



**FLUID CONNECTORS FOR HYDRAULICS**  
A COMPLETE PRODUCT RANGE





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# MANULI HYDRAULICS - OUR MISSION

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*Manuli Hydraulics, focused on achieving excellence in the design, manufacture and supply of fluid conveyance solutions, components and associated equipment for high pressure hydraulics, refrigeration and oil and marine applications.*

Just some of the application areas where Manuli Hydraulics products are used are:

- Construction and public works
- Underground and open pit mining
- Maintenance services
- Forestry
- Agriculture
- Water blasting and cleaning
- Refrigeration
- Material handling and logistics
- Industrial machines
- Industrial services
- Energy

## **Manuli Hydraulics Offers:**

- Wire spiral reinforced rubber hoses
- Wire braid reinforced rubber hoses
- Textile braid reinforced rubber hoses
- Reinforced thermoplastic hoses
- Hose fittings
- Quick couplings
- Staple-lock fittings, adaptors and valves for underground mining applications
- Assembling machines
- Hose assemblies and hose kits for mobile refrigeration systems
- Hose assemblies for water cleaning and water blasting applications
- Hose assemblies for high and very high pressure hydraulics systems
- Other fluid connectors

# INNOVATION

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*Manuli Hydraulics R&D activities are based at the Manuli Hydraulics Innovation Centre (MHIC) in Bologna, Italy, which oversees the R&D centres in France, Poland, China and the UK. All of our research centres are equipped with advanced design, testing and validation facilities.*

The main MHIC laboratories feature special rooms that allow researchers to simulate the most extreme environmental conditions including:

- Heat
- Cold
- Fog
- Saline environments
- Vibrations

Our global R&D teams are made up of highly skilled international engineers who are dedicated to the development of integrated solutions for Manuli customers. The quality, wide selection of products and cost saving initiatives that our Innovation Centres provide allow us to better support our customers whatever their requirements.

Our Innovation Centres also focus on the development of co-design projects in confidential alliances with Original Equipment Customers. This is an additional benefit to our Partners, whilst the technological cooperation with OEMs helps our engineers to better understand the demanding and ever-evolving requirements of fluid conveying applications. Our focus on customer requirements enhances our capability and expertise in providing complete fluid connector solutions.





# QUALITY CERTIFICATIONS

*Quality and sustainable development are the driving forces of all Manuli Hydraulics' activities. Manuli Rubber Industries was the first European hydraulic components manufacturer to achieve the ISO 9001 certification in 1992 and the OHSAS certification in 2005.*

The Manuli Group facilities are compliant to ISO 9001 and ISO 14001 and have achieved the Occupational Health and Safety Assessment Series (OHSAS) certifications as the result of it's strong commitment to the preservation of people's health & safety on the work sites.

## ISO 9001 certified plants

- Manuli Rubber Industries – Italy, Innovation Centre & Headquarters
- Manuli Rubber Industries – Italy, Hydraulic Hoses
- Manuli Rubber Industries – Italy, Oil & Marine Hoses
- Manuli Hydraulics (Suzhou) – PRC, Hydraulic Hoses
- Manuli Hydraulics (Suzhou) – PRC, Hose assemblies
- Manuli Hydraulics Manufacturing (Radomsko) - Poland, Hydraulic Hoses
- Manuli Hydraulics Polska – Poland, HY Connectors, Refri & A/C systems
- Manuli Hydraulics – UK, Hose assemblies
- Manuli Hydraulics Europe – Czech Rep., Hose assemblies
- Manuli Hydraulics – India, Hose assemblies
- Manuli Hydraulics Korea – S. Korea, Hose assemblies
- Manuli Otim – France, Hose assemblies
- Techmafex – France, Assembling machines
- Fluiconnecto by Manuli – South Africa
- Fluiconnecto by Manuli – The Netherlands

## ISO 14001 certified plants

- Manuli Rubber Industries – Italy - Hydraulic Hoses
- Manuli Rubber Industries – Italy - Oil & Marine Hoses
- Manuli Hydraulics (Suzhou) – P.R.C. - Hydraulic Hoses
- Manuli Hydraulics (Suzhou) – P.R.C. - Hose assemblies
- Manuli Hydraulics Polska – Poland - HY Connectors, Refri & A/C systems
- Manuli Hydraulics UK – United Kingdom - Hose assemblies
- Manuli Hydraulics Europe – Czech Rep. - Hose assemblies
- Manuli Hydraulics Korea – Korea - Hose assemblies
- Manuli Hydraulics India - India - Hose assemblies

## OHSAS 18001 certified plants

- Manuli Hydraulics (Suzhou) – PRC, Hydraulic Hoses
- Manuli Hydraulics (Suzhou) – PRC, Hose assemblies
- Fluiconnecto by Manuli – South Africa



# QUALITY CERTIFICATIONS (CONT.)

## THIRD PARTY APPROVALS

Manuli products meet and exceed the highest industry standards as proven by the achievement of our extensive list of technical approvals issued by third party accreditation bodies.

### MINING APPROVALS

- FRAS (Fire Resistant and Anti-Static Australian Dept. Mineral Resource)
- MSHA (Mine Safety and Health Administration – USA)
- Polish B Safety certification
- MA (Chinese Mining Approval)

### OIL AND GAS APPROVALS

- API (American Petroleum Institute) Monogram License 7K
- API (American Petroleum Institute) Monogram License 5L
- API (American Petroleum Institute) 16D Fire test
- QS mark by AQSIQ (General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China)

### MARINE EQUIPMENT APPROVALS

- ABS (American Bureau of Shipping)
- BV (Bureau Veritas)
- DNV-GL (Det Norske Veritas - Germanischer Lloyd)
- MED (Marine Equipment Directive)
- RINA (Italian Bureau of Shipping)
- KRS (Korean Register of Shipping)
- LR (Lloyd's Register of Shipping)
- CCS (China Classification Society)
- NKK (Nippon Kaiji Kyokai)

### GOVERNMENT SAFETY APPROVALS

- DB (DIN 5510-2) - German Railway
- DB (EN 45545-2) – Europe Railway (requested)
- CU-TR – Russian Fed. & CIS
- EN 81-2 - Safety of hydraulic elevators



# THE NETWORK

*Manuli Hydraulics aims to guarantee worldwide availability of technical and commercial support for its products and services.*

The sales & service network is organised as follows:

- **WHOLESALE FACILITIES** in Western & Eastern Europe, Americas, Asia and Oceania;
- **OEM ASSEMBLING FULLY OWNED FACILITIES** in Europe and East Asia;
- **OEM ALLIANCES PARTNER FACILITIES** with reliable customers in strategic markets
- **DISTRIBUTOR NETWORK** with a widespread presence all over the world



**PRODUCTION PLANTS**  
CHINA, POLAND, FRANCE,  
ITALY



**OEM UNITS**  
SOUTH KOREA, CHINA,  
INDIA, CZECH REPUBLIC,  
UK, FRANCE



**WHS BRANCHES**  
CHINA, SINGAPORE, INDIA,  
RUSSIA, GERMANY, UK,  
USA, MEXICO



**OEM ALLIANCE**  
USA, BRAZIL



**RESEARCH & INNOVATION**  
CHINA, FRANCE, INDIA,  
ITALY, POLAND

The network is integrated by services delivered through the private area of [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com).

The online platform offers:

- Technical products database and related approvals
- Fluid compatibility and pressure loss tools
- On-line store
- Order tracking
- Claim management
- E-learning platform

# A COMPLETE PRODUCT RANGE - HOSES

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*Manuli Hydraulics has established a worldwide market recognition for superior performance, reliability and long lasting products. Several hose ranges have also been developed for specific applications in heavy duty working conditions and for special markets needs.*

## STRUCTURE OF THE RANGE:

### UNIVERSAL HOSE RANGE

Meeting the main International Standards (SAE, DIN, EN, ISO).

- Wire spiral
- Wire braid
- Textile braid and thermoplastic hoses

### SPECIAL HOSE RANGE

Hoses specifically designed to satisfy the requirements of some of the most demanding applications in heavy duty working conditions.

### EXTREME HOSE RANGE

Designed to guarantee superior performance, exceeding the Standards in terms of:

- Temperature resistance
- Abrasion resistance
- Flame retardant cover properties
- Pressure resistance
- Ozone and weather resistance
- Flexibility, compactness and lightness.



## A COMPLETE PRODUCT RANGE - FITTINGS

*The crimped fittings range is composed of more than 6000 references meeting the most common international standards (SAE, DIN, BSP, JIC, ORFS, etc.) and specific requirements set by important OEMs.*

The entire Manuli Hydraulics fittings range is manufactured with an eco-friendly zinc plating treatment which also provides high corrosion resistance.

The Manuli range of crimped fittings comprises two major families, MF2000 (two-piece) fittings and MF3000 (one-piece) fittings.

Most MF2000 and MF3000 fittings are made from solid stock without welding.

### The crimped fittings choice includes:

- MULTIFIT - MF2000
- INTERLOCK PLUS - MF2000
- XTRALOCK - MF2000
- BLASTLOCK - MF2000
- PUSH-LOCK - MF2000
- MINIFIT - - MF2000
- SPIRALFIT - MF2000
- OPF - MF3000
- OPK - MF3000

The logo for the MF2000 series, featuring a stylized red 'M' and 'F' followed by '2000' in red.The logo for the MF3000 series, featuring a stylized red 'M' and 'F' followed by '3000' in blue.

## A COMPLETE PRODUCT RANGE - SMART FITTINGS

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*Manuli Hydraulics prides itself on it's innovative solutions to common problems encountered in real world hydraulics applications. As such we have introduced several "Smart Fittings" which are specifically designed to solve some of these issues.*

### **ROTOFIT**

A well-known Manuli Hydraulics solution designed to eliminate hose twist under external torques, which can be a major contributor to premature hose failure.

The additional advantage of RotoFit is that it is a "Direct-to-Hose" and "Direct-to-Port" solution. By eliminating the need for adaptors, the number of possible leak points is reduced.

### **EASYFIT**

EasyFit is the Manuli "threadless" fittings solution for quick and easy installation of assemblies.

This innovative termination end is fitted with a simple axial push, allowing the hose to self-align and thus improve service life. Maintenance and repair time is also drastically reduced and installation / disconnection in restricted spaces is far easier.

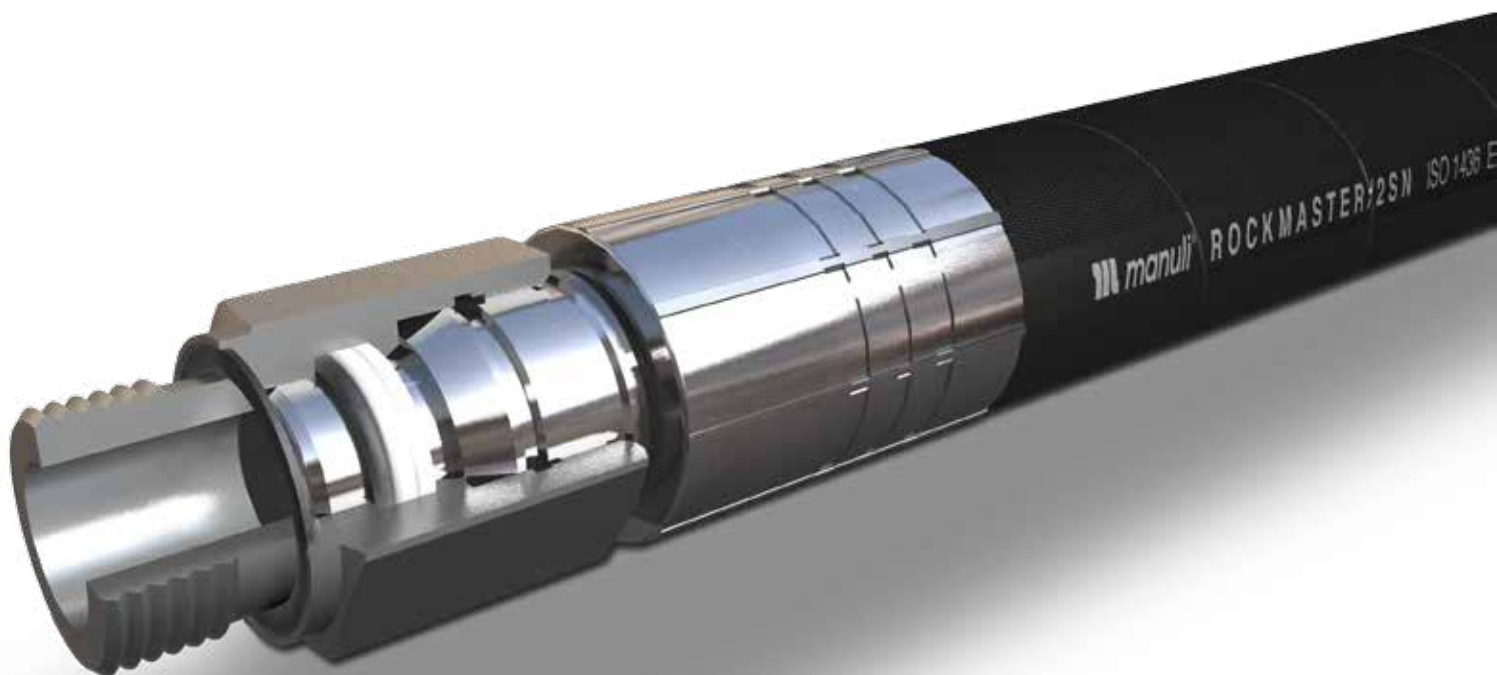
Moreover the "Direct-to-Port" concept eliminates the need for adaptors and the possibility of related leakages.

All EasyFit fittings have an eco-friendly coating treatment for superior corrosion performance.

### **FASTFIT**

FastFit is a "one plug" connection consisting of a male half integrated onto the hose and then inserted into the female cartridge. This easy and safe operation does not require any tools for assembly and allows easy installation in restricted areas or in complex configurations.

FastFit comes in a wide range of cartridges with direct connection on most standard ports, including BSP, SAE METRIC and NPTF.



# A COMPLETE PRODUCT RANGE - QUICK COUPLINGS

*Q.Safe is the Manuli Hydraulics offering for quick coupling applications. Composed of more than 1,200 references, accessories and spare parts, the Q.Safe brand has rapidly become an industry byword for quality and performance.*

The entire Q.Safe product range is manufactured with an environmentally friendly Cr3+ (trivalent chrome) surface coating, which offers excellent resistance to corrosion; far exceeding ISO 4520 requirements (salt spray resistance: 240 hours for white corrosion and 400 for red corrosion). Guaranteeing leak-free performance, the Q.Safe brand is suitable for a wide range of different applications and assures total interchangeability with other quick coupling products on the market.

All Q.Safe products are manufactured and assembled in our world-class facility in Poland, where they are subjected to stringent quality controls including:

- 100% visual check
- 100% functional test
- 100% air sealing test

## Q.Safe

### The Q.Safe quick couplings range:

- MQS-A - ISO-A poppet and ball valves couplings
- MQS-AP - ISO-A under pressure couplings
- MQS-AM - ISO-A connectible with male under pressure
- MQS-AB - ISO-A connectible under pressure
- MQS-B - ISO-B poppet valve couplings
- MQS-BOP - ISO-B poppet valve couplings with flame test resistance to API 16D
- MQS-N - Standard poppet and ball valves couplings
- MQS-NL - Free flow couplings
- MQS-NF - Standard push-pull poppet valve couplings
- MQS-AF - Push-pull couplings
- MQS-AFP - Push-pull connectible under pressure couplings
- MQS-AFM - Push-pull connectible with male under pressure - Flexible mounting
- MQS-AFB - Push-pull connectible with both parts under pressure - Flexible mounting
- MQS-ARM - Push-pull connectible with male under pressure - Rigid mounting
- MQS-ARB - Push-pull connectible with both parts under pressure - Flexible mounting
- MQS-VB - Braking circuit valves
- MQS-VS - Agricultural valves
- MQS-D - Couplings for diagnosis
- MQS-F - Flat-Face couplings
- MQS-FH - Flat-Face high pressure couplings
- MQS-FP - Flat-Face male connectible under pressure
- MQS-FS - Flat-Face screw-type
- MQS-SG - Screw-type couplings
- MQS-SGR - Screw-type couplings for heavy duty
- MQS-SH - Screw very high pressure
- MQS-SC - Screw-type couplings for hydraulic cylinders couplings
- MQS-ST - Screw-type couplings for trucks
- MQS-CV - Check valves
- MQS-CVC - Compact Check valves
- MQS-DHI - Couplings direct hose integrated



## A COMPLETE PRODUCT RANGE - WATER CLEANING & BLASTING

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*Manuli Hydraulics also offers a range of hoses and fittings dedicated specifically to water cleaning and blasting applications. Although different from hydraulics, our expertise in designing hoses for very high-pressure systems makes these applications a natural extension of our range.*

The water cleaning hose range offered by Manuli can be applied to both hobby and professional water cleaning machines with both hot and cold water (not suitable for vapour steam applications).

They are designed according to safety norm IEC-2 with a safety factor (burst / working pressure) of 4:1.

The water blasting hose range is designed for maximum robustness and ease of handling.

Given the importance of safety and performance when connected with any blasting application, this range has a complete, dedicated fittings range, whilst the safety factor (burst / working pressure) of 2,5:1 is compliant with international specifications (AS/NZ 4233.2, RMA-USA, ISO7751, BFPA-UK, EN1829-2)





## A COMPLETE PRODUCT RANGE - REFRIGERATION

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*In addition to standard hydraulic products, Manuli Hydraulics also offers a complete range of reinforced rubber hoses, fittings, hose assemblies and kits for refrigeration applications.*

The Refrigeration product range is specifically designed to satisfy even the most restrictive of requirements aimed at the development of:

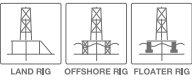



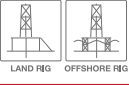



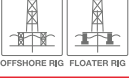

- Bus air conditioning and mobile refrigeration systems for “on-road industrial vehicles”;
- Air conditioning systems applied to “off-highway industrial vehicles” such as agricultural machines, earth-moving machines, forestry machines and many others.

The above systems are supplied both directly to manufacturers which need significant product volumes and through specialised distributors.



# A COMPLETE PRODUCT RANGE - DRILLING

*Manuli Hydraulics is globally recognised for the reliability, high-quality and robustness of their products. In an industry where the combination of safety and efficiency is of paramount concern, you can rely on Manuli to support you across the whole spectrum of drilling applications. We understand the harsh demands of your operating environment and engineer our solutions to meet your specific requirements.*

| APPLICATION             | MANULI HOSE   | RIG TYPE  | DESIGN EXCEEDS NORMS   |
|-------------------------|---|---|--|
| ROTARY/VIBRATOR HOSE    | GOLDENDRILL (3000, 4000, 5000, 7500 psi)                | <br>LAND RIG   OFFSHORE RIG   FLOATER RIG   | API 7K FSL 1<br>ISO 14693 FSL 1<br> |
| CEMENT HOSE             | GOLDENCEMENT (10000 psi)                                | <br>LAND RIG   OFFSHORE RIG   FLOATER RIG   | API 7K FSL 0<br>ISO 14693 FSL 0<br> |
| BOP HOSE                | GOLDENGUARD (3000, 5000 psi)<br>GOLDENARMOUR (5000 psi) | <br>LAND RIG   OFFSHORE RIG                 | API 16D<br>ISO 3862<br>SAE J517<br> |
| GREASE INJECTION HOSE   | GOLDENDRILL/H   | <br>LAND RIG   OFFSHORE RIG   FLOATER RIG   | MSHA   |
| MOTION COMPENSATOR HOSE | GOLDENWAVE  | <br>FLOATER RIG                           | ISO 18752 - B extension<br>SAE J517 extension<br>MSHA  |
| TRANSFER HOSE           | XTRAFLOW/4WS  | <br>OFFSHORE RIG   FLOATER RIG            | ISO 18752 extension<br>MSHA  |
| GENERAL PURPOSE         | ROCKMASTER/2SC  |   | EN857 & ISO 11237 extension<br>SAE 100R16, MSHA  |
|                         | DIAMONDSPiR/21<br>DIAMONDSPiR/35                        | <br>LAND RIG   OFFSHORE RIG   FLOATER RIG | ISO 18752, MSHA  |



## A COMPLETE PRODUCT RANGE - MINING

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*The Manuli Hydraulics brand is known throughout the hydraulics industry as the mark of a quality hose, and our extensive range of underground mining hoses are no exception.*

With several ranges of hose designed specifically to meet the needs of the underground mining industry, Manuli Hydraulics can boast compliance with the requirements of some of the most stringent and demanding approvals bodies in the industry, including:

- MSHA (USA)
- MA (China)
- Polish Safety "B"
- FRAS (Australia)

In addition our range of underground mining fittings is designed to integrate seamlessly with our hose products to deliver robust, reliable and efficient service in both the laboratory and, most importantly, in the field.

With an extensive product catalogue, covering almost all underground mining applications, Manuli Hydraulics provides both traditional and innovative hoses and fittings specifically designed with the underground mining industry in mind.



# A COMPLETE PRODUCT RANGE - HOSE PROTECTIONS

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*Manuli Hydraulics also offers a range of strong, easy to install, and high-tech protective covers for hoses and piping. These hose protections are mainly dedicated to applications in harsh environmental conditions, where the additional protection offered is a key factor to prevent injury, fluid jetting, abrasion or hose bundling.*

In addition, the use of hose protections can significantly reduce downtime and maintenance cost.

The Manuli Hydraulics hose protections range meets all the safety requirements defined by international specifications such as ISO, EN and SAE.

**The “Made in Manuli” hose protection range consists of:**

## PROTECTION SPRINGS - PS

Recommended to protect hoses from abrasion and wearing with external parts in construction, agriculture and forestry applications.

## MINING PROTECTION SPRINGS - MPS

Recommended for severe mining applications to prevent hose bundling and to provide protection from harsh environmental factors such as abrasion.

## HT PROTECTION SPRINGS - HTPS

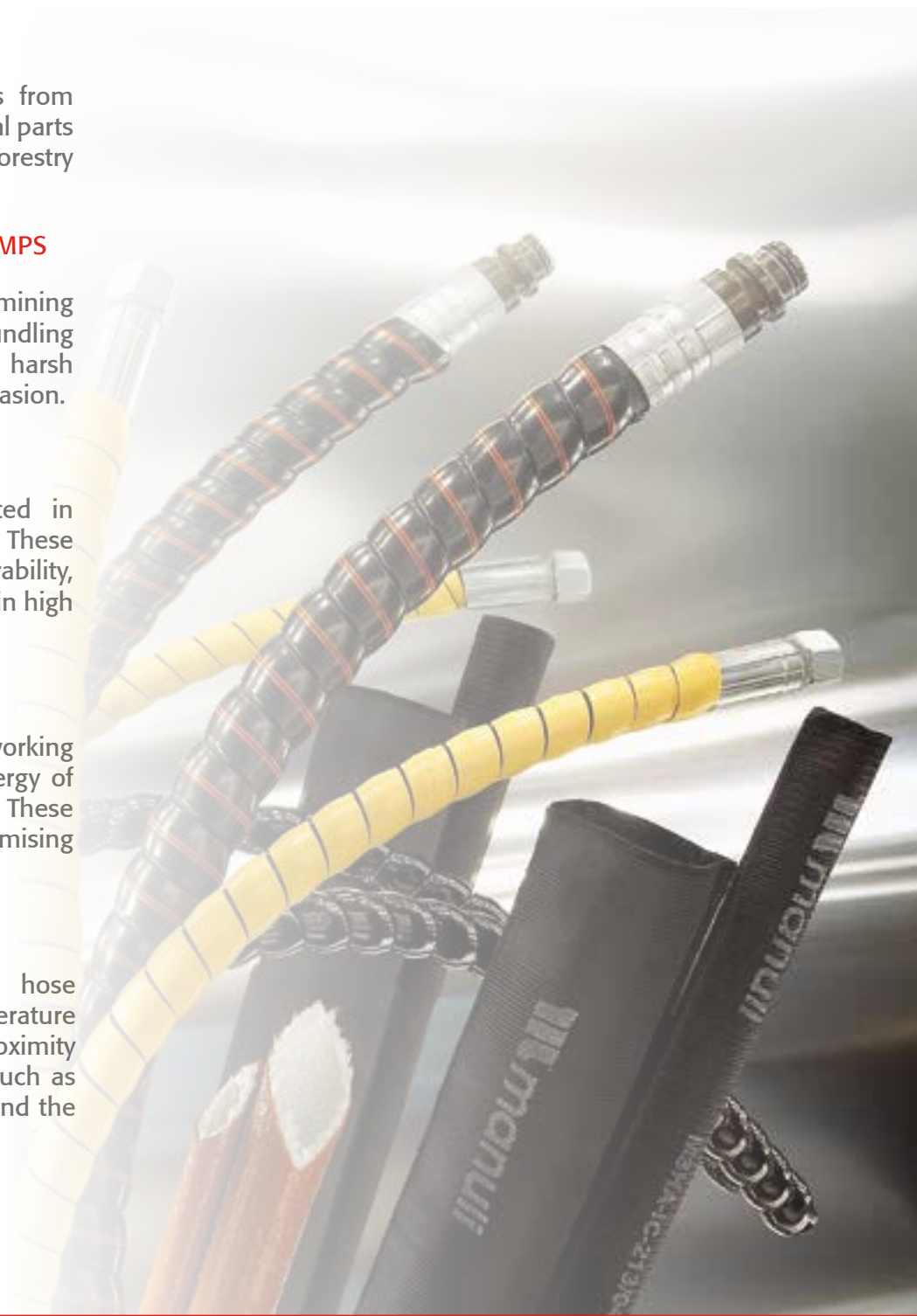
Recommended for hoses located in close proximity to hot surfaces. These protections enhance hose durability, flexibility and abrasion resistance in high temperature environments.

## TEXTILE SLEEVES - TSL

Recommended to protect the working environment by diffusing the energy of a sudden fluid jetting incident. These protections can be critical in minimising the risk of fluid injection injuries.

## FIRE SLEEVES - FSL

Recommended for hydraulic hose applications in very high temperature environments and in close proximity to sources of thermal radiation such as siderurgy, foundries, glassworks and the railways industry.



## A COMPLETE PRODUCT RANGE - ASSEMBLING MACHINES

*Manuli Hydraulics is an integrated supplier and, as such, also offers with a wide range of assembling machines, equipment, tools and operating instructions, approved to guarantee full compatibility with its own fittings solutions.*

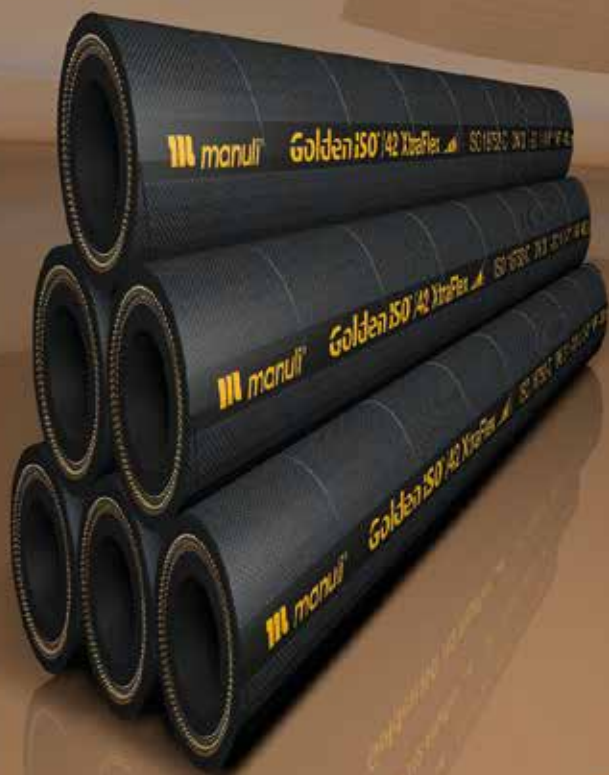
The use of Manuli assembling machines, assembling instructions and crimping parameters is highly recommended for the production of safe, reliable hose assemblies.

### **The assembling machines range includes:**

- Crimping Machines
- Cutting Machines
- Skiving Machines
- Insert Pushing Machines
- Marking Machines
- Pressure Test Machines







**HOSES**





# HOSES

## INTRODUCTION

---

The hydraulic hose range is dedicated to hydraulic systems and equipment in many different sectors, such as construction machines, mining, industrial processes, agriculture, road construction equipment, drilling, forestry machines, material handling and lifting, road transportation, marine and offshore, and many others.

High pressure hydraulics is a means to transmit, control and distribute energy and power using a pressurised liquid, most often oil and water-based fluids, as a medium.

Manuli's UNIVERSAL hose range meets the ISO, EN, SAE, and JIS International Norms, while the EXTREME hose range is designed to meet special performance requirements in OEM severe applications. This second hose family also includes a group of hoses dedicated to Special Applications - products developed as a result of over 80 years of experience in the field.

The hose families follow traditional norms or the modern isobaric approach, which features a friendly methodology for users thanks to constant pressure levels for any size.

# HOSES INDEX

**HOSES**  
H0-2

| RANGE             | HOSE         | HOSE STRUCTURE                         | NORM                 | KEY PERFORMANCE  | SECTION                             | ITEM |    |
|-------------------|--------------|--|----------------------|--|-------------------------------------|------|----|
| UNIVERSAL         | TRADITIONAL  | TRACTOR/1SN                            | Wire braided         | EN 853, ISO 1436-1SN, SAE J517-100R1AT                           | Standard hydraulic applications     | H1   | 1  |
|                   |              | TRACTOR/2SN                            | Wire braided         | EN 853, ISO 1436-2SN, SAE J517-100R-2AT                          | Standard hydraulic applications     |      | 2  |
|                   |              | TRACTOR/1SC                            | Wire braided         | EN 857, ISO 11237-1SC  | Standard hydraulic applications     |      | 3  |
|                   |              | TRACTOR/2SC                            | Wire braided         | EN 857, ISO 11237-2SC, SAE J517-100R16                           | Standard hydraulic applications     |      | 4  |
|                   |              | HARVESTER/17                           | Wire braided         | SAE J517-100R17, ISO 11237-R17                                   | Light and compact structure         | H2   | 1  |
|                   |              | GOLDENISO/14                           | Wire braided         | ISO 18752 Type A   | Compact, high flexibility           | H3   | 1  |
|                   |              | LYTE-FLEX                              | Wire braided         | Manuli Design (compact wire braided)                             | High flexibility                    | H4   | 1  |
|                   |              | COVER                                  | Wire braided         | SAE J517-100 R5  | General purpose hose                | H5   | 1  |
|                   |              | SPIRTEX/K                              | Textile / Helix wire | SAE J517-100 R4  | High quality suction hose           | H6   | 1  |
|                   |              | MULTITEX                               | Textile              | SAE J517-100 R6, EN 854, ISO 4079 R6/1TE                         | Universal low pressure solution     | H7   | 1  |
|                   |              | ASTRO/2                                | Textile              | EN 854, ISO 4079-2TE   | Medium pressure solution            | H8   | 1  |
|                   |              | ASTRO/3                                | Textile              | EN 854, ISO 4079-3TE   | Medium pressure solution            |      | 2  |
|                   |              | HYDROPLAST                             | Textile              | EN 855, ISO 3949-R7, SAE J517-R100R7                             | Thermoplastic solution              | H9   | 1  |
|                   |              | HYDROTWIN                              | Textile              | EN 855, ISO 3949-R7, SAE J517-R100R7                             | Twinned thermoplastic solution      | H10  | 1  |
| EXTREME           | TRADITIONAL  | ROCKMASTER/1SN                         | Wire braided         | EN 853, ISO 1436-1SN, SAE J517-100R1AT                           | Abrasion, weather & heat resistance | H11  | 1  |
|                   |              | ROCKMASTER/2SN                         | Wire braided         | EN 853, ISO 1436-2SN, SAE J517-100R2AT                           | Abrasion, weather & heat resistance |      | 2  |
|                   |              | ROCKMASTER/2ST                         | Wire braided         | EN 853, ISO 1436-2ST   | Abrasion, weather & heat resistance |      | 3  |
|                   |              | ROCKMASTER/2 PLUS                      | Wire braided         | EN 853, ISO 1436-2SN, SAE J517-100R2AT, perf. BCS174, ISO 6805-4 | Abrasion, weather & heat resistance |      | 4  |
|                   |              | ROCKMASTER/1SC                         | Wire braided         | EN 857, ISO 11237-1SC  | Abrasion, weather & heat resistance |      | 5  |
|                   |              | ROCKMASTER/2SC                         | Wire braided         | EN 857, ISO 11237-2SC, SAE J517-100R16                           | Abrasion, weather & heat resistance |      | 6  |
|                   |              | ROCKMASTER/4SP                         | Wire spiralled       | EN 856, ISO 3862-4SP   | Abrasion, weather & heat resistance |      | 7  |
|                   |              | ROCKMASTER/4SH                         | Wire spiralled       | EN 856, ISO 3862-4SH   | Abrasion, weather & heat resistance |      | 8  |
|                   |              | ROCKMASTER/12                          | Wire spiralled       | EN 856, ISO 3862-R12, SAE J517-100R12                            | Abrasion, weather & heat resistance |      | 9  |
|                   |              | ROCKMASTER/13                          | Wire spiralled       | EN 856, ISO 3862-R13, SAE J517-100R13                            | Abrasion, weather & heat resistance |      | 10 |
|                   |              | ROCKMASTER/15                          | Wire spiralled       | ISO 3862-R15, SAE J517-100R15                                    | Abrasion, weather & heat resistance |      | 11 |
|                   |              | EQUATOR/1 (BLUE)                       | Wire braided         | EN 853, ISO 1436-1SN, SAE J517-100R1AT                           | Extreme temperature                 | H12  | 1  |
| EQUATOR/1 (BLACK) | Wire braided | EN 853, ISO 1436-1SN, SAE J517-100R1AT | Extreme temperature  | 2  |                                     |      |    |

# HOSES INDEX

| RANGE                  | HOSE                       | HOSE STRUCTURE  | NORM   | KEY PERFORMANCE  | SECTION  | ITEM |     |
|------------------------|----------------------------|---|--|--|--|------|-----|
| EXTREME                | TRADITIONAL                | EQUATOR/2 (BLUE)  | Wire braided                                   | EN 853, ISO 1436-2SN, SAE J517-100R2AT                           | Extreme temperature                              | H12  | 3   |
|                        |                            | EQUATOR/2 (BLACK)                                       | Wire braided                                   | EN 853, ISO 1436-2SN, SAE J517-100R2AT                           | Extreme temperature                              |      | 4   |
|                        |                            | PILOT   | Wire braided                                   | Manuli Design  | Superior lightness and flexibility               | H13  | 1   |
|                        |                            | NOZONE/2K   | Wire braided                                   | EN 857, ISO 11237-2SC  | Outstanding ozone resistance                     | H14  | 1   |
|                        |                            | ETERNITY/2  | Wire braided                                   | EN 857, ISO 11237-2SC, SAE J517-100R16                           | High service-life and reliability                | H15  | 1   |
|                        |                            | DIAMONDSPIR   | Wire spiralled                                 | ISO 3862-R15, SAE J517-100R15                                    | Very high pressure rating                        | H16  | 1   |
|                        |                            | SHIELDMASTER/2 PLUS MINE                                | Wire braided                                   | EN 853, ISO 1436-2SN, SAE J517-100R2AT, perf. BCS174, ISO 6805-4 | Outstanding abrasion resistance, MSHA approved   | H17  | 1   |
|                        |                            | PUSHFIT   | Textile  | Manuli Design  | Push-on hose                                     | H18  | 1   |
|                        |                            | XTRAFLOW/2WB  | Wire braided                                   | Ext. EN 857-2SC, ISO 11237-2SC                                   | High flow rates, low pressure drops              | H19  | 1   |
|                        |                            | XTRAFLOW/4WS  | Wire spiralled                                 | Manuli Design  | High flow rates, outstanding abrasion resistance |      | 2   |
|                        |                            | XTRAFLOW/HT   | Wire braided                                   | Manuli Design  | High temperature, suction and return lines       |      | 3   |
|                        | ISOBARIC                   | GOLDENISO/21 ANTIWEAR                                   | Wire braided                                   | ISO 18752-A, ISO 11237-R17, SAE J517-100R17                      | Extreme abrasion resistance                      | H20  | 1   |
|                        |                            | GOLDENISO/28 ANTIWEAR                                   | Wire braided                                   | ISO 18752-A, ISO 11237-R19, SAE J517-100R19                      | Extreme abrasion resistance                      |      | 2   |
|                        |                            | GOLDENISO/21 XTRAFLEX                                   | Wire spiralled                                 | ISO 18752-C/D, JIS K6349   | Extreme flexibility                              |      | 3   |
|                        |                            | GOLDENISO/28 XTRAFLEX                                   | Wire spiralled                                 | ISO 18752-C/D, JIS K6349   | Extreme flexibility                              |      | 4   |
|                        |                            | GOLDENISO/35 XTRAFLEX                                   | Wire spiralled                                 | ISO 18752-C/D, JIS K6349   | Extreme flexibility                              |      | 5   |
|                        |                            | GOLDENISO/42 XTRAFLEX                                   | Wire spiralled                                 | ISO 18752-C/C Plus   | Extreme flexibility                              |      | 6   |
|                        |                            | GOLDENISO/35 LONGLIFE                                   | Wire braided                                   | ISO 18752-B  | High fatigue resistance                          |      | 7   |
|                        |                            | GOLDENISO/38 LONGLIFE                                   | Wire spiralled                                 | ISO 18752-C/D  | High fatigue resistance                          |      | 8   |
|                        |                            | GOLDENISO/45 LONGLIFE                                   | Wire spiralled                                 | ISO 18752-D ext., ISO 11237-R15, SAE J517-100R15                 | High fatigue resistance                          |      | 9   |
|                        |                            | SHIELDMASTER/2000                                       | Wire braided                                   | Manuli Design  | Outstanding abrasion resistance                  |      | H21 |
| SHIELDMASTER/4000      | Wire braided and spiralled | Manuli Design   | Outstanding abrasion resistance                | 2  |  |      |     |
| SHIELDMASTER/5000      | Wire braided and spiralled | Manuli Design   | Outstanding abrasion resistance                | 3  |  |      |     |
| SHIELDMASTER/6000      | Wire braided and spiralled | Manuli Design   | Outstanding abrasion resistance                | 4  |  |      |     |
| SHIELDMASTER/5000 MINE | Wire braided and spiralled | perf. BCS174, ISO 6805                                  | Outstanding abrasion resistance, MSHA approved | 5  |  |      |     |
| SHIELDMASTER/6000 MINE | Wire spiralled             | ISO 3862-R15, SAE J517-100R15, perf. BCS174, ISO 6805-6 | Outstanding abrasion resistance, MSHA approved | 6  |  |      |     |
| SHIELDMASTER/17 WS     | Wire spiralled             | EN 856 R12, ISO 3862 R12, SAE J517-100R12               | Outstanding abrasion resistance                | 7  |  |      |     |

# HOSES INDEX

| RANGE                |          | HOSE             | HOSE STRUCTURE | NORM   | KEY PERFORMANCE  | SECTION                             | ITEM                           |
|----------------------|----------|------------------|----------------|--|--|-------------------------------------|--------------------------------|
| EXTREME              | ISOBARIC | DIAMONDSPIR/14   | Wire spiralled | ISO 18752-C ext.   | High flow rates, outstanding abrasion resistance             | H22                                 | 1                              |
|                      |          | DIAMONDSPIR/21   | Wire spiralled | ISO 18752-C ext.   | Very high hydraulic power transmission                       |                                     | 2                              |
|                      |          | DIAMONDSPIR/35   | Wire spiralled | ISO 18752-C ext.   | Very high hydraulic power transmission                       |                                     | 3                              |
|                      |          | FORESTMASTER/35  | Wire spiralled | Manuli Design, ref. ISO 18752-C  | Forestry machines, extreme abrasion resistance               | H23                                 | 1                              |
|                      |          | FORESTMASTER/42  | Wire spiralled | Manuli Design, ref. ISO 18752-C  | Forestry machines, extreme abrasion resistance               |                                     | 2                              |
|                      |          |                  |                | MASTERTEX  | Textile  | Exceeds SAE 100 R6, ISO 4079 R6/1TE | Low pressure, high temperature |
| APPLICATION ORIENTED |          | TWINPOWER 4000   | Wire braided   | DN 10: ISO 11237-R19, SAE J517-R19<br>DN 12: ISO 11237-2SC, EN 857-2SC, SAE J517-R16 | Compact, twinned hose structure, easy installations for OEMs | H25                                 | 1                              |
|                      |          | TWINPOWER 5000   | Wire braided   | Exceeds ISO 11237 2SC, EN 857 2SC, SAE J517 type 100R16                              | Compact, twinned hose structure                              |                                     | 2                              |
|                      |          | TWINPOWER/PLUS   | Wire braided   | EN 857, ISO 11237-2SC, SAE J517-100R16   | Compact, twinned hose structure                              |                                     | 3                              |
|                      |          | T°REX            | Wire braided   | Manuli Design  | Extreme temperature  | H26                                 | 1                              |
|                      |          | LUBEMASTER       | Wire braided   | Manuli Design  | Lubrication line   | H27                                 | 1                              |
|                      |          | JACKMASTER       | Wire braided   | IJ-100, Manuli Design (ref. ISO/CD 16301)  | Extreme static pressure                                      | H28                                 | 1                              |
|                      |          | FIREND           | Wire braided   | EN 853, ISO 1436-1SN, SAE J517-100R1AT   | Fire suppression systems                                     | H29                                 | 1                              |
|                      |          | CPH/2SC          | Wire braided   | -  | Cable protection hose  | H30                                 | 1                              |
|                      |          | GOLDENMINE       | Wire spiralled | MT/T 98  | Very high hydraulic power transmission in coal mines (China) | H31                                 | 1                              |
|                      |          | GOLDENGUARD/3000 | Wire spiralled | API 16D Fire Test (pr. 10.1.2), ISO 18752  | Emergency hydraulics   | H32                                 | 1                              |
|                      |          | GOLDENGUARD/5000 | Wire spiralled | API 16D Fire Test (pr. 10.1.2), ISO 18752, ISO 3862, SAE J517-100R13                 | Emergency hydraulics   |                                     | 2                              |
|                      |          | GOLDENARMOUR     | Wire spiralled | API 16D Fire Test (pr. 10.1.2), ISO 18752, ISO 3862, SAE J517 type 100R13            | Emergency hydraulics   | H33                                 | 1                              |

# HOSES BY WORKING PRESSURE

| HOSE SIZE                | WORKING PRESSURE (bar) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|--------------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                          | DN                     | 5   | 6   | 8   | 10  | 12  | 16  | 19  | 22  | 25  | 28  | 31  | 35  | 38  | 46  | 51  | 60  | 63  | 76  | 89  | 102 |
|                          | dash                   | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -16 | -20 | -20 | -24 | -24 | -32 | -32 | -38 | -40 | -48 | -56 | -64 |
| TRACTOR/1SN              |                        | 250 | 225 | 215 | 180 | 160 | 130 | 105 |     | 88  |     | 63  |     | 50  |     | 40  | 50  |     |     |     |     |
| TRACTOR/2SN              |                        | 415 | 400 | 350 | 330 | 275 | 250 | 215 |     | 165 |     | 125 |     | 90  |     | 80  | 90  |     |     |     |     |
| TRACTOR/1SC              |                        |     | 225 | 215 | 180 | 160 | 130 | 105 |     | 88  |     | 63  |     | 50  |     | 40  |     | 50  | 35  |     |     |
| TRACTOR/2SC              |                        |     | 400 | 350 | 330 | 275 | 250 | 215 |     | 165 |     | 125 |     | 100 |     | 90  |     | 70  | 45  |     |     |
| HARVESTER/17             |                        |     | 210 | 210 | 210 | 210 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| GOLDENISO/14             |                        |     | 140 | 140 | 140 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| LYTE-FLEX                |                        |     | 350 | 297 | 280 | 245 | 210 | 210 |     | 140 |     |     |     |     |     |     |     |     |     |     |     |
| COVER                    |                        | 210 | 210 | 157 | 140 | 122 | 105 |     | 56  |     | 43  |     | 35  |     | 24  |     |     |     |     |     |     |
| SPIRTEX/K                |                        |     |     |     |     | 21  | 21  |     |     | 17  |     | 14  |     | 10  |     | 7   |     | 4   | 4   | 3   | 2   |
| MULTITEX                 |                        | 35  | 30  | 30  | 30  | 30  | 30  | 30  |     | 30  |     |     |     |     |     |     |     |     |     |     |     |
| ASTRO/2                  |                        |     | 75  | 68  | 63  | 58  | 50  | 45  |     | 40  |     | 35  |     |     |     |     |     |     |     |     |     |
| ASTRO/3                  |                        |     | 145 | 130 | 110 | 93  | 80  | 70  |     | 55  |     | 45  |     | 40  |     | 33  |     |     |     |     |     |
| HYDROPLAST               |                        | 210 | 192 | 187 | 175 | 140 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| HYDROTWIN                |                        | 210 | 192 | 187 | 175 | 140 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ROCKMASTER/1SN           |                        |     | 225 | 215 | 180 | 160 | 130 | 105 |     | 90  |     | 65  |     | 50  |     | 40  | 50  |     |     |     |     |
| ROCKMASTER/2SN           |                        |     | 400 | 350 | 350 | 350 | 250 | 215 |     | 175 |     | 140 |     | 100 |     | 90  | 90  |     |     |     |     |
| ROCKMASTER/2ST           |                        | 415 | 400 | 350 | 350 | 350 | 250 | 215 |     | 175 |     | 140 |     | 100 |     | 90  |     |     |     |     |     |
| ROCKMASTER/2 PLUS        |                        |     | 450 |     | 400 | 362 | 340 | 310 |     | 240 |     | 175 |     | 146 |     | 130 |     |     | 70  |     |     |
| ROCKMASTER/1SC           |                        |     | 260 | 250 | 225 | 190 | 150 | 150 |     | 110 |     | 75  |     | 50  |     | 50  |     |     |     |     |     |
| ROCKMASTER/2SC           |                        | 420 | 400 | 350 | 330 | 275 | 250 | 245 |     | 210 |     | 140 |     | 100 |     | 90  |     | 70  | 45  |     |     |
| ROCKMASTER/4SP           |                        |     | 485 |     | 450 | 420 | 380 | 380 |     | 320 |     | 210 |     | 185 |     | 175 |     |     |     |     |     |
| ROCKMASTER/4SH           |                        |     |     |     |     | 450 | 420 |     |     | 385 |     | 350 |     | 300 |     | 250 |     |     |     |     |     |
| ROCKMASTER/12            |                        |     |     |     | 280 | 280 | 280 | 280 |     | 280 |     | 210 |     | 175 |     | 175 |     |     |     |     |     |
| ROCKMASTER/13            |                        |     | 690 |     | 690 | 620 |     | 350 |     | 350 |     | 350 |     | 350 |     | 350 |     |     |     |     |     |
| ROCKMASTER/15            |                        |     |     |     |     |     |     | 420 |     | 420 |     | 420 |     | 420 |     |     |     |     |     |     |     |
| EQUATOR/1                |                        |     | 225 | 215 | 180 | 160 | 130 | 105 |     | 88  |     | 65  |     | 50  |     | 40  |     | 35  |     |     |     |
| EQUATOR/2                |                        |     | 400 | 350 | 330 | 275 | 250 | 215 |     | 175 |     | 150 |     | 100 |     | 90  |     |     |     |     |     |
| PILOT                    |                        | 150 | 150 | 120 | 100 | 100 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| NOZONE/2K                |                        |     | 400 | 350 | 330 | 275 | 250 | 215 |     |     |     |     |     |     |     |     |     |     |     |     |     |
| ETERNITY/2               |                        |     | 450 | 400 | 365 | 350 | 300 | 300 |     | 225 |     |     |     |     |     |     |     |     |     |     |     |
| DIAMONDSPIR              |                        |     |     |     |     |     |     | 560 |     | 560 |     | 525 |     | 475 |     | 420 |     |     |     |     |     |
| SHIELDMASTER/2 PLUS MINE |                        |     | 400 | 400 | 362 |     | 310 |     |     | 240 |     | 175 |     | 146 |     | 130 |     |     |     |     |     |
| PUSHFIT                  |                        |     | 35  | 35  | 35  | 25  | 25  | 21  |     | 14  |     |     |     |     |     |     |     |     |     |     |     |
| XTRAFLOW/2WB             |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 105 | 80  | 35  |     |
| XTRAFLOW/4WS             |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 140 | 105 | 80  | 35  |
| XTRAFLOW/HT              |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 35  | 35  | 35  |     |
| GOLDENISO/21 ANTIWEAR    |                        | 210 | 210 | 210 | 210 | 210 | 210 | 210 |     | 210 |     |     |     |     |     |     |     |     |     |     |     |
| GOLDENISO/28 ANTIWEAR    |                        |     | 280 | 280 | 280 | 280 | 280 | 280 |     |     |     |     |     |     |     |     |     |     |     |     |     |
| GOLDENISO/21 XTRAFLEX    |                        |     |     |     |     |     |     |     |     |     |     | 210 |     | 210 |     | 210 |     |     |     |     |     |
| GOLDENISO/28 XTRAFLEX    |                        |     |     |     | 280 | 280 | 280 | 280 |     | 280 |     | 280 |     | 280 |     | 280 |     |     |     |     |     |
| GOLDENISO/35 XTRAFLEX    |                        |     |     |     | 350 | 350 | 350 | 350 |     | 350 |     | 350 |     | 350 |     | 350 |     |     |     |     |     |
| GOLDENISO/42 XTRAFLEX    |                        |     |     |     | 420 | 420 | 420 | 420 |     | 420 |     | 420 |     | 420 |     |     |     |     |     |     |     |
| GOLDENISO/35 LONGLIFE    |                        |     | 350 |     | 350 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |

HOSES

H0-5

# HOSES BY WORKING PRESSURE

HOSES  
H0-6

| HOSE SIZE              | WORKING PRESSURE (bar) |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
|------------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|                        | DN                     | 5   | 6   | 8   | 10  | 12  | 16  | 19  | 22  | 25  | 28  | 31  | 35  | 38  | 46  | 51  | 60  | 63  | 76  | 89  | 102 |
| dash                   | -03                    | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -16 | -20 | -20 | -24 | -24 | -32 | -32 | -38 | -40 | -48 | -56 | -64 |     |
| GOLDENISO/38 LONGLIFE  |                        |     |     |     |     |     |     | 380 |     | 380 |     | 380 |     | 380 |     | 380 |     |     |     |     |     |
| GOLDENISO/45 LONGLIFE  |                        | 460 |     |     |     |     | 460 | 460 |     | 460 |     | 450 |     |     |     |     |     |     |     |     |     |
| SHIELDMASTER/2000      |                        | 140 |     | 140 | 140 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| SHIELDMASTER/4000      |                        | 276 | 276 | 276 | 276 | 276 | 276 |     | 276 |     | 276 |     | 276 |     | 276 |     | 276 |     |     |     |     |
| SHIELDMASTER/5000      |                        | 345 | 345 | 345 | 345 | 345 | 345 |     | 345 |     |     |     |     |     |     |     |     |     |     |     |     |
| SHIELDMASTER/6000      |                        | 420 |     | 420 | 420 | 420 | 420 |     | 420 |     | 420 |     | 420 |     | 420 |     | 420 |     |     |     |     |
| SHIELDMASTER/5000 MINE |                        | 345 | 345 | 345 | 345 | 345 | 345 |     | 345 |     | 345 |     |     |     |     |     |     |     |     |     |     |
| SHIELDMASTER/6000 MINE |                        |     |     |     |     |     |     |     |     | 420 |     | 420 |     | 420 |     |     |     |     |     |     |     |
| SHIELDMASTER/17 WS     |                        |     |     |     |     |     |     |     |     |     |     |     |     |     | 175 |     |     |     |     |     |     |
| DIAMONDSPIR/14         |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 140 |     |
| DIAMONDSPIR/21         |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 210 | 210 |     |     |
| DIAMONDSPIR/35         |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 350 | 350 |     |     |
| FORESTMASTER/35        |                        |     |     |     |     |     |     | 350 |     | 350 |     |     |     |     |     |     |     |     |     |     |     |
| FORESTMASTER/42        |                        |     |     |     |     | 420 | 420 |     | 420 |     | 420 |     |     |     |     |     |     |     |     |     |     |
| MASTERTEX              |                        | 30  |     | 30  | 30  | 30  |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TWINPOWER 4000         |                        |     |     | 280 | 280 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TWINPOWER 5000         |                        |     | 350 | 350 | 350 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TWINPOWER/PLUS         |                        |     |     |     | 310 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| T°REX                  |                        |     |     |     |     |     |     |     |     |     | 43  |     |     |     |     |     |     |     |     |     |     |
| LUBEMASTER             |                        | 210 |     | 210 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| JACKMASTER             |                        | 725 |     | 725 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| FIREND                 |                        | 225 |     | 180 | 160 |     | 105 |     | 88  |     |     |     |     |     |     |     |     |     |     |     |     |
| GOLDENMINE             |                        |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     | 350 |     |     |     |
| GOLDENGUARD/3000       |                        |     |     |     |     |     | 207 |     | 207 |     |     |     |     |     |     |     |     |     |     |     |     |
| GOLDENGUARD/5000       |                        |     |     | 345 | 345 | 345 | 345 |     | 345 |     | 345 |     | 345 |     | 345 |     | 345 |     |     |     |     |
| GOLDENARMOUR           |                        |     |     | 345 | 345 | 345 | 345 |     | 345 |     | 345 |     | 345 |     | 345 |     | 345 |     |     |     |     |

# HOSES BY APPROVALS

|                          | HYDRAULICS, MARINE EQUIPMENT TYPE APPROVALS |    |        |     |                  |      |     |    | MINING SAFETY TYPE APPROVALS |            |      |    | GOVERNMENT, SAFETY AND SPECIAL TYPE APPROVALS |       |
|--------------------------|---|----|--------|-----|------------------|------|-----|----|------------------------------|------------|------|----|---|-------|
|                          | ABS   | BV | DNV-GL | KRS | LLOYD'S REGISTER | RINA | MED | NK | MSHA                         | POLISH "B" | FRAS | MA | Elevators EN81-2                              | CU-TR |
| TRACTOR/1SN              |   |    | *      |     |                  |      |     |    |                              |            |      |    |   | *     |
| TRACTOR/2SN              |   |    | *      |     |                  |      |     |    |                              |            |      |    |   | *     |
| TRACTOR/1SC              |   |    | *      |     |                  |      |     |    |                              |            |      | *  |   | *     |
| TRACTOR/2SC              |   |    | *      |     |                  |      |     |    |                              |            |      | *  |   | *     |
| HARVESTER/17             |   |    |        |     | *                |      |     |    |                              |            |      |    |   | *     |
| GOLDENISO/14             |   |    |        |     |                  |      |     | *  |                              |            |      |    |   | *     |
| LYTE-FLEX                |   |    |        |     | *                |      |     |    |                              |            |      |    |   | *     |
| COVER                    |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| SPIRTEX/K                |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| MULTITEX                 |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| ASTRO/2                  |   |    | *      |     |                  |      |     |    |                              |            |      |    |   | *     |
| ASTRO/3                  |   |    | *      |     |                  |      |     |    |                              |            |      |    |   | *     |
| HYDROPLAST               |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| HYDROTWIN                |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| ROCKMASTER/1SN           | *   | *  | *      | *   | *                |      | *   | *  | *                            |            | *    | *  |   | *     |
| ROCKMASTER/2SN           | *   | *  | *      | *   | *                | *    | *   | *  | *                            | *          | *    | *  |   | *     |
| ROCKMASTER/2ST           |   | *  |        |     | *                |      |     |    | *                            | *          | *    |    |   | *     |
| ROCKMASTER/2 PLUS        |   | *  | *      |     | *                |      |     |    | *                            |            | *    | *  |   | *     |
| ROCKMASTER/1SC           |   |    |        |     | *                |      |     |    | *                            |            | *    |    |   | *     |
| ROCKMASTER/2SC           | *   | *  | *      |     | *                | *    |     | *  | *                            | *          | *    | *  |   | *     |
| ROCKMASTER/4SP           | *   | *  | *      |     | *                | *    | *   | *  | *                            | *          | *    | *  |   | *     |
| ROCKMASTER/4SH           | *   | *  | *      |     | *                | *    | *   | *  | *                            | *          | *    | *  |   | *     |
| ROCKMASTER/12            | *   | *  |        |     | *                |      | *   | *  | *                            |            | *    | *  |   | *     |
| ROCKMASTER/13            | *   | *  | *      |     | *                | *    | *   | *  | *                            | *          | *    | *  |   | *     |
| ROCKMASTER/15            | *   | *  | *      |     | *                |      | *   |    | *                            | *          | *    | *  |   | *     |
| EQUATOR/1                | *   |    | *      |     | *                |      |     |    | *                            |            |      |    |   | *     |
| EQUATOR/1 (BLUE)         | *   | *  | *      |     | *                |      | *   |    | *                            |            |      |    |   | *     |
| EQUATOR/2                | *   |    | *      |     | *                |      |     |    | *                            |            |      |    |   | *     |
| EQUATOR/2 (BLUE)         | *   | *  | *      |     | *                |      | *   |    | *                            |            |      |    |   | *     |
| PILOT                    |   |    |        |     |                  |      |     |    | *                            |            |      |    |   | *     |
| NOZONE/2K                |   |    |        |     |                  |      |     |    | *                            |            |      |    |   | *     |
| ETERNITY/2               | *   |    | *      |     |                  |      | *   |    | *                            |            | *    |    |   | *     |
| DIAMONDSPIR              | *   |    |        |     |                  |      |     |    | *                            |            | *    | *  |   | *     |
| SHIELDMASTER/2 PLUS MINE |   |    |        |     |                  |      |     |    | *                            |            |      |    |   | *     |
| PUSHFIT                  |   |    |        |     |                  |      |     |    |                              |            |      |    |   | *     |
| XTRAFLOW/2WB             |   |    |        |     |                  |      |     |    | *                            |            |      |    |   | *     |
| XTRAFLOW/4WS             |   |    |        |     |                  |      |     |    | *                            |            | *    |    |   | *     |
| XTRAFLOW/HT              |   |    |        |     |                  |      |     |    | *                            |            |      |    |   | *     |
| GOLDENISO/21 ANTIWEAR    |   |    |        |     |                  |      |     |    | *                            |            | *    |    |   | *     |
| GOLDENISO/28 ANTIWEAR    |   |    |        |     |                  |      |     |    | *                            |            | *    |    |   | *     |
| GOLDENISO/21 XTRAFLEX    |   |    |        |     |                  |      |     |    | *                            |            | *    |    |   | *     |

# HOSES BY APPROVALS

HOSES  
H0-8

|                        | HYDRAULICS, MARINE EQUIPMENT TYPE APPROVALS |    |        |     |                  |      |     |    | MINING SAFETY TYPE APPROVALS |            |      |    | GOVERNMENT, SAFETY AND SPECIAL TYPE APPROVALS |       |
|------------------------|---|----|--------|-----|------------------|------|-----|----|------------------------------|------------|------|----|---|-------|
|                        | ABS   | BV | DNV-GL | KRS | LLOYD'S REGISTER | RINA | MED | NK | MSHA                         | POLISH "B" | FRAS | MA | Elevators EN81-2                              | CU-TR |
| GOLDENISO/28 XTRAFLEX  |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| GOLDENISO/35 XTRAFLEX  |   |    | *      |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| GOLDENISO/42 XTRAFLEX  |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| GOLDENISO/35 LONGLIFE  |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| GOLDENISO/38 LONGLIFE  |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| GOLDENISO/45 LONGLIFE  |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| SHIELDMASTER/2000      |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| SHIELDMASTER/4000      |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| SHIELDMASTER/5000      |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| SHIELDMASTER/6000      |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| SHIELDMASTER/5000 MINE |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| SHIELDMASTER/6000 MINE |   |    |        |     |                  |      |     | *  |                              | *          |      |    | *   |       |
| SHIELDMASTER/17 WS     |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| DIAMONDSPIR/14         |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| DIAMONDSPIR/21         |   |    |        |     |                  |      |     | *  |                              |            | *    |    | *   |       |
| DIAMONDSPIR/35         |   |    |        |     |                  |      |     | *  |                              |            | *    |    | *   |       |
| FORESTMASTER/35        |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| FORESTMASTER/42        |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| MASTERTEX              |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| TWINPOWER 4000         |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| TWINPOWER 5000         |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| TWINPOWER/PLUS         |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| T°REX                  |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| LUBEMASTER             |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| JACKMASTER             |   |    |        |     |                  |      |     |    |                              |            |      |    | *   |       |
| FIREND                 |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| CPH/2SC                |   |    |        |     |                  |      |     | *  |                              |            |      |    | *   |       |
| GOLDENMINE             |   |    |        |     |                  |      |     | *  |                              |            | *    |    | *   |       |
| GOLDENGUARD/3000       |   |    | *      |     | *                |      |     |    |                              |            |      |    | *   |       |
| GOLDENGUARD/5000       |   |    | *      |     | *                |      |     |    |                              |            |      |    | *   |       |
| GOLDENARMOUR           |   |    | *      |     | *                |      |     |    |                              |            |      |    | *   |       |



## TRACTOR/1SN

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- EN/DIN and new SAE rated working pressures
- Flame retardant property of the cover compound, MSHA approved
- Smooth cover FRAS approved (DN 5÷12)
- Halogen-Free hose line

### APPLICATIONS & FLUIDS

- Hydraulics: low-medium pressure lines, return lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01006005* | 5         | - 3  | 3/16"  | 9,5    | 0,37 | 11,5 | 0,45 | 250      | 3620 | 1000  | 14500 | 89        | 3,50  | 197    | 0,13  | MF+M03400-03 | OPF-03 |
| H02004A06* | 6         | - 4  | 1/4"   | 11,2   | 0,44 | 13,2 | 0,52 | 225      | 3260 | 900   | 13050 | 100       | 3,94  | 220    | 0,15  | MF+M03400-04 | OPF-04 |
| H02004008* | 8         | - 5  | 5/16"  | 12,8   | 0,50 | 14,8 | 0,58 | 215      | 3110 | 850   | 12320 | 114       | 4,49  | 270    | 0,18  | MF+M03400-05 | OPF-05 |
| H02004010* | 10        | - 6  | 3/8"   | 15,1   | 0,59 | 17,1 | 0,67 | 180      | 2610 | 720   | 10440 | 127       | 5,00  | 340    | 0,23  | MF+M03400-06 | OPF-06 |
| H02004012* | 12        | - 8  | 1/2"   | 18,1   | 0,71 | 20,1 | 0,79 | 160      | 2320 | 640   | 9280  | 178       | 7,01  | 400    | 0,27  | MF+M03400-08 | OPF-08 |
| H01006016* | 16        | - 10 | 5/8"   | 21,3   | 0,84 | 23,3 | 0,92 | 130      | 1880 | 520   | 7540  | 200       | 7,87  | 490    | 0,33  | MF+M03400-10 | OPF-10 |
| H01006019* | 19        | - 12 | 3/4"   | 25,3   | 1,00 | 27,3 | 1,07 | 105      | 1520 | 420   | 6090  | 240       | 9,45  | 610    | 0,41  | MF+M03400-12 | OPF-12 |
| H01006025* | 25        | - 16 | 1"     | 33,1   | 1,30 | 35,1 | 1,38 | 88       | 1270 | 350   | 5070  | 300       | 11,81 | 920    | 0,62  | MF+M03400-16 | OPF-16 |
| H01006032* | 31        | - 20 | 1.1/4" | 40,6   | 1,60 | 43,3 | 1,70 | 63       | 910  | 250   | 3620  | 419       | 16,50 | 1260   | 0,85  | MF+M03400-20 | OPK-20 |
| H01006040* | 38        | - 24 | 1.1/2" | 47,0   | 1,85 | 49,7 | 1,96 | 50       | 720  | 200   | 2900  | 500       | 19,69 | 1470   | 0,99  | MF+M03400-24 | OPK-24 |
| H01006051* | 51        | - 32 | 2"     | 60,4   | 2,38 | 63,1 | 2,48 | 40       | 580  | 160   | 2320  | 630       | 24,80 | 2075   | 1,39  | MF+M03400-32 | OPK-32 |
| H01006060* | 60        | - 38 | 2.3/8" | 68,8   | 2,71 | 71,5 | 2,81 | 50       | 720  | 200   | 2900  | 650       | 25,59 | 2210   | 1,49  | MF+M03400-38 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

EN 853 1SN; SAE 100 R1AT; ISO 1436 1SN/R1AT

#### TYPE APPROVALS

MSHA, ABS; BV; DNV-GL; FRAS; NK; CU-TR; KRS; LR;



#### Remarks:

DN 5, 16, 19, 25, 31, 38, 51, 60 references not to be used anymore on new projects: phase out planned.

## TRACTOR/2SN

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- EN/DIN and new SAE rated working pressures
- Wide range of type approvals available
- Flame retardant property of the cover compound, MSHA approved
- Halogen-Free hose line

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01027005* | 5         | - 3  | 3/16"  | 11,3   | 0,44 | 13,3 | 0,52 | 415      | 6010 | 1650  | 23930 | 89        | 3,50  | 315    | 0,21  | MF+M03400-03 | OPF-03 |
| H01027006* | 6         | - 4  | 1/4"   | 12,7   | 0,50 | 14,7 | 0,58 | 400      | 5800 | 1600  | 23200 | 100       | 3,94  | 370    | 0,25  | MF+M03400-04 | OPF-04 |
| H01027008* | 8         | - 5  | 5/16"  | 14,3   | 0,56 | 16,3 | 0,64 | 350      | 5070 | 1400  | 20300 | 114       | 4,49  | 410    | 0,28  | MF+M03400-05 | OPF-05 |
| H01027010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,7 | 0,74 | 330      | 4780 | 1320  | 19140 | 127       | 5,00  | 530    | 0,36  | MF+M03400-06 | OPF-06 |
| H01027012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 21,8 | 0,86 | 275      | 3980 | 1100  | 15950 | 178       | 7,01  | 620    | 0,42  | MF+M03400-08 | OPF-08 |
| H01027016* | 16        | - 10 | 5/8"   | 23,0   | 0,91 | 25,0 | 0,98 | 250      | 3620 | 1000  | 14500 | 200       | 7,87  | 720    | 0,48  | MF+M03400-10 | OPF-10 |
| H01027019* | 19        | - 12 | 3/4"   | 27,0   | 1,06 | 29,0 | 1,14 | 215      | 3110 | 860   | 12470 | 240       | 9,45  | 940    | 0,63  | MF+M03400-12 | OPF-12 |
| H01027025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 36,8 | 1,45 | 165      | 2390 | 660   | 9570  | 300       | 11,81 | 1290   | 0,87  | MF+M03400-16 | OPF-16 |
| H01027032* | 31        | - 20 | 1.1/4" | 44,3   | 1,74 | 47,0 | 1,85 | 125      | 1810 | 500   | 7250  | 419       | 16,50 | 1944   | 1,31  | MF+M03400-20 | OPK-20 |
| H01027040* | 38        | - 24 | 1.1/2" | 50,7   | 2,00 | 53,4 | 2,10 | 90       | 1300 | 360   | 5220  | 500       | 19,69 | 2250   | 1,51  | MF+M03400-24 | OPK-24 |
| H01027051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 66,2 | 2,61 | 80       | 1160 | 320   | 4640  | 630       | 24,80 | 2900   | 1,95  | MF+M03400-32 | OPK-32 |
| H01027060* | 60        | - 38 | 2.3/8" | 68,8   | 2,71 | 71,5 | 2,81 | 90       | 1300 | 360   | 5220  | 650       | 25,59 | 2700   | 1,81  | MF+M03400-38 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

#### TYPE APPROVALS

MSHA, ABS; BV; DNV-GL; CU-TR; KRS; NK; LR



#### Remarks:

DN 5, 16, 19, 25, 31, 38, 51, 60 references not to be used anymore on new projects: phase out planned.

## TRACTOR/1SC

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- High flexibility and excellent bend radius
- Low weight
- Flame retardant property of the cover compound, MSHA approved
- Halogen-Free hose line
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 31
- Range extension to DN 76

### APPLICATIONS & FLUIDS

- Hydraulics: low-medium pressure lines with installation constraints, pilot lines, return lines (suction lines: sizes lower or equal to DN 31)
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H01013006* | 6         | - 4  | 1/4"   | 10,2   | 0,40 | 12,0 | 0,47 | 225      | 3260 | 1050  | 15220 | 50       | 1,97  | 185    | 0,12  | MF+M03300-04 | MF+M00120-04 |
| H01013008* | 8         | - 5  | 5/16"  | 11,5   | 0,45 | 13,6 | 0,54 | 215      | 3110 | 1000  | 14500 | 55       | 2,17  | 215    | 0,14  | MF+M03300-05 | MF+M00120-05 |
| H01013010* | 10        | - 6  | 3/8"   | 13,6   | 0,54 | 15,5 | 0,61 | 180      | 2610 | 850   | 12320 | 60       | 2,36  | 265    | 0,18  | MF+M03300-06 | MF+M00120-06 |
| H01013012* | 12        | - 8  | 1/2"   | 17,1   | 0,67 | 18,9 | 0,74 | 160      | 2320 | 660   | 9570  | 70       | 2,76  | 335    | 0,23  | MF+M00820-08 | MF+M00120-08 |
| H01013016* | 16        | - 10 | 5/8"   | 20,6   | 0,81 | 22,4 | 0,88 | 130      | 1880 | 620   | 8990  | 90       | 3,54  | 445    | 0,30  | MF+M00820-10 | MF+M00820-10 |
| H01013019* | 19        | - 12 | 3/4"   | 23,9   | 0,94 | 25,9 | 1,02 | 105      | 1520 | 480   | 6960  | 100      | 3,94  | 540    | 0,36  | MF+M00820-12 | MF+M00820-12 |
| H01013025* | 25        | - 16 | 1"     | 31,3   | 1,23 | 33,3 | 1,31 | 88       | 1270 | 400   | 5800  | 160      | 6,30  | 770    | 0,52  | MF+M00820-16 | MF+M00820-16 |
| H01013031* | 31        | - 20 | 1.1/4" | 38,4   | 1,51 | 40,9 | 1,61 | 63       | 910  | 400   | 5800  | 210      | 8,27  | 1080   | 0,73  | MF+M00820-20 | MF+M00820-20 |
| H01013038* | 38        | - 24 | 1.1/2" | 45,0   | 1,77 | 47,5 | 1,87 | 50       | 720  | 200   | 2900  | 300      | 11,81 | 1220   | 0,82  | MF+M00820-24 |              |
| H01013051* | 51        | - 32 | 2"     | 58,0   | 2,28 | 60,5 | 2,38 | 40       | 580  | 160   | 2320  | 400      | 15,75 | 1630   | 1,10  | MF+M00820-32 |              |
| H01013063* | 63        | - 40 | 2.1/2" | 70,5   | 2,78 | 73,0 | 2,87 | 50       | 720  | 200   | 2900  | 760      | 29,92 | 2090   | 1,40  | MF+M03400-40 |              |
| H01013076* | 76        | - 48 | 3"     | 85,0   | 3,35 | 87,7 | 3,45 | 35       | 500  | 140   | 2030  | 900      | 35,43 | 2780   | 1,87  | MF+M03400-48 |              |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

EN 857 1SC; ISO 11237 1SC

#### TYPE APPROVALS

ABS; DNV-GL; CU-TR; LR; MSHA (only DN 63 & 76); ELEVATORS EN 8-12;



#### Remarks:

For hydraulic lift applications according to EN 81-2 specification: DN 19: WP = 50 bar - DN 25: WP = 50 bar - DN 31: WP = 50 bar. The ref. spec. EN 81-2 is identified in the standard hose branding for these specific applications.

DN 16, 31, 38, 51, 63, 76 references not to be used anymore on new projects: phase out planned.

## TRACTOR/2SC

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- High flexibility and excellent bend radius
- Low weight
- Flame retardant property of the cover compound, MSHA approved
- Halogen-Free hose line
- Range extension to DN 76
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 76

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines with installation constraints, return lines and suction lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01025006* | 6         | - 4  | 1/4"   | 11,3   | 0,44 | 13,1 | 0,52 | 400      | 5800 | 1850  | 26830 | 45       | 1,77  | 280    | 0,19  | MF+M03400-04 | OPF-04 |
| H01025008* | 8         | - 5  | 5/16"  | 12,9   | 0,51 | 14,7 | 0,58 | 350      | 5070 | 1700  | 24650 | 55       | 2,17  | 330    | 0,22  | MF+M03400-05 | OPF-05 |
| H01025010* | 10        | - 6  | 3/8"   | 15,0   | 0,59 | 16,8 | 0,66 | 330      | 4780 | 1500  | 21750 | 65       | 2,56  | 395    | 0,27  | MF+M03400-06 | OPF-06 |
| H01025012* | 12        | - 8  | 1/2"   | 18,5   | 0,73 | 20,3 | 0,80 | 275      | 3980 | 1220  | 17690 | 80       | 3,15  | 510    | 0,34  | MF+M03400-08 | OPF-08 |
| H01025016* | 16        | - 10 | 5/8"   | 21,8   | 0,86 | 23,6 | 0,93 | 250      | 3620 | 1050  | 15220 | 90       | 3,54  | 630    | 0,42  | MF+M03400-10 | OPF-10 |
| H01025019* | 19        | - 12 | 3/4"   | 25,6   | 1,01 | 27,6 | 1,09 | 215      | 3110 | 920   | 13340 | 120      | 4,72  | 800    | 0,54  | MF+M03400-12 | OPF-12 |
| H01025025* | 25        | - 16 | 1"     | 33,0   | 1,30 | 35,2 | 1,39 | 165      | 2390 | 720   | 10440 | 160      | 6,30  | 1130   | 0,76  | MF+M03400-16 | OPF-16 |
| H01025031* | 31        | - 20 | 1.1/4" | 41,1   | 1,62 | 43,6 | 1,72 | 125      | 1810 | 560   | 8120  | 250      | 9,84  | 1570   | 1,06  | MF+M03400-20 | OPK-20 |
| H01025038* | 38        | - 24 | 1.1/2" | 47,7   | 1,88 | 50,7 | 2,00 | 100      | 1450 | 400   | 5800  | 300      | 11,81 | 1900   | 1,28  | MF+M03400-24 | OPK-24 |
| H01025051* | 51        | - 32 | 2"     | 60,4   | 2,38 | 63,4 | 2,50 | 90       | 1300 | 360   | 5220  | 400      | 15,75 | 2460   | 1,65  | MF+M03400-32 | OPK-32 |
| H01025063* | 63        | - 40 | 2.1/2" | 73,0   | 2,87 | 76,0 | 2,99 | 70       | 1010 | 300   | 4350  | 760      | 29,92 | 2980   | 2,00  | MF+M03400-40 |        |
| H01025076* | 76        | - 48 | 3"     | 87,8   | 3,46 | 90,5 | 3,56 | 45       | 650  | 180   | 2610  | 900      | 35,43 | 3250   | 2,18  | MF+M03400-48 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

EN 857 2SC; ISO 11237 2SC; SAE 100 R16

#### TYPE APPROVALS

MSHA, ABS; DNV-GL; CU-TR; LR; ELEVATORS  
EN 8-12



#### Remarks:

For hydraulic lift applications according to EN 81-2 specification: DN 31: WP = 50 bar - DN 38: WP = 50 bar - DN 51: WP = 45 bar. These ratings are identified with additional embossed branding on the hose references.

DN 16, 31, 38, 51, 63, 76 references not to be used anymore on new projects: phase out planned.

## HARVESTER/17

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Isobaric pressure rating
- Compact hose structures for installations in narrow spaces
- Halogen-Free hose line

### APPLICATIONS & FLUIDS

- Hydraulics: medium pressure lines with installation constraints
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01056006* | 6         | - 4  | 1/4"  | 10,2   | 0,40 | 12,0 | 0,47 | 210      | 3040 | 840   | 12180 | 50       | 1,97 | 185    | 0,12  | MF+M03300-04 | OPF-04 |
| H01056008* | 8         | - 5  | 5/16" | 11,5   | 0,45 | 13,6 | 0,54 | 210      | 3040 | 840   | 12180 | 55       | 2,17 | 215    | 0,14  | MF+M03300-05 | OPF-05 |
| H01056A10* | 10        | - 6  | 3/8"  | 14,4   | 0,57 | 16,2 | 0,64 | 210      | 3040 | 840   | 12180 | 65       | 2,56 | 305    | 0,20  | MF+M03400-06 | OPF-06 |
| H01056A12* | 12        | - 8  | 1/2"  | 17,9   | 0,70 | 19,7 | 0,78 | 210      | 3040 | 840   | 12180 | 90       | 3,54 | 420    | 0,28  | MF+M03400-08 | OPF-08 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

SAE 100 R17; ISO 11237 R17

#### TYPE APPROVALS

CU-TR; LR

## GOLDENISO/14

COMPACTNESS & FLEXIBILITY



### KEY FEATURES

- Compact dimensions, smooth cover
- Very low bend radius, suitable for difficult installations
- High flexibility
- Flame retardant MSHA approved cover
- MiniFit special dedicated fittings, compact dimensions, designed for small bore 1WB hose

### APPLICATIONS & FLUIDS



- Hydraulics: low pressure lines, pilot lines, auxiliary hydraulic systems
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H02011006* | 6         | - 4  | 1/4"  | 10,2   | 0,40 | 12,4 | 0,49 | 140      | 2030 | 560   | 8120 | 25       | 0,98 | 190    | 0,13  | MN+M02400-04 | OPF-04 |
| H02011008* | 8         | - 5  | 5/16" | 11,9   | 0,47 | 14,0 | 0,55 | 140      | 2030 | 560   | 8120 | 30       | 1,18 | 214    | 0,14  | MN+M02400-05 | OPF-05 |
| H02011010* | 10        | - 6  | 3/8"  | 14,5   | 0,57 | 16,5 | 0,65 | 140      | 2030 | 560   | 8120 | 40       | 1,57 | 298    | 0,20  | MN+M02400-06 | OPF-06 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One wire braid (DN 6 to 12) or two wire braids

#### COVER

Synthetic rubber with high ozone and wheater resistance

#### APPLICABLE SPECS

ISO 18752 type A

#### TYPE APPROVALS

CU-TR

## LYTE-FLEX

COMPACT WIRE BRAID, INTEGRATED RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Intermediate pressure rating between 1SC & 2SC
- Lightness and flexibility
- Halogen-Free hose line

### APPLICATIONS & FLUIDS

- Hydraulics: medium pressure lines with installation constraints
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2   |
| H01084006* | 6         | - 4  | 1/4"  | 11,6   | 0,46 | 13,2 | 0,52 | 350      | 5070 | 1400  | 20300 | 50        | 1,97 | 265    | 0,18  | MF+M03400-04 | OPF-04 |
| H01084008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,5 | 0,57 | 297      | 4300 | 1190  | 17250 | 55        | 2,17 | 290    | 0,19  | MF+M03400-05 | OPF-05 |
| H01084010* | 10        | - 6  | 3/8"  | 15,4   | 0,61 | 17,0 | 0,67 | 280      | 4060 | 1120  | 16240 | 63        | 2,48 | 385    | 0,26  | MF+M03400-06 | OPF-06 |
| H01084012* | 12        | - 8  | 1/2"  | 18,5   | 0,73 | 20,3 | 0,80 | 245      | 3550 | 980   | 14210 | 88        | 3,46 | 465    | 0,31  | MF+M03400-08 | OPF-08 |
| H01084016* | 16        | - 10 | 5/8"  | 22,2   | 0,87 | 24,0 | 0,94 | 210      | 3040 | 840   | 12180 | 100       | 3,94 | 630    | 0,42  | MF+M03400-10 | OPF-10 |
| H01084019* | 19        | - 12 | 3/4"  | 25,6   | 1,01 | 27,7 | 1,09 | 210      | 3040 | 840   | 12180 | 120       | 4,72 | 790    | 0,53  | MF+M03400-12 | OPF-12 |
| H01084025* | 25        | - 16 | 1"    | 32,3   | 1,27 | 34,6 | 1,36 | 140      | 2030 | 560   | 8120  | 150       | 5,91 | 1090   | 0,73  | MF+M03400-16 | OPF-16 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

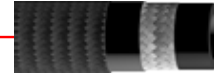
Manuli Design; DN 16 and 19: SAE 100 R17;  
ISO 11237 R17

#### TYPE APPROVALS

CU-TR; LR

## COVER

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Robust design, general purpose hose
- Wear resistant cover

### APPLICATIONS & FLUIDS

- Hydraulics: low-medium pressure lines, general purpose applications
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water, diesel fuel (up to 200°F/93°C)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |          | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|----------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch     | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2   |
| H05002005* | 5         | - 4  | 3/16"    |        |      | 13,2 | 0,52 | 210      | 3040 | 840   | 12180 | 75        | 2,95  | 220    | 0,15  | MF+M00310-03 | OPF-03 |
| H05002006* | 6         | - 5  | 1/4"     |        |      | 14,8 | 0,58 | 210      | 3040 | 840   | 12180 | 85        | 3,35  | 260    | 0,17  | MF+M00310-04 | OPF-04 |
| H05002008* | 8         | - 6  | 5/16"    |        |      | 17,1 | 0,67 | 157      | 2270 | 630   | 9130  | 100       | 3,94  | 305    | 0,20  | MF+M00310-05 | OPF-05 |
| H05002010* | 10        | - 8  | 13/32"   |        |      | 19,4 | 0,76 | 140      | 2030 | 560   | 8120  | 115       | 4,53  | 365    | 0,25  | MF+M00310-06 | OPF-06 |
| H05002012* | 12        | - 10 | 1/2"     |        |      | 23,3 | 0,92 | 122      | 1760 | 490   | 7100  | 140       | 5,51  | 495    | 0,33  | MF+M00310-08 | OPF-08 |
| H05002016* | 16        | - 12 | 5/8"     |        |      | 27,3 | 1,07 | 105      | 1520 | 420   | 6090  | 165       | 6,50  | 650    | 0,44  | MF+M00310-10 |        |
| H05002022* | 22        | - 16 | 7/8"     |        |      | 31,2 | 1,23 | 56       | 810  | 224   | 3240  | 185       | 7,28  | 600    | 0,40  |              |        |
| H05002028* | 28        | - 20 | 1.1/8"   |        |      | 38,0 | 1,50 | 43       | 620  | 175   | 2530  | 229       | 9,02  | 780    | 0,52  |              |        |
| H05002035* | 35        | - 24 | 1.3/8"   |        |      | 44,3 | 1,74 | 35       | 500  | 140   | 2030  | 265       | 10,43 | 1010   | 0,68  |              |        |
| H05002046* | 46        | - 32 | 1.13/16" |        |      | 56,1 | 2,21 | 24       | 340  | 98    | 1420  | 335       | 13,19 | 1400   | 0,94  |              |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °C  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

One textile braid

#### APPLICABLE SPECS

SAE 100 R5

#### TYPE APPROVALS

CU-TR



## SPIRTEX/K

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Resistance to Vacuum
- Compact SAE 100 R4 architecture

### APPLICATIONS & FLUIDS

- Hydraulics: suction lines, return lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D.  |      | MAX W.P. |     | BURST |      | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|-------|------|----------|-----|-------|------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm    | inch | bar      | psi | bar   | psi  | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H30005016* | 16        | - 10 | 5/8"   |        |      | 26,0  | 1,02 | 21       | 300 | 64    | 920  | 96       | 3,78  | 590    | 0,40  | MF+M00310-10 |      |
| H30005019* | 19        | - 12 | 3/4"   |        |      | 29,0  | 1,14 | 21       | 300 | 84    | 1210 | 125      | 4,92  | 550    | 0,37  | MF+M00320-12 |      |
| H30005025* | 25        | - 16 | 1"     |        |      | 35,0  | 1,38 | 17       | 240 | 70    | 1010 | 150      | 5,91  | 680    | 0,46  | MF+M00930-16 |      |
| H30005031* | 31        | - 20 | 1.1/4" |        |      | 42,0  | 1,65 | 14       | 200 | 56    | 810  | 200      | 7,87  | 840    | 0,56  | MF+M00920-20 |      |
| H30005038* | 38        | - 24 | 1.1/2" |        |      | 48,5  | 1,91 | 10       | 140 | 42    | 600  | 254      | 10,00 | 1024   | 0,69  | MF+M00910-24 |      |
| H30005051* | 51        | - 32 | 2"     |        |      | 61,5  | 2,42 | 7        | 100 | 28    | 400  | 300      | 11,81 | 1420   | 0,95  | MF+M00910-32 |      |
| H30005063* | 63        | - 40 | 2.1/2" |        |      | 76,0  | 2,99 | 4        | 50  | 17    | 240  | 355      | 13,98 | 2150   | 1,44  | MF+M03400-40 |      |
| H30005076* | 76        | - 48 | 3"     |        |      | 88,0  | 3,46 | 4        | 50  | 16    | 230  | 457      | 17,99 | 2850   | 1,92  | MF+M03400-48 |      |
| H30005090* | 89        | - 56 | 3.1/2" |        |      | 103,0 | 4,06 | 3        | 40  | 12    | 170  | 530      | 20,87 | 3450   | 2,32  |              |      |
| H30005102* | 102       | - 64 | 4"     |        |      | 115,0 | 4,53 | 2        | 20  | 10    | 140  | 610      | 24,02 | 3900   | 2,62  |              |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two textile reinforcements with steel helical body wire

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

SAE 100 R4

#### TYPE APPROVALS

CU-TR

## MULTITEX

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- High flexibility
- Wide range of fluid compatibility
- MF2000® Multifit type couplability
- Push-On hose with MF2000® Push-Lock insert type without ferrule

### APPLICATIONS & FLUIDS



- Hydraulics: low pressure lines, return lines, drain lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|-----|-------|------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H09067005* | 5         | - 3  | 3/16" |        |      | 11,0 | 0,43 | 35       | 500 | 140   | 2030 | 35       | 1,38 | 90     | 0,06  | MF+M00820-03 |      |
| H09067006* | 6         | - 4  | 1/4"  |        |      | 12,6 | 0,50 | 30       | 430 | 120   | 1740 | 45       | 1,77 | 115    | 0,08  | MF+M00830-04 |      |
| H09067008* | 8         | - 5  | 5/16" |        |      | 14,1 | 0,56 | 30       | 430 | 120   | 1740 | 65       | 2,56 | 140    | 0,09  | MF+M00830-05 |      |
| H09067010* | 10        | - 6  | 3/8"  |        |      | 15,8 | 0,62 | 30       | 430 | 120   | 1740 | 75       | 2,95 | 160    | 0,11  | MF+M00820-06 |      |
| H09067012* | 12        | - 8  | 1/2"  |        |      | 19,4 | 0,76 | 30       | 430 | 120   | 1740 | 90       | 3,54 | 210    | 0,14  | MF+M00820-08 |      |
| H09073016* | 16        | - 10 | 5/8"  |        |      | 23,0 | 0,91 | 30       | 430 | 120   | 1740 | 115      | 4,53 | 290    | 0,19  | MF+M00820-10 |      |
| H09073019* | 19        | - 12 | 3/4"  |        |      | 26,0 | 1,02 | 30       | 430 | 120   | 1740 | 140      | 5,51 | 325    | 0,22  | MF+M00820-12 |      |
| H09073025* | 25        | - 16 | 1"    |        |      | 32,0 | 1,26 | 30       | 430 | 120   | 1740 | 150      | 5,91 | 400    | 0,27  | MF+M00820-16 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 257 °F  
-40 °C / 125 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high resistance textile braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

SAE 100 R6; EN 854 R6/1TE; ISO 4079 R6/1TE

#### TYPE APPROVALS

CU-TR



#### Remarks:

Working Pressure with Push-Lock fittings: DN 5, 6, 8, 10, 12, 16, 19: WP = 17 bar - DN 25: WP = 12 bar

## ASTRO/2

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Wide range of fluid compatibility
- High flexibility of the hose structure

### APPLICATIONS & FLUIDS



- Hydraulics: low pressure lines, return lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H09045006* | 6         | - 4  | 1/4"   |        |      | 13,0 | 0,51 | 75       | 1080 | 300   | 4350 | 40       | 1,57 | 125    | 0,08  | MF+M00830-04 |      |
| H09045008* | 8         | - 5  | 5/16"  |        |      | 14,6 | 0,57 | 68       | 980  | 272   | 3940 | 50       | 1,97 | 150    | 0,10  | MF+M00830-05 |      |
| H09045010* | 10        | - 6  | 3/8"   |        |      | 16,1 | 0,63 | 63       | 910  | 252   | 3650 | 60       | 2,36 | 180    | 0,12  | MF+M00820-06 |      |
| H09045012* | 12        | - 8  | 1/2"   |        |      | 19,2 | 0,76 | 58       | 840  | 232   | 3360 | 70       | 2,76 | 220    | 0,15  | MF+M00820-08 |      |
| H09045016* | 16        | - 10 | 5/8"   |        |      | 23,6 | 0,93 | 50       | 720  | 200   | 2900 | 90       | 3,54 | 290    | 0,19  | MF+M00820-10 |      |
| H09045019* | 19        | - 12 | 3/4"   |        |      | 26,5 | 1,04 | 45       | 650  | 180   | 2610 | 110      | 4,33 | 360    | 0,24  | MF+M00820-12 |      |
| H09045025* | 25        | - 16 | 1"     |        |      | 33,4 | 1,31 | 40       | 580  | 160   | 2320 | 130      | 5,12 | 440    | 0,30  | MF+M00820-16 |      |
| H09045032* | 31        | - 20 | 1.1/4" |        |      | 41,5 | 1,63 | 35       | 500  | 140   | 2030 | 140      | 5,51 | 650    | 0,44  | MF+M00820-20 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 257 °F  
-40 °C / 125 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high resistance textile braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

EN 854 2TE; ISO 4079 2TE

#### TYPE APPROVALS

DNV-GL; CU-TR

## ASTRO/3

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- Wide range of fluid compatibility
- High flexibility of the hose structure
- Low bend radii and compactness
- Exceed performance of SAE100R3

### APPLICATIONS & FLUIDS



- Hydraulics: low-medium pressure lines, return lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H09046006* | 6         | - 4  | 1/4"   |        |      | 14,2 | 0,56 | 145      | 2100 | 580   | 8410 | 45       | 1,77  | 150    | 0,10  | MF+M00310-04 |      |
| H09046008* | 8         | - 5  | 5/16"  |        |      | 16,6 | 0,65 | 130      | 1880 | 520   | 7540 | 55       | 2,17  | 210    | 0,14  | MF+M00310-05 |      |
| H09046010* | 10        | - 6  | 3/8"   |        |      | 18,2 | 0,72 | 110      | 1590 | 440   | 6380 | 70       | 2,76  | 230    | 0,15  | MF+M00310-06 |      |
| H09046012* | 12        | - 8  | 1/2"   |        |      | 21,5 | 0,85 | 93       | 1340 | 372   | 5390 | 85       | 3,35  | 290    | 0,19  | MF+M00310-08 |      |
| H09046016* | 16        | - 10 | 5/8"   |        |      | 25,6 | 1,01 | 80       | 1160 | 320   | 4640 | 105      | 4,13  | 395    | 0,27  | MF+M00310-10 |      |
| H09046019* | 19        | - 12 | 3/4"   |        |      | 28,8 | 1,13 | 70       | 1010 | 280   | 4060 | 130      | 5,12  | 455    | 0,31  | MF+M00320-12 |      |
| H09046025* | 25        | - 16 | 1"     |        |      | 35,4 | 1,39 | 55       | 790  | 220   | 3190 | 150      | 5,91  | 580    | 0,39  | MF+M00310-16 |      |
| H09046032* | 31        | - 20 | 1.1/4" |        |      | 42,5 | 1,67 | 45       | 650  | 180   | 2610 | 190      | 7,48  | 740    | 0,50  | MF+M00310-20 |      |
| H09046040* | 38        | - 24 | 1.1/2" |        |      | 49,4 | 1,94 | 40       | 580  | 160   | 2320 | 240      | 9,45  | 920    | 0,62  | MF+M00910-24 |      |
| H09046051* | 51        | - 32 | 2"     |        |      | 62,2 | 2,45 | 33       | 470  | 132   | 1910 | 300      | 11,81 | 1140   | 0,77  | MF+M00910-32 |      |

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 257 °F  
-40 °C / 125 °C

### TUBE

Oil resistant synthetic rubber

### REINFORCEMENT

Two high resistance textile braids

### COVER

Environment resistant synthetic rubber

### APPLICABLE SPECS

EN 854 3TE; ISO 4079 3TE

### TYPE APPROVALS

DNV-GL; CU-TR

## HYDROPLAST

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- High flexibility
- Tight Bend Radius
- Excellent abrasion resistance

### APPLICATIONS & FLUIDS

- Hydraulics: medium pressure hydraulic applications, hoisting, hydraulic transmission
- Mineral and biological oils, ASTM 1, ASTM 3, polyglycol based oils, water, water oil emulsions

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H30010005* | 5         | - 3  | 3/16" |        |      | 10,2 | 0,40 | 210      | 3040 | 840   | 12180 | 35       | 1,38 | 80     | 0,05  | MF+M00820-03 |      |
| H30010006* | 6         | - 4  | 1/4"  |        |      | 12,0 | 0,47 | 192      | 2780 | 770   | 11160 | 50       | 1,97 | 95     | 0,06  | MF+M00830-04 |      |
| H30010008* | 8         | - 5  | 5/16" |        |      | 14,3 | 0,56 | 187      | 2710 | 750   | 10870 | 55       | 2,17 | 135    | 0,09  | MF+M00830-05 |      |
| H30010010* | 10        | - 6  | 3/8"  |        |      | 16,3 | 0,64 | 175      | 2530 | 700   | 10150 | 75       | 2,95 | 165    | 0,11  | MF+M00820-06 |      |
| H30010012* | 12        | - 8  | 1/2"  |        |      | 20,3 | 0,80 | 140      | 2030 | 560   | 8120  | 95       | 3,74 | 225    | 0,15  | MF+M00820-08 |      |

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

### MAX OPERATING TEMPERATURE

100 °C, 212 °F

### TUBE

Oil resistant thermoplastic elastomer

### REINFORCEMENT

Two polyester braids

### COVER

Thermoplastic elastomer with high ozone and abrasion resistance

### APPLICABLE SPECS

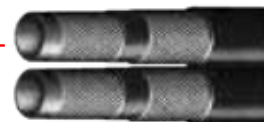
EN 855 R7; SAE 100R7

### TYPE APPROVALS

CU-TR

## HYDROTWIN

INTEGRATED, RELIABLE HOSE ASSEMBLY



### KEY FEATURES

- High flexibility
- Tight Bend Radius
- Excellent abrasion resistance
- Twin version for easy mounting in OEMs lines

### APPLICATIONS & FLUIDS



- Hydraulics: medium pressure hydraulic applications, hoisting, hydraulic transmission
- Mineral and biological oils, ASTM 1, ASTM 3, polyglycol based oils, water, water oil emulsions

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H30011005* | 5         | - 3  | 3/16" |        |      | 10,2 | 0,40 | 210      | 3040 | 840   | 12180 | 35       | 1,38 | 160    | 0,11  | MF+M00820-03 |      |
| H30011006* | 6         | - 4  | 1/4"  |        |      | 12,0 | 0,47 | 192      | 2780 | 770   | 11160 | 50       | 1,97 | 222    | 0,15  | MF+M00830-04 |      |
| H30011008* | 8         | - 5  | 5/16" |        |      | 14,3 | 0,56 | 187      | 2710 | 750   | 10870 | 55       | 2,17 | 290    | 0,19  | MF+M00830-05 |      |
| H30011010* | 10        | - 6  | 3/8"  |        |      | 16,3 | 0,64 | 175      | 2530 | 700   | 10150 | 75       | 2,95 | 330    | 0,22  | MF+M00820-06 |      |
| H30011012* | 12        | - 8  | 1/2"  |        |      | 20,3 | 0,80 | 140      | 2030 | 560   | 8120  | 95       | 3,74 | 450    | 0,30  | MF+M00820-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

100 °C, 212 °F

#### TUBE

Oil resistant thermoplastic elastomer

#### REINFORCEMENT

Two polyester braids

#### COVER

Thermoplastic elastomer with high ozone and abrasion resistance

#### APPLICABLE SPECS

EN 855 R7; SAE 100R7

#### TYPE APPROVALS

CU-TR

**ROCKMASTER/1SN**

ABRASION, WEATHER &amp; HEAT RESISTANCE

**KEY FEATURES**

- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover

**APPLICATIONS & FLUIDS**

- Hydraulics: low-medium pressure lines, return lines, in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

**TECHNICAL DATA**

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01007006* | 6         | - 4  | 1/4"   | 11,0   | 0,43 | 13,0 | 0,51 | 225      | 3260 | 1000  | 14500 | 100      | 3,94  | 215    | 0,14  | MF+M03400-04 | OPF-04 |
| H01007008* | 8         | - 5  | 5/16"  | 12,6   | 0,50 | 14,6 | 0,57 | 215      | 3110 | 950   | 13770 | 114      | 4,49  | 260    | 0,17  | MF+M03400-05 | OPF-05 |
| H01007010* | 10        | - 6  | 3/8"   | 15,0   | 0,59 | 17,0 | 0,67 | 180      | 2610 | 800   | 11600 | 127      | 5,00  | 320    | 0,22  | MF+M03400-06 | OPF-06 |
| H01007012* | 12        | - 8  | 1/2"   | 18,1   | 0,71 | 20,1 | 0,79 | 160      | 2320 | 680   | 9860  | 178      | 7,01  | 400    | 0,27  | MF+M03400-08 | OPF-08 |
| H01007016* | 16        | - 10 | 5/8"   | 21,3   | 0,84 | 23,3 | 0,92 | 130      | 1880 | 600   | 8700  | 200      | 7,87  | 480    | 0,32  | MF+M03400-10 | OPF-10 |
| H01007019* | 19        | - 12 | 3/4"   | 25,3   | 1,00 | 27,3 | 1,07 | 105      | 1520 | 500   | 7250  | 240      | 9,45  | 600    | 0,40  | MF+M03400-12 | OPF-12 |
| H01007025* | 25        | - 16 | 1"     | 33,1   | 1,30 | 35,1 | 1,38 | 90       | 1300 | 360   | 5220  | 300      | 11,81 | 910    | 0,61  | MF+M03400-16 | OPF-16 |
| H01007032* | 31        | - 20 | 1.1/4" | 40,6   | 1,60 | 43,3 | 1,70 | 65       | 940  | 260   | 3770  | 419      | 16,50 | 1243   | 0,84  | MF+M03400-20 | OPK-20 |
| H01007040* | 38        | - 24 | 1.1/2" | 47,0   | 1,85 | 49,7 | 1,96 | 50       | 720  | 260   | 3770  | 500      | 19,69 | 1450   | 0,97  | MF+M03400-24 | OPK-24 |
| H01007051* | 51        | - 32 | 2"     | 60,4   | 2,38 | 63,1 | 2,48 | 40       | 580  | 250   | 3620  | 630      | 24,80 | 2050   | 1,38  | MF+M03400-32 | OPK-32 |
| H01007060* | 60        | - 38 | 2.3/8" | 68,8   | 2,71 | 71,5 | 2,81 | 50       | 720  | 200   | 2900  | 650      | 25,59 | 2190   | 1,47  | MF+M03400-38 |        |

**CONTINUOUS SERVICE TEMPERATURE RANGE**

-40 °F / 212 °F  
-40 °C / 100 °C

**MAX OPERATING TEMPERATURE**

125 °C, 257 °F

**TUBE**

Oil resistant synthetic rubber

**REINFORCEMENT**

One high tensile steel braid

**COVER**

Synthetic rubber with high ozone, weather and heat resistance

**APPLICABLE SPECS**

Exceed EN 853 1SN; SAE 100 R1AT; ISO 1436 1SN/R1AT

**TYPE APPROVALS**

ABS; BV; DNV-GL; DNV-GL MED; FRAS; CU-TR; MSHA; LR; NK; MA

**ROCKMASTER/2SN**

ABRASION, WEATHER &amp; HEAT RESISTANCE

**KEY FEATURES**

- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Over standard pressure resistance

**APPLICATIONS & FLUIDS**

- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

**TECHNICAL DATA**

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01038006* | 6         | - 4  | 1/4"   | 12,7   | 0,50 | 14,7 | 0,58 | 400      | 5800 | 1750  | 25380 | 50       | 1,97  | 365    | 0,25  | MF+M03400-04 | OPF-04 |
| H01038008* | 8         | - 5  | 5/16"  | 14,3   | 0,56 | 16,3 | 0,64 | 350      | 5070 | 1480  | 21460 | 60       | 2,36  | 405    | 0,27  | MF+M03400-05 | OPF-05 |
| H01038010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,7 | 0,74 | 350      | 5070 | 1400  | 20300 | 70       | 2,76  | 530    | 0,36  | MF+M03400-06 | OPF-06 |
| H01038012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 21,8 | 0,86 | 350      | 5070 | 1400  | 20300 | 89       | 3,50  | 650    | 0,44  | MF+M03400-08 | OPF-08 |
| H01038016* | 16        | - 10 | 5/8"   | 23,0   | 0,91 | 25,0 | 0,98 | 250      | 3620 | 1020  | 14790 | 100      | 3,94  | 720    | 0,48  | MF+M03400-10 | OPF-10 |
| H01038019* | 19        | - 12 | 3/4"   | 27,0   | 1,06 | 29,0 | 1,14 | 215      | 3110 | 900   | 13050 | 130      | 5,12  | 930    | 0,62  | MF+M03400-12 | OPF-12 |
| H01038025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 36,8 | 1,45 | 175      | 2530 | 670   | 9710  | 160      | 6,30  | 1290   | 0,87  | MF+M03400-16 | OPF-16 |
| H01038032* | 31        | - 20 | 1.1/4" | 44,3   | 1,74 | 47,0 | 1,85 | 140      | 2030 | 600   | 8700  | 419      | 16,50 | 1930   | 1,30  | MF+M03400-20 | OPK-20 |
| H01038040* | 38        | - 24 | 1.1/2" | 50,7   | 2,00 | 53,4 | 2,10 | 100      | 1450 | 500   | 7250  | 500      | 19,69 | 2262   | 1,52  | MF+M03400-24 | OPK-24 |
| H01038051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 66,2 | 2,61 | 90       | 1300 | 420   | 6090  | 630      | 24,80 | 2880   | 1,94  | MF+M03400-32 | OPK-32 |
| H01038060* | 60        | - 38 | 2.3/8" | 68,8   | 2,71 | 71,5 | 2,81 | 90       | 1300 | 360   | 5220  | 650      | 25,59 | 2670   | 1,79  | MF+M03400-38 |        |

**CONTINUOUS SERVICE TEMPERATURE RANGE**

-40 °F / 212 °F  
-40 °C / 100 °C

**MAX OPERATING TEMPERATURE**

125 °C, 257 °F

**TUBE**

Oil resistant synthetic rubber

**REINFORCEMENT**

Two high tensile steel braids

**COVER**

Synthetic rubber with high ozone, weather and heat resistance

**APPLICABLE SPECS**

Exceed EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

**TYPE APPROVALS**

ABS; BV; DNV-GL; DNV-GL MED; LR; FRAS; CU-TR; MSHA; RINA ; B; NK; MA; DIN 5510-2



## ROCKMASTER/2ST

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- High robustness of the cover for mining applications and tough handling
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Over standard pressure resistance

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01035005* | 5         | - 3  | 3/16"  | 11,3   | 0,44 | 15,6 | 0,61 | 415      | 6010 | 2000  | 29000 | 89        | 3,50  | 385    | 0,26  | MF+M00910-03 |      |
| H01035006* | 6         | - 4  | 1/4"   | 12,7   | 0,50 | 17,2 | 0,68 | 400      | 5800 | 1750  | 25380 | 100       | 3,94  | 450    | 0,30  | MF+M00910-04 |      |
| H01035008* | 8         | - 5  | 5/16"  | 14,3   | 0,56 | 18,9 | 0,74 | 350      | 5070 | 1480  | 21460 | 114       | 4,49  | 500    | 0,34  | MF+M00910-05 |      |
| H01035010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 21,3 | 0,84 | 350      | 5070 | 1400  | 20300 | 127       | 5,00  | 640    | 0,43  | MF+M00910-06 |      |
| H01035012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 24,5 | 0,96 | 350      | 5070 | 1400  | 20300 | 178       | 7,01  | 790    | 0,53  | MF+M00910-08 |      |
| H01035016* | 16        | - 10 | 5/8"   | 23,0   | 0,91 | 27,7 | 1,09 | 250      | 3620 | 1020  | 14790 | 200       | 7,87  | 870    | 0,58  | MF+M00910-10 |      |
| H01035019* | 19        | - 12 | 3/4"   | 27,0   | 1,06 | 31,6 | 1,24 | 215      | 3110 | 900   | 13050 | 240       | 9,45  | 1100   | 0,74  | MF+M00920-12 |      |
| H01035025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 39,5 | 1,56 | 175      | 2530 | 670   | 9710  | 300       | 11,81 | 1510   | 1,01  | MF+M00930-16 |      |
| H01035032* | 31        | - 20 | 1.1/4" | 44,3   | 1,74 | 50,6 | 1,99 | 140      | 2030 | 600   | 8700  | 419       | 16,50 | 2310   | 1,55  | MF+M00920-20 |      |
| H01035040* | 38        | - 24 | 1.1/2" | 50,7   | 2,00 | 57,0 | 2,24 | 100      | 1450 | 500   | 7250  | 500       | 19,69 | 2683   | 1,80  | MF+M00910-24 |      |
| H01035051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 69,8 | 2,75 | 90       | 1300 | 420   | 6090  | 630       | 24,80 | 3410   | 2,29  | MF+M00910-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 853 2ST; SAE 100 R2A; ISO 1436 2ST/R2A

#### TYPE APPROVALS

BV; CU-TR; LR; B; MSHA; FRAS

## ROCKMASTER/2 PLUS

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Superior pressure rating
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Robustness thanks to skive fittings solution

### APPLICATIONS & FLUIDS



- Hydraulics: high pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01101006* | 6         | - 4  | 1/4"   | 11,3   | 0,44 | 13,1 | 0,52 | 450      | 6520 | 1800  | 26100 | 45       | 1,77  | 275    | 0,18  | MF+M03400-04 |        |
| H01101010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,5 | 0,73 | 400      | 5800 | 1600  | 23200 | 127      | 5,00  | 520    | 0,35  | MF+M00910-06 |        |
| H01101012* | 12        | - 8  | 1/2"   | 20,1   | 0,79 | 22,1 | 0,87 | 362      | 5250 | 1450  | 21030 | 150      | 5,91  | 700    | 0,47  | MF+M00910-08 |        |
| H01101016* | 16        | - 10 | 5/8"   | 23,2   | 0,91 | 25,2 | 0,99 | 340      | 4930 | 1360  | 19720 | 200      | 7,87  | 860    | 0,58  | MF+M00910-10 |        |
| H01101019* | 19        | - 12 | 3/4"   | 27,1   | 1,07 | 29,3 | 1,15 | 310      | 4490 | 1240  | 17980 | 230      | 9,06  | 1060   | 0,71  | MF+M00920-12 | OPK-12 |
| H01101025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 37,8 | 1,49 | 240      | 3480 | 960   | 13920 | 300      | 11,81 | 1570   | 1,06  | MF+M00930-16 | OPK-16 |
| H01101032* | 31        | - 20 | 1.1/4" | 44,5   | 1,75 | 47,2 | 1,86 | 175      | 2530 | 700   | 10150 | 380      | 14,96 | 2120   | 1,42  | MF+M00920-20 | OPK-20 |
| H01101038* | 38        | - 24 | 1.1/2" | 51,0   | 2,01 | 53,7 | 2,11 | 146      | 2110 | 584   | 8470  | 450      | 17,72 | 2460   | 1,65  | MF+M00910-24 |        |
| H01101051* | 51        | - 32 | 2"     | 62,8   | 2,47 | 65,5 | 2,58 | 130      | 1880 | 530   | 7680  | 600      | 23,62 | 3090   | 2,08  | MF+M00910-32 |        |
| H01101076* | 76        | - 48 | 3"     | 87,8   | 3,46 | 91,4 | 3,60 | 70       | 1010 | 280   | 4060  | 500      | 19,69 | 4290   | 2,88  | MF+M03400-48 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

MANULI® Design: Exceed ISO 1436-2SN; EN 853-2SN; SAE J517 type 100R2AT.  
Performance BCS 174; ISO 6805 type 4

#### TYPE APPROVALS

BV; DNV-GL; CU-TR; LR; MA (except DN 76); MSHA; FRAS

## ROCKMASTER/1SC

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Compact and flexible one wire braid hose line
- High temperature resistance for the most severe service and OEM applications
- Working pressure exceeds 1SC standards
- Superior protection with ROCKMASTER® cover compound
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 31

### APPLICATIONS & FLUIDS



- Hydraulics: low-medium pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01108006* | 6         | - 4  | 1/4"   | 10,2   | 0,40 | 12,0 | 0,47 | 260      | 3770 | 1050  | 15220 | 50        | 1,97  | 180    | 0,12  | MF+M00120-04 |      |
| H01108008* | 8         | - 5  | 5/16"  | 11,5   | 0,45 | 13,6 | 0,54 | 250      | 3620 | 1000  | 14500 | 55        | 2,17  | 210    | 0,14  | MF+M00120-05 |      |
| H01108010* | 10        | - 6  | 3/8"   | 13,6   | 0,54 | 15,5 | 0,61 | 225      | 3260 | 900   | 13050 | 60        | 2,36  | 255    | 0,17  | MF+M00120-06 |      |
| H01108012* | 12        | - 8  | 1/2"   | 17,3   | 0,68 | 19,1 | 0,75 | 190      | 2750 | 760   | 11020 | 70        | 2,76  | 355    | 0,24  | MF+M00820-08 |      |
| H01108016* | 16        | - 10 | 5/8"   | 20,6   | 0,81 | 22,4 | 0,88 | 150      | 2170 | 600   | 8700  | 90        | 3,54  | 430    | 0,29  | MF+M00820-10 |      |
| H01108019* | 19        | - 12 | 3/4"   | 23,9   | 0,94 | 25,9 | 1,02 | 150      | 2170 | 600   | 8700  | 100       | 3,94  | 520    | 0,35  | MF+M00820-12 |      |
| H01108025* | 25        | - 16 | 1"     | 31,3   | 1,23 | 33,1 | 1,30 | 110      | 1590 | 440   | 6380  | 160       | 6,30  | 730    | 0,49  | MF+M00820-16 |      |
| H01108031* | 31        | - 20 | 1.1/4" | 38,4   | 1,51 | 40,9 | 1,61 | 75       | 1080 | 300   | 4350  | 210       | 8,27  | 1040   | 0,70  | MF+M00820-20 |      |
| H01108038* | 38        | - 24 | 1.1/2" | 45,0   | 1,77 | 47,5 | 1,87 | 50       | 720  | 200   | 2900  | 300       | 11,81 | 1170   | 0,79  | MF+M00820-24 |      |
| H01108051* | 51        | - 32 | 2"     | 58,0   | 2,28 | 60,5 | 2,38 | 50       | 720  | 200   | 2900  | 400       | 15,75 | 1560   | 1,05  | MF+M00820-32 |      |
| H01108063* | 63        | - 40 | 2.1/2" | 70,5   | 2,78 | 73,0 | 2,87 | 50       | 720  | 200   | 2900  | 760       | 29,92 | 2090   | 1,40  | MF+M03400-40 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 857 1SC; ISO 11237 1SC

#### TYPE APPROVALS

CU-TR; LR; MSHA; FRAS

## ROCKMASTER/2SC

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Compactness and flexibility
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Working pressure improvement
- Range extension to DN 76
- Vacuum resistance with SAE 100 R4 performance approved on sizes up to DN 76

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines with installation constraints in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining, return and suction lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |      | MIN.BEND |     | WEIGHT |      | FITTINGS |              |        |
|------------|-----------|------|--------|------|------|------|----------|-----|-------|------|----------|-----|--------|------|----------|--------------|--------|
|            | DN        | dash | inch   | mm   | inch | mm   | inch     | bar | psi   | bar  | psi      | mm  | inch   | g/m  | lb/ft    | Std1         | Std2   |
| H01030005* | 5         | - 3  | 3/16"  | 9,7  | 0,38 | 11,5 | 0,45     | 420 | 6090  | 2000 | 29000    | 40  | 1,57   | 220  | 0,15     | MF+M03400-03 | OPF-03 |
| H01030006* | 6         | - 4  | 1/4"   | 11,3 | 0,44 | 13,1 | 0,52     | 400 | 5800  | 1850 | 26830    | 45  | 1,77   | 275  | 0,18     | MF+M03400-04 | OPF-04 |
| H01030008* | 8         | - 5  | 5/16"  | 12,9 | 0,51 | 14,7 | 0,58     | 350 | 5070  | 1700 | 24650    | 55  | 2,17   | 325  | 0,22     | MF+M03400-05 | OPF-05 |
| H01030010* | 10        | - 6  | 3/8"   | 15,0 | 0,59 | 16,8 | 0,66     | 330 | 4780  | 1500 | 21750    | 65  | 2,56   | 390  | 0,26     | MF+M03400-06 | OPF-06 |
| H01030012* | 12        | - 8  | 1/2"   | 18,5 | 0,73 | 20,3 | 0,80     | 275 | 3980  | 1220 | 17690    | 80  | 3,15   | 500  | 0,34     | MF+M03400-08 | OPF-08 |
| H01030016* | 16        | - 10 | 5/8"   | 21,8 | 0,86 | 23,6 | 0,93     | 250 | 3620  | 1050 | 15220    | 90  | 3,54   | 620  | 0,42     | MF+M03400-10 | OPF-10 |
| H01030019* | 19        | - 12 | 3/4"   | 25,6 | 1,01 | 27,6 | 1,09     | 245 | 3550  | 980  | 14210    | 120 | 4,72   | 790  | 0,53     | MF+M03400-12 | OPF-12 |
| H01030025* | 25        | - 16 | 1"     | 33,0 | 1,30 | 35,2 | 1,39     | 210 | 3040  | 840  | 12180    | 150 | 5,91   | 1180 | 0,79     | MF+M03400-16 | OPF-16 |
| H01030031* | 31        | - 20 | 1.1/4" | 41,1 | 1,62 | 43,6 | 1,72     | 140 | 2030  | 560  | 8120     | 250 | 9,84   | 1550 | 1,04     | MF+M03400-20 | OPK-20 |
| H01030038* | 38        | - 24 | 1.1/2" | 47,7 | 1,88 | 50,7 | 2,00     | 100 | 1450  | 400  | 5800     | 300 | 11,81  | 1880 | 1,26     | MF+M03400-24 | OPK-24 |
| H01030051* | 51        | - 32 | 2"     | 60,4 | 2,38 | 63,4 | 2,50     | 90  | 1300  | 360  | 5220     | 400 | 15,75  | 2430 | 1,63     | MF+M03400-32 | OPK-32 |
| H01030063* | 63        | - 40 | 2.1/2" | 73,0 | 2,87 | 76,0 | 2,99     | 70  | 1010  | 300  | 4350     | 760 | 29,92  | 2900 | 1,95     | MF+M03400-40 |        |
| H01030076* | 76        | - 48 | 3"     | 87,8 | 3,46 | 90,5 | 3,56     | 45  | 650   | 180  | 2610     | 900 | 35,43  | 3120 | 2,10     | MF+M03400-48 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 857 2SC; ISO 11237 2SC; SAE 100 R16. In addition: DN 25 SAE 100 R17; ISO 11237 R17

#### TYPE APPROVALS

ABS; BV; DNV-GL; CU-TR; LR; MA; MSHA; RINA; B; FRAS; CCS

## ROCKMASTER/4SP

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Upgraded temperature resistance
- BIO biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: very high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10008006* | 6         | - 4  | 1/4"   | 14,7   | 0,58 | 17,6 | 0,69 | 485      | 7030 | 2400  | 34800 | 125       | 4,92  | 590    | 0,40  | MF+M00910-04 |              |
| H10008010* | 10        | - 6  | 3/8"   | 17,6   | 0,69 | 21,0 | 0,83 | 450      | 6520 | 2000  | 29000 | 125       | 4,92  | 740    | 0,50  | MF+M00910-06 |              |
| H10008012* | 12        | - 8  | 1/2"   | 20,3   | 0,80 | 24,2 | 0,95 | 420      | 6090 | 1750  | 25380 | 175       | 6,89  | 880    | 0,59  | MF+M00910-08 |              |
| H10008016* | 16        | - 10 | 5/8"   | 23,7   | 0,93 | 27,6 | 1,09 | 380      | 5510 | 1600  | 23200 | 200       | 7,87  | 1080   | 0,73  | MF+M00910-10 |              |
| H10008019* | 19        | - 12 | 3/4"   | 28,2   | 1,11 | 31,7 | 1,25 | 380      | 5510 | 1600  | 23200 | 240       | 9,45  | 1450   | 0,97  | MF+M00920-12 | SP+M05400-12 |
| H10008025* | 25        | - 16 | 1"     | 35,0   | 1,38 | 39,0 | 1,54 | 320      | 4640 | 1400  | 20300 | 340       | 13,39 | 1880   | 1,26  | MF+M00930-16 | SP+M05400-16 |
| H10008032* | 31        | - 20 | 1.1/4" | 46,1   | 1,81 | 49,7 | 1,96 | 210      | 3040 | 1250  | 18120 | 460       | 18,11 | 2990   | 2,01  | MF+M00920-20 | SP+M05500-20 |
| H10008038* | 38        | - 24 | 1.1/2" | 52,4   | 2,06 | 56,1 | 2,21 | 185      | 2680 | 1000  | 14500 | 560       | 22,05 | 3500   | 2,35  | MF+M00910-24 | SP+M05500-24 |
| H10008051* | 51        | - 32 | 2"     | 65,4   | 2,57 | 69,0 | 2,72 | 175      | 2530 | 1000  | 14500 | 660       | 25,98 | 5010   | 3,37  | MF+M00910-32 | SP+M05400-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 856 4SP; ISO 3862 4SP; DN 16 & 19: thin cover style, exceeding performance EN 856 4SP and ISO 3862 4SP

#### TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); BV; FRAS; CU-TR; MA; MSHA; RINA; B; LR; NK; DB (EN 45545-2)



#### Remarks:

If service temperature is lower than 212°F/100°C, Rockmaster/4SP can be used with reduced Min. Bend Radius for small sizes (DN6 100mm, DN10 110mm, DN12 120mm, DN16 140mm, DN19 170mm).

## ROCKMASTER/4SH

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- Upgraded temperature resistance
- BIO biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: very high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10044016* | 16        | - 10 | 5/8"   | 25,5   | 1,00 | 28,5 | 1,12 | 450      | 6520 | 1850  | 26830 | 180       | 7,09  | 1290   | 0,87  | IP+M01500-10 |              |
| H10044019* | 19        | - 12 | 3/4"   | 28,2   | 1,11 | 31,9 | 1,26 | 420      | 6090 | 1750  | 25380 | 210       | 8,27  | 1500   | 1,01  | IP+M01500-12 | SP+M05400-12 |
| H10044025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 38,1 | 1,50 | 385      | 5580 | 1750  | 25380 | 220       | 8,66  | 2040   | 1,37  | IP+M01500-16 | SP+M05400-16 |
| H10044032* | 31        | - 20 | 1.1/4" | 42,2   | 1,66 | 45,0 | 1,77 | 350      | 5070 | 1400  | 20300 | 420       | 16,54 | 2410   | 1,62  | IP+M01500-20 | SP+M05400-20 |
| H10044038* | 38        | - 24 | 1.1/2" | 49,1   | 1,93 | 53,1 | 2,09 | 300      | 4350 | 1250  | 18120 | 560       | 22,05 | 3170   | 2,13  | IP+M01500-24 | SP+M05400-24 |
| H10044051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 67,5 | 2,66 | 250      | 3620 | 1000  | 14500 | 700       | 27,56 | 4460   | 3,00  | IP+M01500-32 | SP+M05400-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 856 4SH; ISO 3862 4SH

#### TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); BV; FRAS; CU-TR; LR; MA; MSHA; B; RINA; NK

## ROCKMASTER/12

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: high pressure power lines in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H10031010* | 10        | - 6  | 3/8"   | 17,3   | 0,68 | 20,0 | 0,79 | 280      | 4060 | 1600  | 23200 | 100      | 3,94  | 620    | 0,42  | MF+M00910-06 | OPK-06 |
| H10031012* | 12        | - 8  | 1/2"   | 20,4   | 0,80 | 23,5 | 0,93 | 280      | 4060 | 1350  | 19580 | 125      | 4,92  | 760    | 0,51  | MF+M00910-08 | OPK-08 |
| H10031016* | 16        | - 10 | 5/8"   | 24,4   | 0,96 | 27,1 | 1,07 | 280      | 4060 | 1300  | 18850 | 140      | 5,51  | 990    | 0,67  | MF+M00910-10 | OPK-10 |
| H10031019* | 19        | - 12 | 3/4"   | 27,4   | 1,08 | 30,4 | 1,20 | 280      | 4060 | 1300  | 18850 | 150      | 5,91  | 1160   | 0,78  | MF+M00920-12 | OPK-12 |
| H10031025* | 25        | - 16 | 1"     | 35,0   | 1,38 | 37,6 | 1,48 | 280      | 4060 | 1150  | 16670 | 225      | 8,86  | 1740   | 1,17  | MF+M00930-16 | OPK-16 |
| H10031A32* | 31        | - 20 | 1.1/4" | 43,1   | 1,70 | 45,9 | 1,81 | 210      | 3040 | 1000  | 14500 | 250      | 9,84  | 2280   | 1,53  | MF+M00920-20 | OPK-20 |
| H10031040* | 38        | - 24 | 1.1/2" | 50,0   | 1,97 | 53,3 | 2,10 | 175      | 2530 | 1000  | 14500 | 500      | 19,69 | 3130   | 2,10  | MF+M00910-24 | OPK-24 |
| H10031051* | 51        | - 32 | 2"     | 63,6   | 2,50 | 66,7 | 2,63 | 175      | 2530 | 800   | 11600 | 630      | 24,80 | 4440   | 2,98  | MF+M00910-32 | OPK-32 |

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

### MAX OPERATING TEMPERATURE

125 °C, 257 °F

### TUBE

Oil resistant synthetic rubber

### REINFORCEMENT

Four high tensile steel spirals

### COVER

Synthetic rubber with high ozone, weather and heat resistance

### APPLICABLE SPECS

Exceed EN 856 R12; SAE 100 R12; ISO 3862 R12

### TYPE APPROVALS

ABS; BV; BV (MED); FRAS; CU-TR; LR; MA; MSHA; NK

## ROCKMASTER/13

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines, hydrostatic transmissions, severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |       | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|-------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi   | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10035A06* | 6         | - 4  | 1/4"   | 14,6   | 0,57 | 17,6 | 0,69 | 690      | 10000 | 3250  | 47130 | 120      | 4,72  | 660    | 0,44  |              |              |
| H10035A10* | 10        | - 6  | 3/8"   | 17,4   | 0,69 | 20,4 | 0,80 | 690      | 10000 | 2900  | 42060 | 150      | 5,91  | 830    | 0,56  |              |              |
| H10035A12* | 12        | - 8  | 1/2"   | 21,5   | 0,85 | 24,5 | 0,96 | 620      | 8990  | 2500  | 36250 | 200      | 7,87  | 1140   | 0,77  |              |              |
| H10035019* | 19        | - 12 | 3/4"   | 29,0   | 1,14 | 31,8 | 1,25 | 350      | 5070  | 1950  | 28280 | 240      | 9,45  | 1630   | 1,10  | IP+M01500-12 | SP+M05400-12 |
| H10035025* | 25        | - 16 | 1"     | 36,0   | 1,42 | 39,2 | 1,54 | 350      | 5070  | 1650  | 23930 | 300      | 11,81 | 2190   | 1,47  | IP+M01500-16 | SP+M05400-16 |
| H10035032* | 31        | - 20 | 1.1/4" | 47,0   | 1,85 | 50,0 | 1,97 | 350      | 5070  | 1500  | 21750 | 420      | 16,54 | 3600   | 2,42  | IP+M01600-20 | SP+M05500-20 |
| H10035040* | 38        | - 24 | 1.1/2" | 54,6   | 2,15 | 57,5 | 2,26 | 350      | 5070  | 1600  | 23200 | 500      | 19,69 | 4700   | 3,16  | IP+M01600-24 | SP+M05500-24 |
| H10035051* | 51        | - 32 | 2"     | 68,4   | 2,69 | 72,0 | 2,83 | 350      | 5070  | 1500  | 21750 | 630      | 24,80 | 6800   | 4,57  | IP+M01800-32 | SP+M05500-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals (DN 6÷25). Six high tensile steel spirals (DN 31÷51)

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 856 R13; SAE 100 R13; ISO 3862 R13

#### TYPE APPROVALS

ABS; BV; DNV-GL; BV MED; FRAS; LR; CU-TR; MA; MSHA; RINA; B



## ROCKMASTER/15

ABRASION, WEATHER & HEAT RESISTANCE



### KEY FEATURES

- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines, hydrostatic transmissions, in severe environmental conditions, specific installations with tough abrasion conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10049019* | 19        | - 12 | 3/4"   | 28,2   | 1,11 | 31,0 | 1,22 | 420      | 6090 | 1750  | 25380 | 265      | 10,43 | 1440   | 0,97  | IP+M01500-12 | SP+M05400-12 |
| H10049025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 38,1 | 1,50 | 420      | 6090 | 1750  | 25380 | 267      | 10,51 | 2040   | 1,37  | IP+M01500-16 | SP+M05400-16 |
| H10049A32* | 31        | - 20 | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 420      | 6090 | 1680  | 24360 | 267      | 10,51 | 3660   | 2,46  | IP+M01600-20 | SP+M05500-20 |
| H10049040* | 38        | - 24 | 1.1/2" | 54,6   | 2,15 | 57,5 | 2,26 | 420      | 6090 | 1680  | 24360 | 315      | 12,40 | 4700   | 3,16  | IP+M01600-24 | SP+M05500-24 |

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

### MAX OPERATING TEMPERATURE

125 °C, 257 °F

### TUBE

Oil resistant synthetic rubber

### REINFORCEMENT

Four high tensile steel spirals (DN 19 ÷ 25). Six high tensile steel spirals (DN 31 ÷ 38)

### COVER

Synthetic rubber with high ozone, weather and heat resistance

### APPLICABLE SPECS

Exceed SAE 100 R15; ISO 3862 R15

### TYPE APPROVALS

ABS; BV; BV (MED); DNV-GL; FRAS; CU-TR; LR; MA; MSHA; B

## EQUATOR/1 (BLUE)

EXTREME TEMPERATURE - BLUE VERSION



### KEY FEATURES

- Wide range temperature resistance
- EN/DIN and new SAE pressure rating
- Outstanding ozone resistance
- Superior weather and UV resistance
- High aging resistance

### APPLICATIONS & FLUIDS



- Hydraulics: low-medium pressure lines in extreme temperature conditions (foundries, compressors, hydraulics within engine compartments, etc.)
- Mineral oils, glycols and polyglycols, transmission fluids, air with oil vapours, mineral oils in aqueous emulsion (up to 212°F/100°C)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01059006* | 6         | - 4  | 1/4"   | 11,0   | 0,43 | 13,4 | 0,53 | 225      | 3260 | 1000  | 14500 | 100      | 3,94  | 240    | 0,16  | MF+M00120-04 | OPF-04 |
| H01059008* | 8         | - 5  | 5/16"  | 12,6   | 0,50 | 15,0 | 0,59 | 215      | 3110 | 900   | 13050 | 114      | 4,49  | 285    | 0,19  | MF+M00120-05 |        |
| H01059010* | 10        | - 6  | 3/8"   | 15,0   | 0,59 | 17,3 | 0,68 | 180      | 2610 | 800   | 11600 | 127      | 5,00  | 340    | 0,23  | MF+M00120-06 |        |
| H01059012* | 12        | - 8  | 1/2"   | 18,1   | 0,71 | 20,5 | 0,81 | 160      | 2320 | 680   | 9860  | 178      | 7,01  | 435    | 0,29  | MF+M00120-08 |        |
| H01059016* | 16        | - 10 | 5/8"   | 21,3   | 0,84 | 23,5 | 0,93 | 130      | 1880 | 600   | 8700  | 200      | 7,87  | 510    | 0,34  | MF+M00120-10 |        |
| H01059019* | 19        | - 12 | 3/4"   | 25,2   | 0,99 | 27,7 | 1,09 | 105      | 1520 | 500   | 7250  | 240      | 9,45  | 640    | 0,43  | MF+M00120-12 |        |
| H01059025* | 25        | - 16 | 1"     | 33,1   | 1,30 | 35,8 | 1,41 | 88       | 1270 | 360   | 5220  | 300      | 11,81 | 980    | 0,66  | MF+M00130-16 |        |
| H01059032* | 31        | - 20 | 1.1/4" | 40,6   | 1,60 | 43,5 | 1,71 | 65       | 940  | 345   | 5000  | 420      | 16,54 | 1300   | 0,87  | MF+M00110-20 | OPK-20 |
| H01059038* | 38        | - 24 | 1.1/2" | 46,9   | 1,85 | 50,0 | 1,97 | 50       | 720  | 290   | 4200  | 500      | 19,69 | 1540   | 1,03  | MF+M00110-24 | OPK-24 |
| H01059051* | 51        | - 32 | 2"     | 60,4   | 2,38 | 63,1 | 2,48 | 40       | 580  | 250   | 3620  | 630      | 24,80 | 2100   | 1,41  | MF+M00110-32 | OPK-32 |
| H01059063* | 63        | - 40 | 2.1/2" | 72,0   | 2,83 | 74,6 | 2,94 | 35       | 500  | 140   | 2030  | 600      | 23,62 | 2400   | 1,61  | MF+M03400-40 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-67 °F / 275 °F  
-55 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 853 1SN; SAE 100 R1AT; ISO 1436 1SN/R1AT

#### TYPE APPROVALS

ABS; BV; BV MED; DNV-GL; CU-TR; LR; MSHA



#### Remarks:

- Compressed air applications require cover pin-pricking and additional safety devices
- Equator hose is not suitable for high temperature water applications
- Equator hose is not designed and not approved for "air brake" applications on railway and/or mobile equipment.

## EQUATOR/1 (BLACK)

EXTREME TEMPERATURE - BLACK VERSION



### KEY FEATURES

- Wide range temperature resistance
- EN/DIN and new SAE pressure rating
- Outstanding ozone resistance
- Superior weather and UV resistance
- High aging resistance

### APPLICATIONS & FLUIDS



- Hydraulics: low-medium pressure lines in extreme temperature conditions (foundries, compressors, hydraulics within engine compartments, etc.)
- Mineral oils, glycols and polyglycols, transmission fluids, air with oil vapours, mineral oils in aqueous emulsion (up to 212°F/100°C)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01058006* | 6         | - 4  | 1/4"   | 11,0   | 0,43 | 13,4 | 0,53 | 225      | 3260 | 1000  | 14500 | 100      | 3,94  | 240    | 0,16  | MF+M00120-04 | OPF-04 |
| H01058008* | 8         | - 5  | 5/16"  | 12,6   | 0,50 | 15,0 | 0,59 | 215      | 3110 | 900   | 13050 | 114      | 4,49  | 280    | 0,19  | MF+M00120-05 |        |
| H01058010* | 10        | - 6  | 3/8"   | 15,0   | 0,59 | 17,3 | 0,68 | 180      | 2610 | 800   | 11600 | 127      | 5,00  | 335    | 0,23  | MF+M00120-06 |        |
| H01058012* | 12        | - 8  | 1/2"   | 18,1   | 0,71 | 20,5 | 0,81 | 160      | 2320 | 680   | 9860  | 178      | 7,01  | 430    | 0,29  | MF+M00120-08 |        |
| H01058016* | 16        | - 10 | 5/8"   | 21,3   | 0,84 | 23,5 | 0,93 | 130      | 1880 | 600   | 8700  | 200      | 7,87  | 500    | 0,34  | MF+M00120-10 |        |
| H01058019* | 19        | - 12 | 3/4"   | 25,2   | 0,99 | 27,7 | 1,09 | 105      | 1520 | 500   | 7250  | 240      | 9,45  | 640    | 0,43  | MF+M00120-12 |        |
| H01058025* | 25        | - 16 | 1"     | 33,1   | 1,30 | 35,8 | 1,41 | 88       | 1270 | 360   | 5220  | 300      | 11,81 | 970    | 0,65  | MF+M00130-16 |        |
| H01058031* | 31        | - 20 | 1.1/4" | 40,6   | 1,60 | 43,5 | 1,71 | 65       | 940  | 345   | 5000  | 420      | 16,54 | 1300   | 0,87  | MF+M00110-20 | OPK-20 |
| H01058038* | 38        | - 24 | 1.1/2" | 46,9   | 1,85 | 50,0 | 1,97 | 50       | 720  | 290   | 4200  | 500      | 19,69 | 1540   | 1,03  | MF+M00110-24 | OPK-24 |
| H01058051* | 51        | - 32 | 2"     | 60,4   | 2,38 | 63,1 | 2,48 | 40       | 580  | 250   | 3620  | 630      | 24,80 | 2100   | 1,41  | MF+M00110-32 | OPK-32 |
| H01058063* | 63        | - 40 | 2.1/2" | 72,0   | 2,83 | 74,6 | 2,94 | 35       | 500  | 140   | 2030  | 600      | 23,62 | 2400   | 1,61  | MF+M03400-40 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-67 °F / 275 °F  
-55 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Synthetic rubber with high ozone, weather and heat resistance.

#### APPLICABLE SPECS

Exceed EN 853 1SN; SAE 100 R1AT; ISO 1436 1SN/R1AT

#### TYPE APPROVALS

ABS; DNV-GL; CU-TR; LR; MSHA



#### Remarks:

- Compressed air applications require cover pin-pricking and additional safety devices
- Equator hose is not suitable for high temperature water applications
- Equator hose is not designed and not approved for "air brake" applications on railway and/or mobile equipment.

## EQUATOR/2 (BLUE)

EXTREME TEMPERATURE - BLUE VERSION



### KEY FEATURES

- Wide range temperature resistance
- EN/DIN and new SAE pressure rating
- Outstanding ozone resistance
- Superior weather and UV resistance
- High aging resistance

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines in extreme temperature conditions (foundries, compressors, hydraulics within engine compartments, etc.)
- Mineral oils, glycols and polyglycols, transmission fluids, air with oil vapours, mineral oils in aqueous emulsion (up to 212°F/100°C)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01061006* | 6         | - 4  | 1/4"   | 12,7   | 0,50 | 14,9 | 0,59 | 400      | 5800 | 1725  | 25010 | 100      | 3,94  | 395    | 0,27  | MF+M00910-04 | OPF-04 |
| H01061008* | 8         | - 5  | 5/16"  | 14,3   | 0,56 | 16,5 | 0,65 | 350      | 5070 | 1480  | 21460 | 114      | 4,49  | 435    | 0,29  | MF+M00910-05 |        |
| H01061010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 19,0 | 0,75 | 330      | 4780 | 1400  | 20300 | 127      | 5,00  | 530    | 0,36  | MF+M00910-06 |        |
| H01061012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 22,0 | 0,87 | 275      | 3980 | 1200  | 17400 | 178      | 7,01  | 640    | 0,43  | MF+M00910-08 |        |
| H01061016* | 16        | - 10 | 5/8"   | 23,0   | 0,91 | 25,2 | 0,99 | 250      | 3620 | 1020  | 14790 | 200      | 7,87  | 760    | 0,51  | MF+M00910-10 |        |
| H01061019* | 19        | - 12 | 3/4"   | 27,0   | 1,06 | 29,0 | 1,14 | 215      | 3110 | 900   | 13050 | 240      | 9,45  | 940    | 0,63  | MF+M00920-12 |        |
| H01061025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 37,0 | 1,46 | 175      | 2530 | 700   | 10150 | 300      | 11,81 | 1350   | 0,91  | MF+M00930-16 |        |
| H01061032* | 31        | - 20 | 1.1/4" | 44,3   | 1,74 | 47,0 | 1,85 | 150      | 2170 | 600   | 8700  | 420      | 16,54 | 2010   | 1,35  | MF+M00920-20 |        |
| H01061040* | 38        | - 24 | 1.1/2" | 50,7   | 2,00 | 53,4 | 2,10 | 100      | 1450 | 410   | 5940  | 500      | 19,69 | 2250   | 1,51  | MF+M00910-24 | OPK-24 |
| H01061051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 66,2 | 2,61 | 90       | 1300 | 370   | 5360  | 630      | 24,80 | 3080   | 2,07  | MF+M00910-32 | OPK-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-67 °F / 275 °F  
-55 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, weather and heat resistance.

#### APPLICABLE SPECS

Exceed EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

#### TYPE APPROVALS

ABS; BV; BV (MED); DNV-GL; CU-TR; LR; MSHA; DIN 5510-2



#### Remarks:

- Compressed air applications require cover pin-pricking and additional safety devices
- Equator hose is not suitable for high temperature water applications
- Equator hoses are not designed and not approved for "air brake" applications on railway and/or mobile equipment

## EQUATOR/2 (BLACK)

EXTREME TEMPERATURE - BLACK VERSION



### KEY FEATURES

- Wide range temperature resistance
- EN/DIN and new SAE pressure rating
- Outstanding ozone resistance
- Superior weather and UV resistance
- High aging resistance

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines in extreme temperature conditions (foundries, compressors, hydraulics within engine compartments, etc.)
- Mineral oils, glycols and polyglycols, transmission fluids, air with oil vapours, mineral oils in aqueous emulsion (up to 212°F/100°C)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01060006* | 6         | - 4  | 1/4"   | 12,7   | 0,50 | 14,9 | 0,59 | 400      | 5800 | 1725  | 25010 | 100      | 3,94  | 390    | 0,26  | MF+M00910-04 | OPF-04 |
| H01060008* | 8         | - 5  | 5/16"  | 14,3   | 0,56 | 16,5 | 0,65 | 350      | 5070 | 1480  | 21460 | 114      | 4,49  | 435    | 0,29  | MF+M00910-05 |        |
| H01060010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 19,0 | 0,75 | 330      | 4780 | 1400  | 20300 | 127      | 5,00  | 530    | 0,36  | MF+M00910-06 |        |
| H01060012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 22,0 | 0,87 | 275      | 3980 | 1200  | 17400 | 178      | 7,01  | 640    | 0,43  | MF+M00910-08 |        |
| H01060016* | 16        | - 10 | 5/8"   | 23,0   | 0,91 | 25,2 | 0,99 | 250      | 3620 | 1020  | 14790 | 200      | 7,87  | 760    | 0,51  | MF+M00910-10 |        |
| H01060019* | 19        | - 12 | 3/4"   | 27,0   | 1,06 | 29,0 | 1,14 | 215      | 3110 | 900   | 13050 | 240      | 9,45  | 940    | 0,63  | MF+M00920-12 |        |
| H01060025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 37,0 | 1,46 | 175      | 2530 | 700   | 10150 | 300      | 11,81 | 1350   | 0,91  | MF+M00930-16 |        |
| H01060031* | 31        | - 20 | 1.1/4" | 44,3   | 1,74 | 47,0 | 1,85 | 150      | 2170 | 600   | 8700  | 420      | 16,54 | 2010   | 1,35  | MF+M00920-20 |        |
| H01060038* | 38        | - 24 | 1.1/2" | 50,7   | 2,00 | 53,4 | 2,10 | 100      | 1450 | 410   | 5940  | 500      | 19,69 | 2250   | 1,51  | MF+M00910-24 | OPK-24 |
| H01060051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 66,2 | 2,61 | 90       | 1300 | 370   | 5360  | 630      | 24,80 | 3080   | 2,07  | MF+M00910-32 | OPK-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-67 °F / 275 °F  
-55 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance.

#### APPLICABLE SPECS

Exceed EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

#### TYPE APPROVALS

ABS; DNV-GL; CU-TR; LR; MSHA



#### Remarks:

- Compressed air applications require cover pin-pricking and additional safety devices
- Equator hose is not suitable for high temperature water applications
- Equator hoses are not designed and not approved for "air brake" applications on railway and/or mobile equipment

## PILOT

EXTREME LIGHTNESS



### KEY FEATURES

- High temperature working conditions
- ROCKMASTER® cover compound for tough environment, high abrasion, ozone, aging resistance
- Superior lightness and flexibility
- Extreme compact structure
- Approved at 1.000.000 cycles at rated working pressure
- Kink resistant solution for pilot applications

### APPLICATIONS & FLUIDS



- Hydraulics: specifically studied for pilot lines, useful also for low pressure lines with installation constraints. Ideal for severe installations, e.g. for engine compartments and for high temperature applications
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|------|----------|------|--------|-------|--------------|--------------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2         |
| H01015005* | 5         | - 3  | 3/16" | 8,7    | 0,34 | 10,5 | 0,41 | 150      | 2170 | 600   | 8700 | 20       | 0,79 | 145    | 0,10  | MF+M03300-03 |              |
| H01015A06* | 6         | - 4  | 1/4"  | 9,9    | 0,39 | 11,5 | 0,45 | 150      | 2170 | 600   | 8700 | 25       | 0,98 | 160    | 0,11  | MF+M03300-04 | MN+M02400-04 |
| H01015008* | 8         | - 5  | 5/16" | 11,5   | 0,45 | 13,1 | 0,52 | 120      | 1740 | 480   | 6960 | 30       | 1,18 | 185    | 0,12  | MF+M03300-05 | MN+M02400-05 |
| H01015010* | 10        | - 6  | 3/8"  | 13,2   | 0,52 | 14,8 | 0,58 | 100      | 1450 | 400   | 5800 | 40       | 1,57 | 205    | 0,14  | MF+M03300-06 | MN+M02400-06 |
| H01015012* | 12        | - 8  | 1/2"  | 16,2   | 0,64 | 18,0 | 0,71 | 100      | 1450 | 400   | 5800 | 50       | 1,97 | 270    | 0,18  | MF+M00820-08 |              |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR; MSHA

## NOZONE/2K

OUTSTANDING OZONE RESISTANCE



### KEY FEATURES

- Outstanding ozone resistance
- Superior weather and UV resistance
- High temperature resistance
- High aging resistance

### APPLICATIONS & FLUIDS



- Hydraulics: medium-high pressure lines with installation constraints and extreme environmental conditions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01039006* | 6         | - 4  | 1/4"  | 11,3   | 0,44 | 13,1 | 0,52 | 400      | 5800 | 1850  | 26830 | 45       | 1,77 | 280    | 0,19  | MF+M03400-04 | OPF-04 |
| H01039008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,7 | 0,58 | 350      | 5070 | 1700  | 24650 | 55       | 2,17 | 330    | 0,22  | MF+M03400-05 | OPF-05 |
| H01039010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 16,8 | 0,66 | 330      | 4780 | 1500  | 21750 | 65       | 2,56 | 395    | 0,27  | MF+M03400-06 | OPF-06 |
| H01039012* | 12        | - 8  | 1/2"  | 18,5   | 0,73 | 20,3 | 0,80 | 275      | 3980 | 1220  | 17690 | 80       | 3,15 | 510    | 0,34  | MF+M03400-08 | OPF-08 |
| H01039016* | 16        | - 10 | 5/8"  | 21,8   | 0,86 | 23,6 | 0,93 | 250      | 3620 | 1050  | 15220 | 90       | 3,54 | 600    | 0,40  | MF+M03400-10 | OPF-10 |
| H01039019* | 19        | - 12 | 3/4"  | 25,6   | 1,01 | 27,6 | 1,09 | 215      | 3110 | 920   | 13340 | 120      | 4,72 | 800    | 0,54  | MF+M03400-12 | OPF-12 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

135 °C, 275 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Exceed EN 857 2SC; ISO 11237 2SC

#### TYPE APPROVALS

CU-TR; MSHA

## ETERNITY/2

HIGH SERVICE LIFE AND RELIABILITY



### KEY FEATURES

- The Hi-Performance solution for toughest OEM specifications
- Performance far exceeds EN 857-2SC
- Extended service life and resistance to fatigue
- High temperature and environmental resistance
- Enhanced flex impulse resistance with M00120 skive ferrule

### APPLICATIONS & FLUIDS



- Hydraulics: high pressure lines with installation constraints in severe OEM applications
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01102006* | 6         | - 4  | 1/4"  | 11,3   | 0,44 | 13,1 | 0,52 | 450      | 6520 | 1800  | 26100 | 45       | 1,77 | 275    | 0,18  | MF+M00120-04 | OPF-04 |
| H01102008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,7 | 0,58 | 400      | 5800 | 1600  | 23200 | 55       | 2,17 | 325    | 0,22  | MF+M00120-05 | OPF-05 |
| H01102010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 16,8 | 0,66 | 365      | 5290 | 1460  | 21170 | 65       | 2,56 | 390    | 0,26  | MF+M00120-06 | OPF-06 |
| H01102A12* | 12        | - 8  | 1/2"  | 18,6   | 0,73 | 20,4 | 0,80 | 350      | 5070 | 1400  | 20300 | 80       | 3,15 | 560    | 0,38  | MF+M00120-08 | OPF-08 |
| H01102016* | 16        | - 10 | 5/8"  | 22,7   | 0,89 | 24,7 | 0,97 | 300      | 4350 | 1200  | 17400 | 90       | 3,54 | 730    | 0,49  | MF+M00120-10 |        |
| H01102019* | 19        | - 12 | 3/4"  | 27,1   | 1,07 | 29,3 | 1,15 | 300      | 4350 | 1200  | 17400 | 120      | 4,72 | 1070   | 0,72  | MF+M00120-12 |        |
| H01102025* | 25        | - 16 | 1"    | 33,7   | 1,33 | 35,9 | 1,41 | 225      | 3260 | 900   | 13050 | 160      | 6,30 | 1340   | 0,90  | MF+M00130-16 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

135 °C, 275 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Exceed EN 857 2SC; SAE 100R16; ISO 11237 2SC

#### TYPE APPROVALS

ABS; DNV-GL; DNV-GL (MED); CU-TR; FRAS; MSHA



## DIAMONDSPIR

VERY HIGH PRESSURE



### KEY FEATURES

- Very high pressure resistance
- Validated for high fatigue resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs.
- Antistatic and antitoxic cover
- BIO Biological and mineral oils compatibility

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines, hydrostatic transmissions, in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10018019* | 19        | - 12 | 3/4"   | 29,1   | 1,15 | 32,1 | 1,26 | 560      | 8120 | 2240  | 32480 | 280       | 11,02 | 1660   | 1,12  | XL+M01750-12 |      |
| H10018025* | 25        | - 16 | 1"     | 38,2   | 1,50 | 41,2 | 1,62 | 560      | 8120 | 2240  | 32480 | 350       | 13,78 | 2910   | 1,96  | XL+M01800-16 |      |
| H10018032* | 31        | - 20 | 1.1/4" | 47,7   | 1,88 | 50,9 | 2,00 | 525      | 7610 | 2100  | 30450 | 420       | 16,54 | 4210   | 2,83  | XL+M01800-20 |      |
| H10018038* | 38        | - 24 | 1.1/2" | 55,2   | 2,17 | 58,7 | 2,31 | 475      | 6880 | 1900  | 27550 | 500       | 19,69 | 5230   | 3,51  | XL+M01800-24 |      |
| H10018051* | 51        | - 32 | 2"     | 68,4   | 2,69 | 71,9 | 2,83 | 420      | 6090 | 1680  | 24360 | 600       | 23,62 | 6680   | 4,49  | XL+M01800-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Six high tensile steel spirals (DN 25÷76). Four high tensile steel spirals (DN 19)

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

MANULI® Design; Exceed ISO 3862 R15

#### TYPE APPROVALS

ABS; FRAS; CU-TR; MSHA; MA

## SHIELDMASTER/2 PLUS MINE

OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED



### KEY FEATURES

- MSHA approved composite cover for mining applications
- Outstanding abrasion and ozone resistance
- Easy assembling and mounting operations, no protection sleeves are required
- Indelible branding technology
- Reduced bend radius for difficult installations
- Flame retardant and electrical antistaticity cover properties

### APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01122006* | 6         | - 4  | 1/4"   | 11,3   | 0,44 | 12,7 | 0,50 | 450      | 6520 | 1800  | 26100 | 45        | 1,77  | 285    | 0,19  | MF+M03400-04 |        |
| H01122008* | 8         | - 5  | 5/16"  | 12,9   | 0,51 | 14,3 | 0,56 | 400      | 5800 | 1600  | 23200 | 85        | 3,35  | 330    | 0,22  | MF+M00120-05 |        |
| H01122010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,5 | 0,73 | 400      | 5800 | 1600  | 23200 | 127       | 5,00  | 549    | 0,37  | MF+M00910-06 |        |
| H01122012* | 12        | - 8  | 1/2"   | 20,1   | 0,79 | 22,1 | 0,87 | 362      | 5250 | 1450  | 21030 | 150       | 5,91  | 710    | 0,48  | MF+M00910-08 |        |
| H01122019* | 19        | - 12 | 3/4"   | 27,1   | 1,07 | 29,3 | 1,15 | 310      | 4490 | 1240  | 17980 | 230       | 9,06  | 1090   | 0,73  | MF+M00920-12 | OPK-12 |
| H01122025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 37,8 | 1,49 | 240      | 3480 | 960   | 13920 | 300       | 11,81 | 1610   | 1,08  | MF+M00930-16 | OPK-16 |
| H01122031* | 31        | - 20 | 1.1/4" | 44,5   | 1,75 | 47,2 | 1,86 | 175      | 2530 | 700   | 10150 | 380       | 14,96 | 2170   | 1,46  | MF+M00920-20 | OPK-20 |
| H01122038* | 38        | - 24 | 1.1/2" | 51,0   | 2,01 | 53,7 | 2,11 | 146      | 2110 | 584   | 8470  | 450       | 17,72 | 2520   | 1,69  | MF+M00910-24 |        |
| H01122051* | 51        | - 32 | 2"     | 62,8   | 2,47 | 65,5 | 2,58 | 130      | 1880 | 520   | 7540  | 600       | 23,62 | 3170   | 2,13  | MF+M00910-32 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two wire braids of high tensile steel wire

#### COVER

Composite bi-layer structure with outstanding abrasion and ozone resistance

#### APPLICABLE SPECS

EN 853 type 2SN; ISO 1436 2SN; SAE J517 100R2AT. Exceed performances of: BCS 174 (British Coal Specification '92); ISO 6805 type 4 (Rubber hoses and hose assemblies for underground mining)

#### TYPE APPROVALS

MSHA; CU-TR



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## PUSHFIT

### PUSH-ON HOSE



#### KEY FEATURES

- Push-On hose with MF2000® Push-Lock insert type without ferrule
- High aging resistance
- Robust assemblies (clamps recommended in long lasting mission profiles applications)
- High flexibility and easy routing

#### APPLICATIONS & FLUIDS



- Push-on hose for low pressure lines, return lines, drain lines. Used in various industrial applications, stationary and mobile equipment
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

#### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |      | MIN. BEND |      | WEIGHT |       | FITTINGS |      |
|------------|-----------|------|-------|--------|------|------|------|----------|-----|-------|------|-----------|------|--------|-------|----------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi | bar   | psi  | mm        | inch | g/m    | lb/ft | Std1     | Std2 |
| H09066006* | 6         | - 4  | 1/4"  |        |      | 12,7 | 0,50 | 35       | 500 | 140   | 2030 | 76        | 2,99 | 130    | 0,09  | PL       |      |
| H09066008* | 8         | - 5  | 5/16" |        |      | 14,3 | 0,56 | 35       | 500 | 140   | 2030 | 76        | 2,99 | 155    | 0,10  | PL       |      |
| H09066010* | 10        | - 6  | 3/8"  |        |      | 15,8 | 0,62 | 35       | 500 | 140   | 2030 | 76        | 2,99 | 175    | 0,12  | PL       |      |
| H09066012* | 12        | - 8  | 1/2"  |        |      | 19,6 | 0,77 | 25       | 360 | 100   | 1450 | 127       | 5,00 | 235    | 0,16  | PL       |      |
| H09066016* | 16        | - 10 | 5/8"  |        |      | 23,6 | 0,93 | 25       | 360 | 100   | 1450 | 150       | 5,91 | 320    | 0,22  | PL       |      |
| H09066019* | 19        | - 12 | 3/4"  |        |      | 26,2 | 1,03 | 21       | 300 | 84    | 1210 | 180       | 7,09 | 340    | 0,23  | PL       |      |
| H09066025* | 25        | - 16 | 1"    |        |      | 33,0 | 1,30 | 14       | 200 | 56    | 810  | 240       | 9,45 | 455    | 0,31  | PL       |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber compound

#### REINFORCEMENT

One textile braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

Manuli design

#### TYPE APPROVALS

CU-TR

## XTRAFLOW/2WB

HIGH FLOW RATES, LOW PRESSURE DROPS



### KEY FEATURES

- Low pressure drops even with high flow rates
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance and electrical antistatic properties of the cover
- High working pressure associated to high flow rates
- Vacuum resistance with SAE 100 R4 performance

### APPLICATIONS & FLUIDS



- Medium-Low pressure hydraulic lines with high flow rates, specific installations with severe abrasion conditions, marine applications, underground and open pit mining, return and suction lines
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D.  |      | MAX W.P. |      | BURST |      | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|-------|------|----------|------|-------|------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm    | inch | bar      | psi  | bar   | psi  | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01129063* | 63        | - 40 | 2.1/2" | 75,8   | 2,98 | 78,5  | 3,09 | 105      | 1520 | 420   | 6090 | 510       | 20,08 | 3531   | 2,37  | SP+M05400-40 |      |
| H01129076* | 76        | - 48 | 3"     | 89,0   | 3,50 | 93,6  | 3,69 | 80       | 1160 | 320   | 4640 | 510       | 20,08 | 4976   | 3,34  | SP+M05400-48 |      |
| H01129089* | 89        | - 56 | 3.1/2" | 102,2  | 4,02 | 107,4 | 4,23 | 35       | 500  | 140   | 2030 | 710       | 27,95 | 5530   | 3,72  | SP+M05400-56 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel wire braids

#### COVER

Synthetic rubber with high ozone, weather and abrasion resistance

#### APPLICABLE SPECS

Extension EN 857-2SC, ISO 11237-2SC

#### TYPE APPROVALS

CU-TR; MSHA

## XTRAFLOW/4WS

HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Low pressure drops even with high flow rates
- Extreme abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic cover
- Superior pressure rating
- Structure robustness for tough handling

### APPLICATIONS & FLUIDS

- General hydraulics with high flow rates, mine hydraulic return lines, longwalls water lines
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D.  |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|-------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm    | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10091063* | 63        | - 40 | 2.1/2" | 77,5   | 3,05 | 81,5  | 3,21 | 140      | 2030 | 700   | 10150 | 700      | 27,56 | 5890   | 3,96  | SP+M05400-40 |      |
| H10091076* | 76        | - 48 | 3"     | 87,8   | 3,46 | 92,2  | 3,63 | 105      | 1520 | 525   | 7610  | 700      | 27,56 | 5367   | 3,61  | SP+M05400-48 |      |
| H10091089* | 89        | - 56 | 3.1/2" | 103,7  | 4,08 | 108,7 | 4,28 | 80       | 1160 | 400   | 5800  | 800      | 31,50 | 8187   | 5,50  | SP+M05400-56 |      |
| H10091102* | 102       | - 64 | 4"     | 120,0  | 4,72 | 126,0 | 4,96 | 35       | 500  | 140   | 2030  | 900      | 35,43 | 10210  | 6,86  | SP+M05400-64 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel wire spirals

#### COVER

Synthetic rubber with high abrasion, ozone and weather resistance

#### APPLICABLE SPECS

Manuli Design

#### TYPE APPROVALS

CU-TR; MSHA; FRAS

## XTRAFLOW/HT

HIGH TEMPERATURE SUCTION & RETURN LINES



### KEY FEATURES

- Vacuum resistance exceeding SAE 100R4 performance
- Extreme high temperature and heat aging resistance
- High flow rates
- Reduced bend radii compared to SAE 100R4

### APPLICATIONS & FLUIDS



- Suction and return lines in hydraulic systems with high temperature fluids, low pressure hydraulic systems in mining equipment.
- Remark: compressed air applications require cover pin-pricking and additional safety devices.
- Mineral oils, glycols and polyglycols, transmission fluids, mineral oils in aqueous emulsion (up to 212°F 100°C), air with oil vapours.

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      | R.O.D. |       | O.D. |       | MAX W.P. |     | BURST |     | MIN.BEND |     | WEIGHT |      | FITTINGS |              |      |
|------------|-----------|------|--------|-------|------|-------|----------|-----|-------|-----|----------|-----|--------|------|----------|--------------|------|
|            | DN        | dash | inch   | mm    | inch | mm    | inch     | bar | psi   | bar | psi      | mm  | inch   | g/m  | lb/ft    | Std1         | Std2 |
| H01128063* | 63        | - 40 | 2.1/2" | 75,8  | 2,98 | 78,5  | 3,09     | 35  | 500   | 140 | 2030     | 254 | 10,00  | 3589 | 2,41     | MF+M03400-40 |      |
| H01128076* | 76        | - 48 | 3"     | 87,8  | 3,46 | 90,5  | 3,56     | 35  | 500   | 140 | 2030     | 355 | 13,98  | 3291 | 2,21     | MF+M03400-48 |      |
| H01128089* | 89        | - 56 | 3.1/2" | 102,2 | 4,02 | 106,0 | 4,17     | 35  | 500   | 140 | 2030     | 475 | 18,70  | 5708 | 3,84     | MF+M03400-56 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-67 °F / 275 °F  
-55 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two wire braids of high tensile steel wire

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Manuli design

#### TYPE APPROVALS

CU-TR; MSHA

## GOLDENISO/21 ANTIWEAR

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Extreme abrasion resistance
- Very low bend radius to suit restricted space installations
- High robust and compact hose structure compared to rated pressure
- Approved at 200.000 impulse cycles, at T=100°C (ISO 18752 grade A)
- High environmental agents resistance
- Vacuum resistance accordingly to SAE 100R4 requirements

### APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01125A05* | 5         | - 3  | 3/16" | 9,1    | 0,36 | 11,1 | 0,44 | 210      | 3040 | 840   | 12180 | 45       | 1,77 | 170    | 0,11  | MF+M03300-03 | OPF-03 |
| H01125006* | 6         | - 4  | 1/4"  | 10,2   | 0,40 | 12,0 | 0,47 | 210      | 3040 | 840   | 12180 | 50       | 1,97 | 180    | 0,12  | MF+M03300-04 | OPF-04 |
| H01125008* | 8         | - 5  | 5/16" | 11,5   | 0,45 | 13,6 | 0,54 | 210      | 3040 | 840   | 12180 | 55       | 2,17 | 210    | 0,14  | MF+M03300-05 | OPF-05 |
| H01125010* | 10        | - 6  | 3/8"  | 14,4   | 0,57 | 16,2 | 0,64 | 210      | 3040 | 840   | 12180 | 65       | 2,56 | 300    | 0,20  | MF+M03400-06 | OPF-06 |
| H01125012* | 12        | - 8  | 1/2"  | 17,9   | 0,70 | 19,7 | 0,78 | 210      | 3040 | 840   | 12180 | 90       | 3,54 | 415    | 0,28  | MF+M03400-08 | OPF-08 |
| H01125016* | 16        | - 10 | 5/8"  | 22,2   | 0,87 | 24,0 | 0,94 | 210      | 3040 | 840   | 12180 | 100      | 3,94 | 620    | 0,42  | MF+M03400-10 | OPF-10 |
| H01125019* | 19        | - 12 | 3/4"  | 25,6   | 1,01 | 27,7 | 1,09 | 210      | 3040 | 840   | 12180 | 120      | 4,72 | 780    | 0,52  | MF+M03400-12 | OPF-12 |
| H01125025* | 25        | - 16 | 1"    | 33,0   | 1,30 | 35,2 | 1,39 | 210      | 3040 | 840   | 12180 | 150      | 5,91 | 1120   | 0,75  | MF+M03400-16 | OPF-16 |

### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

### MAX OPERATING TEMPERATURE

121 °C, 250 °F

### TUBE

Synthetic rubber

### REINFORCEMENT

One wire braid (DN 5÷12). Two wire braid (DN 16÷25)

### COVER

High abrasion resistant synthetic rubber

### APPLICABLE SPECS

ISO 18752 grade A; SAE J517 type 100 R17; ISO 11237-R17

### TYPE APPROVALS

CU-TR; MSHA; FRAS

## GOLDENISO/28 ANTIWEAR

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Extreme abrasion resistance
- Very low bend radius to suit restricted space installations
- High robust and compact hose structure compared to rated pressure
- Approved at 200.000 impulse cycles, at T=100°C (ISO 18752 grade A)
- High environmental agents resistance
- Vacuum resistance accordingly to SAE 100R4 requirements

### APPLICATIONS & FLUIDS



- Medium and high pressure hydraulic lines with installation constraints, pilot lines, return, drain and suction lines
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01126006* | 6         | - 4  | 1/4"  | 11,6   | 0,46 | 13,2 | 0,52 | 280      | 4060 | 1120  | 16240 | 50       | 1,97 | 260    | 0,17  | MF+M03400-04 | OPF-04 |
| H01126008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,5 | 0,57 | 280      | 4060 | 1120  | 16240 | 55       | 2,17 | 280    | 0,19  | MF+M03400-05 | OPF-05 |
| H01126010* | 10        | - 6  | 3/8"  | 15,4   | 0,61 | 17,0 | 0,67 | 280      | 4060 | 1120  | 16240 | 63       | 2,48 | 380    | 0,26  | MF+M03400-06 | OPF-06 |
| H01126012* | 12        | - 8  | 1/2"  | 18,5   | 0,73 | 20,3 | 0,80 | 280      | 4060 | 1120  | 16240 | 80       | 3,15 | 495    | 0,33  | MF+M03400-08 | OPF-08 |
| H01126016* | 16        | - 10 | 5/8"  | 22,7   | 0,89 | 24,7 | 0,97 | 280      | 4060 | 1120  | 16240 | 90       | 3,54 | 730    | 0,49  | MF+M03400-10 | OPF-10 |
| H01126019* | 19        | - 12 | 3/4"  | 27,1   | 1,07 | 29,3 | 1,15 | 280      | 4060 | 1120  | 16240 | 120      | 4,72 | 1060   | 0,71  | MF+M03400-12 | OPK-12 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Synthetic rubber

#### REINFORCEMENT

Two wire braids

#### COVER

High abrasion resistant synthetic rubber

#### APPLICABLE SPECS

ISO 18752 grade A; SAE J517 type 100R19

#### TYPE APPROVALS

CU-TR; MSHA; FRAS



## GOLDENISO/21 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



### KEY FEATURES

- Bend radius which exceed the standard requirements by -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving vs traditional R12 hose construction, despite the higher working pressure of the GoldenIso Xtraflex range
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- Medium pressure hydraulic lines for general hydraulics
- Return lines of hydraulic systems
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10093031* | 31        | - 20 | 1.1/4" | 41,7   | 1,64 | 44,5 | 1,75 | 210      | 3040 | 840   | 12180 | 210      | 8,27  | 2071   | 1,39  | MF+M00920-20 | OPK-20       |
| H10093038* | 38        | - 24 | 1.1/2" | 48,9   | 1,93 | 52,1 | 2,05 | 210      | 3040 | 840   | 12180 | 260      | 10,24 | 2989   | 2,01  | IP+M01500-24 | SP+M05400-24 |
| H10093051* | 51        | - 32 | 2"     | 63,2   | 2,49 | 66,8 | 2,63 | 210      | 3040 | 840   | 12180 | 330      | 12,99 | 4311   | 2,90  | IP+M01500-32 | SP+M05400-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

4 high tensile steel spirals

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

#### TYPE APPROVALS

CU-TR; MSHA; FRAS

## GOLDENISO/28 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



### KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R12 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- High pressure power lines for general hydraulics
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10095010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,9 | 0,74 | 280      | 4060 | 1120  | 16240 | 65       | 2,56  | 520    | 0,35  | MF+M00910-06 | OPK-06       |
| H10095012* | 12        | - 8  | 1/2"   | 19,6   | 0,77 | 21,8 | 0,86 | 280      | 4060 | 1120  | 16240 | 90       | 3,54  | 650    | 0,44  | MF+M00910-08 | OPK-08       |
| H10095016* | 16        | - 10 | 5/8"   | 23,5   | 0,93 | 25,7 | 1,01 | 280      | 4060 | 1120  | 16240 | 100      | 3,94  | 934    | 0,63  | MF+M00910-10 | OPK-10       |
| H10095019* | 19        | - 12 | 3/4"   | 26,9   | 1,06 | 29,3 | 1,15 | 280      | 4060 | 1120  | 16240 | 120      | 4,72  | 1040   | 0,70  | MF+M00920-12 | OPK-12       |
| H10095025* | 25        | - 16 | 1"     | 34,1   | 1,34 | 36,5 | 1,44 | 280      | 4060 | 1120  | 16240 | 150      | 5,91  | 1530   | 1,03  | MF+M00930-16 | OPK-16       |
| H10095031* | 31        | - 20 | 1.1/4" | 41,7   | 1,64 | 44,5 | 1,75 | 280      | 4060 | 1120  | 16240 | 210      | 8,27  | 2160   | 1,45  | MF+M00920-20 | OPK-20       |
| H10095038* | 38        | - 24 | 1.1/2" | 48,9   | 1,93 | 52,1 | 2,05 | 280      | 4060 | 1120  | 16240 | 280      | 11,02 | 2994   | 2,01  | IP+M01500-24 | SP+M05400-24 |
| H10095051* | 51        | - 32 | 2"     | 63,9   | 2,52 | 67,5 | 2,66 | 280      | 4060 | 1120  | 16240 | 350      | 13,78 | 4633   | 3,11  | IP+M01500-32 | SP+M05400-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

4 high tensile steel spirals

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

#### TYPE APPROVALS

CU-TR; MSHA; FRAS; CCS

## GOLDENISO/35 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



### KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R13 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- High pressure power lines for general hydraulics
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10096010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 18,9 | 0,74 | 350      | 5070 | 1400  | 20300 | 80       | 3,15  | 530    | 0,36  | MF+M00910-06 | OPK-06       |
| H10096012* | 12        | - 8  | 1/2"   | 19,6   | 0,77 | 21,8 | 0,86 | 350      | 5070 | 1400  | 20300 | 90       | 3,54  | 660    | 0,44  | MF+M00910-08 | OPK-08       |
| H10096016* | 16        | - 10 | 5/8"   | 23,5   | 0,93 | 25,7 | 1,01 | 350      | 5070 | 1400  | 20300 | 100      | 3,94  | 934    | 0,63  | MF+M00910-10 | OPK-10       |
| H10096019* | 19        | - 12 | 3/4"   | 27,5   | 1,08 | 29,9 | 1,18 | 350      | 5070 | 1400  | 20300 | 120      | 4,72  | 1220   | 0,82  | MF+M00920-12 | OPK-12       |
| H10096025* | 25        | - 16 | 1"     | 34,6   | 1,36 | 37,0 | 1,46 | 350      | 5070 | 1400  | 20300 | 150      | 5,91  | 1800   | 1,21  | IP+M01500-16 | SP+M05400-16 |
| H10096031* | 31        | - 20 | 1.1/4" | 42,1   | 1,66 | 44,9 | 1,77 | 350      | 5070 | 1400  | 20300 | 230      | 9,06  | 2340   | 1,57  | IP+M01500-20 | SP+M05400-20 |
| H10096038* | 38        | - 24 | 1.1/2" | 52,9   | 2,08 | 56,1 | 2,21 | 350      | 5070 | 1400  | 20300 | 300      | 11,81 | 4165   | 2,80  | IP+M01600-24 | SP+M05500-24 |
| H10096051* | 51        | - 32 | 2"     | 66,8   | 2,63 | 70,4 | 2,77 | 350      | 5070 | 1400  | 20300 | 360      | 14,17 | 6161   | 4,14  | IP+M01800-32 | SP+M05500-32 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals (DN 6÷31). Six high tensile steel spirals (DN 38÷51).

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

ISO 18752-C/D, JIS K6349-3

#### TYPE APPROVALS

DNV-GL; CU-TR; MSHA; FRAS; B

## GOLDENISO/42 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



### KEY FEATURES

- Bend radius which exceed the standard requirements by - 30% to -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements
- Weight saving of 20% vs traditional R15 hose construction
- No-skive fitting solution is available
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- High pressure power lines for general hydraulics
- Heavy duty power lines
- Applications with installation constraints (short assemblies, compact spaces, low bend radii, etc.)
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |                      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|----------------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2                 |
| H10097010* | 10        | - 6  | 3/8"   | 17,6   | 0,69 | 20,0 | 0,79 | 420      | 6090 | 1680  | 24360 | 100      | 3,94  | 550    | 0,37  | MF+M00910-06 |                      |
| H10097012* | 12        | - 8  | 1/2"   | 20,3   | 0,80 | 22,7 | 0,89 | 420      | 6090 | 1680  | 24360 | 120      | 4,72  | 807    | 0,54  | MF+M00910-08 |                      |
| H10097016* | 16        | - 10 | 5/8"   | 23,9   | 0,94 | 26,4 | 1,04 | 420      | 6090 | 1680  | 24360 | 140      | 5,51  | 989    | 0,66  | IP+M01500-10 | SP+M05400-10         |
| H10097019* | 19        | - 12 | 3/4"   | 27,7   | 1,09 | 30,2 | 1,19 | 420      | 6090 | 1680  | 24360 | 150      | 5,91  | 1285   | 0,86  | IP+M01500-12 | SP+M05400-12         |
| H10097025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 37,3 | 1,47 | 420      | 6090 | 1680  | 24360 | 210      | 8,27  | 1915   | 1,29  | IP+M01500-16 | SP+M05400-16         |
| H10097031* | 31        | - 20 | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 420      | 6090 | 1680  | 24360 | 260      | 10,24 | 3663   | 2,46  | IP+M01600-20 | SP+M05500-20         |
| H10097038* | 38        | - 24 | 1.1/2" | 53,2   | 2,09 | 56,4 | 2,22 | 420      | 6090 | 1680  | 24360 | 310      | 12,20 | 4450   | 2,99  | IP+M01600-24 | SPGX+<br>M05500-24GX |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals (DN 6÷25). Six high tensile steel spirals (DN 31÷51).

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

ISO 18752-C (Grade C "Plus" approved 1 Mil impulse cycles with Interlock Plus fittings)

#### TYPE APPROVALS

CU-TR; MSHA; FRAS; B

## GOLDENISO/35 LONGLIFE

HIGH FATIGUE RESISTANCE



### KEY FEATURES



- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Skive robust fitting solution
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- Hydraulics: high pressure power lines, heavy duty earth moving equipment, drilling applications, lifting equipment and telescopic booms, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H01134006* | 6         | - 4  | 1/4" | 11,3   | 0,44 | 13,1 | 0,52 | 350      | 5070 | 1800  | 26100 | 45       | 1,77 | 284    | 0,19  | MF+M00120-04 |      |
| H01134010* | 10        | - 6  | 3/8" | 15,0   | 0,59 | 16,8 | 0,66 | 350      | 5070 | 1400  | 20300 | 65       | 2,56 | 392    | 0,26  | MF+M00120-06 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel wire braids (DN 6 to 12)

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Manuli special design exceeds ISO 18752-B

#### TYPE APPROVALS

CU-TR; MSHA

## GOLDENISO/38 LONGLIFE

HIGH FATIGUE RESISTANCE



### KEY FEATURES

- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Interlock-Plus easy mounting system for a very high-level robustness
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10098019* | 19        | - 12 | 3/4"   | 27,7   | 1,09 | 32,0 | 1,26 | 380      | 5510 | 1680  | 24360 | 170       | 6,69  | 1410   | 0,95  | IP+M01500-12 |      |
| H10098025* | 25        | - 16 | 1"     | 34,8   | 1,37 | 38,1 | 1,50 | 380      | 5510 | 1680  | 24360 | 220       | 8,66  | 1964   | 1,32  | IP+M01500-16 |      |
| H10098031* | 31        | - 20 | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 380      | 5510 | 1680  | 24360 | 267       | 10,51 | 3663   | 2,46  | IP+M01600-20 |      |
| H10098038* | 38        | - 24 | 1.1/2" | 55,2   | 2,17 | 59,1 | 2,33 | 380      | 5510 | 1900  | 27550 | 500       | 19,69 | 5280   | 3,55  | IP+M01800-24 |      |
| H10098051* | 51        | - 32 | 2"     | 68,4   | 2,69 | 72,4 | 2,85 | 380      | 5510 | 1520  | 22040 | 630       | 24,80 | 6796   | 4,57  | IP+M01800-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel wire spirals (DN 19 & 25),  
six high tensile steel wire spirals (DN 31)

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Manuli special design exceeds SAE J517 type100R13; ISO 3862 R13; ISO 18752-C-D extension

#### TYPE APPROVALS

CU-TR; MSHA; FRAS

## GOLDENISO/45 LONGLIFE

HIGH FATIGUE RESISTANCE



### KEY FEATURES

- Designed for original equipment
- Long-term mission profile in severe applications
- Over standard pressure rating
- High impulse resistance exceeding the ISO 18752 requirements
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic properties of the cover
- Wide compatibility with hydraulic fluids, mineral and biodegradable oils
- Low bend radius, better than the standard requirements
- Interlock-Plus easy mounting system for a very high-level robustness
- Isobaric pressure rating for easy selection and product management

### APPLICATIONS & FLUIDS



- Heavy duty pressure lines, hydrostatic transmissions, heavy duty earth moving equipment, hydraulic presses, drilling applications, injection moulding machines, specific installations with severe abrasion conditions and/or harsh environmental conditions, marine applications, underground and open pit mining
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10089006* | 6         | - 4  | 1/4"   | 14,7   | 0,58 | 17,1 | 0,67 | 460      | 6670 | 1840  | 26680 | 125       | 4,92  | 567    | 0,38  | IP+M01500-04 |      |
| H10089016* | 16        | - 10 | 5/8"   | 25,5   | 1,00 | 28,5 | 1,12 | 460      | 6670 | 1840  | 26680 | 250       | 9,84  | 1290   | 0,87  | IP+M01500-10 |      |
| H10089019* | 19        | - 12 | 3/4"   | 28,4   | 1,12 | 32,0 | 1,26 | 460      | 6670 | 1840  | 26680 | 280       | 11,02 | 1530   | 1,03  | IP+M01500-12 |      |
| H10089025* | 25        | - 16 | 1"     | 35,4   | 1,39 | 38,2 | 1,50 | 460      | 6670 | 1840  | 26680 | 340       | 13,39 | 2150   | 1,44  | IP+M01500-16 |      |
| H10089031* | 31        | - 20 | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 450      | 6520 | 1800  | 26100 | 420       | 16,54 | 3790   | 2,55  | IP+M01800-20 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel wire spirals (DN 16÷25).  
Six high tensile steel wire spirals (DN 31)

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Manuli special design exceeds SAE J517 type100R15; ISO 3862 R15; ISO 18752-D extension

#### TYPE APPROVALS

CU-TR; MSHA; FRAS

## SHIELDMASTER/2000

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- FROST suitable for very cold environments
- Compact solution for difficult installation

### APPLICATIONS & FLUIDS



- Low pressure hydraulic lines, pilot lines with shield architecture
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01106A06* | 6         | - 4  | 1/4" | 10,2   | 0,40 | 12,3 | 0,48 | 140      | 2030 | 560   | 8120 | 50       | 1,97 | 185    | 0,12  | MF+M00120-04 | OPF-04 |
| H01106010* | 10        | - 6  | 3/8" | 13,6   | 0,54 | 15,8 | 0,62 | 140      | 2030 | 560   | 8120 | 60       | 2,36 | 270    | 0,18  | MF+M00120-06 |        |
| H01106012* | 12        | - 8  | 1/2" | 17,1   | 0,67 | 19,3 | 0,76 | 140      | 2030 | 560   | 8120 | 70       | 2,76 | 350    | 0,24  | MF+M00120-08 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 212 °F  
-46 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### MIN EXTERNAL TEMPERATURE

-55 °C, -67 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.



## SHIELDMASTER/4000

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- FROST suitable for very cold environments

### APPLICATIONS & FLUIDS



- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01031006* | 6         | - 4  | 1/4"   | 11,6   | 0,46 | 13,6 | 0,54 | 276      | 4000 | 1110  | 16090 | 50       | 1,97  | 275    | 0,18  | MF+M00120-04 |      |
| H01031008* | 8         | - 5  | 5/16"  | 12,9   | 0,51 | 14,9 | 0,59 | 276      | 4000 | 1110  | 16090 | 57       | 2,24  | 324    | 0,22  | MF+M00120-05 |      |
| H01031010* | 10        | - 6  | 3/8"   | 15,4   | 0,61 | 17,4 | 0,69 | 276      | 4000 | 1110  | 16090 | 63       | 2,48  | 400    | 0,27  | MF+M00120-06 |      |
| H01031012* | 12        | - 8  | 1/2"   | 18,5   | 0,73 | 20,5 | 0,81 | 276      | 4000 | 1110  | 16090 | 80       | 3,15  | 510    | 0,34  | MF+M00120-08 |      |
| H01031016* | 16        | - 10 | 5/8"   | 22,7   | 0,89 | 24,7 | 0,97 | 276      | 4000 | 1110  | 16090 | 90       | 3,54  | 730    | 0,49  | MF+M00120-10 |      |
| H01031019* | 19        | - 12 | 3/4"   | 27,1   | 1,07 | 29,3 | 1,15 | 276      | 4000 | 1110  | 16090 | 120      | 4,72  | 1070   | 0,72  | MF+M00120-12 |      |
| H01031025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 38,1 | 1,50 | 276      | 4000 | 1110  | 16090 | 267      | 10,51 | 1950   | 1,31  | MF+M00930-16 |      |
| H01031031* | 31        | - 20 | 1.1/4" | 43,8   | 1,72 | 47,0 | 1,85 | 276      | 4000 | 1110  | 16090 | 400      | 15,75 | 2590   | 1,74  | MF+M00920-20 |      |
| H01031038* | 38        | - 24 | 1.1/2" | 50,0   | 1,97 | 53,5 | 2,11 | 276      | 4000 | 1110  | 16090 | 500      | 19,69 | 3160   | 2,12  | MF+M00910-24 |      |
| H01031051* | 51        | - 32 | 2"     | 63,5   | 2,50 | 68,0 | 2,68 | 276      | 4000 | 1110  | 16090 | 700      | 27,56 | 4580   | 3,08  | IP+M01500-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 212 °F  
-46 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### MIN EXTERNAL TEMPERATURE

-55 °C, -67 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids (DN 6÷19). Four high tensile steel spirals (DN 25÷51)

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## SHIELDMASTER/5000

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- FROST suitable for very cold environments

### APPLICATIONS & FLUIDS



- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01032006* | 6         | - 4  | 1/4"  | 11,6   | 0,46 | 13,6 | 0,54 | 345      | 5000 | 1380  | 20010 | 50       | 1,97  | 275    | 0,18  | MF+M00120-04 |      |
| H01032008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 15,1 | 0,59 | 345      | 5000 | 1380  | 20010 | 55       | 2,17  | 340    | 0,23  | MF+M00120-05 |      |
| H01032010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 17,2 | 0,68 | 345      | 5000 | 1380  | 20010 | 65       | 2,56  | 400    | 0,27  | MF+M00120-06 |      |
| H01032012* | 12        | - 8  | 1/2"  | 19,8   | 0,78 | 21,8 | 0,86 | 345      | 5000 | 1380  | 20010 | 120      | 4,72  | 650    | 0,44  | MF+M00910-08 |      |
| H01032016* | 16        | - 10 | 5/8"  | 24,4   | 0,96 | 27,2 | 1,07 | 345      | 5000 | 1380  | 20010 | 200      | 7,87  | 995    | 0,67  | MF+M00910-10 |      |
| H01032019* | 19        | - 12 | 3/4"  | 28,2   | 1,11 | 31,2 | 1,23 | 345      | 5000 | 1380  | 20010 | 230      | 9,06  | 1360   | 0,91  | IP+M01500-12 |      |
| H01032025* | 25        | - 16 | 1"    | 35,1   | 1,38 | 38,1 | 1,50 | 345      | 5000 | 1380  | 20010 | 267      | 10,51 | 1950   | 1,31  | IP+M01500-16 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 212 °F  
-46 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### MIN EXTERNAL TEMPERATURE

-55 °C, -67 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids (DN 6÷12). Four high tensile steel spirals (DN 16÷25)

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## SHIELDMASTER/6000

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- FROST suitable for very cold environments

### APPLICATIONS & FLUIDS



- Heavy duty hydraulic power lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe environmental conditions, long resistance to ozone and weathering, cold temperatures, dirty industrial environments
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01A32006* | 6         | - 4  | 1/4"   | 11,3   | 0,44 | 13,5 | 0,53 | 420      | 6090 | 1680  | 24360 | 45       | 1,77  | 290    | 0,19  | MF+M00120-04 |      |
| H01A32010* | 10        | - 6  | 3/8"   | 17,6   | 0,69 | 20,6 | 0,81 | 420      | 6090 | 1680  | 24360 | 110      | 4,33  | 710    | 0,48  | MF+M00910-06 |      |
| H01A32012* | 12        | - 8  | 1/2"   | 20,3   | 0,80 | 23,5 | 0,93 | 420      | 6090 | 1680  | 24360 | 120      | 4,72  | 840    | 0,56  | MF+M00910-08 |      |
| H01A32016* | 16        | - 10 | 5/8"   | 23,7   | 0,93 | 27,0 | 1,06 | 420      | 6090 | 1680  | 24360 | 140      | 5,51  | 1000   | 0,67  | MF+M00910-10 |      |
| H01A32019* | 19        | - 12 | 3/4"   | 28,2   | 1,11 | 32,0 | 1,26 | 420      | 6090 | 1680  | 24360 | 170      | 6,69  | 1480   | 0,99  | IP+M01500-12 |      |
| H01A32025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 38,1 | 1,50 | 420      | 6090 | 1680  | 24360 | 220      | 8,66  | 2050   | 1,38  | IP+M01500-16 |      |
| H01A32031* | 31        | - 20 | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 420      | 6090 | 1680  | 24360 | 267      | 10,51 | 3690   | 2,48  | IP+M01600-20 |      |
| H01A32038* | 38        | - 24 | 1.1/2" | 54,6   | 2,15 | 57,8 | 2,28 | 420      | 6090 | 1680  | 24360 | 315      | 12,40 | 4780   | 3,21  | IP+M01600-24 |      |
| H01A32051* | 51        | - 32 | 2"     | 68,4   | 2,69 | 72,0 | 2,83 | 420      | 6090 | 1680  | 24360 | 600      | 23,62 | 6760   | 4,54  | XL+M01800-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 212 °F  
-46 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### MIN EXTERNAL TEMPERATURE

-55 °C, -67 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids (DN 6). Four high tensile steel spirals (DN 10÷25). Six high tensile steel spirals (DN 31÷51)

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## SHIELDMASTER/5000 MINE

OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED



### KEY FEATURES

- MSHA approved cover for mining applications
- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Indelible branding technology

### APPLICATIONS & FLUIDS



- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H01104006* | 6         | - 4  | 1/4"   | 11,6   | 0,46 | 13,6 | 0,54 | 345      | 5000 | 1380  | 20010 | 50       | 1,97  | 280    | 0,19  | MF+M00120-04 |      |
| H01104008* | 8         | - 5  | 5/16"  | 12,9   | 0,51 | 15,1 | 0,59 | 345      | 5000 | 1380  | 20010 | 55       | 2,17  | 350    | 0,24  | MF+M00120-05 |      |
| H01104010* | 10        | - 6  | 3/8"   | 15,0   | 0,59 | 17,2 | 0,68 | 345      | 5000 | 1380  | 20010 | 65       | 2,56  | 410    | 0,28  | MF+M00120-06 |      |
| H01104012* | 12        | - 8  | 1/2"   | 19,8   | 0,78 | 21,8 | 0,86 | 345      | 5000 | 1380  | 20010 | 120      | 4,72  | 670    | 0,45  | MF+M00910-08 |      |
| H01104016* | 16        | - 10 | 5/8"   | 24,4   | 0,96 | 27,2 | 1,07 | 345      | 5000 | 1380  | 20010 | 200      | 7,87  | 1030   | 0,69  | MF+M00910-10 |      |
| H01104019* | 19        | - 12 | 3/4"   | 28,2   | 1,11 | 31,2 | 1,23 | 345      | 5000 | 1380  | 20010 | 230      | 9,06  | 1420   | 0,95  | IP+M01500-12 |      |
| H01104025* | 25        | - 16 | 1"     | 35,1   | 1,38 | 38,1 | 1,50 | 345      | 5000 | 1380  | 20010 | 267      | 10,51 | 1990   | 1,34  | IP+M01500-16 |      |
| H01104031* | 31        | - 20 | 1.1/4" | 42,2   | 1,66 | 45,2 | 1,78 | 345      | 5000 | 1380  | 20010 | 350      | 13,78 | 2500   | 1,68  | IP+M01500-20 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids (DN 6÷12). Four high tensile steel spirals (DN 16÷31)

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design. Performances ISO 3862 - R13

#### TYPE APPROVALS

CU-TR; MSHA; FRAS



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## SHIELDMASTER/6000 MINE

OUTSTANDING ABRASION RESISTANCE, MSHA APPROVED



### KEY FEATURES

- MSHA approved composite cover for mining applications
- Outstanding abrasion and ozone resistance
- Easy assembling and mounting operations, no protection sleeves are required
- Indelible branding technology
- Reduced bend radius for difficult installations
- Flame retardant and electrical antistaticity cover properties

### APPLICATIONS & FLUIDS



- Heavy duty hydraulic power lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10086031* | 31        | -20  | 1.1/4" | 46,3   | 1,82 | 49,5 | 1,95 | 420      | 6090 | 1680  | 24360 | 260      | 10,24 | 3760   | 2,53  | IP+M01600-20 |      |
| H10086038* | 38        | -24  | 1.1/2" | 54,6   | 2,15 | 57,8 | 2,28 | 420      | 6090 | 1680  | 24360 | 310      | 12,20 | 4850   | 3,26  | IP+M01600-24 |      |
| H10086051* | 51        | -32  | 2"     | 68,4   | 2,69 | 72,0 | 2,83 | 420      | 6090 | 1680  | 24360 | 600      | 23,62 | 6860   | 4,61  | XL+M01800-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Six high tensile steel wire spirals

#### COVER

Composite bi-layer structure with outstanding abrasion and ozone resistance

#### APPLICABLE SPECS

ISO 3862 type R15; SAE J517 type 100 R15; exceed performances of BCS 174 (British Coal Specification 1992); ISO 6805 type 6 (rubber hoses and hose assemblies for underground mining)

#### TYPE APPROVALS

MSHA, CU-TR; FRAS



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## SHIELDMASTER/17 WS

OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- MSHA approved cover for mining applications
- Outstanding abrasion and ozone resistance
- Compact overall dimensions
- Easy assembling and mounting operations (no protection sleeves required)
- Indelible branding technology

### APPLICATIONS & FLUIDS



- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing among hoses in bunches, alternative to spring guards, ease of cleaning in dusty environments
- For severe mining environments, underground and open pit, long resistance to ozone and weathering, cold temperatures, antistatic and flame retardant properties of the cover
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10113051* | 51        | - 32 | 2"   | 63,6   | 2,50 | 66,7 | 2,63 | 175      | 2530 | 700   | 10150 | 630       | 24,80 | 4461   | 3,00  | MF+M00910-32 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals (DN 51)

#### COVER

Composite bi-layer structure with outstanding abrasion resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR; MSHA



#### Remarks:

Applications with materials projection or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases.

## DIAMONDSPIR/14

HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE



### KEY FEATURES

- Extreme abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic cover
- Superior pressure rating
- Structure robustness for tough handling
- InterLock robust fitting technology

### APPLICATIONS & FLUIDS



- Medium pressure hydraulic lines with high flow rates, mine hydraulic return lines, large equipment hydraulics
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |      | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi  | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10104076* | 76        | - 48 | 3"   | 87,8   | 3,46 | 92,2 | 3,63 | 140      | 2030 | 560   | 8120 | 700      | 27,56 | 5900   | 3,96  | IP+M01500-48 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four or six high tensile wire spirals

#### COVER

Synthetic rubber with high abrasion, ozone and weather resistance

#### APPLICABLE SPECS

Manuli Design, ISO 18752-C extension

#### TYPE APPROVALS

CU-TR; MSHA; CCS

## DIAMONDSPIR/21

VERY HIGH HYDRAULIC POWER TRANSMISSION



### KEY FEATURES

- Very high flow rates in high pressure hydraulics
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus fittings structures

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10102063* | 63        | - 40 | 2.1/2" | 77,5   | 3,05 | 81,5 | 3,21 | 210      | 3040 | 840   | 12180 | 700      | 27,56 | 5890   | 3,96  | IP+M01500-40 |      |
| H10102076* | 76        | - 48 | 3"     | 90,8   | 3,57 | 94,6 | 3,72 | 210      | 3040 | 840   | 12180 | 900      | 35,43 | 7910   | 5,32  | IP+M01810-48 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four to six high tensile steel spirals

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

MANULI® Design: ISO 18752 grade C extension

#### TYPE APPROVALS

CU-TR; MSHA; MA; CCS



## DIAMONDSPIR/35

VERY HIGH HYDRAULIC POWER TRANSMISSION



### KEY FEATURES

- Very high flow rates in high pressure
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus & InterLock Super fittings structures

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, off-shore applications, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D.  |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|-------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm    | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2         |
| H10103063* | 63        | - 40 | 2.1/2" | 80,6   | 3,17 | 84,8  | 3,34 | 350      | 5070 | 1400  | 20300 | 800      | 31,50 | 8105   | 5,45  | IP+M01810-40 |              |
| H10103076* | 76        | - 48 | 3"     | 97,9   | 3,85 | 101,9 | 4,01 | 350      | 5070 | 1400  | 20300 | 1000     | 39,37 | 12249  | 8,23  | IS+M02700-48 | IS+M02800-48 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Six to eight high tensile steel spirals

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

MANULI® Design: ISO 18752 grade C extension

#### TYPE APPROVALS

CU-TR; MSHA; MA; CCS

## FORESTMASTER/35

FORESTRY MACHINES



### KEY FEATURES

- Extreme high abrasion resistance, long life before reinforcement scratching
- Special composite cover layer with textile reinforcement for the maximum resistance in harsh environments
- Reduced bend radius
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 requirements

### APPLICATIONS & FLUIDS



- High pressure power lines for general hydraulics
- Designed for forestry machines booms and harvester heads, harsh environments and severe abrasions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2         |
| H10111019* | 19        | - 12 | 3/4"   | 27,5   | 1,08 | 31,7 | 1,25 | 350      | 5070 | 1400  | 20300 | 140      | 5,51 | 1251   | 0,84  | IP+M01500-12 | SP+M05400-12 |
| H10111025* | 25        | - 16 | 1"     | 34,6   | 1,36 | 38,8 | 1,53 | 350      | 5070 | 1400  | 20300 | 190      | 7,48 | 1843   | 1,24  | IP+M01500-16 | SP+M05400-16 |
| H10111031* | 31        | - 20 | 1.1/4" | 42,1   | 1,66 | 47,1 | 1,85 | 350      | 5070 | 1400  | 20300 | 230      | 9,06 | 2484   | 1,67  | IP+M01500-20 |              |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Composite cover with textile reinforcement, realized with high abrasion and ozone resistant synthetic rubber

#### APPLICABLE SPECS

Manuli design, ref. ISO 18752-C

#### TYPE APPROVALS

CU-TR; MSHA

## FORESTMASTER/42

FORESTRY MACHINES



### KEY FEATURES

- Extreme high abrasion resistance, long life before reinforcement scratching
- Special composite cover layer with textile reinforcement for the maximum resistance in harsh environments
- Reduced bend radius
- Good flexibility in the whole temperature range
- Easy mounting in any installation
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### APPLICATIONS & FLUIDS



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- Designed for forestry machines booms and harvester heads, harsh environments and severe abrasions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H10112019* | 19        | - 12 | 3/4" | 27,7   | 1,09 | 31,9 | 1,26 | 420      | 6090 | 1680  | 24360 | 150      | 5,91 | 1331   | 0,89  | IP+M01500-12 |      |
| H10112025* | 25        | - 16 | 1"   | 34,8   | 1,37 | 39,0 | 1,54 | 420      | 6090 | 1680  | 24360 | 210      | 8,27 | 1970   | 1,32  | IP+M01500-16 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Composite cover with textile reinforcement, realized with high abrasion and ozone resistant synthetic rubber

#### APPLICABLE SPECS

Manuli design, ref. ISO 18752-C

#### TYPE APPROVALS

CU-TR; MSHA

## MASTERTEX

LOW PRESSURE HIGH TEMPERATURE HOSE



### KEY FEATURES

- Long term aging resistance
- Suitability in high temperature applications
- High flexibility
- Wide range of fluid compatibility
- MF2000 Multifit type couplability

### APPLICATIONS & FLUIDS



- Hydraulics: low pressure lines, return lines, drain lines with high temperature fluids
- Mineral oils, synthetic base oils (HS), vegetable and rape seed oils, glycol and polyglycol based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|-----|-------|------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H09069006* | 6         | - 4  | 1/4" |        |      | 12,6 | 0,50 | 30       | 430 | 120   | 1740 | 45       | 1,77 | 115    | 0,08  | MF+M00830-04 |      |
| H09069010* | 10        | - 6  | 3/8" |        |      | 15,8 | 0,62 | 30       | 430 | 120   | 1740 | 75       | 2,95 | 160    | 0,11  | MF+M00820-06 |      |
| H09069012* | 12        | - 8  | 1/2" |        |      | 19,4 | 0,76 | 30       | 430 | 120   | 1740 | 90       | 3,54 | 210    | 0,14  | MF+M00820-08 |      |
| H09069016* | 16        | - 10 | 5/8" |        |      | 23,0 | 0,91 | 30       | 430 | 120   | 1740 | 115      | 4,53 | 285    | 0,19  | MF+M00820-10 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 275 °F  
-40 °C / 135 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high resistance textile braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

Exceed SAE 100 R6; ISO 4079 R6/1TE

#### TYPE APPROVALS

CU-TR

## TWINPOWER 4000

EASY INSTALLATION FOR OEMs



### KEY FEATURES

- Compact hose structure and reduced bend radius
- Isobaric rating for easy selection
- Smooth cover hose ensuring user friendly installation inside the booms
- Unique hose assembly solution for pressure and discharge line on the same body valve
- Reduced installation time compared to two separated assembly hose solutions
- Reduced risk of abrasion of the line inside the booms due to twin hose alignment
- Elimination of clamps to connect the two hose lines, with consequent easyness of insertion
- Warehouse/logistic optimization with reduced codes in stock

### APPLICATIONS & FLUIDS



- Hydraulics: hose range dedicated to aerial lifts, platforms, forklift trucks and telescopic booms applications
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H01119010* | 10        | - 6  | 3/8" | 15,4   | 0,61 | 18,0 | 0,71 | 280      | 4060 | 1120  | 16240 | 65       | 2,56 | 830    | 0,56  | MF+M00120-06 |      |
| H01119012* | 12        | - 8  | 1/2" | 18,5   | 0,73 | 21,5 | 0,85 | 280      | 4060 | 1120  | 16240 | 80       | 3,15 | 1100   | 0,74  | MF+M00120-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Synthetic rubber

#### REINFORCEMENT

Two high tensile steel wire braids

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

DN 10: ISO 11237 R19; SAE J517 type100R19.  
DN 12: ISO 11237 2SC; EN 857 2SC, SAE J517 type 100R16

#### TYPE APPROVALS

CU-TR

## TWINPOWER 5000

EASY INSTALLATION FOR OEMs



### KEY FEATURES

- Compact hose structure and reduced bend radius
- Isobaric rating exceeding international specifications
- Smooth cover hose ensuring user friendly installation inside the booms
- Unique hose assembly solution for pressure and discharge line on the same body valve
- Reduced installation time compared to two separated assembly hose solutions
- Reduced risk of abrasion of the line inside the booms due to twin hose alignment
- Elimination of clamps to connect the two hose lines, with consequent easyness of insertion
- Higher abrasion resistant and flame retardant MSHA approved cover
- Warehouse/logistic optimization with reduced codes in stock

### APPLICATIONS & FLUIDS



- Hydraulics: hose range dedicated to aerial lifts, platforms, forklift trucks and telescopic booms applications
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H01120008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 15,3 | 0,60 | 350      | 5070 | 1400  | 20300 | 55       | 2,17 | 682    | 0,46  | MF+M00120-05 |      |
| H01120010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 17,6 | 0,69 | 350      | 5070 | 1400  | 20300 | 65       | 2,56 | 830    | 0,56  | MF+M00120-06 |      |
| H01120012* | 12        | - 8  | 1/2"  | 18,6   | 0,73 | 21,6 | 0,85 | 350      | 5070 | 1400  | 20300 | 80       | 3,15 | 1190   | 0,80  | MF+M00120-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Synthetic rubber

#### REINFORCEMENT

Two high tensile steel wire braids

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Exceed ISO 11237 2SC/R16; EN 857 2SC; SAE J517 type 100R16

#### TYPE APPROVALS

CU-TR; MSHA

## TWINPOWER/PLUS

EASY INSTALLATION FOR OEMs



### KEY FEATURES

- Compact hose structure and reduced bend radius
- Approved with 500.000 flexing impulse cycles (1,33 WP), 125.000 flexing cycles (Manuli testing method)
- Smooth hose cover ensuring user friendly installation inside the booms
- Unique hose assembly solution for pressure and discharge line on the same body valve
- Reduced installation time compared to two separated assembly hose solutions
- Reduced risk of abrasion of the line inside the booms due to twin hose alignment
- Elimination of clamps to connect the two hose lines, with consequent easyness of insertion
- Higher abrasion resistant and flame retardant MSHA approved cover
- Warehouse/logistic optimization with reduced codes in stock

### APPLICATIONS & FLUIDS



- Hydraulics: hose range dedicated to aerial lifts, platforms, forklift trucks and telescopic booms applications
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2 |
| H01112A12* | 12        | - 8  | 1/2" | 18,5   | 0,73 | 22,5 | 0,89 | 310      | 4490 | 1240  | 17980 | 80       | 3,15 | 1220   | 0,82  | MF+M00120-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### MAX OPERATING TEMPERATURE

135 °C, 275 °F

#### TUBE

Synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

Exceed ISO 11237 2SC/R16; EN 857 2SC; SAE J517 type 100R16

#### TYPE APPROVALS

CU-TR; MSHA

## T°REX

EXTREME TEMPERATURE



### KEY FEATURES

- Extreme high temperature and aging resistance
- High flexibility
- Long service duration

### APPLICATIONS & FLUIDS



- Oil cooling systems, automatic transmissions with very high temperature of the oil, low pressure high temperature applications in hydraulic systems.
- Mineral oils, Synthetic Hydrocarbons oils, glycols and polyglycols (up to 121°C, 250°F)

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |      | MIN.BEND |      | WEIGHT |       | FITTINGS |             |
|------------|-----------|------|--------|--------|------|------|------|----------|-----|-------|------|----------|------|--------|-------|----------|-------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi | bar   | psi  | mm       | inch | g/m    | lb/ft | Std1     | Std2        |
| H01127031* | 31        | - 20 | 1.1/4" |        |      | 40,7 | 1,60 | 43       | 620 | 172   | 2490 | 203      | 7,99 | 925    | 0,62  | MF+      | M00110-20TX |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 320 °F  
-40 °C / 160 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel wire braid

#### COVER

Synthetic rubber with high ozone, weather and heat resistance

#### APPLICABLE SPECS

Manuli design

#### TYPE APPROVALS

CU-TR



## LUBEMASTER

LUBRICATION LINE



### KEY FEATURES

- Designed for applications with lubrication and transmission fluids
- Compact hose structures for installations in narrow spaces
- Isobaric pressure rating

### APPLICATIONS & FLUIDS



- Lubrication lines, auxiliary systems with transmission oils
- Mineral oils, glycols and polyglycols, transmission fluids (ATF), mineral based greases and lubrication oils.

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2   |
| H01135006* | 6         | - 4  | 1/4" | 10,2   | 0,40 | 12,0 | 0,47 | 210      | 3040 | 840   | 12180 | 50        | 1,97 | 180    | 0,12  | MF+M03300-04 | OPF-04 |
| H01135010* | 10        | - 6  | 3/8" | 14,4   | 0,57 | 16,2 | 0,64 | 210      | 3040 | 840   | 12180 | 65        | 2,56 | 300    | 0,20  | MF+M03300-06 | OPF-06 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

Manuli Design

#### TYPE APPROVALS

CU-TR

## JACKMASTER

EXTREME STATIC PRESSURE



### KEY FEATURES

- High static pressures in remote locations
- Weight-lifting and hydraulic actuations by means of jacking system
- Extreme static pressure
- Tested and approved for specific jacking applications
- Test certificate available upon request
- Standard MF2000 fittings couplability (no special fittings required)
- Halogen-Free hose line

### APPLICATIONS & FLUIDS



- Hydraulic jacking systems
- Mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |       | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|------|--------|------|------|------|----------|-------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi   | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01034006* | 6         | - 4  | 1/4" | 12,7   | 0,50 | 14,7 | 0,58 | 725      | 10510 | 1450  | 21030 | 100      | 3,94 | 370    | 0,25  | MF+M03400-04 | OPF-04 |
| H01034010* | 10        | - 6  | 3/8" | 15,0   | 0,59 | 16,8 | 0,66 | 725      | 10510 | 1450  | 21030 | 127      | 5,00 | 395    | 0,27  | MF+M03400-06 | OPF-06 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### MAX OPERATING TEMPERATURE

121 °C, 250 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

IJ100 hydraulic jack spec., ISO/CD 16301

#### TYPE APPROVALS

CU-TR



#### Remarks:

Product designed for jacking applications.  
Any different use may reduce service life. Please contact Manuli Hydraulics for more information.

## FIREEND

FIRE SUPPRESSION SYSTEMS



### KEY FEATURES

- SAE 100R1AT and ISO-1SN rated working pressures
- Flame retardant red cover
- Excellent performance for standard hydraulic applications
- Embossed indelible branding
- No skive MF2000 (two-pieces) and MF3000 (one-piece) fittings

### APPLICATIONS & FLUIDS



- Use in fire suppression systems of off-road vehicles, mining equipment, stationary engines. The hose present red cover for easy identification in the fire suppression system
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water, water based fire extinguishing agents

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |       | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|----------|-------|--------|-------|--------------|--------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch  | g/m    | lb/ft | Std1         | Std2   |
| H01124006* | 6         | - 4  | 1/4" | 11,0   | 0,43 | 13,0 | 0,51 | 225      | 3260 | 900   | 13050 | 100      | 3,94  | 220    | 0,15  | MF+M03400-04 | OPF-04 |
| H01124010* | 10        | - 6  | 3/8" | 15,0   | 0,59 | 17,0 | 0,67 | 180      | 2610 | 720   | 10440 | 127      | 5,00  | 325    | 0,22  | MF+M03400-06 | OPF-06 |
| H01124012* | 12        | - 8  | 1/2" | 18,1   | 0,71 | 20,1 | 0,79 | 160      | 2320 | 640   | 9280  | 178      | 7,01  | 410    | 0,28  | MF+M03400-08 | OPF-08 |
| H01124019* | 19        | - 12 | 3/4" | 25,3   | 1,00 | 27,9 | 1,10 | 105      | 1520 | 420   | 6090  | 240      | 9,45  | 660    | 0,44  | MF+M03400-12 | OPF-12 |
| H01124025* | 25        | - 16 | 1"   | 33,1   | 1,30 | 35,7 | 1,41 | 88       | 1270 | 350   | 5070  | 300      | 11,81 | 980    | 0,66  | MF+M03400-16 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel wire braid

#### COVER

Red synthetic rubber with high ozone, abrasion and weather resistance

#### APPLICABLE SPECS

ISO 1436-1SN; SAE J517 type 100R1AT; EN 853-1SN

#### TYPE APPROVALS

MSHA; CU-TR

## CPH/2SC

CABLE PROTECTION HOSE



### KEY FEATURES

- High flexibility
- Low weight
- High-tech manufacturing process
- Easy routing
- Blue flame retardant cover
- MSHA approval of the cover compound

### APPLICATIONS & FLUIDS



- Cable protection hose for mining applications;

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |     | BURST |     | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|------|--------|------|------|------|----------|-----|-------|-----|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi | bar   | psi | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H01033010* | 10        | - 6  | 3/8" | 15,0   | 0,59 | 16,8 | 0,66 |          |     |       |     |          |      | 395    | 0,27  | MF+M03400-06 | OPF-06 |
| H01033012* | 12        | - 8  | 1/2" | 18,5   | 0,73 | 20,3 | 0,80 |          |     |       |     |          |      | 495    | 0,33  | MF+M03400-08 | OPF-08 |
| H01033019* | 19        | - 12 | 3/4" | 25,6   | 1,01 | 27,6 | 1,09 |          |     |       |     |          |      | 815    | 0,55  | MF+M03400-12 | OPF-12 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 212 °F  
-40 °C / 100 °C

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Blue synthetic rubber with high ozone and weather resistance

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

MSHA; CU-TR

## GOLDENMINE

CHINA COAL MINE HYDRAULICS



### KEY FEATURES

- Very high flow rates in high pressure
- Extreme robustness of the hose structures
- Hose compact dimensions
- Approved with severe fatigue tests
- Superior abrasion resistance
- High ozone and weather resistance
- Flame retardant (MSHA) and antistatic properties
- Biological and mineral oils compatibility
- Crimped InterLock Plus fitting structure

### APPLICATIONS & FLUIDS



- Hydraulics: heavy duty power lines in China coal mines, hydrostatic transmissions in severe environmental conditions, specific installations with tough abrasion conditions, underground and open pit mining.
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10116063* | 63        | - 40 | 2.1/2" | 80,6   | 3,17 | 84,8 | 3,34 | 350      | 5070 | 1400  | 20300 | 800       | 31,50 | 8105   | 5,45  | IP+M01810-40 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °F / 250 °F  
-46 °C / 121 °C

#### MAX OPERATING TEMPERATURE

125 °C, 257 °F

#### TUBE

Oil resistant synthetic rubber

#### REINFORCEMENT

Six high tensile steel spirals

#### COVER

Synthetic rubber with high abrasion, ozone, weather and heat resistance

#### APPLICABLE SPECS

MT/T98

#### TYPE APPROVALS

MA China; MSHA; CU-TR



#### Remarks:

REMARK: The brand of the hose reports Allowable Working Pressure 50.0 MPa (500 bar), Safety Factor 2,8:1, according to the China norm MT/T98.

## GOLDENGUARD/3000

EMERGENCY HYDRAULIC SYSTEMS & BOP



### KEY FEATURES

- High robustness of the hose structures
- Thermal insulation of the hose with a special cover material
- Long lasting resistance of the cover layer
- Flame retardant properties of the cover
- High ozone and weather resistance

### APPLICATIONS & FLUIDS



- Hydraulics: designed for use in areas where the continuous hydraulic function is required to drive the emergency systems (industrial, marine, off-shore and refineries, defense, mining)
- Flexible hose for hydraulic systems of Blow Out Preventer control lines on drilling rigs
- Mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS |      |
|------------|-----------|------|------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|----------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1     | Std2 |
| H11022019* | 19        | - 12 | 3/4" | 26,9   | 1,06 | 32,3 | 1,27 | 207      | 3000 | 828   | 12000 | 180       | 7,09 | 1288   | 0,87  | OPK-12   |      |
| H11022025* | 25        | - 16 | 1"   | 34,1   | 1,34 | 40,1 | 1,58 | 207      | 3000 | 828   | 12000 | 230       | 9,06 | 1876   | 1,26  | OPK-16   |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °F / 250 °F  
-40 °C / 121 °C

#### TUBE

High grade NBR oil resistant rubber

#### REINFORCEMENT

Four high tensile steel wire spirals

#### COVER

Red insulant and flame retardant synthetic rubber

#### APPLICABLE SPECS

API 16D Fire Test (pr. 10.1.2), ISO 18752 type C

#### TYPE APPROVALS

DNV-GL; CU-TR; MSHA; API 16D fire test (DNV), LR



#### Remarks:

Refer to GoldenGuard assembling instructions and crimp chart for correct assembling (partial skive required).

## GOLDENGUARD/5000

EMERGENCY HYDRAULIC SYSTEMS & BOP



### KEY FEATURES

- High robustness of the hose structures
- Thermal insulation of the hose with a special cover material
- Long lasting resistance of the cover layer
- Flame retardant properties of the cover
- High ozone and weather resistance

### APPLICATIONS & FLUIDS



- Hydraulics: designed for use in areas where the continuous hydraulic function is required to drive the emergency systems (industrial, marine, off-shore and refineries, defense, mining)
- Flexible hose for hydraulic systems of Blow Out Preventer control lines on drilling rigs
- Mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |        | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |              |
|------------|-----------|------|--------|--------|------|------|------|----------|------|-------|-------|-----------|-------|--------|-------|--------------|--------------|
|            | DN        | dash | inch   | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2         |
| H11020010* | 10        | - 6  | 3/8"   | 16,7   | 0,66 | 20,7 | 0,81 | 345      | 5000 | 1380  | 20010 | 127       | 5,00  | 651    | 0,44  | MF+M00910-06 | OPK-06       |
| H11020012* | 12        | - 8  | 1/2"   | 20,1   | 0,79 | 24,1 | 0,95 | 345      | 5000 | 1380  | 20010 | 150       | 5,91  | 820    | 0,55  | MF+M00910-08 | OPK-08       |
| H11020016* | 16        | - 10 | 5/8"   | 25,5   | 1,00 | 30,9 | 1,22 | 345      | 5000 | 1380  | 20010 | 180       | 7,09  | 1490   | 1,00  | IP+M01500-10 |              |
| H11020019* | 19        | - 12 | 3/4"   | 29,0   | 1,14 | 36,2 | 1,43 | 345      | 5000 | 1380  | 20010 | 240       | 9,45  | 2024   | 1,36  | IP+M01500-12 | SP+M05400-12 |
| H11020025* | 25        | - 16 | 1"     | 36,0   | 1,42 | 44,0 | 1,73 | 345      | 5000 | 1380  | 20010 | 300       | 11,81 | 2742   | 1,84  | IP+M01500-16 | SP+M05400-16 |
| H11020031* | 31        | - 20 | 1.1/4" | 47,0   | 1,85 | 55,0 | 2,17 | 345      | 5000 | 1380  | 20010 | 420       | 16,54 | 4293   | 2,88  | IP+M01600-20 | SP+M05500-20 |
| H11020038* | 38        | - 24 | 1.1/2" | 54,6   | 2,15 | 62,6 | 2,46 | 345      | 5000 | 1380  | 20010 | 500       | 19,69 | 5531   | 3,72  | IP+M01600-24 | SP+M05500-24 |
| H11020051* | 51        | - 32 | 2"     | 68,4   | 2,69 | 76,4 | 3,01 | 345      | 5000 | 1380  | 20010 | 630       | 24,80 | 7712   | 5,18  | IP+M01800-32 | SP+M05500-32 |

### CONTINUOUS SERVICE TEMPERATURE

**RANGE**  
-40 °F / 250 °F  
-40 °C / 121 °C

### TUBE

High grade NBR oil resistant rubber

### REINFORCEMENT

Multiple plies of high tensile steel wire spirals (DN 16 to 51), 2 wire braids (DN 10 & 12)

### COVER

Red insulant and flame retardant synthetic rubber

### APPLICABLE SPECS

API 16D Fire Test (pr. 10.1.2), DN 10-12: ISO 18752-A; DN 16-51: ISO 18752-C (STD2 fitting) and type C "Plus" (STD1 fitting), ISO 3862 and SAE J517-100R13 performance

### TYPE APPROVALS

DNV-GL; CU-TR; MSHA; API 16D fire test (DNV), LR



### Remarks:

Refer to GoldenGuard assembling instructions and crimp chart for the use of accessories when required:

- STD1 fitting solution: Fire Sleeve & Metal Sleeve over the fitting area are required
- STD2 fitting solution: No accessories required

The STD1 fitting solution has to be selected for the most demanding applications.

DN 10 & 12: Max. continuous temperature 100°C for these wire braided references.



## EMERGENCY HYDRAULIC SYSTEMS & BOP

### KEY FEATURES

- High robustness of the hose structures
- Thermal insulation of the hose with a stainless armour cover
- Long lasting resistance of the cover layer
- Flame retardant properties
- High ozone and weather resistance

### APPLICATIONS & FLUIDS:

- Hydraulics: designed for use in areas where the continuous hydraulic function is required to drive the emergency systems (industrial, marine, off-shore and refineries, defense, mining);
- Flexible hose for hydraulic systems of Blow Out Preventer control lines on drilling rigs;
- Mineral oils, glycols and polyglycols, mineral oils in aqueous emulsion.

| HOSE SIZE |      | MAX W.P. |     | TEST PRESSURE |     | BURST PRESSURE |      | HOSE  |                  | FITTING   |         | ACCESSORIES  |                |              |
|-----------|------|----------|-----|---------------|-----|----------------|------|-------|------------------|-----------|---------|--------------|----------------|--------------|
| DN        | dash | inch     | bar | psi           | bar | psi            | bar  | psi   | PART. REF.       | Insert    | Ferrule | Armour guard | Metal Sleeve   |              |
| 10        | -6   | 3/8"     | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/2PLUS | H01101010 | MF      | IM00910-06   | JP45G090280099 | IO82110-06GA |
| 12        | -8   | 1/2"     | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/2PLUS | H01101012 | MF      | IM00910-08   | JP45G090320099 | IO82110-08GA |
| 16        | -10  | 5/8"     | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/4SH   | H10044016 | IP      | IM01500-10   | JP45G090400099 | IO82110-10GA |
| 19        | -12  | 3/4"     | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/13    | H10035019 | IP      | IM01500-12   | JP45G090450099 | IO82110-12GA |
| 25        | -16  | 1"       | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/13    | H10035025 | IP      | IM01500-16   | JP45G090500099 | IO82110-16GA |
| 31        | -20  | 1-1/4"   | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/13    | H10035032 | IP      | IM01600-20   | JP45G090650099 | IO82110-20GA |
| 38        | -24  | 1-1/2"   | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/13    | H10035040 | IP      | IM01600-24   | JP45G090750099 | IO82110-24GA |
| 51        | -32  | 2"       | 345 | 5000          | 690 | 10000          | 1380 | 20000 | ROCKMASTER/13    | H10035051 | IP      | IM01800-32   | JP45G090900099 | IO82110-32GA |

**CONTINUOUS SERVICE TEMPERATURE RANGE: TUBE:** High grade NBR oil resistant rubber

DN 10, 12:  
-40°C / +100°C  
-40°F / +212°F

DN16-51:  
-40°C / +121°C  
-40°F / +250°F

**REINFORCEMENT:** Multiple plies of high tensile steel wire spirals (DN 16 to 51), 2 wire braids (DN 10, 12)

**COVER:** High abrasion and ozone resistant rubber

**FITTINGS:** MF2000 Interlock Plus crimped fittings (DN 10, 12 Multifit fittings), stainless steel and carbon steel

**EXTERNAL PROTECTION:** stainless steel flexible armour

**APPLICABLE SPECS:** API 16D Fire Test (pr. 10.1.2).


DN 10, 12: ISO 18752-A  
DN 16-51: ISO 18752-C, ISO 3862 and SAE J517 type 100R13 performance

**TYPE APPROVALS:** MSHA, DNV-GL, LR, (API 16D fire test)



**Remark:**  
Refer to GOLDENARMOUR assembling instructions and crimp chart for the correct assembling of the hose.

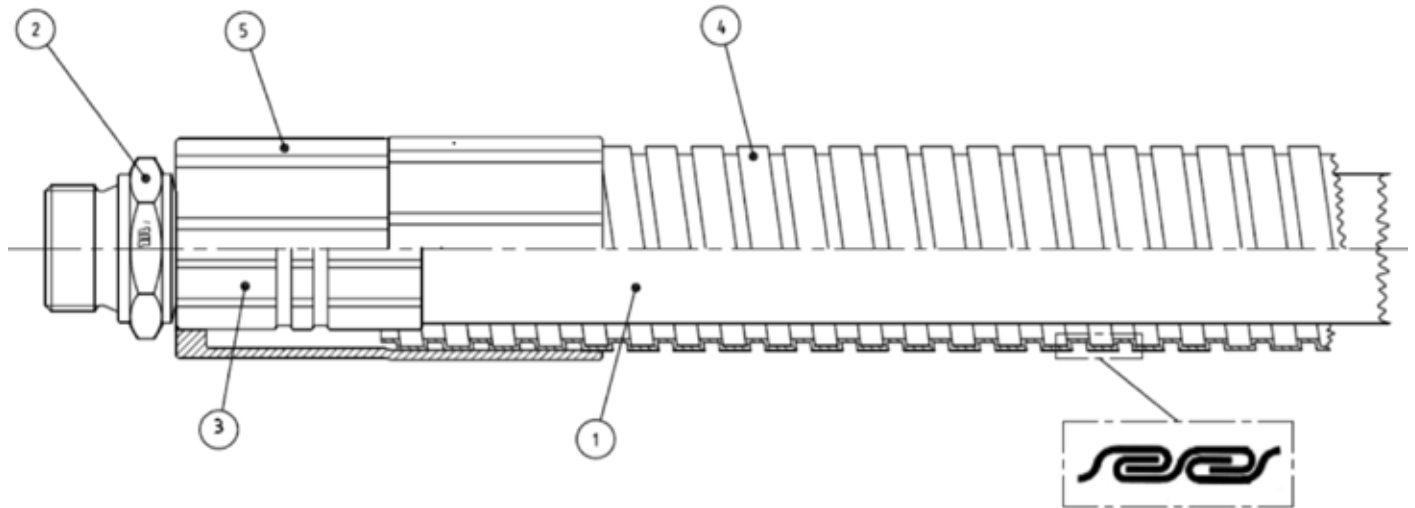


**Hose assembly branding:**  
The GOLDENARMOUR must report at least the following information in the hose brand:  
 - inch size - WP 5000 psi (on the metal sleeve)  
 - assembling date - assembler identification (additional tag or on the metal sleeve)



## GOLDENARMOUR MAKE-UP

The GoldenArmour assembly is made up of the following components:



1. Hydraulic hose
2. Hydraulic MF2000 insert type, with additional tail o-ring only for IP fitting solution
3. Hydraulic MF2000 ferrule type
4. External flexible Metal Armour (interlocked flexible metal hose)
5. Metal Sleeve

## ARMOUR JOINING PROCEDURE

Individual pieces of the GoldenArmour metal sleeve can be joined using a dedicated Armour Joint. The procedure for joining the pieces of flexible armour is as follows:

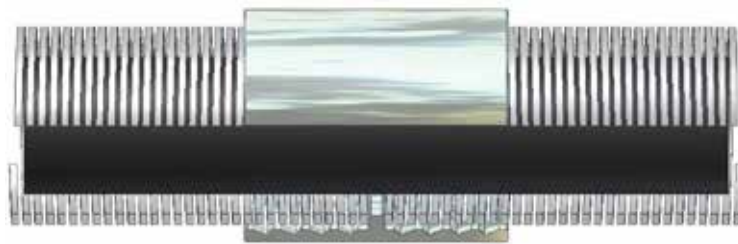
1. Slide the Armour Joint onto the hose.



2. Insert the first piece of flexible armour into the Armour Joint until it reaches the internal stop.



3. Insert the second piece of flexible armour into the other side of the Armour Joint until it also reaches the internal stop.



## ACCESSORIES DATASHEETS

## ACCESSORIES



## STAINLESS STEEL ARMOUR GUARD

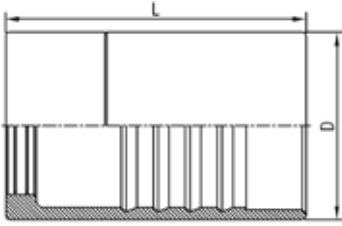
### METAL FLEXIBLE STRIP WOUND HOSE

| PART. REF.     | SIZE |       | MAX OD |      | MIN. BEND RADIUS |       | WEIGHT |       |
|----------------|------|-------|--------|------|------------------|-------|--------|-------|
|                | DN   | inch  | mm     | inch | mm               | inch  | g/m    | lb/ft |
| JP45G090280099 | 25   | 1"    | 32.00  | 1.26 | 127              | 5.00  | 565    | 0.38  |
| JP45G090320099 | 31   | 1.1/4 | 36.50  | 1.44 | 150              | 5.91  | 703    | 0.47  |
| JP45G090400099 | 38   | 1.1/2 | 44.50  | 1.75 | 180              | 7.09  | 939    | 0.63  |
| JP45G090450099 | 46   | 1.3/4 | 51.00  | 2.01 | 240              | 9.45  | 1118   | 0.75  |
| JP45G090500099 | 51   | 2     | 57.50  | 2.26 | 300              | 11.81 | 1301   | 0.87  |
| JP45G090650099 | 63   | 2.1/2 | 70.00  | 2.76 | 420              | 16.54 | 1636   | 1.10  |
| JP45G090750099 | 76   | 3     | 82.50  | 3.25 | 500              | 19.69 | 1920   | 1.29  |
| JP45G090900099 | 89   | 3.1/2 | 96.00  | 3.78 | 630              | 24.80 | 2386   | 1.60  |

## ACCESSORIES

### IO821GA

METAL SLEEVE FOR ARMOUR (STAINLESS STEEL)

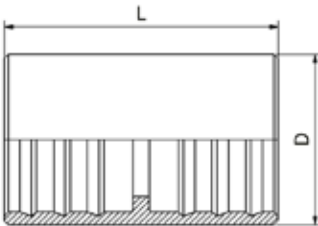


| PART. REF.   | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |     |  |  |  |  |
|--------------|-----------|------|--------|------------------|--|-------|-----|--|--|--|--|
|              | DN        | Dash | inch   |                  |  | D     | L   |  |  |  |  |
| IO82110-06GA | 10        | - 6  | 3/8"   |                  |  | 40,5  | 60  |  |  |  |  |
| IO82110-08GA | 12        | - 8  | 1/2"   |                  |  | 46,8  | 75  |  |  |  |  |
| IO82110-10GA | 16        | - 10 | 5/8"   |                  |  | 53,2  | 90  |  |  |  |  |
| IO82110-12GA | 19        | - 12 | 3/4"   |                  |  | 59,5  | 105 |  |  |  |  |
| IO82110-16GA | 25        | - 16 | 1"     |                  |  | 66    | 120 |  |  |  |  |
| IO82110-20GA | 31        | - 20 | 1.1/4" |                  |  | 78,6  | 135 |  |  |  |  |
| IO82110-24GA | 38        | - 24 | 1.1/2" |                  |  | 91,5  | 150 |  |  |  |  |
| IO82110-32GA | 51        | - 32 | 2"     |                  |  | 106,5 | 165 |  |  |  |  |

## ACCESSORIES

### IO84210

ARMOUR-JOINT



| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |     |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|-----|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L   |  |  |  |  |
| IO84210-06 | 10        | - 6  | 3/8"   |                  |  | 40,5  | 65  |  |  |  |  |
| IO84210-08 | 12        | - 8  | 1/2"   |                  |  | 46,8  | 65  |  |  |  |  |
| IO84210-10 | 16        | - 10 | 5/8"   |                  |  | 53,2  | 65  |  |  |  |  |
| IO84210-12 | 19        | - 12 | 3/4"   |                  |  | 59,5  | 70  |  |  |  |  |
| IO84210-16 | 25        | - 16 | 1"     |                  |  | 66    | 75  |  |  |  |  |
| IO84210-20 | 31        | - 20 | 1.1/4" |                  |  | 78,6  | 95  |  |  |  |  |
| IO84210-24 | 38        | - 24 | 1.1/2" |                  |  | 91,5  | 105 |  |  |  |  |
| IO84210-32 | 51        | - 32 | 2"     |                  |  | 106,5 | 115 |  |  |  |  |





# FITTINGS



# FITTINGS

## INTRODUCTION

Manuli Hydraulics is globally respected for the breadth and versatility of our hydraulic fittings range. Comprising over 6,000 references, we have fittings to suit most of the common international standards as well as the specific requirements of several of our important OEM customers.

The Manuli Hydraulics fittings range is made up of 3 families: MF2000, MF3000 and Smart Connectors.

The **MF2000** range comprises our core range of two-piece fitting solutions and has over 4,000 references:

**Multifit (MF)** - Simple and cost effective universal solution for wire spiral and wire braid hoses

**Minifit (MN)** - Extremely compact fittings for braided hose (DN6 to DN10)

**Interlock Plus (IP)** - Maximum reliability for very high pressure wire spiral hoses in heavy-duty applications

**Interlock Super (IS)** - High-tech swaged fittings for very large bore wire spiral hose

**Spiral fit (SP)** - No-skive insert for wire spiral hoses and large bore hose

**Xtralock (XL)** - Designed for ultra high pressure hydraulic power lines

**Blastlock (BL)** - Ultra high pressure insert for water-blasting applications

**Pushlock (PL)** - Insert solution for low pressure applications without the need for a swaged ferrule

The **MF3000** range is made up of one-piece fittings for hoses at medium/high pressures:

**One-Piece Flat (OPF)** - No-skive, compact and flat-crimp fittings for wire braid hoses up to 1"

**One-Piece Kompact (OPK)** - No-skive, compact and flat-crimp fittings for wire spiral and wire braid high pressure hoses up to 2"

There are also three types of **Smart Connectors** available:

**RotoFit** - A well-known and patented Manuli Hydraulics solution designed to eliminate hose twist under external torques, which can be a major contributor to premature hose failure.

The additional advantage of RotoFit is that it is a "Direct-to-Hose" and "Direct-to-Port" solution. By eliminating the need for adaptors, the number of possible leak points is reduced.

**EasyFit** - The Manuli "threadless" fittings solution for quick and easy installation of assemblies.

This innovative termination end is fitted with a simple axial push, allowing the hose to self-align and thus improve service life. Maintenance and repair time is also drastically reduced and installation / disconnection in restricted spaces is far easier.

Moreover the "Direct-to-Port" concept eliminates the need for adaptors and the possibility of related leakages.

All EasyFit fittings have an eco-friendly coating treatment for superior corrosion performance.

**FastFit** - A "one plug" connection consisting of a male half integrated onto the hose and then inserted into the female cartridge. This easy and safe operation does not require any tools for assembly and allows easy installation in restricted areas or in complex configurations.

FastFit comes in a wide range of cartridges with direct connection on most standard ports, including BSP, SAE METRIC and NPTF.

# FITTINGS VISUAL INDEX

## CONNECTORS

### TWO PIECE TECHNOLOGY

#### OVERVIEW

MINIFIT



F1

MULTIFIT



F2

INTERLOCK PLUS



F3

INTERLOCK SUPER



F4

XTRALOCK



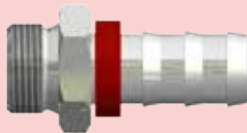
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SPIRALFIT



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PUSH-LOCK



F7

ACCESSORIES

F8

### ONE PIECE TECHNOLOGY

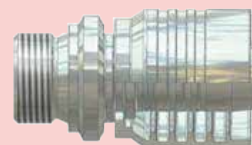
#### OVERVIEW

OPF



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OPK



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FITTINGS  
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## SMART CONNECTORS

### OVERVIEW

EASYFIT



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FASTFIT



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ROTOFIT



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| M22541KR         | 2       | 29   |
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| M22582F          | 2       | 29   |
| M22591KR         | 2       | 26   |
| M22592-22593     | 2       | 25   |
| M22612           | 2       | 40   |
| M22692           | 2       | 40   |
| M22711-KR-K      | 2       | 24   |
| M22712           | 2       | 23   |
| M22812           | 2       | 42   |
| M22H10           | 11      | 2    |
| M23301P          | 2       | 51   |
| M23301S          | 2       | 51   |
| M23301T          | 2       | 52   |
| M23311           | 2       | 43   |
| M23321           | 2       | 44   |
| M23331           | 2       | 45   |
| M23341           | 2       | 46   |
| M23361           | 2       | 47   |
| M23371           | 2       | 48   |
| M23391           | 2       | 49   |
| M23391 LONG DROP | 2       | 50   |
| M23611           | 2       | 52   |
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| M24141           | 2       | 76   |
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| M24491 LONG DROP | 2       | 35   |
| M24791KR         | 2       | 27   |
| M24792-24793     | 2       | 26   |
| M27411           | 2       | 32   |
| M27411KR         | 2       | 32   |
| M30050           | 3       | 30   |
| M30510           | 3       | 2    |
| M31210           | 3       | 18   |
| M32410           | 3       | 6    |
| M32510           | 3       | 4    |
| M32810           | 3       | 11   |
| M33010           | 3       | 11   |
| M40812           | 3       | 3    |
| M40842           | 3       | 4    |
| M40892           | 3       | 3    |
| M41243 LONG DROP | 3       | 20   |
| M41293 LONG DROP | 3       | 20   |
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| M42412           | 3       | 7    |
| M42441           | 3       | 9    |
| M42442           | 3       | 10   |
| M42443           | 3       | 10   |
| M42491           | 3       | 8    |
| M42492           | 3       | 8    |
| M42493           | 3       | 9    |
| M42512           | 3       | 5    |
| M42542           | 3       | 6    |
| M42592           | 3       | 5    |
| M43310           | 3       | 12   |
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| M43990 LONG DROP | 3       | 27   |
| M43990CT         | 3       | 26   |
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| M48410           | 3       | 27   |
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| MR11210          | 13      | 4    |
| MR11910          | 13      | 4    |
| MR12410          | 13      | 2    |
| MR12810          | 13      | 2    |
| MR20812          | 13      | 1    |
| MR21512          | 13      | 4    |
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| MR22711          | 13      | 2    |
| MR23311          | 13      | 3    |
| MR30510          | 13      | 5    |
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| MS0813            | 1       | 5    |
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| O83308            | 8       | 2    |
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| O83609            | 8       | 2    |
| O88407            | 8       | 4    |
| O88507            | 8       | 3    |
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| OPF10710          | 9       | 2    |
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| OPF24792-OPF24793 LONG DROP | 9       | 12   |
| OPF3100                     | 9       | 1    |
| OPK10510                    | 10      | 1    |
| OPK11110                    | 10      | 27   |
| OPK11210                    | 10      | 31   |
| OPK11710                    | 10      | 33   |
| OPK11810                    | 10      | 33   |
| OPK12410                    | 10      | 14   |
| OPK12510                    | 10      | 8    |
| OPK12810                    | 10      | 20   |
| OPK13010                    | 10      | 19   |
| OPK14110R                   | 10      | 21   |
| OPK14310                    | 10      | 19   |
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| OPK21592-OPK21593           | 10      | 29   |
| OPK21612-OPK21613           | 10      | 31   |
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| OPK21813                    | 10      | 33   |
| OPK22411                    | 10      | 15   |
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| OPK22591KR                  | 10      | 11   |
| OPK22592-OPK22593           | 10      | 10   |
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| OPK22712                    | 10      | 8    |
| OPK22812                    | 10      | 21   |
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| OPK23321                    | 10      | 22   |
| OPK23331                    | 10      | 23   |
| OPK23341                    | 10      | 23   |
| OPK23361                    | 10      | 24   |
| OPK23371                    | 10      | 24   |
| OPK23391                    | 10      | 25   |
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| OPK23941                    | 10      | 37   |
| OPK23991                    | 10      | 36   |
| OPK24011-OPK24012           | 10      | 34   |
| OPK24111                    | 10      | 35   |
| OPK24141                    | 10      | 35   |
| OPK24191                    | 10      | 35   |
| OPK24491 LONG DROP          | 10      | 17   |
| OPK24791KR                  | 10      | 12   |
| OPK24792-OPK24793 LONG DROP | 10      | 11   |
| OPK3610                     | 10      | 1    |

# FITTINGS - TERMINATION ENDS WORKING PRESSURE

 FITTINGS  
F-08

| Fitting  | Maximum Working Pressure (bar) |                 |                |                  |                  |                |                   |                   |                    |                    |                  |                  |              |              |          |  |
|--|--------------------------------|-----------------|----------------|------------------|------------------|----------------|-------------------|-------------------|--------------------|--------------------|------------------|------------------|--------------|--------------|----------|--|
|  | Hose Size / Dash               |                 |                |                  |                  |                |                   |                   |                    |                    |                  |                  |              |              |          |  |
|  | 3/16"                          | 1/4"            | 5/16"          | 3/8"             | 1/2"             | 5/8"           | 3/4"              | 1"                | 1 1/4"             | 1 1/2"             | 2"               | 2 1/2"           | 3"           | 3 1/2"       | 4"       |  |
|  | 03                             | 04              | 05             | 06               | 08               | 10             | 12                | 16                | 20                 | 24                 | 32               | 40               | 48           | 56           | 64       |  |
| <b>BSP 60° CONE</b><br>BS5200 / ISO 8434-6                         | 1/8"-28<br>350                 | 1/4"-19<br>500  |                | 3/8"-19<br>460   | 1/2"-14<br>430   | 5/8"-14<br>350 | 3/4"-14<br>350    | 1"-11<br>350      | 1.1/4"-11<br>350   | 1.1/2"-11<br>300   | 2"-11<br>300     | 2.1/2"-11<br>140 | 3"-11<br>105 |              |          |  |
| <b>JIC 37° CONE</b><br>ISO 8434-2 / SAE J514                       |                                | 7/16"-20<br>350 | 1/2"-20<br>350 | 9/16"-18<br>350  | 3/4"-16<br>350   | 7/8"-14<br>350 | 1.1/16"-12<br>350 | 1.5/16"-12<br>280 | 1.5/8"-12<br>210   | 1.7/8"-12<br>160   | 2.1/2"-12<br>125 |                  |              |              |          |  |
| <b>ORFS</b><br>ISO 8434-3 / SAE J1453                              |                                | 9/16"-18<br>460 |                | 11/16"-16<br>460 | 13/16"-16<br>420 | 1"-14<br>420   | 1.3/16"-12<br>420 | 1.7/16"-12<br>420 | 1.11/16"-12<br>420 | 2"-12<br>350       |                  |                  |              |              |          |  |
| <b>NPTF MALE</b><br>SAE J514 / ASME B1.20.3                        | 1/8"-27<br>350                 | 1/4"-18<br>350  |                | 3/8"-18<br>280   | 1/2"-14<br>245   |                | 3/4"-14<br>210    | 1"-11,5<br>175    | 1.1/4"-11,5<br>145 | 1.1/2"-11,5<br>145 | 2"-11,5<br>145   |                  |              |              |          |  |
| <b>NPSM FEMALE</b><br>SAE J514                                     | 1/8"-27<br>350                 | 1/4"-18<br>350  |                | 3/8"-18<br>280   | 1/2"-14<br>245   |                | 3/4"-14<br>210    | 1"-11,5<br>175    | 1.1/4"-11,5<br>145 | 1.1/2"-11,5<br>145 | 2"-11,5<br>145   |                  |              |              |          |  |
| <b>SAE 45° CONE</b><br>SAE J512                                    |                                | 7/16"-20<br>350 | 1/2"-20<br>350 | 5/8"-18<br>350   | 3/4"-16<br>310   | 7/8"-14<br>240 | 1.1/16"-14<br>240 | 1.3/8"-12<br>210  |                    |                    |                  |                  |              |              |          |  |
| <b>ISO/SAE CODE 61 FLANGE</b><br>ISO 6162-1 / SAE J518-1           |                                |                 |                |                  | 1/2"<br>350      |                | 3/4"<br>350       | 1"<br>350         | 1-1/4"<br>280      | 1-1/2"<br>210      | 2"<br>210        | 2-1/2"<br>175    | 3"<br>160    | 3-1/2"<br>35 | 4"<br>35 |  |
| <b>ISO/SAE CODE 62 FLANGE</b><br>ISO 6162-2 / SAE J518-2           |                                |                 |                |                  | 1/2"<br>420      |                | 3/4"<br>420       | 1"<br>420         | 1-1/4"<br>420      | 1-1/2"<br>420      | 2"<br>420        | 2-1/2"<br>420    | 3"<br>420    |              |          |  |
| <b>XTRAFRANGE/61</b><br>ISO 6162-1 / SAE J518-1<br>PORT COMPATIBLE |                                |                 |                |                  |                  |                |                   | 1"<br>420         | 1-1/4"<br>420      | 1-1/2"<br>420      | 2"<br>420        | 2-1/2"<br>420    |              |              |          |  |
| <b>XTRAFRANGE/61</b><br>ISO 6162-1 / SAE J518-1<br>PORT COMPATIBLE |                                |                 |                |                  |                  |                | 3/4"<br>560       | 1"<br>560         | 1-1/4"<br>560      | 1-1/2"<br>560      | 2"<br>450        | 2-1/2"<br>350    | 3"<br>420    |              |          |  |
| <b>FLANGE/PLUS</b><br>ISO 6162-2 / SAE J518-2<br>PORT COMPATIBLE   |                                |                 |                |                  |                  |                | 3/4"<br>420       | 1"<br>420         | 1-1/4"<br>420      |                    |                  |                  |              |              |          |  |
| <b>CAT FLANGE</b><br>ISO 6162-2 / SAE J518-2<br>PORT COMPATIBLE    |                                |                 |                |                  |                  |                | 3/4"<br>420       | 1"<br>420         | 1-1/4"<br>420      | 1-1/2"<br>420      | 2"<br>420        |                  |              |              |          |  |
| <b>METRIC CONE 24° L SERIES</b><br>ISO 8434-1 / DIN 3865           | M12x1,5<br>415                 | M14x1,5<br>400  | M16x1,5<br>350 | M18x1,5<br>330   | M22x1,5<br>275   | M26x1,5<br>250 | M30x2<br>245      | M36x2<br>245      | M45x2<br>220       | M52x2<br>100       |                  |                  |              |              |          |  |
| <b>METRIC CONE 24° S SERIES</b><br>ISO 8434-1 / DIN 3865           | M16x1,5<br>630                 | M18x1,5<br>630  | M20x1,5<br>630 | M20x1,5<br>630   | M24x1,5<br>450   | M30x2<br>420   | M36x2<br>385      | M42x2<br>350      | M52x2<br>280       |                    |                  |                  |              |              |          |  |
| <b>METRIC CONE 60° LL SERIES</b><br>DIN 20066                      |                                |                 |                |                  |                  |                | M30x2<br>63       | M38x1,5<br>63     | M45x1,5<br>63      | M52x1,5<br>63      | M65x2<br>40      |                  |              |              |          |  |
| <b>METRIC MULTISEAL</b><br>DIN 20066                               | M12x1,5<br>250                 | M14x1,5<br>250  | M16x1,5<br>250 | M18x1,5<br>250   | M22x1,5<br>250   | M26x1,5<br>160 |                   |                   |                    |                    |                  |                  |              |              |          |  |
| <b>FRENCH METRIC MILLIMETRIC</b><br>NF E48-064                     |                                |                 |                |                  |                  | M27x1,5<br>420 | M30x1,5<br>420    | M33x1,5<br>420    |                    |                    |                  |                  |              |              |          |  |
| <b>FRENCH GAZ MILLIMETRIC</b><br>NF E48-064                        |                                |                 |                | M20x1,5<br>630   | M24x1,5<br>630   | M30x1,5<br>420 | M36x1,5<br>420    | M45x1,5<br>420    |                    |                    |                  |                  |              |              |          |  |
| <b>JIS METRIC FEMALE 60° CONE (KOMATSU)</b><br>JIS B8363           |                                | M14x1,5<br>350  | M16x1,5<br>350 | M18x1,5<br>350   | M22x1,5<br>350   | M24x1,5<br>280 | M30x1,5<br>280    | M33x1,5<br>280    | M36x1,5<br>175     | M42x2<br>105       |                  |                  |              |              |          |  |
| <b>JIS GAS FEMALE 60° CONE (TOYOTA)</b><br>JIS B8363               |                                | 1/4"-19<br>350  |                | 3/8"-19<br>350   | 1/2"-14<br>350   |                | 3/4"-14<br>280    | 1"-11<br>280      | 1.1/4"-11<br>175   | 1.1/2"-11<br>105   | 2"-11<br>105     |                  |              |              |          |  |
| <b>WASHCLEANER</b>   |                                |                 |                | M22x1,5<br>420   |                  |                |                   |                   |                    |                    |                  |                  |              |              |          |  |



**MINIFIT**





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| MS0543       | 1       | 4    |
| MS0591KR     | 1       | 3    |
| MS0593       | 1       | 3    |
| MS0813       | 1       | 5    |
| MS0843       | 1       | 7    |
| MS0882F      | 1       | 8    |
| MS0893       | 1       | 6    |
| M0811HKR     | 1       | 5    |
| MS0841KR     | 1       | 7    |
| MS0891KR     | 1       | 6    |

## MINIFIT

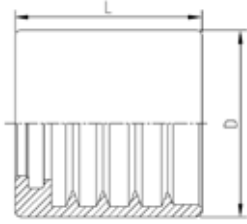
|             |       |      |       |      |      |      |      |     |        |        |     |        |        |     |
|-------------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|
| <b>DN</b>   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  |
| <b>Inch</b> | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  |
| <b>Size</b> | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 |

## FERRULES

|        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M02400 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

## FITTINGS

|     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|



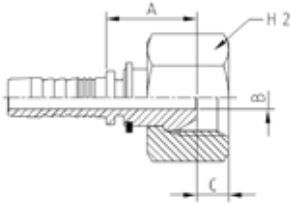
FERRULE

**M02400**

NO-SKIVE FERRULE FOR COMPACT HOSES

| PART. REF. | HOSE BORE |      |       | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|-------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch  |                  |  | D    | L    |  |  |  |  |
| M02400-04  | 6         | - 4  | 1/4"  |                  |  | 18,5 | 18,5 |  |  |  |  |
| M02400-05  | 8         | - 5  | 5/16" |                  |  | 21,3 | 19,6 |  |  |  |  |
| M02400-06  | 10        | - 6  | 3/8"  |                  |  | 23,8 | 21,2 |  |  |  |  |

## BS STANDARD CONNECTIONS

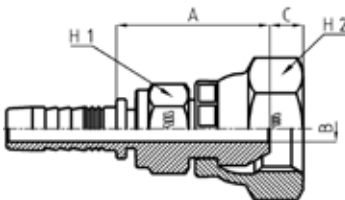


### MS0513

**BSP FEMALE 60° CONE BS5200  
/ISO 8434-6**

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |  |  |  |
|--------------|-----------|------|------|-----------|--|------------------|------|-----|----|--|--|--|
|              | DN        | Dash | inch |           |  | T                | B    | A   | C  |  |  |  |
| MS0513-04-04 | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 15,7 | 5,4 | 19 |  |  |  |
| MS0513-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 18,3 | 6   | 22 |  |  |  |

## BS STANDARD CONNECTIONS

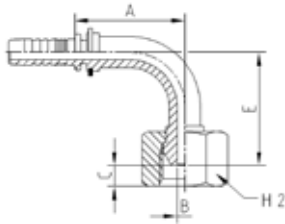


### MS0511KR

**BSP FEMALE 60° CONE - BS5200 / ISO 8434-6**

| PART. REF.        | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |  |  |  |
|-------------------|-----------|------|------|-----------|--|------------------|------|-----|----|--|--|--|
|                   | DN        | Dash | inch |           |  | T                | B    | A   | C  |  |  |  |
| MS0511-04-04H12KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 23,5 | 5,2 | 19 |  |  |  |
| MS0511-06-06H17KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 26   | 6   | 22 |  |  |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

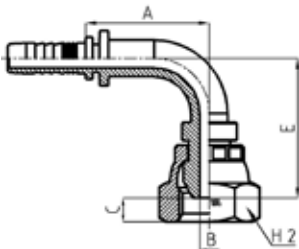


## BS STANDARD CONNECTIONS

### MS0593

90° BSP FEMALE 60° CONE BS5200  
/ISO 8434-6

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|--------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| MS0593-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 28,2 | 5,4 | 29   | 19 |    |  |
| MS0593-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 35,3 | 6   | 31,5 | 22 |    |  |



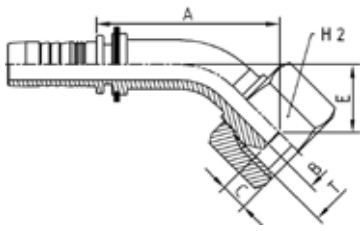
## BS STANDARD CONNECTIONS

### MS0591KR

90° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 8434-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| MS0591-04-04KR | 6         | -4   | 1/4" | 1/4" - 19 |  | 4,2              | 27   | 5,2 | 30,5 | 19 |    |  |
| MS0591-06-06KR | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 34,5 | 6   | 37,5 | 22 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

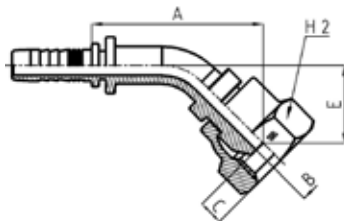


## BS STANDARD CONNECTIONS

### MS0543

45° BSP FEMALE 60° CONE BS5200  
/ ISO 8434-6

| PART. REF.   | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |   |      |     |      |    |  |  |
|--------------|-----------|------|------|-----------|------------------|---|------|-----|------|----|--|--|
|              | DN        | Dash | inch |           | T                | B | A    | C   | E    | H2 |  |  |
| MS0543-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |                  | 4 | 34,7 | 5,4 | 14,7 | 19 |  |  |
| MS0543-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |                  | 7 | 41   | 6   | 15,3 | 22 |  |  |



## BS STANDARD CONNECTIONS

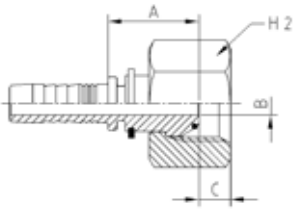
### MS0541KR

BSP FEMALE 60° CONE - BS5200 / ISO 8434-6

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |     |      |     |      |    |  |  |
|----------------|-----------|------|------|-----------|------------------|-----|------|-----|------|----|--|--|
|                | DN        | Dash | inch |           | T                | B   | A    | C   | E    | H2 |  |  |
| MS0541-04-04KR | 6         | -4   | 1/4" | 1/4" - 19 |                  | 4,2 | 36,5 | 5,2 | 16,6 | 19 |  |  |
| MS0541-06-06KR | 10        | -6   | 3/8" | 3/8" - 19 |                  | 7   | 44,5 | 6   | 20   | 22 |  |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## BS STANDARD CONNECTIONS

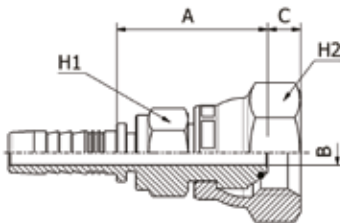


### MS0813

**BSP O-RING FEMALE 60° CONE BS5200  
/ISO 8434-6**

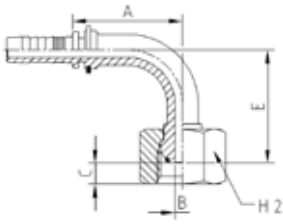
| PART. REF.   | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |     |    |    |  |  |
|--------------|-----------|------|-------|-----------|--|------------------|------|-----|----|----|--|--|
|              | DN        | Dash | inch  |           |  | T                | B    | A   | C  | H2 |  |  |
| MS0813-04-04 | 6         | - 4  | 1/4"  | 1/4" - 19 |  | 4                | 15,7 | 5,4 | 19 |    |  |  |
| MS0813-05-06 | 8         | - 5  | 5/16" | 3/8" - 19 |  | 7                | 18   | 6   | 22 |    |  |  |
| MS0813-06-06 | 10        | - 6  | 3/8"  | 3/8" - 19 |  | 7                | 18,3 | 6   | 22 |    |  |  |

## BS STANDARD CONNECTIONS



### MS0811HKR

| PART. REF.        | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |    |    |  |
|-------------------|-----------|------|------|-----------|--|------------------|------|-----|----|----|----|--|
|                   | DN        | Dash | inch |           |  | T                | B    | A   | C  | H1 | H2 |  |
| MS0811-04-04H12KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 23,5 | 5,2 | 12 | 19 |    |  |
| MS0811-06-06H17KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 26   | 6   | 17 | 22 |    |  |

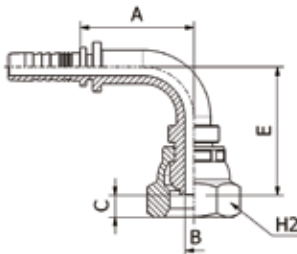


## BS STANDARD CONNECTIONS

### MS0893

90° BSP O-RING FEMALE 60° CONE BS5200  
/ISO 8434-6

| PART. REF.   | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|--------------|-----------|------|-------|-----------|--|------------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch  |           |  | T                | B    | A   | C    | E  | H2 |  |
| MS0893-04-04 | 6         | -4   | 1/4"  | 1/4" - 19 |  | 4                | 28,2 | 5,4 | 29   | 19 |    |  |
| MS0893-05-06 | 8         | -5   | 5/16" | 3/8" - 19 |  | 7                | 31   | 6   | 32,5 | 22 |    |  |
| MS0893-06-06 | 10        | -6   | 3/8"  | 3/8" - 19 |  | 7                | 35,3 | 6   | 31,5 | 22 |    |  |



## BS STANDARD CONNECTIONS

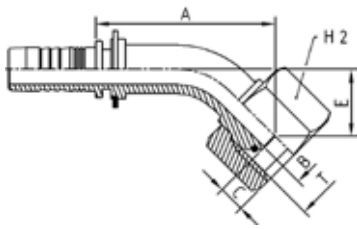
### MS0891KR

90° BSP O-RING FEMALE 60° CONE BS5200  
/ISO 8434-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| MS0891-04-04KR | 6         | -4   | 1/4" | 1/4" - 19 |  | 4,2              | 27   | 5,2 | 30,5 | 19 |    |  |
| MS0891-06-06KR | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 34,5 | 6   | 37,5 | 22 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT



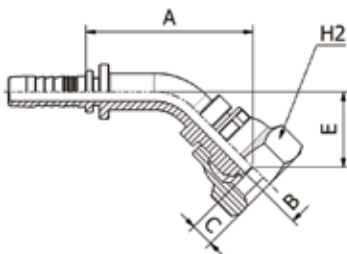


## BS STANDARD CONNECTIONS

### MS0843

45° BSP O-RING FEMALE 60° CONE BS5200  
/ISO 8434-6

| PART. REF.   | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |  |  |
|--------------|-----------|------|-------|-----------|--|------------------|------|-----|------|----|--|--|
|              | DN        | Dash | inch  |           |  | T                | B    | A   | C    | E  |  |  |
| MS0843-04-04 | 6         | -4   | 1/4"  | 1/4" - 19 |  | 4                | 34,7 | 5,4 | 14,7 | 19 |  |  |
| MS0843-05-06 | 8         | -5   | 5/16" | 3/8" - 19 |  | 7                | 40,5 | 6   | 17   | 22 |  |  |
| MS0843-06-06 | 10        | -6   | 3/8"  | 3/8" - 19 |  | 7                | 41   | 6   | 15,3 | 22 |  |  |



## BS STANDARD CONNECTIONS

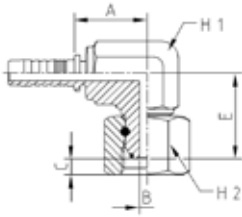
### MS0841KR

45° BSP O-RING FEMALE 60° CONE BS5200  
/ISO 8434-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |  |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|--|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  |  |  |
| MS0841-04-04KR | 6         | -4   | 1/4" | 1/4" - 19 |  | 4,2              | 36,5 | 5,2 | 16,5 | 19 |  |  |
| MS0841-06-06KR | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 44,5 | 6   | 20   | 22 |  |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## BS STANDARD CONNECTIONS



### MS0882F

90° BSP O-RING FEMALE COMPACT ELBOW 60° CONE BS5200  
/ISO 8434-6

| PART. REF.    | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |    |
|---------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|----|
|               | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H1 | H2 |
| MS0882-04-04F | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 18,7 | 4,1 | 22   | 14 | 19 |    |
| MS0882-06-06F | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 21,8 | 6   | 27,5 | 19 | 22 |    |



**MULTIFIT**



| FITTING CODE         | SECTION | PAGE |
|----------------------|---------|------|
| M..IP..              | 2       | 80   |
| M00110-M00120-M00130 | 2       | 1    |
| M00310-M00320        | 2       | 3    |
| M00820-M00830        | 2       | 4    |
| M00910-M00920-M00930 | 2       | 1    |
| M03300               | 2       | 2    |
| M03400               | 2       | 2    |
| M03500               | 2       | 3    |
| M10050               | 2       | 82   |
| M10510               | 2       | 6    |
| M10610               | 2       | 19   |
| M10710               | 2       | 5    |
| M11110               | 2       | 63   |
| M11210               | 2       | 67   |
| M11710               | 2       | 71   |
| M11810               | 2       | 72   |
| M12410               | 2       | 30   |
| M12510               | 2       | 21   |
| M12810               | 2       | 41   |
| M13010               | 2       | 38   |
| M14110R              | 2       | 42   |
| M14310               | 2       | 39   |
| M14390               | 2       | 39   |
| M20511KR             | 2       | 8    |
| M20512-20513         | 2       | 7    |
| M20514               | 2       | 8    |
| M20541KR             | 2       | 12   |
| M20542-20543         | 2       | 11   |
| M20591KR             | 2       | 10   |
| M20592-20593         | 2       | 9    |
| M20594               | 2       | 10   |
| M20612-20613         | 2       | 20   |
| M20711-20712         | 2       | 75   |
| M20811HKR            | 2       | 14   |
| M20812-20813         | 2       | 13   |
| M20841KR             | 2       | 18   |
| M20842-20843         | 2       | 17   |
| M20882F              | 2       | 18   |
| M20891KR             | 2       | 16   |
| M20892-20893         | 2       | 15   |
| M21013               | 2       | 59   |
| M21093               | 2       | 59   |
| M21312-21313         | 2       | 60   |
| M21342-21343         | 2       | 62   |
| M21392-21393         | 2       | 61   |
| M21512-21513         | 2       | 64   |
| M21542-21543         | 2       | 66   |
| M21592-21593         | 2       | 65   |
| M21612-21613         | 2       | 68   |
| M21642-21643         | 2       | 70   |
| M21692-M21693        | 2       | 69   |
| M21713               | 2       | 71   |
| M21813               | 2       | 72   |
| M21893               | 2       | 73   |
| M22010               | 2       | 55   |
| M22040               | 2       | 58   |

| FITTING CODE     | SECTION | PAGE |
|------------------|---------|------|
| M22090           | 2       | 57   |
| M22110           | 2       | 56   |
| M22140           | 2       | 58   |
| M22190           | 2       | 57   |
| M22411           | 2       | 31   |
| M22441-22443     | 2       | 36   |
| M22441KR         | 2       | 37   |
| M22491-22493     | 2       | 33   |
| M22491KR         | 2       | 34   |
| M22512-22513     | 2       | 22   |
| M22541KR         | 2       | 29   |
| M22542-22543     | 2       | 28   |
| M22582F          | 2       | 29   |
| M22591KR         | 2       | 26   |
| M22592-22593     | 2       | 25   |
| M22612           | 2       | 40   |
| M22692           | 2       | 40   |
| M22711-KR-K      | 2       | 24   |
| M22712           | 2       | 23   |
| M22812           | 2       | 42   |
| M23301P          | 2       | 51   |
| M23301S          | 2       | 51   |
| M23301T          | 2       | 52   |
| M23311           | 2       | 43   |
| M23321           | 2       | 44   |
| M23331           | 2       | 45   |
| M23341           | 2       | 46   |
| M23361           | 2       | 47   |
| M23371           | 2       | 48   |
| M23391           | 2       | 49   |
| M23391 LONG DROP | 2       | 50   |
| M23611           | 2       | 52   |
| M23641           | 2       | 4    |
| M23691           | 2       | 53   |
| M23811           | 2       | 75   |
| M23911           | 2       | 77   |
| M23911CT         | 2       | 77   |
| M23941           | 2       | 79   |
| M23941CT         | 2       | 79   |
| M23991           | 2       | 78   |
| M23991CT         | 2       | 78   |
| M24011-24012     | 2       | 74   |
| M24091           | 2       | 74   |
| M24111           | 2       | 76   |
| M24141           | 2       | 76   |
| M24191           | 2       | 76   |
| M24491 LONG DROP | 2       | 35   |
| M24791KR         | 2       | 27   |
| M24792-24793     | 2       | 26   |
| M27411           | 2       | 32   |
| M27411KR         | 2       | 32   |
| O20310           | 2       | 81   |
| O20910           | 2       | 81   |
| O80210           | 2       | 82   |
| O80810           | 2       | 82   |

## MULTIFIT

| DN   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  | 89     | 102 |
|------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|--------|-----|
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  | 3 1/2" | 4"  |
| Size | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 | -56    | -64 |

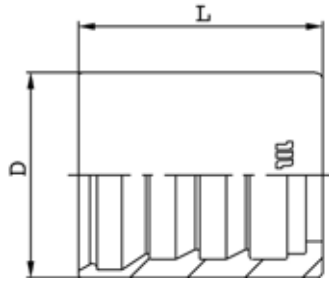
## FERRULES

|                          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M00110 / M00120 / M00130 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M00910 / M00920          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M03300                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M03400                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M03500                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M00310                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M00320                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M00820 / M00830          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF-NPSM)                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 62             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN STANDPIPE                  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 60° CONE            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC MULTISEAL           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE LIGHT TYPE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NF (FRENCH MILLIMERIC TYPE)    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| NF (FRENCH GAZ TYPE)           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| JIS                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| BANJO CONNECTIONS              |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FITTINGS F-2-II

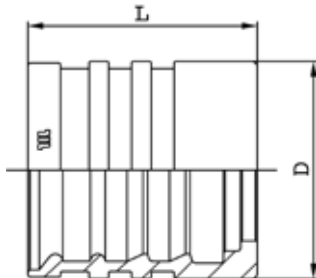


FERRULE

## M00110/M00120/M00130

SKIVE FERRULE FOR WIRE BRAID HOSES

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |      |  |  |  |  |  |
|------------|-----------|------|--------|------------------|------|--|--|--|--|--|
|            | DN        | Dash | inch   | D                | L    |  |  |  |  |  |
| M00120-03  | 5         | -3   | 3/16"  | 17               | 23,9 |  |  |  |  |  |
| M00120-04  | 6         | -4   | 1/4"   | 19,5             | 28   |  |  |  |  |  |
| M00120-05  | 8         | -5   | 5/16"  | 20               | 28,6 |  |  |  |  |  |
| M00120-06  | 10        | -6   | 3/8"   | 23               | 30   |  |  |  |  |  |
| M00120-08  | 12        | -8   | 1/2"   | 26,7             | 32   |  |  |  |  |  |
| M00120-10  | 16        | -10  | 5/8"   | 32               | 38   |  |  |  |  |  |
| M00120-12  | 19        | -12  | 3/4"   | 35,8             | 41,7 |  |  |  |  |  |
| M00130-16  | 25        | -16  | 1"     | 43               | 47   |  |  |  |  |  |
| M00110-20  | 31        | -20  | 1.1/4" | 50,5             | 59   |  |  |  |  |  |
| M00110-24  | 38        | -24  | 1.1/2" | 57               | 70   |  |  |  |  |  |
| M00110-32  | 51        | -32  | 2"     | 70               | 72   |  |  |  |  |  |



FERRULE

## M00910/M00920/M00930

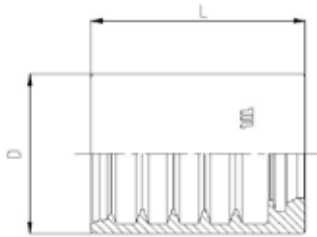
SKIVE FERRULE FOR WIRE BRAID AND SPIRAL HOSES

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |    |  |  |  |  |  |
|------------|-----------|------|--------|------------------|----|--|--|--|--|--|
|            | DN        | Dash | inch   | D                | L  |  |  |  |  |  |
| M00910-03  | 5         | -3   | 3/16"  | 20,6             | 26 |  |  |  |  |  |
| M00910-04  | 6         | -4   | 1/4"   | 22               | 30 |  |  |  |  |  |
| M00910-05  | 8         | -5   | 5/16"  | 24               | 31 |  |  |  |  |  |
| M00910-06  | 10        | -6   | 3/8"   | 26               | 33 |  |  |  |  |  |
| M00910-08  | 12        | -8   | 1/2"   | 30               | 34 |  |  |  |  |  |
| M00910-10  | 16        | -10  | 5/8"   | 33               | 39 |  |  |  |  |  |
| M00920-12  | 19        | -12  | 3/4"   | 38               | 40 |  |  |  |  |  |
| M00930-16  | 25        | -16  | 1"     | 46               | 54 |  |  |  |  |  |
| M00920-20  | 31        | -20  | 1.1/4" | 57               | 60 |  |  |  |  |  |
| M00910-24  | 38        | -24  | 1.1/2" | 65               | 70 |  |  |  |  |  |
| M00910-32  | 51        | -32  | 2"     | 79               | 72 |  |  |  |  |  |

FERRULE

**M03300**

NO-SKIVE FERRULE FOR WIRE BRAID HOSES



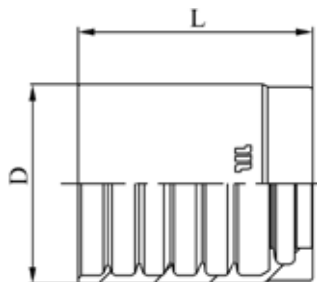
| PART. REF. | HOSE BORE |      |       | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|-------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch  |                  |  | D    | L    |  |  |  |  |
| M03300-03  | 5         | -3   | 3/16" |                  |  | 19,2 | 22   |  |  |  |  |
| M03300-04  | 6         | -4   | 1/4"  |                  |  | 20,5 | 27,5 |  |  |  |  |
| M03300-05  | 8         | -5   | 5/16" |                  |  | 22,8 | 28,5 |  |  |  |  |
| M03300-06  | 10        | -6   | 3/8"  |                  |  | 25   | 30   |  |  |  |  |

FITTINGS F-2-2

FERRULE

**M03400**

NO-SKIVE FERRULE FOR WIRE BRAID HOSES



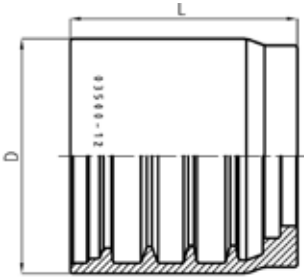
| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L    |  |  |  |  |
| M03400-03  | 5         | -3   | 3/16"  |                  |  | 21    | 23   |  |  |  |  |
| M03400-04  | 6         | -4   | 1/4"   |                  |  | 23    | 30,1 |  |  |  |  |
| M03400-05  | 8         | -5   | 5/16"  |                  |  | 24    | 30   |  |  |  |  |
| M03400-06  | 10        | -6   | 3/8"   |                  |  | 26    | 31,1 |  |  |  |  |
| M03400-08  | 12        | -8   | 1/2"   |                  |  | 29    | 34   |  |  |  |  |
| M03400-10  | 16        | -10  | 5/8"   |                  |  | 33    | 37   |  |  |  |  |
| M03400-12  | 19        | -12  | 3/4"   |                  |  | 37    | 42   |  |  |  |  |
| M03400-16  | 25        | -16  | 1"     |                  |  | 46    | 50,7 |  |  |  |  |
| M03400-20  | 31        | -20  | 1.1/4" |                  |  | 59    | 57,2 |  |  |  |  |
| M03400-24  | 38        | -24  | 1.1/2" |                  |  | 67    | 64,8 |  |  |  |  |
| M03400-32  | 51        | -32  | 2"     |                  |  | 80    | 68,3 |  |  |  |  |
| M03400-38  | 60        | -38  | 2.3/8" |                  |  | 82,5  | 69   |  |  |  |  |
| M03400-40  | 63        | -40  | 2.1/2" |                  |  | 88,2  | 68,8 |  |  |  |  |
| M03400-48  | 76        | -48  | 3"     |                  |  | 103   | 75   |  |  |  |  |
| M03400-56  | 89        | -56  | 3.1/2" |                  |  | 123,4 | 91   |  |  |  |  |



FERRULE

**M03500**

NO SKIVE FERRULE WIRE SPIRAL

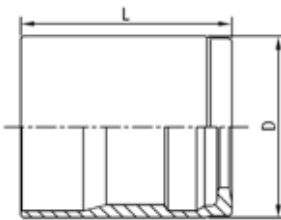


| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D    | L    |  |  |  |  |
| M03500-06  | 10        | - 6  | 3/8" |                  |  | 29,5 | 30,7 |  |  |  |  |
| M03500-08  | 12        | - 8  | 1/2" |                  |  | 33,4 | 32   |  |  |  |  |
| M03500-10  | 16        | - 10 | 5/8" |                  |  | 37,2 | 34,8 |  |  |  |  |
| M03500-12  | 19        | - 12 | 3/4" |                  |  | 41,3 | 40   |  |  |  |  |
| M03500-16  | 25        | - 16 | 1"   |                  |  | 49,1 | 51   |  |  |  |  |

FERRULE

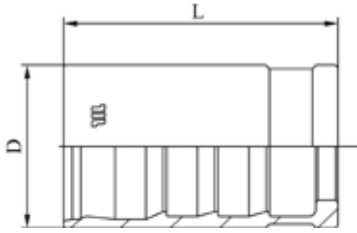
**M00310/M00320**

NO-SKIVE FERRULE FOR TEXTILE BRAID HOSES



| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |    |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|----|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | L  |  |  |  |  |
| M00310-03  | 5         | - 3  | 3/16"  |                  |  | 17,5 | 27 |  |  |  |  |
| M00310-04  | 6         | - 4  | 1/4"   |                  |  | 19,3 | 30 |  |  |  |  |
| M00310-05  | 8         | - 5  | 5/16"  |                  |  | 21   | 32 |  |  |  |  |
| M00310-06  | 10        | - 6  | 3/8"   |                  |  | 24   | 32 |  |  |  |  |
| M00310-08  | 12        | - 8  | 1/2"   |                  |  | 28,4 | 34 |  |  |  |  |
| M00310-10  | 16        | - 10 | 5/8"   |                  |  | 33   | 37 |  |  |  |  |
| M00320-12  | 19        | - 12 | 3/4"   |                  |  | 37   | 43 |  |  |  |  |
| M00310-16  | 25        | - 16 | 1"     |                  |  | 43,5 | 51 |  |  |  |  |
| M00310-20  | 31        | - 20 | 1.1/4" |                  |  | 50   | 59 |  |  |  |  |

FERRULE



## M00820/M00830

NO-SKIVE FERRULE FOR COMPACT HOSES

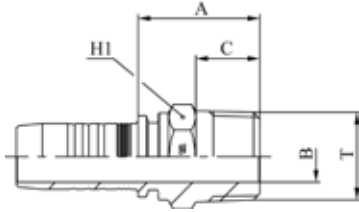
FITTINGS F 2-4

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | L    |  |  |  |  |
| M00820-03  | 5         | - 3  | 3/16"  |                  |  | 14   | 26,4 |  |  |  |  |
| M00830-04  | 6         | - 4  | 1/4"   |                  |  | 18   | 29,6 |  |  |  |  |
| M00830-05  | 8         | - 5  | 5/16"  |                  |  | 19   | 31,9 |  |  |  |  |
| M00820-06  | 10        | - 6  | 3/8"   |                  |  | 22   | 32,9 |  |  |  |  |
| M00820-08  | 12        | - 8  | 1/2"   |                  |  | 26   | 33,9 |  |  |  |  |
| M00820-10  | 16        | - 10 | 5/8"   |                  |  | 29   | 35,9 |  |  |  |  |
| M00820-12  | 19        | - 12 | 3/4"   |                  |  | 33   | 41,7 |  |  |  |  |
| M00820-16  | 25        | - 16 | 1"     |                  |  | 41   | 49,7 |  |  |  |  |
| M00820-20  | 31        | - 20 | 1.1/4" |                  |  | 48   | 57   |  |  |  |  |
| M00820-24  | 38        | - 24 | 1.1/2" |                  |  | 55,5 | 66   |  |  |  |  |
| M00820-32  | 51        | - 32 | 2"     |                  |  | 68,6 | 70   |  |  |  |  |

## BS STANDARD CONNECTIONS

### M10710

#### BSP MALE TAPERED - ISO 7

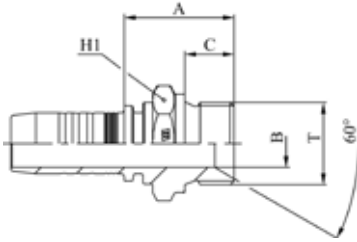


| PART. REF.   | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |      |    |    |  |  |  |
|--------------|-----------|------|--------|-------------|------------------|------|------|----|----|--|--|--|
|              | DN        | Dash | inch   |             | T                | B    | A    | C  | H1 |  |  |  |
| M10710-03-02 | 5         | -3   | 3/16"  | 1/8" - 28   |                  | 4,5  | 20,5 | 8  | 12 |  |  |  |
| M10710-03-04 | 5         | -3   | 3/16"  | 1/4" - 19   |                  | 4,5  | 24,5 | 12 | 14 |  |  |  |
| M10710-04-02 | 6         | -4   | 1/4"   | 1/8" - 28   |                  | 4,5  | 21   | 8  | 12 |  |  |  |
| M10710-04-04 | 6         | -4   | 1/4"   | 1/4" - 19   |                  | 4,5  | 25   | 12 | 14 |  |  |  |
| M10710-04-06 | 6         | -4   | 1/4"   | 3/8" - 19   |                  | 7    | 26   | 12 | 19 |  |  |  |
| M10710-04-08 | 6         | -4   | 1/4"   | 1/2" - 14   |                  | 10   | 29,5 | 15 | 22 |  |  |  |
| M10710-05-04 | 8         | -5   | 5/16"  | 1/4" - 19   |                  | 5,5  | 25   | 12 | 14 |  |  |  |
| M10710-05-06 | 8         | -5   | 5/16"  | 3/8" - 19   |                  | 7    | 26,5 | 12 | 19 |  |  |  |
| M10710-05-08 | 8         | -5   | 5/16"  | 1/2" - 14   |                  | 10   | 30   | 15 | 22 |  |  |  |
| M10710-06-06 | 10        | -6   | 3/8"   | 3/8" - 19   |                  | 7    | 27   | 12 | 19 |  |  |  |
| M10710-06-08 | 10        | -6   | 3/8"   | 1/2" - 14   |                  | 10   | 30,5 | 15 | 22 |  |  |  |
| M10710-08-04 | 12        | -8   | 1/2"   | 1/4" - 19   |                  | 4,5  | 26   | 12 | 19 |  |  |  |
| M10710-08-08 | 12        | -8   | 1/2"   | 1/2" - 14   |                  | 10   | 31   | 15 | 22 |  |  |  |
| M10710-10-08 | 16        | -10  | 5/8"   | 1/2" - 14   |                  | 10   | 31   | 15 | 22 |  |  |  |
| M10710-10-12 | 16        | -10  | 5/8"   | 3/4" - 14   |                  | 17   | 34   | 17 | 27 |  |  |  |
| M10710-12-12 | 19        | -12  | 3/4"   | 3/4" - 14   |                  | 17   | 35,5 | 17 | 27 |  |  |  |
| M10710-16-12 | 25        | -16  | 1"     | 3/4" - 14   |                  | 17   | 38   | 17 | 32 |  |  |  |
| M10710-16-16 | 25        | -16  | 1"     | 1" - 11     |                  | 22,5 | 42   | 21 | 36 |  |  |  |
| M10710-20-20 | 31        | -20  | 1.1/4" | 1.1/4" - 11 |                  | 28,5 | 47,5 | 23 | 46 |  |  |  |
| M10710-24-24 | 38        | -24  | 1.1/2" | 1.1/2" - 11 |                  | 32   | 50   | 23 | 50 |  |  |  |
| M10710-32-32 | 51        | -32  | 2"     | 2" - 11     |                  | 44   | 55,5 | 27 | 65 |  |  |  |

## BS STANDARD CONNECTIONS

### M10510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6

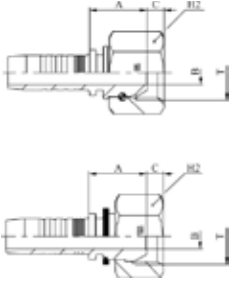


| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |    |    |  |  |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|----|----|--|--|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A  | C  |  |  |  |
| M10510-03-02 | 5         | -3   | 3/16"  | 1/8" - 28   |  | 3,5              | 22,5 | 10 | 14 |  |  |  |
| M10510-03-04 | 5         | -3   | 3/16"  | 1/4" - 19   |  | 5                | 25   | 11 | 19 |  |  |  |
| M10510-04-02 | 6         | -4   | 1/4"   | 1/8" - 28   |  | 3,5              | 22,5 | 10 | 14 |  |  |  |
| M10510-04-04 | 6         | -4   | 1/4"   | 1/4" - 19   |  | 5                | 25,5 | 11 | 19 |  |  |  |
| M10510-04-06 | 6         | -4   | 1/4"   | 3/8" - 19   |  | 8                | 27   | 12 | 22 |  |  |  |
| M10510-04-08 | 6         | -4   | 1/4"   | 1/2" - 14   |  | 11               | 30   | 14 | 27 |  |  |  |
| M10510-05-04 | 8         | -5   | 5/16"  | 1/4" - 19   |  | 5                | 26   | 11 | 19 |  |  |  |
| M10510-05-06 | 8         | -5   | 5/16"  | 3/8" - 19   |  | 8                | 27,5 | 12 | 22 |  |  |  |
| M10510-06-04 | 10        | -6   | 3/8"   | 1/4" - 19   |  | 5                | 26   | 11 | 19 |  |  |  |
| M10510-06-06 | 10        | -6   | 3/8"   | 3/8" - 19   |  | 8                | 28   | 12 | 22 |  |  |  |
| M10510-06-08 | 10        | -6   | 3/8"   | 1/2" - 14   |  | 11               | 30,5 | 14 | 27 |  |  |  |
| M10510-08-06 | 12        | -8   | 1/2"   | 3/8" - 19   |  | 8                | 28   | 12 | 22 |  |  |  |
| M10510-08-08 | 12        | -8   | 1/2"   | 1/2" - 14   |  | 11               | 31   | 14 | 27 |  |  |  |
| M10510-08-10 | 12        | -8   | 1/2"   | 5/8" - 14   |  | 14,5             | 33   | 16 | 30 |  |  |  |
| M10510-08-12 | 12        | -8   | 1/2"   | 3/4" - 14   |  | 17               | 34   | 16 | 32 |  |  |  |
| M10510-10-10 | 16        | -10  | 5/8"   | 5/8" - 14   |  | 14,5             | 33   | 16 | 30 |  |  |  |
| M10510-10-12 | 16        | -10  | 5/8"   | 3/4" - 14   |  | 17               | 35,5 | 16 | 32 |  |  |  |
| M10510-12-08 | 19        | -12  | 3/4"   | 1/2" - 14   |  | 11               | 32   | 14 | 27 |  |  |  |
| M10510-12-12 | 19        | -12  | 3/4"   | 3/4" - 14   |  | 17               | 35,5 | 16 | 32 |  |  |  |
| M10510-12-16 | 19        | -12  | 3/4"   | 1" - 11     |  | 22,5             | 39,5 | 19 | 41 |  |  |  |
| M10510-16-12 | 25        | -16  | 1"     | 3/4" - 14   |  | 17               | 36,5 | 16 | 32 |  |  |  |
| M10510-16-16 | 25        | -16  | 1"     | 1" - 11     |  | 22,5             | 41   | 19 | 41 |  |  |  |
| M10510-16-20 | 25        | -16  | 1"     | 1.1/4" - 11 |  | 28,5             | 45   | 20 | 50 |  |  |  |
| M10510-20-20 | 31        | -20  | 1.1/4" | 1.1/4" - 11 |  | 28,5             | 46,5 | 20 | 50 |  |  |  |
| M10510-20-24 | 31        | -20  | 1.1/4" | 1.1/2" - 11 |  | 33,5             | 48,5 | 22 | 55 |  |  |  |
| M10510-24-24 | 38        | -24  | 1.1/2" | 1.1/2" - 11 |  | 33,5             | 49,5 | 22 | 55 |  |  |  |
| M10510-32-32 | 51        | -32  | 2"     | 2" - 11     |  | 46               | 54   | 25 | 70 |  |  |  |

## BS STANDARD CONNECTIONS

### M20512/M20513

BSP FEMALE 60° CONE - BS5200 / ISO 12151-6



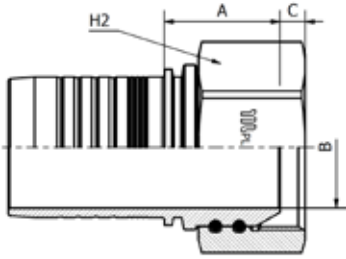
| PART. REF.   | HOSE BORE |      |       | Thread    | DIMENSIONS<br>mm |      |      |      |    |  |  |  |  |
|--------------|-----------|------|-------|-----------|------------------|------|------|------|----|--|--|--|--|
|              | DN        | Dash | inch  |           | T                | B    | A    | C    | H2 |  |  |  |  |
| M20512-03-02 | 5         | -3   | 3/16" | 1/8" - 28 |                  | 3    | 16   | 4,4  | 14 |  |  |  |  |
| M20513-03-04 | 5         | -3   | 3/16" | 1/4" - 19 |                  | 4    | 16,5 | 5,4  | 19 |  |  |  |  |
| M20512-04-02 | 6         | -4   | 1/4"  | 1/8" - 28 |                  | 3,1  | 16,5 | 4,4  | 14 |  |  |  |  |
| M20513-04-04 | 6         | -4   | 1/4"  | 1/4" - 19 |                  | 4    | 17   | 5,4  | 19 |  |  |  |  |
| M20513-04-06 | 6         | -4   | 1/4"  | 3/8" - 19 |                  | 7    | 19   | 6    | 22 |  |  |  |  |
| M20513-04-08 | 6         | -4   | 1/4"  | 1/2" - 14 |                  | 9,5  | 19,5 | 6,3  | 27 |  |  |  |  |
| M20512-05-04 | 8         | -5   | 5/16" | 1/4" - 19 |                  | 4,1  | 17,5 | 4,2  | 19 |  |  |  |  |
| M20513-05-06 | 8         | -5   | 5/16" | 3/8" - 19 |                  | 7    | 19   | 6    | 22 |  |  |  |  |
| M20513-05-08 | 8         | -5   | 5/16" | 1/2" - 14 |                  | 9,3  | 20,5 | 6,3  | 27 |  |  |  |  |
| M20512-06-04 | 10        | -6   | 3/8"  | 1/4" - 19 |                  | 4,1  | 18   | 4,2  | 19 |  |  |  |  |
| M20513-06-06 | 10        | -6   | 3/8"  | 3/8" - 19 |                  | 7    | 19,5 | 6    | 22 |  |  |  |  |
| M20513-06-08 | 10        | -6   | 3/8"  | 1/2" - 14 |                  | 9,3  | 20   | 6,3  | 27 |  |  |  |  |
| M20512-08-06 | 12        | -8   | 1/2"  | 3/8" - 19 |                  | 7,1  | 21   | 6    | 22 |  |  |  |  |
| M20513-08-08 | 12        | -8   | 1/2"  | 1/2" - 14 |                  | 9,3  | 20,5 | 6,3  | 27 |  |  |  |  |
| M20512-08-10 | 12        | -8   | 1/2"  | 5/8" - 14 |                  | 12,1 | 22   | 10,2 | 28 |  |  |  |  |
| M20512-08-12 | 12        | -8   | 1/2"  | 3/4" - 14 |                  | 15   | 24,5 | 9    | 32 |  |  |  |  |
| M20512-10-08 | 16        | -10  | 5/8"  | 1/2" - 14 |                  | 9,8  | 24   | 6,5  | 27 |  |  |  |  |
| M20512-10-10 | 16        | -10  | 5/8"  | 5/8" - 14 |                  | 12,5 | 21,5 | 10,2 | 28 |  |  |  |  |
| M20512-10-12 | 16        | -10  | 5/8"  | 3/4" - 14 |                  | 15   | 23   | 9    | 32 |  |  |  |  |
| M20512-12-08 | 19        | -12  | 3/4"  | 1/2" - 14 |                  | 9,8  | 25   | 6,5  | 27 |  |  |  |  |
| M20512-12-12 | 19        | -12  | 3/4"  | 3/4" - 14 |                  | 15   | 24,5 | 9    | 32 |  |  |  |  |
| M20512-12-16 | 19        | -12  | 3/4"  | 1" - 11   |                  | 19,8 | 26   | 10,5 | 38 |  |  |  |  |
| M20512-16-12 | 25        | -16  | 1"    | 3/4" - 14 |                  | 15   | 25,5 | 9    | 32 |  |  |  |  |
| M20512-16-16 | 25        | -16  | 1"    | 1" - 11   |                  | 19,8 | 27,5 | 10,5 | 38 |  |  |  |  |

M20512: THRUST-WIRE NUT / M20513: SLIP-ON NUT

## BS STANDARD CONNECTIONS

### M20514

BSP FEMALE 60° CONE - BS5200 / ISO 12151-6

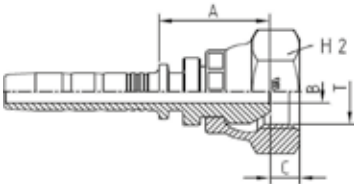


| PART. REF.   | HOSE BORE |      |        | Thread |  | DIMENSIONS mm |      |      |     |    |  |  |
|--------------|-----------|------|--------|--------|--|---------------|------|------|-----|----|--|--|
|              | DN        | Dash | inch   |        |  | T             | B    | A    | C   | H2 |  |  |
| M20514-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 55,4          | 52,5 | 11,5 | 85  |    |  |  |
| M20514-48-48 | 76        | - 48 | 3"     | 3"     |  | 65            | 57   | 10,9 | 100 |    |  |  |

## BS STANDARD CONNECTIONS

### M20511KR

BSP FEMALE 60° CONE - BS5200 / ISO 12151-6



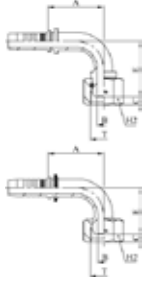
| PART. REF.        | HOSE BORE |      |      | Thread    |  | DIMENSIONS mm |      |     |    |    |  |  |
|-------------------|-----------|------|------|-----------|--|---------------|------|-----|----|----|--|--|
|                   | DN        | Dash | inch |           |  | T             | B    | A   | C  | H2 |  |  |
| M20511-04-04H12KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4             | 25   | 5,2 | 19 |    |  |  |
| M20511-04-04KR    | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4             | 20   | 5,2 | 19 |    |  |  |
| M20511-04-06H17KR | 6         | - 4  | 1/4" | 3/8" - 19 |  | 7             | 27   | 6   | 22 |    |  |  |
| M20511-06-06H17KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7             | 27,5 | 6   | 22 |    |  |  |
| M20511-06-06KR    | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7             | 22   | 6   | 22 |    |  |  |
| M20511-06-08H19KR | 10        | - 6  | 3/8" | 1/2" - 14 |  | 9,3           | 29,5 | 6,5 | 27 |    |  |  |
| M20511-08-06H19KR | 12        | - 8  | 1/2" | 3/8" - 19 |  | 7             | 29,5 | 6   | 22 |    |  |  |
| M20511-08-08H19KR | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3           | 30   | 6,5 | 27 |    |  |  |
| M20511-08-08KR    | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3           | 24   | 6,5 | 27 |    |  |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT  
H:FITTINGS WITH COUNTER-HEX.

## BS STANDARD CONNECTIONS

### M20592/M20593

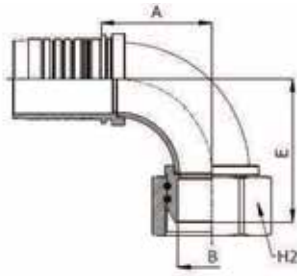
90° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6



| PART. REF.   | HOSE BORE |      |       | Thread    | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|--------------|-----------|------|-------|-----------|------------------|------|------|------|------|----|--|--|
|              | DN        | Dash | inch  |           | T                | B    | A    | C    | E    | H2 |  |  |
| M20592-03-02 | 5         | -3   | 3/16" | 1/8" - 28 |                  | 3    | 21,5 | 4,4  | 26   | 14 |  |  |
| M20593-03-04 | 5         | -3   | 3/16" | 1/4" - 19 |                  | 4    | 29   | 5,4  | 29   | 19 |  |  |
| M20592-04-02 | 6         | -4   | 1/4"  | 1/8" - 28 |                  | 3,1  | 28,5 | 4,4  | 27   | 14 |  |  |
| M20593-04-04 | 6         | -4   | 1/4"  | 1/4" - 19 |                  | 4    | 29,5 | 5,4  | 29   | 19 |  |  |
| M20593-04-06 | 6         | -4   | 1/4"  | 3/8" - 19 |                  | 7    | 29,5 | 6    | 31   | 22 |  |  |
| M20592-05-04 | 8         | -5   | 5/16" | 1/4" - 19 |                  | 4    | 26,5 | 4,1  | 29,5 | 19 |  |  |
| M20593-05-06 | 8         | -5   | 5/16" | 3/8" - 19 |                  | 7    | 32   | 6    | 27,5 | 22 |  |  |
| M20593-05-08 | 8         | -5   | 5/16" | 1/2" - 14 |                  | 9,3  | 36,5 | 6,3  | 32   | 27 |  |  |
| M20592-06-04 | 10        | -6   | 3/8"  | 1/4" - 19 |                  | 4    | 27   | 4,1  | 29,5 | 19 |  |  |
| M20593-06-06 | 10        | -6   | 3/8"  | 3/8" - 19 |                  | 7    | 36,5 | 6    | 31,5 | 22 |  |  |
| M20593-06-08 | 10        | -6   | 3/8"  | 1/2" - 14 |                  | 9,3  | 36,5 | 6,3  | 32   | 27 |  |  |
| M20592-08-06 | 12        | -8   | 1/2"  | 3/8" - 19 |                  | 7,1  | 45   | 6    | 41   | 22 |  |  |
| M20593-08-08 | 12        | -8   | 1/2"  | 1/2" - 14 |                  | 9,3  | 45   | 6,3  | 36,5 | 27 |  |  |
| M20592-08-10 | 12        | -8   | 1/2"  | 5/8" - 14 |                  | 12,1 | 44   | 10,2 | 44   | 28 |  |  |
| M20592-08-12 | 12        | -8   | 1/2"  | 3/4" - 14 |                  | 15   | 44   | 9    | 45,5 | 32 |  |  |
| M20592-10-08 | 16        | -10  | 5/8"  | 1/2" - 14 |                  | 9,3  | 53,5 | 6,5  | 54,5 | 27 |  |  |
| M20592-10-10 | 16        | -10  | 5/8"  | 5/8" - 14 |                  | 12,5 | 53,5 | 10,2 | 53,5 | 28 |  |  |
| M20592-10-12 | 16        | -10  | 5/8"  | 3/4" - 14 |                  | 15   | 53,5 | 9    | 55   | 32 |  |  |
| M20592-12-08 | 19        | -12  | 3/4"  | 1/2" - 14 |                  | 9,3  | 45,5 | 6,5  | 44   | 27 |  |  |
| M20592-12-12 | 19        | -12  | 3/4"  | 3/4" - 14 |                  | 15   | 61,5 | 9    | 59,5 | 32 |  |  |
| M20592-12-16 | 19        | -12  | 3/4"  | 1" - 11   |                  | 19,8 | 61,5 | 10,5 | 62   | 38 |  |  |
| M20592-16-12 | 25        | -16  | 1"    | 3/4" - 14 |                  | 15   | 64,5 | 9    | 59,5 | 32 |  |  |
| M20592-16-16 | 25        | -16  | 1"    | 1" - 11   |                  | 19,8 | 79,5 | 10,5 | 76   | 38 |  |  |

M20592: THRUST-WIRE NUT / M20593: SLIP-ON NUT

## BS STANDARD CONNECTIONS



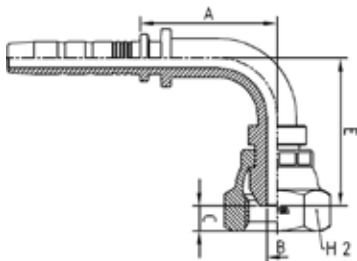
### M20594

90° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6

| PART. REF.   | HOSE BORE |      |        | Thread |  | DIMENSIONS<br>mm |     |      |     |     |    |  |
|--------------|-----------|------|--------|--------|--|------------------|-----|------|-----|-----|----|--|
|              | DN        | Dash | inch   |        |  | T                | B   | A    | C   | E   | H2 |  |
| M20594-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 55,4             | 88  | 11,5 | 114 | 85  |    |  |
| M20594-48-48 | 76        | - 48 | 3"     | 3"     |  | 65               | 123 | 10,9 | 135 | 100 |    |  |

BRAZED SOLUTION

## BS STANDARD CONNECTIONS



### M20591KR

90° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| M20591-04-04KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4,2              | 28,5 | 5,2 | 30,5 | 19 |    |  |
| M20591-04-06KR | 6         | - 4  | 1/4" | 3/8" - 19 |  | 7                | 28,5 | 6   | 32   | 22 |    |  |
| M20591-06-06KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 35,5 | 6   | 37,5 | 22 |    |  |
| M20591-06-08KR | 10        | - 6  | 3/8" | 1/2" - 14 |  | 9,3              | 35,5 | 6,5 | 39   | 27 |    |  |
| M20591-08-06KR | 12        | - 8  | 1/2" | 3/8" - 19 |  | 7                | 44   | 6   | 42   | 22 |    |  |
| M20591-08-08KR | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 44   | 6,5 | 43,5 | 27 |    |  |

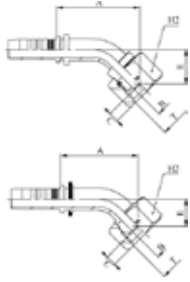
KR:CRIMPED-BACK KOMPACT ROBUST NUT



## BS STANDARD CONNECTIONS

### M20542/M20543

45° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6



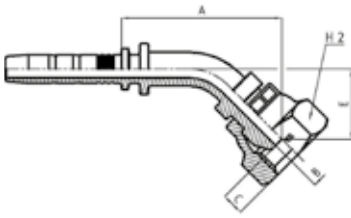
| PART. REF.   | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|-------|-----------|--|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch  |           |  | T                | B    | A    | C    | E  | H2 |  |
| M20542-03-02 | 5         | - 3  | 3/16" | 1/8" - 28 |  | 3                | 31   | 4,4  | 15   | 14 |    |  |
| M20543-03-04 | 5         | - 3  | 3/16" | 1/4" - 19 |  | 4                | 35,5 | 5,4  | 14,5 | 19 |    |  |
| M20542-04-02 | 6         | - 4  | 1/4"  | 1/8" - 28 |  | 3,1              | 35,5 | 4,4  | 14,5 | 14 |    |  |
| M20543-04-04 | 6         | - 4  | 1/4"  | 1/4" - 19 |  | 4                | 36   | 5,4  | 15   | 19 |    |  |
| M20543-04-06 | 6         | - 4  | 1/4"  | 3/8" - 19 |  | 7                | 37,5 | 6    | 16   | 22 |    |  |
| M20542-05-04 | 8         | - 5  | 5/16" | 1/4" - 19 |  | 4                | 35,5 | 4,1  | 16   | 19 |    |  |
| M20543-05-06 | 8         | - 5  | 5/16" | 3/8" - 19 |  | 7                | 38   | 6    | 13,5 | 22 |    |  |
| M20543-06-06 | 10        | - 6  | 3/8"  | 3/8" - 19 |  | 7                | 42   | 6    | 15,5 | 22 |    |  |
| M20543-06-08 | 10        | - 6  | 3/8"  | 1/2" - 14 |  | 9,3              | 42,5 | 6,3  | 16   | 27 |    |  |
| M20542-08-06 | 12        | - 8  | 1/2"  | 3/8" - 19 |  | 7,1              | 52   | 6    | 20   | 22 |    |  |
| M20543-08-08 | 12        | - 8  | 1/2"  | 1/2" - 14 |  | 9,3              | 49,5 | 6,3  | 17   | 27 |    |  |
| M20542-08-10 | 12        | - 8  | 1/2"  | 5/8" - 14 |  | 12,1             | 54,5 | 10,2 | 22,5 | 28 |    |  |
| M20542-08-12 | 12        | - 8  | 1/2"  | 3/4" - 14 |  | 15               | 57   | 9    | 25   | 32 |    |  |
| M20542-10-08 | 16        | - 10 | 5/8"  | 1/2" - 14 |  | 9,3              | 63,5 | 6,5  | 26,5 | 27 |    |  |
| M20542-10-10 | 16        | - 10 | 5/8"  | 5/8" - 14 |  | 12,5             | 63   | 10,2 | 26   | 28 |    |  |
| M20542-10-12 | 16        | - 10 | 5/8"  | 3/4" - 14 |  | 15               | 64   | 9    | 27   | 32 |    |  |
| M20542-12-08 | 19        | - 12 | 3/4"  | 1/2" - 14 |  | 9,3              | 55,5 | 6,5  | 22,5 | 27 |    |  |
| M20542-12-12 | 19        | - 12 | 3/4"  | 3/4" - 14 |  | 15               | 70,5 | 9    | 28,5 | 32 |    |  |
| M20542-12-16 | 19        | - 12 | 3/4"  | 1" - 11   |  | 19,8             | 72,5 | 10,5 | 30   | 38 |    |  |
| M20542-16-16 | 25        | - 16 | 1"    | 1" - 11   |  | 19,8             | 91   | 10,5 | 36,5 | 38 |    |  |

M20542: THRUST-WIRE NUT / M20543: SLIP-ON NUT

## BS STANDARD CONNECTIONS

### M20541KR

45° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6



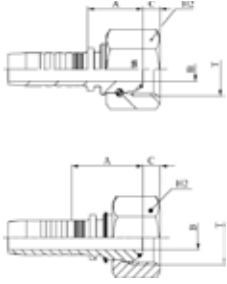
| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| M20541-04-04KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4,2              | 38   | 5,2 | 16,6 | 19 |    |  |
| M20541-06-06KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 45,5 | 6   | 20   | 22 |    |  |
| M20541-08-08KR | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 54   | 6,5 | 22   | 27 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## BS STANDARD CONNECTIONS

### M20812/M20813

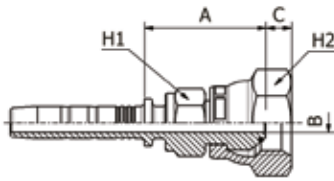
BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6



| PART. REF.   | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |      |      |    |  |  |  |
|--------------|-----------|------|--------|-------------|------------------|------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |             | T                | B    | A    | C    | H2 |  |  |  |
| M20813-03-04 | 5         | - 3  | 3/16"  | 1/4" - 19   |                  | 4    | 16,5 | 5,4  | 19 |  |  |  |
| M20813-04-04 | 6         | - 4  | 1/4"   | 1/4" - 19   |                  | 4    | 17   | 5,4  | 19 |  |  |  |
| M20813-04-06 | 6         | - 4  | 1/4"   | 3/8" - 19   |                  | 7    | 19   | 6    | 22 |  |  |  |
| M20812-06-04 | 10        | - 6  | 3/8"   | 1/4" - 19   |                  | 4,1  | 18   | 4,1  | 19 |  |  |  |
| M20813-06-06 | 10        | - 6  | 3/8"   | 3/8" - 19   |                  | 7    | 19,5 | 6    | 22 |  |  |  |
| M20813-06-08 | 10        | - 6  | 3/8"   | 1/2" - 14   |                  | 9,3  | 21   | 6,3  | 27 |  |  |  |
| M20813-08-08 | 12        | - 8  | 1/2"   | 1/2" - 14   |                  | 9,3  | 20,5 | 6,3  | 27 |  |  |  |
| M20812-10-10 | 16        | - 10 | 5/8"   | 5/8" - 14   |                  | 12,5 | 22   | 9,7  | 28 |  |  |  |
| M20812-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |                  | 15   | 25   | 8,5  | 32 |  |  |  |
| M20812-16-12 | 25        | - 16 | 1"     | 3/4" - 14   |                  | 15   | 26   | 8,5  | 32 |  |  |  |
| M20812-16-16 | 25        | - 16 | 1"     | 1" - 11     |                  | 19,8 | 27,5 | 10,6 | 38 |  |  |  |
| M20812-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |                  | 26,1 | 31   | 10,5 | 50 |  |  |  |
| M20812-20-16 | 31        | - 20 | 1.1/4" | 1" - 11     |                  | 19,8 | 29   | 10,5 | 38 |  |  |  |
| M20812-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |                  | 26   | 31,5 | 10,5 | 50 |  |  |  |
| M20812-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |                  | 32,1 | 29,5 | 12,5 | 60 |  |  |  |
| M20812-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" - 11 |                  | 26   | 31,5 | 10,5 | 50 |  |  |  |
| M20812-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |                  | 32   | 30,5 | 12,5 | 60 |  |  |  |
| M20812-24-32 | 38        | - 24 | 1.1/2" | 2" - 11     |                  | 42,1 | 30   | 16,1 | 70 |  |  |  |
| M20812-32-32 | 51        | - 32 | 2"     | 2" - 11     |                  | 42   | 32   | 16,1 | 70 |  |  |  |

M20812: THRUST-WIRE NUT / M20813: SLIP-ON NUT

## BS STANDARD CONNECTIONS



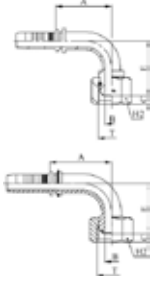
### M20811HKR

| PART. REF.        | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |    |    |  |
|-------------------|-----------|------|------|-----------|--|------------------|------|-----|----|----|----|--|
|                   | DN        | Dash | inch |           |  | T                | B    | A   | C  | H1 | H2 |  |
| M20811-04-04H12KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 25   | 5,2 | 12 | 19 |    |  |
| M20811-04-06H17KR | 6         | - 4  | 1/4" | 3/8" - 19 |  | 7                | 27   | 6   | 17 | 22 |    |  |
| M20811-06-04H17KR | 10        | - 6  | 3/8" | 1/4" - 19 |  | 4                | 26   | 5,2 | 17 | 19 |    |  |
| M20811-06-06H17KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 27,5 | 6   | 17 | 22 |    |  |
| M20811-06-08H19KR | 10        | - 6  | 3/8" | 1/2" - 14 |  | 9,3              | 29,5 | 6,5 | 19 | 27 |    |  |
| M20811-08-06H19KR | 12        | - 8  | 1/2" | 3/8" - 19 |  | 7                | 29,5 | 6   | 19 | 22 |    |  |
| M20811-08-08H19KR | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 30   | 5,5 | 19 | 22 |    |  |

## BS STANDARD CONNECTIONS

### M20892/M20893

90° BSP O-RING FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO  
12151-6



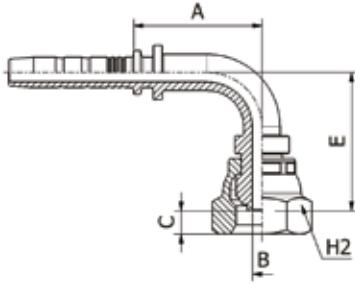
| PART. REF.   | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |      |      |       |    |  |  |
|--------------|-----------|------|--------|-------------|------------------|------|------|------|-------|----|--|--|
|              | DN        | Dash | inch   |             | T                | B    | A    | C    | E     | H2 |  |  |
| M20893-03-04 | 5         | -3   | 3/16"  | 1/4" - 19   |                  | 4    | 29   | 5,4  | 29    | 19 |  |  |
| M20893-04-04 | 6         | -4   | 1/4"   | 1/4" - 19   |                  | 4    | 29,5 | 5,4  | 29    | 19 |  |  |
| M20892-06-04 | 10        | -6   | 3/8"   | 1/4" - 19   |                  | 4,1  | 35,5 | 4,1  | 33    | 19 |  |  |
| M20893-06-06 | 10        | -6   | 3/8"   | 3/8" - 19   |                  | 7    | 36,5 | 6    | 31,5  | 22 |  |  |
| M20893-08-08 | 12        | -8   | 1/2"   | 1/2" - 14   |                  | 9,3  | 45   | 6,3  | 36,5  | 27 |  |  |
| M20892-10-10 | 16        | -10  | 5/8"   | 5/8" - 14   |                  | 12,5 | 53   | 9,7  | 55    | 28 |  |  |
| M20892-12-12 | 19        | -12  | 3/4"   | 3/4" - 14   |                  | 15   | 61,5 | 8,5  | 60    | 32 |  |  |
| M20892-12-16 | 19        | -12  | 3/4"   | 1" - 11     |                  | 19,8 | 61,5 | 10,6 | 62    | 38 |  |  |
| M20892-16-12 | 25        | -16  | 1"     | 3/4" - 14   |                  | 15   | 79,5 | 8,5  | 60    | 32 |  |  |
| M20892-16-16 | 25        | -16  | 1"     | 1" - 11     |                  | 19,8 | 79,5 | 10,6 | 76    | 38 |  |  |
| M20892-16-20 | 25        | -16  | 1"     | 1.1/4" - 11 |                  | 26,1 | 79,5 | 10,5 | 78,5  | 50 |  |  |
| M20892-20-16 | 31        | -20  | 1.1/4" | 1" - 11     |                  | 19,8 | 79,5 | 10,6 | 76    | 38 |  |  |
| M20892-20-20 | 31        | -20  | 1.1/4" | 1.1/4" - 11 |                  | 26   | 90,5 | 10,5 | 83,5  | 50 |  |  |
| M20892-20-24 | 31        | -20  | 1.1/4" | 1.1/2" - 11 |                  | 32,1 | 90,5 | 12,5 | 84,5  | 60 |  |  |
| M20892-24-20 | 38        | -24  | 1.1/2" | 1.1/4" - 11 |                  | 26   | 95   | 10,5 | 90,5  | 50 |  |  |
| M20892-24-24 | 38        | -24  | 1.1/2" | 1.1/2" - 11 |                  | 32   | 108  | 12,5 | 98,5  | 60 |  |  |
| M20892-24-32 | 38        | -24  | 1.1/2" | 2" - 11     |                  | 42,1 | 108  | 16,1 | 98    | 70 |  |  |
| M20892-32-32 | 51        | -32  | 2"     | 2" - 11     |                  | 42   | 131  | 16,1 | 110,5 | 70 |  |  |

M20892: THRUST-WIRE NUT / M20893: SLIP-ON NUT

## BS STANDARD CONNECTIONS

### M20891KR

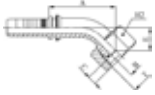
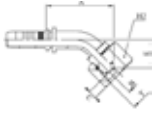
90° BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6



| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| M20891-04-04KR | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4,2              | 28,5 | 5,2 | 30,5 | 19 |    |  |
| M20891-04-06KR | 6         | - 4  | 1/4" | 3/8" - 19 |  | 7                | 28,5 | 6   | 32   | 22 |    |  |
| M20891-06-04KR | 10        | - 6  | 3/8" | 1/4" - 19 |  | 4                | 37,5 | 5,2 | 36   | 19 |    |  |
| M20891-06-06KR | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 35,5 | 6   | 37,5 | 22 |    |  |
| M20891-06-08KR | 10        | - 6  | 3/8" | 1/2" - 14 |  | 9,3              | 35,5 | 6,5 | 39   | 27 |    |  |
| M20891-08-06KR | 12        | - 8  | 1/2" | 3/8" - 19 |  | 7                | 44   | 6   | 42   | 22 |    |  |
| M20891-08-08KR | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 44   | 5,5 | 43,5 | 22 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## BS STANDARD CONNECTIONS



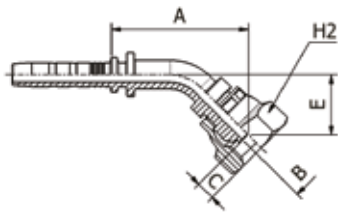
### M20842/M20843

45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO  
12151-6

| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|-------------|--|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |             |  | T                | B     | A    | C    | E  | H2 |  |
| M20843-04-04 | 6         | - 4  | 1/4"   | 1/4" - 19   |  | 4                | 36    | 5,4  | 14,5 | 19 |    |  |
| M20843-06-06 | 10        | - 6  | 3/8"   | 3/8" - 19   |  | 7                | 42    | 6    | 15,5 | 22 |    |  |
| M20843-08-08 | 12        | - 8  | 1/2"   | 1/2" - 14   |  | 9,3              | 49,5  | 6,3  | 17   | 27 |    |  |
| M20842-10-10 | 16        | - 10 | 5/8"   | 5/8" - 14   |  | 12,5             | 63,5  | 9,7  | 27,5 | 28 |    |  |
| M20842-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 15               | 71    | 8,5  | 29   | 32 |    |  |
| M20842-16-12 | 25        | - 16 | 1"     | 3/4" - 14   |  | 15               | 79,5  | 8,5  | 29   | 32 |    |  |
| M20842-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,8             | 90,5  | 10,6 | 35,5 | 38 |    |  |
| M20842-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1             | 93    | 10,5 | 38   | 50 |    |  |
| M20842-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26               | 101,5 | 10,5 | 39   | 50 |    |  |
| M20842-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32,1             | 118,5 | 12,5 | 40,5 | 60 |    |  |
| M20842-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" - 11 |  | 26               | 106   | 10,5 | 42   | 50 |    |  |
| M20842-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32               | 118   | 12,5 | 45   | 60 |    |  |
| M20842-24-32 | 38        | - 24 | 1.1/2" | 2" - 11     |  | 42,1             | 117,5 | 16,1 | 44,5 | 70 |    |  |
| M20842-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 134   | 16,1 | 47   | 70 |    |  |

M20842: THRUST-WIRE NUT / M20843: SLIP-ON NUT

## BS STANDARD CONNECTIONS



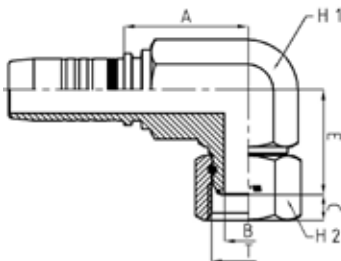
### M20841KR

45° BSP O-RING FEMALE 60° CONE BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS mm |     |      |     |      |    |  |  |
|----------------|-----------|------|------|-----------|---------------|-----|------|-----|------|----|--|--|
|                | DN        | Dash | inch |           | T             | B   | A    | C   | E    | H2 |  |  |
| M20841-04-04KR | 6         | - 4  | 1/4" | 1/4" - 19 |               | 4,2 | 38   | 5,2 | 16,6 | 19 |  |  |
| M20841-06-06KR | 10        | - 6  | 3/8" | 3/8" - 19 |               | 7   | 45,5 | 6   | 16,5 | 22 |  |  |
| M20841-08-08KR | 12        | - 8  | 1/2" | 1/2" - 14 |               | 9,3 | 54   | 6,5 | 22   | 27 |  |  |

FITTINGS F 2-18

## BS STANDARD CONNECTIONS



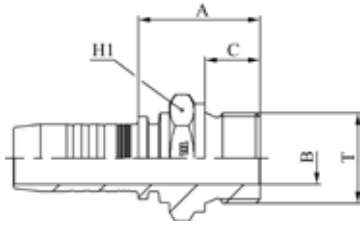
### M20882F

90° BSP O-RING FEMALE COMPACT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT)

| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS mm |      |      |      |      |    |    |  |
|---------------|-----------|------|------|-----------|---------------|------|------|------|------|----|----|--|
|               | DN        | Dash | inch |           | T             | B    | A    | C    | E    | H1 | H2 |  |
| M20882-04-04F | 6         | - 4  | 1/4" | 1/4" - 19 |               | 4    | 20   | 4,1  | 22   | 14 | 19 |  |
| M20882-06-06F | 10        | - 6  | 3/8" | 3/8" - 19 |               | 7    | 23   | 6    | 27,5 | 19 | 22 |  |
| M20882-08-08F | 12        | - 8  | 1/2" | 1/2" - 14 |               | 9,3  | 25   | 6,5  | 31   | 22 | 27 |  |
| M20882-10-10F | 16        | - 10 | 5/8" | 5/8" - 14 |               | 12,5 | 24,5 | 9,7  | 32,5 | 24 | 28 |  |
| M20882-12-12F | 19        | - 12 | 3/4" | 3/4" - 14 |               | 15   | 37,5 | 8,5  | 36   | 27 | 32 |  |
| M20882-16-16F | 25        | - 16 | 1"   | 1" - 11   |               | 20   | 52   | 10,6 | 44   | 36 | 38 |  |



## BS STANDARD CONNECTIONS



### M10610

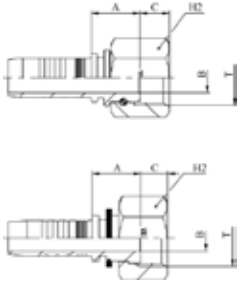
#### BSP MALE FLAT SEAT

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |    |    |    |  |  |
|--------------|-----------|------|------|-----------|--|------------------|------|----|----|----|--|--|
|              | DN        | Dash | inch |           |  | T                | B    | A  | C  | H1 |  |  |
| M10610-04-04 | 6         | - 4  | 1/4" | 1/4" - 19 |  | 6                | 25,5 | 11 | 19 |    |  |  |
| M10610-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 9,5              | 28   | 12 | 22 |    |  |  |
| M10610-06-08 | 10        | - 6  | 3/8" | 1/2" - 14 |  | 13               | 30,5 | 14 | 27 |    |  |  |
| M10610-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 13               | 31   | 14 | 27 |    |  |  |
| M10610-10-08 | 16        | - 10 | 5/8" | 1/2" - 14 |  | 13               | 31   | 14 | 27 |    |  |  |
| M10610-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 18               | 35,5 | 16 | 32 |    |  |  |

## BS STANDARD CONNECTIONS

### M20612/M20613

BSP FEMALE FLAT SEAT



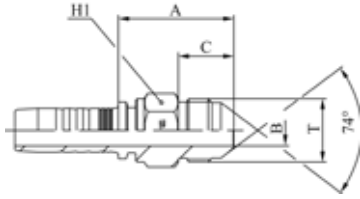
| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |      |    |  |  |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A    | C  |  |  |  |
| M20613-04-04 | 6         | -4   | 1/4"   | 1/4" - 19   |  | 4                | 14,5 | 7,9  | 19 |  |  |  |
| M20613-05-06 | 8         | -5   | 5/16"  | 3/8" - 19   |  | 7                | 16   | 9    | 22 |  |  |  |
| M20613-06-06 | 10        | -6   | 3/8"   | 3/8" - 19   |  | 7                | 16,5 | 9    | 22 |  |  |  |
| M20613-06-08 | 10        | -6   | 3/8"   | 1/2" - 14   |  | 9,3              | 17,5 | 9,8  | 27 |  |  |  |
| M20613-08-08 | 12        | -8   | 1/2"   | 1/2" - 14   |  | 9,3              | 18   | 9,8  | 27 |  |  |  |
| M20612-08-12 | 12        | -8   | 1/2"   | 3/4" - 14   |  | 15               | 21   | 11,5 | 32 |  |  |  |
| M20612-10-12 | 16        | -10  | 5/8"   | 3/4" - 14   |  | 15               | 20,5 | 11,5 | 32 |  |  |  |
| M20612-12-12 | 19        | -12  | 3/4"   | 3/4" - 14   |  | 15               | 22   | 11,5 | 32 |  |  |  |
| M20612-12-16 | 19        | -12  | 3/4"   | 1" - 11     |  | 19,8             | 23,5 | 13   | 38 |  |  |  |
| M20612-16-16 | 25        | -16  | 1"     | 1" - 11     |  | 19,8             | 25   | 13   | 38 |  |  |  |
| M20612-20-20 | 31        | -20  | 1.1/4" | 1.1/4" - 11 |  | 26               | 26   | 15   | 50 |  |  |  |

M20612: THRUST-WIRE NUT / M20613: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

### M12510

#### JIC MALE 37° CONE - SAE J516 / ISO 12151-5

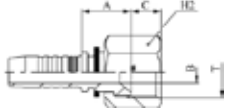
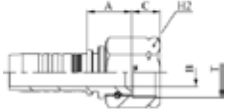


| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |      |      |    |  |  |  |
|--------------|-----------|------|--------|--------------|------------------|------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |              | T                | B    | A    | C    | H1 |  |  |  |
| M12510-04-04 | 6         | -4   | 1/4"   | 7/16" - 20   |                  | 4    | 28   | 14   | 12 |  |  |  |
| M12510-04-05 | 6         | -4   | 1/4"   | 1/2" - 20    |                  | 5,5  | 29   | 14   | 14 |  |  |  |
| M12510-04-06 | 6         | -4   | 1/4"   | 9/16" - 18   |                  | 7    | 29   | 14   | 17 |  |  |  |
| M12510-05-04 | 8         | -5   | 5/16"  | 7/16" - 20   |                  | 4    | 29   | 14   | 14 |  |  |  |
| M12510-05-05 | 8         | -5   | 5/16"  | 1/2" - 20    |                  | 5,5  | 29   | 14   | 14 |  |  |  |
| M12510-05-06 | 8         | -5   | 5/16"  | 9/16" - 18   |                  | 7    | 29   | 14   | 17 |  |  |  |
| M12510-06-05 | 10        | -6   | 3/8"   | 1/2" - 20    |                  | 5,5  | 29,5 | 14   | 17 |  |  |  |
| M12510-06-06 | 10        | -6   | 3/8"   | 9/16" - 18   |                  | 7    | 29,5 | 14   | 17 |  |  |  |
| M12510-06-08 | 10        | -6   | 3/8"   | 3/4" - 16    |                  | 9,3  | 34   | 16,5 | 19 |  |  |  |
| M12510-06-10 | 10        | -6   | 3/8"   | 7/8" - 14    |                  | 12,5 | 38,5 | 19,5 | 24 |  |  |  |
| M12510-08-06 | 12        | -8   | 1/2"   | 9/16" - 18   |                  | 7    | 32   | 14   | 19 |  |  |  |
| M12510-08-08 | 12        | -8   | 1/2"   | 3/4" - 16    |                  | 9,3  | 34,5 | 16,5 | 19 |  |  |  |
| M12510-08-10 | 12        | -8   | 1/2"   | 7/8" - 14    |                  | 12,5 | 39   | 19,5 | 24 |  |  |  |
| M12510-08-12 | 12        | -8   | 1/2"   | 1.1/16" - 12 |                  | 15   | 43   | 22   | 27 |  |  |  |
| M12510-10-10 | 16        | -10  | 5/8"   | 7/8" - 14    |                  | 12,5 | 39   | 19,5 | 24 |  |  |  |
| M12510-10-12 | 16        | -10  | 5/8"   | 1.1/16" - 12 |                  | 15   | 42,5 | 22   | 27 |  |  |  |
| M12510-12-10 | 19        | -12  | 3/4"   | 7/8" - 14    |                  | 12,5 | 41,5 | 19,5 | 27 |  |  |  |
| M12510-12-12 | 19        | -12  | 3/4"   | 1.1/16" - 12 |                  | 15   | 44   | 22   | 27 |  |  |  |
| M12510-12-14 | 19        | -12  | 3/4"   | 1.3/16" - 12 |                  | 15   | 44,5 | 22,5 | 32 |  |  |  |
| M12510-12-16 | 19        | -12  | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 47   | 23   | 34 |  |  |  |
| M12510-16-12 | 25        | -16  | 1"     | 1.1/16" - 12 |                  | 15   | 45   | 22   | 32 |  |  |  |
| M12510-16-16 | 25        | -16  | 1"     | 1.5/16" - 12 |                  | 19,8 | 48   | 23   | 34 |  |  |  |
| M12510-16-20 | 25        | -16  | 1"     | 1.5/8" - 12  |                  | 26   | 53   | 24,3 | 42 |  |  |  |
| M12510-20-20 | 31        | -20  | 1.1/4" | 1.5/8" - 12  |                  | 26   | 53,5 | 24,3 | 42 |  |  |  |
| M12510-20-24 | 31        | -20  | 1.1/4" | 1.7/8" - 12  |                  | 32   | 60,5 | 27,5 | 50 |  |  |  |
| M12510-24-24 | 38        | -24  | 1.1/2" | 1.7/8" - 12  |                  | 32   | 60,5 | 27,5 | 50 |  |  |  |
| M12510-32-32 | 51        | -32  | 2"     | 2.1/2" - 12  |                  | 42   | 72   | 34   | 65 |  |  |  |

## SAE STANDARD CONNECTIONS

### M22512/M22513

JIC FEMALE 37° CONE SEAT - SAE J516 / ISO 12151-5



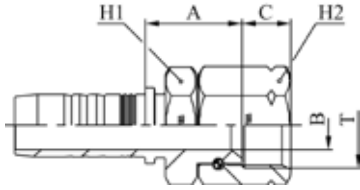
FITTINGS F 2-22

| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |      |      |    |  |  |  |  |
|--------------|-----------|------|--------|--------------|------------------|------|------|------|----|--|--|--|--|
|              | DN        | Dash | inch   |              | T                | B    | A    | C    | H2 |  |  |  |  |
| M22513-03-04 | 5         | - 3  | 3/16"  | 7/16" - 20   |                  | 3    | 15   | 8    | 15 |  |  |  |  |
| M22512-03-05 | 5         | - 3  | 3/16"  | 1/2" - 20    |                  | 4    | 15,5 | 9,1  | 17 |  |  |  |  |
| M22512-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   |                  | 4    | 15,5 | 8,7  | 17 |  |  |  |  |
| M22512-04-05 | 6         | - 4  | 1/4"   | 1/2" - 20    |                  | 4    | 16   | 9,1  | 17 |  |  |  |  |
| M22513-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   |                  | 4    | 16,5 | 9,8  | 19 |  |  |  |  |
| M22512-05-04 | 8         | - 5  | 5/16"  | 7/16" - 20   |                  | 4    | 15,5 | 8,7  | 17 |  |  |  |  |
| M22512-05-05 | 8         | - 5  | 5/16"  | 1/2" - 20    |                  | 5,5  | 16   | 9,1  | 17 |  |  |  |  |
| M22512-05-06 | 8         | - 5  | 5/16"  | 9/16" - 18   |                  | 7    | 15,5 | 9,2  | 19 |  |  |  |  |
| M22513-05-08 | 8         | - 5  | 5/16"  | 3/4" - 16    |                  | 5,5  | 17   | 10,1 | 22 |  |  |  |  |
| M22512-06-05 | 10        | - 6  | 3/8"   | 1/2" - 20    |                  | 5,5  | 16,5 | 9,1  | 17 |  |  |  |  |
| M22512-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   |                  | 7    | 16   | 9,2  | 19 |  |  |  |  |
| M22513-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    |                  | 7    | 17,5 | 10,1 | 22 |  |  |  |  |
| M22513-06-10 | 10        | - 6  | 3/8"   | 7/8" - 14    |                  | 9,3  | 18   | 12,4 | 27 |  |  |  |  |
| M22512-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    |                  | 9,3  | 20   | 10,2 | 22 |  |  |  |  |
| M22513-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    |                  | 9,3  | 18,5 | 12,4 | 27 |  |  |  |  |
| M22513-08-12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |                  | 12,5 | 22   | 14,1 | 32 |  |  |  |  |
| M22512-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |                  | 12,5 | 20   | 12,3 | 27 |  |  |  |  |
| M22513-10-12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |                  | 12,5 | 21,5 | 14,1 | 32 |  |  |  |  |
| M22512-12-08 | 19        | - 12 | 3/4"   | 3/4" - 16    |                  | 9,3  | 21,5 | 10,2 | 22 |  |  |  |  |
| M22512-12-10 | 19        | - 12 | 3/4"   | 7/8" - 14    |                  | 12,5 | 21,5 | 12,3 | 27 |  |  |  |  |
| M22512-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15   | 22,5 | 14,2 | 32 |  |  |  |  |
| M22512-12-14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |                  | 15   | 23   | 14,3 | 36 |  |  |  |  |
| M22512-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 23   | 15   | 38 |  |  |  |  |
| M22512-16-12 | 25        | - 16 | 1"     | 1.1/16" - 12 |                  | 15   | 23,5 | 14,2 | 32 |  |  |  |  |
| M22512-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 19,8 | 24   | 15   | 38 |  |  |  |  |
| M22512-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 30   | 16,2 | 50 |  |  |  |  |
| M22512-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 30   | 16,2 | 50 |  |  |  |  |
| M22512-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |                  | 32   | 35   | 18,8 | 60 |  |  |  |  |
| M22512-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 35   | 18,8 | 60 |  |  |  |  |
| M22512-32-24 | 51        | - 32 | 2"     | 1.7/8" - 12  |                  | 32   | 37   | 18,8 | 60 |  |  |  |  |
| M22512-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 44   | 35,5 | 24   | 75 |  |  |  |  |

## SAE STANDARD CONNECTIONS

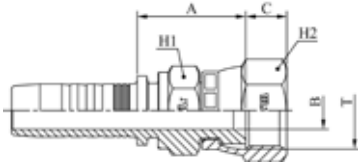
### M22712

JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)



| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |  |  |
|--------------|-----------|------|--------|--------------|------------------|------|------|------|----|----|--|--|
|              | DN        | Dash | inch   |              | T                | B    | A    | C    | H1 | H2 |  |  |
| M22712-03-04 | 5         | - 3  | 3/16"  | 7/16" - 20   |                  | 4    | 20,5 | 8,7  | 12 | 17 |  |  |
| M22712-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   |                  | 4    | 21   | 8,7  | 12 | 17 |  |  |
| M22712-04-05 | 6         | - 4  | 1/4"   | 1/2" - 20    |                  | 4    | 21,5 | 9,1  | 12 | 17 |  |  |
| M22712-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   |                  | 7    | 24   | 9,2  | 14 | 19 |  |  |
| M22712-05-05 | 8         | - 5  | 5/16"  | 1/2" - 20    |                  | 5,5  | 21,5 | 9,1  | 14 | 17 |  |  |
| M22712-05-06 | 8         | - 5  | 5/16"  | 9/16" - 18   |                  | 7    | 24   | 9,2  | 14 | 19 |  |  |
| M22712-05-08 | 8         | - 5  | 5/16"  | 3/4" - 16    |                  | 9,3  | 26   | 10,2 | 19 | 22 |  |  |
| M22712-06-04 | 10        | - 6  | 3/8"   | 7/16" - 20   |                  | 4    | 24,5 | 8,7  | 17 | 17 |  |  |
| M22712-06-05 | 10        | - 6  | 3/8"   | 1/2" - 20    |                  | 5,5  | 25   | 9,1  | 17 | 17 |  |  |
| M22712-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   |                  | 7    | 24,5 | 9,2  | 17 | 19 |  |  |
| M22712-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    |                  | 9,3  | 27   | 10,2 | 19 | 22 |  |  |
| M22712-06-10 | 10        | - 6  | 3/8"   | 7/8" - 14    |                  | 12,5 | 28   | 12,3 | 22 | 27 |  |  |
| M22712-08-06 | 12        | - 8  | 1/2"   | 9/16" - 18   |                  | 7    | 24,5 | 9,2  | 19 | 19 |  |  |
| M22712-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    |                  | 9,3  | 27,5 | 10,2 | 19 | 22 |  |  |
| M22712-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    |                  | 12,5 | 28,5 | 12,3 | 22 | 27 |  |  |
| M22712-08-12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |                  | 14   | 30   | 14,2 | 27 | 32 |  |  |
| M22712-10-08 | 16        | - 10 | 5/8"   | 3/4" - 16    |                  | 9,3  | 28,5 | 10,2 | 22 | 22 |  |  |
| M22712-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |                  | 12,5 | 28,5 | 12,3 | 22 | 27 |  |  |
| M22712-10-12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |                  | 15   | 30   | 14,2 | 27 | 32 |  |  |
| M22712-12-08 | 19        | - 12 | 3/4"   | 3/4" - 16    |                  | 9,3  | 30   | 10,2 | 27 | 22 |  |  |
| M22712-12-10 | 19        | - 12 | 3/4"   | 7/8" - 14    |                  | 12,5 | 30   | 12,3 | 27 | 27 |  |  |
| M22712-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15   | 31,5 | 14,2 | 27 | 32 |  |  |
| M22712-12-14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |                  | 15   | 33   | 14,3 | 30 | 36 |  |  |
| M22712-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 32,5 | 15   | 32 | 38 |  |  |
| M22712-16-12 | 25        | - 16 | 1"     | 1.1/16" - 12 |                  | 12,5 | 34   | 14,2 | 32 | 32 |  |  |
| M22712-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 19,8 | 34,5 | 15   | 32 | 38 |  |  |
| M22712-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 43   | 16,2 | 41 | 50 |  |  |
| M22712-20-16 | 31        | - 20 | 1.1/4" | 1.5/16" - 12 |                  | 19,8 | 36   | 15   | 38 | 38 |  |  |
| M22712-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 43,5 | 16,2 | 41 | 50 |  |  |
| M22712-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 51   | 18,8 | 50 | 60 |  |  |
| M22712-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 44   | 51,5 | 24   | 65 | 75 |  |  |

## SAE STANDARD CONNECTIONS



### M22711/M22711KR/M22711K

JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON - SAE J516 / ISO  
12151-5

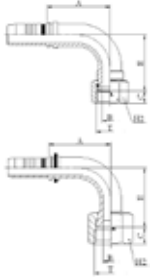
| PART. REF.     | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|----------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|----|--|
|                | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 | H2 |  |
| M22711-03-04K  | 5         | - 3  | 3/16"  | 7/16" - 20   |  | 4                | 20   | 8,9  | 12 | 15 |    |  |
| M22711-04-04KR | 6         | - 4  | 1/4"   | 7/16" - 20   |  | 4                | 20,5 | 8,9  | 12 | 15 |    |  |
| M22711-04-05KR | 6         | - 4  | 1/4"   | 1/2" - 20    |  | 4                | 21   | 9,4  | 14 | 17 |    |  |
| M22711-04-06KR | 6         | - 4  | 1/4"   | 9/16" - 18   |  | 7                | 21,5 | 9,5  | 14 | 17 |    |  |
| M22711-06-04KR | 10        | - 6  | 3/8"   | 7/16" - 20   |  | 4                | 21,5 | 8,9  | 17 | 15 |    |  |
| M22711-06-05KR | 10        | - 6  | 3/8"   | 1/2" - 20    |  | 4                | 22   | 9,4  | 17 | 17 |    |  |
| M22711-06-06KR | 10        | - 6  | 3/8"   | 9/16" - 18   |  | 7                | 22   | 9,5  | 17 | 17 |    |  |
| M22711-06-08KR | 10        | - 6  | 3/8"   | 3/4" - 16    |  | 9,3              | 26,5 | 10,7 | 19 | 22 |    |  |
| M22711-08-08KR | 12        | - 8  | 1/2"   | 3/4" - 16    |  | 9,3              | 27   | 10,7 | 19 | 22 |    |  |
| M22711-08-10KR | 12        | - 8  | 1/2"   | 7/8" - 14    |  | 9,3              | 29,5 | 12,5 | 22 | 25 |    |  |
| M22711-08-12KR | 12        | - 8  | 1/2"   | 1.1/16" - 12 |  | 15               | 28,5 | 14,1 | 27 | 32 |    |  |
| M22711-10-08KR | 16        | - 10 | 5/8"   | 3/4" - 16    |  | 9,3              | 28,5 | 10,7 | 22 | 22 |    |  |
| M22711-10-10KR | 16        | - 10 | 5/8"   | 7/8" - 14    |  | 12,5             | 29,5 | 12,5 | 22 | 25 |    |  |
| M22711-10-12KR | 16        | - 10 | 5/8"   | 1.1/16" - 12 |  | 15               | 29   | 14,1 | 27 | 32 |    |  |
| M22711-12-08KR | 19        | - 12 | 3/4"   | 3/4" - 16    |  | 9,3              | 29,5 | 10,7 | 27 | 22 |    |  |
| M22711-12-10KR | 19        | - 12 | 3/4"   | 7/8" - 14    |  | 12,5             | 30,5 | 12,5 | 27 | 25 |    |  |
| M22711-12-12KR | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 30   | 14,1 | 27 | 32 |    |  |
| M22711-12-16   | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 19,8             | 34,5 | 15,3 | 32 | 38 |    |  |
| M22711-16-12KR | 25        | - 16 | 1"     | 1.1/16" - 12 |  | 15               | 32,5 | 14,1 | 32 | 32 |    |  |
| M22711-16-16   | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,8             | 35,5 | 15,3 | 32 | 38 |    |  |
| M22711-20-20   | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26               | 42   | 16,1 | 41 | 50 |    |  |
| M22711-24-24   | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32               | 46,5 | 18,6 | 50 | 60 |    |  |
| M22711-32-32   | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 50,5 | 23,5 | 65 | 75 |    |  |

M22711: CRIMPED-BACK NUT / M22711KR and M22711K: CRIMPED-BACK COMPACT NUT

## SAE STANDARD CONNECTIONS

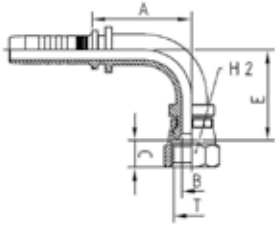
### M22592/M22593

90° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5



| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |      |      |       |    |  |  |
|--------------|-----------|------|--------|--------------|------------------|------|------|------|-------|----|--|--|
|              | DN        | Dash | inch   |              | T                | B    | A    | C    | E     | H2 |  |  |
| M22593-03-04 | 5         | - 3  | 3/16"  | 7/16" - 20   |                  | 3    | 26   | 8,5  | 23,5  | 15 |  |  |
| M22592-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   |                  | 4    | 28,5 | 8,7  | 27    | 17 |  |  |
| M22592-04-05 | 6         | - 4  | 1/4"   | 1/2" - 20    |                  | 4    | 28,5 | 9,1  | 27,5  | 17 |  |  |
| M22593-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   |                  | 4    | 29,5 | 9,8  | 28    | 19 |  |  |
| M22593-04-08 | 6         | - 4  | 1/4"   | 3/4" - 16    |                  | 7    | 29,5 | 10   | 30,5  | 22 |  |  |
| M22592-05-05 | 8         | - 5  | 5/16"  | 1/2" - 20    |                  | 5,5  | 31   | 9,1  | 28    | 17 |  |  |
| M22592-05-06 | 8         | - 5  | 5/16"  | 9/16" - 18   |                  | 7    | 31   | 9,2  | 28,5  | 19 |  |  |
| M22592-06-05 | 10        | - 6  | 3/8"   | 1/2" - 20    |                  | 5,5  | 30   | 9,1  | 26,5  | 17 |  |  |
| M22592-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   |                  | 7    | 35,5 | 9,2  | 32,5  | 19 |  |  |
| M22593-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    |                  | 7    | 36,5 | 10,1 | 29,5  | 22 |  |  |
| M22593-06-10 | 10        | - 6  | 3/8"   | 7/8" - 14    |                  | 9,3  | 36,5 | 12,4 | 31,5  | 27 |  |  |
| M22592-08-06 | 12        | - 8  | 1/2"   | 9/16" - 18   |                  | 7    | 37   | 9,2  | 33    | 19 |  |  |
| M22592-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    |                  | 9,3  | 44   | 10,2 | 41    | 22 |  |  |
| M22593-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    |                  | 9,3  | 45   | 12,4 | 36    | 27 |  |  |
| M22593-08-12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |                  | 12,5 | 45   | 14,1 | 36    | 32 |  |  |
| M22592-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |                  | 12,5 | 53,5 | 12,3 | 52,5  | 27 |  |  |
| M22593-10-12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |                  | 12,5 | 51,5 | 14,1 | 50    | 32 |  |  |
| M22592-12-10 | 19        | - 12 | 3/4"   | 7/8" - 14    |                  | 12,5 | 55   | 12,3 | 52,5  | 27 |  |  |
| M22592-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15   | 62   | 14,2 | 58    | 32 |  |  |
| M22592-12-14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |                  | 15   | 63   | 14,3 | 58    | 36 |  |  |
| M22592-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 63   | 15   | 57,5  | 38 |  |  |
| M22592-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 19,8 | 77   | 15   | 68,5  | 38 |  |  |
| M22592-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 77,5 | 16,2 | 74,5  | 50 |  |  |
| M22592-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 90,5 | 16,2 | 86,5  | 50 |  |  |
| M22592-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |                  | 32   | 90,5 | 18,8 | 90,5  | 60 |  |  |
| M22592-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 108  | 18,8 | 100,5 | 60 |  |  |
| M22592-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 44   | 142  | 24   | 137   | 75 |  |  |

M22592: THRUST-WIRE NUT / M22593: SLIP-ON NUT



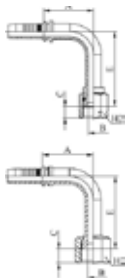
## SAE STANDARD CONNECTIONS

### M22591KR

90° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS mm |      |      |      |    |    |  |
|----------------|-----------|------|------|--------------|---------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |              | T             | B    | A    | C    | E  | H2 |  |
| M22591-04-04KR | 6         | - 4  | 1/4" | 7/16" - 20   | 4,2           | 28,5 | 8,9  | 26   | 15 |    |  |
| M22591-04-05KR | 6         | - 4  | 1/4" | 1/2" - 20    | 4             | 28,5 | 9,4  | 26,5 | 17 |    |  |
| M22591-06-06KR | 10        | - 6  | 3/8" | 9/16" - 18   | 7             | 35,5 | 9,5  | 32   | 17 |    |  |
| M22591-08-08KR | 12        | - 8  | 1/2" | 3/4" - 16    | 9,3           | 44   | 10,7 | 40,5 | 22 |    |  |
| M22591-10-10KR | 16        | - 10 | 5/8" | 7/8" - 14    | 12,5          | 53,5 | 12,5 | 47   | 25 |    |  |
| M22591-12-12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 | 15            | 62   | 14,1 | 57   | 32 |    |  |
| M22591-16-12KR | 25        | - 16 | 1"   | 1.1/16" - 12 | 15            | 62   | 14,1 | 57   | 32 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT



## SAE STANDARD CONNECTIONS

### M24792/M24793

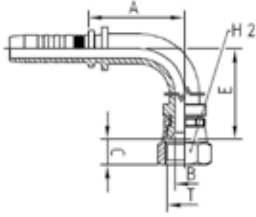
90° JIC FEMALE LONG DROP ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |              | T             | B    | A    | C    | E  | H2 |  |
| M24792-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   | 4             | 28,5 | 8,7  | 45   | 17 |    |  |
| M24792-04-05 | 6         | - 4  | 1/4"   | 1/2" - 20    | 4             | 28,5 | 9,1  | 45   | 17 |    |  |
| M24793-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   | 4             | 29,5 | 9,8  | 55,5 | 19 |    |  |
| M24792-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   | 7             | 35,5 | 9,2  | 55   | 19 |    |  |
| M24793-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    | 7             | 36,5 | 10,1 | 61,5 | 22 |    |  |
| M24792-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    | 9,3           | 44   | 10,2 | 61   | 22 |    |  |
| M24793-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    | 9,3           | 45   | 12,4 | 65   | 27 |    |  |
| M24792-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    | 12,5          | 53,5 | 12,3 | 65,5 | 27 |    |  |
| M24792-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 | 15            | 62   | 14,2 | 94,5 | 32 |    |  |
| M24792-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 | 19,8          | 77,5 | 15   | 110  | 38 |    |  |
| M24792-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  | 26            | 90,5 | 16,2 | 129  | 50 |    |  |

M24792: THRUST-WIRE NUT - M24793: SLIP-ON NUT



## SAE STANDARD CONNECTIONS



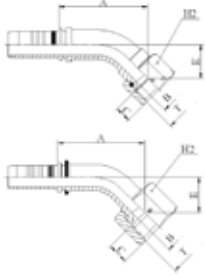
### M24791KR

90° JIC FEMALE LONG DROP ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS mm |      |      |      |    |    |  |  |
|----------------|-----------|------|------|--------------|---------------|------|------|------|----|----|--|--|
|                | DN        | Dash | inch |              | T             | B    | A    | C    | E  | H2 |  |  |
| M24791-04-04KR | 6         | - 4  | 1/4" | 7/16" - 20   |               | 4,2  | 28,5 | 8,9  | 45 | 15 |  |  |
| M24791-06-06KR | 10        | - 6  | 3/8" | 9/16" - 18   |               | 7    | 35,5 | 9,5  | 55 | 17 |  |  |
| M24791-08-08KR | 12        | - 8  | 1/2" | 3/4" - 16    |               | 9,3  | 44   | 10,7 | 64 | 22 |  |  |
| M24791-10-10KR | 16        | - 10 | 5/8" | 7/8" - 14    |               | 12,5 | 53,5 | 12,5 | 70 | 25 |  |  |
| M24791-12-12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |               | 15   | 62   | 14,1 | 96 | 32 |  |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## SAE STANDARD CONNECTIONS

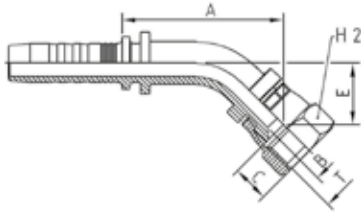


### M22542/M22543

45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|--|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |              |  | T                | B     | A    | C    | E  | H2 |  |
| M22542-03-04 | 5         | - 3  | 3/16"  | 7/16" - 20   |  | 4                | 35    | 8,7  | 14,5 | 17 |    |  |
| M22542-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   |  | 4                | 35,5  | 8,7  | 14,5 | 17 |    |  |
| M22542-04-05 | 6         | - 4  | 1/4"   | 1/2" - 20    |  | 4                | 35,5  | 9,1  | 14,5 | 17 |    |  |
| M22543-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   |  | 4                | 35,5  | 9,8  | 14   | 19 |    |  |
| M22542-05-05 | 8         | - 5  | 5/16"  | 1/2" - 20    |  | 5,5              | 37,5  | 9,1  | 14   | 17 |    |  |
| M22542-05-06 | 8         | - 5  | 5/16"  | 9/16" - 18   |  | 7                | 38    | 9,2  | 14,5 | 19 |    |  |
| M22542-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   |  | 7                | 42    | 9,2  | 16,5 | 19 |    |  |
| M22543-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    |  | 7                | 41    | 10,1 | 14   | 22 |    |  |
| M22543-06-10 | 10        | - 6  | 3/8"   | 7/8" - 14    |  | 9,3              | 42,5  | 12,4 | 15,5 | 27 |    |  |
| M22542-08-06 | 12        | - 8  | 1/2"   | 9/16" - 18   |  | 7                | 43    | 9,2  | 16,5 | 19 |    |  |
| M22542-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    |  | 9,3              | 52    | 10,2 | 20   | 22 |    |  |
| M22543-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    |  | 9,3              | 49,5  | 12,4 | 17   | 27 |    |  |
| M22543-08-12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |  | 12,5             | 49,5  | 14,1 | 17   | 32 |    |  |
| M22542-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |  | 12,5             | 62    | 12,3 | 25,5 | 27 |    |  |
| M22543-10-12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |  | 12,5             | 60    | 14,1 | 24   | 32 |    |  |
| M22542-12-08 | 19        | - 12 | 3/4"   | 3/4" - 16    |  | 9,3              | 53,5  | 10,2 | 20   | 22 |    |  |
| M22542-12-10 | 19        | - 12 | 3/4"   | 7/8" - 14    |  | 12,5             | 63,5  | 12,3 | 25   | 27 |    |  |
| M22542-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 70    | 14,2 | 27,5 | 32 |    |  |
| M22542-12-14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |  | 15               | 69,5  | 14,3 | 27,5 | 36 |    |  |
| M22542-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 19,8             | 70    | 15   | 27,5 | 38 |    |  |
| M22542-16-12 | 25        | - 16 | 1"     | 1.1/16" - 12 |  | 15               | 72,5  | 14,2 | 27,5 | 32 |    |  |
| M22542-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,8             | 84    | 15   | 32   | 38 |    |  |
| M22542-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26               | 90    | 16,2 | 36   | 50 |    |  |
| M22542-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26               | 103,5 | 16,2 | 41,5 | 50 |    |  |
| M22542-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |  | 32               | 106,5 | 18,8 | 44,5 | 60 |    |  |
| M22542-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32               | 119   | 18,8 | 46,5 | 60 |    |  |
| M22542-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 44               | 163   | 24   | 68   | 75 |    |  |

M22542: THRUST-WIRE NUT - M22543: SLIP-ON NUT



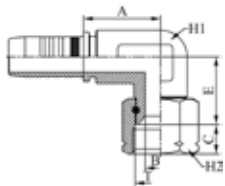
## SAE STANDARD CONNECTIONS

### M22541KR

45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS mm |      |      |      |    |    |  |
|----------------|-----------|------|------|--------------|--|---------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |              |  | T             | B    | A    | C    | E  | H2 |  |
| M22541-04-04KR | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4,2           | 34,5 | 8,9  | 13,5 | 15 |    |  |
| M22541-04-05KR | 6         | - 4  | 1/4" | 1/2" - 20    |  | 4             | 35   | 9,4  | 14   | 17 |    |  |
| M22541-06-06KR | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7             | 42   | 9,5  | 16   | 17 |    |  |
| M22541-08-08KR | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3           | 52   | 10,7 | 20   | 22 |    |  |
| M22541-10-10KR | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5          | 61   | 12,5 | 22,5 | 25 |    |  |
| M22541-12-12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15            | 69   | 14,1 | 26,5 | 32 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT



## SAE STANDARD CONNECTIONS

### M22582F

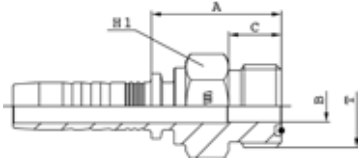
90° JIC FEMALE COMPACT ELBOW 37° CONE SEAT SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)

| PART. REF.    | HOSE BORE |      |      | Thread       |  | DIMENSIONS mm |      |      |      |    |    |    |
|---------------|-----------|------|------|--------------|--|---------------|------|------|------|----|----|----|
|               | DN        | Dash | inch |              |  | T             | B    | A    | C    | E  | H1 | H2 |
| M22582-04-04F | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4             | 20   | 8,7  | 20,5 | 14 | 17 |    |
| M22582-04-06F | 6         | - 4  | 1/4" | 9/16" - 18   |  | 7             | 20   | 9,2  | 21,5 | 14 | 19 |    |
| M22582-06-06F | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7             | 23   | 9,2  | 24   | 19 | 19 |    |
| M22582-06-08F | 10        | - 6  | 3/8" | 3/4" - 16    |  | 9,3           | 26,5 | 10,2 | 28   | 22 | 22 |    |
| M22582-08-08F | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3           | 25   | 10,2 | 28   | 22 | 22 |    |
| M22582-08-10F | 12        | - 8  | 1/2" | 7/8" - 14    |  | 12,5          | 25   | 12,3 | 29   | 22 | 27 |    |
| M22582-12-12F | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15            | 37,5 | 14,2 | 33   | 27 | 32 |    |
| M22582-16-16F | 25        | - 16 | 1"   | 1.5/16" - 12 |  | 20            | 52   | 15   | 40   | 36 | 38 |    |

## SAE STANDARD CONNECTIONS

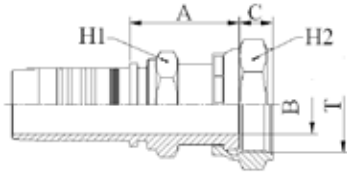
### M12410

ORFS MALE - SAE J516 / ISO 12151-1



| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |    |  |  |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C    | H1 |  |  |  |
| M12410-04-04 | 6         | -4   | 1/4"   | 9/16" - 18    |                  | 4    | 24   | 9,8  | 16 |  |  |  |
| M12410-04-06 | 6         | -4   | 1/4"   | 11/16" - 16   |                  | 6,7  | 26,5 | 11,2 | 19 |  |  |  |
| M12410-05-06 | 8         | -5   | 5/16"  | 11/16" - 16   |                  | 6,7  | 27   | 11,2 | 19 |  |  |  |
| M12410-06-06 | 10        | -6   | 3/8"   | 11/16" - 16   |                  | 6,7  | 27,5 | 11,2 | 19 |  |  |  |
| M12410-06-08 | 10        | -6   | 3/8"   | 13/16" - 16   |                  | 9,3  | 30   | 12,8 | 22 |  |  |  |
| M12410-08-06 | 12        | -8   | 1/2"   | 11/16" - 16   |                  | 6,7  | 29   | 11,2 | 22 |  |  |  |
| M12410-08-08 | 12        | -8   | 1/2"   | 13/16" - 16   |                  | 9,3  | 30,5 | 12,8 | 22 |  |  |  |
| M12410-08-10 | 12        | -8   | 1/2"   | 1" - 14       |                  | 12,5 | 35   | 15,5 | 27 |  |  |  |
| M12410-08-12 | 12        | -8   | 1/2"   | 1.3/16" - 12  |                  | 15   | 37,5 | 17   | 32 |  |  |  |
| M12410-10-08 | 16        | -10  | 5/8"   | 13/16" - 16   |                  | 9,3  | 30,5 | 12,8 | 22 |  |  |  |
| M12410-10-10 | 16        | -10  | 5/8"   | 1" - 14       |                  | 12,5 | 34,5 | 15,5 | 27 |  |  |  |
| M12410-10-12 | 16        | -10  | 5/8"   | 1.3/16" - 12  |                  | 15   | 37,5 | 17   | 32 |  |  |  |
| M12410-12-12 | 19        | -12  | 3/4"   | 1.3/16" - 12  |                  | 15   | 39   | 17   | 32 |  |  |  |
| M12410-12-16 | 19        | -12  | 3/4"   | 1.7/16" - 12  |                  | 19,8 | 40,5 | 17,5 | 38 |  |  |  |
| M12410-16-16 | 25        | -16  | 1"     | 1.7/16" - 12  |                  | 19,8 | 42   | 17,5 | 38 |  |  |  |
| M12410-16-20 | 25        | -16  | 1"     | 1.11/16" - 12 |                  | 26   | 44   | 17,5 | 46 |  |  |  |
| M12410-20-20 | 31        | -20  | 1.1/4" | 1.11/16" - 12 |                  | 26   | 46,5 | 17,5 | 46 |  |  |  |
| M12410-24-24 | 38        | -24  | 1.1/2" | 2" - 12       |                  | 32   | 48,5 | 17,5 | 55 |  |  |  |

## SAE STANDARD CONNECTIONS

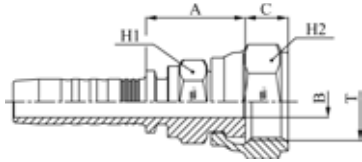


### M22411

ORFS FEMALE - SAE J516 / ISO 12151-1 PULLBACK TYPE  
(CRIMPED BACK-NUT)

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |    |    |  |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|------|----|----|--|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C    | H1 | H2 |  |  |
| M22411-04-04 | 6         | - 4  | 1/4"   | 9/16" - 18    |                  | 4    | 27,5 | 8    | 13 | 19 |  |  |
| M22411-04-06 | 6         | - 4  | 1/4"   | 11/16" - 16   |                  | 7    | 30   | 9,5  | 16 | 22 |  |  |
| M22411-04-08 | 6         | - 4  | 1/4"   | 13/16" - 16   |                  | 9,3  | 35,5 | 11   | 19 | 24 |  |  |
| M22411-05-04 | 8         | - 5  | 5/16"  | 9/16" - 18    |                  | 4    | 28,5 | 8    | 16 | 19 |  |  |
| M22411-05-06 | 8         | - 5  | 5/16"  | 11/16" - 16   |                  | 7    | 30,5 | 9,5  | 16 | 22 |  |  |
| M22411-06-04 | 10        | - 6  | 3/8"   | 9/16" - 18    |                  | 4    | 29   | 8    | 16 | 19 |  |  |
| M22411-06-06 | 10        | - 6  | 3/8"   | 11/16" - 16   |                  | 7    | 31   | 9,5  | 16 | 22 |  |  |
| M22411-06-08 | 10        | - 6  | 3/8"   | 13/16" - 16   |                  | 9,3  | 36,5 | 11   | 19 | 24 |  |  |
| M22411-08-06 | 12        | - 8  | 1/2"   | 11/16" - 16   |                  | 7    | 32   | 9,5  | 19 | 22 |  |  |
| M22411-08-08 | 12        | - 8  | 1/2"   | 13/16" - 16   |                  | 9,3  | 37   | 11   | 19 | 24 |  |  |
| M22411-08-10 | 12        | - 8  | 1/2"   | 1" - 14       |                  | 11,5 | 39   | 13,5 | 24 | 30 |  |  |
| M22411-08-12 | 12        | - 8  | 1/2"   | 1.3/16" - 12  |                  | 13,9 | 44   | 14,5 | 28 | 36 |  |  |
| M22411-10-08 | 16        | - 10 | 5/8"   | 13/16" - 16   |                  | 9,3  | 37   | 11   | 24 | 24 |  |  |
| M22411-10-10 | 16        | - 10 | 5/8"   | 1" - 14       |                  | 11,5 | 39   | 13,5 | 24 | 30 |  |  |
| M22411-10-12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  |                  | 13,9 | 44   | 14,5 | 28 | 36 |  |  |
| M22411-12-10 | 19        | - 12 | 3/4"   | 1" - 14       |                  | 11,5 | 41,5 | 13,5 | 28 | 30 |  |  |
| M22411-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |                  | 13,9 | 45,5 | 14,5 | 28 | 36 |  |  |
| M22411-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |                  | 19,8 | 48,5 | 15   | 36 | 41 |  |  |
| M22411-16-12 | 25        | - 16 | 1"     | 1.3/16" - 12  |                  | 13,9 | 48   | 13,5 | 36 | 36 |  |  |
| M22411-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |                  | 19,8 | 49,5 | 15   | 36 | 41 |  |  |
| M22411-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 |                  | 26   | 49,5 | 14,8 | 41 | 50 |  |  |
| M22411-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |                  | 26   | 52   | 14,8 | 41 | 50 |  |  |
| M22411-20-24 | 31        | - 20 | 1.1/4" | 2" - 12       |                  | 32   | 54   | 15,8 | 50 | 60 |  |  |
| M22411-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |                  | 32   | 54   | 15,8 | 50 | 60 |  |  |

## SAE STANDARD CONNECTIONS

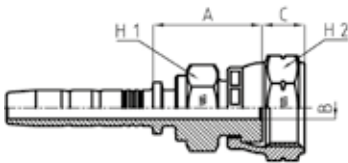


### M27411

ORFS FEMALE - SAE J516 / ISO 12151-1 SHORT TYPE  
(CRIMPED BACK-NUT)

| PART. REF.   | HOSE BORE |      |       | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|-------|--------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch  |              |  | T                | B    | A    | C  | H1 | H2 |  |
| M27411-04-04 | 6         | -4   | 1/4"  | 9/16" - 18   |  | 4                | 20,5 | 8    | 13 | 19 |    |  |
| M27411-04-06 | 6         | -4   | 1/4"  | 11/16" - 16  |  | 7                | 22   | 9,5  | 16 | 22 |    |  |
| M27411-05-06 | 8         | -5   | 5/16" | 11/16" - 16  |  | 7                | 25,5 | 9,5  | 16 | 22 |    |  |
| M27411-06-06 | 10        | -6   | 3/8"  | 11/16" - 16  |  | 7                | 26   | 9,5  | 16 | 22 |    |  |
| M27411-06-08 | 10        | -6   | 3/8"  | 13/16" - 16  |  | 9,3              | 26,5 | 11   | 19 | 24 |    |  |
| M27411-08-08 | 12        | -8   | 1/2"  | 13/16" - 16  |  | 9,3              | 26,5 | 11   | 19 | 24 |    |  |
| M27411-08-10 | 12        | -8   | 1/2"  | 1" - 14      |  | 11,5             | 27,5 | 12,5 | 24 | 30 |    |  |
| M27411-08-12 | 12        | -8   | 1/2"  | 1.3/16" - 12 |  | 13,9             | 31   | 13,5 | 28 | 36 |    |  |
| M27411-10-10 | 16        | -10  | 5/8"  | 1" - 14      |  | 11,5             | 28   | 12,5 | 24 | 30 |    |  |
| M27411-10-12 | 16        | -10  | 5/8"  | 1.3/16" - 12 |  | 13,9             | 31   | 13,5 | 28 | 36 |    |  |
| M27411-12-12 | 19        | -12  | 3/4"  | 1.3/16" - 12 |  | 13,9             | 32,5 | 13,5 | 28 | 36 |    |  |
| M27411-16-16 | 25        | -16  | 1"    | 1.7/16" - 12 |  | 19,8             | 36,5 | 13,5 | 36 | 41 |    |  |

## SAE STANDARD CONNECTIONS



### M27411KR

ORFS FEMALE - SAE J516 / ISO 12151-1 SHORT TYPE

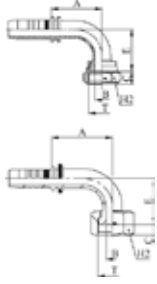
| PART. REF.     | HOSE BORE |      |      | Thread      |  | DIMENSIONS<br>mm |      |     |    |    |    |  |
|----------------|-----------|------|------|-------------|--|------------------|------|-----|----|----|----|--|
|                | DN        | Dash | inch |             |  | T                | B    | A   | C  | H1 | H2 |  |
| M27411-04-04KR | 6         | -4   | 1/4" | 9/16" - 18  |  | 4                | 20,5 | 8   | 14 | 17 |    |  |
| M27411-06-06KR | 10        | -6   | 3/8" | 11/16" - 16 |  | 7                | 23   | 9,5 | 17 | 22 |    |  |
| M27411-08-08KR | 12        | -8   | 1/2" | 13/16" - 16 |  | 9,3              | 27   | 11  | 19 | 24 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## SAE STANDARD CONNECTIONS

### M22491/M22493

#### 90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1



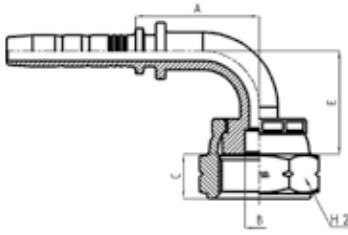
| PART. REF.      | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|-----------------|-----------|------|--------|---------------|------------------|------|------|------|------|----|--|--|
|                 | DN        | Dash | inch   |               | T                | B    | A    | C    | E    | H2 |  |  |
| M22493-04-04    | 6         | -4   | 1/4"   | 9/16" - 18    |                  | 4    | 27,5 | 8,2  | 22   | 17 |  |  |
| M22493-04-06    | 6         | -4   | 1/4"   | 11/16" - 16   |                  | 7    | 27,5 | 9,5  | 22   | 22 |  |  |
| M22493-05-06    | 8         | -5   | 5/16"  | 11/16" - 16   |                  | 7    | 32   | 9,5  | 23   | 22 |  |  |
| M22491-06-04    | 10        | -6   | 3/8"   | 9/16" - 18    |                  | 4    | 28   | 8    | 23   | 19 |  |  |
| M22493-06-06    | 10        | -6   | 3/8"   | 11/16" - 16   |                  | 6    | 30   | 9,5  | 24   | 22 |  |  |
| M22493-06-08    | 10        | -6   | 3/8"   | 13/16" - 16   |                  | 9,3  | 30   | 11   | 26,5 | 24 |  |  |
| M22491-08-06    | 12        | -8   | 1/2"   | 11/16" - 16   |                  | 7    | 30   | 9,5  | 24,5 | 22 |  |  |
| M22493-08-08    | 12        | -8   | 1/2"   | 13/16" - 16   |                  | 9    | 40,5 | 11   | 30   | 24 |  |  |
| M22493-08-10    | 12        | -8   | 1/2"   | 1" - 14       |                  | 11,5 | 40   | 13,5 | 30,5 | 30 |  |  |
| M22493-08-12    | 12        | -8   | 1/2"   | 1.3/16" - 12  |                  | 13,9 | 39,5 | 14,5 | 37,5 | 36 |  |  |
| M22491-10-08    | 16        | -10  | 5/8"   | 13/16" - 16   |                  | 9,3  | 41   | 11   | 34   | 24 |  |  |
| M22493-10-10    | 16        | -10  | 5/8"   | 1" - 14       |                  | 11,5 | 48   | 13,5 | 37,5 | 30 |  |  |
| M22491-10-10032 | 16        | -10  | 5/8"   | 1" - 14       |                  | 11   | 42   | 7,5  | 32   | 30 |  |  |
| M22493-10-12    | 16        | -10  | 5/8"   | 1.3/16" - 12  |                  | 13,9 | 48   | 14,5 | 41   | 36 |  |  |
| M22491-12-10    | 19        | -12  | 3/4"   | 1" - 14       |                  | 11,5 | 49   | 12,5 | 38,5 | 30 |  |  |
| M22493-12-12    | 19        | -12  | 3/4"   | 1.3/16" - 12  |                  | 13,9 | 56,5 | 14,5 | 48   | 36 |  |  |
| M22493-12-16    | 19        | -12  | 3/4"   | 1.7/16" - 12  |                  | 19,8 | 56,5 | 14,8 | 47,5 | 41 |  |  |
| M22491-16-12    | 25        | -16  | 1"     | 1.3/16" - 12  |                  | 13,9 | 57,5 | 13,5 | 48   | 36 |  |  |
| M22493-16-16    | 25        | -16  | 1"     | 1.7/16" - 12  |                  | 19,8 | 71,5 | 14,8 | 56   | 41 |  |  |
| M22493-16-20    | 25        | -16  | 1"     | 1.11/16" - 12 |                  | 26   | 71,5 | 14,8 | 58,5 | 50 |  |  |
| M22493-20-20    | 31        | -20  | 1.1/4" | 1.11/16" - 12 |                  | 26   | 83   | 14,8 | 66   | 50 |  |  |
| M22493-24-24    | 38        | -24  | 1.1/2" | 2" - 12       |                  | 32   | 102  | 14,8 | 79,5 | 60 |  |  |

M22491: CRIMPED BACK-NUT / M22493: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

### M22491KR

90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1



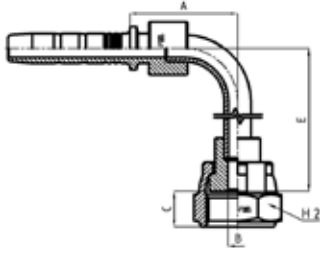
| PART. REF.     | HOSE BORE |      |      | Thread      | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-------------|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |             | T                | B    | A   | C    | E  | H2 |  |
| M22491-04-04KR | 6         | - 4  | 1/4" | 9/16" - 18  | 4,2              | 54   | 8   | 22   | 17 |    |  |
| M22491-04-06KR | 6         | - 4  | 1/4" | 11/16" - 16 | 6                | 26,3 | 9,5 | 22   | 22 |    |  |
| M22491-06-06KR | 10        | - 6  | 3/8" | 11/16" - 16 | 6                | 29   | 9,5 | 24   | 22 |    |  |
| M22491-06-08KR | 10        | - 6  | 3/8" | 13/16" - 16 | 9                | 35,5 | 11  | 28,5 | 24 |    |  |
| M22491-08-08KR | 12        | - 8  | 1/2" | 13/16" - 16 | 9                | 40,5 | 11  | 30,5 | 24 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

FITTINGS  
F 2-34



## SAE STANDARD CONNECTIONS



### M24491 LONG DROP

90° ORFS FEMALE LONG DROP ELBOW - SAE J516 / ISO 12151-1  
(CRIMPED-BACK NUT)

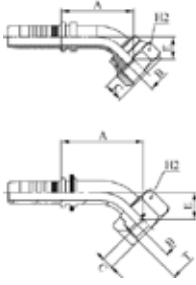
| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C    | E  | H2 |  |
| M24491-04-04 | 6         | - 4  | 1/4"   | 9/16" - 18    |  | 4,4              | 25   | 8    | 46   | 17 |    |  |
| M24491-04-06 | 6         | - 4  | 1/4"   | 11/16" - 16   |  | 7                | 26,5 | 9,5  | 53,5 | 22 |    |  |
| M24491-05-06 | 8         | - 5  | 5/16"  | 11/16" - 16   |  | 6,7              | 31,5 | 9,5  | 54   | 22 |    |  |
| M24491-06-06 | 10        | - 6  | 3/8"   | 11/16" - 16   |  | 6,7              | 32   | 9,5  | 54   | 22 |    |  |
| M24491-06-08 | 10        | - 6  | 3/8"   | 13/16" - 16   |  | 6,7              | 32   | 11   | 54   | 24 |    |  |
| M24491-08-08 | 12        | - 8  | 1/2"   | 13/16" - 16   |  | 9,6              | 37   | 11   | 64   | 24 |    |  |
| M24491-08-10 | 12        | - 8  | 1/2"   | 1" - 14       |  | 9,6              | 37   | 12,5 | 64,5 | 30 |    |  |
| M24491-10-10 | 16        | - 10 | 5/8"   | 1" - 14       |  | 12               | 41   | 13   | 70   | 30 |    |  |
| M24491-10-12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  |  | 12,7             | 41   | 13,5 | 73   | 36 |    |  |
| M24491-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 15               | 58,5 | 13,5 | 96   | 36 |    |  |
| M24491-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,8             | 71,5 | 13,5 | 114  | 41 |    |  |
| M24491-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 26               | 82,5 | 13,6 | 129  | 50 |    |  |

All items are made from brazing with the exception of M24491-04-06, M24491-12-12, M24491-16-16 and M24491-20-20

## SAE STANDARD CONNECTIONS

### M22441/M22443

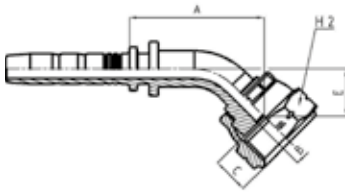
#### 45° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1



| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C    | E  | H2 |  |
| M22443-04-04 | 6         | -4   | 1/4"   | 9/16" - 18    | 4                | 31   | 8,2  | 10,5 | 17 |    |  |
| M22443-04-06 | 6         | -4   | 1/4"   | 11/16" - 16   | 7                | 31   | 9,5  | 10,5 | 22 |    |  |
| M22443-05-06 | 8         | -5   | 5/16"  | 11/16" - 16   | 7                | 34   | 9,5  | 10,5 | 22 |    |  |
| M22443-06-06 | 10        | -6   | 3/8"   | 11/16" - 16   | 6                | 32,5 | 9,5  | 11   | 22 |    |  |
| M22443-06-08 | 10        | -6   | 3/8"   | 13/16" - 16   | 9,3              | 34   | 11   | 12,5 | 24 |    |  |
| M22441-08-06 | 12        | -8   | 1/2"   | 11/16" - 16   | 7                | 32,5 | 9,5  | 11   | 22 |    |  |
| M22443-08-08 | 12        | -8   | 1/2"   | 13/16" - 16   | 9                | 42   | 11   | 13   | 24 |    |  |
| M22443-08-10 | 12        | -8   | 1/2"   | 1" - 14       | 11,5             | 42   | 13,5 | 13,5 | 30 |    |  |
| M22443-08-12 | 12        | -8   | 1/2"   | 1.3/16" - 12  | 13,9             | 46,5 | 14,5 | 18,5 | 36 |    |  |
| M22443-10-10 | 16        | -10  | 5/8"   | 1" - 14       | 11,5             | 49   | 13,5 | 16   | 30 |    |  |
| M22443-10-12 | 16        | -10  | 5/8"   | 1.3/16" - 12  | 13,9             | 51,5 | 14,5 | 18,5 | 36 |    |  |
| M22441-12-10 | 19        | -12  | 3/4"   | 1" - 14       | 11,5             | 51   | 12,5 | 16,5 | 30 |    |  |
| M22443-12-12 | 19        | -12  | 3/4"   | 1.3/16" - 12  | 13,9             | 60,5 | 14,5 | 21,5 | 36 |    |  |
| M22443-12-16 | 19        | -12  | 3/4"   | 1.7/16" - 12  | 19,8             | 60   | 14,8 | 21   | 41 |    |  |
| M22441-16-12 | 25        | -16  | 1"     | 1.3/16" - 12  | 13,9             | 66   | 13,5 | 21,5 | 36 |    |  |
| M22443-16-16 | 25        | -16  | 1"     | 1.7/16" - 12  | 19,8             | 72   | 14,8 | 23,5 | 41 |    |  |
| M22443-16-20 | 25        | -16  | 1"     | 1.11/16" - 12 | 26               | 74   | 14,8 | 25   | 50 |    |  |
| M22443-20-20 | 31        | -20  | 1.1/4" | 1.11/16" - 12 | 26               | 82   | 14,8 | 27   | 50 |    |  |
| M22443-24-24 | 38        | -24  | 1.1/2" | 2" - 12       | 32               | 98   | 14,8 | 31,5 | 60 |    |  |

M22441: CRIMPED BACK-NUT / M22443: SLIP-ON NUT

## SAE STANDARD CONNECTIONS



### M22441KR

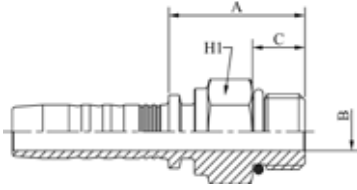
45° ORFS FEMALE SWEEP ELBOW - SAE J516 / ISO 12151-1

| PART. REF.     | HOSE BORE |      |      | Thread      |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|----------------|-----------|------|------|-------------|--|------------------|------|-----|------|----|----|--|
|                | DN        | Dash | inch |             |  | T                | B    | A   | C    | E  | H2 |  |
| M22441-04-04KR | 6         | - 4  | 1/4" | 9/16" - 18  |  | 4,2              | 30   | 8   | 10,5 | 17 |    |  |
| M22441-06-06KR | 10        | - 6  | 3/8" | 11/16" - 16 |  | 6                | 31,5 | 9,5 | 11   | 22 |    |  |
| M22441-08-08KR | 12        | - 8  | 1/2" | 13/16" - 16 |  | 9                | 42,5 | 11  | 13,5 | 24 |    |  |

## SAE STANDARD CONNECTIONS

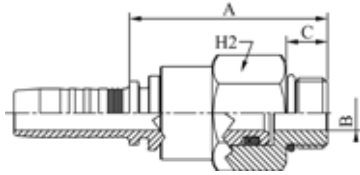
### M13010

SAE MALE O-RING BOSS TYPE - SAE J516 / ISO 11926



| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |  |  |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C  |  |  |  |
| M13010-04-04 | 6         | - 4  | 1/4"   | 7/16" - 20   |  | 4,4              | 24   | 9,1  | 14 |  |  |  |
| M13010-04-06 | 6         | - 4  | 1/4"   | 9/16" - 18   |  | 7,5              | 24,5 | 9,9  | 17 |  |  |  |
| M13010-06-06 | 10        | - 6  | 3/8"   | 9/16" - 18   |  | 7,5              | 25,5 | 9,9  | 17 |  |  |  |
| M13010-06-08 | 10        | - 6  | 3/8"   | 3/4" - 16    |  | 9,9              | 28,5 | 11,1 | 22 |  |  |  |
| M13010-06-10 | 10        | - 6  | 3/8"   | 7/8" - 14    |  | 12,3             | 31,5 | 12,7 | 25 |  |  |  |
| M13010-08-08 | 12        | - 8  | 1/2"   | 3/4" - 16    |  | 9,9              | 29   | 11,1 | 22 |  |  |  |
| M13010-08-10 | 12        | - 8  | 1/2"   | 7/8" - 14    |  | 12,3             | 32   | 12,7 | 25 |  |  |  |
| M13010-08-12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |  | 15,5             | 38,5 | 15,1 | 32 |  |  |  |
| M13010-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |  | 12,5             | 32   | 12,7 | 25 |  |  |  |
| M13010-10-12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |  | 15,5             | 37,5 | 15,1 | 32 |  |  |  |
| M13010-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15,5             | 39,5 | 15,1 | 32 |  |  |  |
| M13010-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 21,5             | 40   | 15,1 | 38 |  |  |  |
| M13010-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,5             | 41   | 15,1 | 38 |  |  |  |
| M13010-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 27,5             | 43,5 | 15,1 | 46 |  |  |  |

## SAE STANDARD CONNECTIONS

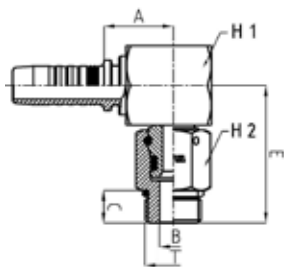


### M14310

SAE SWIVEL MALE O-RING BOSS TYPE - SAE J516 / ISO 11926

| PART. REF.   | HOSE BORE |      |      | Thread       | DIMENSIONS mm |      |      |    |    |  |  |
|--------------|-----------|------|------|--------------|---------------|------|------|----|----|--|--|
|              | DN        | Dash | inch |              | T             | B    | A    | C  | H2 |  |  |
| M14310-04-04 | 6         | -4   | 1/4" | 7/16" - 20   | 4             | 43   | 9,1  | 17 |    |  |  |
| M14310-04-06 | 6         | -4   | 1/4" | 9/16" - 18   | 7             | 44   | 9,9  | 22 |    |  |  |
| M14310-06-06 | 10        | -6   | 3/8" | 9/16" - 18   | 7             | 48   | 9,9  | 22 |    |  |  |
| M14310-06-08 | 10        | -6   | 3/8" | 3/4" - 16    | 9,3           | 47   | 11,1 | 22 |    |  |  |
| M14310-08-08 | 12        | -8   | 1/2" | 3/4" - 16    | 9,3           | 53   | 11,1 | 27 |    |  |  |
| M14310-08-10 | 12        | -8   | 1/2" | 7/8" - 14    | 9,3           | 41,5 | 13   | 27 |    |  |  |
| M14310-08-12 | 12        | -8   | 1/2" | 1.1/16" - 12 | 12,5          | 49,5 | 15   | 32 |    |  |  |
| M14310-10-10 | 16        | -10  | 5/8" | 7/8" - 14    | 9,3           | 41,5 | 13   | 27 |    |  |  |
| M14310-12-12 | 19        | -12  | 3/4" | 1.1/16" - 12 | 12,5          | 50,5 | 15   | 32 |    |  |  |

Not to be used as a live swivel



## SAE STANDARD CONNECTIONS

### M14390

90° SAE SWIVEL MALE O-RING BOSS TYPE - SAE J516 / ISO 11926

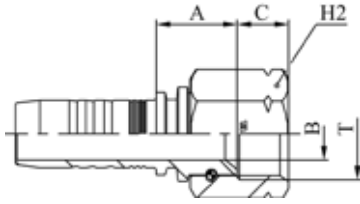
| PART. REF.   | HOSE BORE |      |      | Thread       | DIMENSIONS mm |      |      |      |    |    |    |
|--------------|-----------|------|------|--------------|---------------|------|------|------|----|----|----|
|              | DN        | Dash | inch |              | T             | B    | A    | C    | E  | H1 | H2 |
| M14390-06-06 | 10        | -6   | 3/8" | 9/16" - 18   | 5,7           | 20   | 9,9  | 40   | 22 | 17 |    |
| M14390-06-08 | 10        | -6   | 3/8" | 3/4" - 16    | 9,3           | 20   | 11,1 | 44,5 | 22 | 22 |    |
| M14390-08-08 | 12        | -8   | 1/2" | 3/4" - 16    | 9,3           | 23,5 | 11,1 | 47   | 27 | 22 |    |
| M14390-08-10 | 12        | -8   | 1/2" | 7/8" - 14    | 9,8           | 23,5 | 13   | 47   | 27 | 27 |    |
| M14390-10-10 | 16        | -10  | 5/8" | 7/8" - 14    | 9,8           | 23,5 | 13   | 47   | 27 | 27 |    |
| M14390-12-12 | 19        | -12  | 3/4" | 1.1/16" - 12 | 13            | 28   | 15   | 58,5 | 34 | 32 |    |

Brazed solution - Not to be used as a live swivel

## SAE STANDARD CONNECTIONS

### M22612

SAE FEMALE 45° CONE SEAT - SAE J516/J512 (THRUST-WIRE NUT)

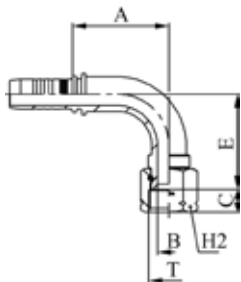


| PART. REF.   | HOSE BORE |      |       | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |  |  |
|--------------|-----------|------|-------|--------------|--|------------------|------|------|----|----|--|--|
|              | DN        | Dash | inch  |              |  | T                | B    | A    | C  | H2 |  |  |
| M22612-04-04 | 6         | - 4  | 1/4"  | 7/16" - 20   |  | 4                | 15,5 | 8,7  | 17 |    |  |  |
| M22612-05-06 | 8         | - 5  | 5/16" | 5/8" - 18    |  | 7                | 16   | 10,8 | 22 |    |  |  |
| M22612-06-06 | 10        | - 6  | 3/8"  | 5/8" - 18    |  | 7                | 16,5 | 10,8 | 22 |    |  |  |
| M22612-12-12 | 19        | - 12 | 3/4"  | 1.1/16" - 14 |  | 15               | 22,5 | 14,4 | 32 |    |  |  |

## SAE STANDARD CONNECTIONS

### M22692

90° SAE FEMALE SWEEP ELBOW 45° CONE SEAT - SAE J516/J512 (THRUST-WIRE NUT)

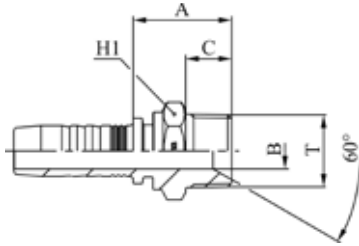


| PART. REF.   | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|------|--------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch |              |  | T                | B    | A    | C  | E  | H2 |  |
| M22692-04-04 | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4                | 28,5 | 8,7  | 27 | 17 |    |  |
| M22692-06-06 | 10        | - 6  | 3/8" | 5/8" - 18    |  | 7                | 35,5 | 10,8 | 33 | 22 |    |  |
| M22692-12-12 | 19        | - 12 | 3/4" | 1.1/16" - 14 |  | 15               | 62   | 14,4 | 58 | 32 |    |  |

## SAE STANDARD CONNECTIONS

### M12810

NPTF MALE 60° CONE SEAT - SAE J516/J514

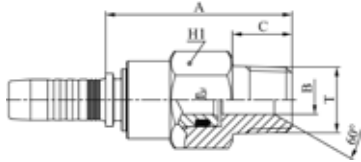


| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |     |  |  |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|-----|--|--|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C   |  |  |  |
| M12810-03-02 | 5         | -3   | 3/16"  | 1/8" - 27     |  | 3                | 23,5 | 10   | 12  |  |  |  |
| M12810-03-04 | 5         | -3   | 3/16"  | 1/4" - 18     |  | 5,5              | 29   | 14,5 | 14  |  |  |  |
| M12810-04-02 | 6         | -4   | 1/4"   | 1/8" - 27     |  | 4                | 24   | 10   | 12  |  |  |  |
| M12810-04-04 | 6         | -4   | 1/4"   | 1/4" - 18     |  | 5,5              | 29   | 14,5 | 14  |  |  |  |
| M12810-04-06 | 6         | -4   | 1/4"   | 3/8" - 18     |  | 9,3              | 27,5 | 14,5 | 19  |  |  |  |
| M12810-04-08 | 6         | -4   | 1/4"   | 1/2" - 14     |  | 9,3              | 33,5 | 19,2 | 24  |  |  |  |
| M12810-05-04 | 8         | -5   | 5/16"  | 1/4" - 18     |  | 5,5              | 29,5 | 14,5 | 14  |  |  |  |
| M12810-05-06 | 8         | -5   | 5/16"  | 3/8" - 18     |  | 9,3              | 32   | 14,5 | 19  |  |  |  |
| M12810-06-04 | 10        | -6   | 3/8"   | 1/4" - 18     |  | 5,5              | 30   | 14,5 | 14  |  |  |  |
| M12810-06-06 | 10        | -6   | 3/8"   | 3/8" - 18     |  | 9,3              | 28,5 | 14,5 | 19  |  |  |  |
| M12810-06-08 | 10        | -6   | 3/8"   | 1/2" - 14     |  | 12,5             | 34,5 | 19,2 | 24  |  |  |  |
| M12810-08-06 | 12        | -8   | 1/2"   | 3/8" - 18     |  | 9,3              | 29   | 14,5 | 19  |  |  |  |
| M12810-08-08 | 12        | -8   | 1/2"   | 1/2" - 14     |  | 12,5             | 35   | 19,2 | 24  |  |  |  |
| M12810-08-12 | 12        | -8   | 1/2"   | 3/4" - 14     |  | 15,5             | 35,5 | 19,2 | 27  |  |  |  |
| M12810-10-08 | 16        | -10  | 5/8"   | 1/2" - 14     |  | 12,5             | 38,5 | 19,2 | 24  |  |  |  |
| M12810-10-12 | 16        | -10  | 5/8"   | 3/4" - 14     |  | 16               | 40   | 19,2 | 27  |  |  |  |
| M12810-12-08 | 19        | -12  | 3/4"   | 1/2" - 14     |  | 12,5             | 36,5 | 19,2 | 27  |  |  |  |
| M12810-12-12 | 19        | -12  | 3/4"   | 3/4" - 14     |  | 16               | 36,5 | 19,2 | 27  |  |  |  |
| M12810-12-16 | 19        | -12  | 3/4"   | 1" - 11,5     |  | 19,8             | 46   | 24,2 | 36  |  |  |  |
| M12810-16-12 | 25        | -16  | 1"     | 3/4" - 14     |  | 15,5             | 39   | 19,2 | 32  |  |  |  |
| M12810-16-16 | 25        | -16  | 1"     | 1" - 11,5     |  | 19,8             | 44   | 24,2 | 36  |  |  |  |
| M12810-16-20 | 25        | -16  | 1"     | 1.1/4" - 11,5 |  | 26               | 56,5 | 25   | 46  |  |  |  |
| M12810-20-20 | 31        | -20  | 1.1/4" | 1.1/4" - 11,5 |  | 26               | 56,5 | 25   | 46  |  |  |  |
| M12810-24-24 | 38        | -24  | 1.1/2" | 1.1/2" - 11,5 |  | 32               | 57,5 | 26   | 50  |  |  |  |
| M12810-32-32 | 51        | -32  | 2"     | 2" - 11,5     |  | 45               | 64,5 | 26,5 | 65  |  |  |  |
| M12810-40-40 | 63        | -40  | 2.1/2" | 2.1/2" - 8    |  | 55,4             | 78   | 39,9 | 80  |  |  |  |
| M12810-48-48 | 76        | -48  | 3"     | 3" - 8        |  | 68,9             | 86   | 41,5 | 100 |  |  |  |

## SAE STANDARD CONNECTIONS

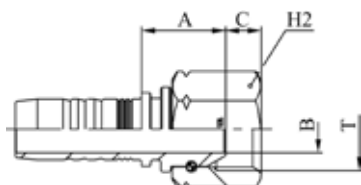
### M14110R

NPTF SWIVEL MALE 60° CONE SEAT - SAE J516/J514



| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS mm |      |      |      |    |  |  |
|---------------|-----------|------|------|-----------|---------------|------|------|------|----|--|--|
|               | DN        | Dash | inch |           | T             | B    | A    | C    | H1 |  |  |
| M14110-04-02R | 6         | -4   | 1/4" | 1/8" - 27 |               | 3    | 42   | 10   | 17 |  |  |
| M14110-04-04R | 6         | -4   | 1/4" | 1/4" - 18 |               | 4    | 46,5 | 14,5 | 17 |  |  |
| M14110-04-06R | 6         | -4   | 1/4" | 3/8" - 18 |               | 7    | 46,5 | 14,5 | 19 |  |  |
| M14110-06-04R | 10        | -6   | 3/8" | 1/4" - 18 |               | 4    | 50,5 | 14,5 | 22 |  |  |
| M14110-06-06R | 10        | -6   | 3/8" | 3/8" - 18 |               | 7    | 50,5 | 14,5 | 22 |  |  |
| M14110-06-08R | 10        | -6   | 3/8" | 1/2" - 14 |               | 9,3  | 55   | 19,2 | 24 |  |  |
| M14110-08-06R | 12        | -8   | 1/2" | 3/8" - 18 |               | 7    | 54,5 | 14,5 | 27 |  |  |
| M14110-08-08R | 12        | -8   | 1/2" | 1/2" - 14 |               | 9,3  | 59   | 19,2 | 27 |  |  |
| M14110-12-12R | 19        | -12  | 3/4" | 3/4" - 14 |               | 16   | 58   | 19,2 | 32 |  |  |
| M14110-16-16R | 25        | -16  | 1"   | 1" - 11,5 |               | 19,8 | 66   | 24,2 | 38 |  |  |

Not to be used as a live swivel



## SAE STANDARD CONNECTIONS

### M22812

NPSM FEMALE 60° CONE - SAE J516/J514 (THRUST-WIRE NUT)

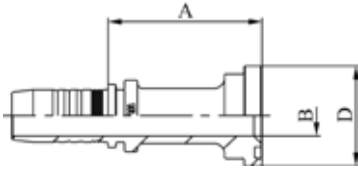
| PART. REF.   | HOSE BORE |      |      | Thread    | DIMENSIONS mm |      |      |      |    |  |  |
|--------------|-----------|------|------|-----------|---------------|------|------|------|----|--|--|
|              | DN        | Dash | inch |           | T             | B    | A    | C    | H2 |  |  |
| M22812-04-04 | 6         | -4   | 1/4" | 1/4" - 18 |               | 4    | 17,5 | 4,2  | 19 |  |  |
| M22812-06-04 | 10        | -6   | 3/8" | 1/4" - 18 |               | 4,1  | 18   | 4,2  | 19 |  |  |
| M22812-06-06 | 10        | -6   | 3/8" | 3/8" - 18 |               | 7    | 21   | 6    | 22 |  |  |
| M22812-08-08 | 12        | -8   | 1/2" | 1/2" - 14 |               | 9,3  | 23   | 6,5  | 27 |  |  |
| M22812-12-12 | 19        | -12  | 3/4" | 3/4" - 14 |               | 15   | 24,5 | 9    | 32 |  |  |
| M22812-16-16 | 25        | -16  | 1"   | 1" - 11,5 |               | 19,8 | 27,5 | 10,5 | 38 |  |  |



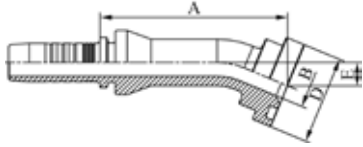
## SAE STANDARD CONNECTIONS

### M23311

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |       |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|-------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D     |  |  |  |
| M23311-08-08 | 12        | - 8  | 1/2"   | 1/2"   |                  | 9,3  | 51    | 30,3  |  |  |  |
| M23311-08-12 | 12        | - 8  | 1/2"   | 3/4"   |                  | 15,1 | 58    | 38    |  |  |  |
| M23311-10-08 | 16        | - 10 | 5/8"   | 1/2"   |                  | 9,3  | 51    | 30,3  |  |  |  |
| M23311-10-12 | 16        | - 10 | 5/8"   | 3/4"   |                  | 15   | 65,5  | 38    |  |  |  |
| M23311-10-24 | 16        | - 10 | 5/8"   | 1.1/2" |                  | 32   | 69,5  | 60,5  |  |  |  |
| M23311-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 15   | 58    | 38    |  |  |  |
| M23311-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 58    | 44,6  |  |  |  |
| M23311-12-20 | 19        | - 12 | 3/4"   | 1.1/4" |                  | 26   | 69,5  | 51    |  |  |  |
| M23311-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 15   | 60,5  | 38    |  |  |  |
| M23311-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,8 | 64,5  | 44,6  |  |  |  |
| M23311-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 70,5  | 51    |  |  |  |
| M23311-20-12 | 31        | - 20 | 1.1/4" | 3/4"   |                  | 15   | 61    | 38    |  |  |  |
| M23311-20-16 | 31        | - 20 | 1.1/4" | 1"     |                  | 19,8 | 64,5  | 44,6  |  |  |  |
| M23311-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 70,5  | 51    |  |  |  |
| M23311-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 72,5  | 60,5  |  |  |  |
| M23311-20-32 | 31        | - 20 | 1.1/4" | 2"     |                  | 42   | 75,5  | 71,6  |  |  |  |
| M23311-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 75,5  | 60,5  |  |  |  |
| M23311-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 75,5  | 71,6  |  |  |  |
| M23311-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 79    | 71,6  |  |  |  |
| M23311-32-40 | 51        | - 32 | 2"     | 2.1/2" |                  | 56   | 81    | 84,3  |  |  |  |
| M23311-38-40 | 60        | - 38 | 2.3/8" | 2.1/2" |                  | 50,5 | 84    | 84,3  |  |  |  |
| M23311-40-32 | 63        | - 40 | 2.1/2" | 2"     |                  | 42   | 78,5  | 71,6  |  |  |  |
| M23311-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |                  | 55,4 | 84    | 84,3  |  |  |  |
| M23311-40-48 | 63        | - 40 | 2.1/2" | 3"     |                  | 68,9 | 79    | 101,6 |  |  |  |
| M23311-40-56 | 63        | - 40 | 2.1/2" | 3.1/2" |                  | 79   | 90,5  | 114,3 |  |  |  |
| M23311-40-64 | 63        | - 40 | 2.1/2" | 4"     |                  | 90   | 96,5  | 127   |  |  |  |
| M23311-48-48 | 76        | - 48 | 3"     | 3"     |                  | 68,9 | 85,5  | 101,6 |  |  |  |
| M23311-56-56 | 89        | - 56 | 3.1/2" | 3.1/2" |                  | 79   | 94,5  | 114,3 |  |  |  |
| M23311-64-64 | 102       | - 64 | 4"     | 4"     |                  | 90   | 100,5 | 127   |  |  |  |



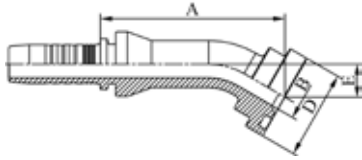
## SAE STANDARD CONNECTIONS

### M23321

22,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |      |  |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|-------|-------|------|--|--|--|
|                 | DN        | Dash | inch   | Inch   |  | B                | A     | D     | E    |  |  |  |
| M23321-08-08    | 12        | - 8  | 1/2"   | 1/2"   |  | 9,3              | 64    | 30,3  | 8    |  |  |  |
| M23321-12-12    | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 74,5  | 38    | 10   |  |  |  |
| M23321-12-16    | 19        | - 12 | 3/4"   | 1"     |  | 20               | 74,5  | 44,6  | 10   |  |  |  |
| M23321-16-16    | 25        | - 16 | 1"     | 1"     |  | 19,8             | 89    | 44,6  | 11,5 |  |  |  |
| M23321-16-20    | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 88,5  | 51    | 11,5 |  |  |  |
| M23321-16-24    | 25        | - 16 | 1"     | 1.1/2" |  | 32               | 88,5  | 60,5  | 12   |  |  |  |
| M23321-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 100   | 51    | 12   |  |  |  |
| M23321-20-20018 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 99    | 51    | 18   |  |  |  |
| M23321-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 102   | 60,5  | 13   |  |  |  |
| M23321-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 116,5 | 60,5  | 14   |  |  |  |
| M23321-24-24023 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 115   | 60,5  | 23   |  |  |  |
| M23321-24-32    | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 116,5 | 71,6  | 14   |  |  |  |
| M23321-32-32    | 51        | - 32 | 2"     | 2"     |  | 42               | 134,5 | 71,6  | 15   |  |  |  |
| M23321-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" |  | 52               | 80    | 84,3  | 16,5 |  |  |  |
| M23321-40-48    | 63        | - 40 | 2.1/2" | 3"     |  | 61               | 107,5 | 101,6 | 20,5 |  |  |  |
| M23321-48-48    | 76        | - 48 | 3"     | 3"     |  | 61               | 111   | 101,6 | 20,5 |  |  |  |

All items are made from solid with the exception of M23321-40-40, M23321-40-48, M23321-48-48



## SAE STANDARD CONNECTIONS

### M23331

30° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

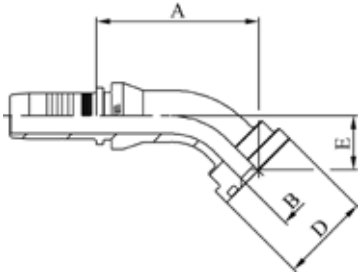
| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |       |      |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|-------|-------|------|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A     | D    | E |  |  |
| M23331-08-08    | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 62,5  | 30,3  | 11   |   |  |  |
| M23331-08-12    | 12        | - 8  | 1/2"   | 3/4"   | 15               | 63,5  | 38    | 11,5 |   |  |  |
| M23331-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 15               | 73    | 38    | 14   |   |  |  |
| M23331-12-16    | 19        | - 12 | 3/4"   | 1"     | 20               | 73    | 44,6  | 14   |   |  |  |
| M23331-16-16    | 25        | - 16 | 1"     | 1"     | 19,8             | 87    | 44,6  | 16,5 |   |  |  |
| M23331-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 87    | 51    | 16,5 |   |  |  |
| M23331-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 98    | 51    | 17,5 |   |  |  |
| M23331-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 100   | 60,5  | 18,5 |   |  |  |
| M23331-20-24044 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 131,5 | 60,5  | 44   |   |  |  |
| M23331-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 114,5 | 60,5  | 20   |   |  |  |
| M23331-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 114,5 | 71,6  | 20   |   |  |  |
| M23331-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 132   | 71,6  | 22   |   |  |  |
| M23331-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" | 52               | 87,5  | 84,3  | 24   |   |  |  |
| M23331-40-48    | 63        | - 40 | 2.1/2" | 3"     | 52               | 85    | 101,6 | 24,5 |   |  |  |
| M23331-48-48    | 76        | - 48 | 3"     | 3"     | 61               | 117,5 | 101,6 | 31,5 |   |  |  |

All items are made from solid with the exception of M23331-40-40, M23331-40-48, M23331-48-48

## SAE STANDARD CONNECTIONS

### M23341

#### 45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



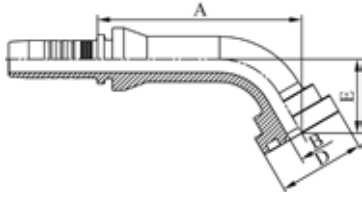
| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |      |  |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|-------|-------|------|--|--|--|
|                 | DN        | Dash | inch   | Inch   |  | B                | A     | D     | E    |  |  |  |
| M23341-06-08    | 10        | - 6  | 3/8"   | 1/2"   |  | 9,3              | 52,5  | 30    | 17,5 |  |  |  |
| M23341-08-08    | 12        | - 8  | 1/2"   | 1/2"   |  | 9,3              | 58,5  | 30,3  | 18,5 |  |  |  |
| M23341-08-12    | 12        | - 8  | 1/2"   | 3/4"   |  | 15               | 59,5  | 38    | 19   |  |  |  |
| M23341-08-16    | 12        | - 8  | 1/2"   | 1"     |  | 19,8             | 59,5  | 44,6  | 19   |  |  |  |
| M23341-10-12    | 16        | - 10 | 5/8"   | 3/4"   |  | 15               | 61    | 38    | 22   |  |  |  |
| M23341-12-12    | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 71    | 38    | 26   |  |  |  |
| M23341-12-16    | 19        | - 12 | 3/4"   | 1"     |  | 20               | 68,5  | 44,6  | 23   |  |  |  |
| M23341-16-12    | 25        | - 16 | 1"     | 3/4"   |  | 15               | 74,5  | 38    | 23   |  |  |  |
| M23341-16-16    | 25        | - 16 | 1"     | 1"     |  | 19,8             | 81,5  | 44,6  | 27,5 |  |  |  |
| M23341-16-16032 | 25        | - 16 | 1"     | 1"     |  | 19,8             | 86    | 44,5  | 32   |  |  |  |
| M23341-16-20    | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 81,5  | 51    | 27,5 |  |  |  |
| M23341-20-16    | 31        | - 20 | 1.1/4" | 1"     |  | 19,8             | 84,5  | 44,6  | 29,5 |  |  |  |
| M23341-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 92    | 51    | 29,5 |  |  |  |
| M23341-20-20038 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 100,5 | 50,9  | 38   |  |  |  |
| M23341-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 93,5  | 60,5  | 31   |  |  |  |
| M23341-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 107,5 | 60,5  | 34,5 |  |  |  |
| M23341-24-24044 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 117   | 60,5  | 44   |  |  |  |
| M23341-24-32    | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 107,5 | 71,6  | 34,5 |  |  |  |
| M23341-32-20    | 51        | - 32 | 2"     | 1.1/4" |  | 26               | 128,5 | 51    | 32   |  |  |  |
| M23341-32-32    | 51        | - 32 | 2"     | 2"     |  | 42               | 124   | 71,6  | 39   |  |  |  |
| M23341-32-32056 | 51        | - 32 | 2"     | 2"     |  | 42               | 141   | 71,5  | 56   |  |  |  |
| M23341-32-40    | 51        | - 32 | 2"     | 2.1/2" |  | 56               | 136,5 | 84,3  | 49,5 |  |  |  |
| M23341-40-32    | 63        | - 40 | 2.1/2" | 2"     |  | 42               | 152   | 71,6  | 48,5 |  |  |  |
| M23341-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" |  | 52               | 95    | 84,3  | 48,5 |  |  |  |
| M23341-40-48    | 63        | - 40 | 2.1/2" | 3"     |  | 61               | 117,5 | 101,6 | 53,5 |  |  |  |
| M23341-48-48    | 76        | - 48 | 3"     | 3"     |  | 58               | 125,5 | 101,6 | 53,5 |  |  |  |
| M23341-56-56    | 89        | - 56 | 3.1/2" | 3.1/2" |  | 79               | 139   | 114,3 | 68   |  |  |  |
| M23341-56-64    | 89        | - 56 | 3.1/2" | 4"     |  | 79               | 124,5 | 127   | 53,5 |  |  |  |
| M23341-64-64    | 102       | - 64 | 4"     | 4"     |  | 90               | 132   | 127   | 56,5 |  |  |  |

All items are made from solid with the exception of M23341-40-40, M23341-40-48, M23341-48-48, M23341-56-56, M23341-56-64, M23341-64-64.

## SAE STANDARD CONNECTIONS

### M23361

60° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



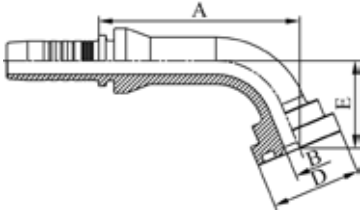
| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |       |      |  |  |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|-------|-------|------|--|--|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A     | D     | E    |  |  |  |  |
| M23361-08-08    | 12        | - 8  | 1/2"   | 1/2"   |                  | 9,3  | 71,5  | 30,3  | 26   |  |  |  |  |
| M23361-08-12    | 12        | - 8  | 1/2"   | 3/4"   |                  | 15   | 72    | 38    | 26,5 |  |  |  |  |
| M23361-12-12    | 19        | - 12 | 3/4"   | 3/4"   |                  | 15   | 87    | 38    | 33   |  |  |  |  |
| M23361-12-16    | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 87    | 44,6  | 33   |  |  |  |  |
| M23361-16-16    | 25        | - 16 | 1"     | 1"     |                  | 19,8 | 104   | 44,6  | 39   |  |  |  |  |
| M23361-16-20    | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 104   | 51    | 39   |  |  |  |  |
| M23361-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 120   | 51    | 43   |  |  |  |  |
| M23361-20-20065 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 107,5 | 51    | 65   |  |  |  |  |
| M23361-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 121   | 60,5  | 44,5 |  |  |  |  |
| M23361-24-20    | 38        | - 24 | 1.1/2" | 1.1/4" |                  | 26   | 136,5 | 51    | 46,5 |  |  |  |  |
| M23361-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 143,5 | 60,5  | 50,5 |  |  |  |  |
| M23361-24-32    | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 143,5 | 71,6  | 51   |  |  |  |  |
| M23361-32-32    | 51        | - 32 | 2"     | 2"     |                  | 42   | 129   | 71,6  | 58   |  |  |  |  |
| M23361-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" |                  | 52   | 94,5  | 84,3  | 67   |  |  |  |  |
| M23361-40-48    | 63        | - 40 | 2.1/2" | 3"     |                  | 52   | 87,5  | 101,6 | 54,5 |  |  |  |  |
| M23361-48-48    | 76        | - 48 | 3"     | 3"     |                  | 61   | 128,5 | 101,6 | 79   |  |  |  |  |

All items are made from solid with the exception of M23361-40-40, M23361-40-48, M23361-48-48.

## SAE STANDARD CONNECTIONS

### M23371

67,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

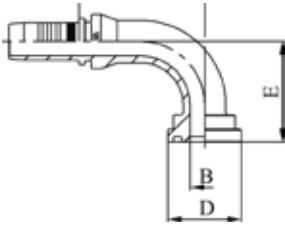


| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |      |  |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|-------|-------|------|--|--|--|
|                 | DN        | Dash | inch   | Inch   |  | B                | A     | D     | E    |  |  |  |
| M23371-08-08    | 12        | - 8  | 1/2"   | 1/2"   |  | 9,3              | 68    | 30,3  | 29,5 |  |  |  |
| M23371-08-12    | 12        | - 8  | 1/2"   | 3/4"   |  | 15               | 68,5  | 38    | 30,5 |  |  |  |
| M23371-08-16    | 12        | - 8  | 1/2"   | 1"     |  | 19,8             | 68,5  | 44,6  | 30,5 |  |  |  |
| M23371-12-12    | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 82    | 38    | 38   |  |  |  |
| M23371-12-16    | 19        | - 12 | 3/4"   | 1"     |  | 20               | 82    | 44,6  | 38   |  |  |  |
| M23371-12-20    | 19        | - 12 | 3/4"   | 1.1/4" |  | 26               | 82    | 51    | 38   |  |  |  |
| M23371-16-16    | 25        | - 16 | 1"     | 1"     |  | 19,8             | 98,5  | 44,6  | 45   |  |  |  |
| M23371-16-20    | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 98,5  | 51    | 45   |  |  |  |
| M23371-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 114   | 51    | 50   |  |  |  |
| M23371-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 115   | 60,5  | 52   |  |  |  |
| M23371-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 136,5 | 60,5  | 59   |  |  |  |
| M23371-24-32    | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 136,5 | 71,6  | 59   |  |  |  |
| M23371-32-32    | 51        | - 32 | 2"     | 2"     |  | 42               | 162   | 71,6  | 68,5 |  |  |  |
| M23371-32-32085 | 51        | - 32 | 2"     | 2"     |  | 42               | 150,5 | 71,6  | 85   |  |  |  |
| M23371-32-40    | 51        | - 32 | 2"     | 2.1/2" |  | 56               | 171,5 | 84,3  | 83,5 |  |  |  |
| M23371-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" |  | 52               | 95    | 84,3  | 78   |  |  |  |
| M23371-40-48    | 63        | - 40 | 2.1/2" | 3"     |  | 52               | 90,5  | 101,6 | 64,5 |  |  |  |

All items are made from solid with the exception of M23371-40-40, M23371-40-48.

## M23391

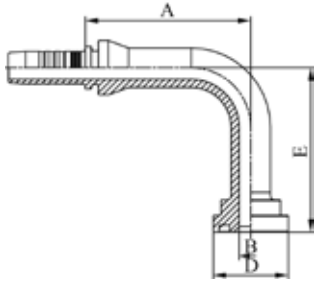
90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |       |       |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|-------|-------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D     | E     |  |  |  |
| M23391-06-08 | 10        | - 6  | 3/8"   | 1/2"   |                  | 9,3  | 44,5  | 30    | 34,5  |  |  |  |
| M23391-08-08 | 12        | - 8  | 1/2"   | 1/2"   |                  | 9,3  | 54,5  | 30,3  | 40    |  |  |  |
| M23391-08-12 | 12        | - 8  | 1/2"   | 3/4"   |                  | 15   | 54,5  | 38    | 41    |  |  |  |
| M23391-08-16 | 12        | - 8  | 1/2"   | 1"     |                  | 19,8 | 54,5  | 44,6  | 66    |  |  |  |
| M23391-10-08 | 16        | - 10 | 5/8"   | 1/2"   |                  | 9,3  | 56    | 30,3  | 46,5  |  |  |  |
| M23391-10-12 | 16        | - 10 | 5/8"   | 3/4"   |                  | 15   | 56    | 38    | 47,5  |  |  |  |
| M23391-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 15   | 64,5  | 38    | 52    |  |  |  |
| M23391-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 64,5  | 44,6  | 52    |  |  |  |
| M23391-12-20 | 19        | - 12 | 3/4"   | 1.1/4" |                  | 26   | 64,5  | 51    | 52    |  |  |  |
| M23391-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 15   | 71    | 38    | 52    |  |  |  |
| M23391-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,8 | 77,5  | 44,6  | 62    |  |  |  |
| M23391-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 77,5  | 51    | 62    |  |  |  |
| M23391-16-24 | 25        | - 16 | 1"     | 1.1/2" |                  | 32   | 77    | 60,5  | 64    |  |  |  |
| M23391-20-16 | 31        | - 20 | 1.1/4" | 1"     |                  | 19,8 | 80    | 44,6  | 66    |  |  |  |
| M23391-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 90,5  | 51    | 70    |  |  |  |
| M23391-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 90,5  | 60,5  | 72    |  |  |  |
| M23391-20-32 | 31        | - 20 | 1.1/4" | 2"     |                  | 42   | 93,5  | 71,6  | 76    |  |  |  |
| M23391-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" |                  | 26   | 104,5 | 51    | 75    |  |  |  |
| M23391-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 108   | 60,5  | 84    |  |  |  |
| M23391-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 108   | 71,6  | 84    |  |  |  |
| M23391-32-24 | 51        | - 32 | 2"     | 1.1/2" |                  | 32   | 133   | 60,5  | 84    |  |  |  |
| M23391-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 129   | 71,6  | 99    |  |  |  |
| M23391-32-40 | 51        | - 32 | 2"     | 2.1/2" |                  | 56   | 132,5 | 84,3  | 116   |  |  |  |
| M23391-40-32 | 63        | - 40 | 2.1/2" | 2"     |                  | 42   | 149,5 | 71,6  | 114   |  |  |  |
| M23391-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |                  | 52   | 88    | 84,3  | 119   |  |  |  |
| M23391-40-48 | 63        | - 40 | 2.1/2" | 3"     |                  | 61   | 120   | 101,6 | 140   |  |  |  |
| M23391-48-48 | 76        | - 48 | 3"     | 3"     |                  | 58   | 123   | 101,6 | 140   |  |  |  |
| M23391-48-56 | 76        | - 48 | 3"     | 3.1/2" |                  | 61   | 123   | 114,3 | 115   |  |  |  |
| M23391-56-56 | 89        | - 56 | 3.1/2" | 3.1/2" |                  | 79   | 134,5 | 114,3 | 160   |  |  |  |
| M23391-64-64 | 102       | - 64 | 4"     | 4"     |                  | 90   | 153,5 | 127   | 158,5 |  |  |  |

All items are made from solid with the exception of M23391-40-40, M23391-40-48, M23391-48-48, M23391-48-56, M23391-56-56, M23391-64-64.

## SAE STANDARD CONNECTIONS

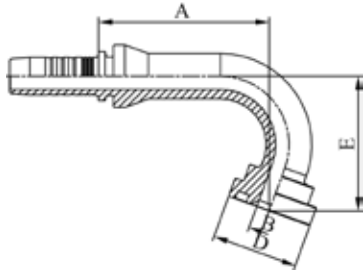


### M23391 LONG DROP

90° LONG DROP ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |      |      |     |  |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|------|------|-----|--|--|--|
|                 | DN        | Dash | inch   | Inch   |  | B                | A    | D    | E   |  |  |  |
| M23391-06-08041 | 10        | - 6  | 3/8"   | 1/2"   |  | 9,3              | 44,5 | 30   | 41  |  |  |  |
| M23391-12-12058 | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 64,5 | 38   | 58  |  |  |  |
| M23391-16-16070 | 25        | - 16 | 1"     | 1"     |  | 19,8             | 77,5 | 44,5 | 70  |  |  |  |
| M23391-16-20117 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 77,5 | 51   | 117 |  |  |  |
| M23391-16-24107 | 25        | - 16 | 1"     | 1.1/2" |  | 32               | 77   | 60,5 | 107 |  |  |  |
| M23391-20-20091 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 90,5 | 51   | 91  |  |  |  |
| M23391-20-20100 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 90,5 | 51   | 100 |  |  |  |
| M23391-20-20112 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 90,5 | 51   | 112 |  |  |  |
| M23391-20-20130 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 90,5 | 51   | 130 |  |  |  |
| M23391-20-20168 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 90,5 | 51   | 168 |  |  |  |
| M23391-20-24118 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 90,5 | 60,5 | 118 |  |  |  |
| M23391-20-24130 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 90,5 | 60,5 | 130 |  |  |  |
| M23391-24-24104 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 108  | 60,5 | 104 |  |  |  |
| M23391-24-24148 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 108  | 60,5 | 148 |  |  |  |
| M23391-24-24172 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 108  | 60,5 | 172 |  |  |  |
| M23391-24-32115 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 108  | 71,6 | 115 |  |  |  |
| M23391-24-32172 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 108  | 71,6 | 172 |  |  |  |
| M23391-32-32138 | 51        | - 32 | 2"     | 2"     |  | 42               | 129  | 71,5 | 138 |  |  |  |
| M23391-32-32203 | 51        | - 32 | 2"     | 2"     |  | 42               | 129  | 71,6 | 203 |  |  |  |



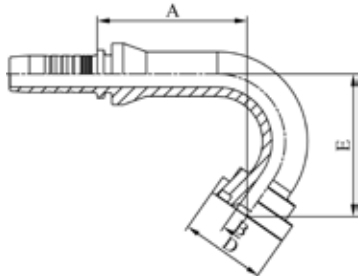


## SAE STANDARD CONNECTIONS

### M23301P

110° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.       | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |     |  |  |  |
|------------------|-----------|------|--------|--------|------------------|------|-------|------|-----|--|--|--|
|                  | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E   |  |  |  |
| M23301-08-12P    | 12        | - 8  | 1/2"   | 3/4"   |                  | 15   | 53    | 38   | 48  |  |  |  |
| M23301-12-12P    | 19        | - 12 | 3/4"   | 3/4"   |                  | 15   | 89    | 38   | 62  |  |  |  |
| M23301-12-16P    | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 89    | 44,6 | 62  |  |  |  |
| M23301-16-16P    | 25        | - 16 | 1"     | 1"     |                  | 19,8 | 88,5  | 44,6 | 79  |  |  |  |
| M23301-16-20133P | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 69    | 51   | 133 |  |  |  |
| M23301-20-20P    | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 102   | 51   | 91  |  |  |  |
| M23301-20-24P    | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 96,5  | 60,5 | 93  |  |  |  |
| M23301-24-24119P | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 105,5 | 60,5 | 119 |  |  |  |
| M23301-32-32P    | 51        | - 32 | 2"     | 2"     |                  | 42   | 142   | 71,6 | 123 |  |  |  |

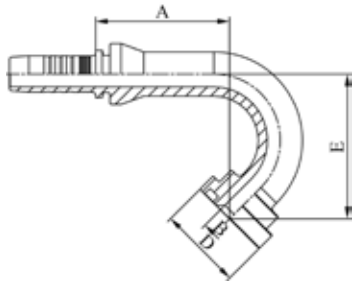


## SAE STANDARD CONNECTIONS

### M23301S

125° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.       | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |    |       |      |     |  |  |  |
|------------------|-----------|------|------|--------|------------------|----|-------|------|-----|--|--|--|
|                  | DN        | Dash | inch |        | Inch             | B  | A     | D    | E   |  |  |  |
| M23301-32-32151S | 51        | - 32 | 2"   | 2"     |                  | 42 | 118,5 | 71,6 | 151 |  |  |  |



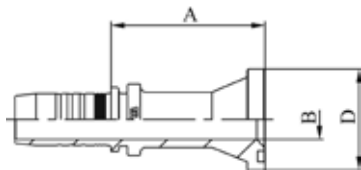
## SAE STANDARD CONNECTIONS

### M23301T

135° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.    | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |      |      |      |      |  |  |  |
|---------------|-----------|------|------|--------|------------------|------|------|------|------|--|--|--|
|               | DN        | Dash | inch |        | Inch             | B    | A    | D    | E    |  |  |  |
| M23301-12-12T | 19        | - 12 | 3/4" | 3/4"   |                  | 15   | 74,5 | 38   | 70   |  |  |  |
| M23301-12-16T | 19        | - 12 | 3/4" | 1"     |                  | 20   | 74,5 | 44,6 | 70   |  |  |  |
| M23301-16-16T | 25        | - 16 | 1"   | 1"     |                  | 19,8 | 70   | 44,6 | 88,5 |  |  |  |

FITTINGS  
F 2-52



## SAE STANDARD CONNECTIONS

### M23611

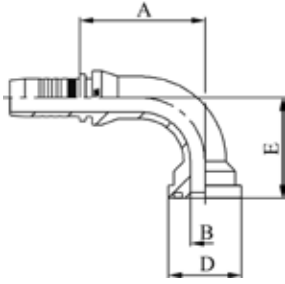
ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    |  |  |  |
| M23611-08-08 | 12        | - 8  | 1/2"   | 1/2"   |                  | 9,3  | 52   | 31,8 |  |  |  |
| M23611-08-12 | 12        | - 8  | 1/2"   | 3/4"   |                  | 15   | 68,5 | 41,5 |  |  |  |
| M23611-10-08 | 16        | - 10 | 5/8"   | 1/2"   |                  | 9,3  | 52   | 31,8 |  |  |  |
| M23611-10-12 | 16        | - 10 | 5/8"   | 3/4"   |                  | 15   | 70   | 41,5 |  |  |  |
| M23611-10-16 | 16        | - 10 | 5/8"   | 1"     |                  | 20   | 80   | 47,7 |  |  |  |
| M23611-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 15   | 69   | 41,5 |  |  |  |
| M23611-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 81   | 47,7 |  |  |  |
| M23611-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,8 | 82,5 | 47,7 |  |  |  |
| M23611-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 90   | 54,2 |  |  |  |
| M23611-20-16 | 31        | - 20 | 1.1/4" | 1"     |                  | 19,8 | 82,5 | 47,7 |  |  |  |
| M23611-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 84,5 | 54,2 |  |  |  |
| M23611-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 90,5 | 63,7 |  |  |  |
| M23611-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 92,5 | 63,6 |  |  |  |
| M23611-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 109  | 79,5 |  |  |  |

## SAE STANDARD CONNECTIONS

### M23691

90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

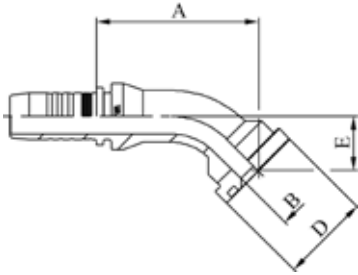


| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |       |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|------|-------|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A    | D     | E |  |  |
| M23691-08-08    | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 54,5 | 31,8 | 45    |   |  |  |
| M23691-08-08040 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 54,5 | 31,7 | 41    |   |  |  |
| M23691-08-12    | 12        | - 8  | 1/2"   | 3/4"   | 15               | 54,5 | 41,5 | 53    |   |  |  |
| M23691-10-08    | 16        | - 10 | 5/8"   | 1/2"   | 9,3              | 57,5 | 31,8 | 45    |   |  |  |
| M23691-10-12    | 16        | - 10 | 5/8"   | 3/4"   | 15               | 53,5 | 41,5 | 60,5  |   |  |  |
| M23691-10-16    | 16        | - 10 | 5/8"   | 1"     | 19,8             | 56   | 47,7 | 64    |   |  |  |
| M23691-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 15               | 64   | 41,5 | 59    |   |  |  |
| M23691-12-16    | 19        | - 12 | 3/4"   | 1"     | 20               | 64,5 | 47,7 | 65    |   |  |  |
| M23691-16-16    | 25        | - 16 | 1"     | 1"     | 19,8             | 73,5 | 47,7 | 68    |   |  |  |
| M23691-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 73,5 | 54,2 | 75    |   |  |  |
| M23691-20-16    | 31        | - 20 | 1.1/4" | 1"     | 19,8             | 82,5 | 47,7 | 68    |   |  |  |
| M23691-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 85,5 | 54,2 | 81    |   |  |  |
| M23691-20-20090 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 85,5 | 54,1 | 90    |   |  |  |
| M23691-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 85,5 | 63,7 | 91,5  |   |  |  |
| M23691-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 106  | 63,7 | 94,5  |   |  |  |
| M23691-24-24104 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 106  | 63,7 | 104   |   |  |  |
| M23691-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 106  | 79,6 | 110,5 |   |  |  |
| M23691-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 138  | 79,6 | 132   |   |  |  |
| M23691-32-32138 | 51        | - 32 | 2"     | 2"     | 42               | 138  | 79,6 | 138   |   |  |  |

## SAE STANDARD CONNECTIONS

### M23641

45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

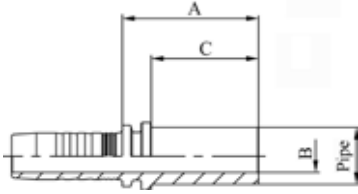


| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |  |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|-------|------|------|--|--|--|
|                 | DN        | Dash | inch   | Inch   |  | B                | A     | D    | E    |  |  |  |
| M23641-08-08    | 12        | - 8  | 1/2"   | 1/2"   |  | 9,3              | 59    | 31,7 | 19   |  |  |  |
| M23641-08-12    | 12        | - 8  | 1/2"   | 3/4"   |  | 15               | 68    | 41,5 | 27,5 |  |  |  |
| M23641-10-08    | 16        | - 10 | 5/8"   | 1/2"   |  | 9,3              | 62,5  | 31,8 | 23,5 |  |  |  |
| M23641-10-12    | 16        | - 10 | 5/8"   | 3/4"   |  | 15               | 67,5  | 41,5 | 31   |  |  |  |
| M23641-12-12    | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 72,5  | 41,5 | 28   |  |  |  |
| M23641-12-16    | 19        | - 12 | 3/4"   | 1"     |  | 20               | 77    | 47,7 | 32,5 |  |  |  |
| M23641-16-12    | 25        | - 16 | 1"     | 3/4"   |  | 15               | 80    | 41,5 | 30   |  |  |  |
| M23641-16-16    | 25        | - 16 | 1"     | 1"     |  | 19,8             | 83,5  | 47,7 | 32,5 |  |  |  |
| M23641-16-20    | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 88,5  | 54,2 | 37,5 |  |  |  |
| M23641-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 95    | 54,2 | 37,5 |  |  |  |
| M23641-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 102,5 | 63,7 | 45   |  |  |  |
| M23641-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 118   | 63,7 | 44   |  |  |  |
| M23641-24-32    | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 129   | 79,6 | 55,5 |  |  |  |
| M23641-32-32    | 51        | - 32 | 2"     | 2"     |  | 42               | 151,5 | 79,6 | 60,5 |  |  |  |
| M23641-32-32056 | 51        | - 32 | 2"     | 2"     |  | 42               | 147,5 | 79,6 | 56,5 |  |  |  |

## DIN STANDARD CONNECTIONS

### M22010

METRIC STANDPIPE LIGHT DUTY - DIN 2353 / ISO 8434-1

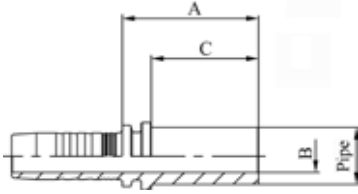


| PART. REF.   | HOSE BORE |      |        | Pipe | DIMENSIONS<br>mm |      |    |   |  |  |  |
|--------------|-----------|------|--------|------|------------------|------|----|---|--|--|--|
|              | DN        | Dash | inch   |      | mm               | B    | A  | C |  |  |  |
| M22010-03-04 | 5         | -3   | 3/16"  | 4    | 2                | 29,5 | 22 |   |  |  |  |
| M22010-03-06 | 5         | -3   | 3/16"  | 6    | 3                | 29,5 | 22 |   |  |  |  |
| M22010-04-06 | 6         | -4   | 1/4"   | 6    | 3                | 30   | 22 |   |  |  |  |
| M22010-05-08 | 8         | -5   | 5/16"  | 8    | 5,5              | 30   | 22 |   |  |  |  |
| M22010-05-10 | 8         | -5   | 5/16"  | 10   | 7                | 31   | 23 |   |  |  |  |
| M22010-06-10 | 10        | -6   | 3/8"   | 10   | 7                | 31,5 | 23 |   |  |  |  |
| M22010-06-12 | 10        | -6   | 3/8"   | 12   | 8                | 31,5 | 23 |   |  |  |  |
| M22010-06-15 | 10        | -6   | 3/8"   | 15   | 10,5             | 33,5 | 25 |   |  |  |  |
| M22010-08-12 | 12        | -8   | 1/2"   | 12   | 8                | 32   | 23 |   |  |  |  |
| M22010-08-15 | 12        | -8   | 1/2"   | 15   | 10,5             | 34   | 25 |   |  |  |  |
| M22010-08-18 | 12        | -8   | 1/2"   | 18   | 12,5             | 35   | 26 |   |  |  |  |
| M22010-10-18 | 16        | -10  | 5/8"   | 18   | 12,5             | 35   | 26 |   |  |  |  |
| M22010-10-22 | 16        | -10  | 5/8"   | 22   | 15               | 37   | 28 |   |  |  |  |
| M22010-12-18 | 19        | -12  | 3/4"   | 18   | 12,5             | 36,5 | 26 |   |  |  |  |
| M22010-12-22 | 19        | -12  | 3/4"   | 22   | 15               | 38,5 | 28 |   |  |  |  |
| M22010-16-28 | 25        | -16  | 1"     | 28   | 19,8             | 41,5 | 30 |   |  |  |  |
| M22010-20-35 | 31        | -20  | 1.1/4" | 35   | 26               | 48,5 | 36 |   |  |  |  |
| M22010-24-42 | 38        | -24  | 1.1/2" | 42   | 32               | 52,5 | 40 |   |  |  |  |

## DIN STANDARD CONNECTIONS

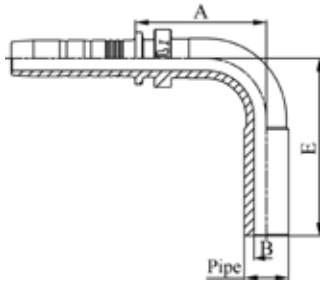
### M22110

METRIC STANDPIPE HEAVY DUTY - DIN 2353 / ISO 8434-1



| PART. REF.   | HOSE BORE |      |        | Pipe | DIMENSIONS<br>mm |      |    |   |  |  |  |
|--------------|-----------|------|--------|------|------------------|------|----|---|--|--|--|
|              | DN        | Dash | inch   |      | mm               | B    | A  | C |  |  |  |
| M22110-03-08 | 5         | - 3  | 3/16"  | 8    | 3                | 31   | 24 |   |  |  |  |
| M22110-03-10 | 5         | - 3  | 3/16"  | 10   | 3                | 29,5 | 22 |   |  |  |  |
| M22110-04-08 | 6         | - 4  | 1/4"   | 8    | 4                | 32   | 24 |   |  |  |  |
| M22110-04-10 | 6         | - 4  | 1/4"   | 10   | 4                | 34   | 26 |   |  |  |  |
| M22110-04-12 | 6         | - 4  | 1/4"   | 12   | 7                | 34   | 26 |   |  |  |  |
| M22110-05-12 | 8         | - 5  | 5/16"  | 12   | 7                | 34   | 26 |   |  |  |  |
| M22110-06-14 | 10        | - 6  | 3/8"   | 14   | 8                | 37,5 | 29 |   |  |  |  |
| M22110-08-14 | 12        | - 8  | 1/2"   | 14   | 9,3              | 38   | 29 |   |  |  |  |
| M22110-08-16 | 12        | - 8  | 1/2"   | 16   | 10,5             | 39   | 30 |   |  |  |  |
| M22110-10-20 | 16        | - 10 | 5/8"   | 20   | 12,5             | 45   | 36 |   |  |  |  |
| M22110-12-20 | 19        | - 12 | 3/4"   | 20   | 15               | 46,5 | 36 |   |  |  |  |
| M22110-12-25 | 19        | - 12 | 3/4"   | 25   | 15               | 50,5 | 40 |   |  |  |  |
| M22110-16-25 | 25        | - 16 | 1"     | 25   | 15               | 51,5 | 40 |   |  |  |  |
| M22110-16-30 | 25        | - 16 | 1"     | 30   | 19,8             | 55,5 | 44 |   |  |  |  |
| M22110-16-38 | 25        | - 16 | 1"     | 38   | 26               | 61,5 | 50 |   |  |  |  |
| M22110-20-30 | 31        | - 20 | 1.1/4" | 30   | 20,5             | 56,5 | 44 |   |  |  |  |
| M22110-20-38 | 31        | - 20 | 1.1/4" | 38   | 26               | 62,5 | 50 |   |  |  |  |
| M22110-24-38 | 38        | - 24 | 1.1/2" | 38   | 26               | 62,5 | 50 |   |  |  |  |

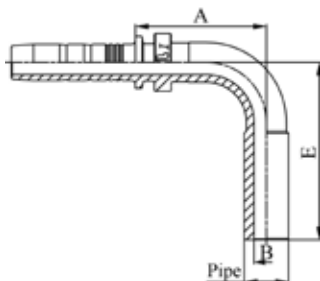
## DIN STANDARD CONNECTIONS



### M22090

90° METRIC STANDPIPE LIGHT DUTY - DIN 2353 / ISO 8434-1

| PART. REF.   | HOSE BORE |      |        | Pipe | DIMENSIONS |      |      |  |  |  |
|--------------|-----------|------|--------|------|------------|------|------|--|--|--|
|              | mm        | inch | mm     |      | B          | A    | E    |  |  |  |
| M22090-03-06 | 5         | -3   | 3/16"  | 6    | 3          | 22,5 | 34   |  |  |  |
| M22090-04-06 | 6         | -4   | 1/4"   | 6    | 3          | 23   | 34   |  |  |  |
| M22090-05-10 | 8         | -5   | 5/16"  | 10   | 7          | 29,5 | 40   |  |  |  |
| M22090-06-10 | 10        | -6   | 3/8"   | 10   | 7          | 33   | 42,5 |  |  |  |
| M22090-06-12 | 10        | -6   | 3/8"   | 12   | 8          | 34   | 45   |  |  |  |
| M22090-08-12 | 12        | -8   | 1/2"   | 12   | 8          | 34,5 | 45   |  |  |  |
| M22090-08-15 | 12        | -8   | 1/2"   | 15   | 10,5       | 42   | 52   |  |  |  |
| M22090-08-18 | 12        | -8   | 1/2"   | 18   | 12,5       | 42   | 55   |  |  |  |
| M22090-10-18 | 16        | -10  | 5/8"   | 18   | 12,5       | 49   | 59   |  |  |  |
| M22090-10-22 | 16        | -10  | 5/8"   | 22   | 15         | 53,5 | 63   |  |  |  |
| M22090-12-22 | 19        | -12  | 3/4"   | 22   | 15         | 54,5 | 63   |  |  |  |
| M22090-16-28 | 25        | -16  | 1"     | 28   | 19,8       | 67,5 | 75   |  |  |  |
| M22090-20-35 | 31        | -20  | 1.1/4" | 35   | 26         | 80,5 | 94   |  |  |  |

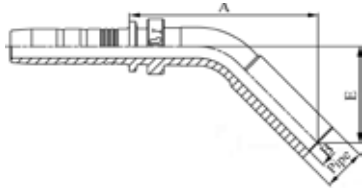


## DIN STANDARD CONNECTIONS

### M22190

90° METRIC STANDPIPE HEAVY DUTY - DIN 2353 / ISO 8434-1

| PART. REF.   | HOSE BORE |      |       | Pipe | DIMENSIONS |      |      |  |  |  |
|--------------|-----------|------|-------|------|------------|------|------|--|--|--|
|              | mm        | inch | mm    |      | B          | A    | E    |  |  |  |
| M22190-04-08 | 6         | -4   | 1/4"  | 8    | 4          | 27   | 38   |  |  |  |
| M22190-04-10 | 6         | -4   | 1/4"  | 10   | 6          | 27   | 41   |  |  |  |
| M22190-04-12 | 6         | -4   | 1/4"  | 12   | 7          | 27   | 44   |  |  |  |
| M22190-05-12 | 8         | -5   | 5/16" | 12   | 7          | 30,5 | 44   |  |  |  |
| M22190-06-14 | 10        | -6   | 3/8"  | 14   | 9,3        | 35   | 51   |  |  |  |
| M22190-08-14 | 12        | -8   | 1/2"  | 14   | 9,3        | 42   | 53,5 |  |  |  |
| M22190-08-16 | 12        | -8   | 1/2"  | 16   | 10,5       | 43   | 55   |  |  |  |
| M22190-10-20 | 16        | -10  | 5/8"  | 20   | 12,5       | 49   | 66,5 |  |  |  |
| M22190-12-20 | 19        | -12  | 3/4"  | 20   | 15         | 54,5 | 69   |  |  |  |
| M22190-12-25 | 19        | -12  | 3/4"  | 25   | 15         | 57,5 | 75   |  |  |  |
| M22190-16-25 | 25        | -16  | 1"    | 25   | 15         | 61,5 | 76,5 |  |  |  |
| M22190-16-30 | 25        | -16  | 1"    | 30   | 19,8       | 69,5 | 87   |  |  |  |

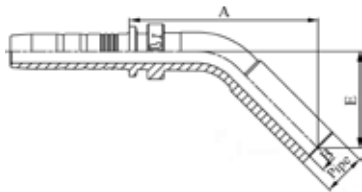


## DIN STANDARD CONNECTIONS

### M22040

45° METRIC STANDPIPE LIGHT DUTY - DIN 2353 / ISO 8434-1

| PART. REF.   | HOSE BORE |      |       | Pipe | DIMENSIONS<br>mm |      |      |   |  |  |  |
|--------------|-----------|------|-------|------|------------------|------|------|---|--|--|--|
|              | DN        | Dash | inch  |      | mm               | B    | A    | E |  |  |  |
| M22040-03-06 | 5         | -3   | 3/16" | 6    | 3                | 37,5 | 20,5 |   |  |  |  |
| M22040-04-06 | 6         | -4   | 1/4"  | 6    | 3                | 38   | 20,5 |   |  |  |  |
| M22040-05-10 | 8         | -5   | 5/16" | 10   | 7                | 44,5 | 22,5 |   |  |  |  |
| M22040-06-10 | 10        | -6   | 3/8"  | 10   | 7                | 47,5 | 23   |   |  |  |  |
| M22040-06-12 | 10        | -6   | 3/8"  | 12   | 8                | 49,5 | 25   |   |  |  |  |
| M22040-08-15 | 12        | -8   | 1/2"  | 15   | 10,5             | 58   | 28   |   |  |  |  |
| M22040-10-18 | 16        | -10  | 5/8"  | 18   | 12,5             | 63,5 | 30,5 |   |  |  |  |
| M22040-12-22 | 19        | -12  | 3/4"  | 22   | 15               | 69   | 32   |   |  |  |  |
| M22040-16-28 | 25        | -16  | 1"    | 28   | 19,8             | 81,5 | 37   |   |  |  |  |



## DIN STANDARD CONNECTIONS

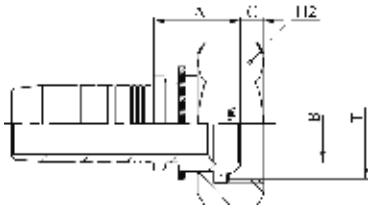
### M22140

45° METRIC STANDPIPE HEAVY DUTY - DIN 2353 / ISO 8434-1

| PART. REF.   | HOSE BORE |      |      | Pipe | DIMENSIONS<br>mm |      |      |   |  |  |  |
|--------------|-----------|------|------|------|------------------|------|------|---|--|--|--|
|              | DN        | Dash | inch |      | mm               | B    | A    | E |  |  |  |
| M22140-04-08 | 6         | -4   | 1/4" | 8    | 4                | 42   | 22   |   |  |  |  |
| M22140-04-10 | 6         | -4   | 1/4" | 10   | 6                | 44   | 24   |   |  |  |  |
| M22140-06-14 | 10        | -6   | 3/8" | 14   | 9,3              | 54,5 | 29   |   |  |  |  |
| M22140-08-16 | 12        | -8   | 1/2" | 16   | 10,5             | 61   | 30   |   |  |  |  |
| M22140-10-20 | 16        | -10  | 5/8" | 20   | 12,5             | 69   | 36   |   |  |  |  |
| M22140-12-25 | 19        | -12  | 3/4" | 25   | 15               | 80,5 | 40,5 |   |  |  |  |
| M22140-16-25 | 25        | -16  | 1"   | 25   | 15               | 82   | 41   |   |  |  |  |



## DIN STANDARD CONNECTIONS

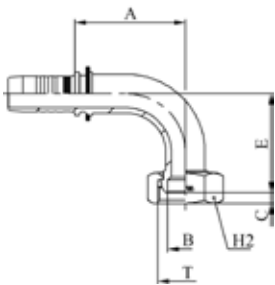


### M21013

METRIC FEMALE 60° CONE - DIN 20078/3863

| PART. REF.   | HOSE BORE |      |        | Thread   |  | DIMENSIONS mm |      |     |    |    |  |  |
|--------------|-----------|------|--------|----------|--|---------------|------|-----|----|----|--|--|
|              | DN        | Dash | inch   |          |  | T             | B    | A   | C  | H2 |  |  |
| M21013-10-30 | 16        | - 10 | 5/8"   | M 30x1,5 |  | 20            | 20   | 6   | 36 |    |  |  |
| M21013-12-30 | 19        | - 12 | 3/4"   | M 30x1,5 |  | 20            | 21   | 6   | 36 |    |  |  |
| M21013-16-38 | 25        | - 16 | 1"     | M 38x1,5 |  | 26            | 23   | 7,5 | 46 |    |  |  |
| M21013-20-45 | 31        | - 20 | 1.1/4" | M 45x1,5 |  | 33            | 23,5 | 8   | 50 |    |  |  |
| M21013-24-52 | 38        | - 24 | 1.1/2" | M 52x1,5 |  | 40            | 25   | 8   | 60 |    |  |  |

## DIN STANDARD CONNECTIONS



### M21093

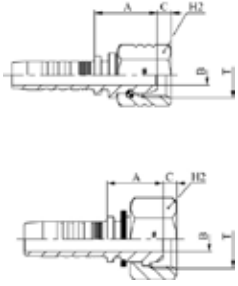
90° METRIC FEMALE SWEPT ELBOW 60° CONE - DIN 20078/3863

| PART. REF.   | HOSE BORE |      |        | Thread   |  | DIMENSIONS mm |      |     |      |    |    |  |
|--------------|-----------|------|--------|----------|--|---------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch   |          |  | T             | B    | A   | C    | E  | H2 |  |
| M21093-12-30 | 19        | - 12 | 3/4"   | M 30x1,5 |  | 20            | 61   | 6   | 54,5 | 36 |    |  |
| M21093-16-38 | 25        | - 16 | 1"     | M 38x1,5 |  | 26            | 76,5 | 7,5 | 63   | 46 |    |  |
| M21093-20-45 | 31        | - 20 | 1.1/4" | M 45x1,5 |  | 33            | 92   | 8   | 81   | 50 |    |  |

## DIN STANDARD CONNECTIONS

### M21312/M21313

METRIC FEMALE MULTISEAL - DIN 20078/3868



FITTINGS F 2-60

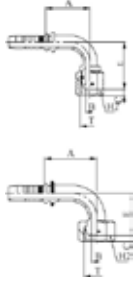
| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |    |   |    |  |
|--------------|-----------|------|-------|----------|------|------------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch  |          |      | T                | mm   | B   | A  | C | H2 |  |
| M21313-03-12 | 5         | - 3  | 3/16" | M 12x1,5 | 6    | 3                | 18,5 | 3,2 | 14 |   |    |  |
| M21312-04-12 | 6         | - 4  | 1/4"  | M 12x1,5 | 6    | 4                | 19,5 | 4   | 17 |   |    |  |
| M21313-04-14 | 6         | - 4  | 1/4"  | M 14x1,5 | 8    | 4                | 19,5 | 3   | 17 |   |    |  |
| M21313-04-16 | 6         | - 4  | 1/4"  | M 16x1,5 | 10   | 4                | 19,5 | 4   | 19 |   |    |  |
| M21313-05-16 | 8         | - 5  | 5/16" | M 16x1,5 | 10   | 5,5              | 19,5 | 4   | 19 |   |    |  |
| M21313-05-18 | 8         | - 5  | 5/16" | M 18x1,5 | 12   | 5,5              | 19,5 | 4   | 22 |   |    |  |
| M21312-06-14 | 10        | - 6  | 3/8"  | M 14x1,5 | 8    | 4                | 19,5 | 3,9 | 17 |   |    |  |
| M21312-06-16 | 10        | - 6  | 3/8"  | M 16x1,5 | 10   | 7                | 21,5 | 5   | 19 |   |    |  |
| M21313-06-18 | 10        | - 6  | 3/8"  | M 18x1,5 | 12   | 7                | 20   | 4   | 22 |   |    |  |
| M21313-06-22 | 10        | - 6  | 3/8"  | M 22x1,5 | 15   | 7                | 21   | 4,7 | 27 |   |    |  |
| M21312-08-18 | 12        | - 8  | 1/2"  | M 18x1,5 | 12   | 7                | 23   | 5,9 | 22 |   |    |  |
| M21313-08-22 | 12        | - 8  | 1/2"  | M 22x1,5 | 15   | 9,3              | 21,5 | 4,7 | 27 |   |    |  |
| M21312-10-22 | 16        | - 10 | 5/8"  | M 22x1,5 | 15   | 9,3              | 23,5 | 5,5 | 27 |   |    |  |
| M21313-10-26 | 16        | - 10 | 5/8"  | M 26x1,5 | 18   | 12,5             | 22   | 5   | 32 |   |    |  |

M21312: THRUST-WIRE NUT / M21313: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21392/M21393

#### 90° METRIC FEMALE SWEPT ELBOW MULTISEAL DIN 20078/3868



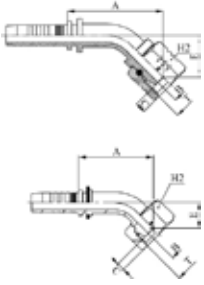
| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|-------|----------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch  |          |      | T                | mm   | B   | A    | C  | E | H2 |
| M21393-03-12 | 5         | - 3  | 3/16" | M 12x1,5 | 6    | 3                | 26   | 3,2 | 27   | 14 |   |    |
| M21392-04-12 | 6         | - 4  | 1/4"  | M 12x1,5 | 6    | 4                | 28   | 4   | 30,5 | 17 |   |    |
| M21393-04-14 | 6         | - 4  | 1/4"  | M 14x1,5 | 8    | 4                | 29,5 | 3   | 29,5 | 17 |   |    |
| M21393-04-16 | 6         | - 4  | 1/4"  | M 16x1,5 | 10   | 4                | 29,5 | 4   | 29,5 | 19 |   |    |
| M21393-05-16 | 8         | - 5  | 5/16" | M 16x1,5 | 10   | 5,5              | 32   | 4   | 29   | 19 |   |    |
| M21393-05-18 | 8         | - 5  | 5/16" | M 18x1,5 | 12   | 7                | 32   | 4   | 30,5 | 22 |   |    |
| M21392-06-16 | 10        | - 6  | 3/8"  | M 16x1,5 | 10   | 7                | 35,5 | 5   | 38   | 19 |   |    |
| M21393-06-18 | 10        | - 6  | 3/8"  | M 18x1,5 | 12   | 7                | 36,5 | 4   | 31,5 | 22 |   |    |
| M21393-06-22 | 10        | - 6  | 3/8"  | M 22x1,5 | 15   | 7                | 36,5 | 4,7 | 32   | 27 |   |    |
| M21393-08-22 | 12        | - 8  | 1/2"  | M 22x1,5 | 15   | 9,3              | 45   | 4,7 | 36,5 | 27 |   |    |
| M21393-10-26 | 16        | - 10 | 5/8"  | M 26x1,5 | 18   | 12,5             | 51,5 | 5   | 50   | 32 |   |    |
| M21392-12-26 | 19        | - 12 | 3/4"  | M 26x1,5 | 18   | 15               | 61,5 | 2,3 | 63   | 32 |   |    |

M21392: THRUST-WIRE NUT / M21393: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21342/M21343

45° METRIC FEMALE SWEPT ELBOW MULTISEAL DIN 20078/3868



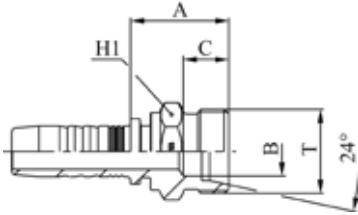
| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|-------|----------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch  |          |      | T                | mm   | B   | A    | C  | E | H2 |
| M21343-04-14 | 6         | -4   | 1/4"  | M 14x1,5 | 8    | 4                | 36,5 | 3   | 15   | 17 |   |    |
| M21343-04-16 | 6         | -4   | 1/4"  | M 16x1,5 | 10   | 4                | 36,5 | 4   | 15   | 19 |   |    |
| M21342-05-14 | 8         | -5   | 5/16" | M 14x1,5 | 8    | 4                | 40   | 3,9 | 19,5 | 17 |   |    |
| M21343-05-16 | 8         | -5   | 5/16" | M 16x1,5 | 10   | 5,5              | 39   | 4   | 15   | 19 |   |    |
| M21342-06-16 | 10        | -6   | 3/8"  | M 16x1,5 | 10   | 7                | 46   | 5   | 20   | 19 |   |    |
| M21343-06-18 | 10        | -6   | 3/8"  | M 18x1,5 | 12   | 7                | 42   | 4   | 15,5 | 22 |   |    |
| M21343-06-22 | 10        | -6   | 3/8"  | M 22x1,5 | 15   | 7                | 42,5 | 4,7 | 15,5 | 27 |   |    |
| M21343-08-22 | 12        | -8   | 1/2"  | M 22x1,5 | 15   | 9,3              | 49,5 | 4,7 | 17   | 27 |   |    |
| M21343-10-26 | 16        | -10  | 5/8"  | M 26x1,5 | 18   | 12,5             | 60   | 5   | 24   | 32 |   |    |

M21342: THRUST-WIRE NUT / M21343: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M11110

METRIC MALE 24° CONE SEAT LIGHT DUTY - DIN 20066 / ISO 12151-2

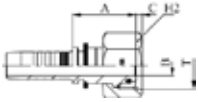
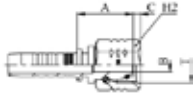


| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |    |    |  |  |  |
|--------------|-----------|------|--------|----------|------|------------------|------|----|----|--|--|--|
|              | DN        | Dash | inch   |          |      | T                | mm   | B  | A  |  |  |  |
| M11110-03-12 | 5         | -3   | 3/16"  | M 12x1,5 | 6    | 3                | 21   | 10 | 14 |  |  |  |
| M11110-04-12 | 6         | -4   | 1/4"   | M 12x1,5 | 6    | 4                | 21,5 | 10 | 14 |  |  |  |
| M11110-04-14 | 6         | -4   | 1/4"   | M 14x1,5 | 8    | 4                | 21,5 | 10 | 14 |  |  |  |
| M11110-04-16 | 6         | -4   | 1/4"   | M 16x1,5 | 10   | 7                | 23,5 | 11 | 17 |  |  |  |
| M11110-04-18 | 6         | -4   | 1/4"   | M 18x1,5 | 12   | 9                | 23,5 | 11 | 19 |  |  |  |
| M11110-05-16 | 8         | -5   | 5/16"  | M 16x1,5 | 10   | 7                | 24   | 11 | 17 |  |  |  |
| M11110-05-18 | 8         | -5   | 5/16"  | M 18x1,5 | 12   | 9                | 24   | 11 | 19 |  |  |  |
| M11110-06-16 | 10        | -6   | 3/8"   | M 16x1,5 | 10   | 7                | 24   | 11 | 17 |  |  |  |
| M11110-06-18 | 10        | -6   | 3/8"   | M 18x1,5 | 12   | 9                | 24,5 | 11 | 19 |  |  |  |
| M11110-06-22 | 10        | -6   | 3/8"   | M 22x1,5 | 15   | 10               | 25,5 | 12 | 22 |  |  |  |
| M11110-06-26 | 10        | -6   | 3/8"   | M 26x1,5 | 18   | 12,5             | 26,5 | 12 | 27 |  |  |  |
| M11110-08-16 | 12        | -8   | 1/2"   | M 16x1,5 | 10   | 7                | 24,5 | 11 | 22 |  |  |  |
| M11110-08-18 | 12        | -8   | 1/2"   | M 18x1,5 | 12   | 9,3              | 24,5 | 11 | 22 |  |  |  |
| M11110-08-22 | 12        | -8   | 1/2"   | M 22x1,5 | 15   | 10               | 25,5 | 12 | 22 |  |  |  |
| M11110-08-26 | 12        | -8   | 1/2"   | M 26x1,5 | 18   | 12,5             | 26,5 | 12 | 27 |  |  |  |
| M11110-10-22 | 16        | -10  | 5/8"   | M 22x1,5 | 15   | 10               | 25,5 | 12 | 22 |  |  |  |
| M11110-10-26 | 16        | -10  | 5/8"   | M 26x1,5 | 18   | 12,5             | 26,5 | 12 | 27 |  |  |  |
| M11110-10-30 | 16        | -10  | 5/8"   | M 30x2   | 22   | 15               | 28,5 | 14 | 30 |  |  |  |
| M11110-12-26 | 19        | -12  | 3/4"   | M 26x1,5 | 18   | 15               | 28   | 12 | 27 |  |  |  |
| M11110-12-30 | 19        | -12  | 3/4"   | M 30x2   | 22   | 15               | 30   | 14 | 30 |  |  |  |
| M11110-12-36 | 19        | -12  | 3/4"   | M 36x2   | 28   | 19,8             | 31   | 14 | 36 |  |  |  |
| M11110-16-36 | 25        | -16  | 1"     | M 36x2   | 28   | 19,8             | 32,5 | 14 | 36 |  |  |  |
| M11110-20-45 | 31        | -20  | 1.1/4" | M 45x2   | 35   | 26               | 40,5 | 16 | 46 |  |  |  |
| M11110-24-52 | 38        | -24  | 1.1/2" | M 52x2   | 42   | 32               | 43   | 16 | 55 |  |  |  |

## DIN STANDARD CONNECTIONS

### M21512/M21513

METRIC O-RING FEMALE 24° CONE LIGHT DUTY - DIN 20066 / ISO 12151-2



| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS mm |      |     |    |   |    |  |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch   |          |      | T             | mm   | B   | A  | C | H2 |  |
| M21513-03-12 | 5         | - 3  | 3/16"  | M 12x1,5 | 6    | 3             | 22   | 0,7 | 14 |   |    |  |
| M21513-03-14 | 5         | - 3  | 3/16"  | M 14x1,5 | 8    | 4             | 24,5 | 1,3 | 17 |   |    |  |
| M21512-04-12 | 6         | - 4  | 1/4"   | M 12x1,5 | 6    | 3             | 21   | 2,2 | 17 |   |    |  |
| M21513-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 | 8    | 4             | 22   | 1,3 | 17 |   |    |  |
| M21513-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 10   | 6             | 22,5 | 1,8 | 19 |   |    |  |
| M21513-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 12   | 7             | 22   | 2   | 22 |   |    |  |
| M21512-05-14 | 8         | - 5  | 5/16"  | M 14x1,5 | 8    | 4             | 20   | 2,9 | 17 |   |    |  |
| M21513-05-16 | 8         | - 5  | 5/16"  | M 16x1,5 | 10   | 6             | 22,5 | 1,8 | 19 |   |    |  |
| M21513-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 12   | 7             | 22   | 2   | 22 |   |    |  |
| M21512-06-16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6             | 23   | 3   | 19 |   |    |  |
| M21513-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7             | 22,5 | 2   | 22 |   |    |  |
| M21513-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3           | 25   | 1,5 | 27 |   |    |  |
| M21512-08-18 | 12        | - 8  | 1/2"   | M 18x1,5 | 12   | 7             | 29   | 2,9 | 22 |   |    |  |
| M21513-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3           | 25,5 | 1,5 | 27 |   |    |  |
| M21513-08-26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5          | 26   | 2   | 32 |   |    |  |
| M21512-10-18 | 16        | - 10 | 5/8"   | M 18x1,5 | 12   | 7             | 29   | 2,9 | 22 |   |    |  |
| M21512-10-22 | 16        | - 10 | 5/8"   | M 22x1,5 | 15   | 9,5           | 26,5 | 2,4 | 27 |   |    |  |
| M21513-10-26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5          | 26   | 2   | 32 |   |    |  |
| M21513-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 22   | 15            | 34   | 3   | 36 |   |    |  |
| M21513-10-36 | 16        | - 10 | 5/8"   | M 36x2   | 28   | 20            | 30,5 | 3,7 | 41 |   |    |  |
| M21512-12-22 | 19        | - 12 | 3/4"   | M 22x1,5 |      | 9,5           | 31   | 2,4 | 27 |   |    |  |
| M21512-12-26 | 19        | - 12 | 3/4"   | M 26x1,5 | 18   | 12,5          | 31   | 2,3 | 32 |   |    |  |
| M21513-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15            | 28   | 3   | 36 |   |    |  |
| M21513-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 28   | 20            | 28,5 | 3,7 | 41 |   |    |  |
| M21512-16-30 | 25        | - 16 | 1"     | M 30x2   | 22   | 15            | 34   | 4,2 | 36 |   |    |  |
| M21513-16-36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8          | 29,5 | 3,7 | 41 |   |    |  |
| M21513-16-45 | 25        | - 16 | 1"     | M 45x2   | 35   | 26            | 39   | 4   | 50 |   |    |  |
| M21512-20-36 | 31        | - 20 | 1.1/4" | M 36x2   | 28   | 19,8          | 35,5 | 5   | 41 |   |    |  |
| M21513-20-45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26            | 33   | 4   | 50 |   |    |  |
| M21513-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 42   | 32            | 32,5 | 4,5 | 60 |   |    |  |
| M21512-24-45 | 38        | - 24 | 1.1/2" | M 45x2   | 35   | 26            | 42,5 | 5,8 | 50 |   |    |  |
| M21513-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32            | 33   | 4,5 | 60 |   |    |  |
| M21512-32-52 | 51        | - 32 | 2"     | M 52x2   | 42   | 32            | 50,5 | 5,6 | 60 |   |    |  |

M21512: THRUST-WIRE NUT / M21513: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21592/M21593

90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2



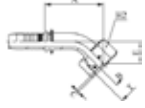
| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|--------------|-----------|------|--------|----------|------|------------------|-------|-----|------|----|---|----|
|              | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C  | E | H2 |
| M21593-03-12 | 5         | - 3  | 3/16"  | M 12x1,5 | 6    | 3                | 26    | 0,7 | 30   | 14 |   |    |
| M21593-03-14 | 5         | - 3  | 3/16"  | M 14x1,5 | 8    | 4                | 29    | 1,3 | 31,5 | 17 |   |    |
| M21592-04-12 | 6         | - 4  | 1/4"   | M 12x1,5 | 6    | 3                | 28,5  | 2,2 | 32,5 | 17 |   |    |
| M21593-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 | 8    | 4                | 29,5  | 1,3 | 31,5 | 17 |   |    |
| M21593-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 10   | 6                | 29,5  | 1,8 | 32   | 19 |   |    |
| M21593-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 12   | 7                | 29,5  | 2   | 33   | 22 |   |    |
| M21592-05-14 | 8         | - 5  | 5/16"  | M 14x1,5 | 8    | 4                | 31    | 2,9 | 33   | 17 |   |    |
| M21593-05-16 | 8         | - 5  | 5/16"  | M 16x1,5 | 10   | 6                | 32    | 1,8 | 32,5 | 19 |   |    |
| M21593-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 12   | 7                | 32    | 2   | 32,5 | 22 |   |    |
| M21593-05-22 | 8         | - 5  | 5/16"  | M 22x1,5 | 15   | 9,3              | 36    | 1,5 | 35   | 27 |   |    |
| M21592-06-16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6                | 35,5  | 3   | 40   | 19 |   |    |
| M21593-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7                | 36,5  | 2   | 33,5 | 22 |   |    |
| M21593-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3              | 36,5  | 1,5 | 35   | 27 |   |    |
| M21592-08-18 | 12        | - 8  | 1/2"   | M 18x1,5 | 12   | 7                | 44    | 2,9 | 48   | 22 |   |    |
| M21593-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3              | 45    | 1,5 | 39,5 | 27 |   |    |
| M21593-08-26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5             | 45    | 2   | 40   | 32 |   |    |
| M21592-10-22 | 16        | - 10 | 5/8"   | M 22x1,5 | 15   | 9,3              | 53,5  | 3   | 57,5 | 27 |   |    |
| M21593-10-26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 51,5  | 2   | 53   | 32 |   |    |
| M21593-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 22   | 15               | 51,5  | 3   | 54   | 36 |   |    |
| M21592-12-26 | 19        | - 12 | 3/4"   | M 26x1,5 | 18   | 12,5             | 61,5  | 2,3 | 63   | 32 |   |    |
| M21593-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 61,5  | 3   | 59,5 | 36 |   |    |
| M21593-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 28   | 19,8             | 61,5  | 3,7 | 61   | 41 |   |    |
| M21592-16-30 | 25        | - 16 | 1"     | M 30x2   | 22   | 15               | 79,5  | 4,2 | 80,5 | 36 |   |    |
| M21593-16-36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 76,5  | 3,7 | 69,5 | 41 |   |    |
| M21593-16-45 | 25        | - 16 | 1"     | M 45x2   | 35   | 26               | 79    | 4   | 72   | 50 |   |    |
| M21592-20-36 | 31        | - 20 | 1.1/4" | M 36x2   | 28   | 19,8             | 93,5  | 5   | 92   | 41 |   |    |
| M21593-20-45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 93,5  | 4   | 81   | 50 |   |    |
| M21592-24-36 | 38        | - 24 | 1.1/2" | M 36x2   | 28   | 19,8             | 97    | 5   | 68   | 41 |   |    |
| M21593-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 107,5 | 4,5 | 98   | 60 |   |    |
| M21592-32-52 | 51        | - 32 | 2"     | M 52x2   | 42   | 32               | 131   | 5,6 | 119  | 60 |   |    |

M21592: THRUST-WIRE NUT / M21593: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21542/M21543

45° METRIC O-RING FEMALE SWEEP ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2



| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|--------------|-----------|------|--------|----------|------|------------------|-------|-----|------|----|---|----|
|              | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C  | E | H2 |
| M21543-03-12 | 5         | - 3  | 3/16"  | M 12x1,5 | 6    | 3                | 35    | 0,7 | 16   | 14 |   |    |
| M21542-04-12 | 6         | - 4  | 1/4"   | M 12x1,5 | 6    | 3                | 39    | 2,2 | 18   | 17 |   |    |
| M21543-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 | 8    | 4                | 38    | 1,3 | 16,5 | 17 |   |    |
| M21543-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 10   | 6                | 38    | 1,8 | 17   | 19 |   |    |
| M21543-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 12   | 7                | 38,5  | 2   | 17,5 | 22 |   |    |
| M21543-05-16 | 8         | - 5  | 5/16"  | M 16x1,5 | 10   | 6                | 41,5  | 1,8 | 17,5 | 19 |   |    |
| M21543-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 12   | 7                | 41,5  | 2   | 17   | 22 |   |    |
| M21542-06-16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6                | 47,5  | 3   | 21,5 | 19 |   |    |
| M21543-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7                | 43,5  | 2   | 16,5 | 22 |   |    |
| M21543-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3              | 45    | 1,5 | 18   | 27 |   |    |
| M21542-08-18 | 12        | - 8  | 1/2"   | M 18x1,5 | 12   | 7                | 56,5  | 2,9 | 25   | 22 |   |    |
| M21543-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3              | 52    | 1,5 | 19   | 27 |   |    |
| M21543-08-26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5             | 52,5  | 2   | 19,5 | 32 |   |    |
| M21542-10-22 | 16        | - 10 | 5/8"   | M 22x1,5 | 15   | 9,3              | 65,5  | 3   | 29   | 27 |   |    |
| M21543-10-26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 62    | 2   | 26,5 | 32 |   |    |
| M21542-12-26 | 19        | - 12 | 3/4"   | M 26x1,5 | 18   | 12,5             | 73    | 2,3 | 31   | 32 |   |    |
| M21543-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 71    | 3   | 28,5 | 36 |   |    |
| M21543-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 28   | 19,8             | 72    | 3,7 | 30   | 41 |   |    |
| M21543-16-36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 85    | 3,7 | 32   | 41 |   |    |
| M21542-20-36 | 31        | - 20 | 1.1/4" | M 36x2   | 28   | 19,8             | 107,5 | 5   | 44   | 41 |   |    |
| M21543-20-45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 100   | 4   | 36   | 50 |   |    |
| M21543-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 42   | 32               | 100   | 4,5 | 42   | 60 |   |    |
| M21542-24-36 | 38        | - 24 | 1.1/2" | M 36x2   | 28   | 19,8             | 113   | 5   | 34,5 | 41 |   |    |
| M21543-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 117   | 4,5 | 44,5 | 60 |   |    |

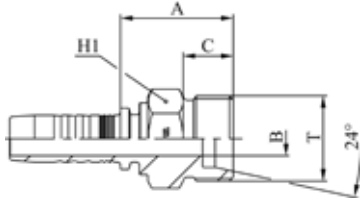
M21542: THRUST-WIRE NUT / M21543: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

### M11210

METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2

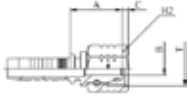


| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |    |    |  |  |  |
|--------------|-----------|------|--------|----------|------|------------------|------|----|----|--|--|--|
|              | DN        | Dash | inch   |          |      | T                | mm   | B  | A  |  |  |  |
| M11210-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 8    | 5,5              | 25,5 | 12 | 17 |  |  |  |
| M11210-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 10   | 6                | 26,5 | 12 | 19 |  |  |  |
| M11210-04-20 | 6         | - 4  | 1/4"   | M 20x1,5 | 12   | 7                | 29   | 12 | 22 |  |  |  |
| M11210-05-16 | 8         | - 5  | 5/16"  | M 16x1,5 | 8    | 5,5              | 26   | 12 | 17 |  |  |  |
| M11210-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 10   | 7                | 26,5 | 12 | 19 |  |  |  |
| M11210-05-20 | 8         | - 5  | 5/16"  | M 20x1,5 | 12   | 7                | 29   | 12 | 22 |  |  |  |
| M11210-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 10   | 7                | 27   | 12 | 19 |  |  |  |
| M11210-06-20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7                | 29   | 12 | 22 |  |  |  |
| M11210-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 8                | 31   | 14 | 22 |  |  |  |
| M11210-08-20 | 12        | - 8  | 1/2"   | M 20x1,5 | 12   | 9,3              | 29,5 | 12 | 22 |  |  |  |
| M11210-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 14   | 9,3              | 31,5 | 14 | 22 |  |  |  |
| M11210-08-24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3              | 31,5 | 14 | 24 |  |  |  |
| M11210-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 15               | 35,5 | 16 | 30 |  |  |  |
| M11210-10-36 | 16        | - 10 | 5/8"   | M 36x2   | 25   | 19,8             | 40   | 18 | 36 |  |  |  |
| M11210-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 15               | 37   | 16 | 30 |  |  |  |
| M11210-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 19,8             | 41   | 18 | 36 |  |  |  |
| M11210-16-36 | 25        | - 16 | 1"     | M 36x2   | 25   | 19,8             | 42,5 | 18 | 36 |  |  |  |
| M11210-16-42 | 25        | - 16 | 1"     | M 42x2   | 30   | 25               | 44,5 | 20 | 46 |  |  |  |
| M11210-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 30               | 51   | 22 | 55 |  |  |  |

## DIN STANDARD CONNECTIONS

### M21612/M21613

METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 / ISO 12151-2



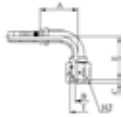
| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS mm |      |     |    |   |    |  |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch   |          |      | T             | mm   | B   | A  | C | H2 |  |
| M21613-03-14 | 5         | - 3  | 3/16"  | M 14x1,5 | 6    | 2,5           | 25,5 | 3,5 | 17 |   |    |  |
| M21613-03-16 | 5         | - 3  | 3/16"  | M 16x1,5 | 8    | 3             | 21,5 | 3,4 | 19 |   |    |  |
| M21613-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 | 6    | 3             | 23,5 | 1,9 | 17 |   |    |  |
| M21613-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 8    | 4             | 22   | 3,4 | 19 |   |    |  |
| M21613-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 10   | 4             | 28   | 2,5 | 22 |   |    |  |
| M21613-04-20 | 6         | - 4  | 1/4"   | M 20x1,5 | 12   | 7             | 26   | 2   | 24 |   |    |  |
| M21613-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 10   | 5,5           | 28   | 2,5 | 22 |   |    |  |
| M21613-05-20 | 8         | - 5  | 5/16"  | M 20x1,5 | 12   | 5,5           | 25   | 2   | 24 |   |    |  |
| M21613-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 10   | 7             | 28,5 | 2,5 | 22 |   |    |  |
| M21613-06-20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7             | 25,5 | 2   | 24 |   |    |  |
| M21613-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 7             | 32,5 | 3   | 27 |   |    |  |
| M21613-06-24 | 10        | - 6  | 3/8"   | M 24x1,5 | 16   | 7             | 32   | 4   | 30 |   |    |  |
| M21612-08-20 | 12        | - 8  | 1/2"   | M 20x1,5 | 12   | 7             | 29   | 2,5 | 24 |   |    |  |
| M21612-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 14   | 7             | 27   | 2,5 | 27 |   |    |  |
| M21613-08-24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3           | 26,5 | 4   | 30 |   |    |  |
| M21613-08-30 | 12        | - 8  | 1/2"   | M 30x2   | 20   | 12,5          | 37   | 3,5 | 36 |   |    |  |
| M21612-10-24 | 16        | - 10 | 5/8"   | M 24x1,5 | 16   | 9,3           | 29,5 | 4   | 30 |   |    |  |
| M21613-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12,5          | 30,5 | 3,5 | 36 |   |    |  |
| M21613-10-36 | 16        | - 10 | 5/8"   | M 36x2   | 25   | 15            | 40   | 4,5 | 41 |   |    |  |
| M21612-12-24 | 19        | - 12 | 3/4"   | M 24x1,5 | 16   | 9,3           | 30,5 | 4   | 30 |   |    |  |
| M21612-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5          | 33,5 | 2,2 | 36 |   |    |  |
| M21613-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 15            | 34   | 4,5 | 41 |   |    |  |
| M21612-16-30 | 25        | - 16 | 1"     | M 30x2   | 20   | 12,5          | 34,5 | 2,2 | 36 |   |    |  |
| M21612-16-36 | 25        | - 16 | 1"     | M 36x2   | 25   | 15            | 35,5 | 1,7 | 41 |   |    |  |
| M21613-16-42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,8          | 35,5 | 6,3 | 50 |   |    |  |
| M21613-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26            | 37,5 | 8   | 60 |   |    |  |
| M21613-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 38   | 26            | 49,5 | 8   | 60 |   |    |  |

M21612: THRUST-WIRE NUT / M21613: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21692/M21693

90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2



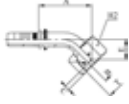
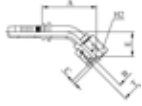
| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|--------|----------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch   |          |      | T                | mm   | B   | A    | C  | E | H2 |
| M21693-03-14 | 5         | - 3  | 3/16"  | M 14x1,5 | 6    | 3                | 26   | 3,5 | 30   | 17 |   |    |
| M21693-03-16 | 5         | - 3  | 3/16"  | M 16x1,5 | 8    | 3                | 26   | 3,4 | 29,5 | 19 |   |    |
| M21693-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 | 6    | 3                | 29,5 | 1,9 | 32,5 | 17 |   |    |
| M21693-04-16 | 6         | - 4  | 1/4"   | M 16x1,5 | 8    | 4                | 29,5 | 3,4 | 29,5 | 19 |   |    |
| M21693-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 | 10   | 4                | 29,5 | 2,5 | 31   | 22 |   |    |
| M21693-04-20 | 6         | - 4  | 1/4"   | M 20x1,5 | 12   | 5,5              | 29,5 | 2   | 34,5 | 24 |   |    |
| M21693-05-18 | 8         | - 5  | 5/16"  | M 18x1,5 | 10   | 4                | 32   | 2,5 | 33,5 | 22 |   |    |
| M21693-05-20 | 8         | - 5  | 5/16"  | M 20x1,5 | 12   | 5,5              | 32   | 2   | 34   | 24 |   |    |
| M21692-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 | 10   | 4                | 35,5 | 3,9 | 42,5 | 22 |   |    |
| M21693-06-20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7                | 36,5 | 2   | 35   | 24 |   |    |
| M21693-06-22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 7                | 36,5 | 3   | 37   | 27 |   |    |
| M21693-06-24 | 10        | - 6  | 3/8"   | M 24x1,5 | 16   | 9,3              | 36,5 | 4   | 36   | 30 |   |    |
| M21692-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 | 14   | 7                | 44   | 2,5 | 48,5 | 27 |   |    |
| M21693-08-24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3              | 45   | 4   | 40,5 | 30 |   |    |
| M21693-08-30 | 12        | - 8  | 1/2"   | M 30x2   | 20   | 12,5             | 45   | 3,5 | 44,5 | 36 |   |    |
| M21692-10-24 | 16        | - 10 | 5/8"   | M 24x1,5 | 16   | 9,3              | 53,5 | 4   | 58,5 | 30 |   |    |
| M21693-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12,5             | 51,5 | 3,5 | 57,5 | 36 |   |    |
| M21692-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5             | 61,5 | 2,2 | 67,5 | 36 |   |    |
| M21693-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 15               | 61,5 | 4,5 | 64,5 | 41 |   |    |
| M21692-16-36 | 25        | - 16 | 1"     | M 36x2   | 25   | 15               | 79,5 | 1,7 | 86   | 41 |   |    |
| M21693-16-42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,8             | 79   | 6,3 | 74,5 | 50 |   |    |
| M21693-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26               | 93,5 | 8   | 85,5 | 60 |   |    |
| M21692-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 38   | 24,7             | 91,5 | 8,8 | 95,5 | 60 |   |    |

M21692: THRUST-WIRE NUT / M21693: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### M21642/M21643

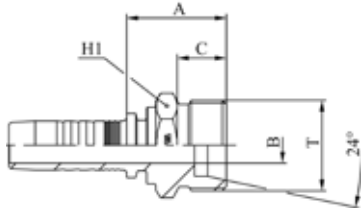
45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2



| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|--------|----------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch   |          |      | T                | mm   | B   | A    | C  | E | H2 |
| M21643-04-14 | 6         | -4   | 1/4"   | M 14x1,5 | 6    | 3                | 38,5 | 1,9 | 17,5 | 17 |   |    |
| M21643-04-16 | 6         | -4   | 1/4"   | M 16x1,5 | 8    | 4                | 36,5 | 3,4 | 15   | 19 |   |    |
| M21643-04-18 | 6         | -4   | 1/4"   | M 18x1,5 | 10   | 4                | 37,5 | 2,5 | 16,5 | 22 |   |    |
| M21643-05-18 | 8         | -5   | 5/16"  | M 18x1,5 | 10   | 4                | 42,5 | 2,5 | 18   | 22 |   |    |
| M21643-05-20 | 8         | -5   | 5/16"  | M 20x1,5 | 12   | 5,5              | 42   | 2   | 18,5 | 24 |   |    |
| M21642-06-18 | 10        | -6   | 3/8"   | M 18x1,5 | 10   | 4                | 49   | 3,9 | 23   | 22 |   |    |
| M21643-06-20 | 10        | -6   | 3/8"   | M 20x1,5 | 12   | 7                | 45   | 2,5 | 18   | 24 |   |    |
| M21643-06-22 | 10        | -6   | 3/8"   | M 22x1,5 | 14   | 7                | 45,5 | 3   | 18,5 | 27 |   |    |
| M21642-08-22 | 12        | -8   | 1/2"   | M 22x1,5 | 14   | 7                | 57,5 | 2,5 | 25,5 | 27 |   |    |
| M21643-08-24 | 12        | -8   | 1/2"   | M 24x1,5 | 16   | 9,3              | 52,5 | 4   | 20   | 30 |   |    |
| M21643-10-30 | 16        | -10  | 5/8"   | M 30x2   | 20   | 12,5             | 65,5 | 3,5 | 29,5 | 36 |   |    |
| M21642-12-30 | 19        | -12  | 3/4"   | M 30x2   | 20   | 12,5             | 76,5 | 2,2 | 34   | 36 |   |    |
| M21643-12-36 | 19        | -12  | 3/4"   | M 36x2   | 25   | 15               | 75   | 4,5 | 32,5 | 41 |   |    |
| M21642-16-36 | 25        | -16  | 1"     | M 36x2   | 25   | 15               | 98   | 1,7 | 43,5 | 41 |   |    |
| M21643-16-42 | 25        | -16  | 1"     | M 42x2   | 30   | 19,8             | 90   | 6,3 | 35,5 | 50 |   |    |
| M21643-20-52 | 31        | -20  | 1.1/4" | M 52x2   | 38   | 26               | 103  | 8   | 39,5 | 60 |   |    |
| M21642-24-52 | 38        | -24  | 1.1/2" | M 52x2   | 38   | 24,7             | 111  | 8,8 | 48   | 60 |   |    |

M21642: THRUST-WIRE NUT / M21643: SLIP-ON NUT

## NF STANDARD CONNECTIONS

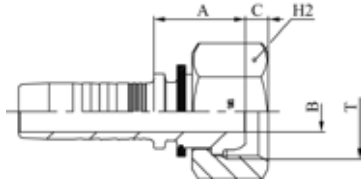


### M11710

#### FRENCH METRIC MALE 24° CONE SEAT MILLIMETRIC TYPE

| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS<br>mm |      |    |    |   |    |  |
|----------------|-----------|------|------|----------|------|------------------|------|----|----|---|----|--|
|                | DN        | Dash | inch |          |      | T                | mm   | B  | A  | C | H1 |  |
| M11710-10-2718 | 16        | - 10 | 5/8" | M 27x1,5 | 18   | 12,5             | 28,5 | 14 | 28 |   |    |  |
| M11710-10-2720 | 16        | - 10 | 5/8" | M 27x1,5 | 20   | 12,5             | 28,5 | 14 | 28 |   |    |  |
| M11710-12-30   | 19        | - 12 | 3/4" | M 30x1,5 | 22   | 15               | 30   | 14 | 30 |   |    |  |
| M11710-12-33   | 19        | - 12 | 3/4" | M 33x1,5 | 25   | 15               | 31   | 14 | 34 |   |    |  |

## NF STANDARD CONNECTIONS



### M21713

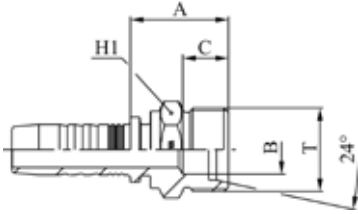
#### FRENCH METRIC FEMALE MILLIMETRIC TYPE (SLIP-ON NUT)

| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS<br>mm |      |     |    |   |    |  |
|----------------|-----------|------|------|----------|------|------------------|------|-----|----|---|----|--|
|                | DN        | Dash | inch |          |      | T                | mm   | B   | A  | C | H2 |  |
| M21713-10-2718 | 16        | - 10 | 5/8" | M 27x1,5 | 18   | 12,5             | 21,5 | 5   | 32 |   |    |  |
| M21713-10-2720 | 16        | - 10 | 5/8" | M 27x1,5 | 20   | 12,5             | 21,5 | 5   | 32 |   |    |  |
| M21713-12-30   | 19        | - 12 | 3/4" | M 30x1,5 | 22   | 15               | 25,5 | 2   | 36 |   |    |  |
| M21713-12-33   | 19        | - 12 | 3/4" | M 33x1,5 | 25   | 15               | 25,5 | 2   | 38 |   |    |  |
| M21713-16-36   | 25        | - 16 | 1"   | M 36x1,5 | 28   | 19,8             | 28   | 4,7 | 41 |   |    |  |
| M21713-16-39   | 25        | - 16 | 1"   | M 39x1,5 | 30   | 19,8             | 28,5 | 4,2 | 46 |   |    |  |

## NF STANDARD CONNECTIONS

### M11810

#### FRENCH METRIC MALE 24° CONE SEAT GAZ TYPE

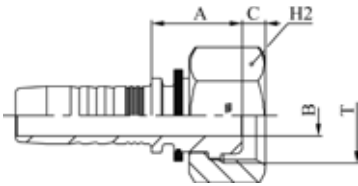


| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe  | DIMENSIONS<br>mm |      |    |    |   |    |  |
|--------------|-----------|------|-------|----------|-------|------------------|------|----|----|---|----|--|
|              | DN        | Dash | inch  |          |       | T                | mm   | B  | A  | C | H1 |  |
| M11810-05-20 | 8         | - 5  | 5/16" | M 20x1,5 | 13,25 | 8                | 27   | 12 | 22 |   |    |  |
| M11810-06-20 | 10        | - 6  | 3/8"  | M 20x1,5 | 13,25 | 8                | 27,5 | 12 | 22 |   |    |  |
| M11810-06-24 | 10        | - 6  | 3/8"  | M 24x1,5 | 16,75 | 12               | 28   | 12 | 24 |   |    |  |
| M11810-08-24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16,75 | 12               | 28,5 | 12 | 24 |   |    |  |
| M11810-10-30 | 16        | - 10 | 5/8"  | M 30x1,5 | 21,25 | 15               | 31,5 | 14 | 30 |   |    |  |
| M11810-12-36 | 19        | - 12 | 3/4"  | M 36x1,5 | 26,75 | 21               | 34   | 14 | 36 |   |    |  |
| M11810-16-45 | 25        | - 16 | 1"    | M 45x1,5 | 33,5  | 26               | 39,5 | 16 | 46 |   |    |  |

## NF STANDARD CONNECTIONS

### M21813

#### FRENCH METRIC FEMALE GAZ TYPE (SLIP-ON NUT)

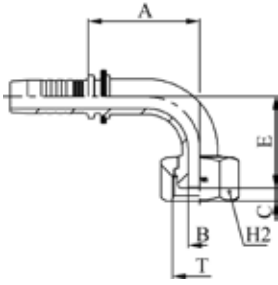


| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe  | DIMENSIONS<br>mm |      |     |    |   |    |  |
|--------------|-----------|------|-------|----------|-------|------------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch  |          |       | T                | mm   | B   | A  | C | H2 |  |
| M21813-04-20 | 6         | - 4  | 1/4"  | M 20x1,5 | 13,25 | 7                | 22   | 4   | 24 |   |    |  |
| M21813-05-20 | 8         | - 5  | 5/16" | M 20x1,5 | 13,25 | 7                | 22   | 4   | 24 |   |    |  |
| M21813-06-20 | 10        | - 6  | 3/8"  | M 20x1,5 | 13,25 | 7                | 22,5 | 4   | 24 |   |    |  |
| M21813-06-24 | 10        | - 6  | 3/8"  | M 24x1,5 | 16,75 | 9,3              | 25,5 | 3,5 | 30 |   |    |  |
| M21813-08-24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16,75 | 9,3              | 26   | 3,5 | 30 |   |    |  |
| M21813-08-30 | 12        | - 8  | 1/2"  | M 30x1,5 | 21,25 | 12,5             | 23,5 | 2   | 36 |   |    |  |
| M21813-10-30 | 16        | - 10 | 5/8"  | M 30x1,5 | 21,25 | 12,5             | 23,5 | 2   | 36 |   |    |  |
| M21813-12-36 | 19        | - 12 | 3/4"  | M 36x1,5 | 26,75 | 15               | 27   | 4,7 | 41 |   |    |  |
| M21813-16-45 | 25        | - 16 | 1"    | M 45x1,5 | 33,5  | 19,8             | 27   | 4,5 | 50 |   |    |  |

## NF STANDARD CONNECTIONS

### M21893

90° FRENCH METRIC FEMALE GAZ TYPE (SLIP-ON NUT)

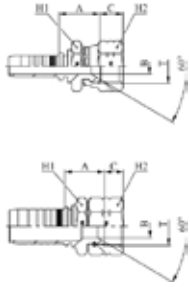


| PART. REF.   | HOSE BORE |      |       | Thread   | Pipe  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|--------------|-----------|------|-------|----------|-------|------------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch  |          |       | T                | B    | A   | C    | E  | H2 |  |
| M21893-05-20 | 8         | - 5  | 5/16" | M 20x1,5 | 13,25 | 7                | 32   | 4   | 29,5 | 24 |    |  |
| M21893-06-20 | 10        | - 6  | 3/8"  | M 20x1,5 | 13,25 | 7                | 36,5 | 4   | 33,5 | 24 |    |  |
| M21893-08-24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16,75 | 12               | 45   | 3,5 | 41   | 30 |    |  |
| M21893-10-30 | 16        | - 10 | 5/8"  | M 30x1,5 | 21,25 | 12,5             | 51,5 | 2   | 53,5 | 36 |    |  |
| M21893-12-36 | 19        | - 12 | 3/4"  | M 36x1,5 | 26,75 | 15               | 61,5 | 4,7 | 60   | 41 |    |  |

## JIS STANDARD CONNECTIONS

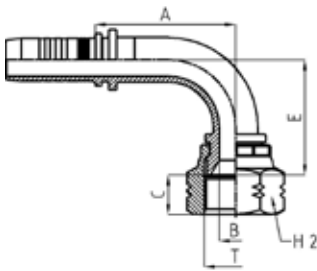
### M24011/M24012

JIS METRIC FEMALE 60° CONE SEAT (KOMATSU) JIS B 8363



| PART. REF.   | HOSE BORE |      |        | Thread   | DIMENSIONS<br>mm |      |      |      |    |    |  |  |
|--------------|-----------|------|--------|----------|------------------|------|------|------|----|----|--|--|
|              | DN        | Dash | inch   |          | T                | B    | A    | C    | H1 | H2 |  |  |
| M24011-04-14 | 6         | - 4  | 1/4"   | M 14x1,5 |                  | 4    | 23   | 10,5 | 19 | 19 |  |  |
| M24011-04-18 | 6         | - 4  | 1/4"   | M 18x1,5 |                  | 7    | 22,5 | 11,5 | 24 | 24 |  |  |
| M24011-05-16 | 8         | - 5  | 5/16"  | M 16x1,5 |                  | 5,5  | 22,5 | 9,3  | 21 | 21 |  |  |
| M24011-06-14 | 10        | - 6  | 3/8"   | M 14x1,5 |                  | 4    | 23,5 | 10,5 | 19 | 19 |  |  |
| M24011-06-18 | 10        | - 6  | 3/8"   | M 18x1,5 |                  | 7    | 23,5 | 11,5 | 24 | 24 |  |  |
| M24011-08-22 | 12        | - 8  | 1/2"   | M 22x1,5 |                  | 9,3  | 25   | 13   | 27 | 27 |  |  |
| M24011-10-24 | 16        | - 10 | 5/8"   | M 24x1,5 |                  | 12,5 | 26,5 | 15,1 | 32 | 32 |  |  |
| M24011-12-30 | 19        | - 12 | 3/4"   | M 30x1,5 |                  | 15   | 31,5 | 18,3 | 36 | 36 |  |  |
| M24011-16-33 | 25        | - 16 | 1"     | M 33x1,5 |                  | 19,8 | 33,5 | 21,3 | 41 | 41 |  |  |
| M24011-20-36 | 31        | - 20 | 1.1/4" | M 36x1,5 |                  | 19,8 | 41   | 20   | 46 | 46 |  |  |
| M24012-24-42 | 38        | - 24 | 1.1/2" | M 42x1,5 |                  | 26   | 44   | 18,8 | 55 | 55 |  |  |

M24011: CRIMPED-BACK NUT / M24012: THRUST-WIRE NUT



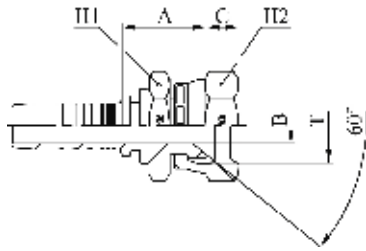
## JIS STANDARD CONNECTIONS

### M24091

90° JIS METRIC FEMALE 60° CONE SEAT

| PART. REF.   | HOSE BORE |      |      | Thread   | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|--------------|-----------|------|------|----------|------------------|------|------|------|------|----|--|--|
|              | DN        | Dash | inch |          | T                | B    | A    | C    | E    | H2 |  |  |
| M24091-04-14 | 6         | - 4  | 1/4" | M 14x1,5 |                  | 4    | 29   | 10,5 | 28,5 | 19 |  |  |
| M24091-06-18 | 10        | - 6  | 3/8" | M 18x1,5 |                  | 7    | 35,5 | 11,5 | 34   | 24 |  |  |
| M24091-08-22 | 12        | - 8  | 1/2" | M 22x1,5 |                  | 9,3  | 44   | 13   | 40   | 27 |  |  |
| M24091-10-24 | 16        | - 10 | 5/8" | M 24x1,5 |                  | 12,5 | 53,5 | 15,2 | 47   | 32 |  |  |
| M24091-12-30 | 19        | - 12 | 3/4" | M 30x1,5 |                  | 15   | 61,5 | 18,3 | 56,5 | 36 |  |  |





## JIS STANDARD CONNECTIONS

### M23811

JIS BSP FEMALE 60° CONE SEAT (TOYOTA) - JIS B 8363  
(CRIMPED-BACK NUT)

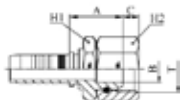
| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|------|-----------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch |           |  | T                | B    | A    | C  | H1 | H2 |  |
| M23811-04-04 | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 18,5 | 8,3  | 19 | 19 |    |  |
| M23811-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 23   | 10   | 22 | 22 |    |  |
| M23811-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 22   | 11,5 | 27 | 27 |    |  |
| M23811-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 26   | 13,5 | 32 | 32 |    |  |
| M23811-16-16 | 25        | - 16 | 1"   | 1" - 11   |  | 19,8             | 30,5 | 14,5 | 38 | 38 |    |  |



## JIS STANDARD CONNECTIONS

### M20711/M20712

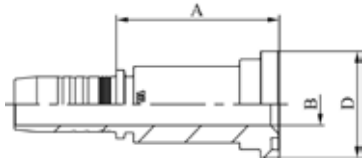
JIS BSP FEMALE 60° CONE (NISSAN) - JIS B 8363



| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A    | C  | H1 | H2 |  |
| M20711-04-04 | 6         | - 4  | 1/4"   | 1/4" - 19   |  | 4                | 22,5 | 4,5  | 19 | 19 |    |  |
| M20711-06-06 | 10        | - 6  | 3/8"   | 3/8" - 19   |  | 7                | 24,5 | 6,4  | 22 | 22 |    |  |
| M20711-08-08 | 12        | - 8  | 1/2"   | 1/2" - 14   |  | 9,3              | 26,5 | 6,7  | 27 | 27 |    |  |
| M20712-10-08 | 16        | - 10 | 5/8"   | 1/2" - 14   |  | 9,3              | 29   | 6,5  | 27 | 27 |    |  |
| M20712-10-12 | 16        | - 10 | 5/8"   | 3/4" - 14   |  | 15               | 30,5 | 9    | 32 | 32 |    |  |
| M20711-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 15               | 30   | 8,9  | 32 | 32 |    |  |
| M20712-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,8             | 35,5 | 10,5 | 38 | 38 |    |  |
| M20712-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26               | 44,5 | 12,5 | 50 | 50 |    |  |

M20711: CRIMPED-BACK NUT / M20712: THRUST-WIRE NUT

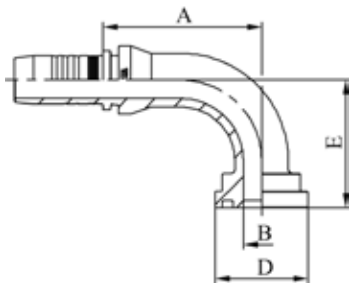
## ORIGINAL EQUIPMENT CONNECTIONS



### M24111

#### STRAIGHT KOMATSU FLANGE

| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |    |      |    |  |  |  |  |
|--------------|-----------|------|------|--------|------------------|----|------|----|--|--|--|--|
|              | DN        | Dash | inch |        | Inch             | B  | A    | D  |  |  |  |  |
| M24111-08-10 | 12        | - 8  | 1/2" | 5/8"   |                  | 14 | 66   | 34 |  |  |  |  |
| M24111-10-10 | 16        | - 10 | 5/8" | 5/8"   |                  | 14 | 65,5 | 34 |  |  |  |  |
| M24111-12-10 | 19        | - 12 | 3/4" | 5/8"   |                  | 14 | 66,5 | 34 |  |  |  |  |

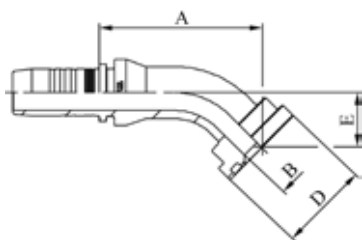


## ORIGINAL EQUIPMENT CONNECTIONS

### M24191

#### 90° KOMATSU FLANGE

| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |    |    |    |      |  |  |  |
|--------------|-----------|------|------|--------|------------------|----|----|----|------|--|--|--|
|              | DN        | Dash | inch |        | Inch             | B  | A  | D  | E    |  |  |  |
| M24191-10-10 | 16        | - 10 | 5/8" | 5/8"   |                  | 14 | 56 | 34 | 47,5 |  |  |  |
| M24191-12-10 | 19        | - 12 | 3/4" | 5/8"   |                  | 14 | 56 | 34 | 47,5 |  |  |  |



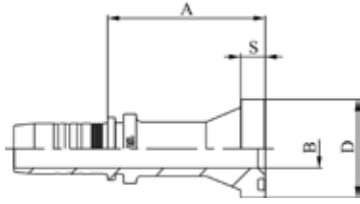
## ORIGINAL EQUIPMENT CONNECTIONS

### M24141

#### 45° KOMATSU FLANGE

| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |    |    |    |    |  |  |  |
|--------------|-----------|------|------|--------|------------------|----|----|----|----|--|--|--|
|              | DN        | Dash | inch |        | Inch             | B  | A  | D  | E  |  |  |  |
| M24141-10-10 | 16        | - 10 | 5/8" | 5/8"   |                  | 14 | 61 | 34 | 22 |  |  |  |

## ORIGINAL EQUIPMENT CONNECTIONS

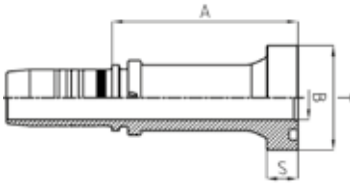


### M23911

#### STRAIGHT SUPERCAT FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |      |      |      |   |  |  |
|--------------|-----------|------|--------|--------|---------------|------|------|------|---|--|--|
|              | DN        | Dash | inch   |        | Inch          | B    | A    | D    | S |  |  |
| M23911-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 15            | 74,5 | 41,5 | 14,3 |   |  |  |
| M23911-12-16 | 19        | - 12 | 3/4"   | 1"     | 19,8          | 83,5 | 47,7 | 14,3 |   |  |  |
| M23911-16-16 | 25        | - 16 | 1"     | 1"     | 19,8          | 87   | 47,7 | 14,3 |   |  |  |
| M23911-16-20 | 25        | - 16 | 1"     | 1.1/4" | 26            | 92,5 | 54   | 14,3 |   |  |  |
| M23911-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26            | 86   | 54   | 14,3 |   |  |  |
| M23911-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32            | 94   | 63,6 | 14,3 |   |  |  |

## ORIGINAL EQUIPMENT CONNECTIONS



### M23911CT

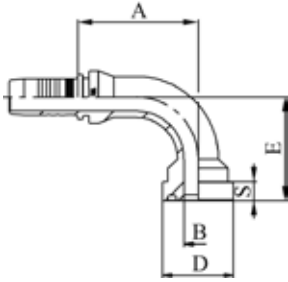
#### STRAIGHT REALCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS mm |      |      |      |   |  |  |
|----------------|-----------|------|--------|--------|---------------|------|------|------|---|--|--|
|                | DN        | Dash | inch   |        | Inch          | B    | A    | D    | S |  |  |
| M23911-16-16CT | 25        | - 16 | 1"     | 1"     | 19,8          | 85   | 47,7 | 14,3 |   |  |  |
| M23911-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" | 26            | 88,5 | 54   | 14,3 |   |  |  |
| M23911-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" | 32            | 93   | 63,6 | 14,3 |   |  |  |

## ORIGINAL EQUIPMENT CONNECTIONS

### M23991

#### 90° SUPERCAT FLANGE

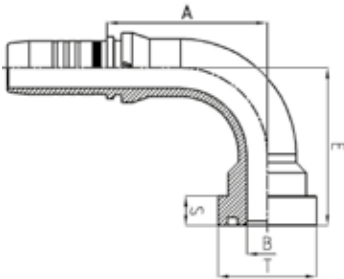


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |   |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|------|---|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E    | S |  |
| M23991-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 64,5 | 41,5 | 64,5 | 14,3 |   |  |
| M23991-16-16 | 25        | - 16 | 1"     | 1"     | 19,8             | 77,5 | 47,7 | 76,5 | 14,3 |   |  |
| M23991-16-20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 75,5 | 54   | 80,5 | 14,3 |   |  |
| M23991-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 85,5 | 54   | 87   | 14,3 |   |  |
| M23991-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 85,5 | 63,7 | 93   | 14,3 |   |  |

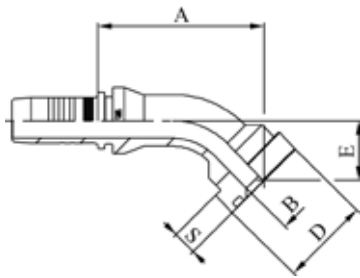
## ORIGINAL EQUIPMENT CONNECTIONS

### M23991CT

#### 90° REALCAT FLANGE



| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E    | S |  |
| M23991-16-16CT | 25        | - 16 | 1"     | 1"     | 19,8             | 77,5 | 47,7 | 76,5 | 14,3 |   |  |
| M23991-16-20CT | 25        | - 16 | 1"     | 1.1/4" | 26               | 75,5 | 54   | 80,5 | 14,3 |   |  |
| M23991-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 85,5 | 54   | 87   | 14,3 |   |  |
| M23991-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 106  | 63,7 | 96   | 14,3 |   |  |

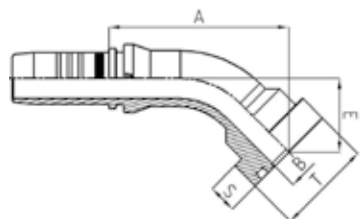


## ORIGINAL EQUIPMENT CONNECTIONS

### M23941

#### 45° SUPERCAT FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |   |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|------|---|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E    | S |  |
| M23941-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 77   | 41,5 | 32   | 14,3 |   |  |
| M23941-16-16 | 25        | - 16 | 1"     | 1"     | 19,8             | 89,5 | 47,7 | 36,5 | 14,3 |   |  |
| M23941-16-20 | 25        | - 16 | 1"     | 1"     | 26               | 92,5 | 54   | 40,5 | 14,3 |   |  |
| M23941-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 99   | 54   | 41,5 | 14,3 |   |  |
| M23941-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 119  | 63,6 | 45,5 | 14,3 |   |  |

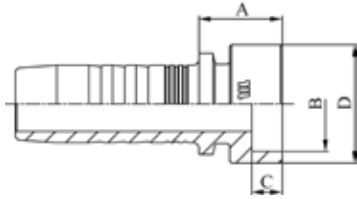


## ORIGINAL EQUIPMENT CONNECTIONS

### M23941CT

#### 45° REALCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E    | S |  |
| M23941-16-16CT | 25        | - 16 | 1"     | 1"     | 19,8             | 89,5 | 47,7 | 36,5 | 14,3 |   |  |
| M23941-16-20CT | 25        | - 16 | 1"     | 1.1/4" | 26               | 93   | 54   | 40,5 | 14,3 |   |  |
| M23941-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 99   | 54   | 41,5 | 14,3 |   |  |
| M23941-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 119  | 63,7 | 45   | 14,3 |   |  |



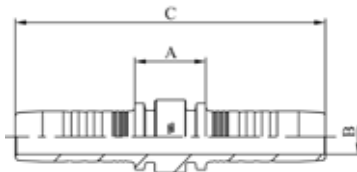
TAIL

**M..IP..**

BRAZING TAIL

FITTINGS F 2-80

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |      |    |    |  |  |  |  |
|------------|-----------|------|--------|------------------|------|----|----|--|--|--|--|
|            | DN        | Dash | inch   | B                | A    | C  | D  |  |  |  |  |
| M03IP06    | 5         | - 3  | 3/16"  | 6                | 11,5 | 5  | 10 |  |  |  |  |
| M04IP08    | 6         | - 4  | 1/4"   | 8                | 13   | 5  | 12 |  |  |  |  |
| M05IP10    | 8         | - 5  | 5/16"  | 10               | 13,5 | 6  | 14 |  |  |  |  |
| M06IP14    | 10        | - 6  | 3/8"   | 14               | 13,5 | 6  | 18 |  |  |  |  |
| M06IP12    | 10        | - 6  | 3/8"   | 12               | 13,5 | 6  | 16 |  |  |  |  |
| M08IP15    | 12        | - 8  | 1/2"   | 15               | 14   | 6  | 20 |  |  |  |  |
| M08IP16    | 12        | - 8  | 1/2"   | 16               | 14   | 6  | 20 |  |  |  |  |
| M10IP18    | 16        | - 10 | 5/8"   | 18               | 15   | 7  | 23 |  |  |  |  |
| M12IP22    | 19        | - 12 | 3/4"   | 22               | 16   | 7  | 26 |  |  |  |  |
| M16IP28    | 25        | - 16 | 1"     | 28               | 18,5 | 8  | 34 |  |  |  |  |
| M20IP35    | 31        | - 20 | 1.1/4" | 35               | 20,5 | 9  | 40 |  |  |  |  |
| M24IP40    | 38        | - 24 | 1.1/2" | 40               | 21,5 | 9  | 50 |  |  |  |  |
| M32IP50    | 51        | - 32 | 2"     | 50               | 23   | 10 | 60 |  |  |  |  |
| M40IP60    | 63        | - 40 | 2.1/2" | 61               | 19   | 7  | 73 |  |  |  |  |
| M48IP70    | 76        | - 48 | 3"     | 70               | 38   | 10 | 89 |  |  |  |  |

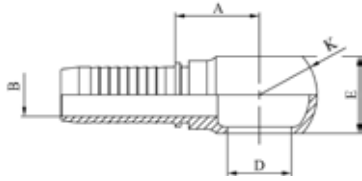


DOUBLE CONNECTOR

**M10050**

DOUBLE CONNECTOR

| PART. REF.   | HOSE BORE |      |        | DIMENSIONS<br>mm |      |       |  |  |  |  |  |
|--------------|-----------|------|--------|------------------|------|-------|--|--|--|--|--|
|              | DN        | Dash | inch   | B                | A    | C     |  |  |  |  |  |
| M10050-03-03 | 5         | - 3  | 3/16"  | 3                | 15,5 | 58,2  |  |  |  |  |  |
| M10050-04-04 | 6         | - 4  | 1/4"   | 4                | 14   | 69    |  |  |  |  |  |
| M10050-05-05 | 8         | - 5  | 5/16"  | 5,5              | 14   | 70    |  |  |  |  |  |
| M10050-06-06 | 10        | - 6  | 3/8"   | 7                | 14,5 | 73,5  |  |  |  |  |  |
| M10050-08-08 | 12        | - 8  | 1/2"   | 9,3              | 15,5 | 77,9  |  |  |  |  |  |
| M10050-10-10 | 16        | - 10 | 5/8"   | 12,5             | 15,5 | 84    |  |  |  |  |  |
| M10050-12-12 | 19        | - 12 | 3/4"   | 15               | 18,5 | 91,5  |  |  |  |  |  |
| M10050-16-16 | 25        | - 16 | 1"     | 19,8             | 22,5 | 119   |  |  |  |  |  |
| M10050-20-20 | 31        | - 20 | 1.1/4" | 26               | 23   | 128,1 |  |  |  |  |  |
| M10050-24-24 | 38        | - 24 | 1.1/2" | 32               | 23,5 | 147,5 |  |  |  |  |  |

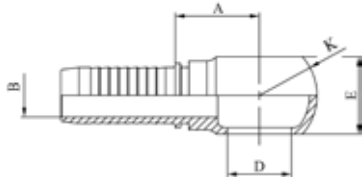


## BANJO CONNECTIONS

### O20910

METRIC BANJO - DIN 7642

| PART. REF.   | HOSE BORE |      |       | Thread   |  | DIMENSIONS<br>mm |      |    |    |    |  |  |
|--------------|-----------|------|-------|----------|--|------------------|------|----|----|----|--|--|
|              | DN        | Dash | inch  |          |  | T                | B    | A  | D  | E  |  |  |
| O20910-04-12 | 6         | - 4  | 1/4"  | M 12x1,5 |  | 4,4              | 22,5 | 12 | 12 | 20 |  |  |
| O20910-04-14 | 6         | - 4  | 1/4"  | M 14x1,5 |  | 4,4              | 23,5 | 14 | 14 | 24 |  |  |
| O20910-05-14 | 8         | - 5  | 5/16" | M 14x1,5 |  | 5,6              | 23,5 | 14 | 14 | 24 |  |  |
| O20910-06-14 | 10        | - 6  | 3/8"  | M 14x1,5 |  | 7,1              | 25   | 14 | 14 | 24 |  |  |
| O20910-06-16 | 10        | - 6  | 3/8"  | M 16x1,5 |  | 7,1              | 25   | 16 | 16 | 28 |  |  |
| O20910-06-18 | 10        | - 6  | 3/8"  | M 18x1,5 |  | 7,1              | 27   | 18 | 20 | 32 |  |  |
| O20910-08-18 | 12        | - 8  | 1/2"  | M 18x1,5 |  | 9,8              | 28   | 18 | 20 | 32 |  |  |
| O20910-08-22 | 12        | - 8  | 1/2"  | M 22x1,5 |  | 9,8              | 31   | 22 | 25 | 39 |  |  |
| O20910-10-22 | 16        | - 10 | 5/8"  | M 22x1,5 |  | 12,7             | 31   | 22 | 25 | 39 |  |  |
| O20910-12-26 | 19        | - 12 | 3/4"  | M 26x1,5 |  | 15,5             | 34,5 | 26 | 30 | 46 |  |  |



## BANJO CONNECTIONS

### O20310

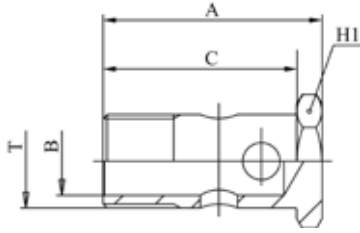
BSP BANJO

| PART. REF.   | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |      |    |    |  |  |
|--------------|-----------|------|-------|-----------|--|------------------|------|------|----|----|--|--|
|              | DN        | Dash | inch  |           |  | T                | B    | A    | D  | E  |  |  |
| O20310-04-04 | 6         | - 4  | 1/4"  | 1/4" - 19 |  | 4,4              | 22   | 13,2 | 15 | 24 |  |  |
| O20310-04-06 | 6         | - 4  | 1/4"  | 3/8" - 19 |  | 4,4              | 23,5 | 16,7 | 18 | 28 |  |  |
| O20310-05-04 | 8         | - 5  | 5/16" | 1/4" - 19 |  | 5                | 23   | 13,2 | 14 | 24 |  |  |
| O20310-05-06 | 8         | - 5  | 5/16" | 3/8" - 19 |  | 5,6              | 23   | 16,7 | 20 | 29 |  |  |
| O20310-06-06 | 10        | - 6  | 3/8"  | 3/8" - 19 |  | 7                | 24,5 | 16,7 | 20 | 29 |  |  |
| O20310-06-08 | 10        | - 6  | 3/8"  | 1/2" - 19 |  | 7,1              | 27   | 21   | 25 | 38 |  |  |
| O20310-08-08 | 12        | - 8  | 1/2"  | 1/2" - 14 |  | 9,8              | 27,5 | 21   | 25 | 38 |  |  |
| O20310-10-10 | 16        | - 10 | 5/8"  | 5/8" - 14 |  | 12,7             | 29,5 | 23   | 27 | 40 |  |  |
| O20310-12-12 | 19        | - 12 | 3/4"  | 3/4" - 14 |  | 15,5             | 36,5 | 26,5 | 31 | 48 |  |  |
| O20310-16-16 | 25        | - 16 | 1"    | 1" - 11   |  | 20,5             | 40,5 | 33,3 | 42 | 60 |  |  |

BOLT

**O80810**

METRIC BOLT - DIN 7643

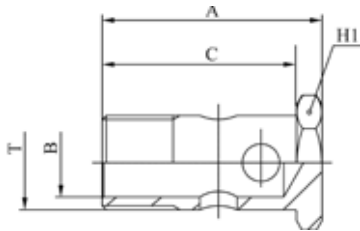


| PART. REF. | HOSE BORE |      |      | Thread   | DIMENSIONS<br>mm |    |    |    |    |  |  |
|------------|-----------|------|------|----------|------------------|----|----|----|----|--|--|
|            | DN        | Dash | inch |          | T                | B  | A  | C  | H1 |  |  |
| O80810-12  |           |      |      | M 12x1,5 |                  | 7  | 29 | 24 | 17 |  |  |
| O80810-14  |           |      |      | M 14x1,5 |                  | 9  | 31 | 26 | 19 |  |  |
| O80810-16  |           |      |      | M 16x1,5 |                  | 11 | 33 | 28 | 22 |  |  |
| O80810-18  |           |      |      | M 18x1,5 |                  | 13 | 37 | 32 | 24 |  |  |
| O80810-22  |           |      |      | M 22x1,5 |                  | 16 | 45 | 39 | 27 |  |  |
| O80810-26  |           |      |      | M 26x1,5 |                  | 20 | 51 | 45 | 32 |  |  |

BOLT

**O80210**

BSP BOLT



| PART. REF. | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |    |      |      |    |  |  |
|------------|-----------|------|------|-----------|------------------|----|------|------|----|--|--|
|            | DN        | Dash | inch |           | T                | B  | A    | C    | H1 |  |  |
| O80210-04  |           |      |      | 1/4" - 19 |                  | 6  | 34,5 | 28,5 | 17 |  |  |
| O80210-06  |           |      |      | 3/8" - 19 |                  | 9  | 45,5 | 38,5 | 22 |  |  |
| O80210-08  |           |      |      | 1/2" - 14 |                  | 13 | 52   | 44   | 27 |  |  |
| O80210-10  |           |      |      | 5/8" - 14 |                  | 15 | 56,5 | 48,5 | 30 |  |  |
| O80210-12  |           |      |      | 3/4" - 14 |                  | 18 | 64   | 54   | 32 |  |  |
| O80210-16  |           |      |      | 1" - 11   |                  | 24 | 77,5 | 68,5 | 41 |  |  |





# INTERLOCK PLUS



| FITTING CODE     | SECTION | PAGE |
|------------------|---------|------|
| JO29             | 3       | 31   |
| M01500           | 3       | 1    |
| M01600           | 3       | 1    |
| M01800-M01810    | 3       | 2    |
| M30050           | 3       | 30   |
| M30510           | 3       | 2    |
| M31210           | 3       | 18   |
| M32410           | 3       | 6    |
| M32510           | 3       | 4    |
| M32810           | 3       | 11   |
| M33010           | 3       | 11   |
| M40812           | 3       | 3    |
| M40842           | 3       | 4    |
| M40892           | 3       | 3    |
| M41243 LONG DROP | 3       | 20   |
| M41293 LONG DROP | 3       | 20   |
| M41612-M41613    | 3       | 18   |
| M41642-M41643    | 3       | 19   |
| M41692-M41693    | 3       | 19   |
| M42411           | 3       | 7    |
| M42412           | 3       | 7    |
| M42441           | 3       | 9    |
| M42442           | 3       | 10   |
| M42443           | 3       | 10   |
| M42491           | 3       | 8    |
| M42492           | 3       | 8    |
| M42493           | 3       | 9    |
| M42512           | 3       | 5    |
| M42542           | 3       | 6    |
| M42592           | 3       | 5    |
| M43310           | 3       | 12   |

| FITTING CODE     | SECTION | PAGE |
|------------------|---------|------|
| M43320           | 3       | 12   |
| M43330           | 3       | 13   |
| M43340           | 3       | 13   |
| M43390           | 3       | 14   |
| M43610           | 3       | 15   |
| M43630           | 3       | 16   |
| M43640           | 3       | 16   |
| M43660           | 3       | 17   |
| M43690           | 3       | 17   |
| M43710           | 3       | 21   |
| M43740           | 3       | 21   |
| M43790           | 3       | 21   |
| M43910           | 3       | 22   |
| M43910CT         | 3       | 22   |
| M43920           | 3       | 23   |
| M43930           | 3       | 23   |
| M43940           | 3       | 24   |
| M43940CT         | 3       | 24   |
| M43960           | 3       | 25   |
| M43970           | 3       | 25   |
| M43990           | 3       | 26   |
| M43990 LONG DROP | 3       | 27   |
| M43990CT         | 3       | 26   |
| M44492 LONG DROP | 3       | 10   |
| M48410           | 3       | 27   |
| M48490           | 3       | 28   |
| M48510           | 3       | 28   |
| M48540           | 3       | 29   |
| M48590           | 3       | 29   |
| M49510WL         | 3       | 30   |

## INTERLOCK PLUS

| DN   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  | 89     | 102 |
|------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|--------|-----|
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  | 3 1/2" | 4"  |
| Size | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 | -56    | -64 |

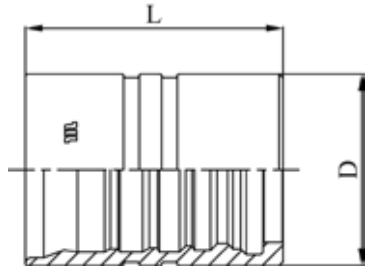
### FERRULES

|                 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M01500          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M01600          |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M01800 / M01810 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF-NPSM)                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 62             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| XTRAFLLANGE                    |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FITTINGS F 311

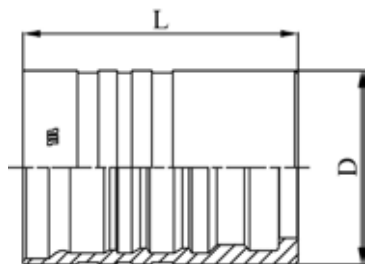


FERRULE

**M01500**

**DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY)**

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | L    |  |  |  |  |
| M01500-10  | 16        | - 10 | 5/8"   |                  |  | 35   | 40,9 |  |  |  |  |
| M01500-12  | 19        | - 12 | 3/4"   |                  |  | 40   | 51,4 |  |  |  |  |
| M01500-16  | 25        | - 16 | 1"     |                  |  | 48   | 64,5 |  |  |  |  |
| M01500-20  | 31        | - 20 | 1.1/4" |                  |  | 57   | 84   |  |  |  |  |
| M01500-24  | 38        | - 24 | 1.1/2" |                  |  | 64,3 | 94   |  |  |  |  |
| M01500-32  | 51        | - 32 | 2"     |                  |  | 83,5 | 107  |  |  |  |  |
| M01500-40  | 63        | - 40 | 2.1/2" |                  |  | 100  | 135  |  |  |  |  |
| M01500-48  | 76        | - 48 | 3"     |                  |  | 107  | 125  |  |  |  |  |



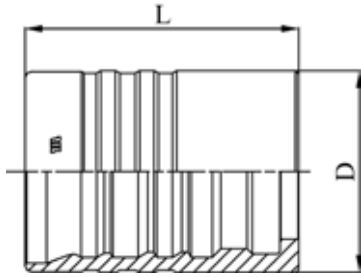
FERRULE

**M01600**

**DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (6 PLY)**

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |    |    |  |  |  |  |
|------------|-----------|------|--------|------------------|--|----|----|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D  | L  |  |  |  |  |
| M01600-20  | 31        | - 20 | 1.1/4" |                  |  | 60 | 85 |  |  |  |  |
| M01600-24  | 38        | - 24 | 1.1/2" |                  |  | 69 | 96 |  |  |  |  |

## FERRULE

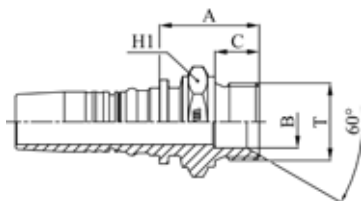


### M01800/M01810

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY)

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L    |  |  |  |  |
| M01800-20  | 31        | - 20 | 1.1/4" |                  |  | 65    | 88,2 |  |  |  |  |
| M01800-32  | 51        | - 32 | 2"     |                  |  | 86,5  | 108  |  |  |  |  |
| M01810-40  | 63        | - 40 | 2.1/2" |                  |  | 103   | 135  |  |  |  |  |
| M01810-48  | 76        | - 48 | 3"     |                  |  | 113,5 | 125  |  |  |  |  |

FITTINGS F 3-2



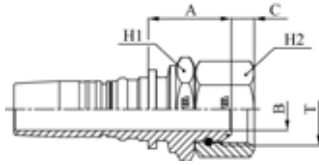
## BS STANDARD CONNECTIONS

### M30510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6

| PART. REF.   | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |    |    |    |  |
|--------------|-----------|------|--------|-------------|------------------|------|----|----|----|--|
|              | DN        | Dash | inch   |             | T                | B    | A  | C  | H1 |  |
| M30510-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 17               | 37   | 16 | 32 |    |  |
| M30510-12-16 | 19        | - 12 | 3/4"   | 1" - 11     | 22,5             | 43   | 19 | 41 |    |  |
| M30510-16-16 | 25        | - 16 | 1"     | 1" - 11     | 22,5             | 43   | 19 | 41 |    |  |
| M30510-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 | 28,5             | 48   | 20 | 50 |    |  |
| M30510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 28,5             | 50,5 | 20 | 50 |    |  |
| M30510-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 | 33,5             | 54,5 | 22 | 55 |    |  |
| M30510-32-32 | 51        | - 32 | 2"     | 2" - 11     | 42               | 58   | 25 | 70 |    |  |

## BS STANDARD CONNECTIONS

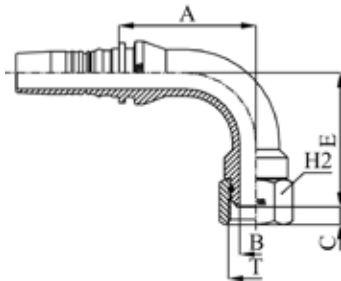


### M40812

**BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6 (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A    | C  | H1 | H2 |  |
| M40812-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 39   | 8,5  | 32 | 32 |    |  |
| M40812-12-16 | 19        | - 12 | 3/4"   | 1" - 11     |  | 19               | 36,5 | 10,6 | 32 | 41 |    |  |
| M40812-16-12 | 25        | - 16 | 1"     | 3/4" - 14   |  | 15               | 35   | 8,5  | 41 | 32 |    |  |
| M40812-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 44,5 | 10,6 | 41 | 41 |    |  |
| M40812-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1             | 41   | 10,5 | 41 | 50 |    |  |
| M40812-20-16 | 31        | - 20 | 1.1/4" | 1" - 11     |  | 19               | 44,5 | 10,6 | 50 | 41 |    |  |
| M40812-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 52,5 | 10,5 | 50 | 50 |    |  |
| M40812-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32,1             | 46   | 12,5 | 50 | 60 |    |  |
| M40812-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" - 11 |  | 26,1             | 48,5 | 10,5 | 60 | 50 |    |  |
| M40812-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 51,5 | 12,5 | 60 | 60 |    |  |
| M40812-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 51,5 | 16,1 | 70 | 70 |    |  |

## BS STANDARD CONNECTIONS



### M40892

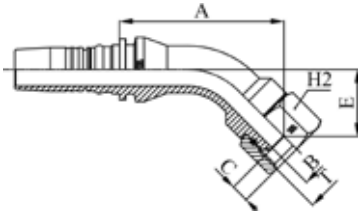
**90° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |       |      |       |    |    |  |
|--------------|-----------|------|--------|-------------|--|------------------|-------|------|-------|----|----|--|
|              | DN        | Dash | inch   |             |  | T                | B     | A    | C     | E  | H2 |  |
| M40892-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 72,5  | 8,5  | 70    | 32 |    |  |
| M40892-12-16 | 19        | - 12 | 3/4"   | 1" - 11     |  | 19               | 72,5  | 10,6 | 71    | 41 |    |  |
| M40892-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 82    | 10,6 | 80,5  | 41 |    |  |
| M40892-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1             | 95    | 10,5 | 78,5  | 50 |    |  |
| M40892-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 98,5  | 10,5 | 98    | 50 |    |  |
| M40892-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32,1             | 98,5  | 12,5 | 84,5  | 60 |    |  |
| M40892-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 111,5 | 12,5 | 109   | 60 |    |  |
| M40892-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 143   | 16,1 | 140,5 | 70 |    |  |

## BS STANDARD CONNECTIONS

### M40842

45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT)

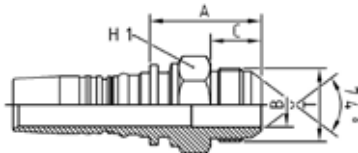


| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|-------------|--|---------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |             |  | T             | B     | A    | C    | E  | H2 |  |
| M40842-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5          | 88    | 8,5  | 35   | 32 |    |  |
| M40842-12-16 | 19        | - 12 | 3/4"   | 1" - 11     |  | 19            | 89,5  | 10,6 | 36,5 | 41 |    |  |
| M40842-16-12 | 25        | - 16 | 1"     | 3/4" - 14   |  | 15            | 105,5 | 8,5  | 36   | 32 |    |  |
| M40842-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5          | 97    | 10,6 | 40   | 41 |    |  |
| M40842-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1          | 108,5 | 10,5 | 38   | 50 |    |  |
| M40842-20-16 | 31        | - 20 | 1.1/4" | 1" - 11     |  | 19            | 118   | 10,6 | 47,5 | 41 |    |  |
| M40842-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1          | 120   | 10,5 | 49,5 | 50 |    |  |
| M40842-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32,1          | 114,5 | 12,5 | 40   | 60 |    |  |
| M40842-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1          | 126,5 | 12,5 | 50   | 60 |    |  |
| M40842-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42            | 162,5 | 16,1 | 66,5 | 70 |    |  |

## SAE STANDARD CONNECTIONS

### M32510

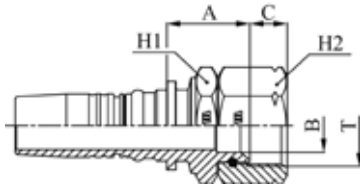
JIC MALE 37° CONE - SAE J516 / ISO 12151-5



| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS mm |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|--|---------------|------|------|----|----|--|
|              | DN        | Dash | inch   |              |  | T             | B    | A    | C  | H1 |  |
| M32510-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |  | 12            | 41   | 19,5 | 27 |    |  |
| M32510-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15            | 45,5 | 22   | 32 |    |  |
| M32510-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 20            | 50,5 | 23   | 38 |    |  |
| M32510-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26            | 57   | 24,3 | 42 |    |  |
| M32510-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1          | 66   | 24,3 | 46 |    |  |
| M32510-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1          | 64   | 27,5 | 50 |    |  |
| M32510-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42            | 81   | 34   | 70 |    |  |



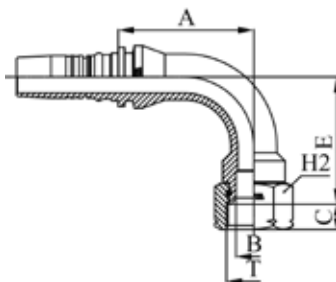
## SAE STANDARD CONNECTIONS



### M42512

**JIC FEMALE 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 | H2 |  |
| M42512-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 36   | 14,2 | 32 | 32 |    |  |
| M42512-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 21,7             | 32,5 | 15,2 | 41 | 41 |    |  |
| M42512-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7             | 40,5 | 15,2 | 41 | 41 |    |  |
| M42512-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26,1             | 44   | 16,2 | 50 | 50 |    |  |
| M42512-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 51,5 | 16,2 | 50 | 50 |    |  |
| M42512-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |  | 30,5             | 51   | 18,8 | 55 | 60 |    |  |
| M42512-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 31               | 54,5 | 18,8 | 55 | 60 |    |  |
| M42512-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 54   | 24   | 70 | 75 |    |  |

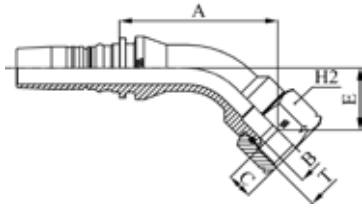


## SAE STANDARD CONNECTIONS

### M42592

**90° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|--|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |              |  | T                | B     | A    | C    | E  | H2 |  |
| M42592-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 72,5  | 14,2 | 66   | 32 |    |  |
| M42592-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 21,7             | 72,5  | 15,2 | 71,5 | 41 |    |  |
| M42592-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7             | 82,5  | 15,2 | 77,5 | 41 |    |  |
| M42592-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26,1             | 90,5  | 16,2 | 76,5 | 50 |    |  |
| M42592-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 98,5  | 16,2 | 92   | 50 |    |  |
| M42592-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |  | 32,1             | 101,5 | 18,8 | 108  | 60 |    |  |
| M42592-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 111,5 | 18,8 | 106  | 60 |    |  |
| M42592-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 144,5 | 24   | 137  | 75 |    |  |



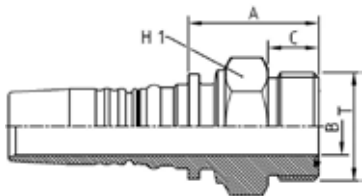
## SAE STANDARD CONNECTIONS

### M42542

45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|--|---------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |              |  | T             | B     | A    | C    | E  | H2 |  |
| M42542-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15            | 86    | 14,2 | 33   | 32 |    |  |
| M42542-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7          | 95    | 15,2 | 37   | 41 |    |  |
| M42542-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26,1          | 102,5 | 16,2 | 36,5 | 50 |    |  |
| M42542-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1          | 115,5 | 16,2 | 45   | 50 |    |  |
| M42542-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1          | 126,5 | 18,8 | 50   | 60 |    |  |
| M42542-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42            | 161,5 | 24   | 63,5 | 75 |    |  |

FITTINGS F 3-6



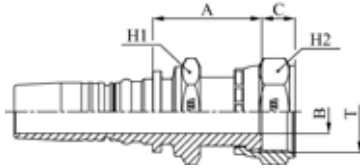
## SAE STANDARD CONNECTIONS

### M32410

ORFS MALE - SAE J516 / ISO 12151-1

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS mm |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|---------------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T             | B    | A    | C  | H1 |  |
| M32410-10-08 | 16        | - 10 | 5/8"   | 13/16" - 16   |  | 9,3           | 33   | 12,8 | 27 |    |  |
| M32410-10-10 | 16        | - 10 | 5/8"   | 1" - 14       |  | 12            | 36   | 15,5 | 27 |    |  |
| M32410-10-12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  |  | 15            | 39   | 17   | 32 |    |  |
| M32410-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5          | 40,5 | 17   | 32 |    |  |
| M32410-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19,8          | 42,5 | 17,5 | 38 |    |  |
| M32410-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5          | 45   | 17,5 | 41 |    |  |
| M32410-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 |  | 25            | 48   | 17,5 | 46 |    |  |
| M32410-20-16 | 31        | - 20 | 1.1/4" | 1.7/16" - 12  |  | 19,5          | 47   | 17,5 | 50 |    |  |
| M32410-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25            | 50,5 | 17,5 | 46 |    |  |
| M32410-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31            | 53   | 17,5 | 55 |    |  |
| M32410-32-24 | 51        | - 32 | 2"     | 2" - 12       |  | 31            | 53   | 17,5 | 70 |    |  |

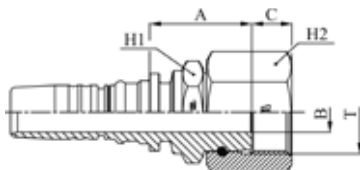
## SAE STANDARD CONNECTIONS



### M42411

**ORFS FEMALE - SAE J516 / ISO 12151-1 PULLBACK TYPE (CRIMPED BACK-NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C  | H1 | H2 |  |
| M42411-10-10 | 16        | - 10 | 5/8"   | 1" - 14       |  | 11,5             | 40,5 | 12,5 | 24 | 30 |    |  |
| M42411-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 48   | 13,5 | 32 | 36 |    |  |
| M42411-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19               | 50   | 13,5 | 36 | 41 |    |  |
| M42411-16-12 | 25        | - 16 | 1"     | 1.3/16" - 12  |  | 14,3             | 50   | 13,5 | 41 | 36 |    |  |
| M42411-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 51,5 | 13,5 | 41 | 41 |    |  |
| M42411-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 |  | 26               | 48,5 | 14,8 | 41 | 50 |    |  |
| M42411-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 55   | 14,8 | 50 | 50 |    |  |
| M42411-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 58   | 15,8 | 60 | 60 |    |  |



## SAE STANDARD CONNECTIONS

### M42412

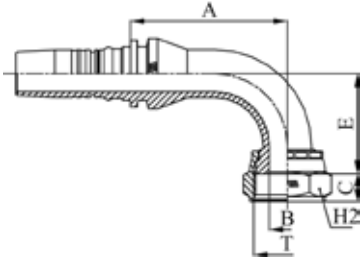
**ORFS FEMALE - SAE J516 / ISO 12151-1 HEAVY TYPE (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |    |      |    |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|----|------|----|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B  | A    | C  | H1 | H2 |  |
| M42412-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 37 | 14,1 | 32 | 36 |    |  |
| M42412-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19,8             | 41 | 15   | 41 | 46 |    |  |
| M42412-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 42 | 15   | 41 | 46 |    |  |
| M42412-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 |  | 26               | 50 | 15,1 | 46 | 55 |    |  |
| M42412-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 52 | 15,1 | 50 | 55 |    |  |
| M42412-20-24 | 31        | - 20 | 1.1/4" | 2" - 12       |  | 31               | 53 | 15   | 55 | 60 |    |  |
| M42412-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 55 | 15   | 60 | 60 |    |  |

## SAE STANDARD CONNECTIONS

### M42491

90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1  
(CRIMPED BACK-NUT)

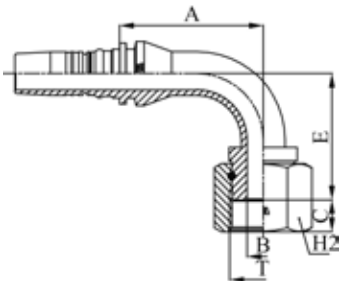


| PART. REF.      | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|-----------------|-----------|------|--------|---------------|--|------------------|-------|------|------|----|----|--|
|                 | DN        | Dash | inch   |               |  | T                | B     | A    | C    | E  | H2 |  |
| M42491-10-12    | 16        | - 10 | 5/8"   | 1.3/16" - 12  |  | 14,3             | 51    | 13,5 | 47   | 36 |    |  |
| M42491-12-12    | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 65    | 13,5 | 48   | 36 |    |  |
| M42491-12-12109 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 65    | 13,5 | 109  | 36 |    |  |
| M42491-12-16    | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19               | 70    | 13,5 | 53   | 41 |    |  |
| M42491-16-16    | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 85    | 13,5 | 57   | 41 |    |  |
| M42491-16-16128 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 85    | 13,5 | 128  | 41 |    |  |
| M42491-16-20    | 25        | - 16 | 1"     | 1.11/16" - 12 |  | 24               | 85    | 14,8 | 58   | 50 |    |  |
| M42491-20-20    | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 98,5  | 14,8 | 65   | 50 |    |  |
| M42491-24-24    | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 115,5 | 15,8 | 79,5 | 60 |    |  |

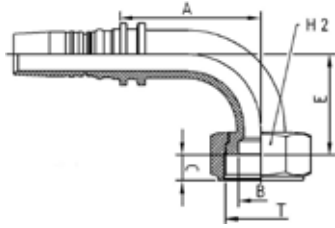
## SAE STANDARD CONNECTIONS

### M42492

90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 HEAVY  
TYPE (THRUST-WIRE-NUT)



| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B     | A    | C    | E  | H2 |  |
| M42492-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 72,5  | 14,1 | 70,5 | 36 |    |  |
| M42492-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 82,5  | 15   | 84,5 | 46 |    |  |
| M42492-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 98,5  | 15,1 | 98   | 55 |    |  |
| M42492-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 111,5 | 15   | 109  | 60 |    |  |

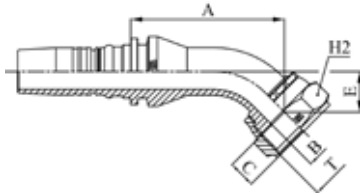


## SAE STANDARD CONNECTIONS

### M42493

90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 (SLIP-ON NUT)

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C    | E  | H2 |  |
| M42493-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19,8             | 67   | 14,8 | 53   | 41 |    |  |
| M42493-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 |  | 26               | 81,5 | 14,8 | 58,5 | 50 |    |  |
| M42493-20-24 | 31        | - 20 | 1.1/4" | 2" - 12       |  | 32               | 100  | 14,8 | 70,5 | 60 |    |  |

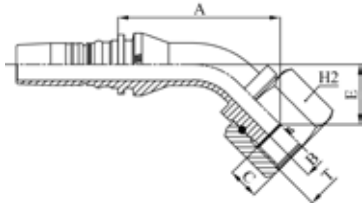


## SAE STANDARD CONNECTIONS

### M42441

45° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 (CRIMPED BACK-NUT)

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C    | E  | H2 |  |
| M42441-10-12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  |  | 14,3             | 56   | 13,5 | 21,5 | 36 |    |  |
| M42441-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 69   | 13,5 | 21,5 | 36 |    |  |
| M42441-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19               | 77,5 | 13,5 | 25   | 41 |    |  |
| M42441-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 86   | 13,5 | 24   | 41 |    |  |
| M42441-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 96,5 | 14,8 | 26   | 50 |    |  |
| M42441-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 112  | 15,8 | 31,5 | 60 |    |  |

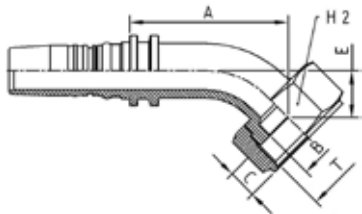


## SAE STANDARD CONNECTIONS

### M42442

**45° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 HEAVY TYPE (THRUST-WIRE-NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |               | T                | B     | A    | C    | E  | H2 |  |
| M42442-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 14,5             | 89    | 14   | 36   | 36 |    |  |
| M42442-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  | 19,5             | 100   | 15   | 42,5 | 46 |    |  |
| M42442-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 25               | 119,5 | 15,1 | 49,5 | 55 |    |  |
| M42442-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       | 31               | 128,5 | 15   | 52   | 60 |    |  |

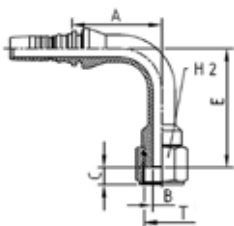


## SAE STANDARD CONNECTIONS

### M42443

**45° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 (SLIP-ON NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |    |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|------------------|----|------|------|----|----|--|
|              | DN        | Dash | inch   |               | T                | B  | A    | C    | E  | H2 |  |
| M42443-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  | 19,8             | 71 | 14,8 | 23,5 | 41 |    |  |
| M42443-16-20 | 25        | - 16 | 1"     | 1.11/16" - 12 | 26               | 81 | 14,8 | 24   | 50 |    |  |
| M42443-20-24 | 31        | - 20 | 1.1/4" | 2" - 12       | 32               | 99 | 14,8 | 29   | 60 |    |  |



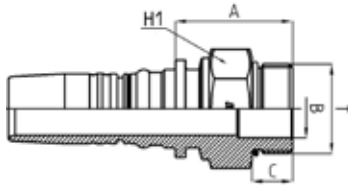
## SAE STANDARD CONNECTIONS

### M44492 LONG DROP

**90° ORFS FEMALE LONG DROP ELBOW - SAE J516 / ISO 12151-1 (THRUST-WIRE NUT)**

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |     |    |    |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|-----|----|----|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C   | E  | H2 |  |
| M44492-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 14,5             | 72,5 | 14,1 | 96  | 36 |    |  |
| M44492-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 25               | 98,5 | 15,1 | 129 | 55 |    |  |

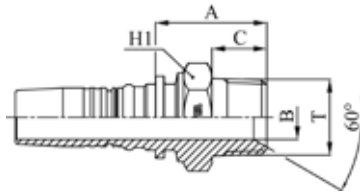
## SAE STANDARD CONNECTIONS



### M33010

SAE MALE O-RING BOSS TYPE - SAE J516 / ISO 11926

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |  |  |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C  |  |  |  |
| M33010-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15,5             | 42   | 15,1 | 32 |  |  |  |
| M33010-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,5             | 43,5 | 15,1 | 38 |  |  |  |
| M33010-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 27,5             | 47,5 | 15,1 | 46 |  |  |  |



## SAE STANDARD CONNECTIONS

### M32810

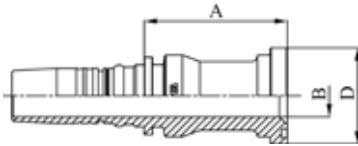
NPTF MALE 60° CONE SEAT - SAE J516/J514

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |     |  |  |  |
|--------------|-----------|------|--------|---------------|--|------------------|-------|------|-----|--|--|--|
|              | DN        | Dash | inch   |               |  | T                | B     | A    | C   |  |  |  |
| M32810-10-12 | 16        | - 10 | 5/8"   | 3/4" - 14     |  | 16               | 40,7  | 19,2 | 27  |  |  |  |
| M32810-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14     |  | 16               | 42,9  | 19,2 | 32  |  |  |  |
| M32810-16-16 | 25        | - 16 | 1"     | 1" - 11,5     |  | 19,5             | 50,5  | 24,2 | 38  |  |  |  |
| M32810-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11,5 |  | 26,1             | 61    | 25   | 46  |  |  |  |
| M32810-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11,5 |  | 32,1             | 62,5  | 26   | 50  |  |  |  |
| M32810-24-32 | 38        | - 24 | 1.1/2" | 2" - 11,5     |  | 42               | 67    | 26,5 | 70  |  |  |  |
| M32810-32-32 | 51        | - 32 | 2"     | 2" - 11,5     |  | 42               | 67    | 26,5 | 70  |  |  |  |
| M32810-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" - 8    |  | 51,5             | 94,5  | 43   | 80  |  |  |  |
| M32810-48-48 | 76        | - 48 | 3"     | 3" - 8        |  | 62,5             | 123,5 | 51,5 | 100 |  |  |  |

## SAE STANDARD CONNECTIONS

### M43310

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

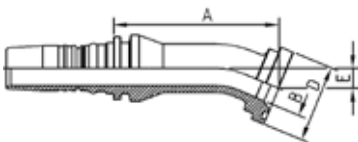


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |       |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|-------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D     |  |  |  |
| M43310-10-16 | 16        | - 10 | 5/8"   | 1"     |                  | 20   | 64   | 44,6  |  |  |  |
| M43310-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 60   | 38    |  |  |  |
| M43310-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 65,5 | 44,6  |  |  |  |
| M43310-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 16   | 67   | 38    |  |  |  |
| M43310-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 66,5 | 44,6  |  |  |  |
| M43310-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26,1 | 73   | 51    |  |  |  |
| M43310-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 75   | 51    |  |  |  |
| M43310-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32,1 | 80   | 60,5  |  |  |  |
| M43310-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32,1 | 80,5 | 60,5  |  |  |  |
| M43310-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 88,5 | 71,6  |  |  |  |
| M43310-32-24 | 38        | - 24 | 1.1/2" | 2"     |                  | 32,1 | 104  | 60,5  |  |  |  |
| M43310-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 82,5 | 71,6  |  |  |  |
| M43310-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |                  | 51,5 | 92,5 | 84,3  |  |  |  |
| M43310-48-48 | 76        | - 48 | 3"     | 3"     |                  | 62,5 | 101  | 101,6 |  |  |  |

## SAE STANDARD CONNECTIONS

### M43320

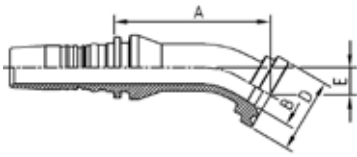
22,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |    |      |      |      |  |  |
|--------------|-----------|------|------|--------|------------------|----|------|------|------|--|--|
|              | DN        | Dash | inch |        | Inch             | B  | A    | D    | E    |  |  |
| M43320-16-16 | 25        | - 16 | 1"   | 1"     |                  | 20 | 94,5 | 44,6 | 11,5 |  |  |



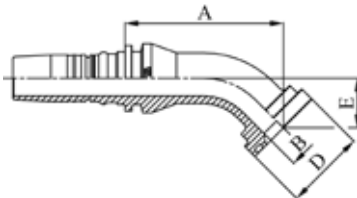
## SAE STANDARD CONNECTIONS



### M43330

30° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |
| M43330-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 93    | 44,6 | 16,5 |   |  |  |
| M43330-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 106,5 | 51   | 17,5 |   |  |  |
| M43330-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 118   | 60,5 | 20   |   |  |  |
| M43330-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 137   | 71,6 | 22   |   |  |  |



## SAE STANDARD CONNECTIONS

### M43340

45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

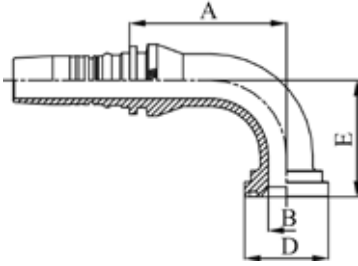
| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |       |      |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|-------|-------|------|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A     | D    | E |  |  |
| M43340-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 16               | 75,5  | 38    | 26   |   |  |  |
| M43340-12-16    | 19        | - 12 | 3/4"   | 1"     | 20               | 76    | 44,6  | 23   |   |  |  |
| M43340-16-16    | 25        | - 16 | 1"     | 1"     | 20               | 87    | 44,6  | 27,5 |   |  |  |
| M43340-16-16032 | 25        | - 16 | 1"     | 1"     | 20               | 92    | 44,5  | 32   |   |  |  |
| M43340-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 87,5  | 51    | 27,5 |   |  |  |
| M43340-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 100,5 | 51    | 29,5 |   |  |  |
| M43340-20-20038 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 109   | 50,9  | 38   |   |  |  |
| M43340-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32,1             | 101,5 | 60,5  | 31   |   |  |  |
| M43340-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 111   | 60,5  | 34,5 |   |  |  |
| M43340-24-24044 | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 120   | 60,5  | 44   |   |  |  |
| M43340-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 113   | 71,6  | 34,5 |   |  |  |
| M43340-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 128,5 | 71,6  | 39   |   |  |  |
| M43340-32-32056 | 51        | - 32 | 2"     | 2"     | 42               | 146   | 71,6  | 56   |   |  |  |
| M43340-48-48    | 76        | - 48 | 3"     | 3"     | 59               | 147,5 | 101,6 | 53   |   |  |  |

All items are made from solid with the exception of M43340-48-48

## SAE STANDARD CONNECTIONS

### M43390

90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



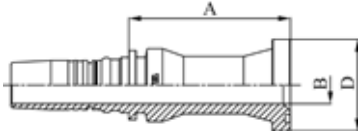
| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |       |     |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|-------|-------|-----|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A     | D   | E |  |  |
| M43390-10-16    | 16        | - 10 | 5/8"   | 1"     | 20               | 71    | 44,6  | 52  |   |  |  |
| M43390-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72    | 38    | 52  |   |  |  |
| M43390-12-12058 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72    | 38    | 58  |   |  |  |
| M43390-12-16    | 19        | - 12 | 3/4"   | 1"     | 20               | 72,5  | 44,6  | 52  |   |  |  |
| M43390-16-16    | 25        | - 16 | 1"     | 1"     | 20               | 83,5  | 44,6  | 62  |   |  |  |
| M43390-16-16070 | 25        | - 16 | 1"     | 1"     | 20               | 83,5  | 44,5  | 70  |   |  |  |
| M43390-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 83,5  | 51    | 62  |   |  |  |
| M43390-20-16    | 31        | - 20 | 1.1/4" | 1"     | 19,8             | 96,5  | 44,6  | 66  |   |  |  |
| M43390-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 99    | 51    | 70  |   |  |  |
| M43390-20-20090 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 99    | 50,9  | 90  |   |  |  |
| M43390-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32,1             | 98,5  | 60,5  | 72  |   |  |  |
| M43390-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 111,5 | 60,5  | 84  |   |  |  |
| M43390-24-24104 | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 111,5 | 60,5  | 104 |   |  |  |
| M43390-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 111,5 | 71,6  | 84  |   |  |  |
| M43390-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 133,5 | 71,6  | 99  |   |  |  |
| M43390-32-32138 | 51        | - 32 | 2"     | 2"     | 42               | 133,5 | 71,5  | 138 |   |  |  |
| M43390-48-48    | 76        | - 48 | 3"     | 3"     | 59               | 145   | 101,6 | 140 |   |  |  |

All items are made from solid with the exception of M43390-48-48

## SAE STANDARD CONNECTIONS

### M43610

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

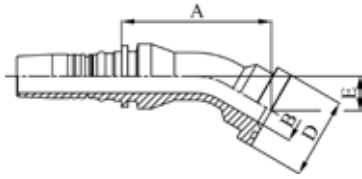


| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |  |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|-------|--|--|--|--|
|              | DN        | Dash | inch   | Inch   |  | B                | A     | D     |  |  |  |  |
| M43610-10-12 | 16        | - 10 | 5/8"   | 3/4"   |  | 16               | 65    | 41,5  |  |  |  |  |
| M43610-10-16 | 16        | - 10 | 5/8"   | 1"     |  | 20               | 81,5  | 47,7  |  |  |  |  |
| M43610-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 71,5  | 41,4  |  |  |  |  |
| M43610-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 20               | 83,5  | 47,7  |  |  |  |  |
| M43610-16-12 | 25        | - 16 | 1"     | 3/4"   |  | 16               | 80,5  | 41,4  |  |  |  |  |
| M43610-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 84,5  | 47,7  |  |  |  |  |
| M43610-16-20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 89    | 54,2  |  |  |  |  |
| M43610-20-16 | 31        | - 20 | 1.1/4" | 1"     |  | 20               | 87    | 47,7  |  |  |  |  |
| M43610-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26,1             | 91    | 54,2  |  |  |  |  |
| M43610-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32,1             | 97    | 63,7  |  |  |  |  |
| M43610-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" |  | 26               | 101   | 54,2  |  |  |  |  |
| M43610-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32,1             | 97,5  | 63,7  |  |  |  |  |
| M43610-24-32 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 113   | 79,6  |  |  |  |  |
| M43610-32-24 | 51        | - 32 | 2"     | 1.1/2" |  | 32,1             | 117   | 63,7  |  |  |  |  |
| M43610-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 112,5 | 79,6  |  |  |  |  |
| M43610-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 51,5             | 126,5 | 107,9 |  |  |  |  |
| M43610-48-48 | 76        | - 48 | 3"     | 3"     |  | 62,5             | 167   | 131,9 |  |  |  |  |

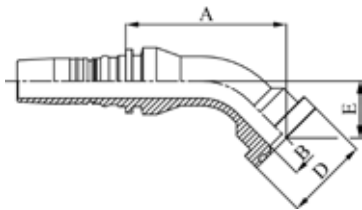
## SAE STANDARD CONNECTIONS

### M43630

30° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    |  |  |  |
| M43630-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 87    | 41,4 | 17,5 |  |  |  |
| M43630-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 16   | 93    | 41,4 | 17   |  |  |  |
| M43630-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 98,5  | 47,7 | 20   |  |  |  |
| M43630-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 115,5 | 54,2 | 23   |  |  |  |
| M43630-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 133,5 | 63,7 | 27   |  |  |  |
| M43630-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 167   | 79,6 | 36,5 |  |  |  |

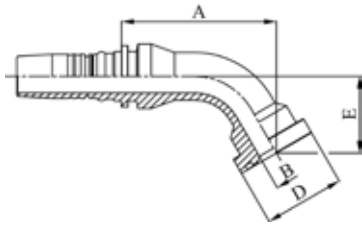


## SAE STANDARD CONNECTIONS

### M43640

45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |  |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|-------|------|------|--|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    |  |  |  |
| M43640-10-12    | 16        | - 10 | 5/8"   | 3/4"   |                  | 16   | 71    | 41,4 | 31   |  |  |  |
| M43640-10-16    | 16        | - 10 | 5/8"   | 1"     |                  | 20   | 83,5  | 47,7 | 32,5 |  |  |  |
| M43640-12-12    | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 79    | 41,4 | 26   |  |  |  |
| M43640-12-16    | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 85,5  | 47,7 | 32,5 |  |  |  |
| M43640-16-12    | 25        | - 16 | 1"     | 3/4"   |                  | 16   | 87    | 41,4 | 28   |  |  |  |
| M43640-16-16    | 25        | - 16 | 1"     | 1"     |                  | 20   | 91,5  | 47,7 | 32,5 |  |  |  |
| M43640-16-20    | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 93,5  | 54,2 | 37,5 |  |  |  |
| M43640-20-16    | 31        | - 20 | 1.1/4" | 1"     |                  | 20   | 106,5 | 47,7 | 36   |  |  |  |
| M43640-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 108   | 54,2 | 37,5 |  |  |  |
| M43640-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32,1 | 115   | 63,7 | 45   |  |  |  |
| M43640-24-20    | 38        | - 24 | 1.1/2" | 1.1/4" |                  | 26   | 124,5 | 54,2 | 43   |  |  |  |
| M43640-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 124,5 | 63,7 | 44   |  |  |  |
| M43640-24-32    | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 135,5 | 79,6 | 55,5 |  |  |  |
| M43640-32-32    | 51        | - 32 | 2"     | 2"     |                  | 42   | 154   | 79,6 | 60,5 |  |  |  |
| M43640-32-32056 | 51        | - 32 | 2"     | 2"     |                  | 42   | 150   | 79,6 | 56,5 |  |  |  |

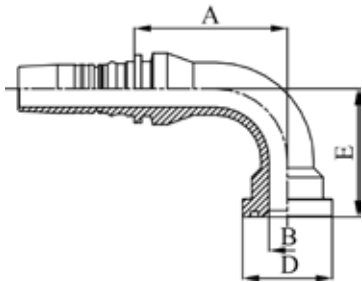


## SAE STANDARD CONNECTIONS

### M43660

60° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |
| M43660-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 98,5  | 41,4 | 39   |   |  |  |
| M43660-12-16 | 19        | - 12 | 3/4"   | 1"     | 20               | 101   | 47,7 | 44   |   |  |  |
| M43660-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 107   | 47,7 | 52   |   |  |  |
| M43660-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 130   | 54,2 | 59   |   |  |  |
| M43660-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32,1             | 136,5 | 63,7 | 66   |   |  |  |
| M43660-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 154   | 63,7 | 61,5 |   |  |  |
| M43660-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 197,5 | 79,6 | 85   |   |  |  |



## SAE STANDARD CONNECTIONS

### M43690

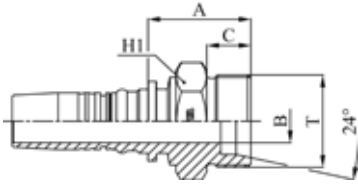
90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |       |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|-------|------|-------|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A    | D     | E |  |  |
| M43690-10-12    | 16        | - 10 | 5/8"   | 3/4"   | 16               | 56,5  | 41,4 | 60,5  |   |  |  |
| M43690-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72,5  | 41,4 | 59    |   |  |  |
| M43690-12-16    | 19        | - 12 | 3/4"   | 1"     | 20               | 72,5  | 47,7 | 65    |   |  |  |
| M43690-16-12    | 25        | - 16 | 1"     | 3/4"   | 16               | 81,5  | 41,4 | 62    |   |  |  |
| M43690-16-16    | 25        | - 16 | 1"     | 1"     | 20               | 81    | 47,7 | 68    |   |  |  |
| M43690-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 78,5  | 54,2 | 76    |   |  |  |
| M43690-20-16    | 31        | - 20 | 1.1/4" | 1"     | 20               | 98,5  | 47,7 | 79    |   |  |  |
| M43690-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 98,5  | 54,2 | 81    |   |  |  |
| M43690-20-20090 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 98,5  | 54,1 | 90    |   |  |  |
| M43690-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32,1             | 98,5  | 63,7 | 91,5  |   |  |  |
| M43690-24-20    | 38        | - 24 | 1.1/2" | 1.1/4" | 26               | 111   | 54,2 | 91    |   |  |  |
| M43690-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 112,5 | 63,7 | 94,5  |   |  |  |
| M43690-24-24104 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 112,5 | 63,7 | 104   |   |  |  |
| M43690-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 112,5 | 79,6 | 110,5 |   |  |  |
| M43690-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 140,5 | 79,6 | 132   |   |  |  |
| M43690-32-32138 | 51        | - 32 | 2"     | 2"     | 42               | 140,5 | 79,6 | 138   |   |  |  |

## DIN STANDARD CONNECTIONS

### M31210

METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2

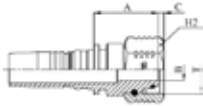


| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS mm |      |    |    |   |    |  |
|--------------|-----------|------|--------|--------|------|---------------|------|----|----|---|----|--|
|              | DN        | Dash | inch   |        |      | T             | mm   | B  | A  | C | H1 |  |
| M31210-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12            | 37   | 16 | 30 |   |    |  |
| M31210-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 14,5          | 38,5 | 16 | 32 |   |    |  |
| M31210-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5          | 43,5 | 18 | 36 |   |    |  |
| M31210-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 19,5          | 45   | 18 | 36 |   |    |  |
| M31210-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5          | 47   | 20 | 46 |   |    |  |
| M31210-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 25            | 55   | 22 | 55 |   |    |  |
| M31210-24-52 | 38        | - 24 | 1.1/2" | M 52x2 | 38   | 31            | 55,5 | 22 | 55 |   |    |  |

## DIN STANDARD CONNECTIONS

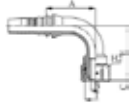
### M41612/M41613

METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 / ISO 12151-2



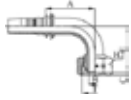
| PART. REF.   | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS mm |      |     |    |   |    |  |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch   |          |      | T             | mm   | B   | A  | C | H2 |  |
| M41612-10-24 | 16        | - 10 | 5/8"   | M 24x1,5 | 16   | 9,3           | 31   | 4   | 30 |   |    |  |
| M41613-10-30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12            | 37   | 3,5 | 36 |   |    |  |
| M41612-12-30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5          | 44   | 3,2 | 36 |   |    |  |
| M41613-12-36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 14,5          | 42   | 3,4 | 41 |   |    |  |
| M41613-12-42 | 19        | - 12 | 3/4"   | M 42x2   | 30   | 19            | 36   | 6,3 | 50 |   |    |  |
| M41612-16-36 | 25        | - 16 | 1"     | M 36x2   | 25   | 16            | 47   | 4,1 | 41 |   |    |  |
| M41613-16-42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,5          | 46,5 | 5,3 | 50 |   |    |  |
| M41613-16-52 | 25        | - 16 | 1"     | M 52x2   | 38   | 26,1          | 49,5 | 8   | 60 |   |    |  |
| M41612-20-42 | 31        | - 20 | 1.1/4" | M 42x2   | 30   | 19            | 47,5 | 6   | 50 |   |    |  |
| M41613-20-52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26,1          | 41,5 | 8   | 60 |   |    |  |
| M41612-24-52 | 38        | - 24 | 1.1/2" | M 52x2   | 38   | 29            | 52,5 | 8,8 | 60 |   |    |  |

M41612: THRUST-WIRE NUT - M41613: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

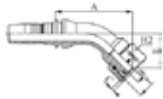
### M41692/M41693



**90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY**  
**DIN 20066 / ISO 12151-2**

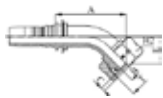
| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|-------|-----|------|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm    | B   | A    | C  | E | H2 |
| M41693-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 52,5  | 3,5 | 57,5 | 36 |   |    |
| M41692-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 25   | 12,5             | 64    | 3,2 | 68,5 | 36 |   |    |
| M41693-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 67    | 3,4 | 67,5 | 41 |   |    |
| M41692-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 16               | 81,5  | 4,1 | 89   | 41 |   |    |
| M41693-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 81,5  | 5,3 | 75,5 | 50 |   |    |
| M41692-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,1             | 103,5 | 6   | 90   | 50 |   |    |
| M41693-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 100   | 8   | 86,5 | 60 |   |    |

M41692: THRUST-WIRE NUT - M41693: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

### M41642/M41643

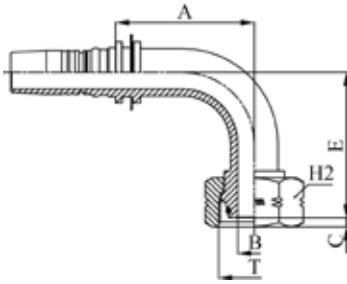


**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY**  
**DIN 20066 / ISO 12151-2**

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|-------|-----|------|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm    | B   | A    | C  | E | H2 |
| M41643-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 66,5  | 3,5 | 29,5 | 36 |   |    |
| M41642-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 12,5             | 79    | 3,2 | 35   | 36 |   |    |
| M41643-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 81    | 3,4 | 33,5 | 41 |   |    |
| M41642-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 16               | 103   | 4,1 | 45,5 | 41 |   |    |
| M41643-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 93    | 5,3 | 36   | 50 |   |    |
| M41642-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,1             | 116,5 | 6   | 44,5 | 50 |   |    |
| M41643-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 110   | 8   | 40   | 60 |   |    |
| M41642-24-52 | 38        | - 24 | 1.1/2" | M 52x2 | 38   | 29               | 128   | 8,8 | 51,5 | 60 |   |    |

M41642: THRUST-WIRE NUT - M41643: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

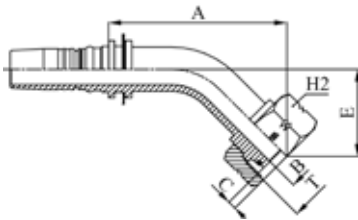


### M41293 LONG DROP

90° METRIC O-RING FEMALE MEDIUM/LONG DROP ELBOW 24°  
CONE HEAVY DUTY DIN 20066 / ISO 12151-2 (SLIP-ON NUT)

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm   | B   | A    | C  | E | H2 |
| M41293-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 53   | 3,5 | 60   | 36 |   |    |
| M41293-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 67   | 3,4 | 67,5 | 41 |   |    |
| M41293-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 81,5 | 5,3 | 86   | 50 |   |    |
| M41293-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 100  | 8   | 92   | 60 |   |    |

## DIN STANDARD CONNECTIONS

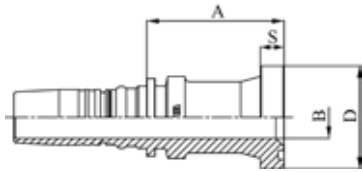


### M41243 LONG DROP

45° METRIC O-RING FEMALE MEDIUM/LONG DROP ELBOW 24°  
CONE HEAVY DUTY DIN 20066/ ISO 12151-2 (SLIP-ON NUT)

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |    |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|------|-----|----|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm   | B   | A  | C  | E | H2 |
| M41243-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 77,5 | 3,5 | 35 | 36 |   |    |
| M41243-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 101  | 3,4 | 45 | 41 |   |    |
| M41243-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 112  | 5,3 | 55 | 50 |   |    |
| M41243-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 133  | 8   | 63 | 60 |   |    |



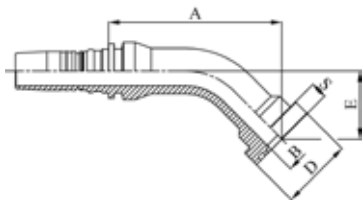


## ORIGINAL EQUIPMENT CONNECTIONS

### M43710

FLANGE PLUS (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |    |   |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|----|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D  | S |  |  |
| M43710-10-12 | 16        | - 10 | 5/8"   | 3/4"   | 16               | 51,5 | 41,5 | 9  |   |  |  |
| M43710-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5             | 71,5 | 41,4 | 10 |   |  |  |
| M43710-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 64   | 47,7 | 11 |   |  |  |
| M43710-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 81   | 54,2 | 12 |   |  |  |

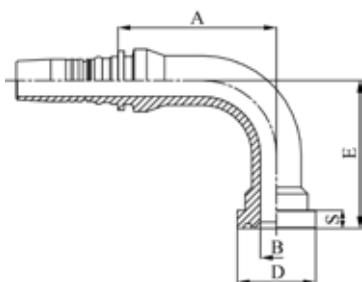


## ORIGINAL EQUIPMENT CONNECTIONS

### M43740

45° FLANGE PLUS (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |    |    |   |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|----|----|---|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D  | E  | S |  |
| M43740-10-12 | 16        | - 10 | 5/8"   | 3/4"   | 16               | 72,5  | 41,4 | 31 | 9  |   |  |
| M43740-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5             | 113   | 41,4 | 40 | 10 |   |  |
| M43740-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 113,5 | 47,7 | 43 | 11 |   |  |
| M43740-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 133,5 | 54,2 | 50 | 12 |   |  |



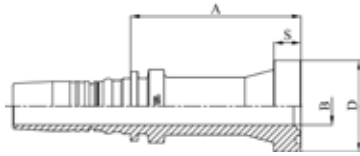
## ORIGINAL EQUIPMENT CONNECTIONS

### M43790

90° FLANGE PLUS (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |    |   |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|----|---|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E  | S |  |
| M43790-10-12 | 16        | - 10 | 5/8"   | 3/4"   | 16               | 61,5 | 41,4 | 60,5 | 9  |   |  |
| M43790-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5             | 93   | 41,4 | 75   | 10 |   |  |
| M43790-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 90   | 47,7 | 90   | 11 |   |  |
| M43790-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 115  | 54,2 | 110  | 12 |   |  |

## ORIGINAL EQUIPMENT CONNECTIONS

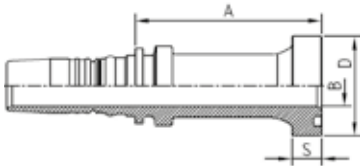


### M43910

#### STRAIGHT SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | S    |  |  |  |
| M43910-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 77    | 41,5 | 14,3 |  |  |  |
| M43910-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 88,5  | 47,7 | 14,3 |  |  |  |
| M43910-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 89,5  | 47,7 | 14,3 |  |  |  |
| M43910-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 93,5  | 54   | 14,3 |  |  |  |
| M43910-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 95    | 54   | 14,3 |  |  |  |
| M43910-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32,1 | 98,5  | 63,6 | 14,3 |  |  |  |
| M43910-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32,1 | 99    | 63,6 | 14,3 |  |  |  |
| M43910-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 115   | 79,3 | 14,3 |  |  |  |
| M43910-32-24 | 51        | - 32 | 2"     | 1.1/2" |                  | 32,1 | 119,5 | 63,6 | 14,3 |  |  |  |
| M43910-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 114,5 | 79,3 | 14,3 |  |  |  |

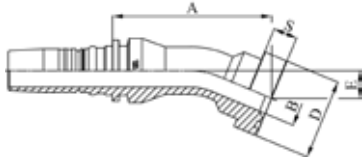
## ORIGINAL EQUIPMENT CONNECTIONS



### M43910CT

#### STRAIGHT REALCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |  |  |  |
|----------------|-----------|------|--------|--------|------------------|------|------|------|------|--|--|--|
|                | DN        | Dash | inch   |        | Inch             | B    | A    | D    | S    |  |  |  |
| M43910-16-16CT | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 89,5 | 47,7 | 14,3 |  |  |  |
| M43910-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 25   | 95   | 54   | 14,3 |  |  |  |
| M43910-20-24CT | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 31   | 98   | 63,6 | 14,3 |  |  |  |
| M43910-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 31   | 99   | 63,6 | 14,3 |  |  |  |

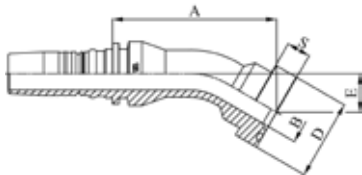


## ORIGINAL EQUIPMENT CONNECTIONS

### M43920

#### 22,5° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |  |  |
| M43920-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 94    | 41,5 | 14,5 | 14,3 |  |  |
| M43920-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 101,5 | 47,7 | 16,5 | 14,3 |  |  |
| M43920-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 110,5 | 47,7 | 16,5 | 14,3 |  |  |
| M43920-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26,1 | 115,5 | 54   | 19   | 14,3 |  |  |
| M43920-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 122   | 54   | 18   | 14,3 |  |  |
| M43920-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 139   | 63,7 | 23   | 14,3 |  |  |
| M43920-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 138   | 63,7 | 20   | 14,3 |  |  |



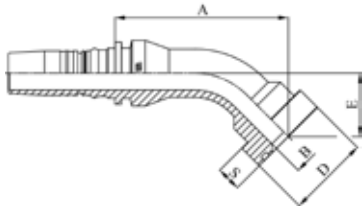
## ORIGINAL EQUIPMENT CONNECTIONS

### M43930

#### 30° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |  |  |
| M43930-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 92    | 41,5 | 20   | 14,3 |  |  |
| M43930-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 99    | 47,7 | 22,5 | 14,3 |  |  |
| M43930-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 108   | 47,7 | 23   | 14,3 |  |  |
| M43930-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26,1 | 112,5 | 54   | 26   | 14,3 |  |  |
| M43930-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 119,5 | 54   | 25   | 14,3 |  |  |
| M43930-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 135,5 | 63,7 | 32   | 14,3 |  |  |
| M43930-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 135   | 63,7 | 28   | 14,3 |  |  |
| M43930-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 151,5 | 79,3 | 36   | 14,3 |  |  |
| M43930-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 171,5 | 79,3 | 37,5 | 14,3 |  |  |

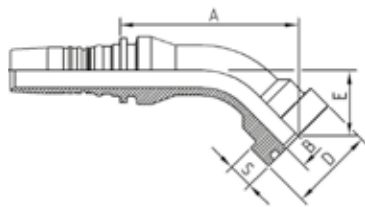
## ORIGINAL EQUIPMENT CONNECTIONS



### M43940

#### 45° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | S |  |
| M43940-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 85    | 41,5 | 32   | 14,3 |   |  |
| M43940-12-16 | 19        | - 12 | 3/4"   | 1"     | 20               | 91,5  | 47,7 | 35,5 | 14,3 |   |  |
| M43940-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 100,5 | 47,7 | 36,5 | 14,3 |   |  |
| M43940-16-20 | 25        | - 16 | 1"     | 1.1/4" | 26,1             | 103,5 | 54   | 40,5 | 14,3 |   |  |
| M43940-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 110,5 | 54   | 40,5 | 14,3 |   |  |
| M43940-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 124,5 | 63,7 | 50,5 | 14,3 |   |  |
| M43940-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 125,5 | 63,7 | 45,5 | 14,3 |   |  |
| M43940-24-32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 139,5 | 79,3 | 56,5 | 14,3 |   |  |
| M43940-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 158,5 | 79,3 | 61,5 | 14,3 |   |  |

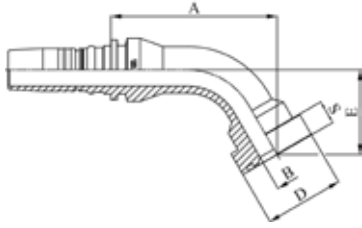


## ORIGINAL EQUIPMENT CONNECTIONS

### M43940CT

#### 45° REALCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | S |  |
| M43940-16-16CT | 25        | - 16 | 1"     | 1"     | 19,5             | 100,5 | 47,7 | 36,5 | 14,3 |   |  |
| M43940-16-20CT | 25        | - 16 | 1"     | 1.1/4" | 25               | 103,5 | 54   | 40,5 | 14,3 |   |  |
| M43940-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 110,5 | 54   | 40,5 | 14,3 |   |  |
| M43940-20-24CT | 31        | - 20 | 1.1/4" | 1.1/2" | 31               | 124,5 | 63,7 | 50,5 | 14,3 |   |  |
| M43940-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" | 31               | 125,5 | 63,7 | 45   | 14,3 |   |  |

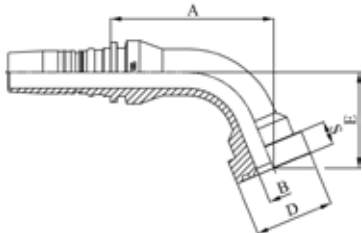


## ORIGINAL EQUIPMENT CONNECTIONS

### M43960

#### 60° SUPERCAT SERIES FLANGE

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |  |  |
| M43960-12-12    | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 101   | 41,5 | 44   | 14,3 |  |  |
| M43960-12-16    | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 106   | 47,7 | 48   | 14,3 |  |  |
| M43960-16-16    | 25        | - 16 | 1"     | 1"     |                  | 20   | 122   | 47,7 | 51   | 14,3 |  |  |
| M43960-16-16055 | 25        | - 16 | 1"     | 1"     |                  | 20   | 102,5 | 47,7 | 55   | 14,3 |  |  |
| M43960-16-20    | 25        | - 16 | 1"     | 1.1/4" |                  | 26,1 | 122   | 54   | 55   | 14,3 |  |  |
| M43960-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 136   | 54   | 56   | 14,3 |  |  |
| M43960-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 149   | 63,7 | 69   | 14,3 |  |  |
| M43960-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 154,5 | 63,7 | 63   | 14,3 |  |  |
| M43960-32-32    | 51        | - 32 | 2"     | 2"     |                  | 42   | 202   | 79,3 | 86,5 | 14,3 |  |  |
| M43960-32-32150 | 51        | - 32 | 2"     | 2"     |                  | 42   | 196,5 | 79,3 | 150  | 14,3 |  |  |

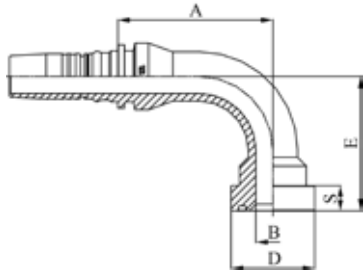


## ORIGINAL EQUIPMENT CONNECTIONS

### M43970

#### 67,5° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |  |  |
| M43970-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 95    | 41,5 | 49,5 | 14,3 |  |  |
| M43970-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 20   | 99,5  | 47,7 | 54   | 14,3 |  |  |
| M43970-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 115   | 47,7 | 58   | 14,3 |  |  |
| M43970-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26,1 | 114,5 | 54   | 62   | 14,3 |  |  |
| M43970-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 128   | 54   | 64   | 14,3 |  |  |
| M43970-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 139,5 | 63,7 | 78   | 14,3 |  |  |
| M43970-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 146   | 63,7 | 72   | 14,3 |  |  |
| M43970-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 189,5 | 79,3 | 99   | 14,3 |  |  |

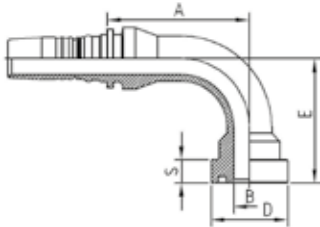


## ORIGINAL EQUIPMENT CONNECTIONS

### M43990

#### 90° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |       |      |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|-------|------|--|--|
|              | DN        | Dash | inch   |        |  | Inch             | B     | A    | D     | E    |  |  |
| M43990-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 72,5  | 41,5 | 64,5  | 14,3 |  |  |
| M43990-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 20               | 75    | 47,7 | 69,5  | 14,3 |  |  |
| M43990-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 88,5  | 47,7 | 76,5  | 14,3 |  |  |
| M43990-16-20 | 25        | - 16 | 1"     | 1.1/4" |  | 26,1             | 86,5  | 54   | 80,5  | 14,3 |  |  |
| M43990-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26,1             | 98,5  | 54   | 85    | 14,3 |  |  |
| M43990-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 104   | 63,7 | 101   | 14,3 |  |  |
| M43990-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 112,5 | 63,7 | 96    | 14,3 |  |  |
| M43990-24-32 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 115   | 79,3 | 112   | 14,3 |  |  |
| M43990-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 144   | 79,3 | 133,5 | 14,3 |  |  |



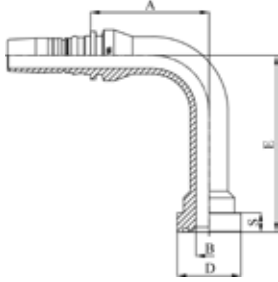
## ORIGINAL EQUIPMENT CONNECTIONS

### M43990CT

#### 90° REALCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |  |  |
|----------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|--|--|
|                | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E    |  |  |
| M43990-16-16CT | 25        | - 16 | 1"     | 1"     |  | 19,5             | 88,5  | 47,7 | 76,5 | 14,3 |  |  |
| M43990-16-20CT | 25        | - 16 | 1"     | 1.1/4" |  | 25               | 86,5  | 54   | 80,5 | 14,3 |  |  |
| M43990-20-20CT | 31        | - 20 | 1.1/4" | 1.1/4" |  | 25               | 98,5  | 54   | 85   | 14,3 |  |  |
| M43990-24-24CT | 38        | - 24 | 1.1/2" | 1.1/2" |  | 31               | 112,5 | 63,7 | 96   | 14,3 |  |  |

## ORIGINAL EQUIPMENT CONNECTIONS

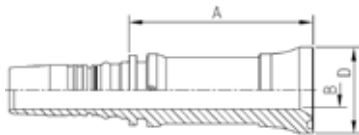


### M43990 LONG DROP

#### 90° LONG DROP SUPERCAT SERIES FLANGE

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |     |      |   |  |
|-----------------|-----------|------|--------|--------|------------------|-------|------|-----|------|---|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A    | D   | E    | S |  |
| M43990-16-16132 | 25        | - 16 | 1"     | 1"     | 20               | 88,5  | 47,7 | 132 | 14,3 |   |  |
| M43990-16-16150 | 25        | - 16 | 1"     | 1"     | 20               | 88,5  | 47,7 | 150 | 14,3 |   |  |
| M43990-16-20150 | 25        | - 16 | 1"     | 1.1/4" | 26,1             | 88,5  | 54   | 150 | 14,3 |   |  |
| M43990-20-20092 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 98,5  | 54   | 92  | 14,3 |   |  |
| M43990-20-20150 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 98,5  | 54   | 150 | 14,3 |   |  |
| M43990-20-24135 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 98,5  | 63,7 | 135 | 14,3 |   |  |
| M43990-24-24106 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 112,5 | 63,7 | 106 | 14,3 |   |  |

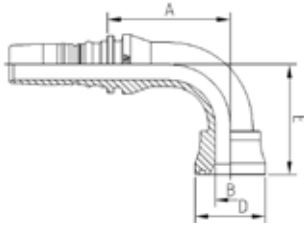
## XTRAFRANGE



### M48410

#### XTRAFRANGE/61 (ISO6162-1/SAE J518 CODE 61 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |   |  |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|---|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D |  |  |  |
| M48410-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 94,5  | 44,5 |   |  |  |  |
| M48410-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 103,5 | 50,5 |   |  |  |  |
| M48410-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 31               | 116   | 60,5 |   |  |  |  |
| M48410-32-32 | 51        | - 32 | 2"     | 2"     | 41               | 101   | 71,6 |   |  |  |  |
| M48410-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" | 51,5             | 103   | 84,4 |   |  |  |  |



## XTRAFLANGE

### M48490

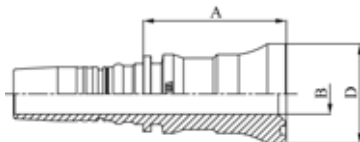
90° XTRAFLANGE/61 (ISO6162-1/SAE J518 CODE 61 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |   |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|---|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    | E |  |  |  |
| M48490-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 77,5 | 44,5 | 69,5 |   |  |  |  |
| M48490-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 107  | 50,5 | 90   |   |  |  |  |
| M48490-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 31               | 112  | 60,5 | 104  |   |  |  |  |
| M48490-32-32 | 51        | - 32 | 2"     | 2"     | 41               | 145  | 71,6 | 138  |   |  |  |  |

## XTRAFLANGE

### M48510

XTRAFLANGE/62 (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)



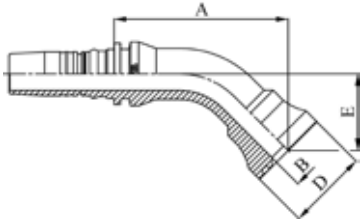
| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |   |  |  |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|---|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D |  |  |  |  |
| M48510-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5             | 64    | 41,4 |   |  |  |  |  |
| M48510-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 68,5  | 47,7 |   |  |  |  |  |
| M48510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25               | 88    | 54,4 |   |  |  |  |  |
| M48510-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 31               | 102   | 63,7 |   |  |  |  |  |
| M48510-32-32 | 51        | - 32 | 2"     | 2"     | 41               | 128,5 | 79,6 |   |  |  |  |  |
| M48510-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" | 51,5             | 148,5 | 99,2 |   |  |  |  |  |



## XTRAFLANGE

### M48540

45° XTRAFLANGE/62 (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

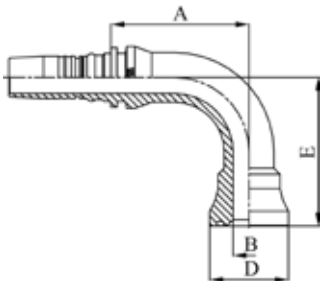


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |  |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    |  |  |  |  |
| M48540-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 14,5 | 92,5  | 41,4 | 38   |  |  |  |  |
| M48540-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 101,5 | 47,7 | 45   |  |  |  |  |
| M48540-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 25   | 138   | 54,4 | 62,5 |  |  |  |  |
| M48540-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 31   | 155   | 63,7 | 71,5 |  |  |  |  |
| M48540-32-32 | 51        | - 32 | 2"     | 2"     |                  | 39   | 193,5 | 79,6 | 92,5 |  |  |  |  |

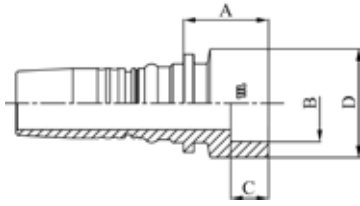
## XTRAFLANGE

### M48590

90° XTRAFLANGE/62 (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |     |  |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|-----|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E   |  |  |  |  |
| M48590-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 14,5 | 75,5  | 41,4 | 75  |  |  |  |  |
| M48590-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 83,5  | 47,7 | 90  |  |  |  |  |
| M48590-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 25   | 107   | 54,4 | 120 |  |  |  |  |
| M48590-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 31   | 122   | 63,7 | 140 |  |  |  |  |
| M48590-32-32 | 51        | - 32 | 2"     | 2"     |                  | 39   | 147,5 | 79,6 | 178 |  |  |  |  |



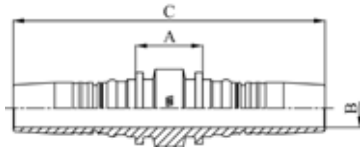
TAIL

**M49510WL**

WELDING TAIL

| PART. REF.     | HOSE BORE |      |        | DIMENSIONS<br>mm |      |    |    |  |  |  |  |
|----------------|-----------|------|--------|------------------|------|----|----|--|--|--|--|
|                | DN        | Dash | inch   | B                | A    | C  | D  |  |  |  |  |
| M49510-10-18WL | 16        | - 10 | 5/8"   | 18,1             | 20,5 | 10 | 26 |  |  |  |  |
| M49510-12-22WL | 19        | - 12 | 3/4"   | 22,1             | 27,5 | 12 | 34 |  |  |  |  |
| M49510-16-28WL | 25        | - 16 | 1"     | 28,1             | 31,5 | 14 | 40 |  |  |  |  |
| M49510-20-35WL | 31        | - 20 | 1.1/4" | 35,1             | 33   | 14 | 49 |  |  |  |  |

FITTINGS  
F 3-30



DOUBLE CONNECTOR

**M30050**

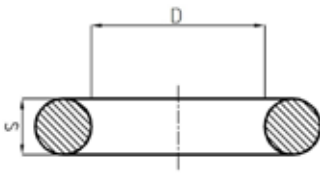
DOUBLE CONNECTOR

| PART. REF.   | HOSE BORE |      |        | DIMENSIONS<br>mm |      |       |  |  |  |  |  |
|--------------|-----------|------|--------|------------------|------|-------|--|--|--|--|--|
|              | DN        | Dash | inch   | B                | A    | C     |  |  |  |  |  |
| M30050-20-20 | 31        | - 20 | 1.1/4" | 25               | 42   | 206   |  |  |  |  |  |
| M30050-24-24 | 38        | - 24 | 1.1/2" | 31               | 43,1 | 229,1 |  |  |  |  |  |
| M30050-32-32 | 51        | - 32 | 2"     | 41               | 43   | 244,7 |  |  |  |  |  |

O-RING

**JO29**

OPTIONAL INTERLOCK PLUS O-RING



| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |     |  |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|-----|--|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | S   |  |  |  |  |  |
| JO29161218 | 16        | - 10 | 5/8"   |                  |  | 12,4 | 1,8 |  |  |  |  |  |
| JO29191618 | 19        | - 12 | 3/4"   |                  |  | 15,6 | 1,8 |  |  |  |  |  |
| JO29262218 | 25        | - 16 | 1"     |                  |  | 22   | 1,8 |  |  |  |  |  |
| JO29322818 | 31        | - 20 | 1.1/4" |                  |  | 28,3 | 1,8 |  |  |  |  |  |
| JO29383518 | 38        | - 24 | 1.1/2" |                  |  | 34,6 | 1,8 |  |  |  |  |  |
| JO29514718 | 51        | - 32 | 2"     |                  |  | 47,4 | 1,8 |  |  |  |  |  |
| JO29605718 | 63        | - 40 | 2.1/2" |                  |  | 57,9 | 1,8 |  |  |  |  |  |
| JO29737018 | 76        | - 48 | 3"     |                  |  | 69,6 | 1,8 |  |  |  |  |  |





# INTERLOCK PLUS STAINLESS STEEL



| FITTING CODE    | SECTION | PAGE |
|-----------------|---------|------|
| IM01500         | 3       | 33   |
| IM01600         | 3       | 33   |
| IM01800/IM01810 | 3       | 34   |
| IM30510         | 3       | 34   |
| IM31210         | 3       | 44   |
| IM32510         | 3       | 36   |
| IM32810         | 3       | 40   |
| IM40812         | 3       | 35   |
| IM40842         | 3       | 35   |
| IM40892         | 3       | 3    |
| IM41613         | 3       | 44   |
| IM41643         | 3       | 45   |
| IM41692/IM41693 | 3       | 45   |
| IM42412         | 3       | 38   |
| IM42442         | 3       | 39   |
| IM42492         | 3       | 39   |
| IM42512         | 3       | 37   |
| IM42542         | 3       | 37   |
| IM42592         | 3       | 38   |
| IM43310         | 3       | 40   |
| IM43340         | 3       | 41   |
| IM43390         | 3       | 41   |
| IM43610         | 3       | 42   |
| IM43640         | 3       | 43   |
| IM43690         | 3       | 43   |
| IM43910         | 3       | 46   |
| IM43940         | 3       | 46   |
| IM43990         | 3       | 47   |

## INTERLOCK PLUS STAINLESS STEEL

| DN   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  | 89     | 102 |
|------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|--------|-----|
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  | 3 1/2" | 4"  |
| Size | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 | -56    | -64 |

### FERRULES

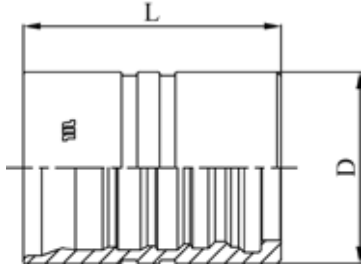
|                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| IM01500           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IM01600           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| IM01800 / IM01810 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

### FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 62             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FITTINGS F 3-V



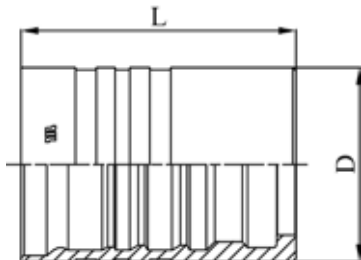


FERRULE

**IM01500**

**DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY)  
STAINLESS STEEL**

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |      |  |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|------|--|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | L    |  |  |  |  |  |
| IM01500-10 | 16        | - 10 | 5/8"   |                  |  | 35   | 40,9 |  |  |  |  |  |
| IM01500-12 | 19        | - 12 | 3/4"   |                  |  | 40   | 51,4 |  |  |  |  |  |
| IM01500-16 | 25        | - 16 | 1"     |                  |  | 48   | 64,5 |  |  |  |  |  |
| IM01500-20 | 31        | - 20 | 1.1/4" |                  |  | 57   | 84   |  |  |  |  |  |
| IM01500-24 | 38        | - 24 | 1.1/2" |                  |  | 64,3 | 94   |  |  |  |  |  |
| IM01500-32 | 51        | - 32 | 2"     |                  |  | 83,5 | 107  |  |  |  |  |  |
| IM01500-40 | 63        | - 40 | 2.1/2" |                  |  | 100  | 135  |  |  |  |  |  |
| IM01500-48 | 76        | - 48 | 3"     |                  |  | 107  | 125  |  |  |  |  |  |

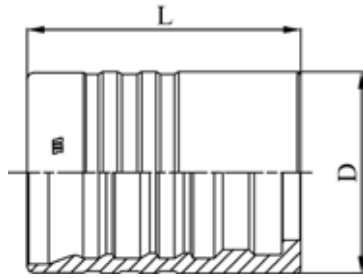


FERRULE

**IM01600**

**DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (6 PLY)  
STAINLESS STEEL**

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |    |    |  |  |  |  |  |
|------------|-----------|------|--------|------------------|--|----|----|--|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D  | L  |  |  |  |  |  |
| IM01600-20 | 31        | - 20 | 1.1/4" |                  |  | 60 | 85 |  |  |  |  |  |
| IM01600-24 | 38        | - 24 | 1.1/2" |                  |  | 69 | 96 |  |  |  |  |  |



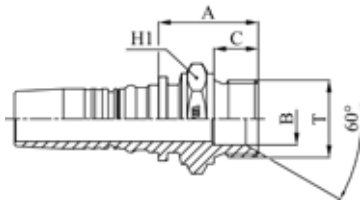
FERRULE

## IM01800/IM01810

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY)  
STAINLESS STEEL

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L    |  |  |  |  |
| IM01800-20 | 31        | - 20 | 1.1/4" |                  |  | 64,5  | 88,2 |  |  |  |  |
| IM01800-32 | 51        | - 32 | 2"     |                  |  | 86,5  | 108  |  |  |  |  |
| IM01810-40 | 63        | - 40 | 2.1/2" |                  |  | 103   | 135  |  |  |  |  |
| IM01810-48 | 76        | - 48 | 3"     |                  |  | 113,5 | 125  |  |  |  |  |

FITTINGS  
F 3-34

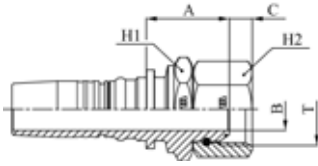


BS STANDARD CONNECTIONS

## IM30510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6  
(STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |    |    |    |  |
|---------------|-----------|------|--------|-------------|------------------|------|----|----|----|--|
|               | DN        | Dash | inch   |             | T                | B    | A  | C  | H1 |  |
| IM30510-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 17               | 37   | 16 | 32 |    |  |
| IM30510-16-16 | 25        | - 16 | 1"     | 1" - 11     | 22,5             | 43   | 19 | 41 |    |  |
| IM30510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 28,5             | 50,5 | 20 | 50 |    |  |
| IM30510-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 | 33,5             | 54,5 | 22 | 55 |    |  |
| IM30510-32-32 | 51        | - 32 | 2"     | 2" - 11     | 42               | 58   | 25 | 70 |    |  |

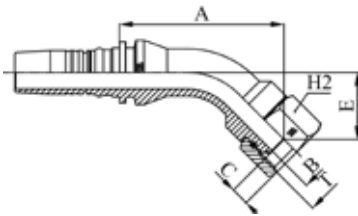


## BS STANDARD CONNECTIONS

### IM40812

**BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6 (THRUST-WIRE NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|---------------|-----------|------|--------|-------------|--|------------------|------|------|----|----|----|--|
|               | DN        | Dash | inch   |             |  | T                | B    | A    | C  | H1 | H2 |  |
| IM40812-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 39   | 8,5  | 32 | 32 |    |  |
| IM40812-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 44,5 | 10,6 | 41 | 41 |    |  |
| IM40812-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 52,5 | 10,5 | 50 | 50 |    |  |
| IM40812-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 51,5 | 12,5 | 60 | 60 |    |  |
| IM40812-32-32 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 42               | 51,5 | 16,1 | 70 | 70 |    |  |



## BS STANDARD CONNECTIONS

### IM40842

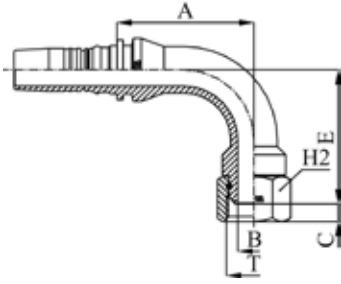
**45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|---------------|-----------|------|--------|-------------|--|------------------|-------|------|------|----|----|--|
|               | DN        | Dash | inch   |             |  | T                | B     | A    | C    | E  | H2 |  |
| IM40842-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 88    | 8,5  | 35   | 32 |    |  |
| IM40842-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 97    | 10,6 | 40   | 41 |    |  |
| IM40842-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 120   | 10,5 | 49,5 | 50 |    |  |
| IM40842-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 126,5 | 12,5 | 50   | 60 |    |  |
| IM40842-32-32 | 51        | - 32 | 2"     | 2" - 11,5   |  | 42               | 162,5 | 16,1 | 66,5 | 70 |    |  |

## BS STANDARD CONNECTIONS

### IM40892

90° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT) STAINLESS STEEL

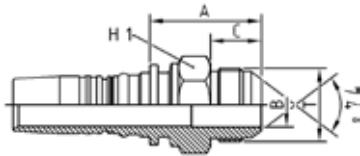


| PART. REF.    | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |       |      |       |    |    |  |
|---------------|-----------|------|--------|-------------|--|------------------|-------|------|-------|----|----|--|
|               | DN        | Dash | inch   |             |  | T                | B     | A    | C     | E  | H2 |  |
| IM40892-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 72,5  | 8,5  | 70    | 32 |    |  |
| IM40892-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 82    | 10,6 | 80,5  | 41 |    |  |
| IM40892-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 98,5  | 10,5 | 98    | 50 |    |  |
| IM40892-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 111,5 | 12,5 | 109   | 60 |    |  |
| IM40892-32-32 | 51        | - 32 | 2"     | 2" - 11,5   |  | 42               | 143   | 16,1 | 140,5 | 70 |    |  |

## SAE STANDARD CONNECTIONS

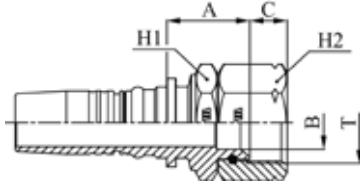
### IM32510

JIC MALE 37° CONE - SAE J516 / ISO 12151-5 STAINLESS STEEL



| PART. REF.    | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |  |
|---------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|--|
|               | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 |  |
| IM32510-10-10 | 16        | - 10 | 5/8"   | 7/8" - 14    |  | 12               | 41   | 19,5 | 27 |    |  |
| IM32510-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 45,5 | 22   | 32 |    |  |
| IM32510-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 20               | 50,5 | 23   | 38 |    |  |
| IM32510-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 66   | 24,3 | 46 |    |  |
| IM32510-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 64   | 27,5 | 50 |    |  |
| IM32510-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 81   | 34   | 70 |    |  |

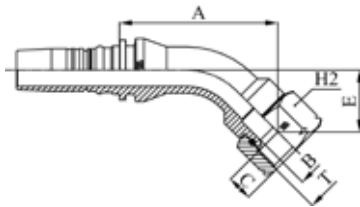
## SAE STANDARD CONNECTIONS



### IM42512

**JIC FEMALE 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|---------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|----|--|
|               | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 | H2 |  |
| IM42512-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 36   | 16   | 32 | 32 |    |  |
| IM42512-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7             | 40,5 | 15,2 | 41 | 41 |    |  |
| IM42512-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 51,5 | 16,2 | 50 | 50 |    |  |
| IM42512-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 31               | 54,5 | 18,8 | 55 | 60 |    |  |
| IM42512-32-32 | 51        | - 32 | 2"     | 2.1/2" - 8   |  | 42               | 54   | 24   | 70 | 75 |    |  |

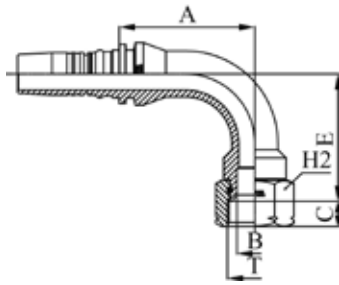


## SAE STANDARD CONNECTIONS

### IM42542

**45° JIC FEMALE SWEEP ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |       |      |    |    |    |  |
|---------------|-----------|------|--------|--------------|--|------------------|-------|------|----|----|----|--|
|               | DN        | Dash | inch   |              |  | T                | B     | A    | C  | E  | H2 |  |
| IM42542-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 86    | 16   | 33 | 32 |    |  |
| IM42542-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7             | 95    | 15,2 | 37 | 41 |    |  |
| IM42542-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 115,5 | 16,2 | 45 | 50 |    |  |
| IM42542-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 126,5 | 18,8 | 50 | 60 |    |  |

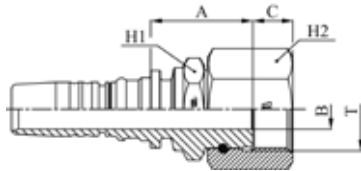


## SAE STANDARD CONNECTIONS

### IM42592

90° JIC FEMALE SWEEP ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5 (THRUST-WIRE NUT) STAINLESS STEEL

| PART. REF.    | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|---------------|-----------|------|--------|--------------|--|------------------|-------|------|------|----|----|--|
|               | DN        | Dash | inch   |              |  | T                | B     | A    | C    | E  | H2 |  |
| IM42592-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 15               | 72,5  | 16   | 66   | 32 |    |  |
| IM42592-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 21,7             | 72,5  | 15,2 | 71,5 | 41 |    |  |
| IM42592-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 21,7             | 82,5  | 15,2 | 77,5 | 41 |    |  |
| IM42592-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 98,5  | 16,2 | 92   | 50 |    |  |
| IM42592-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 111,5 | 18,8 | 106  | 60 |    |  |
| IM42592-32-32 | 51        | - 32 | 2"     | 2.1/2" - 8   |  | 42               | 144,5 | 24   | 137  | 75 |    |  |

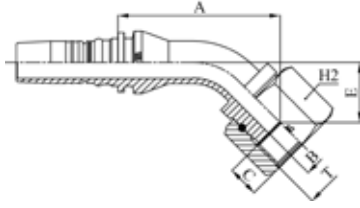


## SAE STANDARD CONNECTIONS

### IM42412

ORFS FEMALE - SAE J516 / ISO 12151-1 HEAVY TYPE (THRUST-WIRE NUT)

| PART. REF.    | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |    |      |    |    |    |  |
|---------------|-----------|------|--------|---------------|--|------------------|----|------|----|----|----|--|
|               | DN        | Dash | inch   |               |  | T                | B  | A    | C  | H1 | H2 |  |
| IM42412-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 37 |      | 32 | 36 |    |  |
| IM42412-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 42 | 15   | 41 | 46 |    |  |
| IM42412-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 52 | 15,1 | 50 | 55 |    |  |
| IM42412-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 55 | 15   | 60 | 60 |    |  |

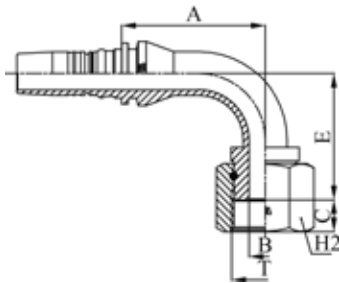


## SAE STANDARD CONNECTIONS

### IM42442

**45° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 HEAVY TYPE (THRUST-WIRE-NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|---------------|-----------|------|--------|---------------|--|------------------|-------|------|------|----|----|--|
|               | DN        | Dash | inch   |               |  | T                | B     | A    | C    | E  | H2 |  |
| IM42442-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 89    | 13,9 | 36   | 36 |    |  |
| IM42442-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 100   | 15   | 42,5 | 46 |    |  |
| IM42442-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 119,5 | 15,1 | 49,5 | 55 |    |  |
| IM42442-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 128,5 | 15   | 52   | 60 |    |  |



## SAE STANDARD CONNECTIONS

### IM42492

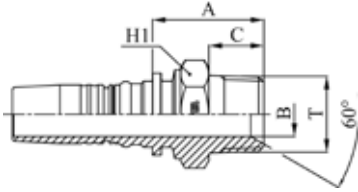
**90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1 HEAVY TYPE (THRUST-WIRE-NUT) STAINLESS STEEL**

| PART. REF.    | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|---------------|-----------|------|--------|---------------|--|------------------|-------|------|------|----|----|--|
|               | DN        | Dash | inch   |               |  | T                | B     | A    | C    | E  | H2 |  |
| IM42492-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 72,5  | 13,9 | 70,5 | 36 |    |  |
| IM42492-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 82,5  | 15   | 84,5 | 46 |    |  |
| IM42492-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 98,5  | 15,1 | 98   | 55 |    |  |
| IM42492-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 31               | 111,5 | 15   | 109  | 60 |    |  |

## SAE STANDARD CONNECTIONS

### IM32810

NPTF MALE 60° CONE SEAT - SAE J516/J514 (STAINLESS STEEL)

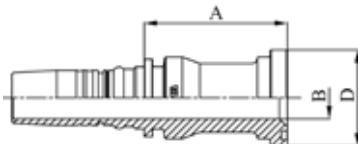


| PART. REF.    | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |     |  |  |  |
|---------------|-----------|------|--------|---------------|--|------------------|-------|------|-----|--|--|--|
|               | DN        | Dash | inch   |               |  | T                | B     | A    | C   |  |  |  |
| IM32810-10-08 | 16        | - 10 | 5/8"   | 1/2" - 14     |  | 12               | 39,5  | 19,2 | 24  |  |  |  |
| IM32810-10-12 | 16        | - 10 | 5/8"   | 3/4" - 14     |  | 16               | 40,5  | 19,2 | 27  |  |  |  |
| IM32810-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14     |  | 16               | 43    | 19,2 | 32  |  |  |  |
| IM32810-16-16 | 25        | - 16 | 1"     | 1" - 11,5     |  | 19,5             | 50,5  | 24,2 | 38  |  |  |  |
| IM32810-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11,5 |  | 26,1             | 61    | 25   | 46  |  |  |  |
| IM32810-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11,5 |  | 32,1             | 62,5  | 26   | 50  |  |  |  |
| IM32810-32-32 | 51        | - 32 | 2"     | 2" - 11       |  | 42               | 67    | 26,5 | 70  |  |  |  |
| IM32810-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" - 8    |  | 51,5             | 94,5  | 43   | 80  |  |  |  |
| IM32810-48-48 | 76        | - 48 | 3"     | 3" - 8        |  | 62,5             | 123,5 | 51,5 | 100 |  |  |  |

## SAE STANDARD CONNECTIONS

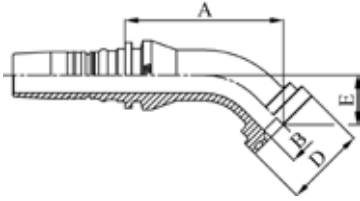
### IM43310

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)



| PART. REF.    | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |      |      |   |  |  |  |
|---------------|-----------|------|--------|--------|--|------------------|------|------|---|--|--|--|
|               | DN        | Dash | inch   |        |  | Inch             | B    | A    | D |  |  |  |
| IM43310-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 60   | 38   |   |  |  |  |
| IM43310-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 66,5 | 44,6 |   |  |  |  |
| IM43310-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26,1             | 75   | 51   |   |  |  |  |
| IM43310-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32,1             | 80,5 | 60,5 |   |  |  |  |
| IM43310-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 83   | 71,6 |   |  |  |  |



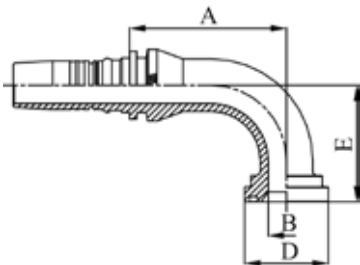


## SAE STANDARD CONNECTIONS

### IM43340

45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |
| IM43340-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 75,5  | 38   | 23   |   |  |  |
| IM43340-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 87    | 44,6 | 27,3 |   |  |  |
| IM43340-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 100,5 | 51   | 29,5 |   |  |  |
| IM43340-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 111   | 60,5 | 34,5 |   |  |  |
| IM43340-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 128,5 | 71,6 | 39   |   |  |  |

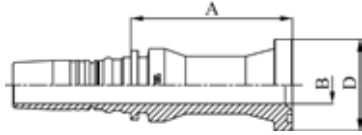


## SAE STANDARD CONNECTIONS

### IM43390

90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |    |   |  |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|----|---|--|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D  | E |  |  |
| IM43390-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72    | 38   | 52 |   |  |  |
| IM43390-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 83,5  | 44,6 | 62 |   |  |  |
| IM43390-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 99    | 51   | 70 |   |  |  |
| IM43390-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32,1             | 111,5 | 60,5 | 84 |   |  |  |
| IM43390-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 133,5 | 71,6 | 99 |   |  |  |



## SAE STANDARD CONNECTIONS

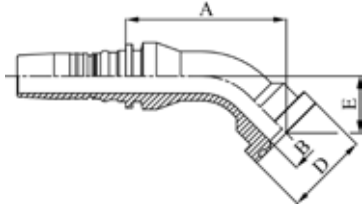
### IM43610

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |  |  |  |  |
|---------------|-----------|------|--------|--------|--|------------------|-------|-------|--|--|--|--|
|               | DN        | Dash | inch   | Inch   |  | B                | A     | D     |  |  |  |  |
| IM43610-10-12 | 16        | - 10 | 5/8"   | 3/4"   |  | 16               | 65    | 41,5  |  |  |  |  |
| IM43610-10-16 | 16        | - 10 | 5/8"   | 1"     |  | 20               | 81,5  | 47,7  |  |  |  |  |
| IM43610-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 71,5  | 41,4  |  |  |  |  |
| IM43610-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 20               | 83,5  | 47,7  |  |  |  |  |
| IM43610-16-12 | 25        | - 16 | 1"     | 3/4"   |  | 16               | 80,3  | 41,4  |  |  |  |  |
| IM43610-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 84,5  | 47,7  |  |  |  |  |
| IM43610-16-20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 89    | 54,2  |  |  |  |  |
| IM43610-20-16 | 31        | - 20 | 1.1/4" | 1"     |  | 20               | 87    | 47,7  |  |  |  |  |
| IM43610-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26,1             | 91    | 54,2  |  |  |  |  |
| IM43610-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32,1             | 97    | 63,7  |  |  |  |  |
| IM43610-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" |  | 26               | 101   | 54,2  |  |  |  |  |
| IM43610-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32,1             | 97,5  | 63,7  |  |  |  |  |
| IM43610-24-32 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 113   | 79,6  |  |  |  |  |
| IM43610-32-24 | 51        | - 32 | 2"     | 1.1/2" |  | 32,1             | 117   | 63,7  |  |  |  |  |
| IM43610-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 113   | 79,6  |  |  |  |  |
| IM43610-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 51,5             | 126,5 | 107,9 |  |  |  |  |
| IM43610-48-48 | 76        | - 48 | 3"     | 3"     |  | 62,5             | 167   | 131,9 |  |  |  |  |

**FITTINGS**  
 F 3-42

## SAE STANDARD CONNECTIONS

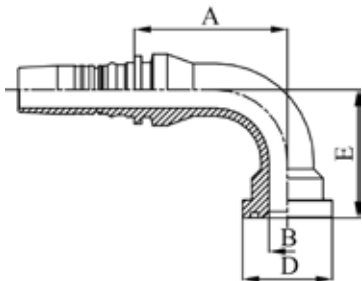


### IM43640

**45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)**

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |  |
| IM43640-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 81    | 41,4 | 28   |   |  |  |  |
| IM43640-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 91,5  | 47,7 | 32,5 |   |  |  |  |
| IM43640-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 108   | 54,2 | 37,5 |   |  |  |  |
| IM43640-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 124,5 | 63,7 | 44   |   |  |  |  |
| IM43640-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 154   | 79,6 | 60,5 |   |  |  |  |

## SAE STANDARD CONNECTIONS



### IM43690

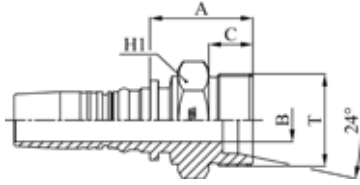
**90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3 (STAINLESS STEEL)**

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |  |
| IM43690-10-12 | 16        | - 10 | 5/8"   | 3/4"   | 16               | 57,5  | 41,4 | 60,5 |   |  |  |  |
| IM43690-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72,4  | 41,4 | 59   |   |  |  |  |
| IM43690-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 81    | 47,7 | 68   |   |  |  |  |
| IM43690-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 98,5  | 54,2 | 81   |   |  |  |  |
| IM43690-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 112,5 | 63,7 | 94,5 |   |  |  |  |
| IM43690-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 140,5 | 79,6 | 132  |   |  |  |  |

## DIN STANDARD CONNECTIONS

### IM31210

METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2 (STAINLESS STEEL)

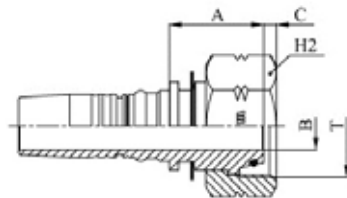


| PART. REF.    | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |    |    |   |    |  |
|---------------|-----------|------|--------|--------|------|------------------|------|----|----|---|----|--|
|               | DN        | Dash | inch   |        |      | T                | mm   | B  | A  | C | H1 |  |
| IM31210-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 37   | 16 | 30 |   |    |  |
| IM31210-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 43,5 | 18 | 36 |   |    |  |
| IM31210-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 46,8 | 20 | 46 |   |    |  |
| IM31210-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 25               | 55   | 22 | 55 |   |    |  |

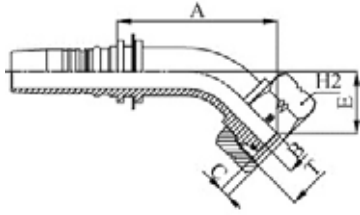
## DIN STANDARD CONNECTIONS

### IM41613

METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 / ISO 12151-2 (STAINLESS STEEL)



| PART. REF.    | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |    |   |    |  |
|---------------|-----------|------|--------|--------|------|------------------|------|-----|----|---|----|--|
|               | DN        | Dash | inch   |        |      | T                | mm   | B   | A  | C | H2 |  |
| IM41613-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 37   | 3,5 | 36 |   |    |  |
| IM41613-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 42   | 3,4 | 41 |   |    |  |
| IM41613-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 46,5 | 5,3 | 50 |   |    |  |
| IM41613-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 41,5 | 8   | 60 |   |    |  |

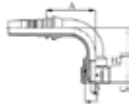


## DIN STANDARD CONNECTIONS

### IM41643

**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2 (STAINLESS STEEL)**

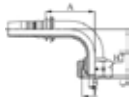
| PART. REF.    | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|---------------|-----------|------|--------|--------|------|------------------|------|-----|------|----|---|----|
|               | DN        | Dash | inch   |        |      | T                | mm   | B   | A    | C  | E | H2 |
| IM41643-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 66,5 | 3,5 | 29,5 | 36 |   |    |
| IM41643-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 81   | 3,4 | 33,5 | 41 |   |    |
| IM41643-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 93   | 5,3 | 36   | 50 |   |    |
| IM41643-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 110  | 8   | 40   | 60 |   |    |



## DIN STANDARD CONNECTIONS

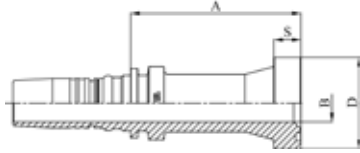
### IM41692/IM41693

**90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2 (STAINLESS STEEL)**



| PART. REF.    | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|---------------|-----------|------|--------|--------|------|------------------|-------|-----|------|----|---|----|
|               | DN        | Dash | inch   |        |      | T                | mm    | B   | A    | C  | E | H2 |
| IM41693-10-30 | 16        | - 10 | 5/8"   | M 30x2 | 20   | 12               | 52,5  | 3,5 | 57,5 | 36 |   |    |
| IM41693-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 67    | 3,4 | 67,5 | 41 |   |    |
| IM41693-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 81,5  | 5,3 | 75,5 | 50 |   |    |
| IM41692-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,1             | 103,5 | 6,1 | 90   | 50 |   |    |
| IM41693-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26               | 100   | 8   | 86,5 | 60 |   |    |

M41692: THRUST-WIRE NUT - M41693: SLIP-ON NUT



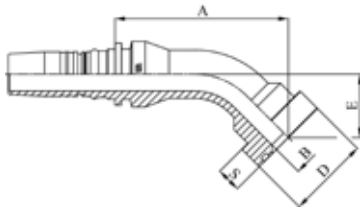
## ORIGINAL EQUIPMENT CONNECTIONS

### IM43910

STRAIGHT SUPERCAT SERIES FLANGE (STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |      |  |  |  |
|---------------|-----------|------|--------|--------|------------------|------|------|------|------|--|--|--|
|               | DN        | Dash | inch   |        | Inch             | B    | A    | D    | S    |  |  |  |
| IM43910-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 77   | 41,5 | 14,3 |  |  |  |
| IM43910-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 89,5 | 47,7 | 14,3 |  |  |  |
| IM43910-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 95   | 54   | 14,3 |  |  |  |
| IM43910-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32,1 | 99   | 63,6 | 14,3 |  |  |  |
| IM43910-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 114  | 79,3 | 14,3 |  |  |  |

FITTINGS  
F 3-46



## ORIGINAL EQUIPMENT CONNECTIONS

### IM43940

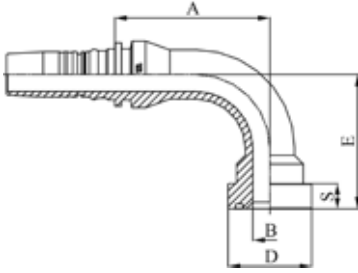
45° SUPERCAT SERIES FLANGE (STAINLESS STEEL)

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |  |  |
|---------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|--|--|
|               | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |  |  |
| IM43940-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 85    | 41,5 | 32   | 14,3 |  |  |
| IM43940-16-16 | 25        | - 16 | 1"     | 1"     |                  | 20   | 100,5 | 47,7 | 36,5 | 14,3 |  |  |
| IM43940-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 110,5 | 54   | 40,5 | 14,3 |  |  |
| IM43940-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 125,5 | 63,7 | 45,5 | 14,3 |  |  |
| IM43940-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 158,5 | 79,3 | 61,5 | 14,3 |  |  |

ORIGINAL EQUIPMENT CONNECTIONS

**IM43990**

90° SUPERCAT SERIES FLANGE (STAINLESS STEEL)



| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |       |      |   |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|-------|------|---|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D     | E    | S |  |
| IM43990-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72,5  | 41,5 | 64,5  | 14,3 |   |  |
| IM43990-16-16 | 25        | - 16 | 1"     | 1"     | 20               | 88,5  | 47,7 | 76,5  | 14,3 |   |  |
| IM43990-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26,1             | 98,5  | 54   | 85    | 14,3 |   |  |
| IM43990-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 112,5 | 63,7 | 96    | 14,3 |   |  |
| IM43990-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 144   | 79,3 | 133,5 | 14,3 |   |  |







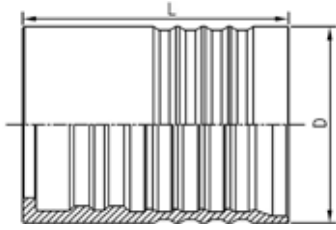
# INTERLOCK SUPER



| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| JO29 IS      | 4       | 2    |
| M02700       | 4       | 1    |
| M02800       | 4       | 1    |
| MB3610       | 4       | 2    |
| MB8510       | 4       | 2    |



FERRULE

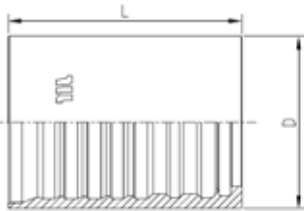


**M02700**

DOUBLE SKIVE FERRULE EXD.8WS

| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |     |     |  |  |  |  |
|------------|-----------|------|------|------------------|--|-----|-----|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D   | L   |  |  |  |  |
| M02700-48  | 76        | - 48 | 3"   |                  |  | 122 | 165 |  |  |  |  |

FERRULE

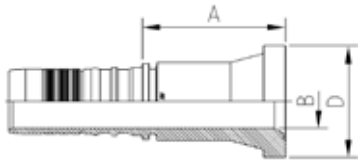


**M02800**

DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (8 PLY)

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |     |       |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-----|-------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D   | L     |  |  |  |  |
| M02800-48  | 76        | - 48 | 3"     |                  |  | 122 | 165   |  |  |  |  |
| M02800-56  | 89        | - 56 | 3.1/2" |                  |  | 149 | 236,7 |  |  |  |  |

## SAE STANDARD CONNECTIONS

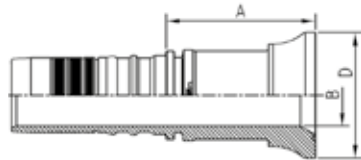


### MB3610

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |      |     |       |  |  |  |  |  |
|--------------|-----------|------|------|--------|------------------|------|-----|-------|--|--|--|--|--|
|              | DN        | Dash | inch |        | Inch             | B    | A   | D     |  |  |  |  |  |
| MB3610-48-48 | 76        | - 48 | 3"   | 3"     |                  | 62,5 | 169 | 131,9 |  |  |  |  |  |

## XTRAFRANGE

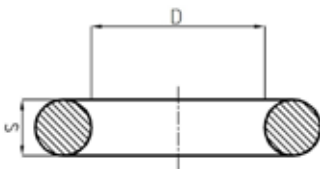


### MB8510

XTRAFRANGE/62 (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |      |     |     |  |  |  |  |  |
|--------------|-----------|------|------|--------|------------------|------|-----|-----|--|--|--|--|--|
|              | DN        | Dash | inch |        | Inch             | B    | A   | D   |  |  |  |  |  |
| MB8510-48-48 | 76        | - 48 | 3"   | 3"     |                  | 62,5 | 152 | 128 |  |  |  |  |  |

## O-RING



### JO29

INTERLOCK SUPER O-RING

| PART. REF.  | HOSE BORE |      |        | DIMENSIONS<br>mm |     |  |  |  |  |  |  |
|-------------|-----------|------|--------|------------------|-----|--|--|--|--|--|--|
|             | DN        | Dash | inch   | D                | S   |  |  |  |  |  |  |
| JO29757026  | 76        | - 48 | 3"     | 69,5             | 2,6 |  |  |  |  |  |  |
| JO29878226  | 89        | - 56 | 3.1/2" | 82,2             | 2,6 |  |  |  |  |  |  |
| JO291029535 | 102       | - 64 | 4"     | 94,8             | 3,5 |  |  |  |  |  |  |



**XTRALOCK**





| FITTING CODE  | SECTION | PAGE |
|---------------|---------|------|
| M01750        | 5       | 1    |
| M01800        | 5       | 1    |
| M52810-M57810 | 5       | 2    |
| M53510        | 5       | 2    |
| M68510        | 5       | 4    |
| M68540        | 5       | 5    |
| M68590        | 5       | 5    |
| M68610        | 5       | 3    |
| M68640        | 5       | 4    |
| M68690        | 5       | 3    |

## XTRALOCK

| DN   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  | 89     | 102 |
|------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|--------|-----|
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  | 3 1/2" | 4"  |
| Size | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 | -56    | -64 |

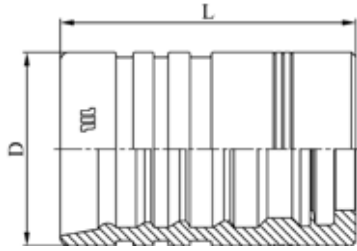
## FERRULES

|        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M01750 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M01800 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## FITTINGS

|                       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SAE (NPTF-NPSM)       |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE<br>62 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| XTRAFLLANGE           |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

FITTINGS  
F 511

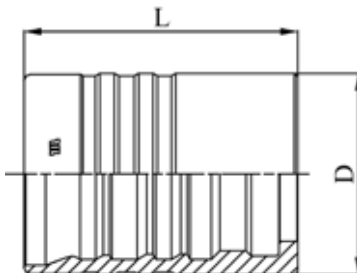


FERRULE

**M01750**

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (4 PLY)

| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |      |    |  |  |  |  |
|------------|-----------|------|------|------------------|--|------|----|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D    | L  |  |  |  |  |
| M01750-12  | 19        | - 12 | 3/4" |                  |  | 45,1 | 69 |  |  |  |  |



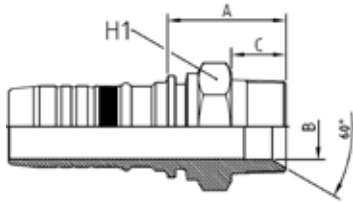
FERRULE

**M01800**

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY)

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D    | L    |  |  |  |  |
| M01800-16  | 25        | - 16 | 1"     |                  |  | 53,5 | 69   |  |  |  |  |
| M01800-24  | 38        | - 24 | 1.1/2" |                  |  | 73   | 97,8 |  |  |  |  |

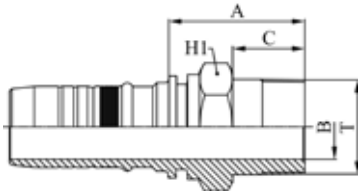
## SAE STANDARD CONNECTION



### M52810/M57810

NPTF MALE 60° CONE SEAT - SAE J516/J514 ANSI B1.20.3

| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |       |      |     |  |  |  |
|--------------|-----------|------|--------|-------------|--|------------------|-------|------|-----|--|--|--|
|              | DN        | Dash | inch   |             |  | T                | B     | A    | C   |  |  |  |
| M52810-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 15               | 49,4  | 21   | 32  |  |  |  |
| M57810-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19               | 60,4  | 24,2 | 41  |  |  |  |
| M57810-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 63,9  | 28   | 46  |  |  |  |
| M57810-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 70,4  | 30   | 55  |  |  |  |
| M57810-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 75,5  | 35   | 70  |  |  |  |
| M57810-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" - 8  |  | 55,4             | 94,7  | 43   | 80  |  |  |  |
| M57810-48-48 | 76        | - 48 | 3"     | 3" - 8      |  | 62,5             | 123,5 | 51,5 | 100 |  |  |  |

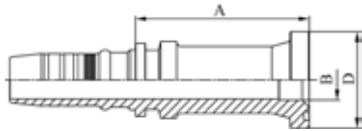


## SAE STANDARD CONNECTIONS

### M53510

NPT MALE - ANSI B1.20.1

| PART. REF.   | HOSE BORE |      |        | Thread     |  | DIMENSIONS<br>mm |       |      |     |  |  |  |
|--------------|-----------|------|--------|------------|--|------------------|-------|------|-----|--|--|--|
|              | DN        | Dash | inch   |            |  | T                | B     | A    | C   |  |  |  |
| M53510-32-32 | 51        | - 32 | 2"     | 2" - 11,5  |  | 41               | 119,5 | 55   | 70  |  |  |  |
| M53510-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" - 8 |  | 51,5             | 135   | 63   | 80  |  |  |  |
| M53510-48-48 | 76        | - 48 | 3"     | 3" - 8     |  | 62,5             | 143,5 | 71,5 | 100 |  |  |  |

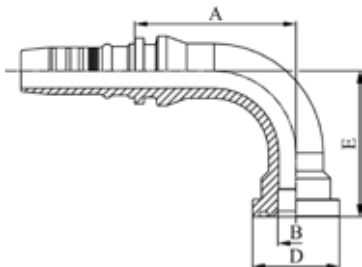


## SAE STANDARD CONNECTIONS

### M68610

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |  |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|-------|--|--|--|--|
|              | DN        | Dash | inch   | Inch   |  | B                | A     | D     |  |  |  |  |
| M68610-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 74    | 41,4  |  |  |  |  |
| M68610-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 20               | 85,5  | 47,7  |  |  |  |  |
| M68610-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 85    | 47,7  |  |  |  |  |
| M68610-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26,1             | 91    | 54,2  |  |  |  |  |
| M68610-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32,1             | 97,5  | 63,7  |  |  |  |  |
| M68610-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 112,5 | 79,6  |  |  |  |  |
| M68610-32-40 | 51        | - 32 | 2"     | 2.1/2" |  | 51,5             | 124   | 107,8 |  |  |  |  |
| M68610-40-32 | 63        | - 40 | 2.1/2" | 2"     |  | 41               | 115   | 79,6  |  |  |  |  |
| M68610-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 51,5             | 126,5 | 107,9 |  |  |  |  |
| M68610-48-48 | 76        | - 48 | 3"     | 3"     |  | 62,5             | 167   | 131,9 |  |  |  |  |



## SAE STANDARD CONNECTIONS

### M68690

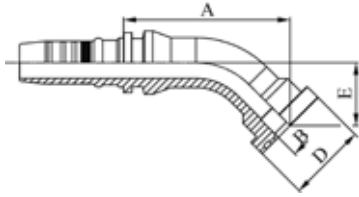
90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |       |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|-------|--|--|--|
|              | DN        | Dash | inch   | Inch   |  | B                | A     | D    | E     |  |  |  |
| M68690-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 75    | 41,4 | 59    |  |  |  |
| M68690-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 87    | 47,7 | 80    |  |  |  |
| M68690-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 24               | 110   | 54,2 | 93    |  |  |  |
| M68690-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 30,5             | 124,5 | 63,7 | 109,5 |  |  |  |
| M68690-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 148   | 79,6 | 135,5 |  |  |  |

## SAE STANDARD CONNECTIONS

### M68640

45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

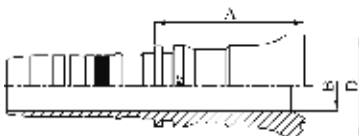


| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|------|--|--|--|
|              | DN        | Dash | inch   | Inch   |  | B                | A     | D    | E    |  |  |  |
| M68640-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 20               | 88    | 47,7 | 32   |  |  |  |
| M68640-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 98,5  | 47,7 | 38   |  |  |  |
| M68640-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 24               | 121,5 | 54,2 | 43,5 |  |  |  |
| M68640-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 30,5             | 136   | 63,7 | 50   |  |  |  |
| M68640-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 160   | 79,6 | 61   |  |  |  |

## XTRAFRANGE

### M68510

XTRAFRANGE/62 (SAE J518 CODE 62 - ISO 6162-2 PORT COMPATIBLE)

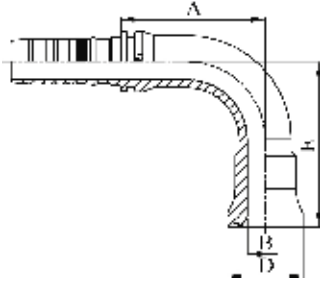


| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |      |      |  |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|------|------|--|--|--|--|
|              | DN        | Dash | inch   | Inch   |  | B                | A    | D    |  |  |  |  |
| M68510-16-16 | 25        | - 16 | 1"     | 1"     |  | 20               | 69,5 | 47,7 |  |  |  |  |
| M68510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 24               | 88   | 54,4 |  |  |  |  |
| M68510-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 30,5             | 100  | 63,7 |  |  |  |  |
| M68510-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 30,5             | 102  | 63,7 |  |  |  |  |
| M68510-32-32 | 51        | - 32 | 2"     | 2"     |  | 41               | 129  | 79,6 |  |  |  |  |
| M68510-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |  | 51,5             | 149  | 99,2 |  |  |  |  |

## XTRAFLLANGE

### M68590

90° XTRAFLLANGE/62 (SAE J518 CODE 62 AND ISO 6162-2 PORT COMPATIBLE)

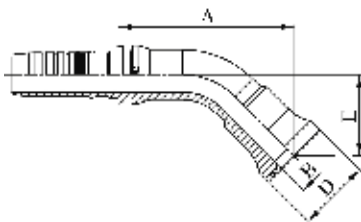


| PART. REF.   | HOSE BORE |      |        | Flange |      | DIMENSIONS<br>mm |      |     |  |  |  |  |
|--------------|-----------|------|--------|--------|------|------------------|------|-----|--|--|--|--|
|              | DN        | Dash | inch   | Inch   | B    | A                | D    | E   |  |  |  |  |
| M68590-16-16 | 25        | - 16 | 1"     | 1"     | 20   | 84               | 47,7 | 90  |  |  |  |  |
| M68590-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 24   | 107              | 54,4 | 120 |  |  |  |  |
| M68590-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 30,5 | 122              | 63,7 | 140 |  |  |  |  |
| M68590-24-32 | 38        | - 24 | 1.1/2" | 2"     | 39   | 122              | 79,6 | 170 |  |  |  |  |
| M68590-32-32 | 51        | - 32 | 2"     | 2"     | 39   | 147,5            | 79,6 | 178 |  |  |  |  |

## XTRAFLLANGE

### M68540

45° XTRAFLLANGE/62 (SAE J518 CODE 62 AND ISO 6162-2 PORT COMPATIBLE)



| PART. REF.   | HOSE BORE |      |        | Flange |      | DIMENSIONS<br>mm |      |      |  |  |  |  |
|--------------|-----------|------|--------|--------|------|------------------|------|------|--|--|--|--|
|              | DN        | Dash | inch   | Inch   | B    | A                | D    | E    |  |  |  |  |
| M68540-16-16 | 25        | - 16 | 1"     | 1"     | 20   | 103              | 47,7 | 45   |  |  |  |  |
| M68540-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 24   | 138              | 54,4 | 62,5 |  |  |  |  |
| M68540-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 30,5 | 155              | 63,7 | 71,5 |  |  |  |  |
| M68540-24-32 | 38        | - 24 | 1.1/2" | 2"     | 39   | 176,5            | 79,6 | 93   |  |  |  |  |
| M68540-32-32 | 51        | - 32 | 2"     | 2"     | 39   | 193,5            | 79,6 | 92,5 |  |  |  |  |







# SPIRALFIT



| FITTING CODE  | SECTION | PAGE |
|---------------|---------|------|
| M05400        | 6       | 1    |
| M05500        | 6       | 1    |
| M70050        | 6       | 26   |
| M70510        | 6       | 2    |
| M71210        | 6       | 17   |
| M72410        | 6       | 6    |
| M72510        | 6       | 4    |
| M72810        | 6       | 9    |
| M73010        | 6       | 9    |
| M80812        | 6       | 2    |
| M80842        | 6       | 3    |
| M80892        | 6       | 3    |
| M81612        | 6       | 17   |
| M81642-M81643 | 6       | 18   |
| M81692-M81693 | 6       | 18   |
| M82412        | 6       | 7    |
| M82442        | 6       | 8    |
| M82492        | 6       | 7    |
| M82542        | 6       | 5    |
| M82592        | 6       | 5    |
| M82712        | 6       | 4    |
| M83301P       | 6       | 16   |
| M83311        | 6       | 10   |
| M83321        | 6       | 10   |
| M83331        | 6       | 11   |
| M83341        | 6       | 11   |

| FITTING CODE     | SECTION | PAGE |
|------------------|---------|------|
| M83361           | 6       | 12   |
| M83371           | 6       | 12   |
| M83391           | 6       | 13   |
| M83611           | 6       | 14   |
| M83631           | 6       | 14   |
| M83641           | 6       | 15   |
| M83661           | 6       | 15   |
| M83691           | 6       | 16   |
| M83711           | 6       | 19   |
| M83741           | 6       | 19   |
| M83791           | 6       | 19   |
| M83911           | 6       | 20   |
| M83921           | 6       | 20   |
| M83931           | 6       | 21   |
| M83941           | 6       | 21   |
| M83961           | 6       | 22   |
| M83971           | 6       | 22   |
| M83991           | 6       | 23   |
| M83991 LONG DROP | 6       | 23   |
| M84492           | 6       | 8    |
| M84792           | 6       | 6    |
| M88511           | 6       | 24   |
| M88541           | 6       | 24   |
| M88591           | 6       | 25   |
| M89510WL         | 6       | 25   |

## SPIRALFIT

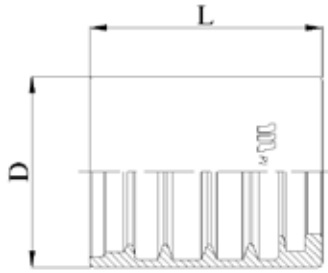
| DN   | 5                | 6               | 8                | 10              | 12              | 16              | 19              | 25  | 31               | 38               | 51  | 60               | 63               | 76  | 89               | 102 |
|------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----|------------------|------------------|-----|------------------|------------------|-----|------------------|-----|
| Inch | $\frac{3}{16}$ " | $\frac{1}{4}$ " | $\frac{5}{16}$ " | $\frac{3}{8}$ " | $\frac{1}{2}$ " | $\frac{5}{8}$ " | $\frac{3}{4}$ " | 1"  | $1\frac{1}{4}$ " | $1\frac{1}{2}$ " | 2"  | $2\frac{3}{8}$ " | $2\frac{1}{2}$ " | 3"  | $3\frac{1}{2}$ " | 4"  |
| Size | -03              | -04             | -05              | -06             | -08             | -10             | -12             | -16 | -20              | -24              | -32 | -38              | -40              | -48 | -56              | -64 |

## FERRULES

|        |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M05400 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| M05500 |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

## FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE                            |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF-NPSM)                |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 62             |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| XTRAFANGE/62                   |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

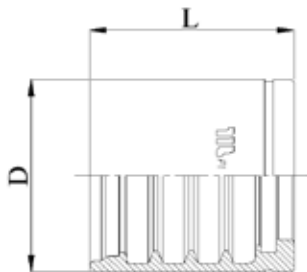


FERRULE

## M05400

NO-SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY)

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |       |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|-------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L     |  |  |  |  |
| M05400-10  | 16        | - 10 | 5/8"   |                  |  | 40    | 44,3  |  |  |  |  |
| M05400-12  | 19        | - 12 | 3/4"   |                  |  | 43,8  | 53,3  |  |  |  |  |
| M05400-16  | 25        | - 16 | 1"     |                  |  | 52    | 64,3  |  |  |  |  |
| M05400-20  | 31        | - 20 | 1.1/4" |                  |  | 59,3  | 72    |  |  |  |  |
| M05400-24  | 38        | - 24 | 1.1/2" |                  |  | 68,5  | 78    |  |  |  |  |
| M05400-32  | 51        | - 32 | 2"     |                  |  | 84,6  | 97,1  |  |  |  |  |
| M05400-40  | 63        | - 40 | 2.1/2" |                  |  | 97    | 116   |  |  |  |  |
| M05400-48  | 76        | - 48 | 3"     |                  |  | 109,8 | 124   |  |  |  |  |
| M05400-56  | 89        | - 56 | 3.1/2" |                  |  | 127,7 | 123,5 |  |  |  |  |
| M05400-64  | 102       | - 64 | 4"     |                  |  | 145   | 126,5 |  |  |  |  |



FERRULE

## M05500

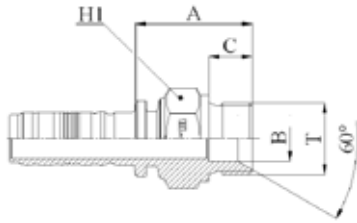
NO-SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4-6 PLY)

| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |    |      |  |  |  |  |
|------------|-----------|------|--------|------------------|--|----|------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D  | L    |  |  |  |  |
| M05500-20  | 31        | - 20 | 1.1/4" |                  |  | 66 | 70   |  |  |  |  |
| M05500-24  | 38        | - 24 | 1.1/2" |                  |  | 75 | 79   |  |  |  |  |
| M05500-32  | 51        | - 32 | 2"     |                  |  | 90 | 98,1 |  |  |  |  |

## BS STANDARD CONNECTIONS

### M70510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 12151-6

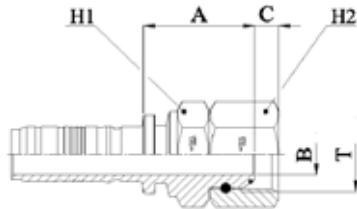


| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |    |    |    |  |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|----|----|----|--|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A  | C  | H1 |  |  |
| M70510-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 16,8             | 43,5 | 16 | 32 |    |  |  |
| M70510-12-16 | 19        | - 12 | 3/4"   | 1" - 11     |  | 22,2             | 49,5 | 19 | 41 |    |  |  |
| M70510-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 22,2             | 51   | 19 | 41 |    |  |  |
| M70510-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 28,5             | 56   | 20 | 50 |    |  |  |
| M70510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 28,5             | 56,5 | 20 | 50 |    |  |  |
| M70510-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 33,5             | 60,5 | 22 | 55 |    |  |  |
| M70510-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 64   | 25 | 70 |    |  |  |

## BS STANDARD CONNECTIONS

### M80812

BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6

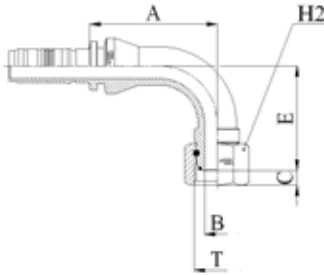


| PART. REF.   | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|-------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |             |  | T                | B    | A    | C  | H1 | H2 |  |
| M80812-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5             | 39,5 | 8,5  | 32 | 32 |    |  |
| M80812-12-16 | 19        | - 12 | 3/4"   | 1" - 11     |  | 19,5             | 44   | 10,6 | 41 | 41 |    |  |
| M80812-16-12 | 25        | - 16 | 1"     | 3/4" - 14   |  | 15               | 44,5 | 8,5  | 41 | 32 |    |  |
| M80812-16-16 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5             | 45,5 | 10,6 | 41 | 41 |    |  |
| M80812-16-20 | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1             | 50,5 | 10,5 | 50 | 50 |    |  |
| M80812-20-16 | 31        | - 20 | 1.1/4" | 1" - 11     |  | 19               | 48   | 10,6 | 50 | 41 |    |  |
| M80812-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26,1             | 50,5 | 10,5 | 50 | 50 |    |  |
| M80812-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32,1             | 50   | 12,5 | 50 | 60 |    |  |
| M80812-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" - 11 |  | 26,1             | 52   | 10,5 | 55 | 50 |    |  |
| M80812-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32,1             | 52   | 12,5 | 60 | 60 |    |  |
| M80812-32-32 | 51        | - 32 | 2"     | 2" - 11     |  | 42               | 53,5 | 16,1 | 70 | 70 |    |  |

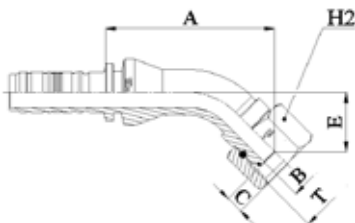
## BS STANDARD CONNECTIONS

### M80892

90° BSP O-RING FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO 12151-6



| PART. REF.      | HOSE BORE |      |        | Thread      |  | DIMENSIONS mm |       |      |       |    |    |  |
|-----------------|-----------|------|--------|-------------|--|---------------|-------|------|-------|----|----|--|
|                 | DN        | Dash | inch   |             |  | T             | B     | A    | C     | E  | H2 |  |
| M80892-12-12    | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5          | 73,5  | 8,5  | 60    | 32 |    |  |
| M80892-12-12050 | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5          | 67,5  | 8,5  | 50    | 32 |    |  |
| M80892-12-16    | 19        | - 12 | 3/4"   | 1" - 11     |  | 19,5          | 73,5  | 10,6 | 62    | 41 |    |  |
| M80892-16-12    | 25        | - 16 | 1"     | 3/4" - 14   |  | 15            | 90    | 8,5  | 70    | 32 |    |  |
| M80892-16-16    | 25        | - 16 | 1"     | 1" - 11     |  | 19,5          | 83    | 10,6 | 76    | 41 |    |  |
| M80892-16-16058 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5          | 74,5  | 10,6 | 58,5  | 41 |    |  |
| M80892-16-20    | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1          | 96    | 10,5 | 78,5  | 50 |    |  |
| M80892-20-16    | 31        | - 20 | 1.1/4" | 1" - 11     |  | 19,5          | 90    | 10,6 | 76    | 41 |    |  |
| M80892-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26            | 88    | 10,5 | 83,5  | 50 |    |  |
| M80892-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32            | 88    | 12,5 | 92    | 60 |    |  |
| M80892-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32            | 103   | 12,5 | 98,5  | 60 |    |  |
| M80892-32-32    | 51        | - 32 | 2"     | 2" - 11     |  | 42            | 135,9 | 16,1 | 140,5 | 70 |    |  |



## BS STANDARD CONNECTIONS

### M80842

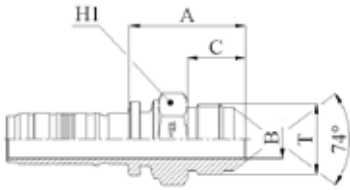
45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO 12151-6

| PART. REF.      | HOSE BORE |      |        | Thread      |  | DIMENSIONS mm |       |      |      |    |    |  |
|-----------------|-----------|------|--------|-------------|--|---------------|-------|------|------|----|----|--|
|                 | DN        | Dash | inch   |             |  | T             | B     | A    | C    | E  | H2 |  |
| M80842-12-12    | 19        | - 12 | 3/4"   | 3/4" - 14   |  | 14,5          | 82,5  | 8,5  | 29   | 32 |    |  |
| M80842-12-16    | 19        | - 12 | 3/4"   | 1" - 11     |  | 19,5          | 84    | 10,6 | 30   | 41 |    |  |
| M80842-16-12    | 25        | - 16 | 1"     | 3/4" - 14   |  | 15            | 106,5 | 8,5  | 36   | 32 |    |  |
| M80842-16-16    | 25        | - 16 | 1"     | 1" - 11     |  | 19,5          | 95    | 10,6 | 36,5 | 41 |    |  |
| M80842-16-16028 | 25        | - 16 | 1"     | 1" - 11     |  | 19,5          | 84    | 10,6 | 28   | 41 |    |  |
| M80842-16-20    | 25        | - 16 | 1"     | 1.1/4" - 11 |  | 26,1          | 109,5 | 10,5 | 38   | 50 |    |  |
| M80842-20-16    | 31        | - 20 | 1.1/4" | 1" - 11     |  | 19,5          | 102   | 10,6 | 36,5 | 41 |    |  |
| M80842-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |  | 26            | 99    | 10,5 | 39   | 50 |    |  |
| M80842-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |  | 32            | 114   | 12,5 | 54   | 60 |    |  |
| M80842-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |  | 32            | 112,5 | 12,5 | 45   | 60 |    |  |
| M80842-32-32    | 51        | - 32 | 2"     | 2" - 11     |  | 42            | 155   | 16,1 | 66   | 70 |    |  |

## SAE STANDARD CONNECTIONS

### M72510

JIC MALE 37° CONE - SAE J516 / ISO 12151-5

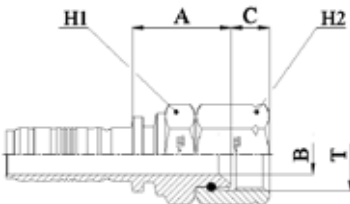


| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |  |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|--|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 |  |  |
| M72510-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 14,5             | 44,5 | 22   | 30 |    |  |  |
| M72510-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,5             | 51,5 | 23   | 38 |    |  |  |
| M72510-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 56   | 24,3 | 46 |    |  |  |
| M72510-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 60   | 27,5 | 50 |    |  |  |
| M72510-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 75,5 | 34   | 65 |    |  |  |

## SAE STANDARD CONNECTIONS

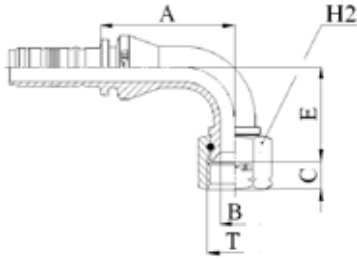
### M82712

JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)



| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |    |    |    |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|----|----|----|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C  | H1 | H2 |  |
| M82712-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 14,5             | 36,5 | 14,2 | 32 | 32 |    |  |
| M82712-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 19,5             | 36,5 | 15,2 | 32 | 41 |    |  |
| M82712-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,5             | 41,5 | 15,2 | 41 | 41 |    |  |
| M82712-16-20 | 25        | - 16 | 1"     | 1.5/8" - 12  |  | 26,1             | 46,5 | 16,2 | 41 | 50 |    |  |
| M82712-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26,1             | 51,5 | 16,2 | 50 | 50 |    |  |
| M82712-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |  | 32               | 54,5 | 18,8 | 55 | 60 |    |  |
| M82712-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 54,5 | 18,8 | 55 | 60 |    |  |
| M82712-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 56   | 24   | 65 | 75 |    |  |



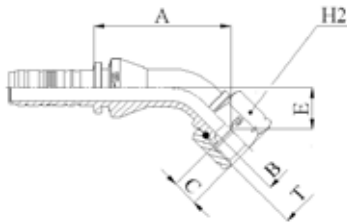


## SAE STANDARD CONNECTIONS

### M82592

**90° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5**

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |      |    |  |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|------|----|--|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C    | E  |  |  |
| M82592-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 14,5             | 67,5 | 14,2 | 47,5 | 32 |  |  |
| M82592-12-16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |  | 19,8             | 73,5 | 15,2 | 57,5 | 41 |  |  |
| M82592-16-12 | 25        | - 16 | 1"     | 1.1/16" - 12 |  | 14,5             | 76,5 | 14,2 | 47,5 | 32 |  |  |
| M82592-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,5             | 74,5 | 15,2 | 55,5 | 41 |  |  |
| M82592-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26               | 88   | 16,2 | 86,5 | 50 |  |  |
| M82592-20-24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |  | 32               | 88   | 18,8 | 90,5 | 60 |  |  |
| M82592-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 105  | 18,8 | 101  | 60 |  |  |
| M82592-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 145  | 24   | 139  | 75 |  |  |

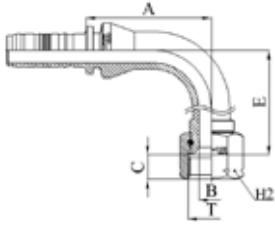


## SAE STANDARD CONNECTIONS

### M82542

**45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5**

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |       |      |      |    |  |  |
|--------------|-----------|------|--------|--------------|--|------------------|-------|------|------|----|--|--|
|              | DN        | Dash | inch   |              |  | T                | B     | A    | C    | E  |  |  |
| M82542-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 14,5             | 75    | 14,2 | 22,5 | 32 |  |  |
| M82542-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,5             | 81,5  | 15,2 | 26   | 41 |  |  |
| M82542-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26               | 101   | 16,2 | 41,5 | 50 |  |  |
| M82542-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 121,5 | 18,8 | 48,5 | 60 |  |  |
| M82542-32-32 | 51        | - 32 | 2"     | 2.1/2" - 12  |  | 42               | 162   | 24   | 63,5 | 75 |  |  |



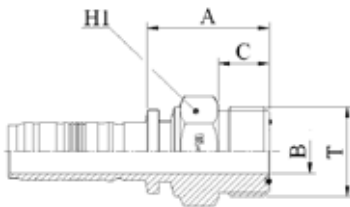
## SAE STANDARD CONNECTIONS

### M84792

90° JIC FEMALE LONG DROP ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.   | HOSE BORE |      |        | Thread       |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|--------------|-----------|------|--------|--------------|--|------------------|------|------|------|----|----|--|
|              | DN        | Dash | inch   |              |  | T                | B    | A    | C    | E  | H2 |  |
| M84792-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |  | 14,5             | 73,5 | 14,2 | 94,5 | 32 |    |  |
| M84792-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |  | 19,5             | 81   | 15,2 | 114  | 41 |    |  |
| M84792-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |  | 26               | 88   | 16,2 | 129  | 50 |    |  |
| M84792-24-24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |  | 32,1             | 105  | 18,8 | 141  | 60 |    |  |
| M84792-32-32 | 38        | - 24 | 1.1/2" | 2.1/2" - 12  |  | 42               | 145  | 24   | 222  | 75 |    |  |

FITTINGS F 66



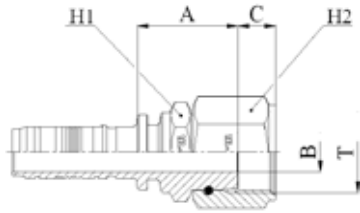
## SAE STANDARD CONNECTIONS

### M72410

ORFS MALE - SAE J516 / ISO 12151-1

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C  | H1 |  |
| M72410-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 41   | 17   | 32 |    |  |
| M72410-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 46   | 17,5 | 41 |    |  |
| M72410-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 26               | 50,5 | 17,5 | 46 |    |  |
| M72410-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 32               | 53   | 17,5 | 55 |    |  |

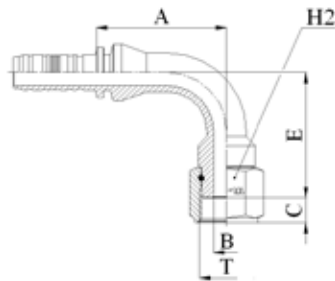
## SAE STANDARD CONNECTIONS



### M82412

ORFS FEMALE SAE J516/ISO 12151.1

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |    |    |  |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|------|----|----|--|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C    | H1 | H2 |  |  |
| M82412-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |                  | 14,5 | 38   | 14,1 | 32 | 36 |  |  |
| M82412-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |                  | 19,5 | 42   | 15   | 41 | 46 |  |  |
| M82412-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |                  | 19,5 | 43   | 15   | 41 | 46 |  |  |
| M82412-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |                  | 25   | 52,5 | 15,1 | 50 | 55 |  |  |
| M82412-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |                  | 30,5 | 55   | 15   | 60 | 60 |  |  |

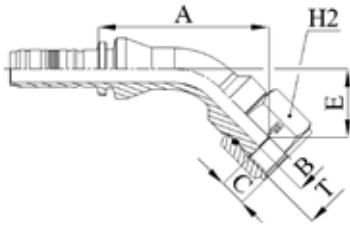


## SAE STANDARD CONNECTIONS

### M82492

90° ORFS FEMALE SWEPT ELBOW SAE J516/ISO 12151-1

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|--------------|-----------|------|--------|---------------|------------------|------|------|------|------|----|--|--|
|              | DN        | Dash | inch   |               | T                | B    | A    | C    | E    | H2 |  |  |
| M82492-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |                  | 14,5 | 73,5 | 14,1 | 70,5 | 36 |  |  |
| M82492-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |                  | 19,5 | 86   | 15   | 71   | 46 |  |  |
| M82492-16-12 | 25        | - 16 | 1"     | 1.3/16" - 12  |                  | 14,5 | 89,5 | 14,1 | 70,5 | 36 |  |  |
| M82492-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |                  | 19,5 | 83   | 15   | 84,5 | 46 |  |  |
| M82492-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |                  | 25   | 99   | 15,1 | 98   | 55 |  |  |
| M82492-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |                  | 32   | 105  | 15   | 104  | 60 |  |  |

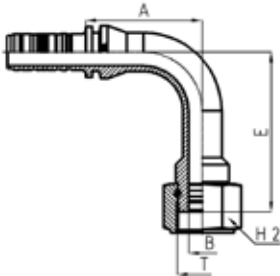


## SAE STANDARD CONNECTIONS

### M82442

45° ORFS FEMALE SWEPT ELBOW SAE J516/ISO 12151-1

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |       |      |      |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|-------|------|------|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B     | A    | C    | E  | H2 |  |
| M82442-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 90    | 14,1 | 36   | 36 |    |  |
| M82442-12-16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  |  | 19,5             | 90,5  | 15   | 36,5 | 46 |    |  |
| M82442-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 101   | 15   | 42,5 | 46 |    |  |
| M82442-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 120   | 15,1 | 49,5 | 55 |    |  |
| M82442-24-24 | 38        | - 24 | 1.1/2" | 2" - 12       |  | 32               | 123,5 | 15   | 50,5 | 60 |    |  |



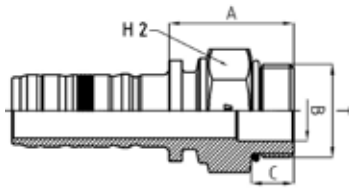
## SAE STANDARD CONNECTIONS

### M84492

90° ORFS FEMALE LONG DROP ELBOW - SAE J516 / ISO 12151-1  
(THURST- WIRE NUT)

| PART. REF.   | HOSE BORE |      |        | Thread        |  | DIMENSIONS<br>mm |      |      |     |    |    |  |
|--------------|-----------|------|--------|---------------|--|------------------|------|------|-----|----|----|--|
|              | DN        | Dash | inch   |               |  | T                | B    | A    | C   | E  | H2 |  |
| M84492-12-12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  |  | 14,5             | 73,5 | 14,1 | 96  | 36 |    |  |
| M84492-16-16 | 25        | - 16 | 1"     | 1.7/16" - 12  |  | 19,5             | 83   | 15   | 114 | 46 |    |  |
| M84492-20-20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 |  | 25               | 99   | 15,1 | 129 | 55 |    |  |

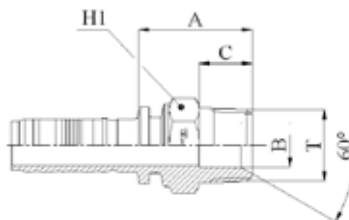
## SAE STANDARD CONNECTIONS



### M73010

SAE MALE O-RING BOSS TYPE - SAE J516 / ISO 11926

| PART. REF.   | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |      |      |    |  |  |  |
|--------------|-----------|------|--------|--------------|------------------|------|------|------|----|--|--|--|
|              | DN        | Dash | inch   |              | T                | B    | A    | C    | H1 |  |  |  |
| M73010-12-12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15,5 | 42,5 | 15,1 | 32 |  |  |  |
| M73010-16-16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 21,5 | 44,5 | 15,1 | 38 |  |  |  |
| M73010-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 27,5 | 47,5 | 15,1 | 46 |  |  |  |

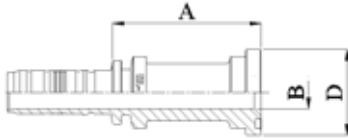


## SAE STANDARD CONNECTIONS

### M72810

NPTF MALE 60° CONE SEAT - SAE J516/J514

| PART. REF.   | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |      |       |      |     |  |  |  |
|--------------|-----------|------|--------|---------------|------------------|------|-------|------|-----|--|--|--|
|              | DN        | Dash | inch   |               | T                | B    | A     | C    | H1  |  |  |  |
| M72810-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14     |                  | 16   | 41,5  | 19,2 | 30  |  |  |  |
| M72810-16-16 | 25        | - 16 | 1"     | 1" - 11,5     |                  | 19,5 | 52    | 24,2 | 38  |  |  |  |
| M72810-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11,5 |                  | 25   | 61,5  | 25   | 46  |  |  |  |
| M72810-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11,5 |                  | 30,5 | 60,5  | 26   | 50  |  |  |  |
| M72810-32-32 | 51        | - 32 | 2"     | 2" - 11,5     |                  | 41   | 67,5  | 26,5 | 65  |  |  |  |
| M72810-48-48 | 76        | - 48 | 3"     | 3" - 8        |                  | 62,5 | 121,5 | 51,5 | 100 |  |  |  |



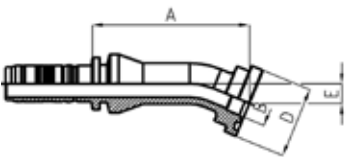
## SAE STANDARD CONNECTIONS

### M83311

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |      |      |       |  |  |  |  |
|--------------|-----------|------|--------|--------|---------------|------|------|-------|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch          | B    | A    | D     |  |  |  |  |
| M83311-12-12 | 19        | - 12 | 3/4"   | 3/4"   |               | 14,5 | 66,5 | 38    |  |  |  |  |
| M83311-12-16 | 19        | - 12 | 3/4"   | 1"     |               | 19,5 | 52,5 | 44,6  |  |  |  |  |
| M83311-16-12 | 25        | - 16 | 1"     | 3/4"   |               | 14,5 | 67,5 | 38    |  |  |  |  |
| M83311-16-16 | 25        | - 16 | 1"     | 1"     |               | 19,5 | 67,5 | 44,6  |  |  |  |  |
| M83311-16-20 | 25        | - 16 | 1"     | 1.1/4" |               | 26   | 53,5 | 51    |  |  |  |  |
| M83311-20-16 | 31        | - 20 | 1.1/4" | 1"     |               | 19,5 | 69   | 44,6  |  |  |  |  |
| M83311-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |               | 26   | 75   | 51    |  |  |  |  |
| M83311-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |               | 32   | 60   | 60,5  |  |  |  |  |
| M83311-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |               | 32   | 78,5 | 60,5  |  |  |  |  |
| M83311-24-32 | 38        | - 24 | 1.1/2" | 2"     |               | 42   | 60,5 | 71,6  |  |  |  |  |
| M83311-32-32 | 51        | - 32 | 2"     | 2"     |               | 42   | 82,5 | 71,6  |  |  |  |  |
| M83311-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |               | 51,5 | 93   | 84,3  |  |  |  |  |
| M83311-48-48 | 76        | - 48 | 3"     | 3"     |               | 62,5 | 88,5 | 101,6 |  |  |  |  |
| M83311-56-56 | 89        | - 56 | 3.1/2" | 3.1/2" |               | 76   | 98,5 | 114,3 |  |  |  |  |
| M83311-64-64 | 102       | - 64 | 4"     | 4"     |               | 89   | 105  | 127   |  |  |  |  |

## SAE STANDARD CONNECTIONS

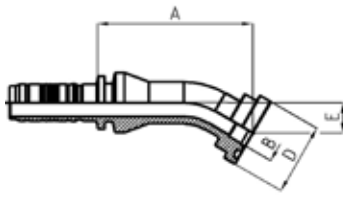


### M83321

22,5° ISO/SAE CODE 61 FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |      |       |      |    |  |  |  |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|----|--|--|--|
|              | DN        | Dash | inch   |        | Inch          | B    | A     | D    | E  |  |  |  |
| M83321-12-12 | 19        | - 12 | 3/4"   | 3/4"   |               | 16   | 84,5  | 38   | 11 |  |  |  |
| M83321-16-16 | 25        | - 16 | 1"     | 1"     |               | 19,5 | 93    | 44,6 | 14 |  |  |  |
| M83321-16-20 | 25        | - 16 | 1"     | 1.1/4" |               | 26   | 101   | 51   | 15 |  |  |  |
| M83321-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |               | 26   | 94,5  | 51   | 15 |  |  |  |
| M83321-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |               | 32   | 112,5 | 60,5 | 18 |  |  |  |
| M83321-32-32 | 51        | - 32 | 2"     | 2"     |               | 42   | 158   | 71,6 | 22 |  |  |  |

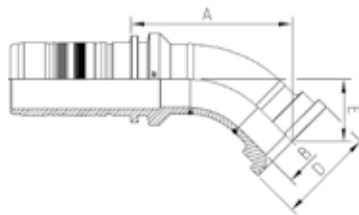
## SAE STANDARD CONNECTIONS



### M83331

30° ISO/SAE CODE 61 FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |    |  |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|----|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E  |  |  |  |  |
| M83331-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 82,5  | 38   | 16 |  |  |  |  |
| M83331-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 83,5  | 44,6 | 19 |  |  |  |  |
| M83331-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 91,1  | 44,6 | 19 |  |  |  |  |
| M83331-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 109,5 | 60,5 | 25 |  |  |  |  |
| M83331-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 111,5 | 71,6 | 32 |  |  |  |  |
| M83331-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 154   | 71,6 | 32 |  |  |  |  |



## SAE STANDARD CONNECTIONS

### M83341

45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

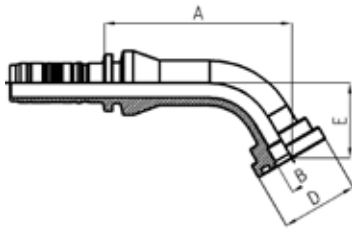
| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |       |      |  |  |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|-------|------|--|--|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D     | E    |  |  |  |  |
| M83341-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 78    | 38    | 24,5 |  |  |  |  |
| M83341-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 78    | 44,6  | 24,5 |  |  |  |  |
| M83341-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 16   | 90,5  | 38    | 24,5 |  |  |  |  |
| M83341-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 86,5  | 44,6  | 26,5 |  |  |  |  |
| M83341-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 92    | 51    | 32   |  |  |  |  |
| M83341-20-16 | 31        | - 20 | 1.1/4" | 1"     |                  | 19,5 | 90,5  | 44,6  | 26,5 |  |  |  |  |
| M83341-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 87,5  | 51    | 29   |  |  |  |  |
| M83341-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 88,5  | 60,5  | 30   |  |  |  |  |
| M83341-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 102,5 | 60,5  | 38   |  |  |  |  |
| M83341-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 102,5 | 71,6  | 38   |  |  |  |  |
| M83341-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 143,5 | 71,6  | 52   |  |  |  |  |
| M83341-40-40 | 63        | - 40 | 2.1/2" | 2.1/2" |                  | 49,2 | 131   | 84,3  | 44,5 |  |  |  |  |
| M83341-48-48 | 76        | - 48 | 3"     | 3"     |                  | 59   | 147   | 101,6 | 53   |  |  |  |  |
| M83341-56-56 | 89        | - 56 | 3.1/2" | 3.1/2" |                  | 73,7 | 169   | 114,3 | 68   |  |  |  |  |

All items are made from solid with the exception of M83341-40-40, M83341-48-48 and M83341-56-56

## SAE STANDARD CONNECTIONS

### M83361

60° ISO/SAE CODE 61 FLANGE

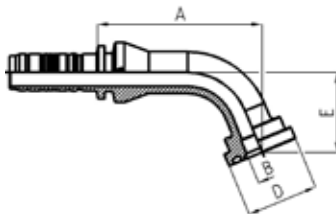


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |    |   |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|----|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D  | E |  |  |
| M83361-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 92,5  | 38   | 37 |   |  |  |
| M83361-12-16 | 19        | - 12 | 3/4"   | 1"     | 19,5             | 106,5 | 44,6 | 44 |   |  |  |
| M83361-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 104,3 | 44,6 | 44 |   |  |  |
| M83361-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 129   | 60,5 | 53 |   |  |  |
| M83361-24-32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 123   | 71,6 | 75 |   |  |  |
| M83361-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 188   | 71,6 | 75 |   |  |  |

## SAE STANDARD CONNECTIONS

### M83371

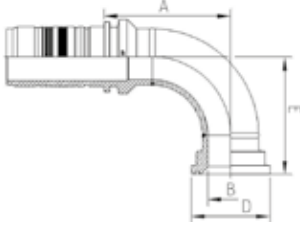
67,5° ISO/SAE CODE 61 FLANGE



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |    |   |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|----|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D  | E |  |  |
| M83371-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 87,5 | 38   | 42 |   |  |  |
| M83371-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 97,5 | 44,6 | 51 |   |  |  |
| M83371-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 122  | 60,5 | 61 |   |  |  |



## SAE STANDARD CONNECTIONS



### M83391

90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

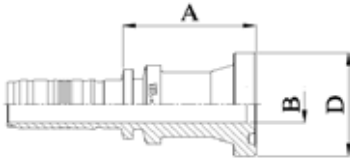
| PART. REF.      | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |       |     |   |  |  |
|-----------------|-----------|------|--------|--------|--|------------------|-------|-------|-----|---|--|--|
|                 | DN        | Dash | inch   |        |  | Inch             | B     | A     | D   | E |  |  |
| M83391-12-12    | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 72,5  | 38    | 58  |   |  |  |
| M83391-12-16    | 19        | - 12 | 3/4"   | 1"     |  | 19,5             | 72,5  | 44,6  | 70  |   |  |  |
| M83391-12-16054 | 19        | - 12 | 3/4"   | 1"     |  | 19,5             | 72,5  | 44,6  | 54  |   |  |  |
| M83391-16-12    | 25        | - 16 | 1"     | 3/4"   |  | 16               | 85    | 38    | 58  |   |  |  |
| M83391-16-16    | 25        | - 16 | 1"     | 1"     |  | 19,5             | 82    | 44,6  | 60  |   |  |  |
| M83391-16-20    | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 82    | 51    | 68  |   |  |  |
| M83391-20-16    | 31        | - 20 | 1.1/4" | 1"     |  | 19,5             | 86    | 44,6  | 60  |   |  |  |
| M83391-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 85    | 51    | 67  |   |  |  |
| M83391-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 85    | 60,5  | 69  |   |  |  |
| M83391-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 96,5  | 60,5  | 81  |   |  |  |
| M83391-24-32    | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 101,5 | 71,6  | 84  |   |  |  |
| M83391-32-32    | 51        | - 32 | 2"     | 2"     |  | 42               | 135,5 | 71,6  | 120 |   |  |  |
| M83391-40-40    | 63        | - 40 | 2.1/2" | 2.1/2" |  | 49,2             | 128   | 84,3  | 118 |   |  |  |
| M83391-48-48    | 76        | - 48 | 3"     | 3"     |  | 59               | 144,5 | 101,6 | 140 |   |  |  |
| M83391-56-56    | 89        | - 56 | 3.1/2" | 3.1/2" |  | 73,7             | 164   | 114,3 | 160 |   |  |  |

All items are made from solid with the exception of M83391-40-40, M83391-48-48 and M83391-56-56

## SAE STANDARD CONNECTIONS

### M83611

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

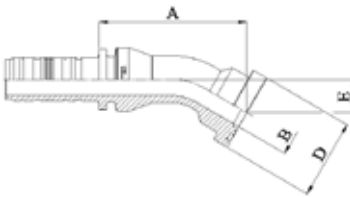


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A    | D    |  |  |
| M83611-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 14,5 | 53,5 | 41,4 |  |  |
| M83611-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 59,5 | 47,7 |  |  |
| M83611-16-12 | 25        | - 16 | 1"     | 3/4"   |                  | 16   | 62,5 | 41,4 |  |  |
| M83611-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 63,5 | 47,7 |  |  |
| M83611-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 70   | 54,2 |  |  |
| M83611-20-16 | 31        | - 20 | 1.1/4" | 1"     |                  | 19,5 | 62   | 47,7 |  |  |
| M83611-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 66   | 54,2 |  |  |
| M83611-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 74,5 | 63,7 |  |  |
| M83611-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" |                  | 26   | 66,5 | 54,2 |  |  |
| M83611-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 74,5 | 63,7 |  |  |
| M83611-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 88,5 | 79,6 |  |  |
| M83611-32-24 | 51        | - 32 | 2"     | 1.1/2" |                  | 32   | 91,5 | 63,7 |  |  |
| M83611-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 91,5 | 79,6 |  |  |

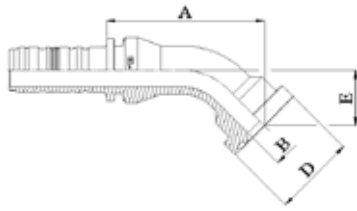
## SAE STANDARD CONNECTIONS

### M83631

30° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    |
| M83631-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 78,5  | 41,4 | 17,5 |
| M83631-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 89    | 47,7 | 20   |
| M83631-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 90,5  | 54,2 | 22,5 |
| M83631-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 104,5 | 63,7 | 27   |
| M83631-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 139,5 | 79,6 | 35   |

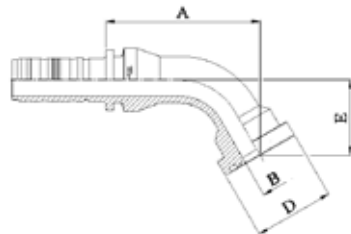


## SAE STANDARD CONNECTIONS

### M83641

45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |
| M83641-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 81,5  | 41,4 | 28   |   |  |  |
| M83641-12-16 | 19        | - 12 | 3/4"   | 1"     | 19,5             | 85,5  | 47,7 | 32,5 |   |  |  |
| M83641-16-12 | 25        | - 16 | 1"     | 3/4"   | 16               | 87,5  | 41,4 | 28   |   |  |  |
| M83641-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 92    | 47,7 | 32,5 |   |  |  |
| M83641-16-20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 97    | 54,2 | 37   |   |  |  |
| M83641-20-16 | 31        | - 20 | 1.1/4" | 1"     | 19,5             | 95,5  | 47,7 | 31,5 |   |  |  |
| M83641-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 96,5  | 54,2 | 38   |   |  |  |
| M83641-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 104,5 | 63,7 | 44,5 |   |  |  |
| M83641-24-20 | 38        | - 24 | 1.1/2" | 1.1/4" | 26               | 110,5 | 54,2 | 38   |   |  |  |
| M83641-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 109,5 | 63,7 | 44   |   |  |  |
| M83641-24-32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 121,5 | 79,6 | 56   |   |  |  |
| M83641-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 148   | 79,6 | 59   |   |  |  |



## SAE STANDARD CONNECTIONS

### M83661

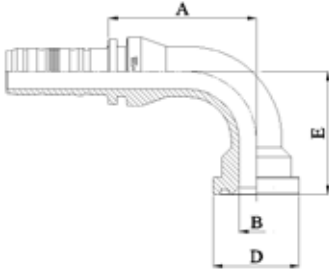
60° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E |  |  |
| M83661-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 81    | 41,4 | 39   |   |  |  |
| M83661-12-16 | 19        | - 12 | 3/4"   | 1"     | 19,5             | 84    | 47,7 | 44   |   |  |  |
| M83661-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 92    | 47,7 | 45   |   |  |  |
| M83661-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 97,5  | 54,2 | 55   |   |  |  |
| M83661-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 101,5 | 63,7 | 62   |   |  |  |
| M83661-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 110,5 | 63,7 | 61,5 |   |  |  |
| M83661-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 151   | 79,6 | 85   |   |  |  |

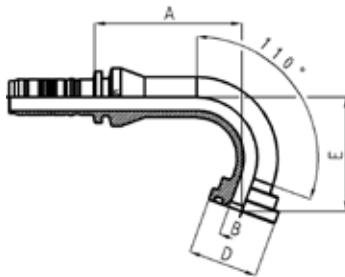
## SAE STANDARD CONNECTIONS

### M83691

90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |      |     |   |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|------|-----|---|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A    | D   | E |  |  |
| M83691-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 16               | 72,5 | 41,4 | 59  |   |  |  |
| M83691-12-16    | 19        | - 12 | 3/4"   | 1"     | 19,5             | 72,6 | 47,7 | 65  |   |  |  |
| M83691-16-12    | 25        | - 16 | 1"     | 3/4"   | 16               | 82   | 41,4 | 62  |   |  |  |
| M83691-16-16    | 25        | - 16 | 1"     | 1"     | 19,5             | 82   | 47,7 | 68  |   |  |  |
| M83691-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 82   | 54,2 | 90  |   |  |  |
| M83691-16-20075 | 25        | - 16 | 1"     | 1.1/4" | 26               | 82   | 54,2 | 75  |   |  |  |
| M83691-20-16    | 31        | - 20 | 1.1/4" | 1"     | 19,5             | 86   | 47,7 | 68  |   |  |  |
| M83691-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 85   | 54,2 | 90  |   |  |  |
| M83691-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 85   | 63,7 | 104 |   |  |  |
| M83691-24-20    | 38        | - 24 | 1.1/2" | 1.1/4" | 26               | 99   | 54,2 | 90  |   |  |  |
| M83691-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 98   | 63,7 | 104 |   |  |  |
| M83691-24-32    | 38        | - 24 | 1.1/2" | 2"     | 42               | 98   | 79,6 | 138 |   |  |  |
| M83691-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 136  | 79,6 | 138 |   |  |  |



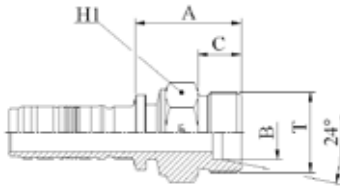
## SAE STANDARD CONNECTIONS

### M83301...P

110° ISO/SAE CODE 61 FLANGE

| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |     |   |  |  |
|---------------|-----------|------|--------|--------|------------------|-------|------|-----|---|--|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A    | D   | E |  |  |
| M83301-12-12P | 19        | - 12 | 3/4"   | 3/4"   | 16               | 80    | 38   | 62  |   |  |  |
| M83301-16-16P | 25        | - 16 | 1"     | 1"     | 19,5             | 91,5  | 44,6 | 79  |   |  |  |
| M83301-20-20P | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 121,5 | 51   | 91  |   |  |  |
| M83301-24-24P | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 124,8 | 60,5 | 109 |   |  |  |
| M83301-32-32P | 51        | - 32 | 2"     | 2"     | 42               | 146,5 | 71,6 | 140 |   |  |  |

## DIN STANDARD CONNECTIONS

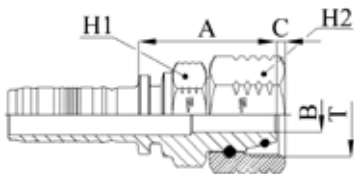


### M71210

**METRIC MALE 24° CONE SEAT HEAVY DUTY**  
- DIN 20066 / ISO 12151-2

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |    |    |   |    |  |
|--------------|-----------|------|--------|--------|------|------------------|------|----|----|---|----|--|
|              | DN        | Dash | inch   |        |      | T                | mm   | B  | A  | C | H1 |  |
| M71210-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 14,5             | 39,5 | 16 | 32 |   |    |  |
| M71210-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 44,5 | 18 | 36 |   |    |  |
| M71210-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 19,5             | 46   | 18 | 36 |   |    |  |
| M71210-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 47,5 | 20 | 46 |   |    |  |
| M71210-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 25               | 55   | 22 | 55 |   |    |  |
| M71210-24-52 | 38        | - 24 | 1.1/2" | M 52x2 | 38   | 30,5             | 55,5 | 22 | 55 |   |    |  |

## DIN STANDARD CONNECTIONS

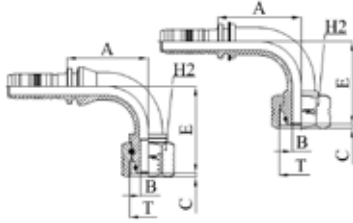


### M81612

**METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 /**  
**ISO 12151-2**

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |    |    |    |    |
|--------------|-----------|------|--------|--------|------|------------------|------|-----|----|----|----|----|
|              | DN        | Dash | inch   |        |      | T                | mm   | B   | A  | C  | H1 | H2 |
| M81612-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 12,5             | 49,5 | 3,2 | 32 | 36 |    |    |
| M81612-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 52   | 4,1 | 36 | 41 |    |    |
| M81612-12-42 | 19        | - 12 | 3/4"   | M 42x2 | 30   | 19,5             | 52,5 | 6   | 41 | 50 |    |    |
| M81612-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 16               | 56   | 4,1 | 41 | 41 |    |    |
| M81612-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 54,5 | 6   | 41 | 50 |    |    |
| M81612-16-52 | 25        | - 16 | 1"     | M 52x2 | 38   | 25               | 56   | 8,8 | 50 | 60 |    |    |
| M81612-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,5             | 56   | 6,1 | 46 | 50 |    |    |
| M81612-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 25               | 57   | 8,8 | 50 | 60 |    |    |
| M81612-24-52 | 38        | - 24 | 1.1/2" | M 52x2 | 38   | 26,1             | 58   | 8,8 | 55 | 60 |    |    |

## DIN STANDARD CONNECTIONS

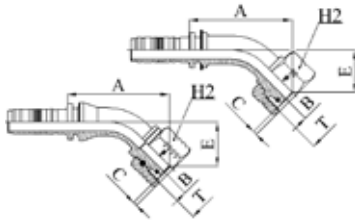


### M81692/M81693

**90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2**

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|------|-----|------|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm   | B   | A    | C  | E | H2 |
| M81692-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 12,5             | 64,5 | 3,2 | 68,5 | 36 |   |    |
| M81693-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 68   | 3,4 | 67,5 | 41 |   |    |
| M81692-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 15               | 83   | 4,1 | 87,5 | 41 |   |    |
| M81693-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 82,5 | 5,3 | 75,5 | 50 |   |    |
| M81692-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,1             | 102  | 6   | 90   | 50 |   |    |
| M81693-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 101  | 8   | 86,5 | 60 |   |    |

M81692: THRUST-WIRE NUT - M81693: SLIP-ON NUT



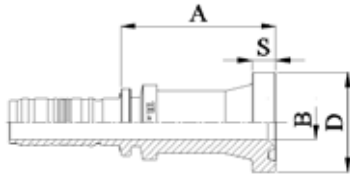
## DIN STANDARD CONNECTIONS

### M81642/M81643

**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2**

| PART. REF.   | HOSE BORE |      |        | Thread | Pipe | DIMENSIONS<br>mm |       |     |      |    |   |    |
|--------------|-----------|------|--------|--------|------|------------------|-------|-----|------|----|---|----|
|              | DN        | Dash | inch   |        |      | T                | mm    | B   | A    | C  | E | H2 |
| M81642-12-30 | 19        | - 12 | 3/4"   | M 30x2 | 20   | 12,5             | 80    | 3,2 | 35   | 36 |   |    |
| M81643-12-36 | 19        | - 12 | 3/4"   | M 36x2 | 25   | 14,5             | 82    | 3,4 | 33,5 | 41 |   |    |
| M81642-16-36 | 25        | - 16 | 1"     | M 36x2 | 25   | 15               | 103   | 4,1 | 44,5 | 41 |   |    |
| M81643-16-42 | 25        | - 16 | 1"     | M 42x2 | 30   | 19,5             | 94    | 5,3 | 36   | 50 |   |    |
| M81642-20-42 | 31        | - 20 | 1.1/4" | M 42x2 | 30   | 19,1             | 117,5 | 6   | 44   | 50 |   |    |
| M81643-20-52 | 31        | - 20 | 1.1/4" | M 52x2 | 38   | 26,1             | 111   | 8   | 40   | 60 |   |    |

M81642: THRUST-WIRE NUT - M81643: SLIP-ON NUT

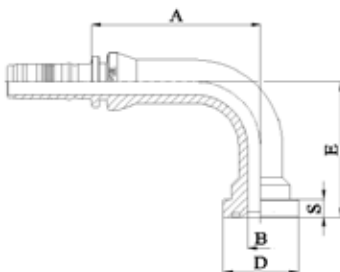


## ORIGINAL EQUIPMENT CONNECTIONS

### M83711

FLANGE PLUS (SAE J518 -2 / ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |    |      |    |   |  |  |
|--------------|-----------|------|--------|--------|---------------|----|------|----|---|--|--|
|              | DN        | Dash | inch   |        | Inch          | B  | A    | D  | S |  |  |
| M83711-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5          | 65 | 41,4 | 10 |   |  |  |
| M83711-16-16 | 25        | - 16 | 1"     | 1"     | 19,5          | 65 | 47,7 | 11 |   |  |  |
| M83711-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25            | 81 | 54,2 | 12 |   |  |  |

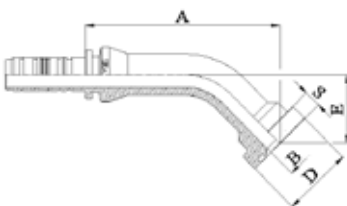


## ORIGINAL EQUIPMENT CONNECTIONS

### M83791

90° FLANGE PLUS (SAE J518 -2/ ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |      |      |     |    |   |  |
|--------------|-----------|------|--------|--------|---------------|------|------|-----|----|---|--|
|              | DN        | Dash | inch   |        | Inch          | B    | A    | D   | E  | S |  |
| M83791-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5          | 93,5 | 41,4 | 75  | 10 |   |  |
| M83791-16-16 | 25        | - 16 | 1"     | 1"     | 19,5          | 91   | 47,7 | 90  | 11 |   |  |
| M83791-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25            | 115  | 54,2 | 110 | 12 |   |  |

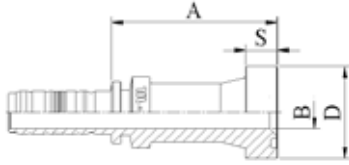


## ORIGINAL EQUIPMENT CONNECTIONS

### M83741

45° FLANGE PLUS (SAE J518-2/ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |       |      |    |    |   |  |
|--------------|-----------|------|--------|--------|---------------|-------|------|----|----|---|--|
|              | DN        | Dash | inch   |        | Inch          | B     | A    | D  | E  | S |  |
| M83741-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5          | 114   | 41,4 | 40 | 10 |   |  |
| M83741-16-16 | 25        | - 16 | 1"     | 1"     | 19,5          | 107,5 | 47,7 | 43 | 11 |   |  |
| M83741-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25            | 133,5 | 54,2 | 50 | 12 |   |  |

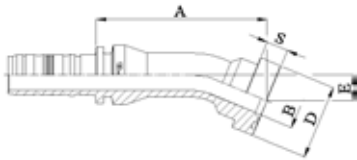


## ORIGINAL EQUIPMENT CONNECTIONS

### M83911

#### STRAIGHT SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | S    |  |  |
| M83911-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 14,5 | 75    | 41,5 | 14,3 |  |  |
| M83911-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 80,5  | 47,7 | 14,3 |  |  |
| M83911-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 80    | 47,7 | 14,3 |  |  |
| M83911-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 84    | 54   | 14,3 |  |  |
| M83911-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 80,5  | 54   | 14,3 |  |  |
| M83911-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 84    | 63,6 | 14,3 |  |  |
| M83911-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 84,5  | 63,6 | 14,3 |  |  |
| M83911-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 107,5 | 79,3 | 14,3 |  |  |
| M83911-32-24 | 51        | - 32 | 2"     | 1.1/2" |                  | 32   | 95,5  | 63,6 | 14,3 |  |  |
| M83911-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 110,5 | 79,3 | 14,3 |  |  |



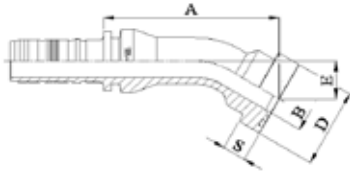
## ORIGINAL EQUIPMENT CONNECTIONS

### M83921

#### 22,5° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |      |      |
|--------------|-----------|------|--------|--------|------------------|------|-------|------|------|------|
|              | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E    | S    |
| M83921-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 101,5 | 41,5 | 16   | 14,3 |
| M83921-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 98    | 47,7 | 16,5 | 14,3 |
| M83921-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 108,5 | 47,7 | 16,5 | 14,3 |
| M83921-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 113   | 54   | 18,5 | 14,3 |
| M83921-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 120,5 | 54   | 18   | 14,3 |
| M83921-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 119   | 63,7 | 21   | 14,3 |
| M83921-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 123,5 | 63,7 | 20   | 14,3 |



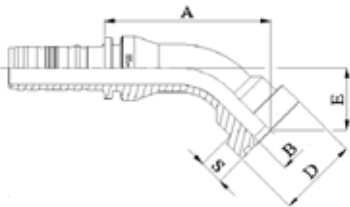


## ORIGINAL EQUIPMENT CONNECTIONS

### M83931

#### 30° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |   |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|---|--|
|              | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E    | S |  |
| M83931-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 99    | 41,5 | 22   | 14,3 |   |  |
| M83931-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 19,5             | 99,5  | 47,7 | 22,5 | 14,3 |   |  |
| M83931-16-16 | 25        | - 16 | 1"     | 1"     |  | 19,5             | 106   | 47,7 | 23   | 14,3 |   |  |
| M83931-16-20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 110   | 54   | 26   | 14,3 |   |  |
| M83931-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 117,5 | 54   | 25   | 14,3 |   |  |
| M83931-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 115,5 | 63,7 | 29   | 14,3 |   |  |
| M83931-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 120,5 | 63,7 | 28   | 14,3 |   |  |
| M83931-24-32 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 134,5 | 79,3 | 36   | 14,3 |   |  |
| M83931-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 163,5 | 79,3 | 37,5 | 14,3 |   |  |

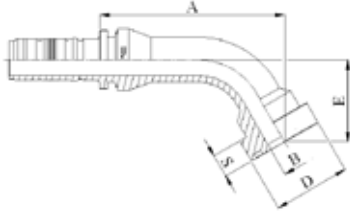


## ORIGINAL EQUIPMENT CONNECTIONS

### M83941

#### 45° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |   |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|---|--|
|              | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E    | S |  |
| M83941-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 16               | 91,5  | 41,5 | 34,5 | 14,3 |   |  |
| M83941-12-16 | 19        | - 12 | 3/4"   | 1"     |  | 19,5             | 92    | 47,7 | 35,5 | 14,3 |   |  |
| M83941-16-16 | 25        | - 16 | 1"     | 1"     |  | 19,5             | 98    | 47,7 | 36,5 | 14,3 |   |  |
| M83941-16-20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 101   | 54   | 40,5 | 14,3 |   |  |
| M83941-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 109   | 54   | 40   | 14,3 |   |  |
| M83941-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |  | 32               | 106   | 63,7 | 46   | 14,3 |   |  |
| M83941-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 111   | 63,7 | 45,5 | 14,3 |   |  |
| M83941-24-32 | 38        | - 24 | 1.1/2" | 2"     |  | 42               | 122   | 79,3 | 56,5 | 14,3 |   |  |
| M83941-32-32 | 51        | - 32 | 2"     | 2"     |  | 42               | 150,5 | 79,3 | 61,5 | 14,3 |   |  |

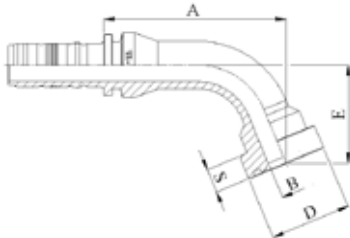


## ORIGINAL EQUIPMENT CONNECTIONS

### M83961

#### 60° SUPERCAT SERIES FLANGE

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|-----------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|                 | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | S |  |
| M83961-12-12    | 19        | - 12 | 3/4"   | 3/4"   | 16               | 106,5 | 41,5 | 47   | 14,3 |   |  |
| M83961-12-16    | 19        | - 12 | 3/4"   | 1"     | 19,5             | 107   | 47,7 | 48   | 14,3 |   |  |
| M83961-16-16    | 25        | - 16 | 1"     | 1"     | 19,5             | 114   | 47,7 | 51   | 14,3 |   |  |
| M83961-16-16055 | 25        | - 16 | 1"     | 1"     | 19,5             | 100   | 47,7 | 55   | 14,3 |   |  |
| M83961-16-20    | 25        | - 16 | 1"     | 1.1/4" | 26               | 116,5 | 54   | 54   | 14,3 |   |  |
| M83961-20-20    | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 130   | 54   | 54,5 | 14,3 |   |  |
| M83961-20-24    | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 126   | 63,7 | 63,5 | 14,3 |   |  |
| M83961-24-24    | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 140   | 63,7 | 63   | 14,3 |   |  |
| M83961-32-32    | 51        | - 32 | 2"     | 2"     | 42               | 194   | 79,3 | 86,5 | 14,3 |   |  |
| M83961-32-32150 | 51        | - 32 | 2"     | 2"     | 42               | 198   | 79,3 | 150  | 14,3 |   |  |



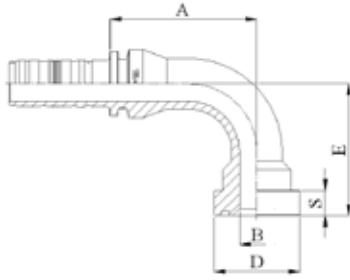
## ORIGINAL EQUIPMENT CONNECTIONS

### M83971

#### 67,5° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|--------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|              | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | S |  |
| M83971-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 16               | 100   | 41,5 | 53   | 14,3 |   |  |
| M83971-12-16 | 19        | - 12 | 3/4"   | 1"     | 19,5             | 100,5 | 47,7 | 54   | 14,3 |   |  |
| M83971-16-16 | 25        | - 16 | 1"     | 1"     | 19,5             | 107   | 47,7 | 58   | 14,3 |   |  |
| M83971-16-20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 109   | 54   | 62   | 14,3 |   |  |
| M83971-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 123   | 54   | 62   | 14,3 |   |  |
| M83971-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 117,5 | 63,7 | 71,5 | 14,3 |   |  |
| M83971-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 131   | 63,7 | 72   | 14,3 |   |  |
| M83971-32-32 | 51        | - 32 | 2"     | 2"     | 42               | 181,5 | 79,3 | 99   | 14,3 |   |  |

## ORIGINAL EQUIPMENT CONNECTIONS

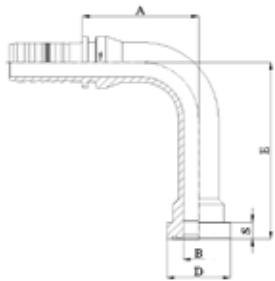


### M83991

#### 90° SUPERCAT SERIES FLANGE

| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |     |      |       |      |  |  |
|--------------|-----------|------|--------|--------|------------------|------|-----|------|-------|------|--|--|
|              | DN        | Dash | inch   |        | Inch             | B    | A   | D    | E     | S    |  |  |
| M83991-12-12 | 19        | - 12 | 3/4"   | 3/4"   |                  | 16   | 76  | 41,5 | 68,5  | 14,3 |  |  |
| M83991-12-16 | 19        | - 12 | 3/4"   | 1"     |                  | 19,5 | 76  | 47,7 | 69,5  | 14,3 |  |  |
| M83991-16-16 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 82  | 47,7 | 73,5  | 14,3 |  |  |
| M83991-16-20 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 82  | 54   | 78,5  | 14,3 |  |  |
| M83991-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26   | 94  | 54   | 82    | 14,3 |  |  |
| M83991-20-24 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 85  | 63,7 | 92    | 14,3 |  |  |
| M83991-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 98  | 63,7 | 96    | 14,3 |  |  |
| M83991-24-32 | 38        | - 24 | 1.1/2" | 2"     |                  | 42   | 98  | 79,3 | 112   | 14,3 |  |  |
| M83991-32-32 | 51        | - 32 | 2"     | 2"     |                  | 42   | 136 | 79,3 | 133,5 | 14,3 |  |  |

## ORIGINAL EQUIPMENT CONNECTIONS

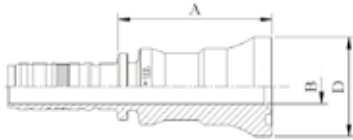


### M83991 LONG DROP

#### 90° LONG DROP SUPERCAT SERIES FLANGE

| PART. REF.      | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |      |       |      |     |      |  |  |
|-----------------|-----------|------|--------|--------|------------------|------|-------|------|-----|------|--|--|
|                 | DN        | Dash | inch   |        | Inch             | B    | A     | D    | E   | S    |  |  |
| M83991-16-16132 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 86    | 47,7 | 132 | 14,3 |  |  |
| M83991-16-16150 | 25        | - 16 | 1"     | 1"     |                  | 19,5 | 86    | 47,7 | 150 | 14,3 |  |  |
| M83991-16-20150 | 25        | - 16 | 1"     | 1.1/4" |                  | 26   | 82    | 54   | 150 | 14,3 |  |  |
| M83991-20-20092 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 99    | 54   | 92  | 14,3 |  |  |
| M83991-20-20150 | 31        | - 20 | 1.1/4" | 1.1/4" |                  | 26,1 | 99    | 54   | 150 | 14,3 |  |  |
| M83991-20-24135 | 31        | - 20 | 1.1/4" | 1.1/2" |                  | 32   | 98,5  | 63,7 | 135 | 14,3 |  |  |
| M83991-24-24106 | 38        | - 24 | 1.1/2" | 1.1/2" |                  | 32   | 112,5 | 63,7 | 106 | 14,3 |  |  |

## XTRAFLANGE



### M88511

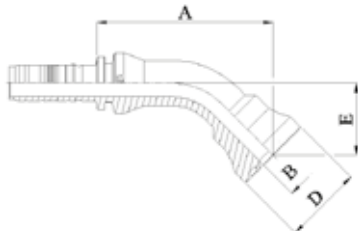
XTRAFLANGE/62 (SAE J518 -2/ ISO 6162-2 PORT COMPATIBLE)

FITTINGS

F 6-24

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |   |  |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|---|--|--|--|
|              | DN        | Dash | inch   |        |  | Inch             | B     | A    | D |  |  |  |
| M88511-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 14,5             | 65,5  | 41,4 |   |  |  |  |
| M88511-16-16 | 25        | - 16 | 1"     | 1"     |  | 19,5             | 69    | 47,7 |   |  |  |  |
| M88511-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 25               | 88    | 54,4 |   |  |  |  |
| M88511-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 30,5             | 102   | 63,7 |   |  |  |  |
| M88511-32-32 | 51        | - 32 | 2"     | 2"     |  | 41               | 129,5 | 79,6 |   |  |  |  |

## XTRAFLANGE



### M88541

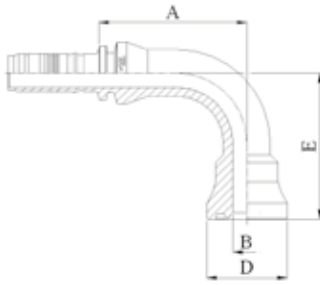
45° XTRAFLANGE/62 (SAE J518 -2/ ISO 6162-2 PORT COMPATIBLE)

| PART. REF.   | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |   |  |  |
|--------------|-----------|------|--------|--------|--|------------------|-------|------|------|---|--|--|
|              | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E |  |  |
| M88541-12-12 | 19        | - 12 | 3/4"   | 3/4"   |  | 14,5             | 93,5  | 41,4 | 38   |   |  |  |
| M88541-16-16 | 25        | - 16 | 1"     | 1"     |  | 19,5             | 103,5 | 47,7 | 45   |   |  |  |
| M88541-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 25               | 138   | 54,4 | 62,5 |   |  |  |
| M88541-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 30,5             | 155   | 63,7 | 71,5 |   |  |  |
| M88541-32-32 | 51        | - 32 | 2"     | 2"     |  | 39               | 194,5 | 79,6 | 92,5 |   |  |  |

## XTRAFLANGE

### M88591

90° XTRAFLANGE/62 (SAE J518 -2/ ISO 6162-2 PORT COMPATIBLE)

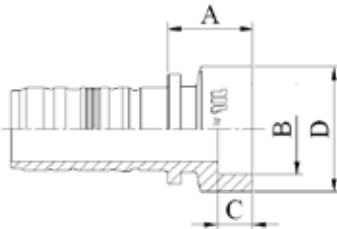


| PART. REF.   | HOSE BORE |      |        | Flange | DIMENSIONS mm |       |      |     |  |  |  |
|--------------|-----------|------|--------|--------|---------------|-------|------|-----|--|--|--|
|              | DN        | Dash | inch   |        | B             | A     | D    | E   |  |  |  |
| M88591-12-12 | 19        | - 12 | 3/4"   | 3/4"   | 14,5          | 76,5  | 41,4 | 75  |  |  |  |
| M88591-16-16 | 25        | - 16 | 1"     | 1"     | 19,5          | 84,5  | 47,7 | 90  |  |  |  |
| M88591-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 25            | 107   | 54,4 | 120 |  |  |  |
| M88591-24-24 | 38        | - 24 | 1.1/2" | 1.1/2" | 30,5          | 122   | 63,7 | 140 |  |  |  |
| M88591-32-32 | 51        | - 32 | 2"     | 2"     | 39            | 148,5 | 79,6 | 178 |  |  |  |

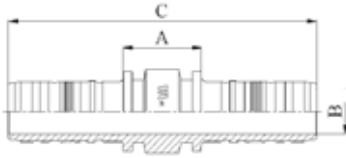
## TAIL

### M89510WL

WELDING TAIL



| PART. REF.     | HOSE BORE |      |        | DIMENSIONS mm |      |    |    |  |  |  |
|----------------|-----------|------|--------|---------------|------|----|----|--|--|--|
|                | DN        | Dash | inch   | B             | A    | C  | D  |  |  |  |
| M89510-12-22WL | 19        | - 12 | 3/4"   | 22,1          | 28,5 | 12 | 34 |  |  |  |
| M89510-16-28WL | 25        | - 16 | 1"     | 28,1          | 32,5 | 14 | 40 |  |  |  |
| M89510-20-35WL | 31        | - 20 | 1.1/4" | 35,1          | 33   | 14 | 49 |  |  |  |



## DOUBLE CONNECTOR

### M70050

#### DOUBLE CONNECTOR

| PART. REF.   | HOSE BORE |      |        | DIMENSIONS<br>mm |  |      |      |       |  |  |  |  |
|--------------|-----------|------|--------|------------------|--|------|------|-------|--|--|--|--|
|              | DN        | Dash | inch   |                  |  | B    | A    | C     |  |  |  |  |
| M70050-20-20 | 31        | - 20 | 1.1/4" |                  |  | 25   | 42,5 | 166,2 |  |  |  |  |
| M70050-24-24 | 38        | - 24 | 1.1/2" |                  |  | 30,5 | 43   | 178,9 |  |  |  |  |
| M70050-32-32 | 51        | - 32 | 2"     |                  |  | 41   | 45,5 | 220,8 |  |  |  |  |

**FITTINGS**  
 F 6-26



**PUSHLOCK**





| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| L10510       | 7       | 1    |
| L20513       | 7       | 1    |
| L20543       | 7       | 2    |
| L20593       | 7       | 2    |

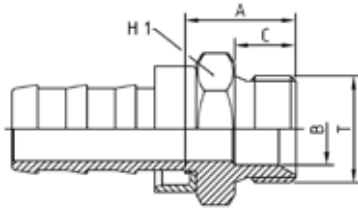
## PUSHLOCK

|             |       |      |       |      |      |      |      |     |        |        |     |        |        |     |        |     |
|-------------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|--------|-----|
| <b>DN</b>   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  | 60     | 63     | 76  | 89     | 102 |
| <b>Inch</b> | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  | 2 3/8" | 2 1/2" | 3"  | 3 1/2" | 4"  |
| <b>Size</b> | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 | -38    | -40    | -48 | -56    | -64 |

## FITTINGS

|     |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|-----|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

## BS STANDARD CONNECTIONS

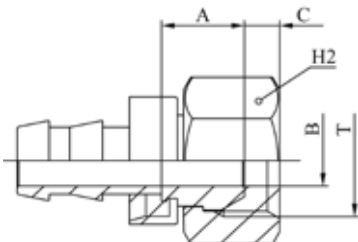


### L10510

**BSP MALE PARALLEL 60° CONE SEAT - BS5200/ISO 8434-6**

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |    |    |  |  |  |
|--------------|-----------|------|------|-----------|--|------------------|------|----|----|--|--|--|
|              | DN        | Dash | inch |           |  | T                | B    | A  | C  |  |  |  |
| L10510-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 5                | 20,5 | 11 | 19 |  |  |  |
| L10510-04-06 | 6         | -4   | 1/4" | 3/8" - 19 |  | 8                | 22,5 | 12 | 22 |  |  |  |
| L10510-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 8                | 23   | 12 | 22 |  |  |  |
| L10510-08-08 | 12        | -8   | 1/2" | 1/2" - 14 |  | 11               | 27   | 14 | 27 |  |  |  |
| L10510-10-10 | 16        | -10  | 5/8" | 5/8" - 14 |  | 14,5             | 28,5 | 16 | 30 |  |  |  |
| L10510-12-12 | 19        | -12  | 3/4" | 3/4" - 14 |  | 17               | 30,5 | 16 | 32 |  |  |  |
| L10510-16-16 | 25        | -16  | 1"   | 1" - 11   |  | 22,5             | 34,5 | 19 | 41 |  |  |  |

No ferrule needed



## BS STANDARD CONNECTIONS

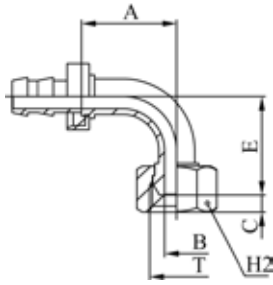
### L20513

**BSP FEMALE 60° CONE - BS5200/ISO 12151-6 (SLIP-ON NUT)**

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |  |  |  |
|--------------|-----------|------|------|-----------|--|------------------|------|-----|----|--|--|--|
|              | DN        | Dash | inch |           |  | T                | B    | A   | C  |  |  |  |
| L20513-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 12,5 | 5,8 | 19 |  |  |  |
| L20513-04-06 | 6         | -4   | 1/4" | 3/8" - 19 |  | 7                | 14,6 | 6,2 | 22 |  |  |  |
| L20513-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 15   | 6,2 | 22 |  |  |  |
| L20513-08-08 | 12        | -8   | 1/2" | 1/2" - 14 |  | 9,5              | 16,5 | 6,5 | 27 |  |  |  |
| L20513-10-10 | 16        | -10  | 5/8" | 5/8" - 14 |  | 12               | 16   | 9   | 28 |  |  |  |
| L20513-12-12 | 19        | -12  | 3/4" | 3/4" - 14 |  | 16               | 18   | 9   | 32 |  |  |  |
| L20513-12-16 | 19        | -12  | 3/4" | 1" - 11   |  | 19               | 19,5 | 11  | 38 |  |  |  |
| L20513-16-16 | 25        | -16  | 1"   | 1" - 11   |  | 19               | 19,5 | 11  | 38 |  |  |  |

No ferrule needed

## BS STANDARD CONNECTIONS

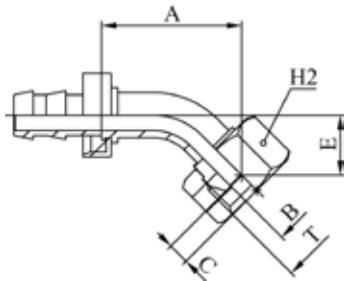


### L20593

**90° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200/ISO 12151-6 (SLIP-ON NUT)**

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|--------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| L20593-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 26   | 5,8 | 24   | 19 |    |  |
| L20593-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 35   | 6,2 | 30,5 | 22 |    |  |
| L20593-08-08 | 12        | -8   | 1/2" | 1/2" - 14 |  | 9,5              | 38   | 6,5 | 38,5 | 27 |    |  |
| L20593-10-10 | 16        | -10  | 5/8" | 5/8" - 14 |  | 12               | 45,5 | 9   | 41   | 28 |    |  |
| L20593-12-12 | 19        | -12  | 3/4" | 3/4" - 14 |  | 16               | 48,5 | 9   | 46,5 | 32 |    |  |
| L20593-12-16 | 19        | -12  | 3/4" | 1" - 11   |  | 19               | 48,5 | 11  | 48,5 | 38 |    |  |
| L20593-16-16 | 25        | -16  | 1"   | 1" - 11   |  | 19               | 54   | 11  | 54   | 38 |    |  |

No ferrule needed



## BS STANDARD CONNECTIONS

### L20543

**45° BSP FEMALE SWEPT ELBOW 60° CONE - BS5200/ISO 12151-6 (SLIP-ON NUT)**

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |      |    |    |  |
|--------------|-----------|------|------|-----------|--|------------------|------|-----|------|----|----|--|
|              | DN        | Dash | inch |           |  | T                | B    | A   | C    | E  | H2 |  |
| L20543-04-04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 31   | 5,8 | 12   | 19 |    |  |
| L20543-06-06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 38,5 | 6,2 | 14,5 | 22 |    |  |
| L20543-08-08 | 12        | -8   | 1/2" | 1/2" - 14 |  | 9,5              | 44   | 6,5 | 18,5 | 27 |    |  |
| L20543-10-10 | 16        | -10  | 5/8" | 5/8" - 14 |  | 12               | 50,5 | 9   | 19   | 28 |    |  |
| L20543-12-12 | 19        | -12  | 3/4" | 3/4" - 14 |  | 16               | 53   | 9   | 21   | 32 |    |  |
| L20543-16-16 | 25        | -16  | 1"   | 1" - 11   |  | 19               | 56   | 11  | 23,5 | 38 |    |  |

No ferrule needed



# ACCESSORIES



| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| O820         | 8       | 1    |
| O83308       | 8       | 2    |
| O83607       | 8       | 3    |
| O83609       | 8       | 2    |
| O88507       | 8       | 3    |
| O88407       | 8       | 4    |

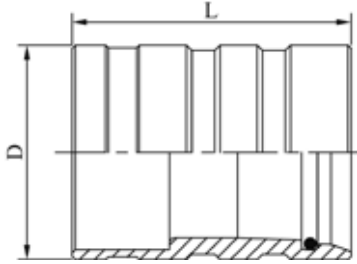




## ACCESSORIES

### O820

#### ANTI-KINK SLEEVE

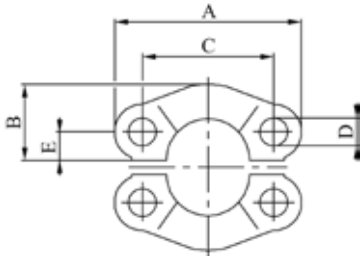


| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |  |       |       |  |  |  |  |
|------------|-----------|------|--------|------------------|--|-------|-------|--|--|--|--|
|            | DN        | Dash | inch   |                  |  | D     | L     |  |  |  |  |
| O82040-12  | 19        | - 12 | 3/4"   |                  |  | 45    | 67    |  |  |  |  |
| O82040-16  | 25        | - 16 | 1"     |                  |  | 52    | 81    |  |  |  |  |
| O82068-16  | 25        | - 16 | 1"     |                  |  | 55    | 75    |  |  |  |  |
| O82062-20  | 31        | - 20 | 1.1/4" |                  |  | 64    | 83    |  |  |  |  |
| O82060-20  | 31        | - 20 | 1.1/4" |                  |  | 64    | 84    |  |  |  |  |
| O82068-20  | 31        | - 20 | 1.1/4" |                  |  | 65,5  | 83    |  |  |  |  |
| O82068-24  | 38        | - 24 | 1.1/2" |                  |  | 73    | 99    |  |  |  |  |
| O82060-24  | 38        | - 24 | 1.1/2" |                  |  | 72    | 102   |  |  |  |  |
| O82068-32  | 51        | - 32 | 2"     |                  |  | 86,5  | 116   |  |  |  |  |
| O82068-40  | 63        | - 40 | 2.1/2" |                  |  | 100,5 | 148,5 |  |  |  |  |
| O82068-48  | 76        | - 48 | 3"     |                  |  | 112   | 158   |  |  |  |  |

## ACCESSORIES

### 083308

ISO/SAE CODE 61 SPLIT FLANGE CLAMPS - SAE J518 / ISO 6162-1

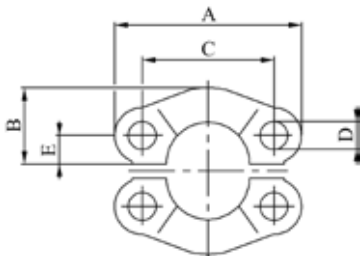


| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |     |       |      |      |  |  |  |
|------------|-----------|------|------|------------------|-----|-------|------|------|--|--|--|
|            | DN        | Dash | inch | B                | A   | C     | D    | E    |  |  |  |
| O83308-08  |           |      |      | 22,8             | 54  | 38,1  | 8,8  | 8,7  |  |  |  |
| O83308-12  |           |      |      | 25,9             | 65  | 47,6  | 10,8 | 11,1 |  |  |  |
| O83308-16  |           |      |      | 29,2             | 70  | 52,4  | 10,8 | 13,1 |  |  |  |
| O83308-20  |           |      |      | 36,3             | 79  | 58,7  | 12   | 15,1 |  |  |  |
| O83308-24  |           |      |      | 41,1             | 94  | 69,8  | 13,5 | 17,9 |  |  |  |
| O83308-32  |           |      |      | 48,2             | 102 | 77,8  | 13,5 | 21,4 |  |  |  |
| O83308-40  |           |      |      | 54,1             | 114 | 88,9  | 13,5 | 25,4 |  |  |  |
| O83308-48  |           |      |      | 65,3             | 135 | 106,4 | 16,8 | 31   |  |  |  |
| O83308-56  |           |      |      | 70               | 152 | 120,6 | 17   | 34,8 |  |  |  |
| O83308-64  |           |      |      | 75               | 160 | 130,2 | 17   | 38,9 |  |  |  |

## ACCESSORIES

### 083609

ISO/SAE CODE 62 SPLIT FLANGE CLAMPS - SAE J518 / ISO 6162-2

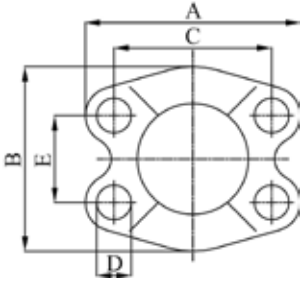


| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |     |      |     |      |  |  |  |
|------------|-----------|------|------|------------------|-----|------|-----|------|--|--|--|
|            | DN        | Dash | inch | B                | A   | C    | D   | E    |  |  |  |
| O83609-08  |           |      |      | 23,6             | 56  | 40,5 | 8,8 | 9,1  |  |  |  |
| O83609-12  |           |      |      | 30               | 71  | 50,8 | 11  | 11,9 |  |  |  |
| O83609-16  |           |      |      | 34,8             | 81  | 57,1 | 13  | 13,9 |  |  |  |
| O83609-20  |           |      |      | 38,6             | 95  | 66,7 | 15  | 15,9 |  |  |  |
| O83609-24  |           |      |      | 47,5             | 113 | 79,4 | 17  | 18,3 |  |  |  |
| O83609-32  |           |      |      | 56,9             | 133 | 96,8 | 21  | 22,2 |  |  |  |

## ACCESSORIES

**O83607**

**ONE-PIECE FLANGE CLAMP ISO 6162-2 / SAE J518 CODE 62**

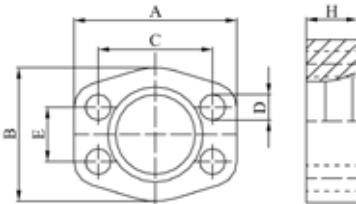


| PART. REF. | HOSE BORE |      |        | DIMENSIONS<br>mm |     |       |      |      |  |  |  |
|------------|-----------|------|--------|------------------|-----|-------|------|------|--|--|--|
|            | DN        | Dash | inch   | B                | A   | C     | D    | E    |  |  |  |
| O83607-12  | 19        | - 12 | 3/4"   | 60               | 72  | 50,8  | 10,5 | 23,8 |  |  |  |
| O83607-16  | 25        | - 16 | 1"     | 70               | 81  | 57,2  | 13   | 27,8 |  |  |  |
| O83607-20  | 31        | - 20 | 1.1/4" | 78               | 96  | 66,7  | 15   | 31,8 |  |  |  |
| O83607-24  | 38        | - 24 | 1.1/2" | 96               | 113 | 79,4  | 17   | 36,5 |  |  |  |
| O83607-32  | 51        | - 32 | 2"     | 114              | 134 | 96,8  | 21   | 44,4 |  |  |  |
| O83607-40  | 63        | - 40 | 2.1/2" | 150              | 175 | 123,8 | 25   | 58,7 |  |  |  |
| O83607-48  | 76        | - 48 | 3"     | 178              | 210 | 152,4 | 32   | 71,4 |  |  |  |

## ACCESSORIES

**O88507**

**ONE-PIECE XTRAFRANGE CLAMP ISO 6162-2 / SAE J518 CODE 62  
PORT COMPATIBLE**

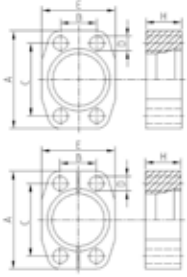


| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |       |       |    |      |      |  |  |
|------------|-----------|------|------|------------------|-------|-------|----|------|------|--|--|
|            | DN        | Dash | inch | B                | A     | C     | D  | E    | H    |  |  |
| O88507-12  |           |      |      | 60               | 71,5  | 50,8  | 11 | 23,8 | 21,5 |  |  |
| O88507-16  |           |      |      | 66,7             | 80    | 57,2  | 13 | 27,8 | 24   |  |  |
| O88507-20  |           |      |      | 78               | 95    | 66,7  | 15 | 31,7 | 30   |  |  |
| O88507-24  |           |      |      | 94               | 112   | 79,4  | 17 | 36,5 | 36   |  |  |
| O88507-32  |           |      |      | 114              | 133   | 96,8  | 21 | 44,5 | 47   |  |  |
| O88507-40  |           |      |      | 150              | 180   | 123,8 | 26 | 58,8 | 55   |  |  |
| O88507-48  |           |      |      | 176              | 210,3 | 152,4 | 31 | 71,4 | 60   |  |  |

## ACCESSORIES

### O88407

ONE-PIECE XTRAFLANGE 61 CLAMP/SPLIT XTRAFLANGE/61 CLAMP



| PART. REF. | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |      |      |      |      |     |      |  |
|------------|-----------|------|------|--------|------------------|------|------|------|------|-----|------|--|
|            | DN        | Dash | inch |        | Inch             | B    | A    | C    | D    | E   | H    |  |
| O88407-16  |           |      |      | 1"     |                  | 26,2 | 70,5 | 52,4 | 10,6 | 53  | 25,7 |  |
| O88407-20  |           |      |      | 1.1/4" |                  | 30,2 | 80   | 58,7 | 12   | 64  | 26,8 |  |
| O88407-24  |           |      |      | 1.1/2" |                  | 35,7 | 94   | 69,9 | 13,3 | 77  | 33,6 |  |
| O88407-32  |           |      |      | 2"     |                  | 42,9 | 102  | 77,8 | 13,3 | 88  | 35   |  |
| O88407-40  |           |      |      | 2.1/2" |                  | 50,8 | 114  | 88,9 | 13,3 | 102 | 44,3 |  |

O88407-32 and O88407-40 : SPLIT XTRAFLANGE/61 CLAMP



**OPF**



| FITTING CODE      | SECTION | PAGE |
|-------------------|---------|------|
| OPF10510          | 9       | 2    |
| OPF10710          | 9       | 2    |
| OPF11110          | 9       | 30   |
| OPF11210          | 9       | 34   |
| OPF12410          | 9       | 16   |
| OPF12510          | 9       | 9    |
| OPF12810          | 9       | 23   |
| OPF13010          | 9       | 21   |
| OPF14110R         | 9       | 24   |
| OPF14310          | 9       | 22   |
| OPF14390          | 9       | 22   |
| OPF20512-OPF20513 | 9       | 3    |
| OPF20542-OPF20543 | 9       | 5    |
| OPF20592-OPF20593 | 9       | 4    |
| OPF20612-OPF20613 | 9       | 8    |
| OPF20711          | 9       | 38   |
| OPF20812-OPF20813 | 9       | 6    |
| OPF20842-OPF20843 | 9       | 7    |
| OPF20882F         | 9       | 7    |
| OPF20892-OPF20893 | 9       | 6    |
| OPF21312-OPF21313 | 9       | 29   |
| OPF21392-OPF21393 | 9       | 29   |
| OPF21512-OPF21513 | 9       | 31   |
| OPF21542-OPF21543 | 9       | 33   |
| OPF21592-OPF21593 | 9       | 32   |
| OPF21612-OPF21613 | 9       | 35   |
| OPF21642-OPF21643 | 9       | 37   |
| OPF21692-OPF21693 | 9       | 36   |
| OPF22010          | 9       | 28   |

| FITTING CODE                | SECTION | PAGE |
|-----------------------------|---------|------|
| OPF22411                    | 9       | 17   |
| OPF22441-OPF22443           | 9       | 20   |
| OPF22491-OPF22493           | 9       | 18   |
| OPF22541KR                  | 9       | 15   |
| OPF22542-OPF22543           | 9       | 14   |
| OPF22582F                   | 9       | 16   |
| OPF22591KR                  | 9       | 12   |
| OPF22592-OPF22593           | 9       | 11   |
| OPF22612                    | 9       | 23   |
| OPF22711-KR-K               | 9       | 10   |
| OPF22712                    | 9       | 9    |
| OPF22812                    | 9       | 24   |
| OPF23311                    | 9       | 25   |
| OPF23321                    | 9       | 25   |
| OPF23331                    | 9       | 26   |
| OPF23341                    | 9       | 26   |
| OPF23361                    | 9       | 27   |
| OPF23371                    | 9       | 27   |
| OPF23391                    | 9       | 28   |
| OPF23811                    | 9       | 38   |
| OPF24011                    | 9       | 37   |
| OPF24111                    | 9       | 39   |
| OPF24141                    | 9       | 39   |
| OPF24191                    | 9       | 39   |
| OPF24491 LONG DROP          | 9       | 19   |
| OPF24791KR                  | 9       | 13   |
| OPF24792-OPF24793 LONG DROP | 9       | 12   |
| OPF3100                     | 9       | 1    |

## OPF

| DN   | 5                | 6               | 8                | 10              | 12              | 16              | 19              | 25  | 31               | 38               | 51  |
|------|------------------|-----------------|------------------|-----------------|-----------------|-----------------|-----------------|-----|------------------|------------------|-----|
| Inch | $\frac{3}{16}$ " | $\frac{1}{4}$ " | $\frac{5}{16}$ " | $\frac{3}{8}$ " | $\frac{1}{2}$ " | $\frac{5}{8}$ " | $\frac{3}{4}$ " | 1"  | $1\frac{1}{4}$ " | $1\frac{1}{2}$ " | 2"  |
| Size | -03              | -04             | -05              | -06             | -08             | -10             | -12             | -16 | -20              | -24              | -32 |

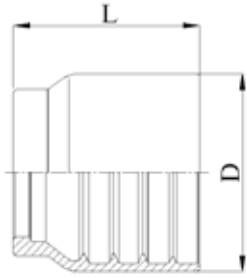
## FERRULES

|         |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|
| OPF3100 |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|

## FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |
| SAE (O-RING BOSS)              |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF-NPSM)                |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |
| DIN STANDPIPE                  |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC MULTISEAL           |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE LIGHT TYPE |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |
| JIS                            |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |





FERRULE

**OPF3100**

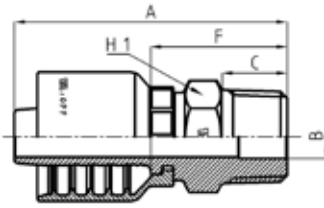
**NO-SKIVE FLAT CRIMP  
FERRULE FOR BRAIDED HOSES**

| PART. REF. | HOSE BORE |      |       | DIMENSIONS<br>mm |  |      |      |  |  |  |  |  |
|------------|-----------|------|-------|------------------|--|------|------|--|--|--|--|--|
|            | DN        | Dash | inch  |                  |  | D    | L    |  |  |  |  |  |
| OPF3100-03 | 5         | -3   | 3/16" |                  |  | 21   | 21   |  |  |  |  |  |
| OPF3100-04 | 6         | -4   | 1/4"  |                  |  | 23   | 27,5 |  |  |  |  |  |
| OPF3100-05 | 8         | -5   | 5/16" |                  |  | 24   | 27   |  |  |  |  |  |
| OPF3100-06 | 10        | -6   | 3/8"  |                  |  | 26,5 | 29,5 |  |  |  |  |  |
| OPF3100-08 | 12        | -8   | 1/2"  |                  |  | 29,4 | 31   |  |  |  |  |  |
| OPF3100-10 | 16        | -10  | 5/8"  |                  |  | 33   | 33   |  |  |  |  |  |
| OPF3100-12 | 19        | -12  | 3/4"  |                  |  | 37,2 | 35   |  |  |  |  |  |
| OPF3100-16 | 25        | -16  | 1"    |                  |  | 46   | 42   |  |  |  |  |  |

## BS STANDARD CONNECTIONS

### OPF10710

BSP MALE TAPERED

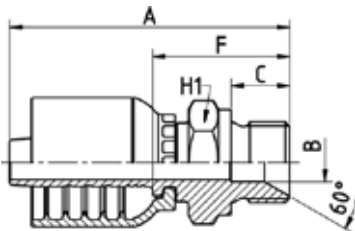


| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |    |    |    |    |  |
|----------------|-----------|------|------|-----------|------------------|------|----|----|----|----|--|
|                | DN        | Dash | inch |           | T                | B    | A  | C  | F  | H1 |  |
| OPF10710-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 | 10               | 62   | 15 | 31 | 22 |    |  |
| OPF10710-10A12 | 16        | - 10 | 5/8" | 3/4" - 14 | 17               | 68,5 | 17 | 34 | 27 |    |  |

## BS STANDARD CONNECTIONS

### OPF10510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6

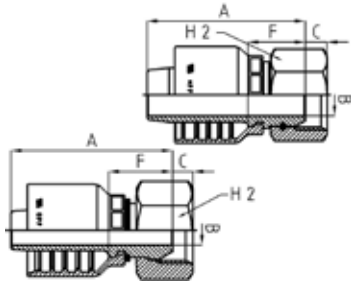


| PART. REF.     | HOSE BORE |      |       | Thread      | DIMENSIONS<br>mm |      |    |      |    |    |  |
|----------------|-----------|------|-------|-------------|------------------|------|----|------|----|----|--|
|                | DN        | Dash | inch  |             | T                | B    | A  | C    | F  | H1 |  |
| OPF10510-03A02 | 5         | - 3  | 3/16" | 1/8" - 28   | 3,5              | 44   | 10 | 22,5 | 14 |    |  |
| OPF10510-04A02 | 6         | - 4  | 1/4"  | 1/8" - 28   | 3,5              | 50   | 10 | 22,5 | 14 |    |  |
| OPF10510-04A04 | 6         | - 4  | 1/4"  | 1/4" - 19   | 5                | 53   | 11 | 25,5 | 19 |    |  |
| OPF10510-04A06 | 6         | - 4  | 1/4"  | 3/8" - 19   | 8                | 54,5 | 12 | 27   | 22 |    |  |
| OPF10510-05A04 | 8         | - 5  | 5/16" | 1/4" - 19   | 5                | 54   | 11 | 26   | 19 |    |  |
| OPF10510-05A06 | 8         | - 5  | 5/16" | 3/8" - 19   | 8                | 55,5 | 12 | 27,5 | 22 |    |  |
| OPF10510-06A04 | 10        | - 6  | 3/8"  | 1/4" - 19   | 5                | 55,5 | 11 | 26   | 19 |    |  |
| OPF10510-06A06 | 10        | - 6  | 3/8"  | 3/8" - 19   | 8                | 57,5 | 12 | 28   | 22 |    |  |
| OPF10510-06A08 | 10        | - 6  | 3/8"  | 1/2" - 14   | 11               | 60   | 14 | 30,5 | 27 |    |  |
| OPF10510-08A06 | 12        | - 8  | 1/2"  | 3/8" - 19   | 8                | 59   | 12 | 28   | 22 |    |  |
| OPF10510-08A08 | 12        | - 8  | 1/2"  | 1/2" - 14   | 11               | 62   | 14 | 31   | 27 |    |  |
| OPF10510-08A10 | 12        | - 8  | 1/2"  | 5/8" - 14   | 14,5             | 64   | 16 | 33   | 30 |    |  |
| OPF10510-08A12 | 12        | - 8  | 1/2"  | 3/4" - 14   | 17               | 65   | 16 | 34   | 32 |    |  |
| OPF10510-10A10 | 16        | - 10 | 5/8"  | 5/8" - 14   | 14,5             | 67,5 | 16 | 33   | 30 |    |  |
| OPF10510-10A12 | 16        | - 10 | 5/8"  | 3/4" - 14   | 17               | 68,5 | 16 | 34   | 32 |    |  |
| OPF10510-12A12 | 19        | - 12 | 3/4"  | 3/4" - 14   | 17               | 72   | 16 | 35,5 | 32 |    |  |
| OPF10510-12A16 | 19        | - 12 | 3/4"  | 1" - 11     | 22,5             | 76   | 19 | 39,5 | 41 |    |  |
| OPF10510-16A16 | 25        | - 16 | 1"    | 1" - 11     | 22,5             | 89   | 19 | 41   | 41 |    |  |
| OPF10510-16A20 | 25        | - 16 | 1"    | 1.1/4" - 11 | 28,5             | 93   | 20 | 45   | 50 |    |  |

## BS STANDARD CONNECTIONS

### OPF20512/OPF20513

BSP FEMALE 60° CONE - BS5200 / ISO 12151-6



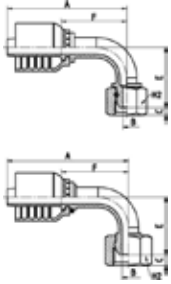
| PART. REF.     | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|-------|-----------|--|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch  |           |  | T                | B    | A    | C    | F  | H2 |  |
| OPF20512-03A02 | 5         | - 3  | 3/16" | 1/8" - 28 |  | 3                | 37   | 4,4  | 16   | 14 |    |  |
| OPF20513-03A04 | 5         | - 3  | 3/16" | 1/4" - 19 |  | 4                | 38   | 5,4  | 16,5 | 19 |    |  |
| OPF20512-04A02 | 6         | - 4  | 1/4"  | 1/8" - 28 |  | 3,1              | 44   | 4,4  | 16,5 | 14 |    |  |
| OPF20513-04A04 | 6         | - 4  | 1/4"  | 1/4" - 19 |  | 4                | 44,5 | 5,4  | 17   | 19 |    |  |
| OPF20513-04A06 | 6         | - 4  | 1/4"  | 3/8" - 19 |  | 7                | 45,5 | 6    | 19   | 22 |    |  |
| OPF20512-05A04 | 8         | - 5  | 5/16" | 1/4" - 19 |  | 4,1              | 45,5 | 4,2  | 17,5 | 19 |    |  |
| OPF20513-05A06 | 8         | - 5  | 5/16" | 3/8" - 19 |  | 7                | 47   | 6    | 19   | 22 |    |  |
| OPF20512-06A04 | 10        | - 6  | 3/8"  | 1/4" - 19 |  | 4,1              | 47,5 | 4,2  | 18   | 19 |    |  |
| OPF20513-06A06 | 10        | - 6  | 3/8"  | 3/8" - 19 |  | 7                | 49   | 6    | 19,5 | 22 |    |  |
| OPF20513-06A08 | 10        | - 6  | 3/8"  | 1/2" - 14 |  | 9,3              | 49,5 | 6,3  | 20   | 27 |    |  |
| OPF20512-08A06 | 12        | - 8  | 1/2"  | 3/8" - 19 |  | 7,1              | 52   | 6    | 21   | 22 |    |  |
| OPF20513-08A08 | 12        | - 8  | 1/2"  | 1/2" - 14 |  | 9,3              | 51,5 | 6,3  | 20,5 | 27 |    |  |
| OPF20512-08A10 | 12        | - 8  | 1/2"  | 5/8" - 14 |  | 12,1             | 53   | 10,2 | 22   | 28 |    |  |
| OPF20512-08A12 | 12        | - 8  | 1/2"  | 3/4" - 14 |  | 15               | 56   | 9    | 24,5 | 32 |    |  |
| OPF20512-10A10 | 16        | - 10 | 5/8"  | 5/8" - 14 |  | 12,5             | 56   | 10,2 | 21,5 | 28 |    |  |
| OPF20512-10A12 | 16        | - 10 | 5/8"  | 3/4" - 14 |  | 15               | 57,5 | 9    | 23   | 32 |    |  |
| OPF20512-12A12 | 19        | - 12 | 3/4"  | 3/4" - 14 |  | 15               | 61   | 9    | 24,5 | 32 |    |  |
| OPF20512-12A16 | 19        | - 12 | 3/4"  | 1" - 11   |  | 19,8             | 62,5 | 10,5 | 26   | 38 |    |  |
| OPF20512-16A16 | 25        | - 16 | 1"    | 1" - 11   |  | 19,8             | 75,5 | 10,5 | 27,5 | 38 |    |  |

OPF20512: THRUST-WIRE NUT / OPF20513: SLIP-ON NUT

## BS STANDARD CONNECTIONS

### OPF20592/OPF20593

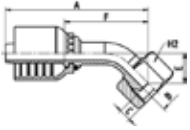
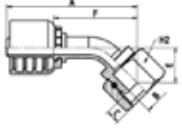
90° BSP FEMALE ELBOW 60° CONE - BS5200 / ISO 12151-6



| PART. REF.     | HOSE BORE |      |       | Thread    | DIMENSIONS<br>mm |      |       |      |      |      |    |  |
|----------------|-----------|------|-------|-----------|------------------|------|-------|------|------|------|----|--|
|                | DN        | Dash | inch  |           | T                | B    | A     | C    | E    | F    | H2 |  |
| OPF20592-03A02 | 5         | - 3  | 3/16" | 1/8" - 28 |                  | 3    | 43    | 4,4  | 26   | 21,5 | 14 |  |
| OPF20592-04A02 | 6         | - 4  | 1/4"  | 1/8" - 28 |                  | 3,1  | 56    | 4,4  | 27   | 28,5 | 14 |  |
| OPF20593-04A04 | 6         | - 4  | 1/4"  | 1/4" - 19 |                  | 4    | 57    | 5,4  | 29   | 29,5 | 19 |  |
| OPF20593-04A06 | 6         | - 4  | 1/4"  | 3/8" - 19 |                  | 7    | 57    | 6    | 31   | 29,5 | 22 |  |
| OPF20592-05A04 | 8         | - 5  | 5/16" | 1/4" - 19 |                  | 4    | 54,5  | 4,1  | 29,5 | 26,5 | 19 |  |
| OPF20593-05A06 | 8         | - 5  | 5/16" | 3/8" - 19 |                  | 7    | 60    | 6    | 27,5 | 32   | 22 |  |
| OPF20593-06A06 | 10        | - 6  | 3/8"  | 3/8" - 19 |                  | 7    | 66    | 6    | 31,5 | 36,5 | 22 |  |
| OPF20593-06A08 | 10        | - 6  | 3/8"  | 1/2" - 14 |                  | 9,3  | 66    | 6,3  | 32   | 36,5 | 27 |  |
| OPF20592-08A06 | 12        | - 8  | 1/2"  | 3/8" - 19 |                  | 7,1  | 76    | 6    | 41   | 45   | 22 |  |
| OPF20593-08A08 | 12        | - 8  | 1/2"  | 1/2" - 14 |                  | 9,3  | 76    | 6,3  | 36,5 | 45   | 27 |  |
| OPF20592-08A10 | 12        | - 8  | 1/2"  | 5/8" - 14 |                  | 12,1 | 75,5  | 10,2 | 44   | 44   | 28 |  |
| OPF20592-08A12 | 12        | - 8  | 1/2"  | 3/4" - 14 |                  | 15   | 75,5  | 9    | 45,5 | 44   | 32 |  |
| OPF20592-10A10 | 16        | - 10 | 5/8"  | 5/8" - 14 |                  | 12,5 | 88    | 10,2 | 53,5 | 53,5 | 28 |  |
| OPF20592-10A12 | 16        | - 10 | 5/8"  | 3/4" - 14 |                  | 15   | 88    | 9    | 55   | 53,5 | 32 |  |
| OPF20592-12A12 | 19        | - 12 | 3/4"  | 3/4" - 14 |                  | 15   | 98    | 9    | 59,5 | 61,5 | 32 |  |
| OPF20592-12A16 | 19        | - 12 | 3/4"  | 1" - 11   |                  | 19,8 | 98    | 10,5 | 62   | 61,5 | 38 |  |
| OPF20592-16A16 | 25        | - 16 | 1"    | 1" - 11   |                  | 19,8 | 127,5 | 10,5 | 76   | 79,5 | 38 |  |

OPF20592: THRUST-WIRE NUT / OPF20593: SLIP-ON NUT

## BS STANDARD CONNECTIONS

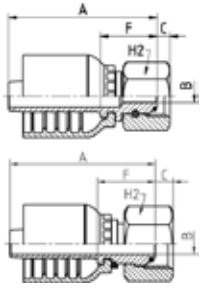


### OPF20542/OPF20543

45° BSP FEMALE ELBOW 60° CONE - BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |       | Thread    |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|-------|-----------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch  |           |  | T                | B     | A    | C    | E    | F  | H2 |
| OPF20543-04A04 | 6         | - 4  | 1/4"  | 1/4" - 19 |  | 4                | 63,5  | 5,4  | 15   | 36   | 19 |    |
| OPF20543-04A06 | 6         | - 4  | 1/4"  | 3/8" - 19 |  | 7                | 65    | 6    | 16   | 37,5 | 22 |    |
| OPF20543-05A06 | 8         | - 5  | 5/16" | 3/8" - 19 |  | 7                | 66    | 6    | 13,5 | 38   | 22 |    |
| OPF20543-06A06 | 10        | - 6  | 3/8"  | 3/8" - 19 |  | 7                | 71,5  | 6    | 15,5 | 42   | 22 |    |
| OPF20543-06A08 | 10        | - 6  | 3/8"  | 1/2" - 14 |  | 9,3              | 72    | 6,3  | 16   | 42,5 | 27 |    |
| OPF20543-08A08 | 12        | - 8  | 1/2"  | 1/2" - 14 |  | 9,3              | 81    | 6,3  | 17   | 49,5 | 27 |    |
| OPF20542-08A10 | 12        | - 8  | 1/2"  | 5/8" - 14 |  | 12,1             | 85,5  | 10,2 | 22,5 | 54,5 | 28 |    |
| OPF20542-10A10 | 16        | - 10 | 5/8"  | 5/8" - 14 |  | 12,5             | 97,5  | 10,2 | 26   | 63   | 28 |    |
| OPF20542-10A12 | 16        | - 10 | 5/8"  | 3/4" - 14 |  | 15               | 98    | 9    | 27   | 64   | 32 |    |
| OPF20542-12A12 | 19        | - 12 | 3/4"  | 3/4" - 14 |  | 15               | 107   | 9    | 28,5 | 70,5 | 32 |    |
| OPF20542-12A16 | 19        | - 12 | 3/4"  | 1" - 11   |  | 19,8             | 109   | 10,5 | 30   | 72,5 | 38 |    |
| OPF20542-16A16 | 25        | - 16 | 1"    | 1" - 11   |  | 19,8             | 139,5 | 10,5 | 36,5 | 91   | 38 |    |

OPF20542: THRUST-WIRE NUT / OPF20543: SLIP-ON NUT



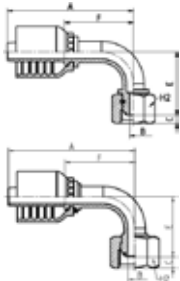
## BS STANDARD CONNECTIONS

### OPF20812/OPF20813

BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread      |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|------|-------------|--|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |             |  | T                | B    | A    | C    | F  | H2 |  |
| OPF20813-04A04 | 6         | -4   | 1/4" | 1/4" - 19   |  | 4                | 44,5 | 5,4  | 17   | 19 |    |  |
| OPF20812-06A04 | 10        | -6   | 3/8" | 1/4" - 19   |  | 4,1              | 47,5 | 4,1  | 18   | 19 |    |  |
| OPF20813-06A06 | 10        | -6   | 3/8" | 3/8" - 19   |  | 7                | 49   | 6    | 19,5 | 22 |    |  |
| OPF20813-08A08 | 12        | -8   | 1/2" | 1/2" - 14   |  | 9,3              | 51,5 | 6,3  | 20,5 | 27 |    |  |
| OPF20812-10A10 | 16        | -10  | 5/8" | 5/8" - 14   |  | 12,5             | 56,5 | 9,7  | 22   | 28 |    |  |
| OPF20812-12A12 | 19        | -12  | 3/4" | 3/4" - 14   |  | 15               | 61,5 | 8,5  | 25   | 32 |    |  |
| OPF20812-16A16 | 25        | -16  | 1"   | 1" - 11     |  | 19,8             | 75,5 | 10,6 | 27,5 | 38 |    |  |
| OPF20812-16A20 | 25        | -16  | 1"   | 1.1/4" - 11 |  | 26,1             | 79   | 10,5 | 31   | 50 |    |  |

OPF20812: THRUST-WIRE NUT / OPF20813: SLIP-ON NUT



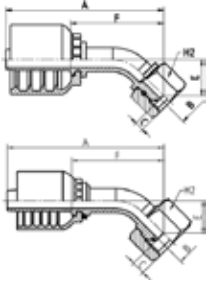
## BS STANDARD CONNECTIONS

### OPF20892/OPF20893

90° BSP O-RING FEMALE SWEEP ELBOW 60° CONE - BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread      |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|-------------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |             |  | T                | B     | A    | C    | E    | F  | H2 |
| OPF20893-04A04 | 6         | -4   | 1/4" | 1/4" - 19   |  | 4                | 57    | 5,4  | 29   | 29,5 | 19 |    |
| OPF20892-06A04 | 10        | -6   | 3/8" | 1/4" - 19   |  | 4,1              | 65    | 4,1  | 33   | 35,5 | 19 |    |
| OPF20893-06A06 | 10        | -6   | 3/8" | 3/8" - 19   |  | 7                | 66    | 6    | 31,5 | 36,5 | 22 |    |
| OPF20893-08A08 | 12        | -8   | 1/2" | 1/2" - 14   |  | 9,3              | 76    | 6,3  | 36,5 | 45   | 27 |    |
| OPF20892-10A10 | 16        | -10  | 5/8" | 5/8" - 14   |  | 12,5             | 87,5  | 9,7  | 55   | 53   | 28 |    |
| OPF20892-12A12 | 19        | -12  | 3/4" | 3/4" - 14   |  | 15               | 98    | 8,5  | 60   | 61,5 | 32 |    |
| OPF20892-16A16 | 25        | -16  | 1"   | 1" - 11     |  | 19,8             | 127,5 | 10,6 | 76   | 79,5 | 38 |    |
| OPF20892-16A20 | 25        | -16  | 1"   | 1.1/4" - 11 |  | 26,1             | 127,5 | 10,5 | 78,5 | 79,5 | 50 |    |

OPF20892: THRUST-WIRE NUT / OPF20893: SLIP-ON NUT



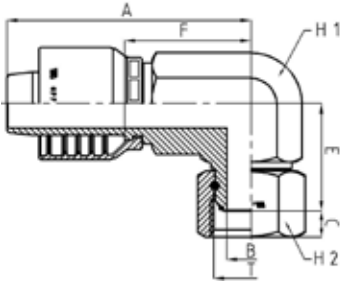
## BS STANDARD CONNECTIONS

### OPF20842/OPF20843

45° BSP O-RING FEMALE ELBOW 60° CONE BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|-----------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |           |  | T                | B     | A    | C    | E    | F  | H2 |
| OPF20843-04A04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 63,5  | 5,4  | 14,5 | 36   | 19 |    |
| OPF20843-06A06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 71,5  | 6    | 15,5 | 42   | 22 |    |
| OPF20843-08A08 | 12        | -8   | 1/2" | 1/2" - 14 |  | 9,3              | 81    | 6,3  | 17   | 49,5 | 27 |    |
| OPF20842-10A10 | 16        | -10  | 5/8" | 5/8" - 14 |  | 12,5             | 98    | 9,7  | 27,5 | 63,5 | 28 |    |
| OPF20842-12A12 | 19        | -12  | 3/4" | 3/4" - 14 |  | 15               | 107,5 | 8,5  | 29   | 71   | 32 |    |
| OPF20842-16A16 | 25        | -16  | 1"   | 1" - 11   |  | 19,8             | 138,5 | 10,6 | 35,5 | 90,5 | 38 |    |

OPF20842: THRUST-WIRE NUT / OPF20843: SLIP-ON NUT



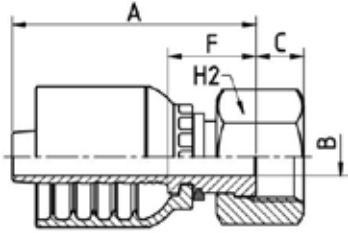
## BS STANDARD CONNECTIONS

### OPF20882F

90° BSP O-RING FEMALE COMPACT ELBOW 60° CONE BS5200 / ISO 12151-6 (THRUST-WIRE NUT)

| PART. REF.      | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |      |      |    |    |
|-----------------|-----------|------|------|-----------|--|------------------|------|------|------|------|----|----|
|                 | DN        | Dash | inch |           |  | T                | B    | A    | C    | E    | F  | H1 |
| OPF20882-04A04F | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 47,5 | 4,1  | 22   | 20   | 14 | 19 |
| OPF20882-06A06F | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 52,5 | 6    | 27,5 | 23   | 19 | 22 |
| OPF20882-08A08F | 12        | -8   | 1/2" | 1/2" - 14 |  | 9,3              | 56   | 6,5  | 31   | 25   | 22 | 27 |
| OPF20882-10A10F | 16        | -10  | 5/8" | 5/8" - 14 |  | 12,5             | 59   | 9,7  | 32,5 | 24,5 | 24 | 28 |
| OPF20882-12A12F | 19        | -12  | 3/4" | 3/4" - 14 |  | 15               | 74   | 8,5  | 36   | 37,5 | 27 | 32 |
| OPF20882-16A16F | 25        | -16  | 1"   | 1" - 11   |  | 20               | 100  | 10,6 | 44   | 52   | 36 | 38 |

## BS STANDARD CONNECTIONS

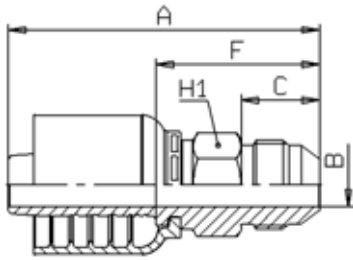


### OPF20612/OPF20613

BSP FEMALE FLAT SEAT (SLIP-ON NUT)

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |    |      |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|----|------|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B  | A    | C    | F  | H2 |  |
| OPF20613-04A04 | 6         | -4   | 1/4" | 1/4" - 19 |  | 4                | 42 | 7,9  | 14,5 | 19 |    |  |
| OPF20613-06A06 | 10        | -6   | 3/8" | 3/8" - 19 |  | 7                | 46 | 9    | 16,5 | 22 |    |  |
| OPF20613-06A08 | 10        | -6   | 3/8" | 1/2" - 14 |  | 9,3              | 47 | 9,8  | 17,5 | 27 |    |  |
| OPF20612-08A12 | 12        | -8   | 1/2" | 3/4" - 14 |  | 15               | 52 | 11,5 | 21   | 32 |    |  |



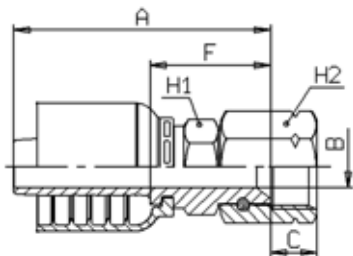


## SAE STANDARD CONNECTIONS

### OPF12510

JIC MALE 37° CONE - SAE J516 / ISO 12151-5

| PART. REF.     | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|----------------|-----------|------|-------|--------------|------------------|------|------|------|------|----|--|--|
|                | DN        | Dash | inch  |              | T                | B    | A    | C    | F    | H1 |  |  |
| OPF12510-04A04 | 6         | -4   | 1/4"  | 7/16" - 20   |                  | 4    | 55,5 | 14   | 28   | 12 |  |  |
| OPF12510-04A05 | 6         | -4   | 1/4"  | 1/2" - 20    |                  | 5,5  | 56,5 | 14   | 29   | 14 |  |  |
| OPF12510-04A06 | 6         | -4   | 1/4"  | 9/16" - 18   |                  | 7    | 56,5 | 14   | 29   | 17 |  |  |
| OPF12510-05A05 | 8         | -5   | 5/16" | 1/2" - 20    |                  | 5,5  | 57   | 14   | 29   | 14 |  |  |
| OPF12510-05A06 | 8         | -5   | 5/16" | 9/16" - 18   |                  | 7    | 57   | 14   | 29   | 17 |  |  |
| OPF12510-06A06 | 10        | -6   | 3/8"  | 9/16" - 18   |                  | 7    | 59   | 14   | 29,5 | 17 |  |  |
| OPF12510-06A08 | 10        | -6   | 3/8"  | 3/4" - 16    |                  | 9,3  | 63,5 | 16,5 | 34   | 19 |  |  |
| OPF12510-06A10 | 10        | -6   | 3/8"  | 7/8" - 14    |                  | 12,5 | 68   | 19,5 | 38,5 | 24 |  |  |
| OPF12510-08A06 | 12        | -8   | 1/2"  | 9/16" - 18   |                  | 7    | 63   | 14   | 32   | 19 |  |  |
| OPF12510-08A08 | 12        | -8   | 1/2"  | 3/4" - 16    |                  | 9,3  | 65,5 | 16,5 | 34,5 | 19 |  |  |
| OPF12510-08A10 | 12        | -8   | 1/2"  | 7/8" - 14    |                  | 12,5 | 70   | 19,5 | 39   | 24 |  |  |
| OPF12510-08A12 | 12        | -8   | 1/2"  | 1.1/16" - 12 |                  | 15   | 74   | 22   | 43   | 27 |  |  |
| OPF12510-10A10 | 16        | -10  | 5/8"  | 7/8" - 14    |                  | 12,5 | 73,5 | 19,5 | 39   | 24 |  |  |
| OPF12510-10A12 | 16        | -10  | 5/8"  | 1.1/16" - 12 |                  | 15   | 77   | 22   | 42,5 | 27 |  |  |
| OPF12510-12A10 | 19        | -12  | 3/4"  | 7/8" - 14    |                  | 12,5 | 78   | 19,5 | 41,5 | 27 |  |  |
| OPF12510-12A12 | 19        | -12  | 3/4"  | 1.1/16" - 12 |                  | 15   | 80,5 | 22   | 44   | 27 |  |  |
| OPF12510-12A14 | 19        | -12  | 3/4"  | 1.3/16" - 12 |                  | 15   | 81   | 22,5 | 44,5 | 32 |  |  |
| OPF12510-12A16 | 19        | -12  | 3/4"  | 1.5/16" - 12 |                  | 19,8 | 83,5 | 23   | 47   | 34 |  |  |
| OPF12510-16A12 | 25        | -16  | 1"    | 1.1/16" - 12 |                  | 15   | 93   | 22   | 45   | 32 |  |  |
| OPF12510-16A16 | 25        | -16  | 1"    | 1.5/16" - 12 |                  | 19,8 | 96   | 23   | 48   | 34 |  |  |
| OPF12510-16A20 | 25        | -16  | 1"    | 1.5/8" - 12  |                  | 26   | 101  | 24,3 | 53   | 42 |  |  |



## SAE STANDARD CONNECTIONS

### OPF22712

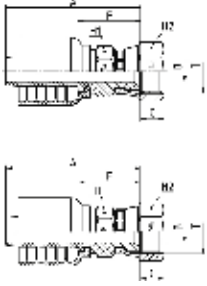
JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)

| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |    |      |      |    |    |    |  |
|----------------|-----------|------|------|--------------|------------------|----|------|------|----|----|----|--|
|                | DN        | Dash | inch |              | T                | B  | A    | C    | F  | H1 | H2 |  |
| OPF22712-12A14 | 19        | -12  | 3/4" | 1.3/16" - 12 |                  | 15 | 69,5 | 14,3 | 33 | 30 | 36 |  |
| OPF22712-16A20 | 25        | -16  | 1"   | 1.5/8" - 12  |                  | 26 | 91   | 16,2 | 43 | 41 | 50 |  |

## SAE STANDARD CONNECTIONS

### OPF22711/OPF22711KR/OPF22711K

JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON - SAE J516 / ISO 12151-5 (CRIMPED-BACK NUT)



FITTINGS  
F 9-10

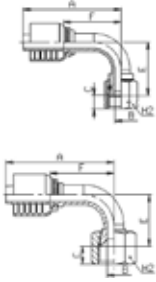
| PART. REF.       | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |    |  |
|------------------|-----------|------|-------|--------------|------------------|------|------|------|----|----|----|--|
|                  | DN        | Dash | inch  |              | T                | B    | A    | C    | F  | H1 | H2 |  |
| OPF22711-03A04K  | 5         | - 3  | 3/16" | 7/16" - 20   | 4                | 41,5 | 8,9  | 20   | 12 | 15 |    |  |
| OPF22711-04A04KR | 6         | - 4  | 1/4"  | 7/16" - 20   | 4                | 48   | 8,9  | 20,5 | 12 | 15 |    |  |
| OPF22711-04A05KR | 6         | - 4  | 1/4"  | 1/2" - 20    | 4                | 48,5 | 9,4  | 21   | 14 | 17 |    |  |
| OPF22711-04A06KR | 6         | - 4  | 1/4"  | 9/16" - 18   | 7                | 49   | 9,5  | 21,5 | 14 | 17 |    |  |
| OPF22711-05A05KR | 8         | - 5  | 5/16" | 1/2" - 20    | 4                | 49,5 | 9,4  | 21,5 | 17 | 17 |    |  |
| OPF22711-06A06KR | 10        | - 6  | 3/8"  | 9/16" - 18   | 7                | 51,5 | 9,5  | 22   | 17 | 17 |    |  |
| OPF22711-06A08KR | 10        | - 6  | 3/8"  | 3/4" - 16    | 9,3              | 56   | 10,7 | 26,5 | 19 | 22 |    |  |
| OPF22711-08A06KR | 12        | - 8  | 1/2"  | 9/16" - 18   | 7                | 55,5 | 9,5  | 24   | 19 | 17 |    |  |
| OPF22711-08A08KR | 12        | - 8  | 1/2"  | 3/4" - 16    | 9,3              | 58   | 10,7 | 27   | 19 | 22 |    |  |
| OPF22711-08A10KR | 12        | - 8  | 1/2"  | 7/8" - 14    | 9,3              | 60,5 | 12,5 | 29,5 | 22 | 25 |    |  |
| OPF22711-08A12KR | 12        | - 8  | 1/2"  | 1.1/16" - 12 | 15               | 60   | 14,1 | 28,5 | 27 | 32 |    |  |
| OPF22711-10A08KR | 16        | - 10 | 5/8"  | 3/4" - 16    | 9,3              | 62,5 | 10,7 | 28,5 | 22 | 22 |    |  |
| OPF22711-10A10KR | 16        | - 10 | 5/8"  | 7/8" - 14    | 9,3              | 64   | 12,5 | 29,5 | 22 | 25 |    |  |
| OPF22711-10A12KR | 16        | - 10 | 5/8"  | 1.1/16" - 12 | 15               | 63,5 | 14,1 | 29   | 27 | 32 |    |  |
| OPF22711-12A08KR | 19        | - 12 | 3/4"  | 3/4" - 16    | 9,3              | 66   | 10,7 | 29,5 | 27 | 22 |    |  |
| OPF22711-12A10KR | 19        | - 12 | 3/4"  | 7/8" - 14    | 12,5             | 67   | 12,5 | 30,5 | 27 | 25 |    |  |
| OPF22711-12A12KR | 19        | - 12 | 3/4"  | 1.1/16" - 12 | 15               | 66,5 | 14,1 | 30   | 27 | 32 |    |  |
| OPF22711-12A16   | 19        | - 12 | 3/4"  | 1.5/16" - 12 | 19,8             | 71   | 15,3 | 34,5 | 32 | 38 |    |  |
| OPF22711-16A12KR | 25        | - 16 | 1"    | 1.1/16" - 12 | 15               | 80,5 | 14,1 | 32,5 | 32 | 32 |    |  |
| OPF22711-16A16   | 25        | - 16 | 1"    | 1.5/16" - 12 | 19,8             | 83,5 | 15,3 | 35,5 | 32 | 38 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## SAE STANDARD CONNECTIONS

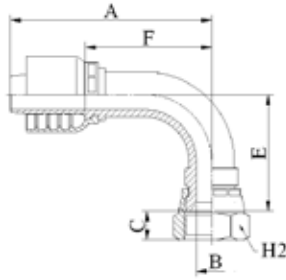
### OPF22592/OPF22593

90° JIC FEMALE ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5



| PART. REF.     | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |      |       |      |      |      |    |  |
|----------------|-----------|------|-------|--------------|------------------|------|-------|------|------|------|----|--|
|                | DN        | Dash | inch  |              | T                | B    | A     | C    | E    | F    | H2 |  |
| OPF22593-03A04 | 5         | - 3  | 3/16" | 7/16" - 20   |                  | 3    | 47,5  | 8,5  | 23,5 | 26   | 15 |  |
| OPF22592-04A04 | 6         | - 4  | 1/4"  | 7/16" - 20   |                  | 4    | 56    | 8,7  | 27   | 28,5 | 17 |  |
| OPF22592-04A05 | 6         | - 4  | 1/4"  | 1/2" - 20    |                  | 4    | 56    | 9,1  | 27,5 | 28,5 | 17 |  |
| OPF22593-04A06 | 6         | - 4  | 1/4"  | 9/16" - 18   |                  | 4    | 57    | 9,8  | 28   | 29,5 | 19 |  |
| OPF22593-04A08 | 6         | - 4  | 1/4"  | 3/4" - 16    |                  | 7    | 57    | 10   | 30,5 | 29,5 | 22 |  |
| OPF22592-05A05 | 8         | - 5  | 5/16" | 1/2" - 20    |                  | 5,5  | 59    | 9,1  | 28   | 31   | 17 |  |
| OPF22592-05A06 | 8         | - 5  | 5/16" | 9/16" - 18   |                  | 7    | 59    | 9,2  | 28,5 | 31   | 19 |  |
| OPF22592-06A05 | 10        | - 6  | 3/8"  | 1/2" - 20    |                  | 5,5  | 59,5  | 9,1  | 26,5 | 30   | 17 |  |
| OPF22592-06A06 | 10        | - 6  | 3/8"  | 9/16" - 18   |                  | 7    | 65    | 9,2  | 32,5 | 35,5 | 19 |  |
| OPF22593-06A08 | 10        | - 6  | 3/8"  | 3/4" - 16    |                  | 7    | 66    | 10,1 | 29,5 | 36,5 | 22 |  |
| OPF22593-06A10 | 10        | - 6  | 3/8"  | 7/8" - 14    |                  | 9,3  | 66    | 12,4 | 31,5 | 36,5 | 27 |  |
| OPF22592-08A06 | 12        | - 8  | 1/2"  | 9/16" - 18   |                  | 7    | 68    | 9,2  | 33   | 37   | 19 |  |
| OPF22592-08A08 | 12        | - 8  | 1/2"  | 3/4" - 16    |                  | 9,3  | 75,5  | 10,2 | 41   | 44   | 22 |  |
| OPF22593-08A10 | 12        | - 8  | 1/2"  | 7/8" - 14    |                  | 9,3  | 76    | 12,4 | 36   | 45   | 27 |  |
| OPF22593-08A12 | 12        | - 8  | 1/2"  | 1.1/16" - 12 |                  | 12,5 | 76    | 14,1 | 36   | 45   | 32 |  |
| OPF22592-10A10 | 16        | - 10 | 5/8"  | 7/8" - 14    |                  | 12,5 | 88    | 12,3 | 52,5 | 53,5 | 27 |  |
| OPF22593-10A12 | 16        | - 10 | 5/8"  | 1.1/16" - 12 |                  | 12,5 | 86    | 14,1 | 50   | 51,5 | 32 |  |
| OPF22592-12A10 | 19        | - 12 | 3/4"  | 7/8" - 14    |                  | 12,5 | 91,5  | 12,3 | 52,5 | 55   | 27 |  |
| OPF22592-12A12 | 19        | - 12 | 3/4"  | 1.1/16" - 12 |                  | 15   | 98    | 14,2 | 58   | 62   | 32 |  |
| OPF22592-12A14 | 19        | - 12 | 3/4"  | 1.3/16" - 12 |                  | 15   | 99    | 14,3 | 58   | 63   | 36 |  |
| OPF22592-12A16 | 19        | - 12 | 3/4"  | 1.5/16" - 12 |                  | 19,8 | 99    | 15   | 57,5 | 63   | 38 |  |
| OPF22592-16A16 | 25        | - 16 | 1"    | 1.5/16" - 12 |                  | 19,8 | 124   | 15   | 68,5 | 76   | 38 |  |
| OPF22592-16A20 | 25        | - 16 | 1"    | 1.5/8" - 12  |                  | 26   | 125,5 | 16,2 | 74,5 | 77,5 | 50 |  |

OPF22592: THRUST-WIRE NUT / OPF22593: SLIP-ON NUT



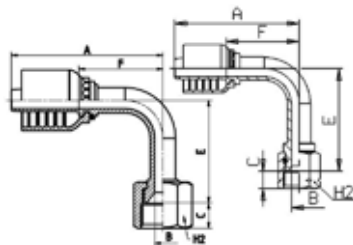
## SAE STANDARD CONNECTIONS

### OPF22591KR

90° ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5  
(CRIMPED-BACK NUT)

| PART. REF.       | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |      |      |      |      |    |    |
|------------------|-----------|------|------|--------------|--|------------------|------|------|------|------|----|----|
|                  | DN        | Dash | inch |              |  | T                | B    | A    | C    | E    | F  | H2 |
| OPF22591-04A04KR | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4,2              | 56   | 8,9  | 26   | 28,5 | 15 |    |
| OPF22591-04A05KR | 6         | - 4  | 1/4" | 1/2" - 20    |  | 4                | 56   | 9,4  | 26,5 | 28,5 | 17 |    |
| OPF22591-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 65   | 9,5  | 32   | 35,5 | 17 |    |
| OPF22591-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 75,5 | 10,7 | 40,5 | 44   | 22 |    |
| OPF22591-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 88   | 12,5 | 47   | 53,5 | 25 |    |
| OPF22591-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 98   | 14,1 | 57   | 62   | 32 |    |

FITTINGS  
F 9-12



## SAE STANDARD CONNECTIONS

### OPF24792/OPF24793 LONG DROP

90° JIC FEMALE LONG DROP ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5

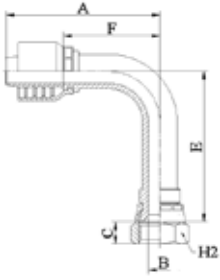
| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|--------------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |              |  | T                | B     | A    | C    | E    | F  | H2 |
| OPF24792-04A04 | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4                | 56    | 8,7  | 45   | 28,5 | 17 |    |
| OPF24792-04A05 | 6         | - 4  | 1/4" | 1/2" - 20    |  | 4                | 56    | 9,1  | 45   | 28,5 | 17 |    |
| OPF24793-04A06 | 6         | - 4  | 1/4" | 9/16" - 18   |  | 4                | 57    | 9,8  | 55,5 | 29,5 | 19 |    |
| OPF24792-06A06 | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 65    | 9,2  | 55   | 35,5 | 19 |    |
| OPF24793-06A08 | 10        | - 6  | 3/8" | 3/4" - 16    |  | 7                | 66    | 10,1 | 61,5 | 36,5 | 22 |    |
| OPF24792-08A08 | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 75,5  | 10,2 | 61   | 44   | 22 |    |
| OPF24793-08A10 | 12        | - 8  | 1/2" | 7/8" - 14    |  | 9,3              | 76    | 12,4 | 65   | 45   | 27 |    |
| OPF24792-10A10 | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 88    | 12,3 | 65,5 | 53,5 | 27 |    |
| OPF24792-12A12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 98    | 14,2 | 94,5 | 62   | 32 |    |
| OPF24792-16A16 | 25        | - 16 | 1"   | 1.5/16" - 12 |  | 19,8             | 125,5 | 15   | 110  | 77,5 | 38 |    |

OPF24792: THRUST-WIRE NUT / OPF24793: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

### OPF24791KR

90° LONG DROP ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5 (CRIMPED-BACK NUT)

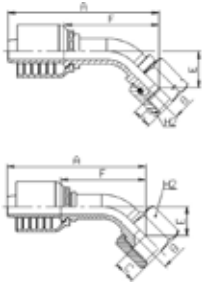


| PART. REF.       | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |      |    |      |    |  |
|------------------|-----------|------|------|--------------|------------------|------|------|------|----|------|----|--|
|                  | DN        | Dash | inch |              | T                | B    | A    | C    | E  | F    | H2 |  |
| OPF24791-04A04KR | 6         | - 4  | 1/4" | 7/16" - 20   |                  | 4,2  | 56   | 8,9  | 45 | 28,5 | 15 |  |
| OPF24791-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   |                  | 7    | 65   | 9,5  | 55 | 35,5 | 17 |  |
| OPF24791-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    |                  | 9,3  | 75,5 | 10,7 | 64 | 44   | 22 |  |
| OPF24791-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    |                  | 12,5 | 88   | 12,5 | 70 | 53,5 | 25 |  |
| OPF24791-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |                  | 15   | 98   | 14,1 | 96 | 62   | 32 |  |

## SAE STANDARD CONNECTIONS

### OPF22542/OPF22543

45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5



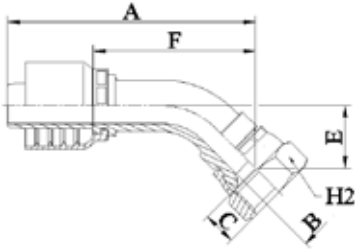
| PART. REF.     | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |       |      |      |      |    |    |  |
|----------------|-----------|------|-------|--------------|------------------|-------|------|------|------|----|----|--|
|                | DN        | Dash | inch  |              | T                | B     | A    | C    | E    | F  | H2 |  |
| OPF22542-04A04 | 6         | - 4  | 1/4"  | 7/16" - 20   | 4                | 63    | 8,7  | 14,5 | 35,5 | 17 |    |  |
| OPF22542-04A05 | 6         | - 4  | 1/4"  | 1/2" - 20    | 4                | 63    | 9,1  | 14,5 | 35,5 | 17 |    |  |
| OPF22543-04A06 | 6         | - 4  | 1/4"  | 9/16" - 18   | 4                | 63    | 9,8  | 14   | 35,5 | 19 |    |  |
| OPF22542-05A05 | 8         | - 5  | 5/16" | 1/2" - 20    | 5,5              | 65,5  | 9,1  | 14   | 37,5 | 17 |    |  |
| OPF22542-05A06 | 8         | - 5  | 5/16" | 9/16" - 18   | 7                | 66    | 9,2  | 14,5 | 38   | 19 |    |  |
| OPF22542-06A06 | 10        | - 6  | 3/8"  | 9/16" - 18   | 7                | 71,5  | 9,2  | 16,5 | 42   | 19 |    |  |
| OPF22543-06A08 | 10        | - 6  | 3/8"  | 3/4" - 16    | 7                | 70,5  | 10,1 | 14   | 41   | 22 |    |  |
| OPF22543-06A10 | 10        | - 6  | 3/8"  | 7/8" - 14    | 9,3              | 72    | 12,4 | 15,5 | 42,5 | 27 |    |  |
| OPF22542-08A08 | 12        | - 8  | 1/2"  | 3/4" - 16    | 9,3              | 83    | 10,2 | 20   | 52   | 22 |    |  |
| OPF22543-08A10 | 12        | - 8  | 1/2"  | 7/8" - 14    | 9,3              | 80,5  | 12,4 | 17   | 49,5 | 27 |    |  |
| OPF22543-08A12 | 12        | - 8  | 1/2"  | 1.1/16" - 12 | 12,5             | 80,5  | 14,1 | 17   | 49,5 | 32 |    |  |
| OPF22542-10A10 | 16        | - 10 | 5/8"  | 7/8" - 14    | 12,5             | 96,5  | 12,3 | 25,5 | 62   | 27 |    |  |
| OPF22543-10A12 | 16        | - 10 | 5/8"  | 1.1/16" - 12 | 12,5             | 94,5  | 14,1 | 24   | 60   | 32 |    |  |
| OPF22542-12A12 | 19        | - 12 | 3/4"  | 1.1/16" - 12 | 15               | 106   | 14,2 | 27,5 | 70   | 32 |    |  |
| OPF22542-12A14 | 19        | - 12 | 3/4"  | 1.3/16" - 12 | 15               | 106   | 14,3 | 27,5 | 69,5 | 36 |    |  |
| OPF22542-12A16 | 19        | - 12 | 3/4"  | 1.5/16" - 12 | 19,8             | 106,5 | 15   | 27,5 | 70   | 38 |    |  |
| OPF22542-16A12 | 25        | - 16 | 1"    | 1.1/16" - 12 | 15               | 120,5 | 14,2 | 27,5 | 72,5 | 32 |    |  |
| OPF22542-16A16 | 25        | - 16 | 1"    | 1.5/16" - 12 | 19,8             | 132,5 | 15   | 32   | 84   | 38 |    |  |
| OPF22542-16A20 | 25        | - 16 | 1"    | 1.5/8" - 12  | 26               | 138   | 16,2 | 36   | 90   | 50 |    |  |

OPF22542: THRUST-WIRE NUT / OPF22543: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

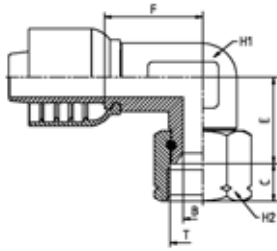
### OPF22541KR

45° ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5  
(CRIMPED-BACK NUT)



| PART. REF.       | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|------------------|-----------|------|------|--------------|--|------------------|-------|------|------|------|----|----|
|                  | DN        | Dash | inch |              |  | T                | B     | A    | C    | E    | F  | H2 |
| OPF22541-04A04KR | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4,2              | 62    | 8,9  | 13,5 | 34,5 | 15 |    |
| OPF22541-04A05KR | 6         | - 4  | 1/4" | 1/2" - 20    |  | 4                | 62,5  | 9,4  | 14   | 35   | 17 |    |
| OPF22541-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 71,5  | 9,5  | 16   | 42   | 17 |    |
| OPF22541-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 83    | 10,7 | 20   | 52   | 22 |    |
| OPF22541-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 95,5  | 12,5 | 22,5 | 61   | 25 |    |
| OPF22541-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 105,5 | 14,1 | 26,5 | 69   | 32 |    |

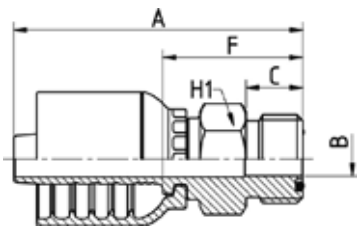
## SAE STANDARD CONNECTIONS



### OPF22582F

90° JIC FEMALE COMPACT ELBOW 37° CONE SEAT SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)

| PART. REF.      | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |      |      |    |    |    |
|-----------------|-----------|------|------|--------------|------------------|------|------|------|------|----|----|----|
|                 | DN        | Dash | inch |              | T                | B    | A    | C    | E    | F  | H1 | H2 |
| OPF22582-04A04F | 6         | -4   | 1/4" | 7/16" - 20   | 4                | 47,5 | 8,7  | 20,5 | 20   | 14 | 17 |    |
| OPF22582-04A06F | 6         | -4   | 1/4" | 9/16" - 18   | 7                | 47,5 | 9,2  | 21,5 | 20   | 14 | 19 |    |
| OPF22582-06A06F | 10        | -6   | 3/8" | 9/16" - 18   | 7                | 52,5 | 9,2  | 24   | 23   | 19 | 19 |    |
| OPF22582-06A08F | 10        | -6   | 3/8" | 3/4" - 16    | 9,3              | 56   | 10,2 | 28   | 26,5 | 22 | 22 |    |
| OPF22582-08A08F | 12        | -8   | 1/2" | 3/4" - 16    | 9,3              | 56   | 10,2 | 28   | 25   | 22 | 22 |    |
| OPF22582-08A10F | 12        | -8   | 1/2" | 7/8" - 14    | 12,5             | 56   | 12,3 | 29   | 25   | 22 | 27 |    |
| OPF22582-12A12F | 19        | -12  | 3/4" | 1.1/16" - 12 | 15               | 74   | 14,2 | 33   | 37,5 | 27 | 32 |    |
| OPF22582-16A16F | 25        | -16  | 1"   | 1.5/16" - 12 | 20               | 100  | 15   | 40   | 52   | 36 | 38 |    |



## SAE STANDARD CONNECTIONS

### OPF12410

ORFS MALE - SAE J516 / ISO 12151-1

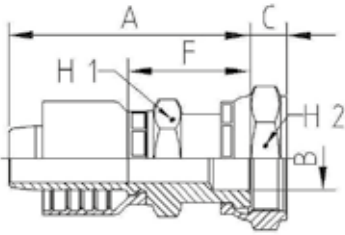
| PART. REF.     | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |  |  |
|----------------|-----------|------|-------|--------------|------------------|------|------|------|----|----|--|--|
|                | DN        | Dash | inch  |              | T                | B    | A    | C    | F  | H1 |  |  |
| OPF12410-04A04 | 6         | -4   | 1/4"  | 9/16" - 18   | 4                | 51,5 | 9,8  | 24   | 16 |    |  |  |
| OPF12410-04A06 | 6         | -4   | 1/4"  | 11/16" - 16  | 6,7              | 54   | 11,2 | 26,5 | 19 |    |  |  |
| OPF12410-05A06 | 8         | -5   | 5/16" | 11/16" - 16  | 6,7              | 55   | 11,2 | 27   | 19 |    |  |  |
| OPF12410-06A06 | 10        | -6   | 3/8"  | 11/16" - 16  | 6,7              | 57   | 11,2 | 27,5 | 19 |    |  |  |
| OPF12410-06A08 | 10        | -6   | 3/8"  | 13/16" - 16  | 9,3              | 59,5 | 12,8 | 30   | 22 |    |  |  |
| OPF12410-08A08 | 12        | -8   | 1/2"  | 13/16" - 16  | 9,3              | 61,5 | 12,8 | 30,5 | 22 |    |  |  |
| OPF12410-08A10 | 12        | -8   | 1/2"  | 1" - 14      | 12,5             | 66   | 15,5 | 35   | 27 |    |  |  |
| OPF12410-10A10 | 16        | -10  | 5/8"  | 1" - 14      | 12,5             | 69   | 15,5 | 34,5 | 27 |    |  |  |
| OPF12410-10A12 | 16        | -10  | 5/8"  | 1.3/16" - 12 | 15               | 72   | 17   | 37,5 | 32 |    |  |  |
| OPF12410-12A12 | 19        | -12  | 3/4"  | 1.3/16" - 12 | 15               | 75,5 | 17   | 39   | 32 |    |  |  |
| OPF12410-12A16 | 19        | -12  | 3/4"  | 1.7/16" - 12 | 19,8             | 77   | 17,5 | 40,5 | 38 |    |  |  |
| OPF12410-16A16 | 25        | -16  | 1"    | 1.7/16" - 12 | 19,8             | 90   | 17,5 | 42   | 38 |    |  |  |



## SAE STANDARD CONNECTIONS

### OPF22411

ORFS FEMALE - SAE J516 / ISO 12151-1 PULL-BACK TYPE

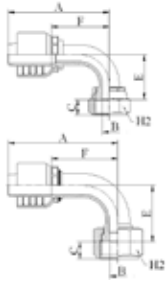


| PART. REF.     | HOSE BORE |      |       | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |    |
|----------------|-----------|------|-------|--------------|------------------|------|------|------|----|----|----|
|                | DN        | Dash | inch  |              | T                | B    | A    | C    | F  | H1 | H2 |
| OPF22411-04A04 | 6         | -4   | 1/4"  | 9/16" - 18   | 4                | 55   | 8    | 27,5 | 13 | 19 |    |
| OPF22411-04A06 | 6         | -4   | 1/4"  | 11/16" - 16  | 7                | 57,5 | 9,5  | 30   | 16 | 22 |    |
| OPF22411-05A06 | 8         | -5   | 5/16" | 11/16" - 16  | 7                | 58,5 | 9,5  | 30,5 | 16 | 22 |    |
| OPF22411-06A06 | 10        | -6   | 3/8"  | 11/16" - 16  | 7                | 60,5 | 9,5  | 31   | 16 | 22 |    |
| OPF22411-06A08 | 10        | -6   | 3/8"  | 13/16" - 16  | 9,3              | 65   | 11   | 35,5 | 19 | 24 |    |
| OPF22411-08A06 | 12        | -8   | 1/2"  | 11/16" - 16  | 7                | 63   | 9,5  | 32   | 19 | 22 |    |
| OPF22411-08A08 | 12        | -8   | 1/2"  | 13/16" - 16  | 9,3              | 67   | 11   | 36   | 19 | 24 |    |
| OPF22411-08A10 | 12        | -8   | 1/2"  | 1" - 14      | 11,5             | 69,5 | 13,5 | 38,5 | 24 | 30 |    |
| OPF22411-08A12 | 12        | -8   | 1/2"  | 1.3/16" - 12 | 13,9             | 73   | 14,5 | 42   | 28 | 36 |    |
| OPF22411-10A10 | 16        | -10  | 5/8"  | 1" - 14      | 11,5             | 73   | 13,5 | 38,5 | 24 | 30 |    |
| OPF22411-10A12 | 16        | -10  | 5/8"  | 1.3/16" - 12 | 13,9             | 76,5 | 14,5 | 42   | 28 | 36 |    |
| OPF22411-12A10 | 19        | -12  | 3/4"  | 1" - 14      | 11,5             | 77,5 | 13,5 | 41   | 28 | 30 |    |
| OPF22411-12A12 | 19        | -12  | 3/4"  | 1.3/16" - 12 | 13,9             | 80   | 14,5 | 43,5 | 28 | 36 |    |
| OPF22411-12A16 | 19        | -12  | 3/4"  | 1.7/16" - 12 | 19,8             | 82   | 15   | 45,5 | 36 | 41 |    |
| OPF22411-16A12 | 25        | -16  | 1"    | 1.3/16" - 12 | 13,9             | 94   | 13,5 | 48   | 36 | 36 |    |
| OPF22411-16A16 | 25        | -16  | 1"    | 1.7/16" - 12 | 19,8             | 94,5 | 15   | 46,5 | 36 | 41 |    |

## SAE STANDARD CONNECTIONS

### OPF22491/OPF22493

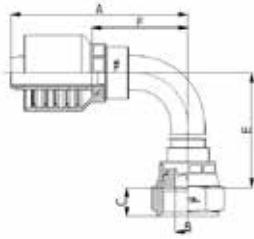
90° ORFS FEMALE SWEPT ELBOW - SAE J516 / ISO 12151-1



| PART. REF.     | HOSE BORE |      |       | Thread        | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|-------|---------------|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch  |               | T                | B     | A    | C    | E    | F  | H2 |
| OPF22493-04A04 | 6         | - 4  | 1/4"  | 9/16" - 18    | 4                | 55    | 8,2  | 22   | 27,5 | 17 |    |
| OPF22493-04A06 | 6         | - 4  | 1/4"  | 11/16" - 16   | 7                | 55    | 9,5  | 22   | 27,5 | 22 |    |
| OPF22493-05A06 | 8         | - 5  | 5/16" | 11/16" - 16   | 7                | 60    | 9,5  | 23   | 32   | 22 |    |
| OPF22493-06A06 | 10        | - 6  | 3/8"  | 11/16" - 16   | 6                | 59,5  | 9,5  | 24   | 30   | 22 |    |
| OPF22493-06A08 | 10        | - 6  | 3/8"  | 13/16" - 16   | 9,3              | 59,5  | 11   | 26,5 | 30   | 24 |    |
| OPF22491-08A06 | 12        | - 8  | 1/2"  | 11/16" - 16   | 7                | 61,5  | 9,5  | 24,5 | 30   | 22 |    |
| OPF22493-08A08 | 12        | - 8  | 1/2"  | 13/16" - 16   | 9                | 71,5  | 11   | 30   | 40,5 | 24 |    |
| OPF22493-08A10 | 12        | - 8  | 1/2"  | 1" - 14       | 11,5             | 71    | 13,5 | 30,5 | 40   | 30 |    |
| OPF22493-08A12 | 12        | - 8  | 1/2"  | 1.3/16" - 12  | 13,9             | 71    | 14,5 | 37,5 | 39,5 | 36 |    |
| OPF22493-10A10 | 16        | - 10 | 5/8"  | 1" - 14       | 11,5             | 82,5  | 13,5 | 37,5 | 48   | 30 |    |
| OPF22493-10A12 | 16        | - 10 | 5/8"  | 1.3/16" - 12  | 13,9             | 82,5  | 14,5 | 41   | 48   | 36 |    |
| OPF22491-12A10 | 19        | - 12 | 3/4"  | 1" - 14       | 11,5             | 85,5  | 13,5 | 38   | 49   | 30 |    |
| OPF22493-12A12 | 19        | - 12 | 3/4"  | 1.3/16" - 12  | 13,9             | 93    | 14,5 | 48   | 56,5 | 36 |    |
| OPF22493-12A16 | 19        | - 12 | 3/4"  | 1.7/16" - 12  | 19,8             | 93    | 14,8 | 47,5 | 56,5 | 41 |    |
| OPF22491-16A12 | 25        | - 16 | 1"    | 1.3/16" - 12  | 13,9             | 106   | 14,5 | 48   | 57,5 | 36 |    |
| OPF22493-16A16 | 25        | - 16 | 1"    | 1.7/16" - 12  | 19,8             | 119,5 | 14,8 | 56   | 71,5 | 41 |    |
| OPF22493-16A20 | 25        | - 16 | 1"    | 1.11/16" - 12 | 26               | 119,5 | 14,8 | 58,5 | 71,5 | 50 |    |

OPF22491: CRIMPED-BACK NUT / OPF22493: SLIP-ON NUT

## SAE STANDARD CONNECTIONS



### OPF24491 LONG DROP

**90° ORFS FEMALE LONG DROP ELBOW - SAE J516 / ISO 12151-1  
(CRIMPED-BACK NUT)**

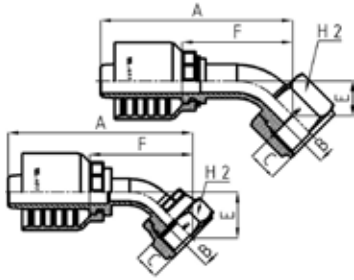
| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|--------------|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |              | T                | B     | A    | C    | E    | F  | H2 |
| OPF24491-04A04 | 6         | - 4  | 1/4" | 9/16" - 18   | 4,4              | 52,5  | 8    | 46   | 25   | 17 |    |
| OPF24491-06A06 | 10        | - 6  | 3/8" | 11/16" - 16  | 6,7              | 61,5  | 9,5  | 54   | 32   | 22 |    |
| OPF24491-06A08 | 10        | - 6  | 3/8" | 13/16" - 16  | 6,7              | 61,5  | 11   | 54   | 32   | 24 |    |
| OPF24491-08A08 | 12        | - 8  | 1/2" | 13/16" - 16  | 9,6              | 68    | 11   | 64   | 37   | 24 |    |
| OPF24491-08A10 | 12        | - 8  | 1/2" | 1" - 14      | 9,6              | 68    | 12,5 | 64,5 | 37   | 30 |    |
| OPF24491-10A10 | 16        | - 10 | 5/8" | 1" - 14      | 12               | 75,5  | 13   | 70   | 41   | 30 |    |
| OPF24491-10A12 | 16        | - 10 | 5/8" | 1.3/16" - 12 | 12,7             | 75,5  | 13,5 | 73   | 41   | 36 |    |
| OPF24491-12A12 | 19        | - 12 | 3/4" | 1.3/16" - 12 | 15               | 95    | 13,5 | 96   | 58,5 | 36 |    |
| OPF24491-16A16 | 25        | - 16 | 1"   | 1.7/16" - 12 | 19,8             | 119,5 | 13,5 | 114  | 71,5 | 41 |    |

All items are made from brazing with the exception of OPF24491-12A12 and OPF24491-16A16

## SAE STANDARD CONNECTIONS

### OPF22441/OPF22443

45° ORFS FEMALE ELBOW - SAE J516 / ISO 12151-1



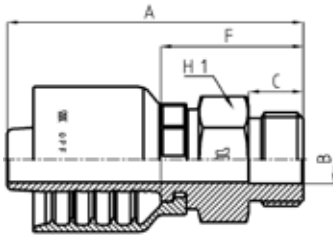
| PART. REF.     | HOSE BORE |      |       | Thread        | DIMENSIONS<br>mm |      |      |      |      |    |    |
|----------------|-----------|------|-------|---------------|------------------|------|------|------|------|----|----|
|                | DN        | Dash | inch  |               | T                | B    | A    | C    | E    | F  | H2 |
| OPF22443-04A04 | 6         | -4   | 1/4"  | 9/16" - 18    | 4                | 58,5 | 8,2  | 10,5 | 31   | 17 |    |
| OPF22443-04A06 | 6         | -4   | 1/4"  | 11/16" - 16   | 7                | 58,5 | 9,5  | 10,5 | 31   | 22 |    |
| OPF22443-05A06 | 8         | -5   | 5/16" | 11/16" - 16   | 7                | 62   | 9,5  | 10,5 | 34   | 22 |    |
| OPF22443-06A06 | 10        | -6   | 3/8"  | 11/16" - 16   | 6                | 61,5 | 9,5  | 11   | 32,5 | 22 |    |
| OPF22443-06A08 | 10        | -6   | 3/8"  | 13/16" - 16   | 9,3              | 63   | 11   | 12,5 | 34   | 24 |    |
| OPF22441-08A06 | 12        | -8   | 1/2"  | 11/16" - 16   | 7                | 63,5 | 9,5  | 11   | 32,5 | 22 |    |
| OPF22443-08A08 | 12        | -8   | 1/2"  | 13/16" - 16   | 9                | 73   | 11   | 13   | 42   | 24 |    |
| OPF22443-08A10 | 12        | -8   | 1/2"  | 1" - 14       | 11,5             | 73   | 13,5 | 13,5 | 42   | 30 |    |
| OPF22443-08A12 | 12        | -8   | 1/2"  | 1.3/16" - 12  | 13,9             | 78   | 14,5 | 18,5 | 46,5 | 36 |    |
| OPF22443-10A10 | 16        | -10  | 5/8"  | 1" - 14       | 11,5             | 83,5 | 13,5 | 16   | 49   | 30 |    |
| OPF22443-10A12 | 16        | -10  | 5/8"  | 1.3/16" - 12  | 13,9             | 86   | 14,5 | 18,5 | 51,5 | 36 |    |
| OPF22441-12A10 | 19        | -12  | 3/4"  | 1" - 14       | 11,5             | 87   | 13,5 | 16,5 | 50,5 | 30 |    |
| OPF22443-12A12 | 19        | -12  | 3/4"  | 1.3/16" - 12  | 13,9             | 97   | 14,5 | 21,5 | 60,5 | 36 |    |
| OPF22443-12A16 | 19        | -12  | 3/4"  | 1.7/16" - 12  | 19,8             | 96,5 | 14,8 | 21   | 60   | 41 |    |
| OPF22443-16A16 | 25        | -16  | 1"    | 1.7/16" - 12  | 19,8             | 120  | 14,8 | 23,5 | 72   | 41 |    |
| OPF22443-16A20 | 25        | -16  | 1"    | 1.11/16" - 12 | 26               | 122  | 14,8 | 25   | 74   | 50 |    |

OPF22441: CRIMPED-BACK NUT / OPF22443: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

### OPF13010

SAE MALE O-RING BOSS TYPE - SAE J516 / ISO 11926

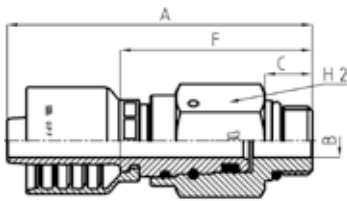


| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|------|--------------|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |              | T                | B    | A    | C    | F  | H1 |  |
| OPF13010-04A04 | 6         | -4   | 1/4" | 7/16" - 20   | 4,4              | 51,5 | 9,1  | 24   | 14 |    |  |
| OPF13010-04A06 | 6         | -4   | 1/4" | 9/16" - 18   | 7,5              | 52   | 9,9  | 24,5 | 17 |    |  |
| OPF13010-06A06 | 10        | -6   | 3/8" | 9/16" - 18   | 7,5              | 55   | 9,9  | 25,5 | 17 |    |  |
| OPF13010-06A08 | 10        | -6   | 3/8" | 3/4" - 16    | 9,9              | 58   | 11,1 | 28,5 | 22 |    |  |
| OPF13010-08A08 | 12        | -8   | 1/2" | 3/4" - 16    | 9,9              | 60   | 11,1 | 29   | 22 |    |  |
| OPF13010-08A10 | 12        | -8   | 1/2" | 7/8" - 14    | 12,3             | 63   | 12,7 | 32   | 25 |    |  |
| OPF13010-10A10 | 16        | -10  | 5/8" | 7/8" - 14    | 12,5             | 63   | 12,7 | 32   | 25 |    |  |
| OPF13010-10A12 | 16        | -10  | 5/8" | 1.1/16" - 12 | 15,5             | 72   | 15,1 | 37,5 | 32 |    |  |
| OPF13010-12A12 | 19        | -12  | 3/4" | 1.1/16" - 12 | 15,5             | 76   | 15,1 | 39,5 | 32 |    |  |
| OPF13010-12A16 | 19        | -12  | 3/4" | 1.5/16" - 12 | 21,5             | 76,5 | 15,1 | 40   | 38 |    |  |
| OPF13010-16A16 | 25        | -16  | 1"   | 1.5/16" - 12 | 21,5             | 89,5 | 15,1 | 41   | 38 |    |  |

## SAE STANDARD CONNECTIONS

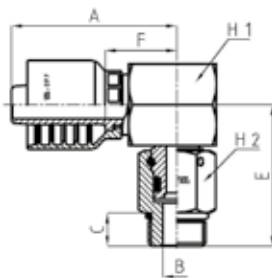
### OPF14310

SAE SWIVEL MALE OR.BOSS TYPE



| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS mm |      |      |      |    |    |  |
|----------------|-----------|------|------|--------------|--|---------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |              |  | T             | B    | A    | C    | F  | H2 |  |
| OPF14310-04A04 | 6         | - 4  | 1/4" | 7/16" - 20   |  | 4             | 70,5 | 9,1  | 43   | 17 |    |  |
| OPF14310-04A06 | 6         | - 4  | 1/4" | 9/16" - 18   |  | 7             | 71,5 | 9,9  | 44   | 22 |    |  |
| OPF14310-06A06 | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7             | 77,5 | 9,9  | 48   | 22 |    |  |
| OPF14310-06A08 | 10        | - 6  | 3/8" | 3/4" - 16    |  | 9,3           | 76,5 | 11,1 | 47   | 22 |    |  |
| OPF14310-08A08 | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3           | 84   | 11,1 | 53   | 27 |    |  |
| OPF14310-08A10 | 12        | - 8  | 1/2" | 7/8" - 14    |  | 9,3           | 72,4 | 13   | 41,5 | 27 |    |  |
| OPF14310-12A12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 12,5          | 87   | 15   | 50,5 | 32 |    |  |

Not to be used as a live swivel



## SAE STANDARD CONNECTIONS

### OPF14390

90° SAE SWIVEL MALE OR.BOSS

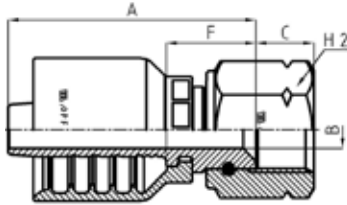
| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS mm |      |      |      |      |    |    |
|----------------|-----------|------|------|--------------|--|---------------|------|------|------|------|----|----|
|                | DN        | Dash | inch |              |  | T             | B    | A    | C    | E    | F  | H1 |
| OPF14390-06A06 | 10        | - 6  | 3/8" | 9/16" - 18   |  | 5,7           | 49,5 | 9,9  | 40   | 20   | 22 | 17 |
| OPF14390-06A08 | 10        | - 6  | 3/8" | 3/4" - 16    |  | 9,3           | 49,5 | 11,1 | 44,5 | 20   | 22 | 22 |
| OPF14390-08A08 | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3           | 54,5 | 11,1 | 47   | 23,5 | 27 | 22 |
| OPF14390-08A10 | 12        | - 8  | 1/2" | 7/8" - 14    |  | 9,8           | 54,5 | 13   | 47   | 23,5 | 27 | 27 |
| OPF14390-10A10 | 16        | - 10 | 5/8" | 7/8" - 14    |  | 9,8           | 58   | 13   | 47   | 23,5 | 27 | 27 |
| OPF14390-12A12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 13            | 64,5 | 15   | 58,5 | 28   | 34 | 32 |

Not to be used as a live swivel

## SAE STANDARD CONNECTIONS

### OPF22612

SAE FEMALE 45° CONE SEAT - SAE J516/J512 (THRUST-WIRE NUT)

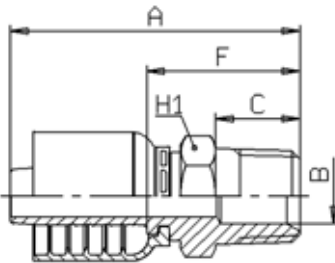


| PART. REF.     | HOSE BORE |      |      | Thread     | DIMENSIONS<br>mm |    |      |      |    |    |  |
|----------------|-----------|------|------|------------|------------------|----|------|------|----|----|--|
|                | DN        | Dash | inch |            | T                | B  | A    | C    | F  | H2 |  |
| OPF22612-06A06 | 10        | -6   | 3/8" | 9/16" - 18 | 7                | 46 | 10,8 | 16,5 | 22 |    |  |

## SAE STANDARD CONNECTIONS

### OPF12810

NPTF MALE 60° CONE SEAT - SAE J516/J514

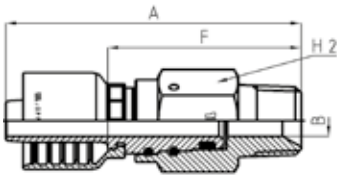


| PART. REF.     | HOSE BORE |      |       | Thread        | DIMENSIONS<br>mm |       |      |      |    |    |  |
|----------------|-----------|------|-------|---------------|------------------|-------|------|------|----|----|--|
|                | DN        | Dash | inch  |               | T                | B     | A    | C    | F  | H1 |  |
| OPF12810-03A02 | 5         | -3   | 3/16" | 1/8" - 27     | 3                | 45    | 10   | 23,5 | 12 |    |  |
| OPF12810-03A04 | 5         | -3   | 3/16" | 1/4" - 18     | 5,5              | 50,5  | 14,5 | 29   | 14 |    |  |
| OPF12810-04A02 | 6         | -4   | 1/4"  | 1/8" - 27     | 4                | 51,5  | 10   | 24   | 12 |    |  |
| OPF12810-04A04 | 6         | -4   | 1/4"  | 1/4" - 18     | 5,5              | 56,5  | 14,5 | 29   | 14 |    |  |
| OPF12810-04A06 | 6         | -4   | 1/4"  | 3/8" - 18     | 9,3              | 55    | 14,5 | 27,5 | 19 |    |  |
| OPF12810-04A08 | 6         | -4   | 1/4"  | 1/2" - 14     | 9,3              | 61    | 19,2 | 33,5 | 24 |    |  |
| OPF12810-05A04 | 8         | -5   | 5/16" | 1/4" - 18     | 5,5              | 57,5  | 14,5 | 29,5 | 14 |    |  |
| OPF12810-05A06 | 8         | -5   | 5/16" | 3/8" - 18     | 9,3              | 60    | 14,5 | 32   | 19 |    |  |
| OPF12810-06A04 | 10        | -6   | 3/8"  | 1/4" - 18     | 5,5              | 59,5  | 14,5 | 30   | 14 |    |  |
| OPF12810-06A06 | 10        | -6   | 3/8"  | 3/8" - 18     | 9,3              | 58    | 14,5 | 28,5 | 19 |    |  |
| OPF12810-06A08 | 10        | -6   | 3/8"  | 1/2" - 14     | 12,5             | 64    | 19,2 | 34,5 | 24 |    |  |
| OPF12810-08A06 | 12        | -8   | 1/2"  | 3/8" - 18     | 9,3              | 60    | 14,5 | 29   | 19 |    |  |
| OPF12810-08A08 | 12        | -8   | 1/2"  | 1/2" - 14     | 12,5             | 66    | 19,2 | 35   | 24 |    |  |
| OPF12810-08A12 | 12        | -8   | 1/2"  | 3/4" - 14     | 15,5             | 66,5  | 19,2 | 35,5 | 27 |    |  |
| OPF12810-10A08 | 16        | -10  | 5/8"  | 1/2" - 14     | 12,5             | 73    | 19,2 | 38,5 | 24 |    |  |
| OPF12810-10A12 | 16        | -10  | 5/8"  | 3/4" - 14     | 16               | 74,5  | 19,2 | 40   | 27 |    |  |
| OPF12810-12A08 | 19        | -12  | 3/4"  | 1/2" - 14     | 12,5             | 73    | 19,2 | 36,5 | 27 |    |  |
| OPF12810-12A12 | 19        | -12  | 3/4"  | 3/4" - 14     | 16               | 73    | 19,2 | 36,5 | 27 |    |  |
| OPF12810-12A16 | 19        | -12  | 3/4"  | 1" - 11,5     | 19,8             | 82,5  | 24,2 | 46   | 36 |    |  |
| OPF12810-16A12 | 25        | -16  | 1"    | 3/4" - 14     | 15,5             | 87    | 19,2 | 39   | 32 |    |  |
| OPF12810-16A16 | 25        | -16  | 1"    | 1" - 11,5     | 19,8             | 92    | 24,2 | 44   | 36 |    |  |
| OPF12810-16A20 | 25        | -16  | 1"    | 1.1/4" - 11,5 | 26               | 104,5 | 25   | 56,5 | 46 |    |  |

## SAE STANDARD CONNECTIONS

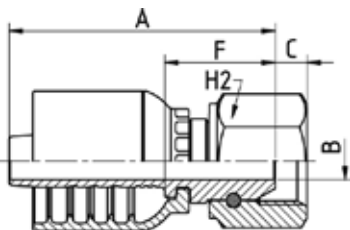
### OPF14110R

SWIVEL MALE NPTF



| PART. REF.      | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|-----------------|-----------|------|------|-----------|------------------|------|------|------|------|----|--|--|
|                 | DN        | Dash | inch |           | T                | B    | A    | C    | F    | H1 |  |  |
| OPF14110-04A02R | 6         | - 4  | 1/4" | 1/8" - 28 |                  | 3    | 69,5 | 10   | 42   | 17 |  |  |
| OPF14110-04A04R | 6         | - 4  | 1/4" | 1/4" - 18 |                  | 4    | 74   | 14,5 | 46,5 | 17 |  |  |
| OPF14110-04A06R | 6         | - 4  | 1/4" | 3/8" - 18 |                  | 7    | 74   | 14,5 | 46,5 | 19 |  |  |
| OPF14110-06A04R | 10        | - 6  | 3/8" | 1/4" - 18 |                  | 4    | 80   | 14,5 | 50,5 | 22 |  |  |
| OPF14110-06A06R | 10        | - 6  | 3/8" | 3/8" - 18 |                  | 7    | 80   | 14,5 | 50,5 | 22 |  |  |
| OPF14110-06A08R | 10        | - 6  | 3/8" | 1/2" - 14 |                  | 9,3  | 84,5 | 19,2 | 55   | 24 |  |  |
| OPF14110-08A08R | 12        | - 8  | 1/2" | 1/2" - 14 |                  | 9,3  | 90   | 19,2 | 59   | 27 |  |  |
| OPF14110-12A12R | 19        | - 12 | 3/4" | 3/4" - 14 |                  | 16   | 94,5 | 19,2 | 58   | 32 |  |  |
| OPF14110-16A16R | 25        | - 16 | 1"   | 1" - 11   |                  | 19,8 | 114  | 24,2 | 66   | 38 |  |  |

Not to be used as a live swivel



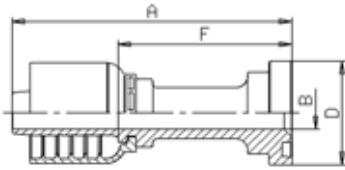
## SAE STANDARD CONNECTIONS

### OPF22812

NPSM FEMALE 60° CONE - SAE J516/J514 (THRUST-WIRE NUT)

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|----------------|-----------|------|------|-----------|------------------|------|------|------|------|----|--|--|
|                | DN        | Dash | inch |           | T                | B    | A    | C    | F    | H2 |  |  |
| OPF22812-04A04 | 6         | - 4  | 1/4" | 1/4" - 18 |                  | 4    | 45   | 4,2  | 17,5 | 19 |  |  |
| OPF22812-06A06 | 10        | - 6  | 3/8" | 3/8" - 18 |                  | 7    | 50,5 | 6    | 21   | 22 |  |  |
| OPF22812-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 |                  | 9,3  | 54   | 6,5  | 23   | 27 |  |  |
| OPF22812-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |                  | 15   | 61   | 9    | 24,5 | 32 |  |  |
| OPF22812-16A16 | 25        | - 16 | 1"   | 1" - 11,5 |                  | 19,8 | 75,5 | 10,5 | 27,5 | 38 |  |  |



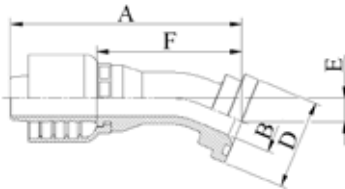


## SAE STANDARD CONNECTIONS

### OPF23311

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |       |      |      |   |  |
|----------------|-----------|------|------|--------|------------------|-------|------|------|---|--|
|                | DN        | Dash | inch |        | Inch             | B     | A    | D    | F |  |
| OPF23311-08A08 | 12        | - 8  | 1/2" | 1/2"   | 9,3              | 82    | 30,3 | 51   |   |  |
| OPF23311-08A12 | 12        | - 8  | 1/2" | 3/4"   | 15,1             | 89    | 38   | 58   |   |  |
| OPF23311-10A12 | 16        | - 10 | 5/8" | 3/4"   | 15               | 100   | 38   | 65,5 |   |  |
| OPF23311-12A12 | 19        | - 12 | 3/4" | 3/4"   | 15               | 94,5  | 38   | 58   |   |  |
| OPF23311-12A16 | 19        | - 12 | 3/4" | 1"     | 20               | 94,5  | 44,6 | 58   |   |  |
| OPF23311-16A16 | 25        | - 16 | 1"   | 1"     | 19,8             | 112,5 | 44,6 | 64,5 |   |  |
| OPF23311-16A20 | 25        | - 16 | 1"   | 1.1/4" | 26               | 118,5 | 51   | 70,5 |   |  |

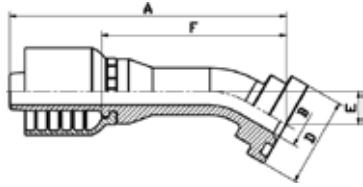


## SAE STANDARD CONNECTIONS

### OPF23321

22,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |     |      |      |      |   |
|----------------|-----------|------|------|--------|------------------|-----|------|------|------|---|
|                | DN        | Dash | inch |        | Inch             | B   | A    | D    | E    | F |
| OPF23321-08A08 | 12        | - 8  | 1/2" | 1/2"   | 9,3              | 95  | 30,3 | 8    | 64   |   |
| OPF23321-12A12 | 19        | - 12 | 3/4" | 3/4"   | 15               | 111 | 38   | 10   | 74,5 |   |
| OPF23321-12A16 | 19        | - 12 | 3/4" | 1"     | 20               | 111 | 44,6 | 10   | 74,5 |   |
| OPF23321-16A16 | 25        | - 16 | 1"   | 1"     | 19,8             | 137 | 44,6 | 11,5 | 89   |   |



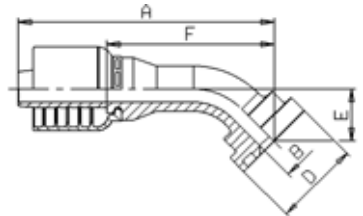
## SAE STANDARD CONNECTIONS

### OPF23331

30° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch |        | Inch             | B     | A    | D    | E    | F |  |
| OPF23331-08A08 | 12        | - 8  | 1/2" | 1/2"   | 9,3              | 93,5  | 30,3 | 11   | 62,5 |   |  |
| OPF23331-12A12 | 19        | - 12 | 3/4" | 3/4"   | 15               | 109,5 | 38   | 14   | 73   |   |  |
| OPF23331-12A16 | 19        | - 12 | 3/4" | 1"     | 20               | 109,5 | 44,6 | 14   | 73   |   |  |
| OPF23331-16A16 | 25        | - 16 | 1"   | 1"     | 19,8             | 135   | 44,6 | 16,5 | 87   |   |  |

FITTINGS  
F 9-26

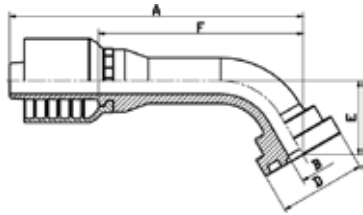


## SAE STANDARD CONNECTIONS

### OPF23341

45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch |        | Inch             | B     | A    | D    | E    | F |  |
| OPF23341-08A08 | 12        | - 8  | 1/2" | 1/2"   | 9,3              | 90    | 30,3 | 18,5 | 58,5 |   |  |
| OPF23341-08A12 | 12        | - 8  | 1/2" | 3/4"   | 15               | 90,5  | 38   | 19   | 59,5 |   |  |
| OPF23341-10A12 | 16        | - 10 | 5/8" | 3/4"   | 15               | 95    | 38   | 22   | 61   |   |  |
| OPF23341-12A12 | 19        | - 12 | 3/4" | 3/4"   | 15               | 104,5 | 38   | 23   | 68,5 |   |  |
| OPF23341-12A16 | 19        | - 12 | 3/4" | 1"     | 20               | 104,5 | 44,6 | 23   | 68,5 |   |  |
| OPF23341-16A16 | 25        | - 16 | 1"   | 1"     | 19,8             | 129,5 | 44,6 | 27,5 | 81,5 |   |  |
| OPF23341-16A20 | 25        | - 16 | 1"   | 1.1/4" | 26               | 129,5 | 51   | 27,5 | 81,5 |   |  |

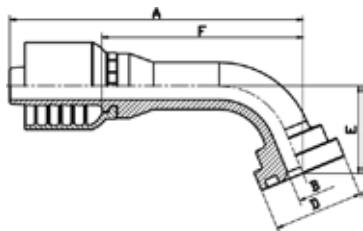


## SAE STANDARD CONNECTIONS

### OPF23361

60° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange |  | DIMENSIONS<br>mm |       |      |    |      |   |  |
|----------------|-----------|------|------|--------|--|------------------|-------|------|----|------|---|--|
|                | DN        | Dash | inch |        |  | Inch             | B     | A    | D  | E    | F |  |
| OPF23361-08A08 | 12        | - 8  | 1/2" | 1/2"   |  | 9,3              | 102,5 | 30,3 | 26 | 71,5 |   |  |
| OPF23361-12A12 | 19        | - 12 | 3/4" | 3/4"   |  | 15               | 123,5 | 38   | 33 | 87   |   |  |
| OPF23361-16A16 | 25        | - 16 | 1"   | 1"     |  | 19,8             | 152   | 44,6 | 39 | 104  |   |  |
| OPF23361-16A20 | 25        | - 16 | 1"   | 1.1/4" |  | 26               | 152   | 51   | 39 | 104  |   |  |

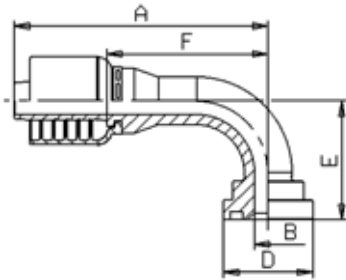


## SAE STANDARD CONNECTIONS

### OPF23371

67,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange |  | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|------|--------|--|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch |        |  | Inch             | B     | A    | D    | E    | F |  |
| OPF23371-08A08 | 12        | - 8  | 1/2" | 1/2"   |  | 9,3              | 99    | 30,3 | 29,5 | 68   |   |  |
| OPF23371-12A12 | 19        | - 12 | 3/4" | 3/4"   |  | 15               | 118,5 | 38   | 38   | 82   |   |  |
| OPF23371-12A16 | 19        | - 12 | 3/4" | 1"     |  | 20               | 118,5 | 44,6 | 38   | 82   |   |  |
| OPF23371-16A16 | 25        | - 16 | 1"   | 1"     |  | 19,8             | 147   | 44,6 | 45   | 98,5 |   |  |



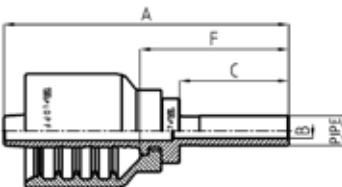
## SAE STANDARD CONNECTIONS

### OPF23391

90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch |        | Inch             | B     | A    | D    | E    | F |  |
| OPF23391-08A08 | 12        | - 8  | 1/2" | 1/2"   | 9,3              | 85,5  | 30,3 | 40   | 54,5 |   |  |
| OPF23391-08A12 | 12        | - 8  | 1/2" | 3/4"   | 15               | 85,5  | 38   | 41   | 54,5 |   |  |
| OPF23391-10A12 | 16        | - 10 | 5/8" | 3/4"   | 15               | 90    | 38   | 47,5 | 56   |   |  |
| OPF23391-12A12 | 19        | - 12 | 3/4" | 3/4"   | 15               | 101   | 38   | 52   | 64,5 |   |  |
| OPF23391-12A16 | 19        | - 12 | 3/4" | 1"     | 20               | 101   | 44,6 | 52   | 64,5 |   |  |
| OPF23391-16A16 | 25        | - 16 | 1"   | 1"     | 19,8             | 125,5 | 44,6 | 62   | 77,5 |   |  |
| OPF23391-16A20 | 25        | - 16 | 1"   | 1.1/4" | 26               | 125,5 | 51   | 62   | 77,5 |   |  |

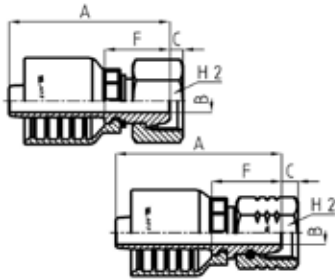
## DIN STANDARD CONNECTIONS



### OPF22010

METRIC STANDPIPE STRAIGHT L.T.

| PART. REF.     | HOSE BORE |      |      | Pipe | DIMENSIONS<br>mm |      |    |      |   |  |  |
|----------------|-----------|------|------|------|------------------|------|----|------|---|--|--|
|                | DN        | Dash | inch |      | mm               | B    | A  | C    | F |  |  |
| OPF22010-04A06 | 6         | - 4  | 1/4" | 6    | 3                | 57,5 | 22 | 30   |   |  |  |
| OPF22010-06A10 | 10        | - 6  | 3/8" | 10   | 7                | 61   | 23 | 31,5 |   |  |  |

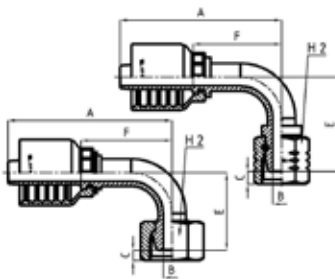


## DIN STANDARD CONNECTIONS

### OPF21312/OPF21313

METRIC FEMALE MULTISEAL

| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|----------------|-----------|------|------|----------|------|------------------|------|-----|------|----|---|----|
|                | DN        | Dash | inch |          |      | T                | mm   | B   | A    | C  | F | H2 |
| OPF21312-06A16 | 10        | -6   | 3/8" | M 16x1,5 | 10   | 7                | 51   | 5   | 21,5 | 19 |   |    |
| OPF21313-06A18 | 10        | -6   | 3/8" | M 18x1,5 | 12   | 7                | 49,5 | 4   | 20   | 22 |   |    |
| OPF21313-08A22 | 12        | -8   | 1/2" | M 22x1,5 | 15   | 9,3              | 52,5 | 4,7 | 21,5 | 27 |   |    |

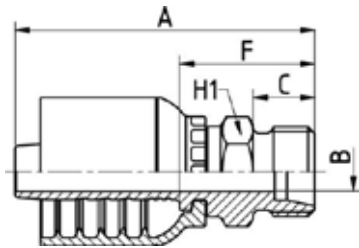


## DIN STANDARD CONNECTIONS

### OPF21392/OPF21393

90° METRIC FEMALE MULTISEAL

| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS<br>mm |    |   |      |      |    |   |
|----------------|-----------|------|------|----------|------|------------------|----|---|------|------|----|---|
|                | DN        | Dash | inch |          |      | T                | mm | B | A    | C    | E  | F |
| OPF21392-06A16 | 10        | -6   | 3/8" | M 16x1,5 | 10   | 7                | 65 | 5 | 38   | 35,5 | 19 |   |
| OPF21393-06A18 | 10        | -6   | 3/8" | M 18x1,5 | 12   | 7                | 66 | 4 | 31,5 | 36,5 | 22 |   |



## DIN STANDARD CONNECTIONS

### OPF11110

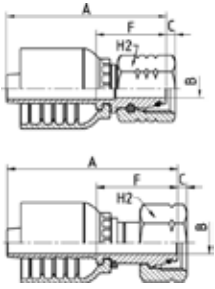
METRIC MALE 24° CONE SEAT LIGHT DUTY - DIN 20066 / ISO 12151-2

| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |    |      |    |   |    |
|----------------|-----------|------|-------|----------|------|------------------|------|----|------|----|---|----|
|                | DN        | Dash | inch  |          |      | T                | mm   | B  | A    | C  | F | H1 |
| OPF11110-04A12 | 6         | - 4  | 1/4"  | M 12x1,5 | 6    | 4                | 49   | 10 | 21,5 | 14 |   |    |
| OPF11110-04A14 | 6         | - 4  | 1/4"  | M 14x1,5 | 8    | 4                | 49   | 10 | 21,5 | 14 |   |    |
| OPF11110-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 10   | 7                | 51   | 11 | 23,5 | 17 |   |    |
| OPF11110-04A18 | 6         | - 4  | 1/4"  | M 18x1,5 | 12   | 9                | 51   | 11 | 23,5 | 19 |   |    |
| OPF11110-05A16 | 8         | - 5  | 5/16" | M 16x1,5 | 10   | 7                | 52   | 11 | 24   | 17 |   |    |
| OPF11110-05A18 | 8         | - 5  | 5/16" | M 18x1,5 | 12   | 9                | 52   | 11 | 24   | 19 |   |    |
| OPF11110-06A16 | 10        | - 6  | 3/8"  | M 16x1,5 | 10   | 7                | 53,5 | 11 | 24   | 17 |   |    |
| OPF11110-06A18 | 10        | - 6  | 3/8"  | M 18x1,5 | 12   | 9                | 54   | 11 | 24,5 | 19 |   |    |
| OPF11110-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 15   | 10               | 55   | 12 | 25,5 | 22 |   |    |
| OPF11110-08A22 | 12        | - 8  | 1/2"  | M 22x1,5 | 15   | 10               | 56,5 | 12 | 25,5 | 22 |   |    |
| OPF11110-08A26 | 12        | - 8  | 1/2"  | M 26x1,5 | 18   | 12,5             | 57,5 | 12 | 26,5 | 27 |   |    |
| OPF11110-10A22 | 16        | - 10 | 5/8"  | M 22x1,5 | 15   | 10               | 60   | 12 | 25,5 | 22 |   |    |
| OPF11110-10A26 | 16        | - 10 | 5/8"  | M 26x1,5 | 18   | 12,5             | 61   | 12 | 26,5 | 27 |   |    |
| OPF11110-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 22   | 15               | 66,5 | 14 | 30   | 30 |   |    |
| OPF11110-16A36 | 25        | - 16 | 1"    | M 36x2   | 28   | 19,8             | 80,5 | 14 | 32,5 | 36 |   |    |

## DIN STANDARD CONNECTIONS

### OPF21512/OPF21513

METRIC O-RING FEMALE 24° CONE LIGHT DUTY - DIN 20066 / ISO 12151-2



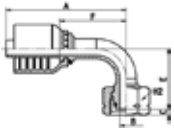
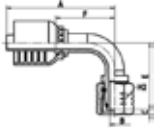
| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|----------------|-----------|------|-------|----------|------|------------------|------|-----|------|----|---|----|
|                | DN        | Dash | inch  |          |      | T                | mm   | B   | A    | C  | F | H2 |
| OPF21512-04A12 | 6         | -4   | 1/4"  | M 12x1,5 | 6    | 3                | 48,5 | 2,2 | 21   | 17 |   |    |
| OPF21513-04A14 | 6         | -4   | 1/4"  | M 14x1,5 | 8    | 4                | 49,5 | 1,3 | 22   | 17 |   |    |
| OPF21513-04A16 | 6         | -4   | 1/4"  | M 16x1,5 | 10   | 6                | 50   | 1,8 | 22,5 | 19 |   |    |
| OPF21513-04A18 | 6         | -4   | 1/4"  | M 18x1,5 | 12   | 7                | 49,5 | 2   | 22   | 22 |   |    |
| OPF21512-05A14 | 8         | -5   | 5/16" | M 14x1,5 | 8    | 4                | 48   | 2,9 | 20   | 17 |   |    |
| OPF21513-05A16 | 8         | -5   | 5/16" | M 16x1,5 | 10   | 6                | 50,5 | 1,8 | 22,5 | 19 |   |    |
| OPF21513-05A18 | 8         | -5   | 5/16" | M 18x1,5 | 12   | 7                | 50   | 2   | 22   | 22 |   |    |
| OPF21512-06A16 | 10        | -6   | 3/8"  | M 16x1,5 | 10   | 6                | 52,5 | 3   | 23   | 19 |   |    |
| OPF21513-06A18 | 10        | -6   | 3/8"  | M 18x1,5 | 12   | 7                | 52   | 2   | 22,5 | 22 |   |    |
| OPF21513-06A22 | 10        | -6   | 3/8"  | M 22x1,5 | 15   | 9,3              | 54,5 | 1,5 | 25   | 27 |   |    |
| OPF21512-08A18 | 12        | -8   | 1/2"  | M 18x1,5 | 12   | 7                | 60   | 2,9 | 29   | 22 |   |    |
| OPF21513-08A22 | 12        | -8   | 1/2"  | M 22x1,5 | 15   | 9,3              | 56,5 | 1,5 | 25,5 | 27 |   |    |
| OPF21513-08A26 | 12        | -8   | 1/2"  | M 26x1,5 | 18   | 12,5             | 57   | 2   | 26   | 32 |   |    |
| OPF21513-10A26 | 16        | -10  | 5/8"  | M 26x1,5 | 18   | 12,5             | 60,5 | 2   | 26   | 32 |   |    |
| OPF21513-10A30 | 16        | -10  | 5/8"  | M 30x2   | 22   | 15               | 68,5 | 3   | 34   | 36 |   |    |
| OPF21512-12A26 | 19        | -12  | 3/4"  | M 26x1,5 | 18   | 12,5             | 67,5 | 2,3 | 31   | 32 |   |    |
| OPF21513-12A30 | 19        | -12  | 3/4"  | M 30x2   | 22   | 15               | 64,5 | 3   | 28   | 36 |   |    |
| OPF21513-12A36 | 19        | -12  | 3/4"  | M 36x2   | 28   | 20               | 65   | 3,7 | 28,5 | 41 |   |    |
| OPF21513-16A36 | 25        | -16  | 1"    | M 36x2   | 28   | 19,8             | 77,5 | 3,7 | 29,5 | 41 |   |    |

OPF21512: THRUST-WIRE NUT / OPF21513: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### OPF21592/OPF21593

90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2



| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |      |    |   |
|----------------|-----------|------|-------|----------|------|------------------|------|-----|------|------|----|---|
|                | DN        | Dash | inch  |          |      | T                | mm   | B   | A    | C    | E  | F |
| OPF21593-03A12 | 5         | - 3  | 3/16" | M 12x1,5 | 6    | 3                | 47,5 | 0,7 | 30   | 26   | 14 |   |
| OPF21592-04A12 | 6         | - 4  | 1/4"  | M 12x1,5 | 6    | 3                | 56   | 2,2 | 32,5 | 28,5 | 17 |   |
| OPF21593-04A14 | 6         | - 4  | 1/4"  | M 14x1,5 | 8    | 4                | 57   | 1,3 | 31,5 | 29,5 | 17 |   |
| OPF21593-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 10   | 6                | 57   | 1,8 | 32   | 29,5 | 19 |   |
| OPF21593-04A18 | 6         | - 4  | 1/4"  | M 18x1,5 | 12   | 7                | 57   | 2   | 33   | 29,5 | 22 |   |
| OPF21593-05A16 | 8         | - 5  | 5/16" | M 16x1,5 | 10   | 6                | 60   | 1,8 | 32,5 | 32   | 19 |   |
| OPF21593-05A18 | 8         | - 5  | 5/16" | M 18x1,5 | 12   | 7                | 60   | 2   | 32,5 | 32   | 22 |   |
| OPF21592-06A16 | 10        | - 6  | 3/8"  | M 16x1,5 | 10   | 6                | 65   | 3   | 40   | 35,5 | 19 |   |
| OPF21593-06A18 | 10        | - 6  | 3/8"  | M 18x1,5 | 12   | 7                | 66   | 2   | 33,5 | 36,5 | 22 |   |
| OPF21593-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 15   | 9,3              | 66   | 1,5 | 35   | 36,5 | 27 |   |
| OPF21592-08A18 | 12        | - 8  | 1/2"  | M 18x1,5 | 12   | 7                | 75   | 2,9 | 48   | 44   | 22 |   |
| OPF21593-08A22 | 12        | - 8  | 1/2"  | M 22x1,5 | 15   | 9,3              | 76   | 1,5 | 39,5 | 45   | 27 |   |
| OPF21593-08A26 | 12        | - 8  | 1/2"  | M 26x1,5 | 18   | 12,5             | 76   | 2   | 40   | 45   | 32 |   |
| OPF21593-10A26 | 16        | - 10 | 5/8"  | M 26x1,5 | 18   | 12,5             | 86   | 2   | 53   | 51,5 | 32 |   |
| OPF21593-10A30 | 16        | - 10 | 5/8"  | M 30x2   | 22   | 15               | 86   | 3   | 54   | 51,5 | 36 |   |
| OPF21593-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 22   | 15               | 97,5 | 3   | 59,5 | 61,5 | 36 |   |
| OPF21593-16A36 | 25        | - 16 | 1"    | M 36x2   | 28   | 19,8             | 125  | 3,7 | 69,5 | 76,5 | 41 |   |

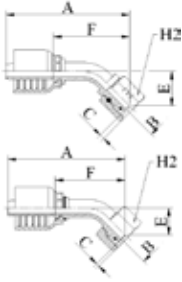
OPF21592: THRUST-WIRE NUT / OPF21593: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

### OPF21542/OPF21543

45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2



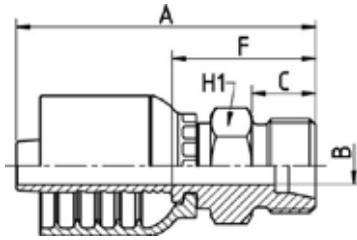
| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |    |
|----------------|-----------|------|-------|----------|------|------------------|-------|-----|------|------|----|----|
|                | DN        | Dash | inch  |          |      | T                | B     | A   | C    | E    | F  | H2 |
| OPF21543-04A14 | 6         | - 4  | 1/4"  | M 14x1,5 | 8    | 4                | 65,5  | 1,3 | 16,5 | 38   | 17 |    |
| OPF21543-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 10   | 6                | 65,5  | 1,8 | 17   | 38   | 19 |    |
| OPF21543-05A16 | 8         | - 5  | 5/16" | M 16x1,5 | 10   | 6                | 69,5  | 1,8 | 17,5 | 41,5 | 19 |    |
| OPF21543-05A18 | 8         | - 5  | 5/16" | M 18x1,5 | 12   | 7                | 69,5  | 2   | 17   | 41,5 | 22 |    |
| OPF21542-06A16 | 10        | - 6  | 3/8"  | M 16x1,5 | 10   | 6                | 77    | 3   | 21,5 | 47,5 | 19 |    |
| OPF21543-06A18 | 10        | - 6  | 3/8"  | M 18x1,5 | 12   | 7                | 73    | 2   | 16,5 | 43,5 | 22 |    |
| OPF21543-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 15   | 9,3              | 74    | 1,5 | 18   | 45   | 27 |    |
| OPF21543-08A22 | 12        | - 8  | 1/2"  | M 22x1,5 | 15   | 9,3              | 83    | 1,5 | 19   | 52   | 27 |    |
| OPF21543-10A26 | 16        | - 10 | 5/8"  | M 26x1,5 | 18   | 12,5             | 96,5  | 2   | 26,5 | 62   | 32 |    |
| OPF21543-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 22   | 15               | 107,5 | 3   | 28,5 | 71   | 36 |    |
| OPF21543-16A36 | 25        | - 16 | 1"    | M 36x2   | 28   | 19,8             | 133   | 3,7 | 32   | 85   | 41 |    |

OPF21542: THRUST-WIRE NUT / OPF21543: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### OPF11210

METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2

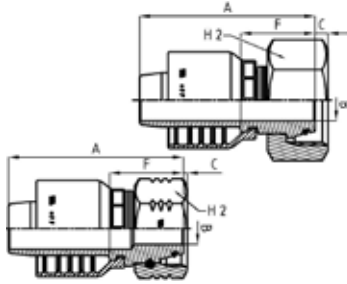


| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |    |      |    |   |    |
|----------------|-----------|------|-------|----------|------|------------------|------|----|------|----|---|----|
|                | DN        | Dash | inch  |          |      | T                | mm   | B  | A    | C  | F | H1 |
| OPF11210-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 8    | 5,5              | 53   | 12 | 25,5 | 17 |   |    |
| OPF11210-04A18 | 6         | - 4  | 1/4"  | M 18x1,5 | 10   | 6                | 54   | 12 | 26,5 | 19 |   |    |
| OPF11210-04A20 | 6         | - 4  | 1/4"  | M 20x1,5 | 12   | 7                | 56,5 | 12 | 29   | 22 |   |    |
| OPF11210-05A20 | 8         | - 5  | 5/16" | M 20x1,5 | 12   | 7                | 57   | 12 | 29   | 22 |   |    |
| OPF11210-06A18 | 10        | - 6  | 3/8"  | M 18x1,5 | 10   | 7                | 56,5 | 12 | 27   | 19 |   |    |
| OPF11210-06A20 | 10        | - 6  | 3/8"  | M 20x1,5 | 12   | 7                | 58,5 | 12 | 29   | 22 |   |    |
| OPF11210-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 14   | 8                | 60,5 | 14 | 31   | 22 |   |    |
| OPF11210-08A24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16   | 9,3              | 62,5 | 14 | 31,5 | 24 |   |    |
| OPF11210-10A30 | 16        | - 10 | 5/8"  | M 30x2   | 20   | 15               | 70   | 16 | 35,5 | 30 |   |    |
| OPF11210-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 20   | 15               | 73,5 | 16 | 37   | 30 |   |    |
| OPF11210-12A36 | 19        | - 12 | 3/4"  | M 36x2   | 25   | 19,8             | 77,5 | 18 | 41   | 36 |   |    |
| OPF11210-16A36 | 25        | - 16 | 1"    | M 36x2   | 25   | 19,8             | 90,5 | 18 | 42,5 | 36 |   |    |
| OPF11210-16A42 | 25        | - 16 | 1"    | M 42x2   | 30   | 25               | 92,5 | 20 | 44,5 | 46 |   |    |

## DIN STANDARD CONNECTIONS

### OPF21612/OPF21613

METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 / ISO 12151-2



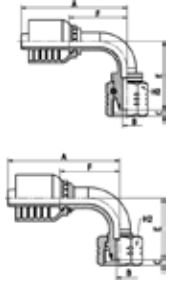
| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|----------------|-----------|------|-------|----------|------|------------------|------|-----|------|----|---|----|
|                | DN        | Dash | inch  |          |      | T                | mm   | B   | A    | C  | F | H2 |
| OPF21613-03A16 | 5         | - 3  | 3/16" | M 16x1,5 | 8    | 3                | 43   | 3,4 | 21,5 | 19 |   |    |
| OPF21613-04A14 | 6         | - 4  | 1/4"  | M 14x1,5 | 6    | 3                | 51   | 1,9 | 23,5 | 17 |   |    |
| OPF21613-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 8    | 4                | 49,5 | 3,4 | 22   | 19 |   |    |
| OPF21613-04A18 | 6         | - 4  | 1/4"  | M 18x1,5 | 10   | 4                | 55,5 | 2,5 | 28   | 22 |   |    |
| OPF21613-04A20 | 6         | - 4  | 1/4"  | M 20x1,5 | 12   | 7                | 53,5 | 2   | 26   | 24 |   |    |
| OPF21613-05A18 | 8         | - 5  | 5/16" | M 18x1,5 | 10   | 5,5              | 56   | 2,5 | 28   | 22 |   |    |
| OPF21613-05A20 | 8         | - 5  | 5/16" | M 20x1,5 | 12   | 5,5              | 53   | 2   | 25   | 24 |   |    |
| OPF21613-06A20 | 10        | - 6  | 3/8"  | M 20x1,5 | 12   | 7                | 54,5 | 2   | 25,5 | 24 |   |    |
| OPF21613-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 14   | 7                | 62   | 3   | 32,5 | 27 |   |    |
| OPF21613-08A24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16   | 9,3              | 58   | 4   | 26,5 | 30 |   |    |
| OPF21613-10A30 | 16        | - 10 | 5/8"  | M 30x2   | 20   | 12,5             | 65   | 3,5 | 30,5 | 36 |   |    |
| OPF21612-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 20   | 12,5             | 70   | 2,2 | 33,5 | 36 |   |    |
| OPF21613-12A36 | 19        | - 12 | 3/4"  | M 36x2   | 25   | 15               | 70,5 | 4,5 | 34   | 41 |   |    |
| OPF21612-16A36 | 25        | - 16 | 1"    | M 36x2   | 25   | 15               | 83,5 | 1,7 | 35,5 | 41 |   |    |
| OPF21613-16A42 | 25        | - 16 | 1"    | M 42x2   | 30   | 19,8             | 83,5 | 6,3 | 35,5 | 50 |   |    |

OPF21612: THRUST-WIRE NUT / OPF21613: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

### OPF21692/OPF21693

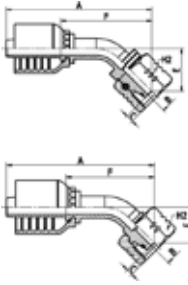
90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2



| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |   |
|----------------|-----------|------|-------|----------|------|------------------|-------|-----|------|------|----|---|
|                | DN        | Dash | inch  |          |      | T                | mm    | B   | A    | C    | E  | F |
| OPF21693-04A16 | 6         | - 4  | 1/4"  | M 16x1,5 | 8    | 4                | 57    | 3,4 | 29,5 | 29,5 | 19 |   |
| OPF21693-04A18 | 6         | - 4  | 1/4"  | M 18x1,5 | 10   | 4                | 57    | 2,5 | 31   | 29,5 | 22 |   |
| OPF21693-04A20 | 6         | - 4  | 1/4"  | M 20x1,5 | 12   | 5,5              | 57    | 2   | 34,5 | 29,5 | 24 |   |
| OPF21693-05A20 | 8         | - 5  | 5/16" | M 20x1,5 | 12   | 5,5              | 60    | 2   | 34   | 32   | 24 |   |
| OPF21693-06A20 | 10        | - 6  | 3/8"  | M 20x1,5 | 12   | 7                | 66    | 2   | 35   | 36,5 | 24 |   |
| OPF21693-06A22 | 10        | - 6  | 3/8"  | M 22x1,5 | 14   | 7                | 66    | 3   | 37   | 36,5 | 27 |   |
| OPF21693-06A24 | 10        | - 6  | 3/8"  | M 24x1,5 | 16   | 9,3              | 66    | 4   | 36   | 36,5 | 30 |   |
| OPF21693-08A24 | 12        | - 8  | 1/2"  | M 24x1,5 | 16   | 9,3              | 76    | 4   | 40,5 | 45   | 30 |   |
| OPF21693-10A30 | 16        | - 10 | 5/8"  | M 30x2   | 20   | 12,5             | 86    | 3,5 | 57,5 | 51,5 | 36 |   |
| OPF21692-12A30 | 19        | - 12 | 3/4"  | M 30x2   | 20   | 12,5             | 98    | 2,2 | 67,5 | 61,5 | 36 |   |
| OPF21693-12A36 | 19        | - 12 | 3/4"  | M 36x2   | 25   | 15               | 97,5  | 4,5 | 64,5 | 61,5 | 41 |   |
| OPF21692-16A36 | 25        | - 16 | 1"    | M 36x2   | 25   | 15               | 127,5 | 1,7 | 86   | 79,5 | 41 |   |
| OPF21693-16A42 | 25        | - 16 | 1"    | M 42x2   | 30   | 19,8             | 127,5 | 6,3 | 74,5 | 79   | 50 |   |

OPF21692: THRUST-WIRE NUT / OPF21693: SLIP-ON NUT

## DIN STANDARD CONNECTIONS

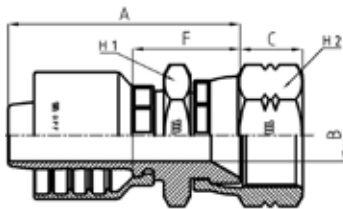


### OPF21642/OPF21643

**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2**

| PART. REF.     | HOSE BORE |      |       | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |   |
|----------------|-----------|------|-------|----------|------|------------------|-------|-----|------|------|----|---|
|                | DN        | Dash | inch  |          |      | T                | mm    | B   | A    | C    | E  | F |
| OPF21643-04A16 | 6         | -4   | 1/4"  | M 16x1,5 | 8    | 4                | 64    | 3,4 | 15   | 36,5 | 19 |   |
| OPF21643-04A18 | 6         | -4   | 1/4"  | M 18x1,5 | 10   | 4                | 65    | 2,5 | 16,5 | 37,5 | 22 |   |
| OPF21643-05A20 | 8         | -5   | 5/16" | M 20x1,5 | 12   | 5,5              | 70    | 2   | 18,5 | 42   | 24 |   |
| OPF21643-06A20 | 10        | -6   | 3/8"  | M 20x1,5 | 12   | 7                | 73,5  | 2   | 17   | 44   | 24 |   |
| OPF21643-06A22 | 10        | -6   | 3/8"  | M 22x1,5 | 14   | 7                | 75    | 3   | 18,5 | 45,5 | 27 |   |
| OPF21643-08A24 | 12        | -8   | 1/2"  | M 24x1,5 | 16   | 9,3              | 83,5  | 4   | 20   | 52,5 | 30 |   |
| OPF21643-10A30 | 16        | -10  | 5/8"  | M 30x2   | 20   | 12,5             | 99,5  | 3,5 | 29,5 | 65,5 | 36 |   |
| OPF21642-12A30 | 19        | -12  | 3/4"  | M 30x2   | 20   | 12,5             | 113   | 2,2 | 34   | 76,5 | 36 |   |
| OPF21643-12A36 | 19        | -12  | 3/4"  | M 36x2   | 25   | 15               | 111,5 | 4,5 | 32,5 | 75   | 41 |   |
| OPF21643-16A42 | 25        | -16  | 1"    | M 42x2   | 30   | 19,8             | 138   | 6,3 | 35,5 | 90   | 50 |   |

OPF21642: THRUST-WIRE NUT / OPF21643: SLIP-ON NUT

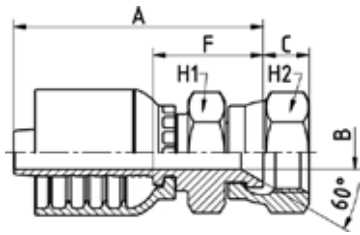


## JIS STANDARD CONNECTIONS

### OPF24011

**JIS METRIC FEMALE (KOMATSU)**

| PART. REF.     | HOSE BORE |      |      | Thread   |  | DIMENSIONS<br>mm |      |      |      |    |    |    |
|----------------|-----------|------|------|----------|--|------------------|------|------|------|----|----|----|
|                | DN        | Dash | inch |          |  | T                | B    | A    | C    | F  | H1 | H2 |
| OPF24011-04A14 | 6         | -4   | 1/4" | M 14x1,5 |  | 4                | 50,5 | 10,5 | 23   | 19 | 19 |    |
| OPF24011-06A14 | 10        | -6   | 3/8" | M 14x1,5 |  | 4                | 53   | 10,5 | 23,5 | 19 | 19 |    |
| OPF24011-06A18 | 10        | -6   | 3/8" | M 18x1,5 |  | 7                | 53   | 11,5 | 23,5 | 24 | 24 |    |
| OPF24011-08A22 | 12        | -8   | 1/2" | M 22x1,5 |  | 9,3              | 56   | 13   | 25   | 27 | 27 |    |
| OPF24011-10A24 | 16        | -10  | 5/8" | M 24x1,5 |  | 12,5             | 61   | 15,1 | 26,5 | 32 | 32 |    |
| OPF24011-12A30 | 19        | -12  | 3/4" | M 30x1,5 |  | 15               | 68   | 18,3 | 31,5 | 36 | 36 |    |
| OPF24011-16A33 | 25        | -16  | 1"   | M 33x1,5 |  | 19,8             | 81,5 | 21,3 | 33,5 | 41 | 41 |    |

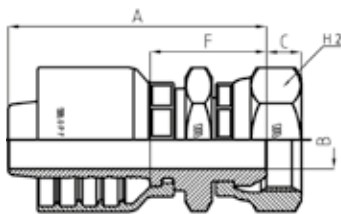


## JIS STANDARD CONNECTIONS

### OPF23811

JIS BSP FEMALE 60° CONE SEAT (TOYOTA) - JIS B 8363  
(CRIMPED-BACK NUT)

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |    |
|----------------|-----------|------|------|-----------|--|------------------|------|------|------|----|----|----|
|                | DN        | Dash | inch |           |  | T                | B    | A    | C    | F  | H1 | H2 |
| OPF23811-04A04 | 6         | - 4  | 1/4" | 1/4" - 19 |  | 4                | 46   | 8,3  | 18,5 | 19 | 19 |    |
| OPF23811-06A06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 52,5 | 10   | 23   | 22 | 22 |    |
| OPF23811-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 53   | 11,5 | 22   | 27 | 27 |    |
| OPF23811-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 62,5 | 13,5 | 26   | 32 | 32 |    |
| OPF23811-16A16 | 25        | - 16 | 1"   | 1" - 11   |  | 19,8             | 78,5 | 14,5 | 30,5 | 38 | 38 |    |

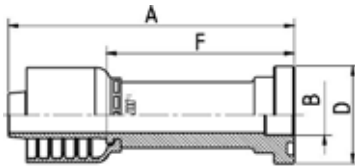


## JIS STANDARD CONNECTIONS

### OPF20711

JIS BSP FEMALE 60° CONE (NISSAN)  
JIS B 8363

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |     |    |    |    |    |
|----------------|-----------|------|------|-----------|--|------------------|------|-----|----|----|----|----|
|                | DN        | Dash | inch |           |  | T                | B    | A   | C  | F  | H1 | H2 |
| OPF20711-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 66,5 | 8,9 | 30 | 32 | 32 |    |

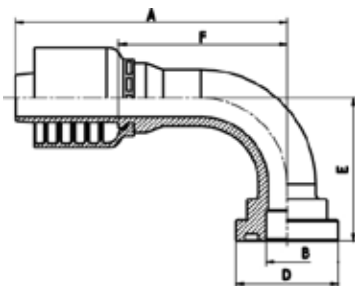


## ORIGINAL EQUIPMENT CONNECTIONS

### OPF24111

#### STRAIGHT KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |    |     |    |      |  |  |  |
|----------------|-----------|------|------|--------|---------------|----|-----|----|------|--|--|--|
|                | DN        | Dash | inch |        | Inch          | B  | A   | D  | F    |  |  |  |
| OPF24111-10A10 | 16        | - 10 | 5/8" | 5/8"   |               | 14 | 100 | 34 | 65,5 |  |  |  |

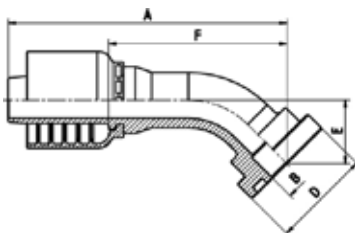


## ORIGINAL EQUIPMENT CONNECTIONS

### OPF24191

#### 90° KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |    |    |    |      |    |  |  |
|----------------|-----------|------|------|--------|---------------|----|----|----|------|----|--|--|
|                | DN        | Dash | inch |        | Inch          | B  | A  | D  | E    | F  |  |  |
| OPF24191-10A10 | 16        | - 10 | 5/8" | 5/8"   |               | 14 | 90 | 34 | 47,5 | 56 |  |  |



## ORIGINAL EQUIPMENT CONNECTIONS

### OPF24141

#### 45° KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |    |    |    |    |    |  |  |
|----------------|-----------|------|------|--------|---------------|----|----|----|----|----|--|--|
|                | DN        | Dash | inch |        | Inch          | B  | A  | D  | E  | F  |  |  |
| OPF24141-10A10 | 16        | - 10 | 5/8" | 5/8"   |               | 14 | 95 | 34 | 22 | 61 |  |  |







**OPK**



| FITTING CODE      | SECTION | PAGE |
|-------------------|---------|------|
| OPK10510          | 10      | 1    |
| OPK11110          | 10      | 27   |
| OPK11210          | 10      | 31   |
| OPK11710          | 10      | 33   |
| OPK11810          | 10      | 33   |
| OPK12410          | 10      | 14   |
| OPK12510          | 10      | 10   |
| OPK12810          | 10      | 20   |
| OPK13010          | 10      | 19   |
| OPK14110R         | 10      | 21   |
| OPK14310          | 10      | 19   |
| OPK20512-OPK20513 | 10      | 2    |
| OPK20542-OPK20543 | 10      | 4    |
| OPK20592-OPK20593 | 10      | 3    |
| OPK20812-OPK20813 | 10      | 5    |
| OPK20842-OPK20843 | 10      | 7    |
| OPK20892-OPK20893 | 10      | 6    |
| OPK21512-OPK21513 | 10      | 28   |
| OPK21542-OPK21543 | 10      | 30   |
| OPK21592-OPK21593 | 10      | 29   |
| OPK21612-OPK21613 | 10      | 31   |
| OPK21642-OPK21643 | 10      | 32   |
| OPK21692-OPK21693 | 10      | 32   |
| OPK21813          | 10      | 33   |
| OPK22411          | 10      | 15   |
| OPK22441-OPK22443 | 10      | 18   |
| OPK22491-OPK22493 | 10      | 16   |
| OPK22541KR        | 10      | 9    |

| FITTING CODE                | SECTION | PAGE |
|-----------------------------|---------|------|
| OPK22542-OPK22543           | 10      | 13   |
| OPK22591KR                  | 10      | 8    |
| OPK22592-OPK22593           | 10      | 11   |
| OPK22711-OPK22711KR         | 10      | 8    |
| OPK22712                    | 10      | 10   |
| OPK22812                    | 10      | 21   |
| OPK23311                    | 10      | 22   |
| OPK23321                    | 10      | 22   |
| OPK23331                    | 10      | 23   |
| OPK23341                    | 10      | 23   |
| OPK23361                    | 10      | 24   |
| OPK23371                    | 10      | 24   |
| OPK23391                    | 10      | 25   |
| OPK23611                    | 10      | 25   |
| OPK23641                    | 10      | 26   |
| OPK23691                    | 10      | 26   |
| OPK23811                    | 10      | 34   |
| OPK23911                    | 10      | 36   |
| OPK23941                    | 10      | 37   |
| OPK23991                    | 10      | 36   |
| OPK24011-OPK24012           | 10      | 34   |
| OPK24111                    | 10      | 35   |
| OPK24141                    | 10      | 35   |
| OPK24191                    | 10      | 35   |
| OPK24491 LONG DROP          | 10      | 17   |
| OPK24791KR                  | 10      | 9    |
| OPK24792-OPK24793 LONG DROP | 10      | 12   |
| OPK3610                     | 10      | 1    |

## OPK

| DN   | 5     | 6    | 8     | 10   | 12   | 16   | 19   | 25  | 31     | 38     | 51  |
|------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1"  | 1 1/4" | 1 1/2" | 2"  |
| Size | -03   | -04  | -05   | -06  | -08  | -10  | -12  | -16 | -20    | -24    | -32 |

## FERRULES

|         |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|
| OPK3610 |  |  |  |  |  |  |  |  |  |  |  |
|---------|--|--|--|--|--|--|--|--|--|--|--|

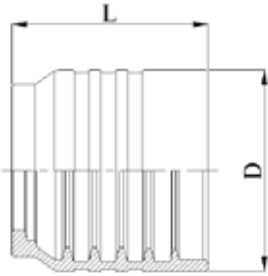
## FITTINGS

|                                |  |  |  |  |  |  |  |  |  |  |  |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| BSP                            |  |  |  |  |  |  |  |  |  |  |  |
| SAE (JIC)                      |  |  |  |  |  |  |  |  |  |  |  |
| SAE (ORFS)                     |  |  |  |  |  |  |  |  |  |  |  |
| SAE (O-RING BOSS)              |  |  |  |  |  |  |  |  |  |  |  |
| SAE (NPTF-NPSM)                |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 61             |  |  |  |  |  |  |  |  |  |  |  |
| SAE FLANGE CODE 62             |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE LIGHT TYPE |  |  |  |  |  |  |  |  |  |  |  |
| DIN METRIC 24° CONE HEAVY TYPE |  |  |  |  |  |  |  |  |  |  |  |
| NF (FRENCH MILLIMETRIC TYPE)   |  |  |  |  |  |  |  |  |  |  |  |
| NF (FRENCH GAZ TYPE)           |  |  |  |  |  |  |  |  |  |  |  |
| JIS                            |  |  |  |  |  |  |  |  |  |  |  |
| ORIGINAL EQUIPMENT CONNECTIONS |  |  |  |  |  |  |  |  |  |  |  |

## FERRULE

### OPK3610

NO-SKIVE FERRULE FOR BRAIDED AND SPIRAL HOSES

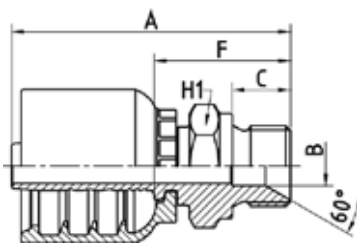


| PART. REF. | HOSE BORE |      |        | DIMENSIONS mm |      |  |  |  |  |  |  |
|------------|-----------|------|--------|---------------|------|--|--|--|--|--|--|
|            | DN        | Dash | inch   | D             | L    |  |  |  |  |  |  |
| OPK3610-06 | 10        | - 6  | 3/8"   | 29,5          | 30,7 |  |  |  |  |  |  |
| OPK3610-08 | 12        | - 8  | 1/2"   | 33,4          | 32   |  |  |  |  |  |  |
| OPK3610-10 | 16        | - 10 | 5/8"   | 37,2          | 34,8 |  |  |  |  |  |  |
| OPK3610-12 | 19        | - 12 | 3/4"   | 41,1          | 40   |  |  |  |  |  |  |
| OPK3610-16 | 25        | - 16 | 1"     | 49,1          | 51   |  |  |  |  |  |  |
| OPK3610-20 | 31        | - 20 | 1.1/4" | 59,5          | 54,5 |  |  |  |  |  |  |
| OPK3610-24 | 38        | - 24 | 1.1/2" | 67            | 66   |  |  |  |  |  |  |
| OPK3610-32 | 51        | - 32 | 2"     | 81,3          | 72   |  |  |  |  |  |  |

## BS STANDARD CONNECTIONS

### OPK10510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6

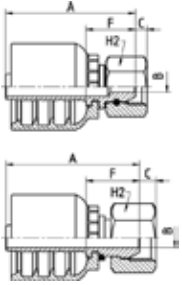


| PART. REF.     | HOSE BORE |      |        | Thread      | DIMENSIONS mm |       |    |      |    |    |
|----------------|-----------|------|--------|-------------|---------------|-------|----|------|----|----|
|                | DN        | Dash | inch   |             | T             | B     | A  | C    | F  | H1 |
| OPK10510-06A04 | 10        | - 6  | 3/8"   | 1/4" - 19   | 5             | 55,5  | 11 | 26   | 19 |    |
| OPK10510-06A06 | 10        | - 6  | 3/8"   | 3/8" - 19   | 8             | 57,5  | 12 | 28   | 22 |    |
| OPK10510-06A08 | 10        | - 6  | 3/8"   | 1/2" - 14   | 11            | 60    | 14 | 30,5 | 27 |    |
| OPK10510-08A06 | 12        | - 8  | 1/2"   | 3/8" - 19   | 8             | 59    | 12 | 28   | 22 |    |
| OPK10510-08A08 | 12        | - 8  | 1/2"   | 1/2" - 14   | 11            | 62    | 14 | 31   | 27 |    |
| OPK10510-08A10 | 12        | - 8  | 1/2"   | 5/8" - 14   | 14,5          | 64    | 16 | 33   | 30 |    |
| OPK10510-08A12 | 12        | - 8  | 1/2"   | 3/4" - 14   | 17            | 65    | 16 | 34   | 32 |    |
| OPK10510-10A10 | 16        | - 10 | 5/8"   | 5/8" - 14   | 14,5          | 67,5  | 16 | 33   | 30 |    |
| OPK10510-10A12 | 16        | - 10 | 5/8"   | 3/4" - 14   | 17            | 68,5  | 16 | 35,5 | 32 |    |
| OPK10510-12A12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 17            | 72    | 16 | 35,5 | 32 |    |
| OPK10510-12A16 | 19        | - 12 | 3/4"   | 1" - 11     | 22,5          | 76    | 19 | 39,5 | 41 |    |
| OPK10510-16A16 | 25        | - 16 | 1"     | 1" - 11     | 22,5          | 89    | 19 | 41   | 41 |    |
| OPK10510-16A20 | 25        | - 16 | 1"     | 1.1/4" - 11 | 28,5          | 93    | 20 | 45   | 50 |    |
| OPK10510-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 28,5          | 99    | 20 | 46,5 | 50 |    |
| OPK10510-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 | 33,5          | 111,5 | 22 | 49,5 | 55 |    |
| OPK10510-32A32 | 51        | - 32 | 2"     | 2" - 11     | 46            | 120   | 25 | 54   | 70 |    |

## BS STANDARD CONNECTIONS

### OPK20512/OPK20513

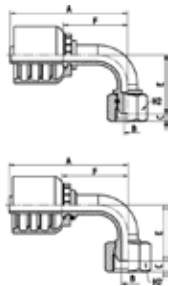
BSP FEMALE 60° CONE - BS5200 / ISO 12151-6



FITTINGS  
F 10-2

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|------|-----------|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |           | T                | B    | A    | C    | F  | H2 |  |
| OPK20512-06A04 | 10        | - 6  | 3/8" | 1/4" - 19 | 4,1              | 47,5 | 4,2  | 18   | 19 |    |  |
| OPK20513-06A06 | 10        | - 6  | 3/8" | 3/8" - 19 | 7                | 49   | 6    | 19,5 | 22 |    |  |
| OPK20513-06A08 | 10        | - 6  | 3/8" | 1/2" - 14 | 9,3              | 49,5 | 6,3  | 20   | 27 |    |  |
| OPK20512-08A06 | 12        | - 8  | 1/2" | 3/8" - 19 | 7,1              | 52   | 6    | 21   | 22 |    |  |
| OPK20513-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 | 9,3              | 51,5 | 6,3  | 20,5 | 27 |    |  |
| OPK20512-08A10 | 12        | - 8  | 1/2" | 5/8" - 14 | 12,1             | 53   | 10,2 | 22   | 28 |    |  |
| OPK20512-08A12 | 12        | - 8  | 1/2" | 3/4" - 14 | 15               | 56   | 9    | 24,5 | 32 |    |  |
| OPK20512-10A10 | 16        | - 10 | 5/8" | 5/8" - 14 | 12,5             | 56   | 10,2 | 21,5 | 28 |    |  |
| OPK20512-10A12 | 16        | - 10 | 5/8" | 3/4" - 14 | 15               | 57,5 | 9    | 23   | 32 |    |  |
| OPK20512-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 | 15               | 61   | 9    | 24,5 | 32 |    |  |
| OPK20512-12A16 | 19        | - 12 | 3/4" | 1" - 11   | 19,8             | 62,5 | 10,5 | 26   | 38 |    |  |
| OPK20512-16A16 | 25        | - 16 | 1"   | 1" - 11   | 19,8             | 75,5 | 10,5 | 27,5 | 38 |    |  |

OPK20512: THRUST-WIRE NUT / OPK20513: SLIP-ON NUT



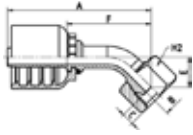
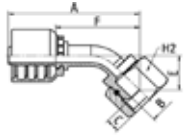
## BS STANDARD CONNECTIONS

### OPK20592/OPK20593

90° BSP FEMALE ELBOW 60° CONE - BS5200 /

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |       |      |      |      |    |    |  |
|----------------|-----------|------|------|-----------|------------------|-------|------|------|------|----|----|--|
|                | DN        | Dash | inch |           | T                | B     | A    | C    | E    | F  | H2 |  |
| OPK20593-06A06 | 10        | - 6  | 3/8" | 3/8" - 19 | 7                | 66    | 6    | 31,5 | 36,5 | 22 |    |  |
| OPK20593-06A08 | 10        | - 6  | 3/8" | 1/2" - 14 | 9,3              | 66    | 6,3  | 32   | 36,5 | 27 |    |  |
| OPK20592-08A06 | 12        | - 8  | 1/2" | 3/8" - 19 | 7,1              | 76    | 6    | 41   | 45   | 22 |    |  |
| OPK20593-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 | 9,3              | 76    | 6,3  | 36,5 | 45   | 27 |    |  |
| OPK20592-08A10 | 12        | - 8  | 1/2" | 5/8" - 14 | 12,1             | 75,5  | 10,2 | 44   | 44   | 28 |    |  |
| OPK20592-08A12 | 12        | - 8  | 1/2" | 3/4" - 14 | 15               | 75,5  | 9    | 45,5 | 44   | 32 |    |  |
| OPK20592-10A10 | 16        | - 10 | 5/8" | 5/8" - 14 | 12,5             | 88    | 10,2 | 53,5 | 53,5 | 28 |    |  |
| OPK20592-10A12 | 16        | - 10 | 5/8" | 3/4" - 14 | 15               | 88    | 9    | 55   | 53,5 | 32 |    |  |
| OPK20592-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 | 15               | 98    | 9    | 59,5 | 61,5 | 32 |    |  |
| OPK20592-12A16 | 19        | - 12 | 3/4" | 1" - 11   | 19,8             | 98    | 10,5 | 62   | 61,5 | 38 |    |  |
| OPK20592-16A16 | 25        | - 16 | 1"   | 1" - 11   | 19,8             | 127,5 | 10,5 | 76   | 79,5 | 38 |    |  |

OPK20592: THRUST-WIRE NUT / OPK20593: SLIP-ON NUT



## BS STANDARD CONNECTIONS

### OPK20542/OPK20543

45° BSP FEMALE ELBOW 60° CONE - BS5200 / ISO 12151-6

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|-----------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |           |  | T                | B     | A    | C    | E    | F  | H2 |
| OPK20543-06A06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 7                | 71,5  | 6    | 15,5 | 42   | 22 |    |
| OPK20543-06A08 | 10        | - 6  | 3/8" | 1/2" - 14 |  | 9,3              | 72    | 6,3  | 16   | 42,5 | 27 |    |
| OPK20543-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 81    | 6,3  | 17   | 49,5 | 27 |    |
| OPK20542-08A10 | 12        | - 8  | 1/2" | 5/8" - 14 |  | 12,1             | 85,5  | 10,2 | 22,5 | 54,5 | 28 |    |
| OPK20542-10A10 | 16        | - 10 | 5/8" | 5/8" - 14 |  | 12,5             | 97,5  | 10,2 | 26   | 63   | 28 |    |
| OPK20542-10A12 | 16        | - 10 | 5/8" | 3/4" - 14 |  | 15               | 98    | 9    | 27   | 64   | 32 |    |
| OPK20542-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 107   | 9    | 28,5 | 70,5 | 32 |    |
| OPK20542-12A16 | 19        | - 12 | 3/4" | 1" - 11   |  | 19,8             | 109   | 10,5 | 30   | 72,5 | 38 |    |
| OPK20542-16A16 | 25        | - 16 | 1"   | 1" - 11   |  | 19,8             | 139,5 | 10,5 | 36,5 | 91   | 38 |    |

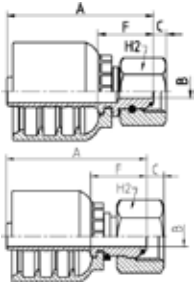
OPK20542: THRUST-WIRE NUT / OPK20543: SLIP-ON NUT



## BS STANDARD CONNECTIONS

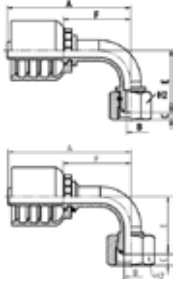
### OPK20812/OPK20813

BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6



| PART. REF.     | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|--------|-------------|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch   |             | T                | B    | A    | C    | F  | H2 |  |
| OPK20812-06A04 | 10        | - 6  | 3/8"   | 1/4" - 19   | 4,1              | 47,5 | 4,1  | 18   | 19 |    |  |
| OPK20813-06A06 | 10        | - 6  | 3/8"   | 3/8" - 19   | 7                | 49   | 6    | 19,5 | 22 |    |  |
| OPK20813-08A08 | 12        | - 8  | 1/2"   | 1/2" - 14   | 9,3              | 51,5 | 6,3  | 20,5 | 27 |    |  |
| OPK20812-10A10 | 16        | - 10 | 5/8"   | 5/8" - 14   | 12,5             | 56,5 | 9,7  | 22   | 28 |    |  |
| OPK20812-12A12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 15               | 61,5 | 8,5  | 25   | 32 |    |  |
| OPK20812-16A16 | 25        | - 16 | 1"     | 1" - 11     | 19,8             | 75,5 | 10,6 | 27,5 | 38 |    |  |
| OPK20812-16A20 | 25        | - 16 | 1"     | 1.1/4" - 11 | 26,1             | 79   | 10,5 | 31   | 50 |    |  |
| OPK20812-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 26               | 84   | 10,5 | 31,5 | 50 |    |  |
| OPK20812-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 | 32,1             | 82   | 12,5 | 29,5 | 60 |    |  |
| OPK20812-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 | 32               | 92,5 | 12,5 | 30,5 | 60 |    |  |
| OPK20812-24A32 | 38        | - 24 | 1.1/2" | 2"          | 42,1             | 92   | 16,1 | 30   | 70 |    |  |
| OPK20812-32A32 | 51        | - 32 | 2"     | 2"          | 42               | 98   | 16,1 | 32   | 70 |    |  |

OPK20812: THRUST-WIRE NUT / OPK20813: SLIP-ON NUT



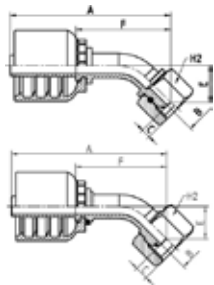
## BS STANDARD CONNECTIONS

### OPK20892/OPK20893

90° BSP O-RING FEMALE SWEPT ELBOW 60° CONE - BS5200 / ISO  
12151-6

| PART. REF.     | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |      |       |      |       |      |    |  |
|----------------|-----------|------|--------|-------------|------------------|------|-------|------|-------|------|----|--|
|                | DN        | Dash | inch   |             | T                | B    | A     | C    | E     | F    | H2 |  |
| OPK20892-06A04 | 10        | - 6  | 3/8"   | 1/4" - 19   |                  | 4,1  | 65    | 4,1  | 33    | 35,5 | 19 |  |
| OPK20893-06A06 | 10        | - 6  | 3/8"   | 3/8" - 19   |                  | 7    | 66    | 6    | 31,5  | 36,5 | 22 |  |
| OPK20893-08A08 | 12        | - 8  | 1/2"   | 1/2" - 14   |                  | 9,3  | 76    | 6,3  | 36,5  | 45   | 27 |  |
| OPK20892-10A10 | 16        | - 10 | 5/8"   | 5/8" - 14   |                  | 12,5 | 87,5  | 9,7  | 55    | 53   | 28 |  |
| OPK20892-12A12 | 19        | - 12 | 3/4"   | 3/4" - 14   |                  | 15   | 98    | 8,5  | 60    | 61,5 | 32 |  |
| OPK20892-16A16 | 25        | - 16 | 1"     | 1" - 11     |                  | 19,8 | 127,5 | 10,6 | 76    | 79,5 | 38 |  |
| OPK20892-16A20 | 25        | - 16 | 1"     | 1.1/4" - 11 |                  | 26,1 | 127,5 | 10,5 | 78,5  | 79,5 | 50 |  |
| OPK20892-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 |                  | 26   | 143   | 10,5 | 83,5  | 90,5 | 50 |  |
| OPK20892-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" - 11 |                  | 32,1 | 143   | 12,5 | 84,5  | 90,5 | 60 |  |
| OPK20892-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 |                  | 32   | 170   | 12,5 | 98,5  | 108  | 60 |  |
| OPK20892-32A32 | 51        | - 32 | 2"     | 2" - 11     |                  | 42   | 197   | 16,1 | 110,5 | 131  | 70 |  |

OPK20892: THRUST-WIRE NUT / OPK20893: SLIP-ON NUT



## BS STANDARD CONNECTIONS

### OPK20842/OPK20843

45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE BS5200 / ISO  
12151-6

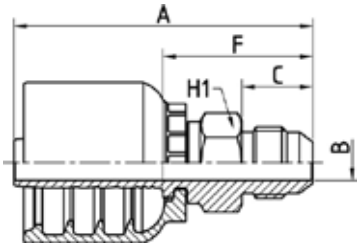
| PART. REF.     | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |       |      |      |       |    |    |
|----------------|-----------|------|--------|-------------|------------------|-------|------|------|-------|----|----|
|                | DN        | Dash | inch   |             | T                | B     | A    | C    | E     | F  | H2 |
| OPK20843-06A06 | 10        | - 6  | 3/8"   | 3/8" - 19   | 7                | 71,5  | 6    | 15,5 | 42    | 22 |    |
| OPK20843-08A08 | 12        | - 8  | 1/2"   | 1/2" - 14   | 9,3              | 81    | 6,3  | 17   | 49,5  | 27 |    |
| OPK20842-10A10 | 16        | - 10 | 5/8"   | 5/8" - 14   | 12,5             | 98    | 9,7  | 27,5 | 63,5  | 28 |    |
| OPK20842-12A12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 15               | 107,5 | 8,5  | 29   | 71    | 32 |    |
| OPK20842-16A16 | 25        | - 16 | 1"     | 1" - 11     | 19,8             | 138,5 | 10,6 | 35,5 | 90,5  | 38 |    |
| OPK20842-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 26               | 154   | 10,5 | 39   | 101,5 | 50 |    |
| OPK20842-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11 | 32               | 180   | 12,5 | 45   | 118   | 60 |    |
| OPK20842-32A32 | 51        | - 32 | 2"     | 2" - 11     | 42               | 200   | 16,1 | 47   | 134   | 70 |    |

OPK20842: THRUST-WIRE NUT / OPK20843: SLIP-ON NUT

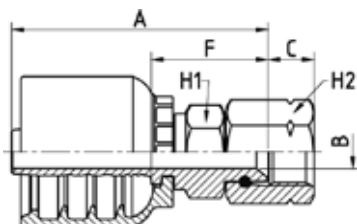
## SAE STANDARD CONNECTIONS

### OPK12510

JIC MALE 37° CONE - SAE J516 / ISO 12151-5



| PART. REF.     | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |       |      |      |    |  |  |
|----------------|-----------|------|--------|--------------|------------------|------|-------|------|------|----|--|--|
|                | DN        | Dash | inch   |              | T                | B    | A     | C    | F    | H1 |  |  |
| OPK12510-06A06 | 10        | - 6  | 3/8"   | 9/16" - 18   |                  | 7    | 59    | 14   | 29,5 | 17 |  |  |
| OPK12510-06A08 | 10        | - 6  | 3/8"   | 3/4" - 16    |                  | 9,3  | 63,5  | 16,5 | 34   | 19 |  |  |
| OPK12510-06A10 | 10        | - 6  | 3/8"   | 7/8" - 14    |                  | 12,5 | 68    | 19,5 | 38,5 | 24 |  |  |
| OPK12510-08A06 | 12        | - 8  | 1/2"   | 9/16" - 18   |                  | 7    | 63    | 14   | 32   | 19 |  |  |
| OPK12510-08A08 | 12        | - 8  | 1/2"   | 3/4" - 16    |                  | 9,3  | 65,5  | 16,5 | 34,5 | 19 |  |  |
| OPK12510-08A10 | 12        | - 8  | 1/2"   | 7/8" - 14    |                  | 12,5 | 70    | 19,5 | 39   | 24 |  |  |
| OPK12510-08A12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |                  | 15   | 74    | 22   | 43   | 27 |  |  |
| OPK12510-10A10 | 16        | - 10 | 5/8"   | 7/8" - 14    |                  | 12,5 | 73,5  | 19,5 | 39   | 24 |  |  |
| OPK12510-10A12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |                  | 15   | 77    | 22   | 42,5 | 27 |  |  |
| OPK12510-12A10 | 19        | - 12 | 3/4"   | 7/8" - 14    |                  | 12,5 | 78    | 19,5 | 41,5 | 27 |  |  |
| OPK12510-12A12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15   | 80,5  | 22   | 44   | 27 |  |  |
| OPK12510-12A14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |                  | 15   | 81    | 22,5 | 44,5 | 32 |  |  |
| OPK12510-12A16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 83,5  | 23   | 47   | 34 |  |  |
| OPK12510-16A12 | 25        | - 16 | 1"     | 1.1/16" - 12 |                  | 15   | 93    | 22   | 45   | 32 |  |  |
| OPK12510-16A16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 19,8 | 96    | 23   | 48   | 34 |  |  |
| OPK12510-16A20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 101   | 24,3 | 53   | 42 |  |  |
| OPK12510-20A20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 106   | 24,3 | 53,5 | 42 |  |  |
| OPK12510-20A24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |                  | 32   | 113   | 27,5 | 60,5 | 50 |  |  |
| OPK12510-24A24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 122,5 | 27,5 | 60,5 | 50 |  |  |
| OPK12510-32A32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 42   | 138   | 34   | 72   | 65 |  |  |



## SAE STANDARD CONNECTIONS

### OPK22712

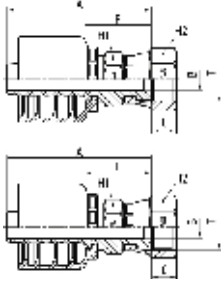
JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)

| PART. REF.     | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |       |      |      |    |    |  |
|----------------|-----------|------|--------|--------------|------------------|------|-------|------|------|----|----|--|
|                | DN        | Dash | inch   |              | T                | B    | A     | C    | F    | H1 | H2 |  |
| OPK22712-12A16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 69    | 15   | 32,5 | 32 | 38 |  |
| OPK22712-16A20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 91    | 16,2 | 43   | 41 | 50 |  |
| OPK22712-20A20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 96    | 16,2 | 43,5 | 41 | 50 |  |
| OPK22712-24A24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 113   | 18,8 | 51   | 50 | 60 |  |
| OPK22712-32A32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 44   | 117,5 | 24   | 51,5 | 65 | 75 |  |

## SAE STANDARD CONNECTIONS

### OPK22711/OPK22711KR

JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON - SAE J516 / ISO 12151-5



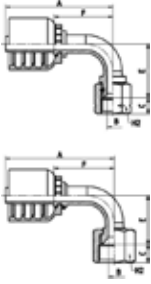
| PART. REF.       | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |      |    |    |    |  |
|------------------|-----------|------|------|--------------|------------------|------|------|------|----|----|----|--|
|                  | DN        | Dash | inch |              | T                | B    | A    | C    | F  | H1 | H2 |  |
| OPK22711-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   | 7                | 51,5 | 9,5  | 22   | 17 | 17 |    |  |
| OPK22711-06A08KR | 10        | - 6  | 3/8" | 3/4" - 16    | 9,3              | 56   | 10,7 | 26,5 | 19 | 22 |    |  |
| OPK22711-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    | 9,3              | 58   | 10,7 | 27   | 19 | 22 |    |  |
| OPK22711-08A10KR | 12        | - 8  | 1/2" | 7/8" - 14    | 9,3              | 60,5 | 12,5 | 29,5 | 22 | 25 |    |  |
| OPK22711-08A12KR | 12        | - 8  | 1/2" | 1.1/16" - 12 | 15               | 60   | 14,1 | 28,5 | 27 | 32 |    |  |
| OPK22711-10A08KR | 16        | - 10 | 5/8" | 3/4" - 16    | 9,3              | 62,5 | 10,7 | 28,5 | 22 | 22 |    |  |
| OPK22711-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    | 12,5             | 64   | 12,5 | 29,5 | 22 | 25 |    |  |
| OPK22711-12A08KR | 19        | - 12 | 3/4" | 3/4" - 16    | 9,3              | 66   | 10,7 | 29,5 | 27 | 22 |    |  |
| OPK22711-12A10KR | 19        | - 12 | 3/4" | 7/8" - 14    | 12,5             | 67   | 12,5 | 30,5 | 27 | 25 |    |  |
| OPK22711-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 | 15               | 66,5 | 14,1 | 30   | 27 | 32 |    |  |
| OPK22711-12A16   | 19        | - 12 | 3/4" | 1.5/16" - 12 | 19,8             | 71   | 15,3 | 34,5 | 32 | 38 |    |  |
| OPK22711-16A12KR | 25        | - 16 | 1"   | 1.1/16" - 12 | 15               | 80,5 | 14,1 | 32,5 | 32 | 32 |    |  |
| OPK22711-16A16   | 25        | - 16 | 1"   | 1.5/16" - 12 | 19,8             | 83,5 | 15,3 | 35,5 | 32 | 38 |    |  |

KR:CRIMPED-BACK KOMPACT ROBUST NUT

## SAE STANDARD CONNECTIONS

### OPK22592/OPK22593

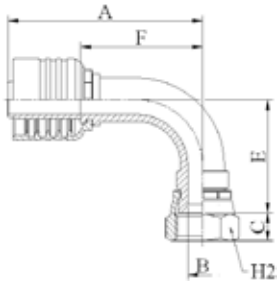
90° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5



FITTINGS  
F 10-10

| PART. REF.     | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |      |       |      |       |      |    |  |
|----------------|-----------|------|--------|--------------|------------------|------|-------|------|-------|------|----|--|
|                | DN        | Dash | inch   |              | T                | B    | A     | C    | E     | F    | H2 |  |
| OPK22592-06A05 | 10        | - 6  | 3/8"   | 1/2" - 20    |                  | 5,5  | 59,5  | 9,1  | 26,5  | 30   | 17 |  |
| OPK22592-06A06 | 10        | - 6  | 3/8"   | 9/16" - 18   |                  | 7    | 65    | 9,2  | 32,5  | 35,5 | 19 |  |
| OPK22593-06A08 | 10        | - 6  | 3/8"   | 3/4" - 16    |                  | 7    | 66    | 10,1 | 29,5  | 36,5 | 22 |  |
| OPK22593-06A10 | 10        | - 6  | 3/8"   | 7/8" - 14    |                  | 9,3  | 66    | 12,4 | 31,5  | 36,5 | 27 |  |
| OPK22592-08A06 | 12        | - 8  | 1/2"   | 9/16" - 18   |                  | 7    | 68    | 9,2  | 33    | 37   | 19 |  |
| OPK22592-08A08 | 12        | - 8  | 1/2"   | 3/4" - 16    |                  | 9,3  | 75,5  | 10,2 | 41    | 44   | 22 |  |
| OPK22593-08A10 | 12        | - 8  | 1/2"   | 7/8" - 14    |                  | 9,3  | 76    | 12,4 | 36    | 45   | 27 |  |
| OPK22593-08A12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 |                  | 12,5 | 76    | 14,1 | 36    | 45   | 32 |  |
| OPK22592-10A10 | 16        | - 10 | 5/8"   | 7/8" - 14    |                  | 12,5 | 88    | 12,3 | 52,5  | 53,5 | 27 |  |
| OPK22593-10A12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 |                  | 12,5 | 86    | 14,1 | 50    | 51,5 | 32 |  |
| OPK22592-12A10 | 19        | - 12 | 3/4"   | 7/8" - 14    |                  | 12,5 | 91,5  | 12,3 | 52,5  | 55   | 27 |  |
| OPK22592-12A12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 |                  | 15   | 98    | 14,2 | 58    | 62   | 32 |  |
| OPK22592-12A14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 |                  | 15   | 99    | 14,3 | 58    | 63   | 36 |  |
| OPK22592-12A16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 |                  | 19,8 | 99    | 15   | 57,5  | 63   | 38 |  |
| OPK22592-16A16 | 25        | - 16 | 1"     | 1.5/16" - 12 |                  | 19,8 | 124   | 15   | 68,5  | 76   | 38 |  |
| OPK22592-16A20 | 25        | - 16 | 1"     | 1.5/8" - 12  |                  | 26   | 125,5 | 16,2 | 74,5  | 77,5 | 50 |  |
| OPK22592-20A20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  |                  | 26   | 143   | 16,2 | 86,5  | 90,5 | 50 |  |
| OPK22592-20A24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  |                  | 32   | 143   | 18,8 | 90,5  | 90,5 | 60 |  |
| OPK22592-24A24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  |                  | 32   | 170   | 18,8 | 100,5 | 108  | 60 |  |
| OPK22592-32A32 | 51        | - 32 | 2"     | 2.1/2" - 12  |                  | 44   | 208   | 24   | 137   | 142  | 75 |  |

OPK22592: THRUST-WIRE NUT / OPK22593: SLIP-ON NUT

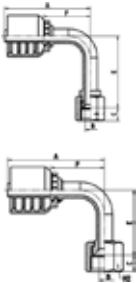


## SAE STANDARD CONNECTIONS

### OPK22591KR

90° ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5  
(CRIMPED-BACK NUT)

| PART. REF.       | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |      |      |      |      |    |    |
|------------------|-----------|------|------|--------------|--|------------------|------|------|------|------|----|----|
|                  | DN        | Dash | inch |              |  | T                | B    | A    | C    | E    | F  | H2 |
| OPK22591-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 65   | 9,5  | 32   | 35,5 | 17 |    |
| OPK22591-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 75,5 | 10,7 | 40,5 | 44   | 22 |    |
| OPK22591-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 88   | 12,5 | 47   | 53,5 | 25 |    |
| OPK22591-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 98   | 14,1 | 57   | 62   | 32 |    |



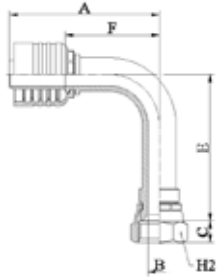
## SAE STANDARD CONNECTIONS

### OPK24792/OPK24793 LONG DROP

90° JIC FEMALE LONG DROP ELBOW 37° CONE SEAT - SAE J516 / ISO  
12151-5

| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|--------------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |              |  | T                | B     | A    | C    | E    | F  | H2 |
| OPK24792-06A06 | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 65    | 9,2  | 55   | 35,5 | 19 |    |
| OPK24793-06A08 | 10        | - 6  | 3/8" | 3/4" - 16    |  | 7                | 66    | 10,1 | 61,5 | 36,5 | 22 |    |
| OPK24792-08A08 | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 75,5  | 10,2 | 61   | 44   | 22 |    |
| OPK24793-08A10 | 12        | - 8  | 1/2" | 7/8" - 14    |  | 9,3              | 76    | 12,4 | 65   | 45   | 27 |    |
| OPK24792-10A10 | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 88    | 12,3 | 65,5 | 53,5 | 27 |    |
| OPK24792-12A12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 98    | 14,2 | 94,5 | 62   | 32 |    |
| OPK24792-16A16 | 25        | - 16 | 1"   | 1.5/16" - 12 |  | 19,8             | 125,5 | 15   | 110  | 77,5 | 38 |    |

OPK24792: THRUST-WIRE NUT / OPK24793: SLIP-ON NUT



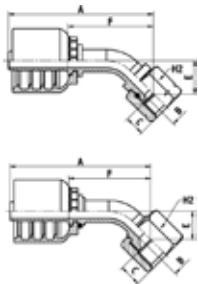
## SAE STANDARD CONNECTIONS

### OPK24791KR

**90° LONG DROP ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5 (CRIMPED-BACK NUT)**

| PART. REF.       | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |    |      |    |    |
|------------------|-----------|------|------|--------------|------------------|------|------|----|------|----|----|
|                  | DN        | Dash | inch |              | T                | B    | A    | C  | E    | F  | H2 |
| OPK24791-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   | 7                | 65   | 9,5  | 55 | 35,5 | 17 |    |
| OPK24791-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    | 9,3              | 75,5 | 10,7 | 64 | 44   | 22 |    |
| OPK24791-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    | 12,5             | 88   | 12,5 | 70 | 53,5 | 25 |    |
| OPK24791-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 | 15               | 98   | 14,1 | 96 | 62   | 32 |    |

FITTINGS  
F 10-12



## SAE STANDARD CONNECTIONS

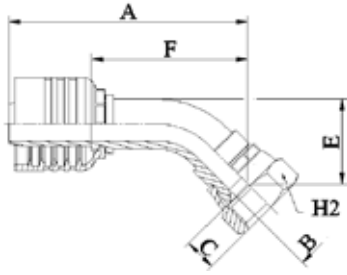
### OPK22542/OPK22543

**45° JIC FEMALE SWEPT ELBOW 37° CONE SEAT - SAE J516 / ISO 12151-5**

| PART. REF.     | HOSE BORE |      |        | Thread       | DIMENSIONS<br>mm |       |      |      |       |    |    |
|----------------|-----------|------|--------|--------------|------------------|-------|------|------|-------|----|----|
|                | DN        | Dash | inch   |              | T                | B     | A    | C    | E     | F  | H2 |
| OPK22542-06A06 | 10        | - 6  | 3/8"   | 9/16" - 18   | 7                | 71,5  | 9,2  | 16,5 | 42    | 19 |    |
| OPK22543-06A08 | 10        | - 6  | 3/8"   | 3/4" - 16    | 7                | 70,5  | 10,1 | 14   | 41    | 22 |    |
| OPK22543-06A10 | 10        | - 6  | 3/8"   | 7/8" - 14    | 9,3              | 72    | 12,4 | 15,5 | 42,5  | 27 |    |
| OPK22542-08A08 | 12        | - 8  | 1/2"   | 3/4" - 16    | 9,3              | 83    | 10,2 | 20   | 52    | 22 |    |
| OPK22543-08A10 | 12        | - 8  | 1/2"   | 7/8" - 14    | 9,3              | 80,5  | 12,4 | 17   | 49,5  | 27 |    |
| OPK22543-08A12 | 12        | - 8  | 1/2"   | 1.1/16" - 12 | 12,5             | 80,5  | 14,1 | 17   | 49,5  | 32 |    |
| OPK22542-10A10 | 16        | - 10 | 5/8"   | 7/8" - 14    | 12,5             | 96,5  | 12,3 | 25,5 | 62    | 27 |    |
| OPK22543-10A12 | 16        | - 10 | 5/8"   | 1.1/16" - 12 | 12,5             | 94,5  | 14,1 | 24   | 60    | 32 |    |
| OPK22542-12A12 | 19        | - 12 | 3/4"   | 1.1/16" - 12 | 15               | 106   | 14,2 | 27,5 | 70    | 32 |    |
| OPK22542-12A14 | 19        | - 12 | 3/4"   | 1.3/16" - 12 | 15               | 106   | 14,3 | 27,5 | 69,5  | 36 |    |
| OPK22542-12A16 | 19        | - 12 | 3/4"   | 1.5/16" - 12 | 19,8             | 106,5 | 15   | 27,5 | 70    | 38 |    |
| OPK22542-16A16 | 25        | - 16 | 1"     | 1.5/16" - 12 | 19,8             | 132,5 | 15   | 32   | 84    | 38 |    |
| OPK22542-16A20 | 25        | - 16 | 1"     | 1.5/8" - 12  | 26               | 138   | 16,2 | 36   | 90    | 50 |    |
| OPK22542-20A20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12  | 26               | 156   | 16,2 | 41,5 | 103,5 | 50 |    |
| OPK22542-20A24 | 31        | - 20 | 1.1/4" | 1.7/8" - 12  | 32               | 159   | 18,8 | 44,5 | 106,5 | 60 |    |
| OPK22542-24A24 | 38        | - 24 | 1.1/2" | 1.7/8" - 12  | 32               | 181   | 18,8 | 46,5 | 119   | 60 |    |
| OPK22542-32A32 | 51        | - 32 | 2"     | 2.1/2" - 12  | 44               | 229   | 24   | 68   | 163   | 75 |    |

OPK22542: THRUST-WIRE NUT / OPK22543: SLIP-ON NUT





## SAE STANDARD CONNECTIONS

### OPK22541KR

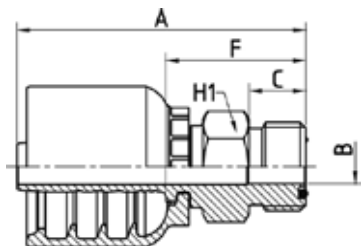
**45° ELBOW JIC FEMALE 37° CONE SEAT SAE J516 / ISO 12151-5  
(CRIMPED-BACK NUT)**

| PART. REF.       | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |       |      |      |    |    |    |
|------------------|-----------|------|------|--------------|--|------------------|-------|------|------|----|----|----|
|                  | DN        | Dash | inch |              |  | T                | B     | A    | C    | E  | F  | H2 |
| OPK22541-06A06KR | 10        | - 6  | 3/8" | 9/16" - 18   |  | 7                | 71,5  | 9,5  | 16   | 42 | 17 |    |
| OPK22541-08A08KR | 12        | - 8  | 1/2" | 3/4" - 16    |  | 9,3              | 83    | 10,7 | 20   | 52 | 22 |    |
| OPK22541-10A10KR | 16        | - 10 | 5/8" | 7/8" - 14    |  | 12,5             | 95,5  | 12,5 | 22,5 | 61 | 25 |    |
| OPK22541-12A12KR | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 15               | 105,5 | 14,1 | 26,5 | 69 | 32 |    |

## SAE STANDARD CONNECTIONS

### OPK12410

ORFS MALE - SAE J516 / ISO 12151-1

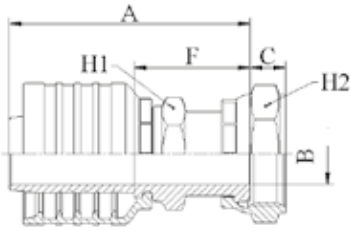


| PART. REF.     | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |    |    |  |
|----------------|-----------|------|--------|---------------|------------------|-------|------|------|----|----|--|
|                | DN        | Dash | inch   |               | T                | B     | A    | C    | F  | H1 |  |
| OPK12410-06A06 | 10        | - 6  | 3/8"   | 11/16" - 16   | 6,7              | 57    | 11,2 | 27,5 | 19 |    |  |
| OPK12410-06A08 | 10        | - 6  | 3/8"   | 13/16" - 16   | 9,3              | 59,5  | 12,8 | 30   | 22 |    |  |
| OPK12410-08A08 | 12        | - 8  | 1/2"   | 13/16" - 16   | 9,3              | 61,5  | 12,8 | 30,5 | 22 |    |  |
| OPK12410-08A10 | 12        | - 8  | 1/2"   | 1" - 14       | 12,5             | 66    | 15,5 | 35   | 27 |    |  |
| OPK12410-10A10 | 16        | - 10 | 5/8"   | 1" - 14       | 12,5             | 69    | 15,5 | 34,5 | 27 |    |  |
| OPK12410-10A12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  | 15               | 72    | 17   | 37,5 | 32 |    |  |
| OPK12410-12A12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 15               | 75,5  | 17   | 39   | 32 |    |  |
| OPK12410-12A16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  | 19,8             | 77    | 17,5 | 40,5 | 38 |    |  |
| OPK12410-16A16 | 25        | - 16 | 1"     | 1.7/16" - 12  | 19,8             | 90    | 17,5 | 42   | 38 |    |  |
| OPK12410-20A20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 26               | 99    | 17,5 | 46,5 | 46 |    |  |
| OPK12410-24A24 | 38        | - 24 | 1.1/2" | 2" - 12       | 32               | 110,5 | 17,5 | 48,5 | 55 |    |  |

## SAE STANDARD CONNECTIONS

### OPK22411

ORFS FEMALE - SAE J516 / ISO 12151-1 PULLBACK TYPE

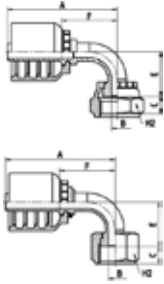


| PART. REF.     | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |    |    |    |
|----------------|-----------|------|--------|---------------|------------------|-------|------|------|----|----|----|
|                | DN        | Dash | inch   |               | T                | B     | A    | C    | F  | H1 | H2 |
| OPK22411-06A06 | 10        | - 6  | 3/8"   | 11/16" - 16   | 7                | 60,5  | 9,5  | 31   | 16 | 22 |    |
| OPK22411-06A08 | 10        | - 6  | 3/8"   | 13/16" - 16   | 9,3              | 65    | 11   | 35,5 | 19 | 24 |    |
| OPK22411-08A06 | 12        | - 8  | 1/2"   | 11/16" - 16   | 7                | 63    | 9,5  | 32   | 19 | 22 |    |
| OPK22411-08A08 | 12        | - 8  | 1/2"   | 13/16" - 16   | 9,3              | 67    | 11   | 36   | 19 | 24 |    |
| OPK22411-08A10 | 12        | - 8  | 1/2"   | 1" - 14       | 11,5             | 69,5  | 13,5 | 38,5 | 24 | 30 |    |
| OPK22411-08A12 | 12        | - 8  | 1/2"   | 1.3/16" - 12  | 13,9             | 73    | 14,5 | 42   | 28 | 36 |    |
| OPK22411-10A10 | 16        | - 10 | 5/8"   | 1" - 14       | 11,5             | 73    | 13,5 | 38,5 | 24 | 30 |    |
| OPK22411-10A12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  | 13,9             | 76,5  | 14,5 | 42   | 28 | 36 |    |
| OPK22411-12A10 | 19        | - 12 | 3/4"   | 1" - 14       | 11,5             | 77,5  | 13,5 | 41   | 28 | 30 |    |
| OPK22411-12A12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 13,9             | 80    | 14,5 | 43,5 | 28 | 36 |    |
| OPK22411-12A16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  | 19,8             | 82    | 15   | 45,5 | 36 | 41 |    |
| OPK22411-16A12 | 25        | - 16 | 1"     | 1.3/16" - 12  | 13,9             | 94    | 13,5 | 48   | 36 | 36 |    |
| OPK22411-16A16 | 25        | - 16 | 1"     | 1.7/16" - 12  | 19,8             | 94,5  | 15   | 46,5 | 36 | 41 |    |
| OPK22411-16A20 | 25        | - 16 | 1"     | 1.11/16" - 12 | 26               | 97,5  | 14,8 | 49,5 | 41 | 50 |    |
| OPK22411-20A20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 26               | 101,5 | 14,8 | 49   | 41 | 50 |    |
| OPK22411-24A24 | 38        | - 24 | 1.1/2" | 2" - 12       | 32               | 116   | 15,8 | 54   | 50 | 60 |    |

## SAE STANDARD CONNECTIONS

### OPK22491/OPK22493

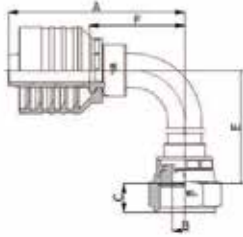
90° ORFS FEMALE ELBOW - SAE J516 / ISO 12151-1



| PART. REF.     | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|--------|---------------|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch   |               | T                | B     | A    | C    | E    | F  | H2 |
| OPK22493-06A06 | 10        | - 6  | 3/8"   | 11/16" - 16   | 6                | 59,5  | 9,5  | 24   | 30   | 22 |    |
| OPK22493-06A08 | 10        | - 6  | 3/8"   | 13/16" - 16   | 9,3              | 59,5  | 11   | 26,5 | 30   | 24 |    |
| OPK22491-08A06 | 12        | - 8  | 1/2"   | 11/16" - 16   | 7                | 61,5  | 9,5  | 24,5 | 30   | 22 |    |
| OPK22493-08A08 | 12        | - 8  | 1/2"   | 13/16" - 16   | 9                | 71,5  | 11   | 30   | 40,5 | 24 |    |
| OPK22493-08A10 | 12        | - 8  | 1/2"   | 1" - 14       | 11,5             | 71    | 13,5 | 30,5 | 40   | 30 |    |
| OPK22493-08A12 | 12        | - 8  | 1/2"   | 1.3/16" - 12  | 13,9             | 71    | 14,5 | 37,5 | 39,5 | 36 |    |
| OPK22493-10A10 | 16        | - 10 | 5/8"   | 1" - 14       | 11,5             | 82,5  | 13,5 | 37,5 | 48   | 30 |    |
| OPK22493-10A12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  | 13,9             | 82,5  | 14,5 | 41   | 48   | 36 |    |
| OPK22491-12A10 | 19        | - 12 | 3/4"   | 1" - 14       | 11,5             | 85,5  | 13,5 | 38   | 49   | 30 |    |
| OPK22493-12A12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 13,9             | 93    | 14,5 | 48   | 56,5 | 36 |    |
| OPK22493-12A16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  | 19,8             | 93    | 14,8 | 47,5 | 56,5 | 41 |    |
| OPK22491-16A12 | 25        | - 16 | 1"     | 1.3/16" - 12  | 13,9             | 106   | 14,5 | 48   | 57,5 | 36 |    |
| OPK22493-16A16 | 25        | - 16 | 1"     | 1.7/16" - 12  | 19,8             | 119,5 | 14,8 | 56   | 71,5 | 41 |    |
| OPK22493-16A20 | 25        | - 16 | 1"     | 1.11/16" - 12 | 26               | 119,5 | 14,8 | 58,5 | 71,5 | 50 |    |
| OPK22493-20A20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 26               | 135,5 | 14,8 | 66   | 83   | 50 |    |
| OPK22493-24A24 | 38        | - 24 | 1.1/2" | 2" - 12       | 32               | 164   | 14,8 | 79,5 | 102  | 60 |    |

OPK22491: CRIMPED BACK-NUT / OPK22493: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

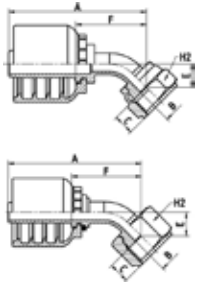


### OPK24491 LONG DROP

90° ORFS FEMALE LONG DROP ELBOW - SAE J516 / ISO 12151-1  
(CRIMPED-BACK NUT)

| PART. REF.     | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|------|--------------|--|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch |              |  | T                | B     | A    | C    | E    | F  | H2 |
| OPK24491-06A06 | 10        | - 6  | 3/8" | 11/16" - 16  |  | 6,7              | 61,5  | 9,5  | 54   | 32   | 22 |    |
| OPK24491-06A08 | 10        | - 6  | 3/8" | 13/16" - 16  |  | 6,7              | 61,5  | 11   | 54   | 32   | 24 |    |
| OPK24491-08A08 | 12        | - 8  | 1/2" | 13/16" - 16  |  | 9,6              | 68    | 11   | 64   | 37   | 24 |    |
| OPK24491-08A10 | 12        | - 8  | 1/2" | 1" - 14      |  | 9,6              | 68    | 12,5 | 64,5 | 37   | 30 |    |
| OPK24491-10A10 | 16        | - 10 | 5/8" | 1" - 14      |  | 12               | 75,5  | 13   | 70   | 41   | 30 |    |
| OPK24491-10A12 | 16        | - 10 | 5/8" | 1.3/16" - 12 |  | 12,7             | 75,5  | 13,5 | 73   | 41   | 36 |    |
| OPK24491-12A12 | 19        | - 12 | 3/4" | 1.3/16" - 12 |  | 15               | 95    | 13,5 | 96   | 58,5 | 36 |    |
| OPK24491-16A16 | 25        | - 16 | 1"   | 1.7/16" - 12 |  | 19,8             | 119,5 | 13,5 | 114  | 71,5 | 41 |    |

All items are made from brazing with the exception of OPK24491-12-12 and OPK24491-16-16



## SAE STANDARD CONNECTIONS

### OPK22441/OPK22443

45° ORFS FEMALE ELBOW - SAE J516 / ISO 12151-1

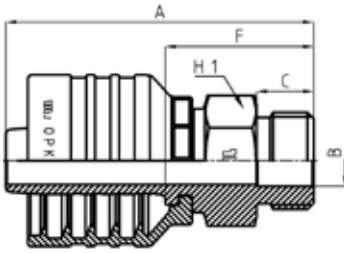
| PART. REF.     | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |      |    |    |
|----------------|-----------|------|--------|---------------|------------------|-------|------|------|------|----|----|
|                | DN        | Dash | inch   |               | T                | B     | A    | C    | E    | F  | H2 |
| OPK22443-06A06 | 10        | - 6  | 3/8"   | 11/16" - 16   | 6                | 61,5  | 9,5  | 11   | 32,5 | 22 |    |
| OPK22443-06A08 | 10        | - 6  | 3/8"   | 13/16" - 16   | 9,3              | 63    | 11   | 12,5 | 34   | 24 |    |
| OPK22441-08A06 | 12        | - 8  | 1/2"   | 11/16" - 16   | 7                | 63,5  | 9,5  | 11   | 32,5 | 22 |    |
| OPK22443-08A08 | 12        | - 8  | 1/2"   | 13/16" - 16   | 9                | 73    | 11   | 13   | 42   | 24 |    |
| OPK22443-08A10 | 12        | - 8  | 1/2"   | 1" - 14       | 11,5             | 73    | 13,5 | 13,5 | 42   | 30 |    |
| OPK22443-08A12 | 12        | - 8  | 1/2"   | 1.3/16" - 12  | 13,9             | 78    | 14,5 | 18,5 | 46,5 | 36 |    |
| OPK22443-10A10 | 16        | - 10 | 5/8"   | 1" - 14       | 11,5             | 83,5  | 13,5 | 16   | 49   | 30 |    |
| OPK22443-10A12 | 16        | - 10 | 5/8"   | 1.3/16" - 12  | 13,9             | 86    | 14,5 | 18,5 | 51,5 | 36 |    |
| OPK22441-12A10 | 19        | - 12 | 3/4"   | 1" - 14       | 11,5             | 87    | 13,5 | 16,5 | 50,5 | 30 |    |
| OPK22443-12A12 | 19        | - 12 | 3/4"   | 1.3/16" - 12  | 13,9             | 97    | 14,5 | 21,5 | 60,5 | 36 |    |
| OPK22443-12A16 | 19        | - 12 | 3/4"   | 1.7/16" - 12  | 19,8             | 96,5  | 14,8 | 21   | 60   | 41 |    |
| OPK22443-16A16 | 25        | - 16 | 1"     | 1.7/16" - 12  | 19,8             | 120   | 14,8 | 23,5 | 72   | 41 |    |
| OPK22443-16A20 | 25        | - 16 | 1"     | 1.11/16" - 12 | 26               | 122   | 14,8 | 25   | 74   | 50 |    |
| OPK22443-20A20 | 31        | - 20 | 1.1/4" | 1.11/16" - 12 | 26               | 134,5 | 14,8 | 27   | 82   | 50 |    |
| OPK22443-24A24 | 38        | - 24 | 1.1/2" | 2" - 12       | 32               | 160   | 14,8 | 31,5 | 98   | 60 |    |

OPK22441: CRIMPED BACK-NUT / OPK22443: SLIP-ON NUT

## SAE STANDARD CONNECTIONS

### OPK13010

SAE MALE O'RING BOSS TYPE

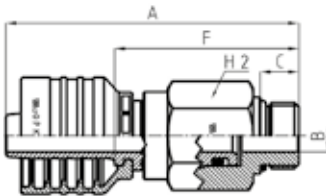


| PART. REF.     | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |      |      |    |  |  |
|----------------|-----------|------|------|--------------|------------------|------|------|------|------|----|--|--|
|                | DN        | Dash | inch |              | T                | B    | A    | C    | F    | H1 |  |  |
| OPK13010-08A08 | 12        | - 8  | 1/2" | 3/4" - 16    |                  | 9,9  | 60   | 11,1 | 29   | 22 |  |  |
| OPK13010-12A12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |                  | 15,5 | 76   | 15,1 | 39,5 | 32 |  |  |
| OPK13010-16A16 | 25        | - 16 | 1"   | 1.5/16" - 12 |                  | 21,5 | 89,5 | 15,1 | 41   | 38 |  |  |

## SAE STANDARD CONNECTIONS

### OPK14310

SAE SWIVEL MALE O'RING BOSS TYPE



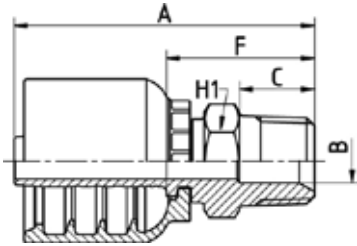
| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |     |    |      |    |    |  |  |
|----------------|-----------|------|------|-----------|------------------|-----|----|------|----|----|--|--|
|                | DN        | Dash | inch |           | T                | B   | A  | C    | F  | H2 |  |  |
| OPK14310-08A08 | 12        | - 8  | 1/2" | 3/4" - 16 |                  | 9,3 | 84 | 11,1 | 53 | 27 |  |  |

Not to be used as a live swivel

## SAE STANDARD CONNECTIONS

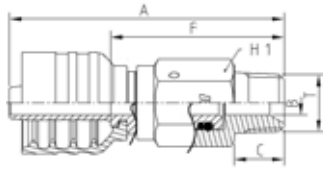
### OPK12810

NPTF MALE 60° CONE SEAT - SAE J516/J514



| PART. REF.     | HOSE BORE |      |        | Thread        | DIMENSIONS<br>mm |       |      |      |    |    |  |
|----------------|-----------|------|--------|---------------|------------------|-------|------|------|----|----|--|
|                | DN        | Dash | inch   |               | T                | B     | A    | C    | F  | H1 |  |
| OPK12810-06A04 | 10        | - 6  | 3/8"   | 1/4" - 18     | 5,5              | 59,5  | 14,5 | 30   | 14 |    |  |
| OPK12810-06A06 | 10        | - 6  | 3/8"   | 3/8" - 18     | 9,3              | 58    | 14,5 | 28,5 | 19 |    |  |
| OPK12810-06A08 | 10        | - 6  | 3/8"   | 1/2" - 14     | 12,5             | 64    | 19,2 | 34,5 | 24 |    |  |
| OPK12810-08A06 | 12        | - 8  | 1/2"   | 3/8" - 18     | 9,3              | 60    | 14,5 | 29   | 19 |    |  |
| OPK12810-08A08 | 12        | - 8  | 1/2"   | 1/2" - 14     | 12,5             | 66    | 19,2 | 35   | 24 |    |  |
| OPK12810-08A12 | 12        | - 8  | 1/2"   | 3/4" - 14     | 15,5             | 66,5  | 19,2 | 35,5 | 27 |    |  |
| OPK12810-10A08 | 16        | - 10 | 5/8"   | 1/2" - 14     | 12,5             | 73    | 19,2 | 38,5 | 24 |    |  |
| OPK12810-10A12 | 16        | - 10 | 5/8"   | 3/4" - 14     | 16               | 74,5  | 19,2 | 40   | 27 |    |  |
| OPK12810-12A08 | 19        | - 12 | 3/4"   | 1/2" - 14     | 12,5             | 73    | 19,2 | 36,5 | 27 |    |  |
| OPK12810-12A12 | 19        | - 12 | 3/4"   | 3/4" - 14     | 16               | 73    | 19,2 | 36,5 | 27 |    |  |
| OPK12810-12A16 | 19        | - 12 | 3/4"   | 1" - 11,5     | 19,8             | 82,5  | 24,2 | 46   | 36 |    |  |
| OPK12810-16A12 | 25        | - 16 | 1"     | 3/4" - 14     | 15,5             | 87    | 19,2 | 39   | 32 |    |  |
| OPK12810-16A16 | 25        | - 16 | 1"     | 1" - 11,5     | 19,8             | 92    | 24,2 | 44   | 36 |    |  |
| OPK12810-16A20 | 25        | - 16 | 1"     | 1.1/4" - 11,5 | 26               | 104,5 | 25   | 56,5 | 46 |    |  |
| OPK12810-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11,5 | 26               | 109   | 25   | 56,5 | 46 |    |  |
| OPK12810-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" - 11,5 | 32               | 119,5 | 26   | 57,5 | 50 |    |  |
| OPK12810-32A32 | 51        | - 32 | 2"     | 2" - 11,5     | 45               | 130,5 | 26,5 | 64,5 | 65 |    |  |





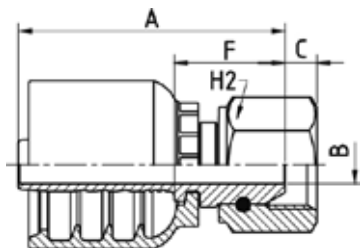
## SAE STANDARD CONNECTIONS

### OPK14110R

NPTF SWIVEL MALE 60° CONE SEAT - SAE J516/J514

| PART. REF.      | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|-----------------|-----------|------|------|-----------|--|------------------|------|------|------|----|----|--|
|                 | DN        | Dash | inch |           |  | T                | B    | A    | C    | F  | H1 |  |
| OPK14110-06A06R | 10        | - 6  | 3/8" | 3/8" - 18 |  | 7                | 80   | 14,5 | 50,5 | 22 |    |  |
| OPK14110-08A08R | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 90   | 19,2 | 59   | 27 |    |  |
| OPK14110-12A12R | 19        | - 12 | 3/4" | 3/4" - 14 |  | 16               | 94,5 | 19,2 | 58   | 32 |    |  |
| OPK14110-16A16R | 25        | - 16 | 1"   | 1" - 11,5 |  | 19,8             | 114  | 24,2 | 66   | 38 |    |  |

Not to be used as a live swivel

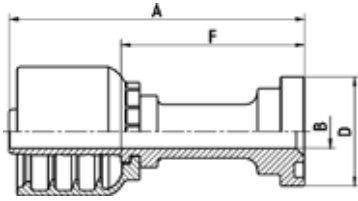


## SAE STANDARD CONNECTIONS

### OPK22812

NPSM FEMALE 60° CONE - SAE J516/J514 (THRUST-WIRE NUT)

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |  |
|----------------|-----------|------|------|-----------|--|------------------|------|------|------|----|----|--|
|                | DN        | Dash | inch |           |  | T                | B    | A    | C    | F  | H2 |  |
| OPK22812-06A06 | 10        | - 6  | 3/8" | 3/8" - 18 |  | 7                | 50,5 | 6    | 21   | 22 |    |  |
| OPK22812-08A08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,3              | 54   | 6,5  | 23   | 27 |    |  |
| OPK22812-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 61   | 9    | 24,5 | 32 |    |  |
| OPK22812-16A16 | 25        | - 16 | 1"   | 1" - 11,5 |  | 19,8             | 75,5 | 10,5 | 27,5 | 38 |    |  |

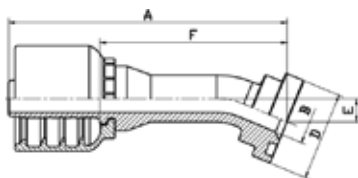


## SAE STANDARD CONNECTIONS

### OPK23311

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | F |  |  |
| OPK23311-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 82    | 30,3 | 51   |   |  |  |
| OPK23311-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15,1             | 89    | 38   | 58   |   |  |  |
| OPK23311-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 100   | 38   | 65,5 |   |  |  |
| OPK23311-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 94,5  | 38   | 58   |   |  |  |
| OPK23311-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 94,5  | 44,6 | 58   |   |  |  |
| OPK23311-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 112,5 | 44,6 | 64,5 |   |  |  |
| OPK23311-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 118,5 | 51   | 70,5 |   |  |  |
| OPK23311-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 123   | 51   | 70,5 |   |  |  |
| OPK23311-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 125   | 60,5 | 72,5 |   |  |  |
| OPK23311-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 137,5 | 60,5 | 75,5 |   |  |  |
| OPK23311-24A32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 137,5 | 71,6 | 75,5 |   |  |  |
| OPK23311-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 145   | 71,6 | 79   |   |  |  |
| OPK23311-32A40 | 51        | - 32 | 2"     | 2.1/2" | 56               | 147   | 84,3 | 81   |   |  |  |

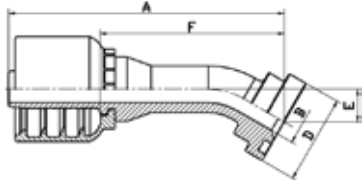


## SAE STANDARD CONNECTIONS

### OPK23321

22,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | F |  |
| OPK23321-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 95    | 30,3 | 8    | 64   |   |  |
| OPK23321-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 111   | 38   | 10   | 74,5 |   |  |
| OPK23321-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 111   | 44,6 | 10   | 74,5 |   |  |
| OPK23321-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 137   | 44,6 | 11,5 | 89   |   |  |
| OPK23321-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 152,5 | 51   | 12   | 100  |   |  |
| OPK23321-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 154,5 | 60,5 | 13   | 102  |   |  |

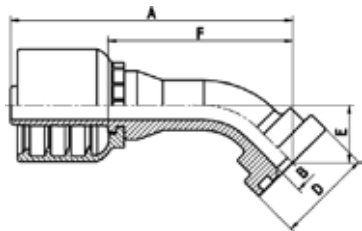


## SAE STANDARD CONNECTIONS

### OPK23331

30° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |       |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|-------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E     | F |  |
| OPK23331-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 93,5  | 30,3 | 11   | 62,5  |   |  |
| OPK23331-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 109,5 | 38   | 14   | 73    |   |  |
| OPK23331-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 109,5 | 44,6 | 14   | 73    |   |  |
| OPK23331-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 135   | 44,6 | 16,5 | 87    |   |  |
| OPK23331-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 150,5 | 51   | 17,5 | 98    |   |  |
| OPK23331-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 176,5 | 60,5 | 20   | 114,5 |   |  |

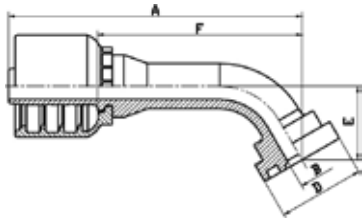


## SAE STANDARD CONNECTIONS

### OPK23341

45° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |       |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|-------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E     | F |  |
| OPK23341-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 90    | 30,3 | 18,5 | 58,5  |   |  |
| OPK23341-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15               | 90,5  | 38   | 19   | 59,5  |   |  |
| OPK23341-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 95    | 38   | 22   | 61    |   |  |
| OPK23341-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 104,5 | 38   | 23   | 68,5  |   |  |
| OPK23341-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 104,5 | 44,6 | 23   | 68,5  |   |  |
| OPK23341-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 129,5 | 44,6 | 27,5 | 81,5  |   |  |
| OPK23341-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 129,5 | 51   | 27,5 | 81,5  |   |  |
| OPK23341-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 144,5 | 51   | 29,5 | 92    |   |  |
| OPK23341-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 146   | 60,5 | 31   | 93,5  |   |  |
| OPK23341-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 169,5 | 60,5 | 34,5 | 107,5 |   |  |
| OPK23341-24A32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 169,5 | 71,6 | 34,5 | 107,5 |   |  |
| OPK23341-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 190   | 71,6 | 39   | 124   |   |  |

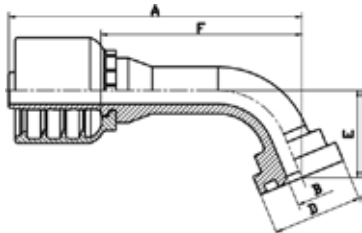


## SAE STANDARD CONNECTIONS

### OPK23361

60° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |       |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|-------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E     | F |  |
| OPK23361-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 102,5 | 30,3 | 26   | 71,5  |   |  |
| OPK23361-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 123,5 | 38   | 33   | 87    |   |  |
| OPK23361-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 152   | 44,6 | 39   | 104   |   |  |
| OPK23361-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 152   | 51   | 39   | 104   |   |  |
| OPK23361-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 172,5 | 51   | 43   | 120   |   |  |
| OPK23361-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 173,5 | 60,5 | 44,5 | 121   |   |  |
| OPK23361-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 205,5 | 60,5 | 50,5 | 143,5 |   |  |

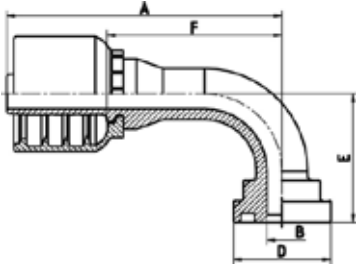


## SAE STANDARD CONNECTIONS

### OPK23371

67,5° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |       |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|-------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E     | F |  |
| OPK23371-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 99    | 30,3 | 29,5 | 68    |   |  |
| OPK23371-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 118,5 | 38   | 38   | 82    |   |  |
| OPK23371-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 118,5 | 44,6 | 38   | 82    |   |  |
| OPK23371-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 147   | 44,6 | 45   | 98,5  |   |  |
| OPK23371-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 166,5 | 51   | 50   | 114   |   |  |
| OPK23371-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 198,5 | 60,5 | 59   | 136,5 |   |  |

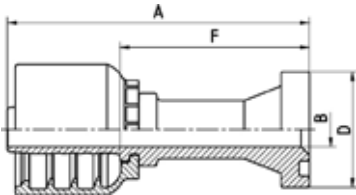


## SAE STANDARD CONNECTIONS

### OPK23391

90° ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | F |  |
| OPK23391-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 85,5  | 30,3 | 40   | 54,5 |   |  |
| OPK23391-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15               | 85,5  | 38   | 41   | 54,5 |   |  |
| OPK23391-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 90    | 38   | 47,5 | 56   |   |  |
| OPK23391-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 101   | 38   | 52   | 64,5 |   |  |
| OPK23391-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 101   | 44,6 | 52   | 64,5 |   |  |
| OPK23391-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 125,5 | 44,6 | 62   | 77,5 |   |  |
| OPK23391-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 125,5 | 51   | 62   | 77,5 |   |  |
| OPK23391-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 143   | 51   | 70   | 90,5 |   |  |
| OPK23391-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 143   | 60,5 | 72   | 90,5 |   |  |
| OPK23391-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 170   | 60,5 | 84   | 108  |   |  |
| OPK23391-24A32 | 38        | - 24 | 1.1/2" | 2"     | 42               | 170   | 71,6 | 84   | 108  |   |  |
| OPK23391-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 195   | 71,6 | 99   | 129  |   |  |

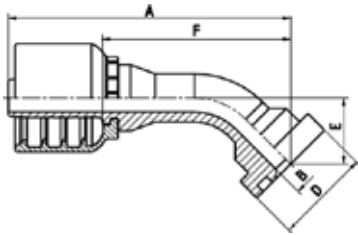


## SAE STANDARD CONNECTIONS

### OPK23611

ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |   |  |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|---|--|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | F |  |  |
| OPK23611-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 83    | 31,8 | 52   |   |  |  |
| OPK23611-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15               | 99,5  | 41,5 | 68,5 |   |  |  |
| OPK23611-10A08 | 16        | - 10 | 5/8"   | 1/2"   | 9,3              | 86,5  | 31,8 | 52   |   |  |  |
| OPK23611-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 104,5 | 41,5 | 70   |   |  |  |
| OPK23611-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 105,5 | 41,5 | 69   |   |  |  |
| OPK23611-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 117,5 | 47,7 | 81   |   |  |  |
| OPK23611-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 130,5 | 47,7 | 82,5 |   |  |  |
| OPK23611-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 138   | 54,2 | 90   |   |  |  |
| OPK23611-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 137   | 54,2 | 84,5 |   |  |  |
| OPK23611-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 143   | 63,7 | 90,5 |   |  |  |
| OPK23611-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 154,5 | 63,6 | 92,5 |   |  |  |
| OPK23611-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 175   | 79,5 | 109  |   |  |  |

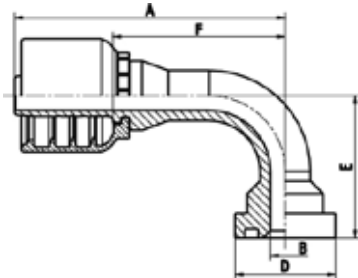


## SAE STANDARD CONNECTIONS

### OPK23641

45° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |       |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|-------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E     | F |  |
| OPK23641-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 93,5  | 31,8 | 22   | 62    |   |  |
| OPK23641-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15               | 99    | 41,5 | 27,5 | 68    |   |  |
| OPK23641-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 102   | 41,5 | 31   | 67,5  |   |  |
| OPK23641-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 109   | 41,5 | 28   | 72,5  |   |  |
| OPK23641-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 114   | 47,7 | 32,5 | 77    |   |  |
| OPK23641-16A12 | 25        | - 16 | 1"     | 3/4"   | 15               | 128   | 41,5 | 30   | 80    |   |  |
| OPK23641-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 132   | 47,7 | 32,5 | 83,5  |   |  |
| OPK23641-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 136,5 | 54,2 | 37,5 | 88,5  |   |  |
| OPK23641-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 147,5 | 54,2 | 37,5 | 95    |   |  |
| OPK23641-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 155   | 63,7 | 45   | 102,5 |   |  |
| OPK23641-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 180   | 63,7 | 44   | 118   |   |  |
| OPK23641-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 217,5 | 79,6 | 60,5 | 151,5 |   |  |



## SAE STANDARD CONNECTIONS

### OPK23691

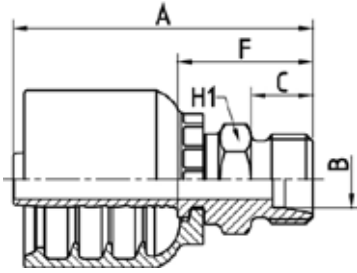
90° ISO/SAE CODE 62 FLANGE - SAE J516 / ISO 12151-3

| PART. REF.     | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|--------|--------|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch   |        | Inch             | B     | A    | D    | E    | F |  |
| OPK23691-08A08 | 12        | - 8  | 1/2"   | 1/2"   | 9,3              | 85,5  | 31,8 | 45   | 54,5 |   |  |
| OPK23691-08A12 | 12        | - 8  | 1/2"   | 3/4"   | 15               | 85,5  | 41,5 | 53   | 54,5 |   |  |
| OPK23691-10A12 | 16        | - 10 | 5/8"   | 3/4"   | 15               | 87,5  | 41,5 | 60,5 | 53,5 |   |  |
| OPK23691-10A16 | 16        | - 10 | 5/8"   | 1"     | 19,8             | 90    | 47,7 | 64   | 56   |   |  |
| OPK23691-12A12 | 19        | - 12 | 3/4"   | 3/4"   | 15               | 100,5 | 41,5 | 59   | 64   |   |  |
| OPK23691-12A16 | 19        | - 12 | 3/4"   | 1"     | 20               | 101   | 47,7 | 65   | 64,5 |   |  |
| OPK23691-16A16 | 25        | - 16 | 1"     | 1"     | 19,8             | 121,5 | 47,7 | 68   | 73,5 |   |  |
| OPK23691-16A20 | 25        | - 16 | 1"     | 1.1/4" | 26               | 121,5 | 54,2 | 75   | 73,5 |   |  |
| OPK23691-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 138   | 54,2 | 81   | 85,5 |   |  |
| OPK23691-20A24 | 31        | - 20 | 1.1/4" | 1.1/2" | 32               | 138   | 63,7 | 91,5 | 85,5 |   |  |
| OPK23691-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" | 32               | 168   | 63,7 | 94,5 | 106  |   |  |
| OPK23691-32A32 | 51        | - 32 | 2"     | 2"     | 42               | 204   | 79,6 | 132  | 138  |   |  |

## DIN STANDARD CONNECTIONS

### OPK11110

METRIC MALE 24° CONE SEAT LIGHT DUTY - DIN 20066 / ISO 12151-2

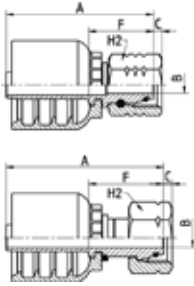


| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |    |      |    |   |    |
|----------------|-----------|------|--------|----------|------|------------------|------|----|------|----|---|----|
|                | DN        | Dash | inch   |          |      | T                | mm   | B  | A    | C  | F | H1 |
| OPK11110-06A16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 7                | 53,5 | 11 | 24   | 17 |   |    |
| OPK11110-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 9                | 54   | 11 | 24,5 | 19 |   |    |
| OPK11110-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 10               | 55   | 12 | 25,5 | 22 |   |    |
| OPK11110-08A22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 10               | 56,5 | 12 | 25,5 | 22 |   |    |
| OPK11110-08A26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5             | 57,5 | 12 | 26,5 | 27 |   |    |
| OPK11110-10A22 | 16        | - 10 | 5/8"   | M 22x1,5 | 15   | 10               | 60   | 12 | 25,5 | 22 |   |    |
| OPK11110-10A26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 61   | 12 | 26,5 | 27 |   |    |
| OPK11110-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 66,5 | 14 | 30   | 30 |   |    |
| OPK11110-16A36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 80,5 | 14 | 32,5 | 36 |   |    |
| OPK11110-20A45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 93   | 16 | 40,5 | 46 |   |    |
| OPK11110-24A52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 105  | 16 | 43   | 55 |   |    |

## DIN STANDARD CONNECTIONS

### OPK21512/OPK21513

METRIC O-RING FEMALE 24° CONE LIGHT DUTY - DIN 20066 / ISO 12151-2

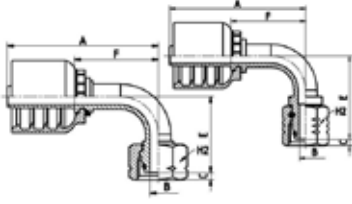


| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |      |     |      |    |   |    |
|----------------|-----------|------|--------|----------|------|------------------|------|-----|------|----|---|----|
|                | DN        | Dash | inch   |          |      | T                | mm   | B   | A    | C  | F | H2 |
| OPK21512-06A16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6                | 52,5 | 3   | 23   | 19 |   |    |
| OPK21513-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7                | 52   | 2   | 22,5 | 22 |   |    |
| OPK21513-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3              | 54,5 | 1,5 | 25   | 27 |   |    |
| OPK21512-08A18 | 12        | - 8  | 1/2"   | M 18x1,5 | 12   | 7                | 60   | 2,9 | 29   | 22 |   |    |
| OPK21513-08A22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3              | 56,5 | 1,5 | 25,5 | 27 |   |    |
| OPK21513-08A26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5             | 57   | 2   | 26   | 32 |   |    |
| OPK21513-10A26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 60,5 | 2   | 26   | 32 |   |    |
| OPK21513-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 22   | 15               | 68,5 | 3   | 34   | 36 |   |    |
| OPK21512-12A26 | 19        | - 12 | 3/4"   | M 26x1,5 | 18   | 12,5             | 67,5 | 2,3 | 31   | 32 |   |    |
| OPK21513-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 64,5 | 3   | 28   | 36 |   |    |
| OPK21513-12A36 | 19        | - 12 | 3/4"   | M 36x2   | 28   | 20               | 65   | 3,7 | 28,5 | 41 |   |    |
| OPK21513-16A36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 77,5 | 3,7 | 29,5 | 41 |   |    |
| OPK21513-20A45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 85,5 | 4   | 33   | 50 |   |    |
| OPK21513-24A52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 95   | 4,5 | 33   | 60 |   |    |

OPK21512: THRUST-WIRE NUT / OPK21513: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

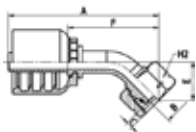
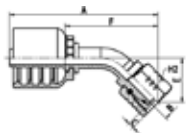


### OPK21592/OPK21593

90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2

| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |       |    |   |
|----------------|-----------|------|--------|----------|------|------------------|-------|-----|------|-------|----|---|
|                | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C     | E  | F |
| OPK21592-06A16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6                | 65    | 3   | 40   | 35,5  | 19 |   |
| OPK21593-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7                | 66    | 2   | 33,5 | 36,5  | 22 |   |
| OPK21593-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3              | 66    | 1,5 | 35   | 36,5  | 27 |   |
| OPK21592-08A18 | 12        | - 8  | 1/2"   | M 18x1,5 | 12   | 7                | 75    | 2,9 | 48   | 44    | 22 |   |
| OPK21593-08A22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3              | 76    | 1,5 | 39,5 | 45    | 27 |   |
| OPK21593-08A26 | 12        | - 8  | 1/2"   | M 26x1,5 | 18   | 12,5             | 76    | 2   | 40   | 45    | 32 |   |
| OPK21593-10A26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 86    | 2   | 53   | 51,5  | 32 |   |
| OPK21593-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 22   | 15               | 86    | 3   | 54   | 51,5  | 36 |   |
| OPK21593-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 97,5  | 3   | 59,5 | 61,5  | 36 |   |
| OPK21593-16A36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 125   | 3,7 | 69,5 | 76,5  | 41 |   |
| OPK21593-20A45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 146   | 4   | 81   | 93,5  | 50 |   |
| OPK21593-24A52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 169,5 | 4,5 | 98   | 107,5 | 60 |   |

OPK21592: THRUST-WIRE NUT / OPK21593: SLIP-ON NUT



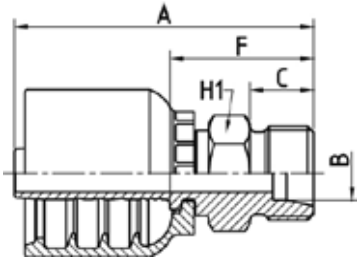
## DIN STANDARD CONNECTIONS

### OPK21542/OPK21543

**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE LIGHT DUTY  
DIN 20066 / ISO 12151-2**

| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |   |
|----------------|-----------|------|--------|----------|------|------------------|-------|-----|------|------|----|---|
|                | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C    | E  | F |
| OPK21542-06A16 | 10        | - 6  | 3/8"   | M 16x1,5 | 10   | 6                | 77    | 3   | 21,5 | 47,5 | 19 |   |
| OPK21543-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 | 12   | 7                | 73    | 2   | 16,5 | 43,5 | 22 |   |
| OPK21543-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 15   | 9,3              | 74    | 1,5 | 18   | 45   | 27 |   |
| OPK21543-08A22 | 12        | - 8  | 1/2"   | M 22x1,5 | 15   | 9,3              | 83    | 1,5 | 19   | 52   | 27 |   |
| OPK21543-10A26 | 16        | - 10 | 5/8"   | M 26x1,5 | 18   | 12,5             | 96,5  | 2   | 26,5 | 62   | 32 |   |
| OPK21543-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 22   | 15               | 107,5 | 3   | 28,5 | 71   | 36 |   |
| OPK21543-16A36 | 25        | - 16 | 1"     | M 36x2   | 28   | 19,8             | 133   | 3,7 | 32   | 85   | 41 |   |
| OPK21543-20A45 | 31        | - 20 | 1.1/4" | M 45x2   | 35   | 26               | 152,5 | 4   | 36   | 100  | 50 |   |
| OPK21543-24A52 | 38        | - 24 | 1.1/2" | M 52x2   | 42   | 32               | 179   | 4,5 | 44,5 | 117  | 60 |   |

OPK21542: THRUST-WIRE NUT / OPK21543: SLIP-ON NUT

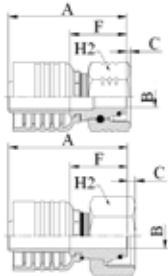


## DIN STANDARD CONNECTIONS

### OPK11210

**METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2**

| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS mm |       |    |      |    |   |    |
|----------------|-----------|------|--------|----------|------|---------------|-------|----|------|----|---|----|
|                | DN        | Dash | inch   |          |      | T             | mm    | B  | A    | C  | F | H1 |
| OPK11210-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 | 10   | 7             | 56,5  | 12 | 27   | 19 |   |    |
| OPK11210-06A20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7             | 58,5  | 12 | 29   | 22 |   |    |
| OPK11210-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 8             | 60,5  | 14 | 31   | 22 |   |    |
| OPK11210-08A24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3           | 62,5  | 14 | 31,5 | 24 |   |    |
| OPK11210-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 15            | 70    | 16 | 35,5 | 30 |   |    |
| OPK11210-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 15            | 73,5  | 16 | 37   | 30 |   |    |
| OPK11210-12A36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 19,8          | 77,5  | 18 | 41   | 36 |   |    |
| OPK11210-16A36 | 25        | - 16 | 1"     | M 36x2   | 25   | 19,8          | 90,5  | 18 | 42,5 | 36 |   |    |
| OPK11210-16A42 | 25        | - 16 | 1"     | M 42x2   | 30   | 25            | 92,5  | 20 | 44,5 | 46 |   |    |
| OPK11210-20A52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 30            | 103,5 | 22 | 51   | 55 |   |    |



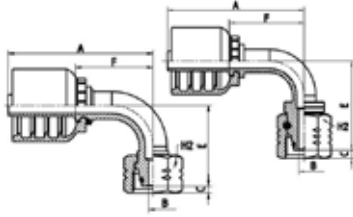
## DIN STANDARD CONNECTIONS

### OPK21612/OPK21613

**METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066 / ISO 12151-2**

| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS mm |       |     |      |    |   |    |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|----|---|----|
|                | DN        | Dash | inch   |          |      | T             | mm    | B   | A    | C  | F | H2 |
| OPK21613-06A20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7             | 54,5  | 2   | 25,5 | 24 |   |    |
| OPK21613-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 7             | 62    | 3   | 32,5 | 27 |   |    |
| OPK21613-08A24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3           | 58    | 4   | 26,5 | 30 |   |    |
| OPK21613-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12,5          | 65    | 3,5 | 30,5 | 36 |   |    |
| OPK21612-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5          | 70    | 2,2 | 33,5 | 36 |   |    |
| OPK21613-12A36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 15            | 70,5  | 4,5 | 34   | 41 |   |    |
| OPK21612-16A36 | 25        | - 16 | 1"     | M 36x2   | 25   | 15            | 83,5  | 1,7 | 35,5 | 41 |   |    |
| OPK21613-16A42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,8          | 83,5  | 6,3 | 35,5 | 50 |   |    |
| OPK21613-20A52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26            | 90    | 8   | 37,5 | 60 |   |    |
| OPK21613-24A52 | 38        | - 24 | 1.1/2" | M 52x2   | 38   | 26            | 111,5 | 8   | 49,5 | 60 |   |    |

OPK21612: THRUST-WIRE NUT / OPK21613: SLIP-ON NUT



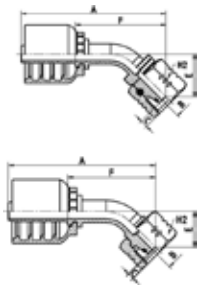
## DIN STANDARD CONNECTIONS

### OPK21692/OPK21693

**90° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2**

| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |   |
|----------------|-----------|------|--------|----------|------|------------------|-------|-----|------|------|----|---|
|                | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C    | E  | F |
| OPK21693-06A20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7                | 66    | 2   | 35   | 36,5 | 24 |   |
| OPK21693-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 7                | 66    | 3   | 37   | 36,5 | 27 |   |
| OPK21693-06A24 | 10        | - 6  | 3/8"   | M 24x1,5 | 16   | 9,3              | 66    | 4   | 36   | 36,5 | 30 |   |
| OPK21693-08A24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3              | 76    | 4   | 40,5 | 45   | 30 |   |
| OPK21693-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12,5             | 86    | 3,5 | 57,5 | 51,5 | 36 |   |
| OPK21692-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5             | 98    | 2,2 | 67,5 | 61,5 | 36 |   |
| OPK21693-12A36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 15               | 97,5  | 4,5 | 64,5 | 61,5 | 41 |   |
| OPK21692-16A36 | 25        | - 16 | 1"     | M 36x2   | 25   | 15               | 127,5 | 1,7 | 86   | 79,5 | 41 |   |
| OPK21693-16A42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,8             | 127,5 | 6,3 | 74,5 | 79   | 50 |   |
| OPK21693-20A52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26               | 146   | 8   | 85,5 | 93,5 | 60 |   |

OPK21692: THRUST-WIRE NUT / OPK21693: SLIP-ON NUT



## DIN STANDARD CONNECTIONS

### OPK21642/OPK21643

**45° METRIC O-RING FEMALE SWEPT ELBOW 24° CONE HEAVY DUTY  
DIN 20066 / ISO 12151-2**

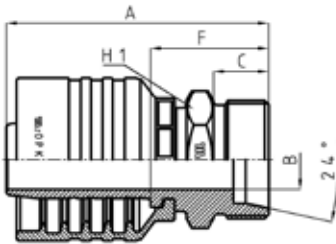
| PART. REF.     | HOSE BORE |      |        | Thread   | Pipe | DIMENSIONS<br>mm |       |     |      |      |    |   |
|----------------|-----------|------|--------|----------|------|------------------|-------|-----|------|------|----|---|
|                | DN        | Dash | inch   |          |      | T                | mm    | B   | A    | C    | E  | F |
| OPK21643-06A20 | 10        | - 6  | 3/8"   | M 20x1,5 | 12   | 7                | 73,5  | 2   | 17   | 44   | 24 |   |
| OPK21643-06A22 | 10        | - 6  | 3/8"   | M 22x1,5 | 14   | 7                | 75    | 3   | 18,5 | 45,5 | 27 |   |
| OPK21643-08A24 | 12        | - 8  | 1/2"   | M 24x1,5 | 16   | 9,3              | 83,5  | 4   | 20   | 52,5 | 30 |   |
| OPK21643-10A30 | 16        | - 10 | 5/8"   | M 30x2   | 20   | 12,5             | 99,5  | 3,5 | 29,5 | 65,5 | 36 |   |
| OPK21642-12A30 | 19        | - 12 | 3/4"   | M 30x2   | 20   | 12,5             | 113   | 2,2 | 34   | 76,5 | 36 |   |
| OPK21643-12A36 | 19        | - 12 | 3/4"   | M 36x2   | 25   | 15               | 111,5 | 4,5 | 32,5 | 75   | 41 |   |
| OPK21643-16A42 | 25        | - 16 | 1"     | M 42x2   | 30   | 19,8             | 138   | 6,3 | 35,5 | 90   | 50 |   |
| OPK21643-20A52 | 31        | - 20 | 1.1/4" | M 52x2   | 38   | 26               | 155,5 | 8   | 39,5 | 103  | 60 |   |

OPK21642: THRUST-WIRE NUT / OPK21643: SLIP-ON NUT

## NF STANDARD CONNECTIONS

### OPK11710

FRENCH METRIC MALE 24° CONE SEAT MILLIMETRIC TYPE

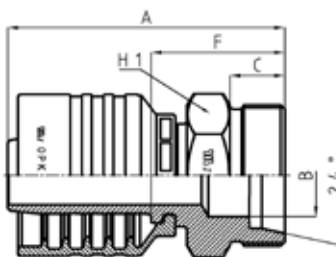


| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS mm |      |    |    |    |   |    |
|----------------|-----------|------|------|----------|------|---------------|------|----|----|----|---|----|
|                | DN        | Dash | inch |          |      | T             | mm   | B  | A  | C  | F | H1 |
| OPK11710-12A30 | 19        | - 12 | 3/4" | M 30x1,5 | 22   | 15            | 66,5 | 14 | 30 | 30 |   |    |

## NF STANDARD CONNECTIONS

### OPK11810

FRENCH METRIC MALE 24° CONE SEAT GAZ TYPE

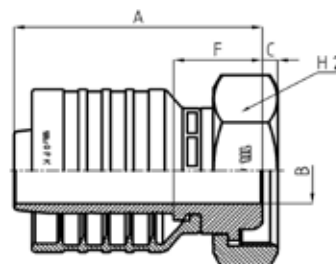


| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS mm |      |    |    |    |   |    |
|----------------|-----------|------|------|----------|------|---------------|------|----|----|----|---|----|
|                | DN        | Dash | inch |          |      | T             | mm   | B  | A  | C  | F | H1 |
| OPK11810-12A36 | 19        | - 12 | 3/4" | M 36x1,5 | 26,8 | 21            | 70,5 | 14 | 34 | 36 |   |    |

## NF STANDARD CONNECTIONS

### OPK21813

FRENCH METRIC FEMALE GAZ TYPE

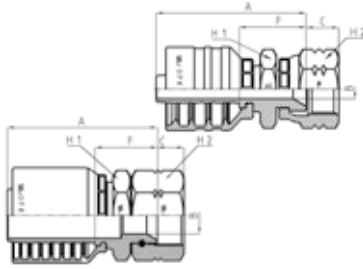


| PART. REF.     | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS mm |    |     |    |    |   |    |
|----------------|-----------|------|------|----------|------|---------------|----|-----|----|----|---|----|
|                | DN        | Dash | inch |          |      | T             | mm | B   | A  | C  | F | H2 |
| OPK21813-16A45 | 25        | - 16 | 1"   | M 45x1,5 | 33,5 | 19,8          | 75 | 4,5 | 27 | 50 |   |    |

## JIS STANDARD CONNECTIONS

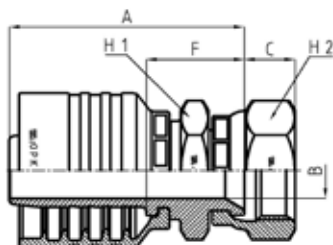
### OPK24011/OPK24012

JIS METRIC FEMALE (KOMATSU)



| PART. REF.     | HOSE BORE |      |        | Thread   |  | DIMENSIONS<br>mm |      |      |      |    |    |    |
|----------------|-----------|------|--------|----------|--|------------------|------|------|------|----|----|----|
|                | DN        | Dash | inch   |          |  | T                | B    | A    | C    | F  | H1 | H2 |
| OPK24011-06A18 | 10        | - 6  | 3/8"   | M 18x1,5 |  | 7                | 53   | 11,5 | 23,5 | 24 | 24 |    |
| OPK24011-08A22 | 12        | - 8  | 1/2"   | M 22x1,5 |  | 9,3              | 56   | 13   | 25   | 27 | 27 |    |
| OPK24011-10A24 | 16        | - 10 | 5/8"   | M 24x1,5 |  | 12,5             | 61   | 15,1 | 26,5 | 32 | 32 |    |
| OPK24011-12A30 | 19        | - 12 | 3/4"   | M 30x1,5 |  | 15               | 68   | 18,3 | 31,5 | 36 | 36 |    |
| OPK24011-16A33 | 25        | - 16 | 1"     | M 33x1,5 |  | 19,8             | 81,5 | 21,3 | 33,5 | 41 | 41 |    |
| OPK24012-24A42 | 38        | - 24 | 1.1/2" | M 42x1,5 |  | 26               | 106  | 18,8 | 44   | 55 | 55 |    |

OPK24011: CRIMPED BACK-NUT / OPK24012: THRUST-WIRE NUT



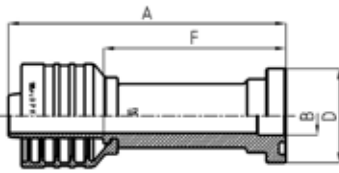
## JIS STANDARD CONNECTIONS

### OPK23811

JIS BSP FEMALE (TOYOTA)

| PART. REF.     | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |      |    |    |    |
|----------------|-----------|------|------|-----------|--|------------------|------|------|------|----|----|----|
|                | DN        | Dash | inch |           |  | T                | B    | A    | C    | F  | H1 | H2 |
| OPK23811-12A12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 62,5 | 13,5 | 26   | 32 | 32 |    |
| OPK23811-16A16 | 25        | - 16 | 1"   | 1" - 11   |  | 19,8             | 78,5 | 14,5 | 30,5 | 38 | 38 |    |

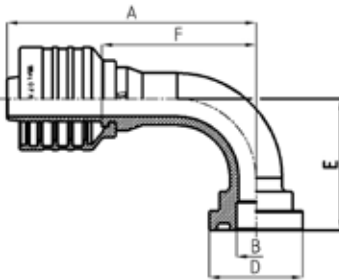
## ORIGINAL EQUIPMENT CONNECTIONS



### OPK24111

#### STRAIGHT KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |     |    |      |   |  |  |  |
|----------------|-----------|------|------|--------|---------------|-----|----|------|---|--|--|--|
|                | DN        | Dash | inch |        | Inch          | B   | A  | D    | F |  |  |  |
| OPK24111-10A10 | 16        | - 10 | 5/8" | 5/8"   | 14            | 100 | 34 | 65,5 |   |  |  |  |

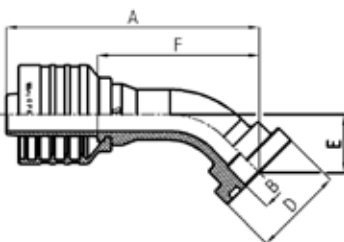


## ORIGINAL EQUIPMENT CONNECTIONS

### OPK24191

#### 90° KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |    |    |      |    |   |  |  |
|----------------|-----------|------|------|--------|---------------|----|----|------|----|---|--|--|
|                | DN        | Dash | inch |        | Inch          | B  | A  | D    | E  | F |  |  |
| OPK24191-10A10 | 16        | - 10 | 5/8" | 5/8"   | 14            | 90 | 34 | 47,5 | 56 |   |  |  |

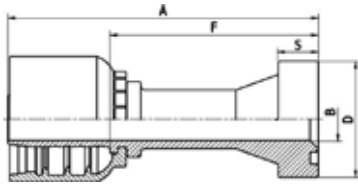


## ORIGINAL EQUIPMENT CONNECTIONS

### OPK24141

#### 45° KOMATSU FLANGE

| PART. REF.     | HOSE BORE |      |      | Flange | DIMENSIONS mm |    |    |    |    |   |  |  |
|----------------|-----------|------|------|--------|---------------|----|----|----|----|---|--|--|
|                | DN        | Dash | inch |        | Inch          | B  | A  | D  | E  | F |  |  |
| OPK24141-10A10 | 16        | - 10 | 5/8" | 5/8"   | 14            | 95 | 34 | 22 | 61 |   |  |  |



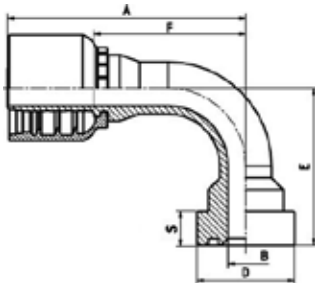
## ORIGINAL EQUIPMENT CONNECTIONS

### OPK23911

#### STRAIGHT SUPERCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |   |  |
|----------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|---|--|
|                | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | F    | S |  |
| OPK23911-12A12 | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 111   | 41,5 | 74,5 | 14,3 |   |  |
| OPK23911-16A16 | 25        | - 16 | 1"     | 1"     |  | 19,8             | 135   | 47,7 | 87   | 14,3 |   |  |
| OPK23911-16A20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 140,5 | 54   | 92,5 | 14,3 |   |  |
| OPK23911-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 138,5 | 54   | 86   | 14,3 |   |  |
| OPK23911-24A24 | 38        | - 24 | 1.1/2" | 1.1/2" |  | 32               | 156   | 63,6 | 94   | 14,3 |   |  |

FITTINGS  
F 10-36



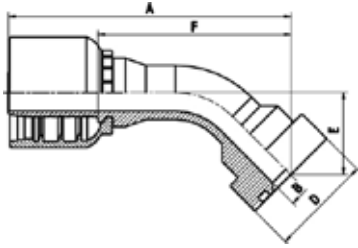
## ORIGINAL EQUIPMENT CONNECTIONS

### OPK23991

#### 90° SUPERCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |      |   |
|----------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|------|---|
|                | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E    | F    | S |
| OPK23991-12A12 | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 101   | 41,5 | 64,5 | 64,5 | 14,3 |   |
| OPK23991-16A16 | 25        | - 16 | 1"     | 1"     |  | 19,8             | 125,5 | 47,7 | 76,5 | 77,5 | 14,3 |   |
| OPK23991-16A20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 123,5 | 54   | 80,5 | 75,5 | 14,3 |   |
| OPK23991-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 138   | 54   | 87   | 85,5 | 14,3 |   |





## ORIGINAL EQUIPMENT CONNECTIONS

### OPK23941

#### 45° SUPERCAT FLANGE

| PART. REF.     | HOSE BORE |      |        | Flange |  | DIMENSIONS<br>mm |       |      |      |      |      |   |
|----------------|-----------|------|--------|--------|--|------------------|-------|------|------|------|------|---|
|                | DN        | Dash | inch   |        |  | Inch             | B     | A    | D    | E    | F    | S |
| OPK23941-12A12 | 19        | - 12 | 3/4"   | 3/4"   |  | 15               | 114   | 41,5 | 32   | 77   | 14,3 |   |
| OPK23941-16A16 | 25        | - 16 | 1"     | 1"     |  | 19,8             | 138   | 47,7 | 36,5 | 89,5 | 14,3 |   |
| OPK23941-16A20 | 25        | - 16 | 1"     | 1.1/4" |  | 26               | 140,5 | 54   | 40,5 | 92,5 | 14,3 |   |
| OPK23941-20A20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26               | 151,5 | 54   | 41,5 | 99   | 14,3 |   |





**EASYFIT**



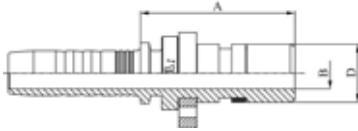
| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| O82H10       | 11      | 4    |
| M12H10       | 11      | 1    |
| M12H40       | 11      | 1    |
| M12H90       | 11      | 2    |
| M22H10       | 11      | 2    |
| A52032H      | 11      | 3    |
| A52192H      | 11      | 4    |
| A52302H      | 11      | 3    |



## MULTIFIT INSERT

### M12H10

#### EF STRAIGHT MALE INSERT

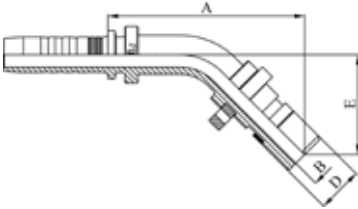


| PART. REF.   | HOSE BORE |      |       | W.P. | DIMENSIONS<br>mm |      |    |   |  |  |
|--------------|-----------|------|-------|------|------------------|------|----|---|--|--|
|              | DN        | Dash | inch  |      | Bar              | B    | A  | D |  |  |
| M12H10-04-04 | 6         | -4   | 1/4"  | 350  | 4                | 30   | 10 |   |  |  |
| M12H10-04-06 | 6         | -4   | 1/4"  | 350  | 7                | 34   | 13 |   |  |  |
| M12H10-05-06 | 8         | -5   | 5/16" | 350  | 7                | 34   | 13 |   |  |  |
| M12H10-06-04 | 10        | -6   | 3/8"  | 350  | 4                | 30,5 | 10 |   |  |  |
| M12H10-06-06 | 10        | -6   | 3/8"  | 350  | 7                | 34,5 | 13 |   |  |  |
| M12H10-06-08 | 10        | -6   | 3/8"  | 350  | 9,3              | 34,5 | 16 |   |  |  |
| M12H10-08-06 | 12        | -8   | 1/2"  | 350  | 7                | 35   | 13 |   |  |  |
| M12H10-08-08 | 12        | -8   | 1/2"  | 350  | 9,3              | 35   | 16 |   |  |  |
| M12H10-10-08 | 16        | -10  | 5/8"  | 350  | 9,3              | 35   | 16 |   |  |  |
| M12H10-10-12 | 16        | -10  | 5/8"  | 280  | 15               | 44,5 | 23 |   |  |  |
| M12H10-12-12 | 19        | -12  | 3/4"  | 280  | 15               | 44,5 | 23 |   |  |  |

## MULTIFIT INSERT

### M12H40

#### EF 45° ELBOW MALE INSERT

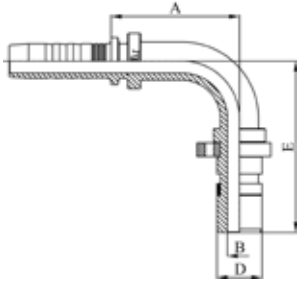


| PART. REF.   | HOSE BORE |      |       | W.P. | DIMENSIONS<br>mm |      |    |      |   |
|--------------|-----------|------|-------|------|------------------|------|----|------|---|
|              | DN        | Dash | inch  |      | Bar              | B    | A  | D    | E |
| M12H40-04-04 | 6         | -4   | 1/4"  | 350  | 4                | 46   | 10 | 23,5 |   |
| M12H40-04-06 | 6         | -4   | 1/4"  | 350  | 7                | 52   | 13 | 27   |   |
| M12H40-05-06 | 8         | -5   | 5/16" | 350  | 7                | 53   | 13 | 27,5 |   |
| M12H40-06-04 | 10        | -6   | 3/8"  | 350  | 4                | 47   | 10 | 23,5 |   |
| M12H40-06-06 | 10        | -6   | 3/8"  | 350  | 7                | 55,5 | 13 | 28   |   |
| M12H40-08-08 | 12        | -8   | 1/2"  | 350  | 9,3              | 61,5 | 16 | 30   |   |
| M12H40-10-08 | 16        | -10  | 5/8"  | 350  | 9,3              | 65   | 16 | 30   |   |
| M12H40-10-12 | 16        | -10  | 5/8"  | 280  | 15               | 79   | 23 | 41   |   |
| M12H40-12-12 | 19        | -12  | 3/4"  | 280  | 15               | 85,5 | 23 | 42,5 |   |

## MULTIFIT INSERT

### M12H90

#### EF 90° ELBOW MALE INSERT

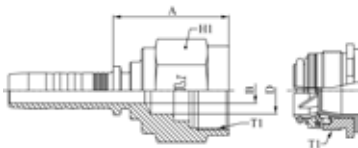


| PART. REF.   | HOSE BORE |      |       | W.P. | DIMENSIONS mm |      |    |      |   |  |  |
|--------------|-----------|------|-------|------|---------------|------|----|------|---|--|--|
|              | DN        | Dash | inch  |      | Bar           | B    | A  | D    | E |  |  |
| M12H90-04-04 | 6         | -4   | 1/4"  | 350  | 4             | 30   | 10 | 40   |   |  |  |
| M12H90-04-06 | 6         | -4   | 1/4"  | 350  | 7             | 32   | 13 | 45   |   |  |  |
| M12H90-05-06 | 8         | -5   | 5/16" | 350  | 7             | 33,5 | 13 | 46,5 |   |  |  |
| M12H90-06-04 | 10        | -6   | 3/8"  | 350  | 4             | 30,5 | 10 | 40   |   |  |  |
| M12H90-06-06 | 10        | -6   | 3/8"  | 350  | 7             | 37   | 13 | 49,5 |   |  |  |
| M12H90-08-06 | 10        | -6   | 3/8"  | 350  | 7             | 37,5 | 13 | 49,5 |   |  |  |
| M12H90-08-08 | 12        | -8   | 1/2"  | 350  | 9,3           | 44   | 16 | 55   |   |  |  |
| M12H90-10-08 | 16        | -10  | 5/8"  | 350  | 9,3           | 47   | 16 | 55   |   |  |  |
| M12H90-10-12 | 16        | -10  | 5/8"  | 280  | 15            | 55   | 23 | 74,5 |   |  |  |
| M12H90-12-12 | 19        | -12  | 3/4"  | 280  | 15            | 62,5 | 23 | 79   |   |  |  |

## MULTIFIT INSERT

### M22H10

#### EF STRAIGHT FEMALE INSERT



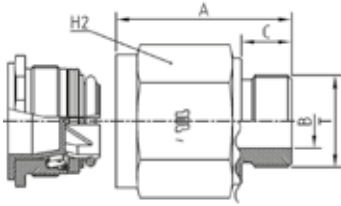
| PART. REF.   | HOSE BORE |      |      | Thread   | W.P. | DIMENSIONS mm |      |    |    |   |    |
|--------------|-----------|------|------|----------|------|---------------|------|----|----|---|----|
|              | DN        | Dash | inch |          |      | T             | Bar  | B  | A  | D | H1 |
| M22H10-04-04 | 6         | -4   | 1/4" | M 18x1   | 350  | 4             | 30   | 10 | 22 |   |    |
| M22H10-06-06 | 10        | -6   | 3/8" | M 22x1   | 350  | 7             | 33,5 | 13 | 25 |   |    |
| M22H10-08-08 | 12        | -8   | 1/2" | M 25x1   | 350  | 9,3           | 34   | 16 | 28 |   |    |
| M22H10-10-08 | 16        | -10  | 5/8" | M 25x1   | 350  | 12,5          | 34   | 23 | 28 |   |    |
| M22H10-10-12 | 16        | -10  | 5/8" | M 33x1,5 | 280  | 12,5          | 45,5 | 23 | 38 |   |    |
| M22H10-12-12 | 19        | -12  | 3/4" | M 33x1,5 | 280  | 15            | 46,5 | 23 | 38 |   |    |



## ADAPTORS

### A52032H

ADAPTOR BSP MALE O-RING BOSS TYPE ISO 1179 EF FEMALE

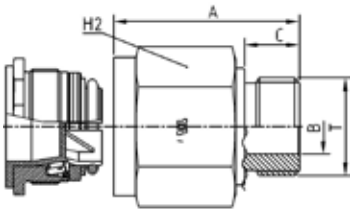


| PART. REF.    | HOSE BORE |      |      | Thread    | W.P. | DIMENSIONS<br>mm |      |      |    |    |   |    |
|---------------|-----------|------|------|-----------|------|------------------|------|------|----|----|---|----|
|               | DN        | Dash | inch |           |      | T                | Bar  | B    | A  | C  | D | H1 |
| A52032H-04-04 | 6         | - 4  | 1/4" | 1/4" - 19 | 350  | 7,5              | 34   | 11,2 | 10 | 22 |   |    |
| A52032H-06-04 | 6         | - 4  | 1/4" | 3/8" - 19 | 350  | 9                | 34   | 11,2 | 10 | 22 |   |    |
| A52032H-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 | 350  | 9,9              | 36,5 | 11,2 | 13 | 25 |   |    |
| A52032H-08-06 | 10        | - 6  | 3/8" | 1/2" - 14 | 350  | 12,3             | 39,5 | 14,5 | 13 | 27 |   |    |
| A52032H-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 | 350  | 12,3             | 40   | 14,5 | 16 | 28 |   |    |
| A52032H-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 | 280  | 15,5             | 50,5 | 14,5 | 23 | 38 |   |    |
| A52032H-16-12 | 19        | - 12 | 3/4" | 1" - 11   | 280  | 20               | 53,5 | 18,6 | 23 | 46 |   |    |

## ADAPTORS

### A52302H

ADAPTOR SAE O-RING BOSS MALE ISO 11926 EF FEMALE

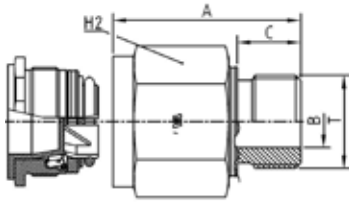


| PART. REF.    | HOSE BORE |      |      | Thread       | W.P. | DIMENSIONS<br>mm |      |      |    |    |   |    |
|---------------|-----------|------|------|--------------|------|------------------|------|------|----|----|---|----|
|               | DN        | Dash | inch |              |      | T                | Bar  | B    | A  | C  | D | H1 |
| A52302H-06-04 | 6         | - 4  | 1/4" | 9/16" - 18   | 350  | 7                | 32,5 | 9,9  | 10 | 22 |   |    |
| A52302H-06-06 | 10        | - 6  | 3/8" | 9/16" - 18   | 350  | 7                | 36   | 9,9  | 13 | 25 |   |    |
| A52302H-08-06 | 10        | - 6  | 3/8" | 3/4" - 16    | 350  | 9,3              | 37   | 11,1 | 13 | 25 |   |    |
| A52302H-08-08 | 12        | - 8  | 1/2" | 3/4" - 16    | 350  | 9,3              | 37   | 11,1 | 16 | 28 |   |    |
| A52302H-10-08 | 12        | - 8  | 1/2" | 7/8" - 14    | 350  | 12,5             | 38,5 | 12,7 | 16 | 28 |   |    |
| A52302H-10-12 | 19        | - 12 | 3/4" | 7/8" - 14    | 280  | 12,5             | 49,5 | 12,7 | 23 | 38 |   |    |
| A52302H-12-12 | 19        | - 12 | 3/4" | 1.1/16" - 12 | 280  | 15               | 51   | 15,1 | 23 | 38 |   |    |

## ADAPTORS

### A52192H

ADAPTOR METRIC MALE ISO 6149 EF FEMALE

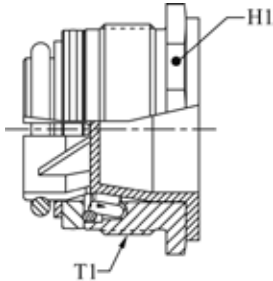


| PART. REF.    | HOSE BORE |      |      | Thread   | W.P. | DIMENSIONS mm |     |      |    |    |   |    |
|---------------|-----------|------|------|----------|------|---------------|-----|------|----|----|---|----|
|               | DN        | Dash | inch |          |      | T             | Bar | B    | A  | C  | D | H1 |
| A52192H-14-04 | 6         | - 4  | 1/4" | M 14x1,5 | 350  | 6             | 34  | 11   | 10 | 22 |   |    |
| A52192H-16-04 | 6         | - 4  | 1/4" | M 16x1,5 | 350  | 7             | 35  | 12,5 | 10 | 22 |   |    |
| A52192H-18-06 | 10        | - 6  | 3/8" | M 18x1,5 | 350  | 9             | 40  | 14   | 13 | 25 |   |    |
| A52192H-22-06 | 10        | - 6  | 3/8" | M 22x1,5 | 350  | 12            | 40  | 15   | 13 | 27 |   |    |
| A52192H-22-08 | 12        | - 8  | 1/2" | M 22x1,5 | 350  | 12            | 40  | 15   | 16 | 28 |   |    |
| A52192H-27-08 | 12        | - 8  | 1/2" | M 27x2   | 350  | 15            | 43  | 18,5 | 16 | 32 |   |    |
| A52192H-27-12 | 19        | - 12 | 3/4" | M 27x2   | 280  | 15            | 55  | 18,5 | 23 | 38 |   |    |
| A52192H-33-12 | 19        | - 12 | 3/4" | M 33x2   | 280  | 20            | 54  | 18,5 | 23 | 41 |   |    |

## ADAPTORS

### O82H10

CARTRIDGE EF



| PART. REF. | HOSE BORE |      |      | Thread   | W.P. | DIMENSIONS mm |     |   |    |  |  |  |
|------------|-----------|------|------|----------|------|---------------|-----|---|----|--|--|--|
|            | DN        | Dash | inch |          |      | T             | Bar | D | H1 |  |  |  |
| O82H10-04  | 6         | - 4  | 1/4" | M 18x1   | 350  | 10            | 19  |   |    |  |  |  |
| O82H10-06  | 10        | - 6  | 3/8" | M 22x1   | 350  | 13            | 23  |   |    |  |  |  |
| O82H10-08  | 12        | - 8  | 1/2" | M 25x1   | 350  | 16            | 26  |   |    |  |  |  |
| O82H10-12  | 19        | - 12 | 3/4" | M 33x1,5 | 280  | 23            | 34  |   |    |  |  |  |



**FASTFIT**



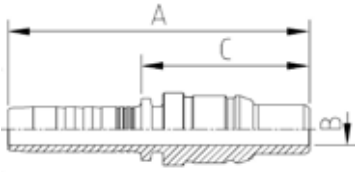
| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| A52013H      | 12      | 2    |
| A52053H      | 12      | 3    |
| A52193H      | 12      | 4    |
| A52283H      | 12      | 3    |
| A52323H      | 12      | 4    |
| M13H10       | 12      | 1    |
| M13H40       | 12      | 1    |
| M13H90       | 12      | 2    |



## MULTIFIT INSERT

### M13H10

#### FAST-FIT STRAIGHT MALE INSERT

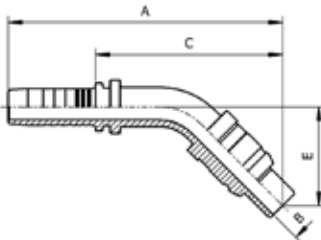


| PART. REF.   | HOSE BORE |      |      | DIMENSIONS<br>mm |      |      |  |  |  |  |
|--------------|-----------|------|------|------------------|------|------|--|--|--|--|
|              | DN        | Dash | inch | B                | A    | C    |  |  |  |  |
| M13H10-04-06 | 6         | -4   | 1/4" | 7                | 63   | 35,5 |  |  |  |  |
| M13H10-06-06 | 10        | -6   | 3/8" | 7                | 66,5 | 37,1 |  |  |  |  |
| M13H10-08-08 | 12        | -8   | 1/2" | 9,3              | 74,5 | 43,4 |  |  |  |  |
| M13H10-12-12 | 19        | -12  | 3/4" | 15               | 80,5 | 44   |  |  |  |  |
| M13H10-16-16 | 25        | -16  | 1"   | 19,8             | 96   | 47,8 |  |  |  |  |

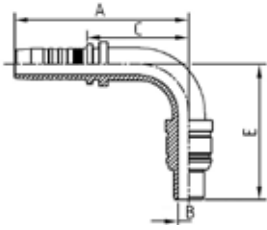
## MULTIFIT INSERT

### M13H40

#### FAST-FIT 45° ELBOW MALE INSERT



| PART. REF.   | HOSE BORE |      |      | DIMENSIONS<br>mm |    |      |    |  |  |  |
|--------------|-----------|------|------|------------------|----|------|----|--|--|--|
|              | DN        | Dash | inch | B                | A  | E    | F  |  |  |  |
| M13H40-08-08 | 12        | -8   | 1/2" | 9,3              | 98 | 35,5 | 67 |  |  |  |



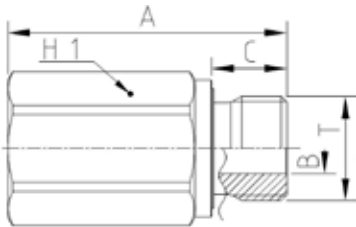
## MULTIFIT INSERT

### M13H90

#### FAST-FIT 90° ELBOW MALE INSERT

FITTINGS F 12-2

| PART. REF.   | HOSE BORE |      |      | DIMENSIONS<br>mm |      |      |      |  |  |  |  |
|--------------|-----------|------|------|------------------|------|------|------|--|--|--|--|
|              | DN        | Dash | inch | B                | A    | C    | E    |  |  |  |  |
| M13H90-04-06 | 6         | - 4  | 1/4" | 7                | 57,5 | 30,1 | 45   |  |  |  |  |
| M13H90-06-06 | 10        | - 6  | 3/8" | 7                | 66,5 | 37   | 51   |  |  |  |  |
| M13H90-08-08 | 12        | - 8  | 1/2" | 9,3              | 75   | 43,8 | 62,5 |  |  |  |  |
| M13H90-12-12 | 19        | - 12 | 3/4" | 15               | 99   | 62,5 | 76,9 |  |  |  |  |
| M13H90-16-16 | 25        | - 16 | 1"   | 19,8             | 119  | 70,6 | 87   |  |  |  |  |



## ADAPTORS

### A52013H

#### BSP MALE OR BOSS TYPE TO ISO 1179- 2

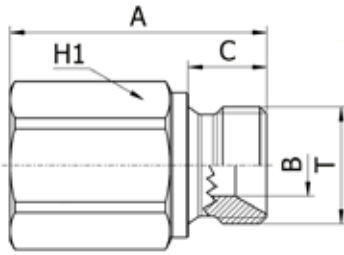
| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |    |    |  |  |  |  |
|---------------|-----------|------|------|-----------|------------------|------|----|----|--|--|--|--|
|               | DN        | Dash | inch | T         | B                | A    | C  | H1 |  |  |  |  |
| A52013H-04-06 | 10        | - 6  | 3/8" | 1/4" - 19 | 5                | 45   | 12 | 19 |  |  |  |  |
| A52013H-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 | 8                | 44,5 | 12 | 22 |  |  |  |  |
| A52013H-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 | 10               | 47   | 14 | 27 |  |  |  |  |
| A52013H-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 | 16               | 53   | 16 | 32 |  |  |  |  |
| A52013H-16-16 | 25        | - 16 | 1"   | 1" - 11   | 20               | 60   | 18 | 41 |  |  |  |  |



## ADAPTORS

### A52053H

BSP MALE 60° CONE (ISO 8434-6 / BS5200)

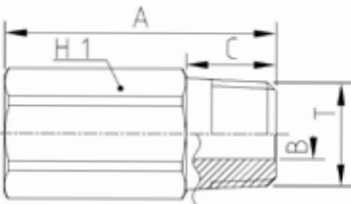


| PART. REF.    | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |    |    |    |    |  |  |
|---------------|-----------|------|------|-----------|--|------------------|----|----|----|----|--|--|
|               | DN        | Dash | inch |           |  | T                | B  | A  | C  | H1 |  |  |
| A52053H-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 11               | 46 | 14 | 27 |    |  |  |

## ADAPTORS

### A52283H

STRAIGHT ADAPTOR NPTF MALE TO ASME B1.20.3

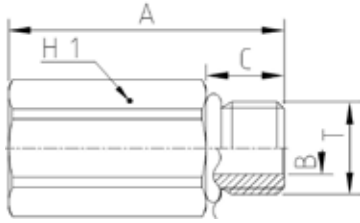


| PART. REF.    | HOSE BORE |      |      | Thread    |  | DIMENSIONS<br>mm |      |      |    |    |  |  |
|---------------|-----------|------|------|-----------|--|------------------|------|------|----|----|--|--|
|               | DN        | Dash | inch |           |  | T                | B    | A    | C  | H1 |  |  |
| A52283H-04-06 | 10        | - 6  | 3/8" | 1/4" - 18 |  | 6                | 44,5 | 14,5 | 19 |    |  |  |
| A52283H-06-06 | 10        | - 6  | 3/8" | 3/8" - 18 |  | 8                | 43,5 | 14,5 | 19 |    |  |  |
| A52283H-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9,5              | 50   | 19,2 | 24 |    |  |  |
| A52283H-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15               | 54,5 | 19,2 | 32 |    |  |  |
| A52283H-16-16 | 25        | - 16 | 1"   | 1"-11.1/2 |  | 19,5             | 62   | 24,2 | 38 |    |  |  |

## ADAPTORS

### A52323H

SAE MALE OR BOSS TYPE TO ISO J1926-2

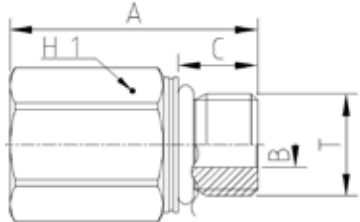


| PART. REF.    | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |      |    |    |  |  |
|---------------|-----------|------|------|--------------|------------------|------|------|----|----|--|--|
|               | DN        | Dash | inch |              | T                | B    | A    | C  | H1 |  |  |
| A52323H-04-06 | 10        | - 6  | 3/8" | 7/16" - 20   | 4,5              | 42   | 11   | 19 |    |  |  |
| A52323H-06-06 | 10        | - 6  | 3/8" | 9/16" - 18   | 7,5              | 42,5 | 12   | 19 |    |  |  |
| A52323H-08-08 | 12        | - 8  | 1/2" | 3/4" - 16    | 10               | 46   | 14   | 24 |    |  |  |
| A52323H-12-12 | 19        | - 12 | 3/4" | 1.1/16" - 12 | 15,5             | 53,5 | 18,5 | 32 |    |  |  |
| A52323H-16-16 | 25        | - 16 | 1"   | 1.5/16" - 12 | 20,5             | 56   | 18,5 | 38 |    |  |  |

## ADAPTORS

### A52193H

STRAIGHT ADAPTOR METRIC MALE ISO 6149-2



| PART. REF.    | HOSE BORE |      |      | Thread   | DIMENSIONS<br>mm |      |      |    |    |  |  |
|---------------|-----------|------|------|----------|------------------|------|------|----|----|--|--|
|               | DN        | Dash | inch |          | T                | B    | A    | C  | H1 |  |  |
| A52193H-14-06 | 10        | - 6  | 3/8" | M 14x1,5 | 6                | 41,5 | 11   | 19 |    |  |  |
| A52193H-18-06 | 10        | - 6  | 3/8" | M 18x1,5 | 8                | 43,5 | 14   | 24 |    |  |  |
| A52193H-22-08 | 12        | - 8  | 1/2" | M 22x1,5 | 10               | 45   | 15   | 27 |    |  |  |
| A52193H-27-12 | 19        | - 12 | 3/4" | M 27x2   | 15               | 53,5 | 18,5 | 32 |    |  |  |
| A52193H-33-16 | 25        | - 16 | 1"   | M 33x2   | 20               | 57   | 18,5 | 41 |    |  |  |



**ROTOFIT**



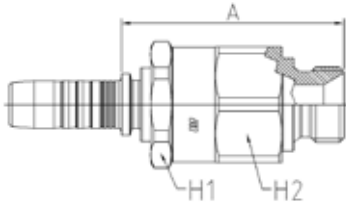
| FITTING CODE | SECTION | PAGE |
|--------------|---------|------|
| AR520504     | 13      | 7    |
| AR580504     | 13      | 7    |
| MR10510      | 13      | 1    |
| MR11210      | 13      | 4    |
| MR11910      | 13      | 4    |
| MR12410      | 13      | 2    |
| MR12810      | 13      | 2    |
| MR20812      | 13      | 1    |
| MR21512      | 13      | 4    |
| MR22411      | 13      | 3    |
| MR22510      | 13      | 2    |
| MR22711      | 13      | 2    |
| MR23311      | 13      | 3    |
| MR30510      | 13      | 5    |
| MR30510FK    | 13      | 5    |
| MR32810      | 13      | 6    |
| MR40812      | 13      | 5    |
| MR42410      | 13      | 6    |
| MR42510      | 13      | 6    |
| MR43310      | 13      | 7    |



## BS STANDARD CONNECTIONS

### MR10510

BSP MALE PARALLEL 60° CONE SEAT - BS5200 / ISO 8434-6

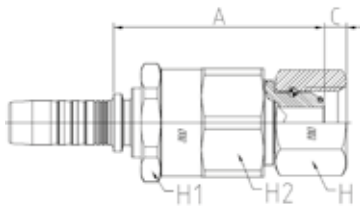


| PART. REF.      | HOSE BORE |      |        | Thread      | DIMENSIONS mm |    |    |    |  |  |  |
|-----------------|-----------|------|--------|-------------|---------------|----|----|----|--|--|--|
|                 | DN        | Dash | inch   |             | T             | A  | H1 | H2 |  |  |  |
| MR10510-04-04   | 6         | - 4  | 1/4"   | 1/4" - 19   | 57,5          | 24 | 24 |    |  |  |  |
| MR10510-06-06   | 10        | - 6  | 3/8"   | 3/8" - 19   | 58            | 27 | 27 |    |  |  |  |
| MR10510-08-08   | 12        | - 8  | 1/2"   | 1/2" - 14   | 61,5          | 32 | 32 |    |  |  |  |
| MR10510-10-10   | 16        | - 10 | 5/8"   | 5/8" - 14   | 69,5          | 36 | 36 |    |  |  |  |
| MR10510-12-12   | 19        | - 12 | 3/4"   | 3/4" - 14   | 71            | 41 | 41 |    |  |  |  |
| MR10510-12-12FK | 19        | - 12 | 3/4"   | 3/4" - 14   | 71            | 41 | 41 |    |  |  |  |
| MR10510-16-16   | 25        | - 16 | 1"     | 1" - 11     | 83            | 50 | 50 |    |  |  |  |
| MR10510-20-20   | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 92            | 60 | 60 |    |  |  |  |

## BS STANDARD CONNECTIONS

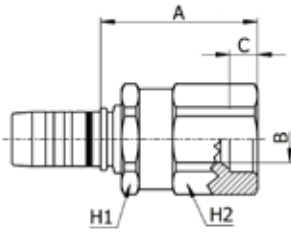
### MR20812

BSP O-RING FEMALE 60° CONE - BS5200 / ISO 12151-6



| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS mm |      |    |    |    |    |  |
|---------------|-----------|------|------|-----------|---------------|------|----|----|----|----|--|
|               | DN        | Dash | inch |           | T             | A    | C  | H  | H1 | H2 |  |
| MR20812-04-04 | 6         | - 4  | 1/4" | 1/4" - 19 | 58            | 4,1  | 19 | 24 | 24 |    |  |
| MR20812-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 | 59,5          | 5,9  | 22 | 27 | 27 |    |  |
| MR20812-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 | 62,5          | 6,5  | 27 | 32 | 32 |    |  |
| MR20812-10-10 | 16        | - 10 | 5/8" | 5/8" - 14 | 68            | 9,7  | 28 | 36 | 36 |    |  |
| MR20812-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 | 71            | 8,5  | 32 | 41 | 41 |    |  |
| MR20812-16-16 | 25        | - 16 | 1"   | 1" - 11   | 81            | 10,6 | 38 | 50 | 50 |    |  |

## SAE STANDARD CONNECTIONS



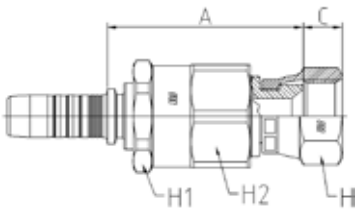
### MR22510

SWIVEL JOINT

JIC FEMALE 37° CONE SEAT - SAE J516 / ISO 12151-5

| PART. REF.    | HOSE BORE |      |        | Thread      |  | DIMENSIONS<br>mm |    |    |    |  |  |  |
|---------------|-----------|------|--------|-------------|--|------------------|----|----|----|--|--|--|
|               | DN        | Dash | inch   |             |  | T                | A  | H1 | H2 |  |  |  |
| MR22510-20-20 | 31        | - 20 | 1.1/4" | 1.5/8" - 12 |  | 93               | 60 | 60 |    |  |  |  |

## SAE STANDARD CONNECTIONS

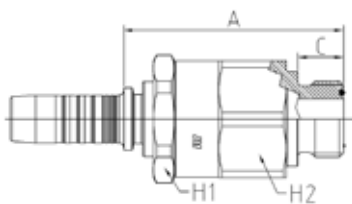


### MR22711

JIC FEM DOUBLE HEXAGON 37° CONE SEAT

| PART. REF.    | HOSE BORE |      |      | Thread       |  | DIMENSIONS<br>mm |      |    |    |    |    |  |
|---------------|-----------|------|------|--------------|--|------------------|------|----|----|----|----|--|
|               | DN        | Dash | inch |              |  | T                | A    | C  | H  | H1 | H2 |  |
| MR22711-06-06 | 10        | - 6  | 3/8" | 9/16" - 18   |  | 56               | 9,5  | 17 | 27 | 27 |    |  |
| MR22711-08-08 | 12        | - 8  | 1/2" | 3/4" - 16    |  | 60               | 10,7 | 22 | 32 | 32 |    |  |
| MR22711-08-10 | 12        | - 8  | 1/2" | 7/8" - 14    |  | 62               | 12,5 | 25 | 32 | 32 |    |  |
| MR22711-10-10 | 16        | - 10 | 5/8" | 7/8" - 14    |  | 67               | 12,5 | 25 | 36 | 36 |    |  |
| MR22711-12-12 | 19        | - 12 | 3/4" | 1.1/16" - 12 |  | 68,5             | 14,1 | 32 | 41 | 41 |    |  |
| MR22711-16-16 | 25        | - 16 | 1"   | 1.5/16" - 12 |  | 80               | 15,3 | 38 | 50 | 50 |    |  |

## SAE STANDARD CONNECTIONS



### MR12410

ORFS MALE - SAE J516 / ISO 12151-1

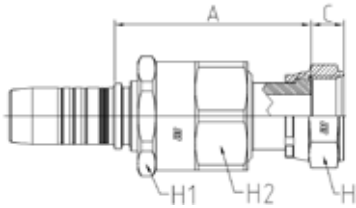
| PART. REF.    | HOSE BORE |      |      | Thread      |  | DIMENSIONS<br>mm |      |    |    |    |  |  |
|---------------|-----------|------|------|-------------|--|------------------|------|----|----|----|--|--|
|               | DN        | Dash | inch |             |  | T                | A    | C  | H1 | H2 |  |  |
| MR12410-08-08 | 12        | - 8  | 1/2" | 13/16" - 16 |  | 60,5             | 12,8 | 32 | 32 |    |  |  |
| MR12410-10-10 | 16        | - 10 | 5/8" | 1" - 14     |  | 69               | 15,5 | 36 | 36 |    |  |  |



## SAE STANDARD CONNECTIONS

### MR22411

ORFS FEMALE - SAE J516 / ISO 12151-1 PULLBACK TYPE (CRIMPED BACK-NUT)

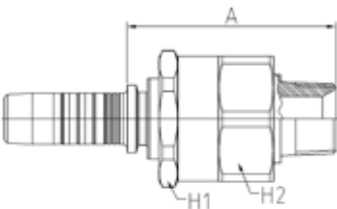


| PART. REF.    | HOSE BORE |      |      | Thread       |  | DIMENSIONS mm |      |    |    |    |    |  |
|---------------|-----------|------|------|--------------|--|---------------|------|----|----|----|----|--|
|               | DN        | Dash | inch |              |  | T             | A    | C  | H  | H1 | H2 |  |
| MR22411-06-06 | 10        | - 6  | 3/8" | 11/16" - 16  |  | 64,5          | 9,5  | 22 | 27 | 27 |    |  |
| MR22411-08-08 | 12        | - 8  | 1/2" | 13/16" - 16  |  | 70            | 11   | 24 | 32 | 32 |    |  |
| MR22411-10-10 | 16        | - 10 | 5/8" | 1" - 14      |  | 77,5          | 13,5 | 30 | 36 | 36 |    |  |
| MR22411-12-12 | 19        | - 12 | 3/4" | 1.3/16" - 12 |  | 82            | 14,5 | 36 | 41 | 41 |    |  |
| MR22411-16-16 | 25        | - 16 | 1"   | 1.7/16" - 12 |  | 90            | 15   | 41 | 50 | 50 |    |  |

## SAE STANDARD CONNECTIONS

### MR12810

NPTF MALE 60° CONE SEAT - SAE J516/J514

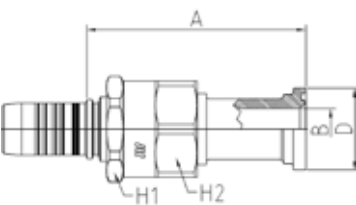


| PART. REF.    | HOSE BORE |      |      | Thread    |  | DIMENSIONS mm |    |    |    |  |  |  |
|---------------|-----------|------|------|-----------|--|---------------|----|----|----|--|--|--|
|               | DN        | Dash | inch |           |  | T             | A  | H1 | H2 |  |  |  |
| MR12810-04-04 | 6         | - 4  | 1/4" | 1/4" - 18 |  | 61            | 24 | 24 |    |  |  |  |
| MR12810-06-06 | 10        | - 6  | 3/8" | 3/8" - 18 |  | 60,5          | 27 | 27 |    |  |  |  |
| MR12810-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 67            | 32 | 32 |    |  |  |  |
| MR12810-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 74            | 41 | 41 |    |  |  |  |
| MR12810-16-16 | 25        | - 16 | 1"   | 1" - 11,5 |  | 88            | 50 | 50 |    |  |  |  |

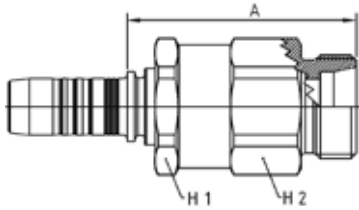
## SAE STANDARD CONNECTIONS

### MR23311

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3



| PART. REF.    | HOSE BORE |      |        | Flange |  | DIMENSIONS mm |       |    |    |    |    |  |
|---------------|-----------|------|--------|--------|--|---------------|-------|----|----|----|----|--|
|               | DN        | Dash | inch   |        |  | Inch          | B     | A  | D  | H1 | H2 |  |
| MR23311-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" |  | 26            | 136,5 | 51 | 60 | 60 |    |  |

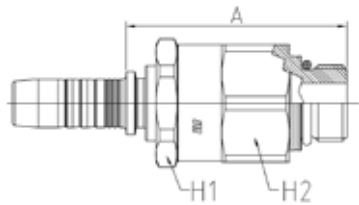


## DIN STANDARD CONNECTIONS

### MR11210

**METRIC MALE 24° CONE SEAT HEAVY DUTY - DIN 20066 / ISO 12151-2**

| PART. REF.    | HOSE BORE |      |      | Thread | DIMENSIONS<br>mm |    |    |    |  |  |  |
|---------------|-----------|------|------|--------|------------------|----|----|----|--|--|--|
|               | DN        | Dash | inch |        | T                | A  | H1 | H2 |  |  |  |
| MR11210-10-30 | 16        | - 10 | 5/8" | M 30x2 | 66,5             | 36 | 36 |    |  |  |  |

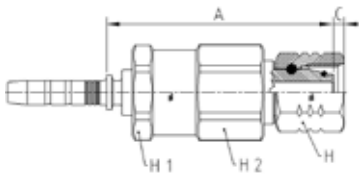


## DIN STANDARD CONNECTIONS

### MR11910

**METRIC MALE HEAVY DUTY SERIES ISO 6149-2**

| PART. REF.    | HOSE BORE |      |      | Thread   | DIMENSIONS<br>mm |    |    |    |  |  |  |
|---------------|-----------|------|------|----------|------------------|----|----|----|--|--|--|
|               | DN        | Dash | inch |          | T                | A  | H1 | H2 |  |  |  |
| MR11910-06-18 | 10        | - 6  | 3/8" | M 18x1,5 | 60,5             | 27 | 27 |    |  |  |  |
| MR11910-08-22 | 12        | - 8  | 1/2" | M 22x1,5 | 62               | 32 | 32 |    |  |  |  |



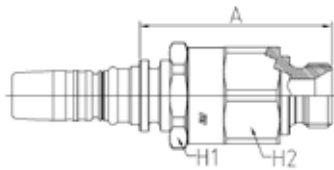
## DIN STANDARD CONNECTIONS

### MR21512

**METRIC O-RING FEMALE 24° CONE LIGHT DUTY - DIN 20066 / ISO 12151-2 (THRUST-WIRE NUT)**

| PART. REF.    | HOSE BORE |      |      | Thread   | DIMENSIONS<br>mm |   |    |    |    |    |  |
|---------------|-----------|------|------|----------|------------------|---|----|----|----|----|--|
|               | DN        | Dash | inch |          | T                | A | C  | H  | H1 | H2 |  |
| MR21512-04-16 | 6         | - 4  | 1/4" | M 16x1,5 | 63               | 3 | 19 | 24 | 24 |    |  |

## BS STANDARD CONNECTIONS

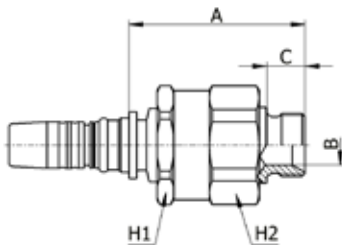


### MR30510

BSP MALE 60° CONE SEAT BS5200

| PART. REF.    | HOSE BORE |      |        | Thread      | DIMENSIONS<br>mm |    |    |    |  |  |  |
|---------------|-----------|------|--------|-------------|------------------|----|----|----|--|--|--|
|               | DN        | Dash | inch   |             | T                | A  | H1 | H2 |  |  |  |
| MR30510-12-12 | 19        | - 12 | 3/4"   | 3/4" - 14   | 74               | 46 | 46 |    |  |  |  |
| MR30510-16-16 | 25        | - 16 | 1"     | 1" - 11     | 85,5             | 55 | 55 |    |  |  |  |
| MR30510-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" - 11 | 96               | 65 | 65 |    |  |  |  |

## BS STANDARD CONNECTIONS

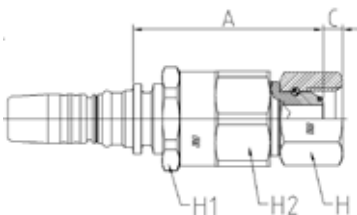


### MR30510FK

BSP MALE 60° CONE SEAT BS5200  
SWIVEL JOINT (VITON)

| PART. REF.      | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |    |    |    |  |  |  |
|-----------------|-----------|------|------|-----------|------------------|----|----|----|--|--|--|
|                 | DN        | Dash | inch |           | T                | A  | H1 | H2 |  |  |  |
| MR30510-12-12FK | 19        | - 12 | 3/4" | 3/4" - 14 | 74               | 46 | 46 |    |  |  |  |

## BS STANDARD CONNECTIONS



### MR40812

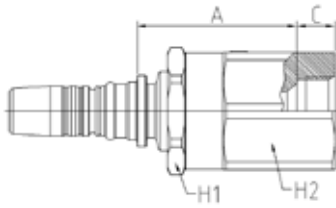
BSP O-RING FEMALE 60° CONE BS5200

| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |    |    |    |    |  |
|---------------|-----------|------|------|-----------|------------------|------|----|----|----|----|--|
|               | DN        | Dash | inch |           | T                | A    | C  | H  | H1 | H2 |  |
| MR40812-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 | 73,5             | 8,5  | 32 | 46 | 46 |    |  |
| MR40812-16-16 | 25        | - 16 | 1"   | 1" - 11   | 83,5             | 10,6 | 41 | 55 | 55 |    |  |

## SAE STANDARD CONNECTIONS

### MR42510

JIC FEM 37° CONE SEAT SAE J514

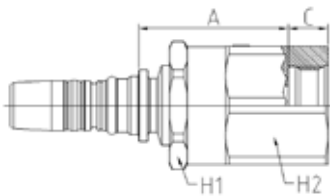


| PART. REF.    | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |    |    |    |  |  |  |
|---------------|-----------|------|------|--------------|------------------|------|----|----|----|--|--|--|
|               | DN        | Dash | inch |              | T                | A    | C  | H1 | H2 |  |  |  |
| MR42510-12-12 | 19        | - 12 | 3/4" | 1.1/16" - 12 | 62,5             | 15   | 46 | 46 |    |  |  |  |
| MR42510-16-16 | 25        | - 16 | 1"   | 1.5/16" - 12 | 70               | 16,5 | 55 | 55 |    |  |  |  |

## SAE STANDARD CONNECTIONS

### MR42410

ORFS FEMALE ISO 8434-3 / SAE J1453

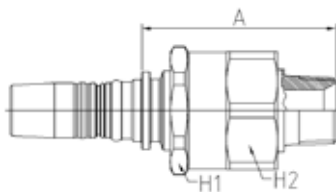


| PART. REF.    | HOSE BORE |      |      | Thread       | DIMENSIONS<br>mm |      |    |    |    |  |  |  |
|---------------|-----------|------|------|--------------|------------------|------|----|----|----|--|--|--|
|               | DN        | Dash | inch |              | T                | A    | C  | H1 | H2 |  |  |  |
| MR42410-12-12 | 19        | - 12 | 3/4" | 1.3/16" - 12 | 58               | 15,5 | 46 | 46 |    |  |  |  |
| MR42410-16-16 | 25        | - 16 | 1"   | 1.7/16" - 12 | 66               | 16   | 55 | 55 |    |  |  |  |

## SAE STANDARD CONNECTIONS

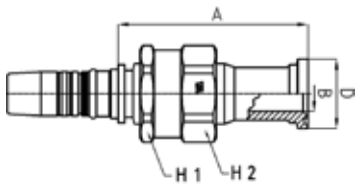
### MR32810

NPTF MALE 60° CONE SEAT - SAE J516/J514



| PART. REF.    | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |    |    |    |  |  |  |
|---------------|-----------|------|------|-----------|------------------|----|----|----|--|--|--|
|               | DN        | Dash | inch |           | T                | A  | H1 | H2 |  |  |  |
| MR32810-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 | 77               | 46 | 46 |    |  |  |  |
| MR32810-16-16 | 25        | - 16 | 1"   | 1" - 11,5 | 91               | 55 | 55 |    |  |  |  |

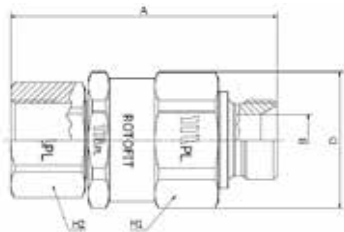
## SAE STANDARD CONNECTIONS



### MR43310

ISO/SAE CODE 61 FLANGE - SAE J516 / ISO 12151-3

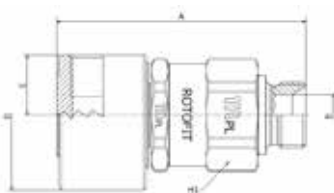
| PART. REF.    | HOSE BORE |      |        | Flange | DIMENSIONS<br>mm |       |    |    |    |    |  |
|---------------|-----------|------|--------|--------|------------------|-------|----|----|----|----|--|
|               | DN        | Dash | inch   |        | Inch             | B     | A  | D  | H1 | H2 |  |
| MR43310-20-20 | 31        | - 20 | 1.1/4" | 1.1/4" | 26               | 145,5 | 51 | 65 | 65 |    |  |



### AR520504

SWIVEL JOINT STRAIGHT  
MALE BSP - FEMALE BSP

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |      |    |    |    |    |  |
|----------------|-----------|------|------|-----------|------------------|------|----|----|----|----|--|
|                | DN        | Dash | inch |           | T                | B    | A  | D  | H1 | H2 |  |
| AR520504-12-12 |           |      |      | 3/4" - 14 | 16,7             | 87,5 | 45 | 41 | 34 |    |  |
| AR520504-16-16 |           |      |      | 1" - 11   | 22,2             | 102  | 55 | 50 | 50 |    |  |



### AR580504

SWIVEL JOINT 90°  
MALE BSP - FEMALE BSP

| PART. REF.     | HOSE BORE |      |      | Thread    | DIMENSIONS<br>mm |     |    |    |    |    |  |
|----------------|-----------|------|------|-----------|------------------|-----|----|----|----|----|--|
|                | DN        | Dash | inch |           | T                | B   | A  | D  | E  | H1 |  |
| AR580504-12-12 |           |      |      | 3/4" - 14 | 16,7             | 100 | 60 | 24 | 41 |    |  |





# QUICK COUPLINGS





# Q.SAFE COUPLINGS

## INTRODUCTION

Q.Safe is the Manuli Hydraulics offering for quick coupling applications. Composed of an ever-expanding range of products, the Q.Safe brand has rapidly become an industry byword for quality and performance. The entire Q.Safe product range is manufactured with an Ecoat treatment which provides an environmentally friendly surface coating (chrome free) far exceeding ISO 4520 requirements (salt spray resistance: 240 hours for white corrosion and 400 for red corrosion).

Guaranteeing leak-free performance, the Q.Safe brand is suitable for a wide range of different applications and assures total interchangeability with other quick coupling products on the market. All Q.Safe products are manufactured and assembled in our world-class facility, where they are subjected to stringent quality controls including:

- 100% visual check
- 100% functional test
- 100% air sealing test

Manuli Hydraulics Q.Safe are suggested for the following application fields:

### AGRICULTURE AND FORESTRY (TRACTORS, TRAILERS, HARVESTER MACHINES)

- Quick couplings according to ISO 7241-A standard connectable in whatever pressure conditions:
- MQS-A and MQS-AF, MQS-N in case of no pressure in the hydraulic line.
- MQS-AP, MQS-AFP, MQS-AFM, MQS-AFB, MQS-ARM and MQS-ARB in case of pressure in one or both the hydraulic lines.
- Quick couplings for hydraulic braking systems: MQS-VB according to ISO 5676 standard, MQS-VS
- Flat Face Quick couplings according to ISO 16028 standards: MQS-F, MQS-FP, MQS-FS
- Screw-type couplings: MQS-SG, MQS-SGR
- Quick couplings for diagnosis according to ISO 15171-1 standard: MQS-D
- Quick couplings "direct hose integration": MQS-DHI
- Check valves: MQS-CV, MQS-CVC

### MINING (DRILLS)

- MQS-A, MQS-N,
- MQS-F
- MQS-SG, MQS-SGR
- MQS-SC
- MQS-SH
- MQS-CV, MQS-CVC

### CONSTRUCTION EQUIPMENTS AND UTILITY VEHICLES (EXCAVATORS, SKID STEERS LOADERS, WHEEL-LOADERS, HYDRAULIC TOOLS AND DUMP TRAILERS)

- MQS-A, MQS-AF, MQS-N, MQS-B
- MQS-F, MQS-FP, MQS-FS
- MQS-SG, MQS-SGR
- MQS-D
- Screw type couplings for very high static pressure: MQS-SC
- Screw type couplings for extreme working conditions: MQS-SH
- Wing nut screw type couplings: MQS-ST
- MQS-DHI
- MQS-CV, MQS-CVC

### INDUSTRY

- MQS-F
- MQS-SH
- MQS-B
- MQS-D
- MQS-DHI
- MQS-CV, MQS-CVC

## QUICK COUPLING SELECTION

To ensure that you select the correct quick coupling for your needs, Manuli Hydraulics recommends that the following factors be considered:

**Pressure and Flow Rate** - The selected quick coupling must always be suitable for the pressure and flow rate in the system. Always check that the selected quick coupling's maximum working pressure is equal to or greater than the maximum pressure of the system (including pressure spikes).

**Connection Under Pressure** - Many quick couplings can only be connected / disconnected when the line pressure has been reduced to zero. If this is not possible you should select a quick coupling which is connectible under pressure. When disconnecting couplings the line pressure must be reduced to zero. Avoid using tools to connect / disconnect quick couplings.

**Fluid Compatibility** - Always check that the fluids used are compatible with the materials and seals used in the quick couplings.

**Temperature** - Always verify that the maximum working temperature of the system is within the operational limits of the quick coupling selected.

**Environmental Conditions** - Be aware that certain environmental conditions can cause damage or excessive corrosion to the quick couplings. Some specific examples are environments where there are harsh chemicals, UV radiation or salt waters.

## GENERAL PRECAUTIONS

- Before connecting the quick coupling carefully clean the insert in order to prevent excessive wear on seals.
- Use suitable protective components such as plugs and caps when quick couplings are not in use to prevent unnecessary wear or damage.
- Shock impacts, such as falling on the ground, may damage your quick coupling. Take precautions to avoid this kind of impact.
- Replace damaged / worn O-rings and back-up rings as soon as possible using the recommended spare part kits.
- Inspect each quick coupling after every individual application in order to detect any visible cracks, leakage, damage or corrosion.

# QUICK COUPLINGS INDEX

| QUICK COUPLINGS SERIES  | FEMALE COUPLING | MALE COUPLING | SHUT-OFF SYSTEM | SPECIFICATIONS                                 | CONNECTION    | SIZE |      |      |      |      |      |    |        |        |    | SECTION NUMBER |     |
|---|-----------------|---------------|-----------------|--|---------------|------|------|------|------|------|------|----|--------|--------|----|----------------|-----|
|   |                 |               |                 |  |               | 3/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |                |     |
| MQS-A<br>ISO A  | Q008            | Q002          | Poppet Valve    | ISO 7241 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q1  |
|   |                 | Q004          | Shielded Poppet |  |               |      |      |      |      |      |      |    |        |        |    |                |     |
|   | Q009            | Q003          | Ball Valve      |  |               |      |      |      |      |      |      |    |        |        |    |                |     |
| MQS-AP<br>ISO A connectable under pressure                                      | Q010            | Q006          | Poppet Valve    | ISO 7241 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q2  |
| MQS-AM<br>ISO A connectable with male under pressure                            | Q011            | -             | Poppet Valve    | ISO 7241 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q3  |
| MQS-AB<br>ISO A connectable with both parts under pressure                      | Q012            | -             | Poppet Valve    | ISO 7241 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q4  |
| MQS-B<br>ISO B  | Q024            | Q021          | Poppet Valve    | ISO 7241 series B                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q5  |
| MQS-BOP<br>ISO B for drilling BOP unit  | Q026 F          | Q021 F        | Poppet Valve    | ISO 7241 series B + flame test res. to API 16D | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q6  |
| MQS-N<br>Standard   | Q032            | Q029          | Poppet Valve    | -  | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q7  |
|   | Q033            | Q030          | Ball Valve      |  |               |      |      |      |      |      |      |    |        |        |    |                |     |
| MQS-NL<br>Free-flow   | Q038            | Q037          | Without         | -  | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q8  |
| MQS-NF<br>Standard push-pull  | Q036            | -             | Poppet Valve    | -  | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q9  |
| MQS-AF<br>Push-pull   | Q013            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q10 |
| MQS-AFP<br>Push-pull connectable under pressure                                 | Q015            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q11 |
| MQS-AFM<br>Push-pull, connectable with male under pressure, flexible mounting   | Q016            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q12 |
| MQS-AFB<br>Push-pull connectable with male under pressure, flexible mounting    | Q017            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q13 |
| MQS-ARM<br>Push-pull, connectable with male under pressure, rigid mounting      | Q018            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q14 |
| MQS-ARB<br>Push-pull connectable with both parts under pressure, rigid mounting | Q019            | -             | Poppet Valve    | ISO 7421 series A                              | Locking Balls |      |      |      |      |      |      |    |        |        |    |                | Q15 |

# QUICK COUPLINGS INDEX

| QUICK COUPLINGS SERIES                         | FEMALE COUPLING | MALE COUPLING | SHUT-OFF SYSTEM           | SPECIFICATIONS  | CONNECTION      | SIZE |      |      |      |      |      |    |        |        |    | SECTION NUMBER |  |     |
|--|-----------------|---------------|---------------------------|---|-----------------|------|------|------|------|------|------|----|--------|--------|----|----------------|--|-----|
|  |                 |               |                           |   |                 | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |                |  |     |
| MQS-VB<br>Braking circuit valve                | Q048            | Q047          | Flat Valve                | ISO 5676  | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q16 |
| MQS-VS<br>Agricultural valve                   | Q050            | Q049          | Flat Valve                | -   | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q17 |
| MQS-D<br>Diagnostic                            | -               | Q045          | Flat Valve                | ISO 15171-1   | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q18 |
| MQS-F<br>Flat-face                             | Q041            | Q039          | Flat Valve                | ISO 16028 e HTMA (only 3/8" size)                           | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q19 |
| MQS-FH<br>Flat-face high pressure              | Q044            | Q043          | Flat Valve                | ISO 16028 e HTMA (only 3/8" size)                           | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q20 |
| MQS-FP<br>Flat-face connectable under pressure | -               | Q040          | Flat Valve                | ISO 16028 e HTMA (only 3/8" size)                           | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q21 |
| MQS-FS<br>Flat-face screw type                 | Q067            | Q066          | Flat Valve                | Manuli standards  | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q22 |
| MQS-SG<br>Screw                                | Q052            | Q051          | Poppet Valve              | German Market interchangeable ISO 14541 (from 3/8" to 3/4") | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q23 |
| MQS-SGR<br>Screw heavy duty                    | Q062            | Q061          | Poppet Valve              | German Market interchangeable ISO 14541 (from 3/8" to 3/4") | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q24 |
| MQS-SH<br>Screw heavy duty                     | Q054            | Q053          | Poppet Valve              | French Market interchangeable                               | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q25 |
| MQS-SC<br>Screw hydraulic cylinders            | Q056            | Q055          | Poppet Valve & Ball Valve | ISO 14540   | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q26 |
| MQS-ST<br>Screw for truck                      | Q058            | Q057          | Poppet Valve              | -   | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  | Q27 |
| MQS-SS<br>Stainless Steel                      | Q024            | Q021          | Poppet Valve              | ISO 7241 series B   | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  | Q28 |
|  | Q041            | Q039          | Flat Valve                | ISO 16028 e HTMA (only 3/8" size)                           | Locking Balls   |      |      |      |      |      |      |    |        |        |    |                |  |     |
|  | Q054            | Q053          | Poppet Valve              | French Market interchangeable                               | Screw-on Sleeve |      |      |      |      |      |      |    |        |        |    |                |  |     |

**Q.Safe quick couplings are precision engineered to meet and exceed the main international requirements for this product type. The Q.Safe range of products includes a broad selection of standard items and application focussed solutions.**

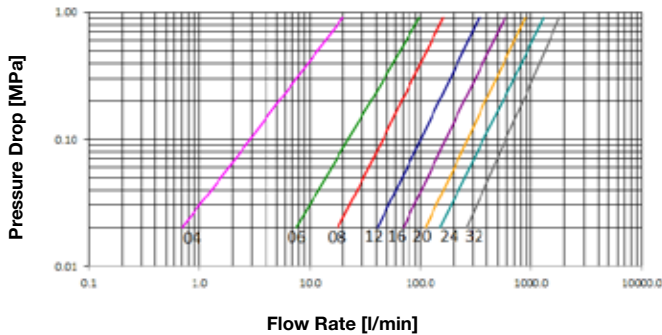
## ISO A POPPET VALVES



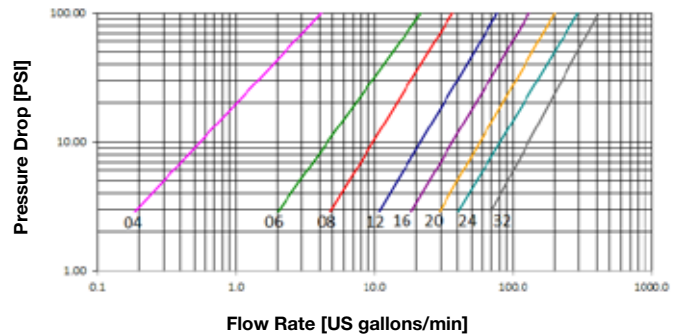
|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb.  | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|-----|------|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |     |      |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 35  | 5075 | 5     | 1.3    | 60  | 13.5 | 0.7 | 0.043      | 200  | 29000 | 150    | 21750 | 150   | 21750 | Not allowed |
| 10   | ⅜    | 06   | 35  | 5075 | 35    | 9.2    | 80  | 18.0 | 1.4 | 0.085      | 140  | 20300 | 150    | 21750 | 150   | 21750 | Not allowed |
| 12.5 | ½    | 08   | 30  | 4350 | 75    | 19.8   | 80  | 18.0 | 1.8 | 0.110      | 125  | 18125 | 150    | 21750 | 150   | 21750 | Not allowed |
| 20   | ¾    | 12   | 25  | 3625 | 147   | 38.8   | 90  | 20.2 | 7   | 0.427      | 100  | 14500 | 120    | 17400 | 100   | 14500 | Not allowed |
| 25   | 1    | 16   | 25  | 3625 | 250   | 66.1   | 90  | 20.2 | 11  | 0.671      | 100  | 14500 | 100    | 14500 | 100   | 14500 | Not allowed |
| 31.5 | 1¼   | 20   | 25  | 3625 | 390   | 103.0  | 90  | 20.2 | 15  | 0.915      | 100  | 14500 | 100    | 14500 | 105   | 15225 | Not allowed |
| 40   | 1½   | 24   | 22  | 3190 | 553   | 146.1  | 100 | 22.5 | 21  | 1.281      | 90   | 13050 | 100    | 14500 | 100   | 14500 | Not allowed |
| 51   | 2    | 32   | 15  | 2175 | 838   | 221.4  | 225 | 50.6 | 45  | 2.746      | 60   | 8700  | 60     | 8700  | 90    | 13050 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

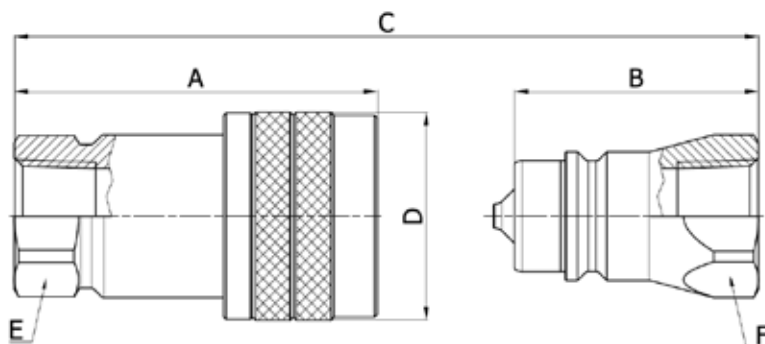
- Reference series on the agriculture and industrial market
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by the latching ball system
- Shut-off by poppet valve
- High resistant materials and hardened male and sleeve to withstand the brinelling effect
- Interchangeability according to ISO 7241-1 series A

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female and male couplings in steel, with some hardened areas, in correspondence to the most stressed points. Springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling may be assembled with the specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## ISO A POPPET VALVES - TERMINATION ENDS

BSP



**Q00811021A**

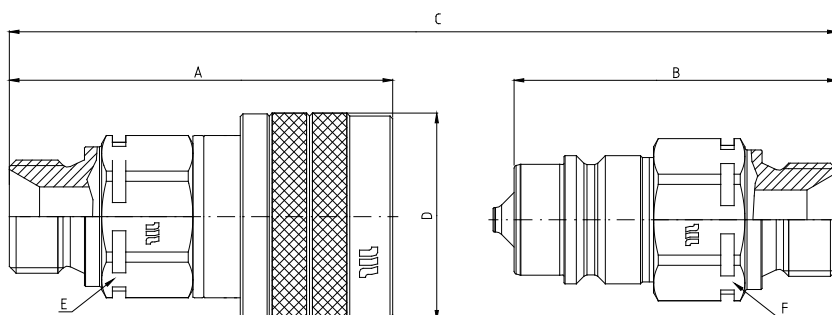
**Q00211021A**

**BSPT TERMINATION ENDS**

**TO ISO 7-1**

**TAPERED**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q00811021A-04-04 | Q00211021A-04-04 | 1/4"   | 48.8          | 34.5 | A+B-14,3 | ø24 | 17 | 17 |
| 10   | 3/8" | -06  | Q00811021A-06-06 | Q00211021A-06-06 | 3/8"   | 57.8          | 40   | A+B-17,8 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811021A-08-08 | Q00211021A-08-08 | 1/2"   | 67.1          | 45   | A+B-22,1 | ø38 | 27 | 27 |
| 20   | 3/4" | -12  | Q00811021A-12-12 | Q00211021A-12-12 | 3/4"   | 83.5          | 56.5 | A+B-27   | ø45 | 34 | 34 |



**Q00811050A**

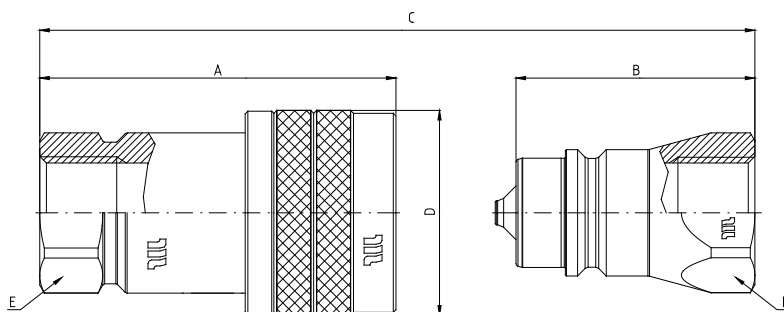
**Q00211050A**

**BSP TERMINATION ENDS**

**TO ISO 8434-6**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811050A-06-06 | Q00211050A-06-06 | 3/8"   | 64.7          | 56.2 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811050A-08-06 | Q00211050A-08-06 | 3/8"   | 68.9          | 57.7 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811050A-08-08 | Q00211050A-08-08 | 1/2"   | 71.4          | 60.2 | A+B-21,8 | ø38 | 27 | 27 |

BSP



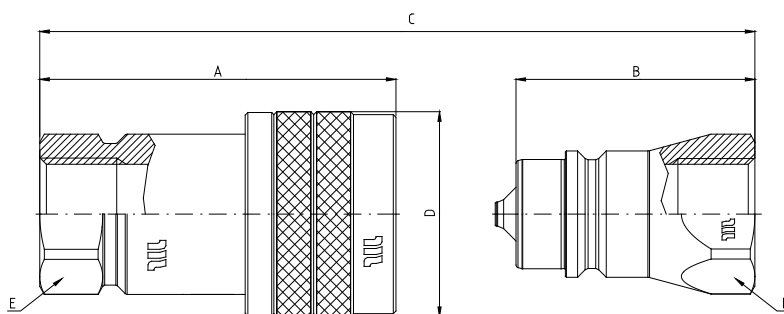
**Q00811041A**

**Q00211041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |      |    |    |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|------|----|----|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D    | E  | F  |
| 6.3  | 1/4"   | -04  | Q00811041A-04-04 | Q00211041A-04-04 | 1/4"   | 48.8          | 34.5 | A+B-14,2 | ø24  | 17 | 17 |
| 10   | 3/8"   | -06  | Q00811041A-06-04 | Q00211041A-06-04 | 1/4"   | 63            | 54.5 | A+B-17,5 | ø30  | 22 | 22 |
|      |        |      | Q00811041A-06-06 | Q00211041A-06-06 | 3/8"   | 57.8          | 40   | A+B-17,5 | ø30  | 22 | 22 |
| 12.5 | 1/2"   | -08  | Q00811041A-08-06 | Q00211041A-08-06 | 3/8"   | 66.2          | 55   | A+B-21,8 | ø38  | 27 | 27 |
|      |        |      | Q00811041A-08-08 | Q00211041A-08-08 | 1/2"   | 67            | 45   | A+B-21,8 | ø38  | 27 | 27 |
| 20   | 3/4"   | -12  | Q00811041A-12-12 | Q00211041A-12-12 | 3/4"   | 83.5          | 56.5 | A+B-26,7 | ø45  | 34 | 34 |
| 25   | 1"     | -16  | Q00811041A-16-12 | Q00211041A-16-12 | 3/4"   | 97.9          | 64.5 | A+B-32,7 | ø52  | 41 | 41 |
|      |        |      | Q00811041A-16-16 | Q00211041A-16-16 | 1"     | 97.9          | 64.5 | A+B-32,7 | ø52  | 41 | 41 |
| 31.5 | 1.1/4" | -20  | Q00811041A-20-20 | Q00211041A-20-20 | 1.1/4" | 118           | 75   | A+B-43   | ø69  | 50 | 50 |
| 40   | 1.1/2" | -24  | Q00811041A-24-24 | Q00211041A-24-24 | 1.1/2" | 133           | 84   | A+B-49   | ø83  | 60 | 60 |
| 51   | 2"     | -32  | Q00811041A-32-32 | Q00211041A-32-32 | 2"     | 164           | 104  | A+B-60,2 | ø100 | 75 | 75 |



**Q00811041U**

**Q00211041U**

**BSP TERMINATION ENDS**

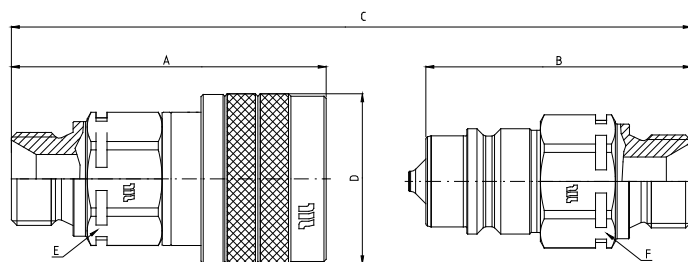
**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B  | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00811041U-08-08 | Q00211041U-08-08 | 1/2"   | 67            | 45 | A+B-21,8 | ø38 | 27 | 27 |

**POLYURETHANE SEAL ON FEMALE PART**



METRIC



**Q00811110A**

**Q00211110A**

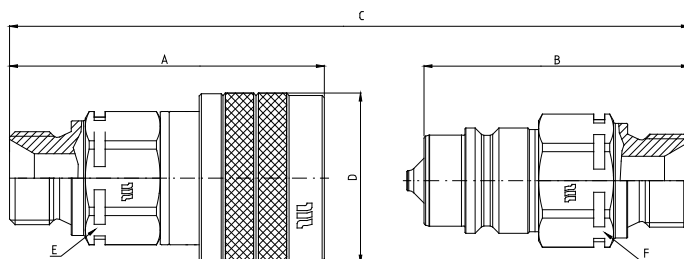
**METRIC TERMINATION ENDS**

**TO ISO 8434-1**

**L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q00811110A-04-14 | Q00211110A-04-14 | M14x1,5 | 52.1          | 42   | A+B-14,2 | ø24 | 17 | 17 |
| 10   | 3/8" | -06  | Q00811110A-06-12 | Q00211110A-06-12 | M12x1,5 | 61            | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
|      |      |      | Q00811110A-06-14 | Q00211110A-06-14 | M14x1,5 | 61            | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
|      |      |      | Q00811110A-06-16 | Q00211110A-06-16 | M16x1,5 | 61            | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
|      |      |      | Q00811110A-06-18 | Q00211110A-06-18 | M18x1,5 | 61            | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811110A-08-14 | Q00211110A-08-14 | M14x1,5 | 65.2          | 54   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811110A-08-16 | Q00211110A-08-16 | M16x1,5 | 66.2          | 55   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811110A-08-18 | Q00211110A-08-18 | M18x1,5 | 65.2          | 54   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811110A-08-22 | Q00211110A-08-22 | M22x1,5 | 66.2          | 55   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811110A-08-26 | Q00211110A-08-26 | M26x1,5 | 66.2          | 55   | A+B-21,8 | ø38 | 27 | 27 |
| 20   | 3/4" | -12  | Q00811110A-12-22 | Q00211110A-12-22 | M22x1,5 | 85.7          | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
|      |      |      | Q00811110A-12-26 | Q00211110A-12-26 | M26x1,5 | 85.7          | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
|      |      |      | Q00811110A-12-30 | Q00211110A-12-30 | M30x2   | 87.7          | 68.3 | A+B-26,7 | ø45 | 34 | 34 |
| 25   | 1"   | -16  | Q00811110A-16-26 | Q00211110A-16-26 | M26x1,5 | 94.5          | 79.5 | A+B-32,7 | ø52 | 41 | 41 |
|      |      |      | Q00811110A-16-30 | Q00211110A-16-30 | M30x2   | 96.5          | 81.5 | A+B-32,7 | ø52 | 41 | 41 |
|      |      |      | Q00811110A-16-36 | Q00211110A-16-36 | M36x2   | 97            | 81.5 | A+B-32,7 | ø52 | 41 | 41 |

METRIC



**Q00811120A**

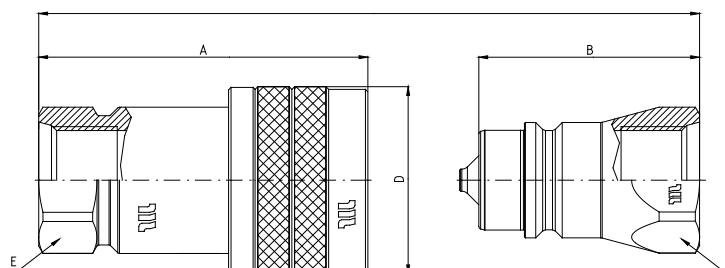
**Q00211120A**

**METRIC TERMINATION ENDS**

**TO ISO 8434-1**

**S SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811120A-06-16 | Q00211120A-06-16 | M16x1,5 | 62            | 53.5 | A+B-17,5 | ø30 | 22 | 22 |
|      |      |      | Q00811120A-06-18 | Q00211120A-06-18 | M18x1,5 | 62            | 53.5 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811120A-08-18 | Q00211120A-08-18 | M18x1,5 | 66.2          | 55   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811120A-08-20 | Q00211120A-08-20 | M20x1,5 | 66.2          | 55   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811120A-08-24 | Q00211120A-08-24 | M24x1,5 | 68.2          | 57   | A+B-21,8 | ø38 | 27 | 27 |
| 25   | 1"   | -16  | Q00811120A-16-30 | Q00211120A-16-30 | M30x2   | 98.5          | 83.5 | A+B-32,7 | ø52 | 41 | 41 |
|      |      |      | Q00811120A-16-36 | Q00211120A-16-36 | M36x2   | 100.5         | 85.5 | A+B-32,7 | ø52 | 41 | 41 |
|      |      |      | Q00811120A-16-42 | Q00211120A-16-42 | M40x2   | 102.5         | 87.5 | A+B-32,7 | ø52 | 41 | 41 |



**Q00811191A**

**Q00211191A**

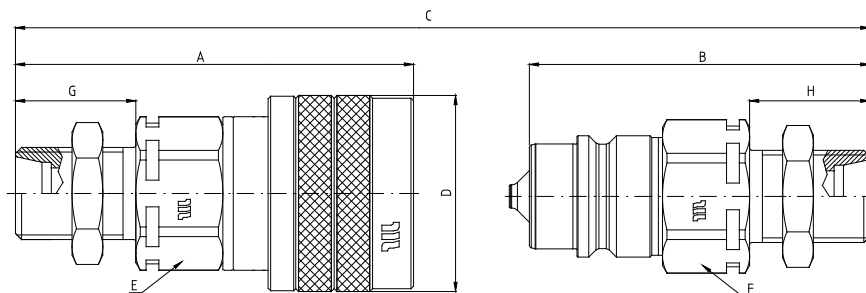
**METRIC TERMINATION ENDS**

**TO ISO 6149-1**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00811191A-08-16 | Q00211191A-08-16 | M16x1,5 | 66.7          | 55.5 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811191A-08-18 | Q00211191A-08-18 | M18x1,5 | 68.2          | 57   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811191A-08-22 | Q00211191A-08-22 | M22x1,5 | 67            | 48   | A+B-21,8 | ø38 | 27 | 27 |

## ISO A POPPET VALVES - TERMINATION ENDS

METRIC



**Q00811770B**

**Q00211770B**

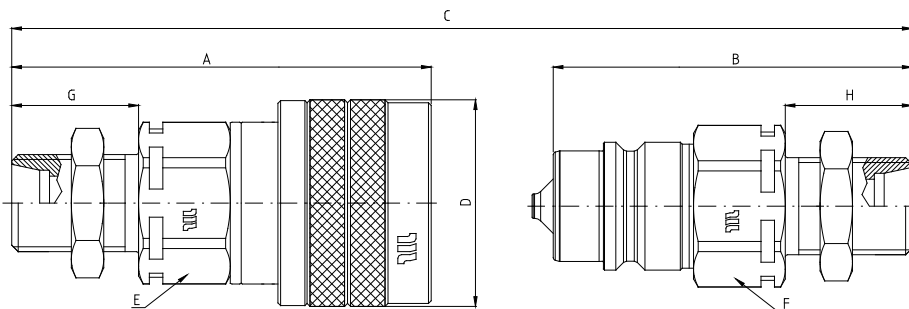
**METRIC TERMINATION ENDS**

**TO ISO 8434-1**

**BULKHEAD L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  | G  | H  |
| 10   | 3/8" | -06  | Q00811770B-06-12 | Q00211770B-06-12 | M12x1,5 | 76            | 67.5 | A+B-17,5 | ø30 | 22 | 22 | 25 | 25 |
|      |      |      | Q00811770B-06-14 | Q00211770B-06-14 | M14x1,5 | 75            | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 25 | 25 |
|      |      |      | Q00811770B-06-16 | Q00211770B-06-16 | M16x1,5 | 75            | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 26 | 26 |
|      |      |      | Q00811770B-06-18 | Q00211770B-06-18 | M18x1,5 | 75            | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 26 | 26 |
| 12.5 | 1/2" | -08  | Q00811770B-08-14 | Q00211770B-08-14 | M14x1,5 | 80.2          | 69   | A+B-21,8 | ø38 | 27 | 27 | 25 | 25 |
|      |      |      | Q00811770B-08-16 | Q00211770B-08-16 | M16x1,5 | 80.2          | 69   | A+B-21,8 | ø38 | 27 | 27 | 26 | 26 |
|      |      |      | Q00811770B-08-18 | Q00211770B-08-18 | M18x1,5 | 80.2          | 69   | A+B-21,8 | ø38 | 27 | 27 | 26 | 26 |
|      |      |      | Q00811770B-08-22 | Q00211770B-08-22 | M22x1,5 | 81.2          | 70   | A+B-21,8 | ø38 | 27 | 27 | 27 | 27 |
|      |      |      | Q00811770B-08-26 | Q00211770B-08-26 | M26x1,5 | 82.2          | 71   | A+B-21,8 | ø38 | 30 | 30 | 28 | 28 |
| 20   | 3/4" | -12  | Q00811770B-12-22 | Q00211770B-12-22 | M22x1,5 | 100.7         | 81.3 | A+B-26,7 | ø45 | 27 | 27 | 34 | 34 |
| 25   | 1"   | -16  | Q00811770B-16-26 | Q00211770B-16-26 | M26x1,5 | 110.5         | 95.5 | A+B-32,7 | ø52 | 41 | 41 | 29 | 29 |
|      |      |      | Q00811770B-16-30 | Q00211770B-16-30 | M30x2   | 114.5         | 95.5 | A+B-32,7 | ø52 | 41 | 41 | 32 | 32 |
|      |      |      | Q00811770B-16-36 | Q00211770B-16-36 | M36x2   | 114.5         | 95.5 | A+B-32,7 | ø52 | 41 | 41 | 32 | 32 |

METRIC



**Q00811870B**

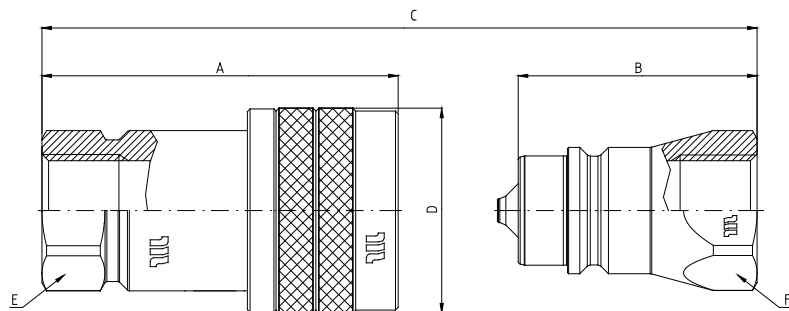
**Q00211870B**

**METRIC TERMINATION ENDS**

**TO ISO 8434-1**

**BULKHEAD S SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  | G  | H  |
| 10   | 3/8" | -06  | Q00811870B-06-16 | Q00211870B-06-16 | M16x1,5 | 76            | 67.5  | A+B-17,5 | ø30 | 22 | 22 | 27 | 27 |
|      |      |      | Q00811870B-06-18 | Q00211870B-06-18 | M18x1,5 | 76            | 67.5  | A+B-17,5 | ø30 | 22 | 22 | 27 | 27 |
| 12.5 | 1/2" | -08  | Q00811870B-08-18 | Q00211870B-08-18 | M18x1,5 | 81.2          | 70    | A+B-21,8 | ø38 | 27 | 27 | 27 | 27 |
|      |      |      | Q00811870B-08-20 | Q00211870B-08-20 | M20x1,5 | 81.2          | 70    | A+B-21,8 | ø38 | 27 | 27 | 27 | 27 |
|      |      |      | Q00811870B-08-24 | Q00211870B-08-24 | M24x1,5 | 83.2          | 72    | A+B-21,8 | ø38 | 27 | 27 | 29 | 29 |
| 25   | 1"   | -16  | Q00811870B-16-30 | Q00211870B-16-30 | M30x2   | 116.5         | 101.5 | A+B-32,7 | ø52 | 41 | 41 | 34 | 34 |
|      |      |      | Q00811870B-16-36 | Q00211870B-16-36 | M36x2   | 118.5         | 103.5 | A+B-32,7 | ø52 | 41 | 41 | 36 | 36 |
|      |      |      | Q00811870B-16-42 | Q00211870B-16-42 | M40x2   | 120.5         | 105.5 | A+B-32,7 | ø52 | 41 | 41 | 40 | 40 |



**Q00811141A**

**Q00211141A**

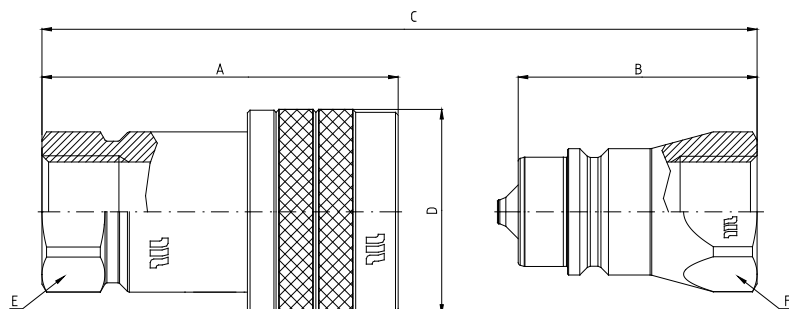
**METRIC TERMINATION ENDS**

**TO ISO 3852-1 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B  | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811141A-06-16 | Q00211141A-06-16 | M16x1,5 | 64.5          | 56 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811141A-08-18 | Q00211141A-08-18 | M18x1,5 | 66.2          | 55 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811141A-08-20 | Q00211141A-08-20 | M20x1,5 | 67            | 45 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811141A-08-22 | Q00211141A-08-22 | M22x1,5 | 67            | 48 | A+B-21,8 | ø38 | 27 | 27 |

## ISO A POPPET VALVES - TERMINATION ENDS

NPT



**Q00811341A**

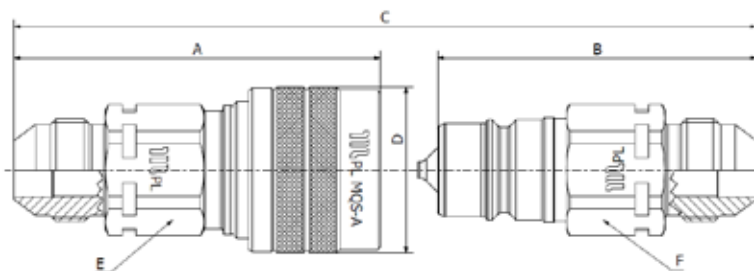
**Q00211341A**

**NPTF TERMINATION ENDS**

**TO ANSI B 1.20.3**

| SIZE |        |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |     |    |    |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN   | inch   | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4"   | -04  | Q00811341A-04-04 | Q00211341A-04-04 | 1/4" NPTF   | 48.8          | 34.5 | A+B-14,2 | ø24 | 17 | 17 |
| 10   | 3/8"   | -06  | Q00811341A-06-06 | Q00211341A-06-06 | 3/8" NPTF   | 57.8          | 40   | A+B-17,5 | ø30 | 22 | 22 |
|      |        |      | Q00811341A-06-08 | Q00211341A-06-08 | 1/2" NPTF   | 60.8          | 45   | A+B-17,5 | ø30 | 27 | 27 |
| 12.5 | 1/2"   | -08  | Q00811341A-08-08 | Q00211341A-08-08 | 1/2" NPTF   | 67            | 45   | A+B-21,8 | ø38 | 27 | 27 |
|      |        |      | Q00811341A-08-12 | Q00211341A-08-12 | 3/4" NPTF   | 70            | 53   | A+B-22   | ø38 | 34 | 34 |
| 20   | 3/4"   | -12  | Q00811341A-12-12 | Q00211341A-12-12 | 3/4" NPTF   | 83.5          | 56.5 | A+B-26,7 | ø45 | 34 | 34 |
| 25   | 1"     | -16  | Q00811341A-16-16 | Q00211341A-16-16 | 1" NPTF     | 97.9          | 64.5 | A+B-32,7 | ø52 | 41 | 41 |
| 31.5 | 1.1/4" | -20  | Q00811341A-20-20 | Q00211341A-20-20 | 1.1/4" NPTF | 118.0         | 75.0 | A+B-43   | ø69 | 50 | 50 |
| 40   | 1.1/2" | -24  | Q00811341A-24-24 | Q00211341A-24-24 | 1.1/2" NPTF | 133.0         | 84.0 | A+B-49   | ø83 | 60 | 60 |

SAE



**Q00811250A**

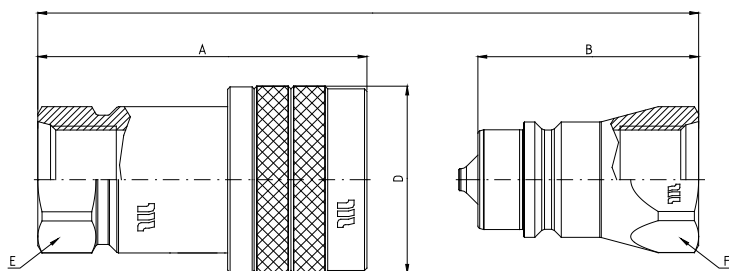
**Q00211250A**

**SAE TERMINATION ENDS**

**TO ISO 8434-2**

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811250A-06-08 | Q00211250A-06-08 | 3/4"-16 UNF | 67            | 58.2 | A+B-18,1 | ø30 | 22 | 22 |

SAE



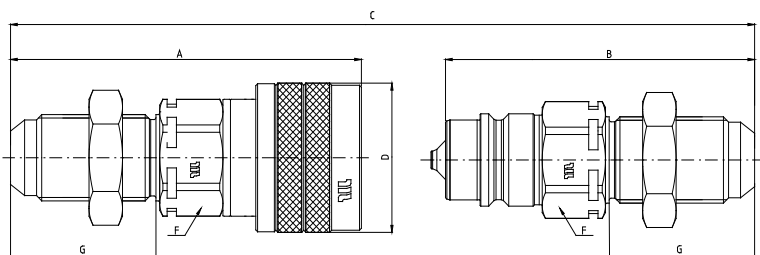
**Q00811301A**

**Q00211301A**

**SAE TERMINATION ENDS**

**TO SAE J1926-1**

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q00811301A-04-06 | Q00211301A-04-06 | 9/16"-18 UNF  | 50            | 34.5 | A+B-14,2 | ø24 | 17 | 17 |
| 10   | 3/8" | -06  | Q00811301A-06-06 | Q00211301A-06-06 | 9/16"-18 UNF  | 64.5          | 56   | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811301A-08-08 | Q00211301A-08-08 | 3/4"-16 UNF   | 67            | 45   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811301A-08-10 | Q00211301A-08-10 | 7/8"-14 UNF   | 69            | 50   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q00811301A-08-12 | Q00211301A-08-12 | 1-1/16"-12 UN | 73            | 54   | A+B-21,8 | ø38 | 34 | 34 |



**Q00811230A**

**Q00211230A**

**SAE TERMINATION ENDS**

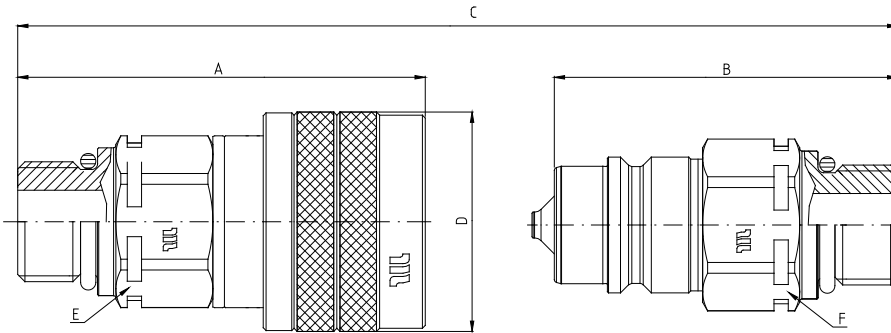
**TO ISO 8434-2**

**BULKHEAD**

| SIZE |      |      | PART NUMBER      |                  | THREAD       | DIMENSIONS mm |      |          |     |    |      |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|------|
| DN   | inch | Size | Female coupling  | Male coupling    |              | A             | B    | C        | D   | F  | G    |
| 10   | 3/8" | -06  | Q00811230A-06-06 | Q00211230A-06-06 | 9/16"-18 UNF | 83.8          | 75   | A+B-18   | ø30 | 22 | 32.5 |
|      |      |      | Q00811230A-06-10 | Q00211230A-06-10 | 7/8"-14 UNF  | 91.3          | 79.6 | A+B-17,5 | ø30 | 27 | 41   |
| 12.5 | 1/2" | -08  | Q00811230A-08-08 | Q00211230A-08-08 | 3/4"-16 UNF  | 91.8          | 80.6 | A+B-21,8 | ø38 | 27 | 36.6 |
|      |      |      | Q00811230A-08-10 | Q00211230A-08-10 | 7/8"-14 UNF  | 95.3          | 84.1 | A+B-21,8 | ø38 | 27 | 40.1 |

## ISO A POPPET VALVES - TERMINATION ENDS

SAE



**Q00811320A**

**Q00211320A**

**ORB TERMINATION ENDS**

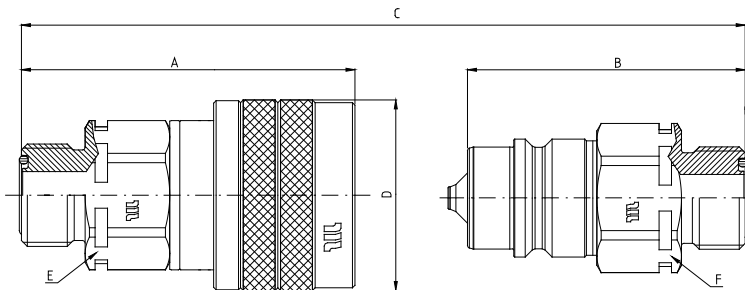
**TO SAE J1926-2**

**S SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD       | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |              | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811320A-06-06 | Q00211320A-06-06 | 9/16"-18 UNF | 63            | 54.4 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811320A-08-08 | Q00211320A-08-08 | 3/4"-16 UNF  | 70            | 60   | A+B-21,8 | ø38 | 27 | 27 |

Polyurethane seal on female part

ORFS



**Q00811240A**

**Q00211240A**

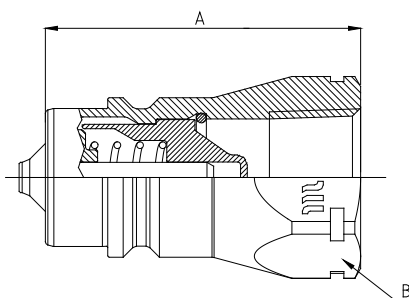
**ORFS TERMINATION ENDS**

**TO ISO 8434-3**

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q00811240A-06-04 | Q00211240A-06-04 | 9/16"-18 UN   | 60.8          | 52.3 | A+B-17,5 | ø30 | 22 | 22 |
|      |      |      | Q00811240A-06-06 | Q00211240A-06-06 | 11/16"-16 UN  | 61.2          | 52.7 | A+B-17,5 | ø30 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q00811240A-08-08 | Q00211240A-08-08 | 13/16"-16 UN  | 66.2          | 55.8 | A+B-21,8 | ø38 | 27 | 27 |
| 25   | 1"   | -16  | Q00811240A-16-16 | Q00211240A-16-16 | 1.7/16"-12 UN | 100           | 81.8 | A+B-32,7 | ø52 | 41 | 41 |

## ISO A SHIELDED POPPET VALVES - TERMINATION ENDS

BSP

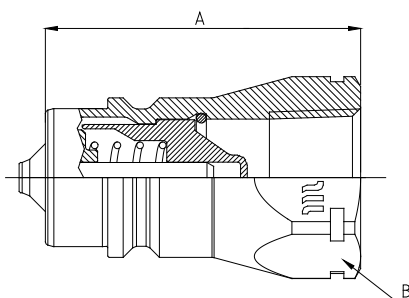


### Q00411041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|--------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |        | A             | B  |  |  |  |
| 12.5 | 1/2" | 08   | Q00411041A-08-08 | 1/2"   | 47            | 27 |  |  |  |

NPT

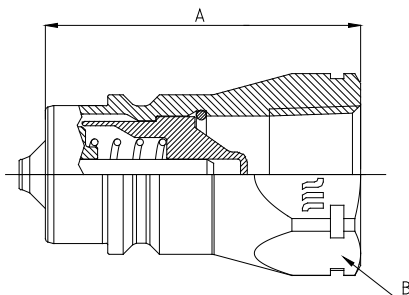


### Q00411341A

NPTF TERMINATION ENDS  
TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|-----------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |           | A             | B  |  |  |  |
| 12.5 | 1/2" | 08   | Q00411341A-08-08 | 1/2" NPTF | 47            | 27 |  |  |  |

SAE



### Q00411301A

SAE TERMINATION ENDS  
TO SAE J1926-1

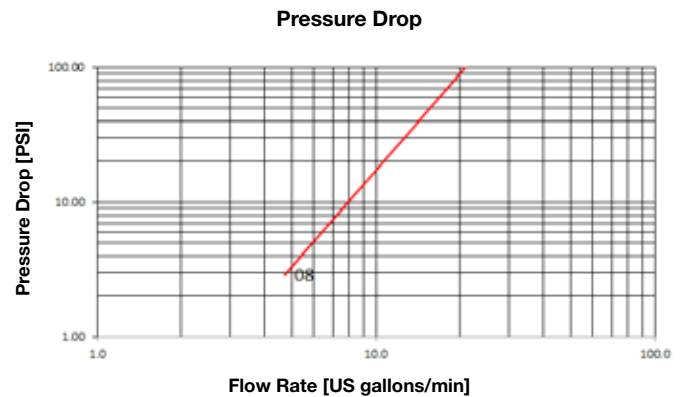
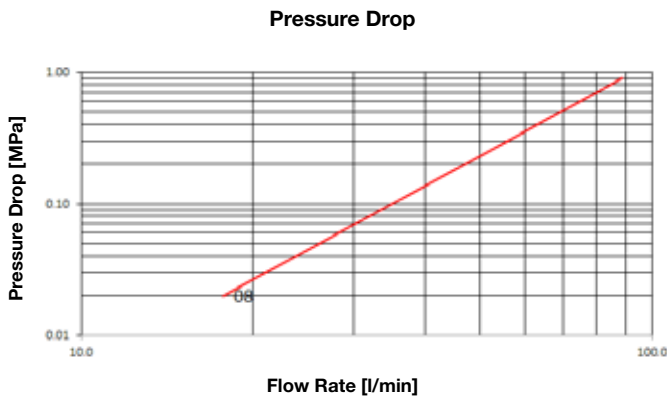
| SIZE |      |      | PART NUMBER      | THREAD   | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|----------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |          | A             | B  |  |  |  |
| 12.5 | 1/2" | 08   | Q00411301A-08-08 | 3/4" UNF | 47            | 27 |  |  |  |





|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb. | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|----|-----|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |     |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 12.5 | ½    | 08   | 21  | 3045 | 47    | 12.4   | 65 | 144 | 1.6 | 0.098      | 85   | 12325 | 100    | 14500 | 150   | 21750 | Not allowed |



### Product description:

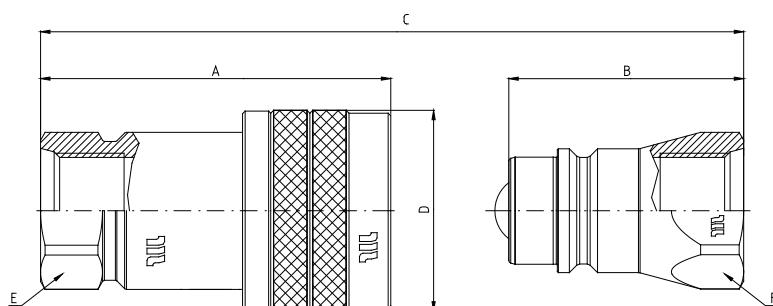
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by the latching ball system
- Shut-off by ball valve
- High resistant materials and hardened male and sleeve to withstand the brinelling effect
- Interchangeability according to ISO 7241-1 series A

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel. Springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling may be assembled with the specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## ISO A BALL VALVES - TERMINATION ENDS

BSP



**Q00911041A**

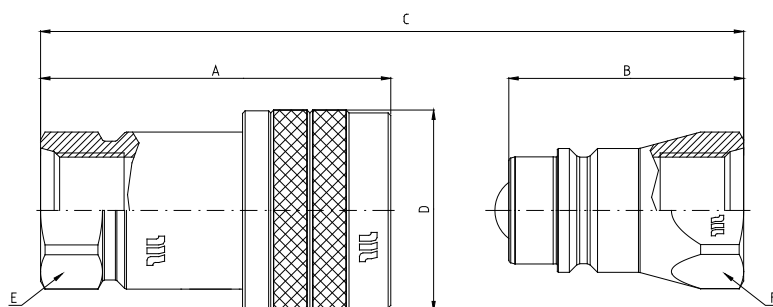
**Q00311041A**

**BSP TERMINATION ENDS**

**TO DIN 3852**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00911041A-08-08 | Q00310041A-08-08 | 1/2"   | 68.2          | 46.2 | A+B-21,8 | ø38 | 27 | 27 |

NPT



**Q00911341A**

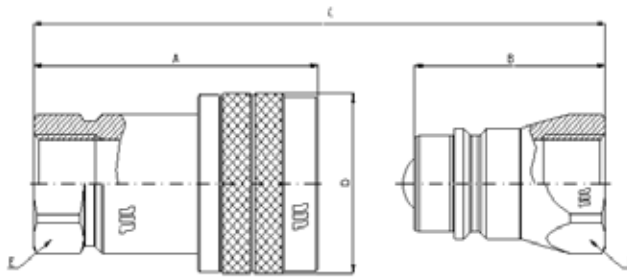
**Q00310341A**

**NFTS TERMINATION ENDS**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00911341A-08-08 | Q00310341A-08-08 | 1/2" NPTF | 68.2          | 46.2 | A+B-21,8 | ø38 | 27 | 27 |

NPT



**Q00911341A**

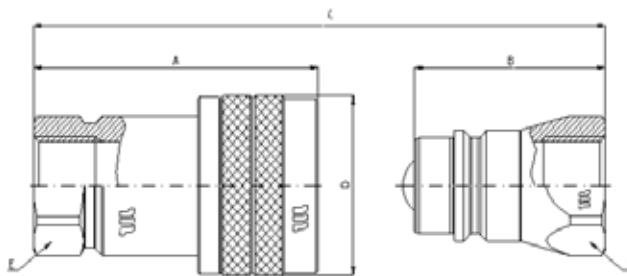
**Q00310341A**

**NFTS TERMINATION ENDS**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00911341A-08-08 | Q00310341A-08-08 | 1/2" NPTF | 68.2          | 46.2 | A+B-21,8 | ø38 | 27 | 27 |

SAE



**Q00911301A**

**Q00310301A**

**SAE TERMINATION ENDS**

**TO SAE J1926-1**

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|-------------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B  | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q00911301A-08-08 | Q00310301A-08-08 | 3/4"-16 UNF | 67            | 45 | A+B-21,8 | ø38 | 27 | 27 |

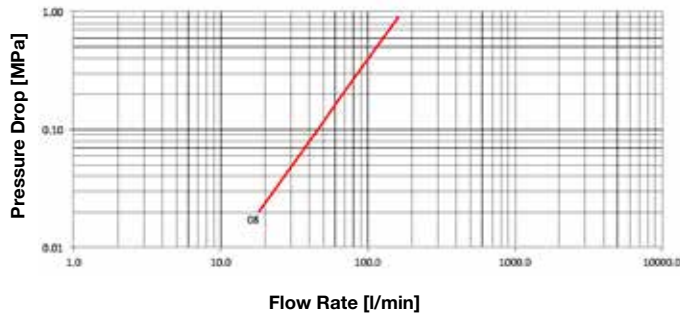
## ISO A CONNECTABLE UNDER PRESSURE



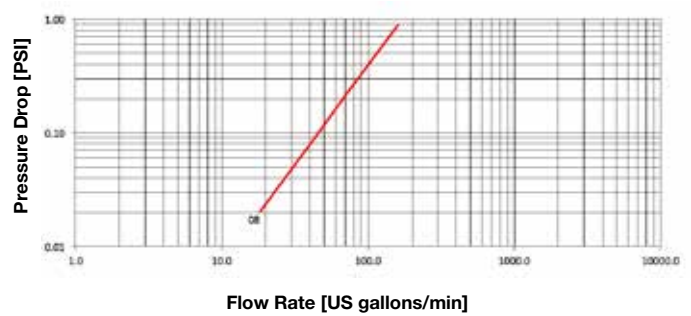
|             |                                   |   |                          |   |                               |  |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|--|---|
|             |                                   |   |                          |   |                               |  |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> |  | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | L/min | US GPM | N  | lb. | cc. | cubic inch          | Male |       | Female |       | M & F |       |                 |
|------|------|------|-----|------|-------|--------|----|-----|-----|---------------------|------|-------|--------|-------|-------|-------|-----------------|
|      |      |      |     |      |       |        |    |     |     |                     | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                 |
| 12.5 | ½    | 08   | 30  | 4350 | 68    | 18.0   | 80 | 178 | 2   | 0.122               | 120  | 17400 | 120    | 17400 | 160   | 23200 | Only connection |
|      |      |      |     |      |       |        |    |     |     | With 0 MPa pressure |      |       |        |       |       |       |                 |

Pressure Drop



Pressure Drop



### Product description:

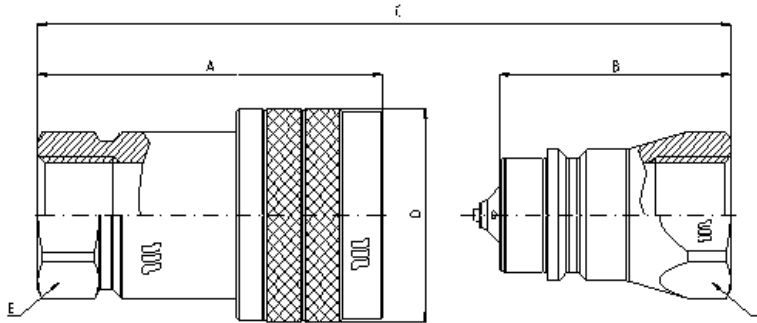
- Connectable under pressure thanks to a frontal micro-valve
- Connection and disconnection is possible by pulling back the sleeve
- Positive, quick connection of the male into the female by the latching ball system
- Shut-off by poppet valve
- High resistant materials
- Connectability at the maximum working pressure
- Interchangeable according to ISO 7241 series A

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel. Springs in C98 steel, seals in NBR and polyurethane (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |



## ISO A CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

### BSP



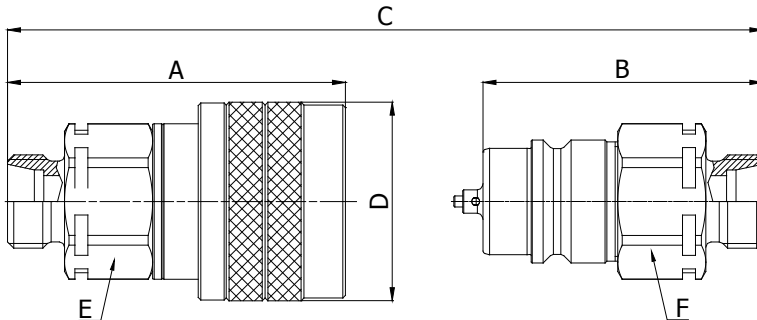
**Q01011041A**

**Q00611041A**

**BSP TERMINATION ENDS  
TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B  | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q01011110A-08-18 | Q00611110A-08-18 | M18x1,5 | 65.2          | 54 | A+B-21,8 | ø38 | 27 | 27 |

### METRIC



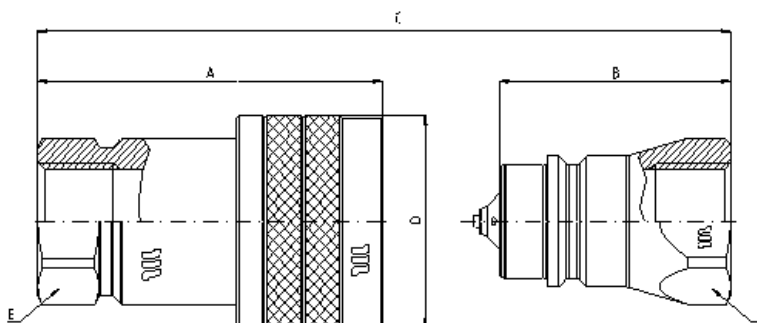
**Q01011110A**

**Q00611110A**

**METRIC TERMINATION END  
TO ISO 8434-1  
L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B  | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q01011110A-08-18 | Q00611110A-08-18 | M18x1,5 | 65.2          | 54 | A+B-21,8 | ø38 | 27 | 27 |

### NPT



**Q01011341A**

**Q00611341A**

**NPTF TERMINATION END  
TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |    |          |     |    |    |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B  | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q01011110A-08-18 | Q00611110A-08-18 | M18x1,5 | 65.2          | 54 | A+B-21,8 | ø38 | 27 | 27 |



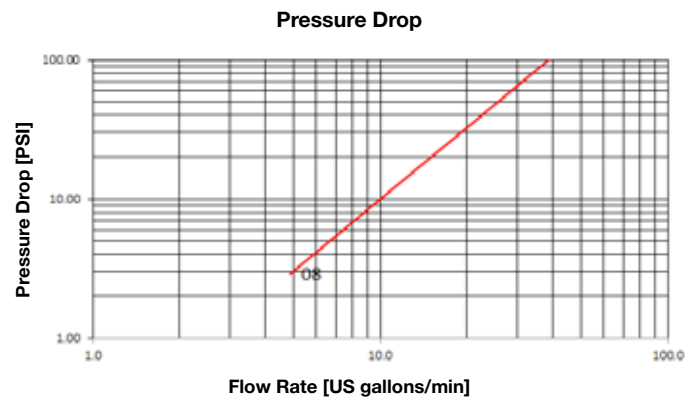
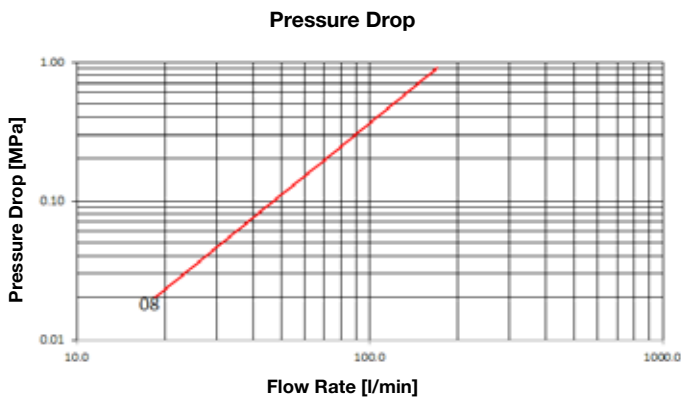




## ISO A FEMALE CONNECTABLE UNDER PRESSURE

|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb. | cc. | cubic inch | Female |       | M & F |       | Connection only, with male under pressure |
|------|------|------|-----|------|-------|--------|----|-----|-----|------------|--------|-------|-------|-------|---|
|      |      |      |     |      |       |        |    |     |     |            | MPa    | PSI   | MPa   | PSI   |   |
| 12.5 | ½    | 08   | 30  | 4350 | 71    | 18.8   | 80 | 178 | 2   | 0.122      | 125    | 18125 | 125   | 18125 |   |



### Product description:

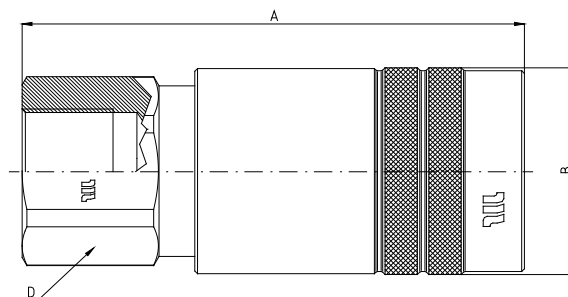
- Connectable with male ISO A under pressure
- High working pressure 30MPa
- Simple connection and disconnection by pulling back the sleeve
- No shut-off, Manuli mechanical valve block system
- Installations on hoses, pipe and direct to port
- Wide range of termination ends
- Interchangeability according to ISO 7241-1 part A

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points.<br>Carbonitrided valve, and sleeve, springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



## ISO A MALE CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP

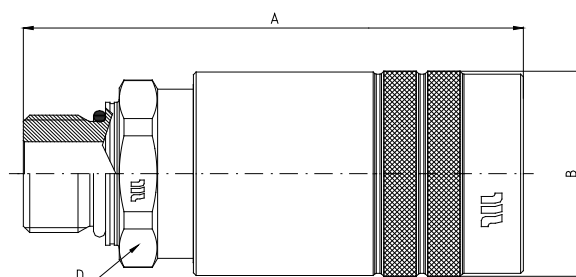


### Q01111041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |       |    |  |  |  |
|------|------|------|------------------|--------|---------------|-------|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B     | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01111041A-08-08 | 1/2"   | 91.7          | ø38,3 | 32 |  |  |  |

METRIC



### Q01111190A

METRIC TERMINATION ENDS  
TO ISO 6149-1

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |       |    |  |  |  |
|------|------|------|------------------|---------|---------------|-------|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B     | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01111190A-08-22 | M22x1,5 | 91.2          | ø38,3 | 32 |  |  |  |

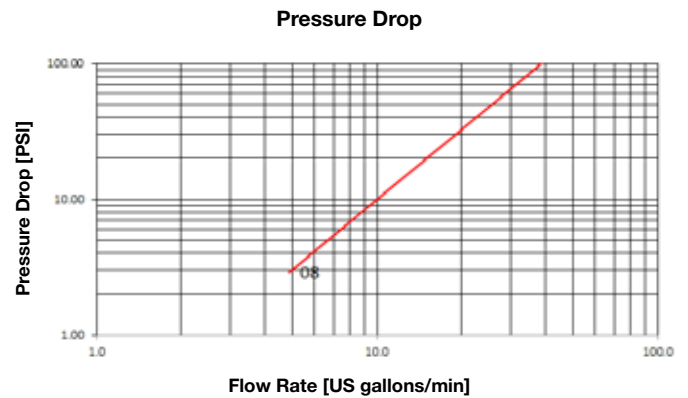
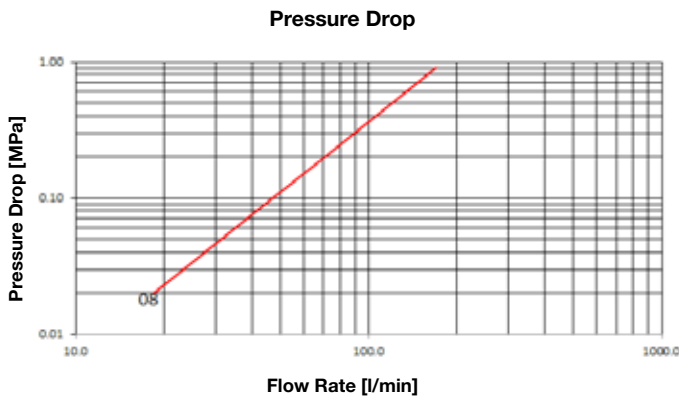




## ISO A FEMALE CONNECTABLE UNDER PRESSURE

|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             | <b>MPa</b>                        |   | <b>N</b>                 |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb. | cc. | cubic inch | Female |       | M & F |       | Connection only, with male and female under pressure |
|------|------|------|-----|------|-------|--------|----|-----|-----|------------|--------|-------|-------|-------|--|
|      |      |      |     |      |       |        |    |     |     |            | MPa    | PSI   | MPa   | PSI   |  |
| 12.5 | ½    | 08   | 30  | 4350 | 71    | 18.8   | 80 | 178 | 2   | 0.122      | 125    | 18125 | 125   | 18125 |  |



### Product description:

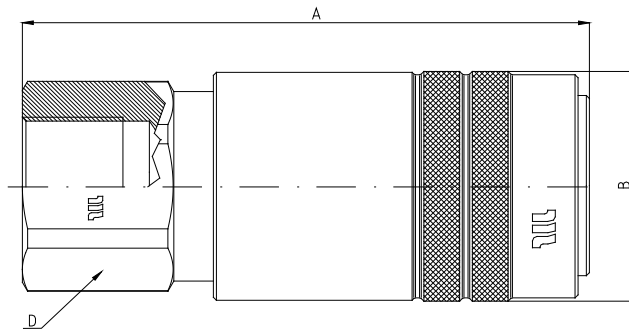
- Connectable with male (ISO A) and female under pressure
- High working pressure 30MPa
- Simple connection and disconnection by pulling back the sleeve
- No shut-off, Manuli mechanical valve block system
- Installations on hoses, pipe and direct to port
- Wide range of termination ends
- Interchangeable according to ISO 7241-1 part A

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Carbonitrided valves and sleeve, springs in C98 steel, seals in NBR and polyurethane (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



ISO A BOTH PARTS CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP



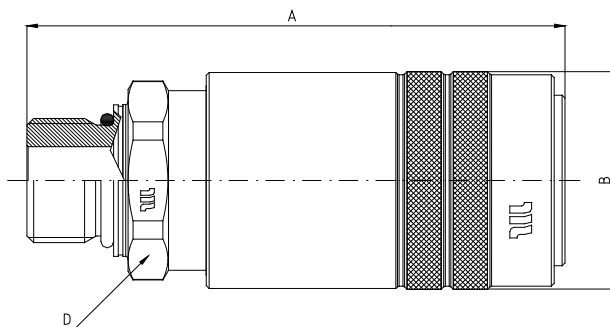
## Q01211041A

BSP TERMINATION ENDS

TO DIN3852

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |       |    |  |  |  |
|------|------|------|------------------|--------|---------------|-------|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B     | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01211041A-08-08 | 1/2"   | 93.6          | ø38,3 | 32 |  |  |  |

METRIC



## Q01211190A

METRIC TERMINATION ENDS

TO ISO 6149-2

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |       |    |  |  |  |
|------|------|------|------------------|---------|---------------|-------|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B     | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01211190A-08-22 | M22x1,5 | 93.1          | ø38,3 | 32 |  |  |  |





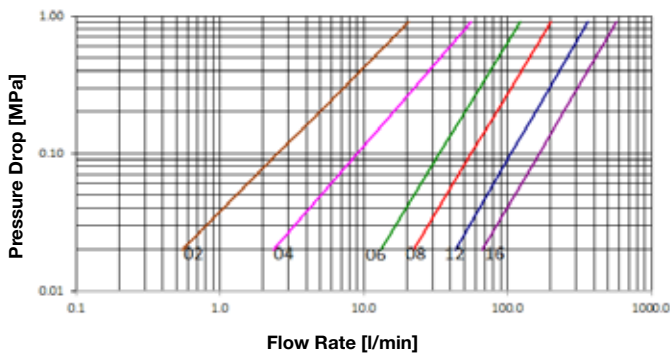


## ISO B POPPET VALVES

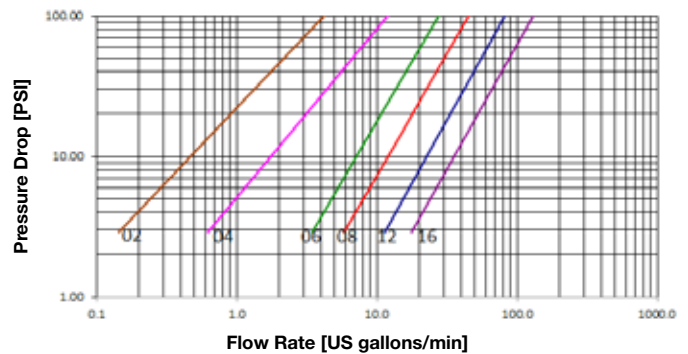
|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb.  | cc.  | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|----|------|------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |      |      |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 5    | 1/8  | 02   | 50  | 7250 | 5     | 1.3    | 40 | 9.0  | 0.5  | 0.031      | 210  | 30450 | 270    | 39150 | 220   | 31900 | Not allowed |
| 6.3  | 1/4  | 04   | 40  | 5800 | 16    | 4.3    | 40 | 9.0  | 0.8  | 0.049      | 180  | 26100 | 190    | 27550 | 165   | 23925 | Not allowed |
| 10   | 3/8  | 06   | 35  | 5075 | 51    | 13.5   | 40 | 9.0  | 1.5  | 0.092      | 145  | 21025 | 160    | 23200 | 160   | 23200 | Not allowed |
| 12.5 | 1/2  | 08   | 35  | 5075 | 84    | 22.0   | 70 | 15.7 | 2.5  | 0.153      | 145  | 21025 | 145    | 21025 | 160   | 23200 | Not allowed |
| 20   | 3/4  | 12   | 25  | 3625 | 156   | 41.5   | 90 | 20.2 | 8.5  | 0.519      | 100  | 14500 | 100    | 14500 | 125   | 18125 | Not allowed |
| 25   | 1    | 16   | 25  | 3625 | 246   | 65.0   | 90 | 20.2 | 15.0 | 0.915      | 100  | 14500 | 100    | 14500 | 120   | 17400 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

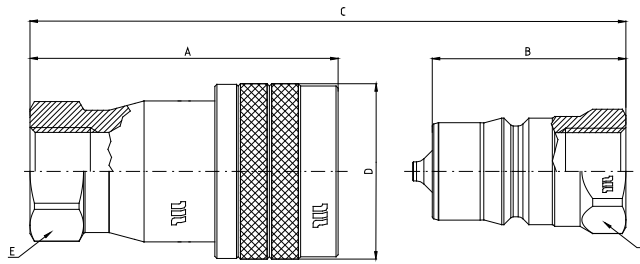
- Reference series for all industrial applications
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by latching the ball system
- Shut-off by poppet valve
- High resistant materials
- Interchangeable according to ISO 7241-1 series B

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel hardened. Springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |



## ISO B POPPET VALVES - TERMINATION ENDS

**BSP**



**Q02411041A**

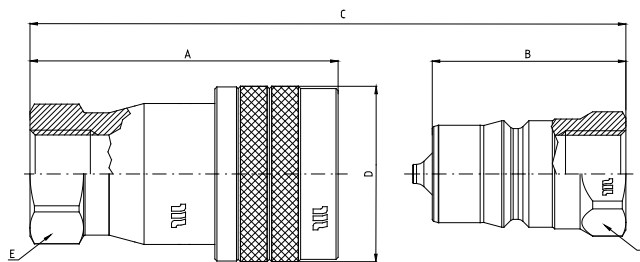
**Q02111041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |
| 5    | 1/8" | -02  | Q02411041A-02-02 | Q02111041A-02-02 | 1/8"   | 48.5          | 30   | A+B-18,7 | ø22 | 15 | 14 |
| 6.3  | 1/4" | -04  | Q02411041A-04-04 | Q02111041A-04-04 | 1/4"   | 58.8          | 37.2 | A+B-21,2 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q02411041A-06-06 | Q00211041A-06-06 | 3/8"   | 66.2          | 41.5 | A+B-24,4 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08  | Q02411041A-08-08 | Q02111041A-08-08 | 1/2"   | 74            | 46.5 | A+B-27,2 | ø42 | 30 | 27 |
| 20   | 3/4" | -12  | Q02411041A-12-12 | Q02111041A-12-12 | 3/4"   | 91            | 56.5 | A+B-34,2 | ø52 | 36 | 36 |
| 25   | 1"   | -16  | Q02411041A-16-16 | Q02111041A-16-16 | 1"     | 104           | 64.5 | A+B-39,2 | ø60 | 41 | 41 |

**NPT**



**Q02411341A**

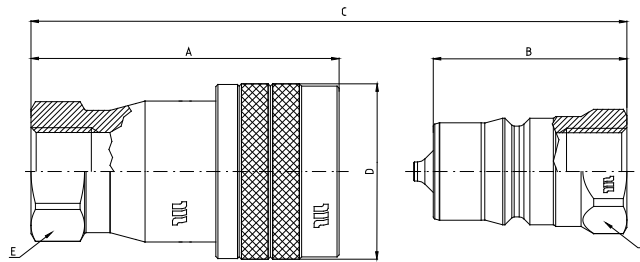
**Q02111341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |
| 5    | 1/8" | -02  | Q02411341A-02-02 | Q02111341A-02-02 | 1/8" NPTF | 48.5          | 30   | A+B-18,7 | ø22 | 15 | 14 |
| 6.3  | 1/4" | -04  | Q02411341A-04-04 | Q02111341A-04-04 | 1/4" NPTF | 58.8          | 37.2 | A+B-21,2 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q02411341A-06-06 | Q02111341A-06-06 | 3/8" NPTF | 66.2          | 41.5 | A+B-24,4 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08  | Q02411341A-08-08 | Q02111341A-08-08 | 1/2" NPTF | 74            | 46.5 | A+B-27,2 | ø42 | 30 | 27 |
| 20   | 3/4" | -12  | Q02411341A-12-12 | Q02111341A-12-12 | 3/4" NPTF | 91            | 56.5 | A+B-34,2 | ø52 | 36 | 36 |
| 25   | 1"   | -16  | Q02411341A-16-16 | Q02111341A-16-16 | 1" NPTF   | 104           | 64.5 | A+B-39,2 | ø60 | 41 | 41 |

SAE



**Q02411301A**

**Q02111301A**

**SAE TERMINATION ENDS**

**TO SAE J1926-1**

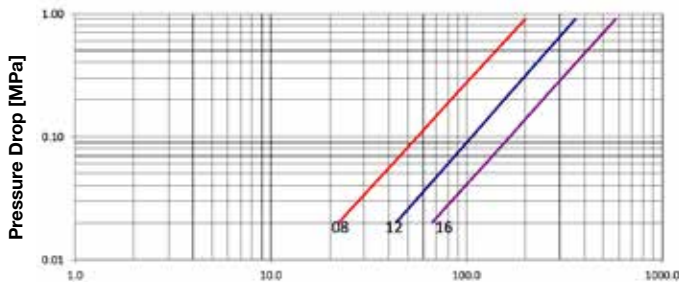
| SIZE |      |      | PART NUMBER      |                  | THREAD       | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |              | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q02411301A-04-06 | Q02111301A-04-06 | 9/16"-18UNF  | 62.2          | 40.6 | A+B-21,2 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q02411301A-06-08 | Q00211301A-06-08 | 3/4"-16 UNF  | 68.2          | 46   | A+B-24,4 | ø35 | 24 | 24 |
| 12.5 | 1/2" | -08  | Q02411301A-08-08 | Q02111301A-08-08 | 3/4"-16 UNF  | 74            | 46.5 | A+B-27,2 | ø42 | 30 | 27 |
| 20   | 3/4" | -12  | Q02411301A-12-12 | Q02111301A-12-12 | 1"1/16-12 UN | 94            | 59.5 | A+B-34,2 | ø52 | 36 | 34 |
| 25   | 1"   | -16  | Q02411301A-16-16 | Q02111301A-16-16 | 1"5/16-12 UN | 104           | 64.5 | A+B-39,2 | ø60 | 41 | 41 |



|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             | <b>MPa</b>                        |   | <b>N</b>                 |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

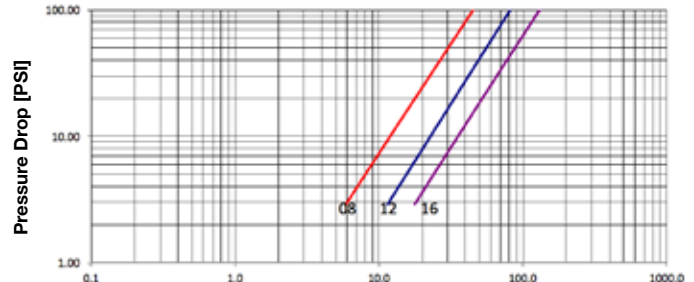
| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb. | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|----|-----|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |     |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 12.5 | ½    | 08   | 42  | 6090 | 51    | 13.5   | 70 | 156 | 2.5 | 0.153      | 140  | 20300 | 140    | 20300 | 180   | 26100 | Not allowed |
| 20   | ¾    | 12   | 35  | 5075 | 102   | 26.9   | 90 | 200 | 8.5 | 0.519      | 100  | 14500 | 100    | 14500 | 150   | 21750 | Not allowed |
| 25   | 1    | 16   | 35  | 5075 | 170   | 44.9   | 90 | 200 | 15  | 0.916      | 100  | 14500 | 100    | 14500 | 140   | 20300 | Not allowed |

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

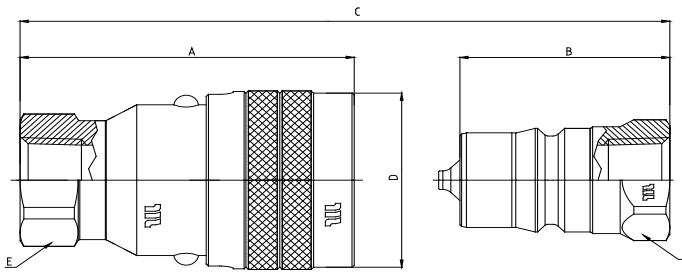
### Product description:

- MQS-B BOP VERSION is designed for BOP (Blow-out preventer) service in Oil & Gas Industry
- Simple connection & disconnection by pulling back the sleeve
- Safety system on the female part to avoid accidental disconnection
- Positive quick connection of the male into the female by latching ball system
- Poppet valve sealing system that guarantee high sealing performance at low & high pressure
- ECOAT zinc plating with improved corrosion protection and environmentally friendly process
- Female & Male Coupling with red identification for an easy visual verification
- ISO 7241-1 series B interchangeable
- API 16D approval.

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female & male couplings in high grade carbon steel with hardened areas in correspondence to the most stressed points. Seal in Viton with back-up in PTFE. |
| <b>Working Temperature</b> | -25°C to +200°C   |
| <b>Safety Factor</b>       | 4.1 in CONNECTED & DISCONNECTED conditions  |
| <b>Impulse Pressures</b>   | Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2 , Flame resistance test to API 16D   |



NPT



**Q02613341F**

**Q02113341F**

**NPTF TERMINATION ENDS**

**TO ANSI B1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q02613341F-08-08 | Q02113341F-08-08 | 1/2" NPTF | 74            | 46.5 | A+B-27,2 | ø44 | 30 | 27 |
| 20   | 3/4" | -12  | Q02613341F-12-12 | Q02113341F-12-12 | 3/4" NPTF | 91            | 56.5 | A+B-34,2 | ø54 | 36 | 34 |
| 25   | 1"   | -16  | Q02613341F-16-16 | Q02113341F-16-16 | 1" NPTF   | 104           | 64.5 | A+B-39,2 | ø64 | 46 | 41 |





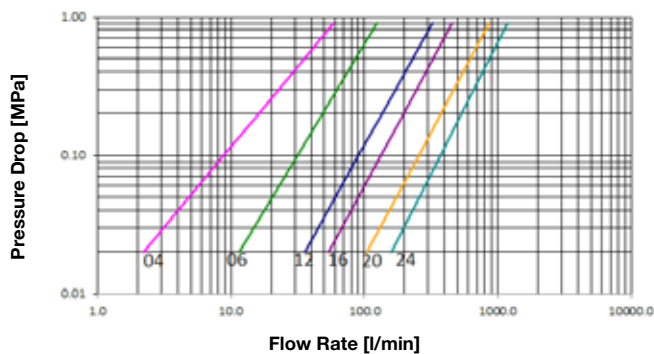
## STANDARD POPPET VALVE



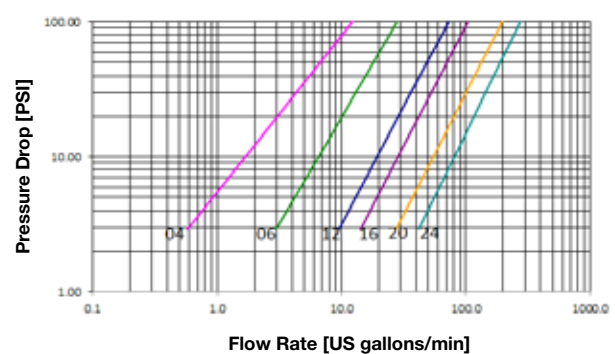
|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa              | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|------------------|------|-------|--------|-----|-----|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |                  |      |       |        |     |     |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 35               | 5075 | 16    | 4.2    | 40  | 89  | 0.8 | 0.049      | 190  | 27500 | 190    | 27500 | 140   | 20300 | Not allowed |
| 10   | ⅜    | 06   | 35               | 5075 | 49    | 12.9   | 65  | 144 | 1.3 | 0.079      | 150  | 21750 | 160    | 23200 | 160   | 23200 | Not allowed |
| 12.5 | ½    | 08   | See ISO A Series |      |       |        |     |     |     |            |      |       |        |       |       |       |             |
| 20   | ¾    | 12   | 25               | 3625 | 135   | 35.7   | 80  | 178 | 7   | 0.427      | 110  | 15950 | 100    | 14500 | 120   | 17400 | Not allowed |
| 25   | 1    | 16   | 25               | 3625 | 196   | 51.8   | 90  | 200 | 11  | 0.672      | 100  | 14500 | 110    | 15950 | 120   | 17400 | Not allowed |
| 31.5 | 1¼   | 20   | 22               | 3190 | 376   | 99.3   | 105 | 233 | 15  | 0.916      | 90   | 13050 | 90     | 13050 | 100   | 14500 | Not allowed |
| 40   | 1½   | 24   | 21               | 3045 | 536   | 141.6  | 115 | 256 | 24  | 1.465      | 85   | 12325 | 90     | 13050 | 100   | 14500 | Not allowed |

Pressure Drop



Pressure Drop



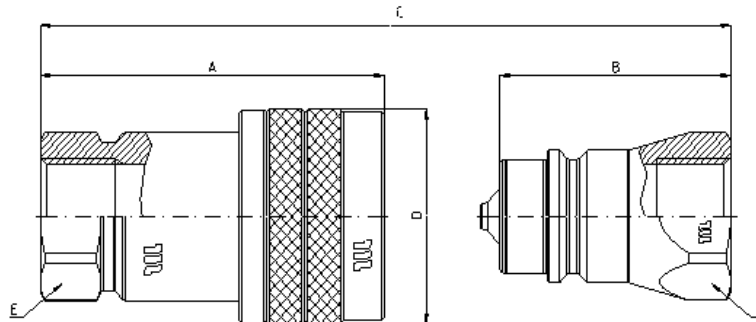
### Product description:

- Historical series for the agriculture market
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by latching the ball system
- Shut-off by poppet valve
- High resistant materials
- Interchangeable with similar products available on the market (½" size according to ISO 7241-1 series A)

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel hardened. Springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



BSP



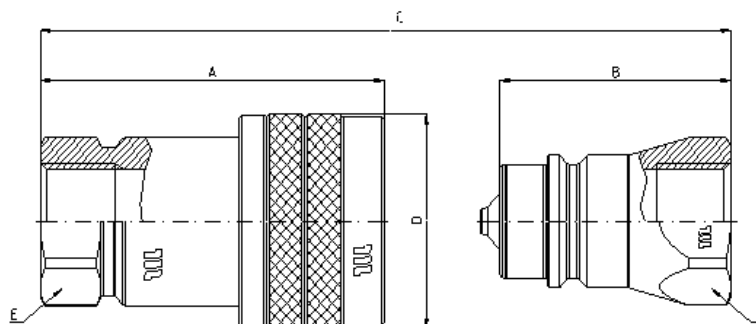
**Q03211041A**

**Q02911041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |  |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |  |
| 6.3  | 1/4"   | -04  | Q03211041A-04-04 | Q02911041A-04-04 | 1/4"   | 53.5          | 36.5 | A+B-16,6 | ø27 | 19 | 19 |  |  |  |
| 10   | 3/8"   | -06  | Q03211041A-06-06 | Q02911041A-06-06 | 3/8"   | 60.5          | 40   | A+B-20,1 | ø34 | 24 | 24 |  |  |  |
| 12.5 | 1/2"   | -08  | SEE ISO SERIES A |                  |        |               |      |          |     |    |    |  |  |  |
| 20   | 3/4"   | -12  | Q03211041A-12-12 | Q02911041A-12-12 | 3/4"   | 85.5          | 56.5 | A+B-28,3 | ø47 | 34 | 34 |  |  |  |
| 25   | 1"     | -16  | Q03211041A-16-16 | Q02911041A-16-16 | 1"     | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |  |
| 31.5 | 1.1/4" | -20  | Q03211041A-20-20 | Q02911041A-20-20 | 1.1/4" | 119.5         | 78   | A+B-41,5 | ø68 | 50 | 50 |  |  |  |
| 40   | 1.1/2" | -24  | Q03211041A-24-24 | Q02911041A-24-24 | 1.2/2" | 132           | 88   | A+B-44,2 | ø80 | 60 | 60 |  |  |  |



**Q03211041B**

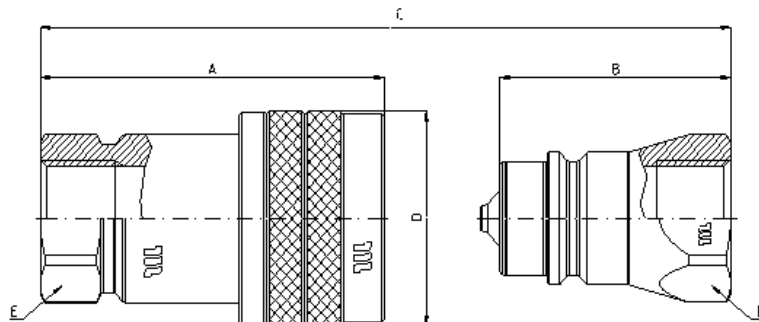
**Q02911041B**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 20   | 3/4" | -12  | Q03211041B-12-12 | Q02911041B-12-12 | 3/4"   | 88            | 56.5 | A+B-31   | ø47 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q03211041B-16-16 | Q02911041B-16-16 | 1"     | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |

NPT

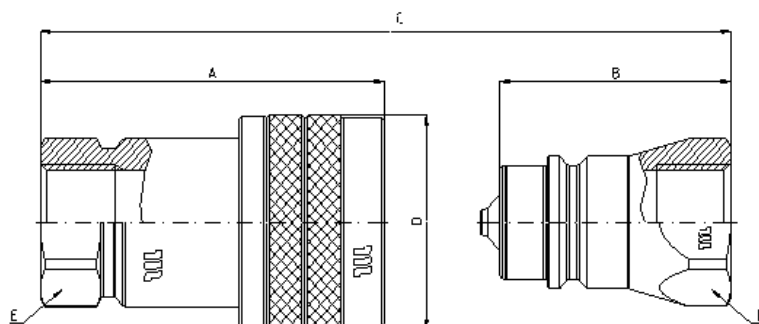


**Q03211341A**

**Q02911341A**

**NPTF TERMINATION END  
TO ANSI B 1.20.3**

| SIZE |        |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|--------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4"   | -04  | Q03211341A-04-04 | Q02911341A-04-04 | 1/4" NPTF | 53.5          | 36.5 | A+B-16,6 | ø27 | 19 | 19 |  |  |
| 10   | 3/8"   | -06  | Q03211341A-06-06 | Q02911341A-06-06 | 3/8" NPTF | 60.5          | 40   | A+B-20,1 | ø34 | 24 | 24 |  |  |
| 12.5 | 1/2"   | -08  | SEE ISO SERIES A |                  |           |               |      |          |     |    |    |  |  |
| 20   | 3/4"   | -12  | Q03211341A-12-12 | Q02911341A-12-12 | 3/4" NPTF | 85.5          | 56.5 | A+B-28,3 | ø47 | 34 | 34 |  |  |
| 25   | 1"     | -16  | Q03211341A-16-16 | Q02911341A-16-16 | 1" NPTF   | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |
| 31.5 | 1.1/4" | -20  | Q03211341A-20-20 | Q02911341A-20-20 | 1.1/4"    | 119.5         | 78   | A+B-41,5 | ø68 | 50 | 50 |  |  |
| 40   | 1.1/2" | -24  | Q03211341A-24-24 | Q02911341A-24-24 | 1.2/2"    | 132           | 88   | A+B-44,2 | ø80 | 60 | 60 |  |  |



**Q03211341B**

**Q02911341B**

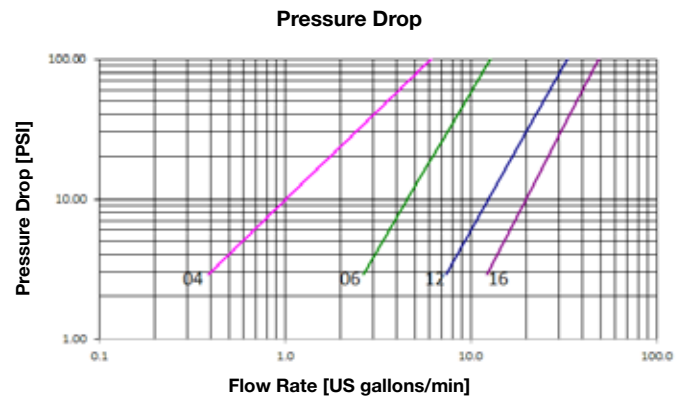
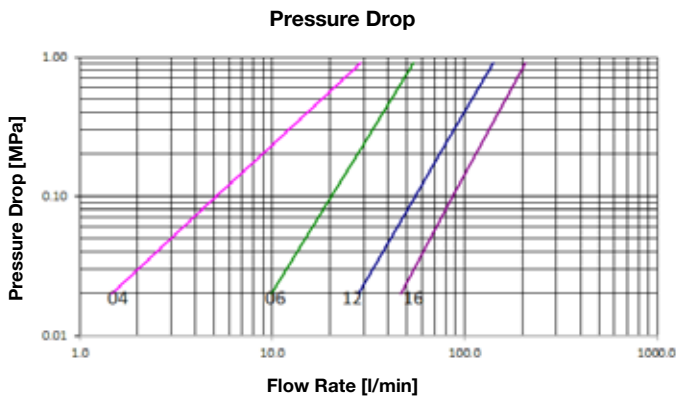
**NPTF TERMINATION END  
TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |  |  |
| 20   | 3/4" | -12  | Q03211341B-12-12 | Q02911341B-12-12 | 3/4" NPTF | 88            | 56.5 | A+B-31   | ø47 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q03211341B-16-16 | Q02911341B-16-16 | 1" NPTF   | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |



|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa                          | PSI  | l/min | US GPM | N   | lb. | cc.  | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|------------------------------|------|-------|--------|-----|-----|------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |                              |      |       |        |     |     |      |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 30                           | 4350 | 9     | 2.4    | 40  | 89  | 0.35 | 0.021      | 140  | 20300 | 125    | 18125 | 150   | 21750 | Not allowed |
| 10   | ¾    | 06   | 25                           | 3625 | 28    | 7.4    | 65  | 144 | 0.85 | 0.052      | 115  | 16675 | 120    | 17400 | 160   | 23200 | Not allowed |
| 12.5 | ½    | 08   | See ISO A Series sealed ball |      |       |        |     |     |      |            |      |       |        |       |       |       |             |
| 20   | ¾    | 12   | 25                           | 3625 | 74    | 19.6   | 75  | 167 | 3.5  | 0.214      | 100  | 14500 | 110    | 15950 | 125   | 18125 | Not allowed |
| 25   | 1    | 16   | 21                           | 3045 | 114   | 30.1   | 100 | 222 | 5    | 0.305      | 85   | 12325 | 100    | 14500 | 110   | 15950 | Not allowed |



### Product description:

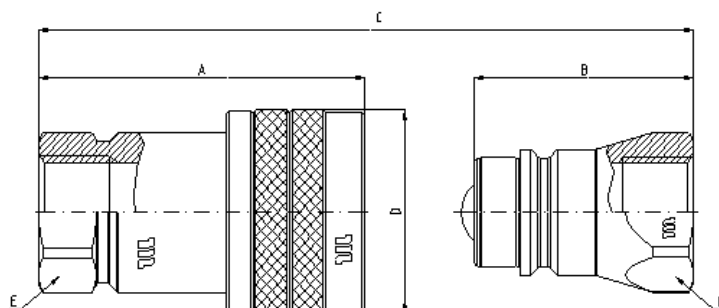
- Historical series for the agriculture market
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by latching the ball system
- Shut-off by ball valve
- High resistant materials
- Interchangeable with poppet valve standard series and with similar products available on the market (½" size according to ISO 7241-1 series A)

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel hardened. High-resistance latching balls, springs in C98 steel, seals in NBR and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## STANDARD (BALL) - TERMINATION ENDS

BSP



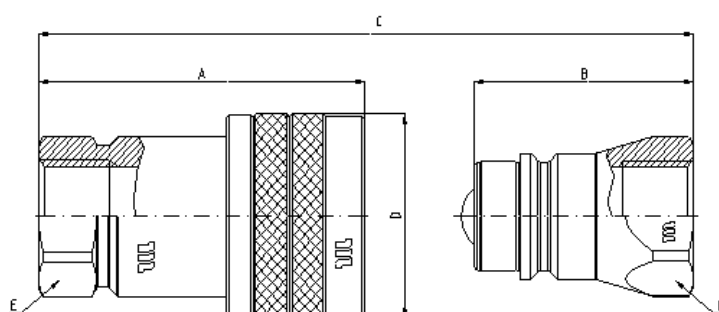
**Q03311041A**

**Q03010041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q03311041A-04-04 | Q03010041A-04-04 | 1/4"   | 51.3          | 34.3 | A+B-16,6 | ø27 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q03311041A-06-06 | Q03010041A-06-06 | 3/8"   | 59.9          | 39.4 | A+B-20,1 | ø34 | 24 | 24 |  |  |
| 12.5 | 1/2" | -08  | SEE ISO SERIES A |                  |        |               |      |          |     |    |    |  |  |
| 20   | 3/4" | -12  | Q03311041A-12-12 | Q03010041A-12-12 | 3/4"   | 85.5          | 56.5 | A+B-28,3 | ø47 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q03311041A-16-16 | Q03010041A-16-16 | 1"     | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |



**Q03311041B**

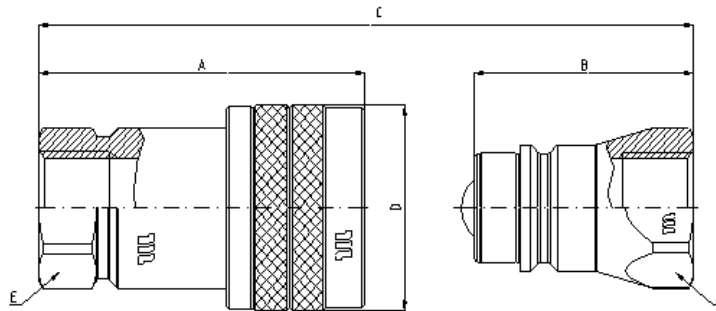
**Q03010041B**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 20   | 3/4" | -12  | Q03311041B-12-12 | Q03010041B-12-12 | 3/4"   | 88            | 58.5 | A+B-31,5 | ø47 | 34 | 34 |  |  |

NPT



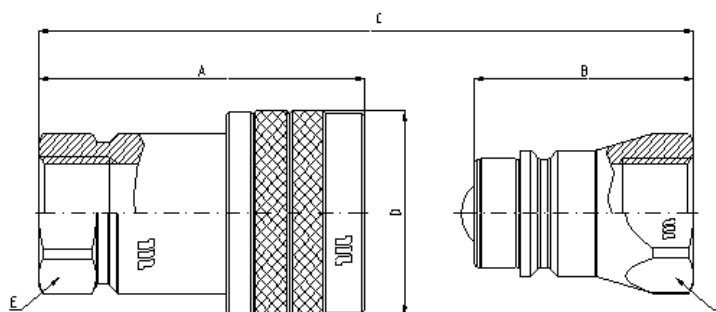
**Q03311341A**

**Q03010341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q03311341A-04-04 | Q03010341A-04-04 | 1/4" NPTF | 51.3          | 34.3 | A+B-16,6 | ø27 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q03311341A-06-06 | Q03010341A-06-06 | 3/8" NPTF | 59.9          | 39.4 | A+B-20,1 | ø34 | 24 | 24 |  |  |
| 12.5 | 1/2" | -08  | SEE ISO SERIES A |                  |           |               |      |          |     |    |    |  |  |
| 20   | 3/4" | -12  | Q03311341A-12-12 | Q03010341A-12-12 | 3/4" NPTF | 85.5          | 56.5 | A+B-28,3 | ø47 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q03311341A-16-16 | Q03010341A-16-16 | 1" NPTF   | 98            | 64.5 | A+B-32,9 | ø52 | 41 | 41 |  |  |



**Q03311341B**

**Q03010341B**





**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q03311341B-12-12 | Q03010341B-12-12 | 3/4" NPTF | 88            | 58.5 | A+B-31,5 | ø47 | 34 | 34 |  |  |





|  |  |  |  |
|---|---|---|---|
| SIZE  | WORKING PRESSURE<br>(Dynamic)   | MINIMUM BURST<br>PRESSURE   | CONNECTION/<br>DISCONNECTION UNDER<br>PRESSURE                                      |

| mm   | inch | dash | MPa | PSI  | M & F |       |             |
|------|------|------|-----|------|-------|-------|-------------|
|      |      |      |     |      | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 35  | 5075 | 160   | 23200 | Not allowed |
| 10   | ¾    | 06   | 35  | 5075 | 145   | 21025 | Not allowed |
| 12.5 | ½    | 08   | 35  | 5075 | 145   | 21025 | Not allowed |

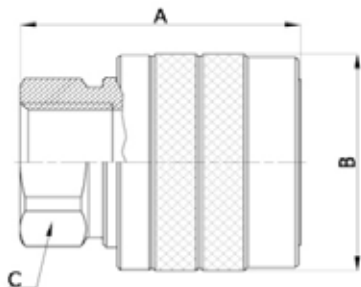
### Product description:

- MQS-NL is Compact Free-Flow quick release couplings
- Simple connection & disconnection by pulling back the sleeve
- Positive quick connection of the male into the female by latching ball system
- ECOAT zinc plating with improved corrosion protection and environmentally friendly process

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female & male couplings in high grade carbon steel with hardened areas in correspondence to the most stressed points. Seal in NBR with back-up in PTFE. |
| <b>Working Temperature</b> | -30°C to +110°C   |
| <b>Safety Factor</b>       | 4.1 in CONNECTED & DISCONNECTED conditions  |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



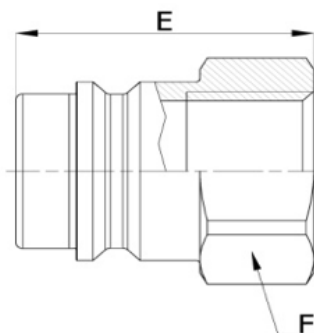
BSP



### Q00381041

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |      |    |  |  |  |  |  |  |
|------|------|------|------------------|--------|---------------|------|----|--|--|--|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B    | C  |  |  |  |  |  |  |
| 6.3  | 1/4" | -04  | Q03811041A-04-04 | 1/4"   | 33.2          | 27.5 | 19 |  |  |  |  |  |  |
| 10   | 3/8" | -06  | Q03811041A-06-06 | 3/8"   | 39.5          | 34.3 | 24 |  |  |  |  |  |  |
| 12.5 | 1/2" | -08  | Q03811041A-08-08 | 1/2"   | 44            | 38.3 | 27 |  |  |  |  |  |  |



### Q03710041

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |    |  |  |  |  |  |  |  |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|--|--|--|
| DN   | inch | Size | Male coupling    |        | E             | F  |  |  |  |  |  |  |  |
| 6.3  | 1/4" | -04  | Q03710041A-04-04 | 1/4"   | 27.5          | 19 |  |  |  |  |  |  |  |
| 10   | 3/8" | -06  | Q03710041A-06-06 | 3/8"   | 29            | 24 |  |  |  |  |  |  |  |
| 12.5 | 1/2" | -08  | Q03710041A-08-08 | 1/2"   | 34            | 27 |  |  |  |  |  |  |  |

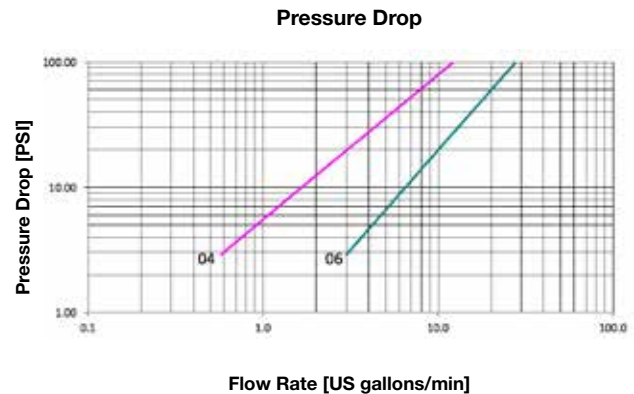
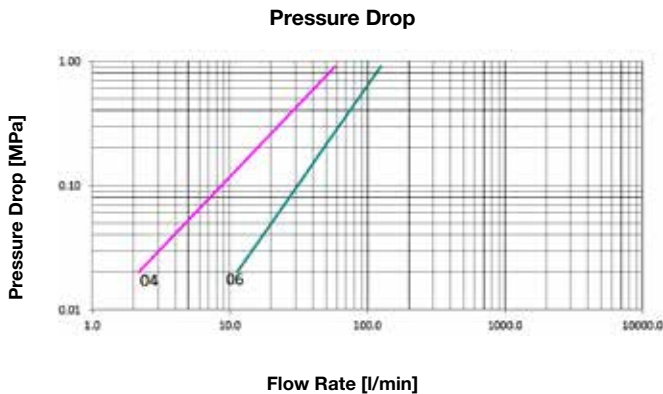


## STANDARD PUSH-PULL



|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa              | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       |             |
|------|------|------|------------------|------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|-------------|
|      |      |      |                  |      |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 35               | 5075 | 16    | 4.2    | 65  | 144 | 0.8 | 0.049      | 230    | 33350 | 140   | 20300 | Not allowed |
| 10   | ¾    | 06   | 35               | 5075 | 49    | 12.9   | 100 | 222 | 1.3 | 0.079      | 170    | 24650 | 150   | 21750 | Not allowed |
| 12.5 | ½    | 08   | See ISO A Series |      |       |        |     |     |     |            |        |       |       |       |             |



### Product description:

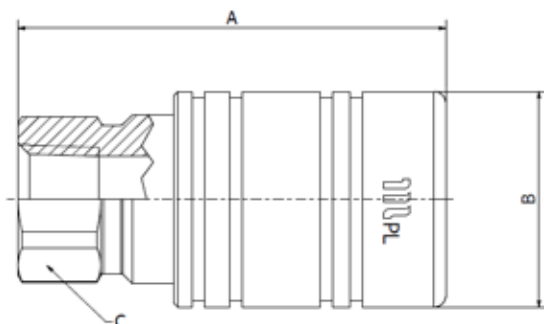
- Female couplings designed for Agriculture applications, interchangeable with male part MQS-N
- Push-Pull connection/disconnection
- Break-away function according to ISO 5675 (in case of bulkhead mounting on the external sleeve)
- Positive connection by latching ball system
- Shut-off by poppet valve

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female & male couplings in high grade carbon steel with hardened areas in correspondence to the most stressed points. Seal in NBR with back-up in PTFE. |
| <b>Working Temperature</b> | -30°C to +110°C   |
| <b>Safety Factor</b>       | 4.1 in CONNECTED & DISCONNECTED conditions  |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## STANDARD PUSH-PULL - TERMINATION ENDS

BSP

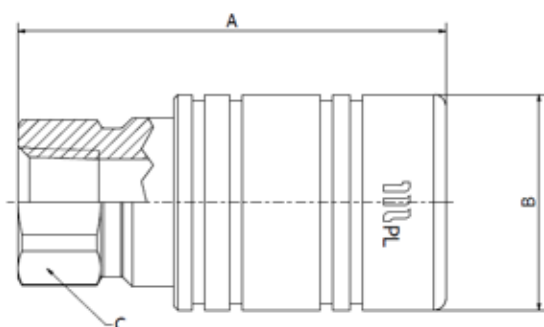


### Q03611041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | C  |  |  |  |
| 6.3  | 1/4" | -04  | Q03611041A-04-04 | 1/4"   | 53.5          | ø27 | 19 |  |  |  |
| 10   | 3/8" | -06  | Q03611041A-06-06 | 3/8"   | 60.5          | ø33 | 24 |  |  |  |

NPT



### Q03611341A

NPT TERMINATION ENDS  
TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD   | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|----------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |          | A             | B   | C  |  |  |  |
| 6.3  | 1/4" | -04  | Q03611341A-04-04 | 1/4"-NPT | 53.5          | ø27 | 19 |  |  |  |
| 10   | 3/8" | -06  | Q03611341A-06-06 | 3/8"-NPT | 60.5          | ø33 | 24 |  |  |  |





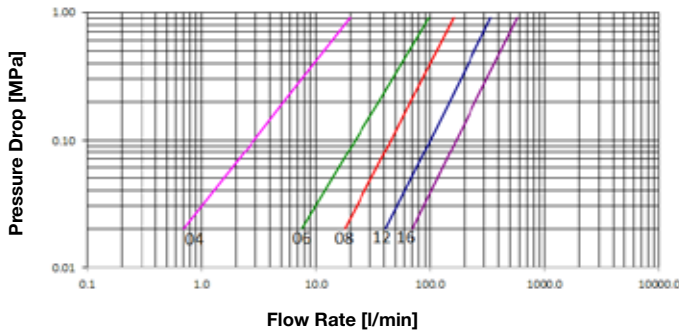
## PUSH-PULL POPPET VALVES



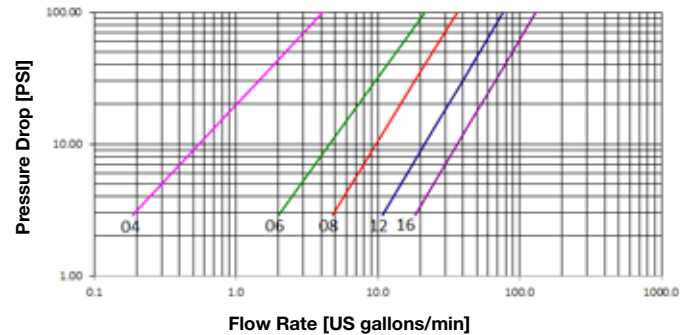
|             |                                   |   |                          |   |                               |  |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|--|---|
|             |                                   |   |                          |   |                               |  |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> |  | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa  | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       |             |
|------|------|------|------|------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|-------------|
|      |      |      |      |      |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 35   | 5075 | 5     | 1.3    | 80  | 178 | 0.7 | 0.043      | 180    | 26100 | 145   | 21025 | Not allowed |
| 10   | ⅜    | 06   | 31.5 | 4568 | 35    | 9.2    | 105 | 233 | 1.4 | 0.085      | 150    | 21750 | 130   | 18850 | Not allowed |
| 12.5 | ½    | 08   | 30   | 4350 | 68    | 18.0   | 110 | 244 | 2   | 0.122      | 140    | 20300 | 140   | 20300 | Not allowed |
| 20   | ¾    | 12   | 25   | 3625 | 147   | 38.8   | 165 | 367 | 4   | 0.244      | 120    | 17400 | 110   | 15950 | Not allowed |
| 25   | 1    | 16   | 25   | 3625 | 250   | 66.1   | 215 | 478 | 8.5 | 0.519      | 115    | 16675 | 120   | 17400 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

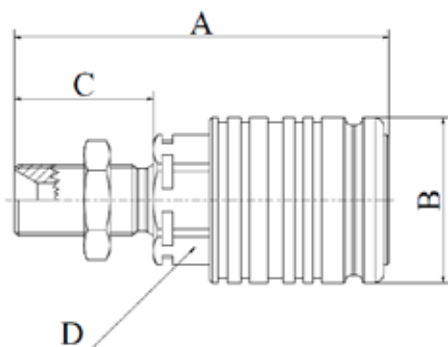
- Female coupling designed for agriculture applications, connectable with ISO 7241-1 series A male couplings
- PUSH-PULL connection and disconnection system, in case of bulkhead mounting on the external sleeve
- Break-away function according to ISO 5675 (in case of bulkhead mounting on the external sleeve)
- Positive connection by latching balls system
- Shut-off by poppet valve
- High resistant materials
- Dimensions and performances according to ISO 7241-1 series A

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female couplings in steel with some hardened areas, in correspondence to the most stressed points. Carbonitrided valve and sleeve, springs in C98 steel, latching balls in high resistance 100 C6 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling is assembled with specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## PUSH-PULL POPPET VALVES - TERMINATION ENDS

BSP



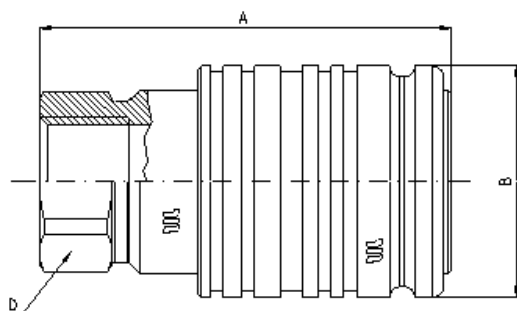
### Q01311040A

BSP TERMINATION ENDS

TO DIN3852

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|--------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | C  | D  |  |  |
| 12.5 | 1/2" | -08  | Q01311040A-08-06 | 3/8"   | 86.2          | ø38 | 32 | 27 |  |  |



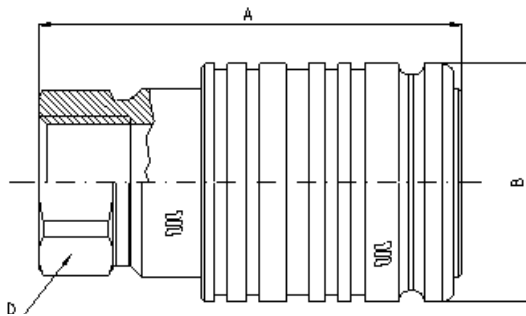
### Q01311041A

BSP TERMINATION ENDS

TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 6    | 1/4" | -04  | Q01311041A-04-04 | 1/4"   | 58.1          | ø26 | 17 |  |  |  |
| 10   | 3/8" | -06  | Q01311041A-06-04 | 1/4"   | 63            | ø32 | 22 |  |  |  |
|      |      |      | Q01311041A-06-06 | 3/8"   | 64.5          | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q01311041A-08-06 | 3/8"   | 66.2          | ø38 | 27 |  |  |  |
|      |      |      | Q01311041A-08-08 | 1/2"   | 67            | ø38 | 27 |  |  |  |
|      |      |      | Q01311041A-08-12 | 3/4"   | 73.2          | ø38 | 34 |  |  |  |
| 20   | 3/4" | -12  | Q01311041A-12-12 | 3/4"   | 87.7          | ø48 | 34 |  |  |  |
| 25   | 1"   | -16  | Q01311041A-16-12 | 3/4"   | 97.9          | ø54 | 41 |  |  |  |
|      |      |      | Q01311041A-16-16 | 1"     | 97.9          | ø54 | 41 |  |  |  |

BSP



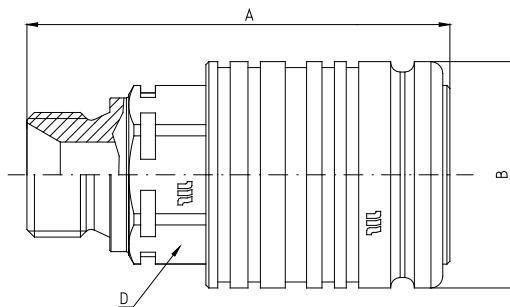
### Q01311041U

BSP TERMINATION ENDS

TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01311041U-08-08 | 1/2"   | 67            | ø38 | 27 |  |  |  |

Polyurethane seal



### Q01311050A

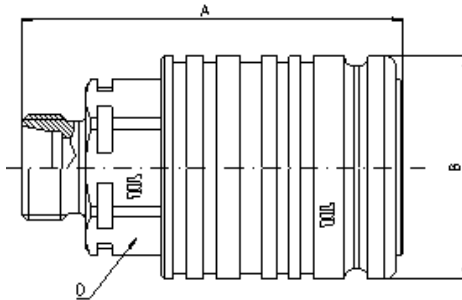
BSP TERMINATION ENDS

TO ISO 8434-6

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01311050A-08-06 | 3/8"   | 68.9          | ø38 | 27 |  |  |  |
|      |      |      | Q01311050A-08-08 | 1/2"   | 71.4          | ø38 | 27 |  |  |  |

## PUSH-PULL POPPET VALVES - TERMINATION ENDS

METRIC



### Q01311110A

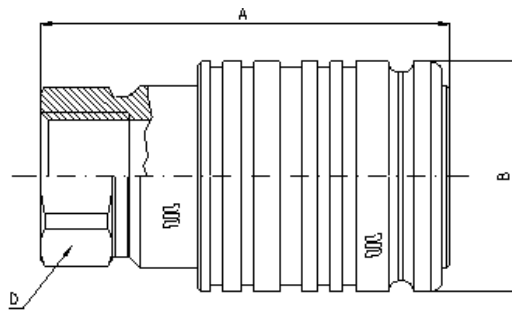
METRIC TERMINATION ENDS

TO ISO 8434-1

L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q01311110A-06-12 | M12x1,5 | 61            | ø32 | 22 |  |  |  |
|      |      |      | Q01311110A-06-14 | M14x1,5 | 61            | ø32 | 22 |  |  |  |
|      |      |      | Q01311110A-06-16 | M16x1,5 | 61            | ø32 | 22 |  |  |  |
|      |      |      | Q01311110A-06-18 | M18x1,5 | 61            | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q01311110A-08-14 | M14x1,5 | 65.2          | ø38 | 27 |  |  |  |
|      |      |      | Q01311110A-08-16 | M16x1,5 | 66.2          | ø38 | 27 |  |  |  |
|      |      |      | Q01311110A-08-18 | M18x1,5 | 65.2          | ø38 | 27 |  |  |  |
|      |      |      | Q01311110A-08-22 | M22x1,5 | 66.2          | ø38 | 27 |  |  |  |
| 20   | 3/4" | -12  | Q01311110A-08-26 | M26x1,5 | 66.2          | ø38 | 30 |  |  |  |
|      |      |      | Q01311110A-12-22 | M22x1,5 | 85.7          | ø48 | 34 |  |  |  |
|      |      |      | Q01311110A-12-26 | M26x1,5 | 85.7          | ø48 | 34 |  |  |  |
| 25   | 1"   | -16  | Q01311110A-12-30 | M30x2   | 87.7          | ø48 | 34 |  |  |  |
|      |      |      | Q01311110A-16-26 | M26x1,5 | 94.5          | ø54 | 41 |  |  |  |
|      |      |      | Q01311110A-16-30 | M30x2   | 96.5          | ø54 | 41 |  |  |  |
|      |      |      | Q01311110A-16-36 | M36x2   | 96.5          | ø54 | 41 |  |  |  |

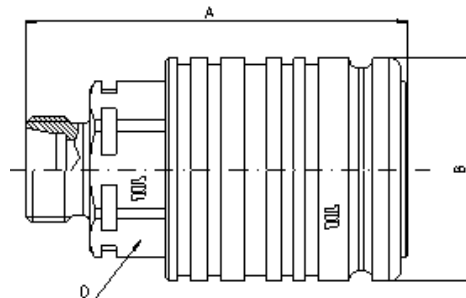
METRIC



### Q0131141A

METRIC TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q0131141A-06-16 | M16x1,5 | 64.5          | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q0131141A-08-18 | M18x1,5 | 66.2          | ø38 | 27 |  |  |  |
|      |      |      | Q0131141A-08-20 | M20x1,5 | 67            | ø38 | 27 |  |  |  |
|      |      |      | Q0131141A-08-22 | M22x1,5 | 67            | ø38 | 27 |  |  |  |
| 20   | 3/4" | -12  | Q0131141A-12-22 | M22x1,5 | 84.7          | ø48 | 34 |  |  |  |



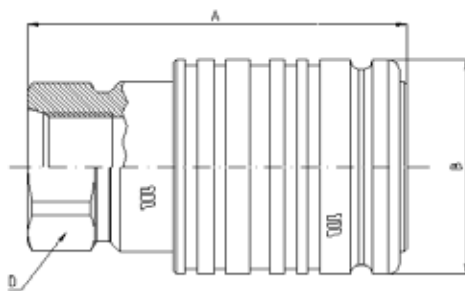
### Q0131120A

METRIC TERMINATION ENDS  
TO ISO 8434-1  
S SERIES

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q0131120A-06-16 | M16x1,5 | 62            | ø32 | 22 |  |  |  |
|      |      |      | Q0131120A-06-18 | M18x1,5 | 62            | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q0131120A-08-18 | M18x1,5 | 66.2          | ø38 | 27 |  |  |  |
|      |      |      | Q0131120A-08-20 | M20x1,5 | 66.2          | ø38 | 27 |  |  |  |
|      |      |      | Q0131120A-08-24 | M24x1,5 | 68.2          | ø38 | 27 |  |  |  |
| 25   | 1"   | -16  | Q0081120A-16-30 | M30x2   | 98.5          | ø54 | 41 |  |  |  |
|      |      |      | Q0081120A-16-36 | M36x2   | 100.5         | ø54 | 41 |  |  |  |
|      |      |      | Q0081120A-16-42 | M40x2   | 102.5         | ø54 | 44 |  |  |  |

## PUSH-PULL POPPET VALVES - TERMINATION ENDS

METRIC

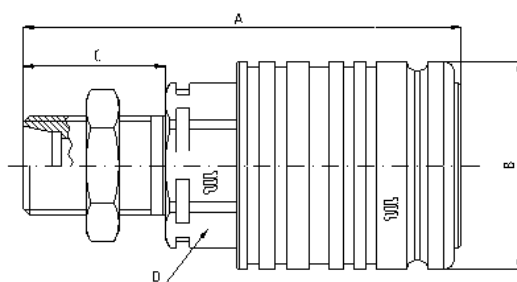


### Q0131191A

METRIC TERMINATION ENDS

TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q0131191A-08-16* | M16x1,5 | 66.7          | ø38 | 27 |  |  |  |
|      |      |      | Q0131191A-08-18* | M18x1,5 | 68.2          | ø38 | 27 |  |  |  |
|      |      |      | Q0131191A-08-22  | M22x1,5 | 67            | ø38 | 27 |  |  |  |



### Q01311770B

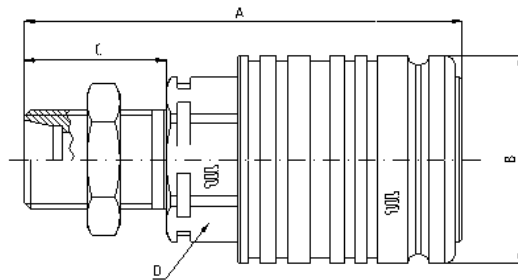
METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  | D  |  |  |
| 10   | 3/8" | -06  | Q01311770B-06-12 | M12x1,5 | 76            | ø32 | 25 | 22 |  |  |
|      |      |      | Q01311770B-06-14 | M14x1,5 | 75            | ø32 | 25 | 22 |  |  |
|      |      |      | Q01311770B-06-16 | M16x1,5 | 75            | ø32 | 26 | 22 |  |  |
|      |      |      | Q01311770B-06-18 | M18x1,5 | 75            | ø32 | 26 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q01311770B-08-14 | M14x1,5 | 80.2          | ø38 | 25 | 27 |  |  |
|      |      |      | Q01311770B-08-16 | M16x1,5 | 80.2          | ø38 | 26 | 27 |  |  |
|      |      |      | Q01311770B-08-18 | M18x1,5 | 80.2          | ø38 | 26 | 27 |  |  |
|      |      |      | Q01311770B-08-22 | M22x1,5 | 81.2          | ø38 | 27 | 27 |  |  |
|      |      |      | Q01311770B-08-26 | M26x1,5 | 82.2          | ø38 | 28 | 30 |  |  |
| 25   | 1"   | -16  | Q01311770B-16-30 | M30x2   | 114.5         | ø54 | 32 | 41 |  |  |

METRIC



### Q01311870B

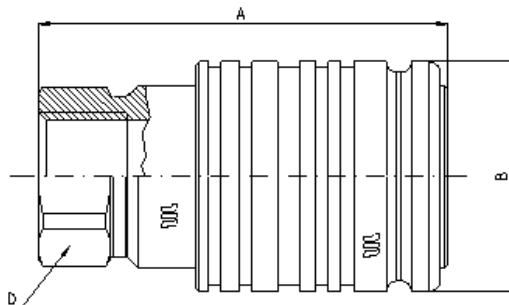
METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD S SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  | D  |  |  |
| 10   | 3/8" | -06  | Q01311870B-06-16 | M16x1,5 | 76            | ø32 | 27 | 22 |  |  |
|      |      |      | Q01311870B-06-18 | M18x1,5 | 76            | ø32 | 27 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q01311870B-08-18 | M18x1,5 | 81.2          | ø38 | 27 | 27 |  |  |
|      |      |      | Q01311870B-08-20 | M20x1,5 | 81.2          | ø38 | 27 | 27 |  |  |
|      |      |      | Q01311870B-08-24 | M24x1,5 | 83.2          | ø38 | 29 | 27 |  |  |

NPT



### Q01311341A

NPT TERMINATION END

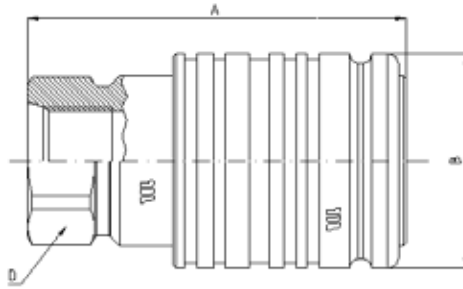
TO ANSI B 1.20.3 STANDARD

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |           | A             | B   | D  |  |  |  |
| 6    | 1/4" | -04  | Q01311341A-04-04 | 1/4" NPTF | 58            | ø26 | 17 |  |  |  |
| 10   | 3/8" | -06  | Q01311341A-06-06 | 3/8" NPTF | 64.5          | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q01311341A-08-08 | 1/2" NPTF | 67            | ø38 | 27 |  |  |  |
| 25   | 1"   | -16  | Q01311341A-16-16 | 1" NPTF   | 97.9          | ø54 | 41 |  |  |  |



## PUSH-PULL POPPET VALVES - TERMINATION ENDS

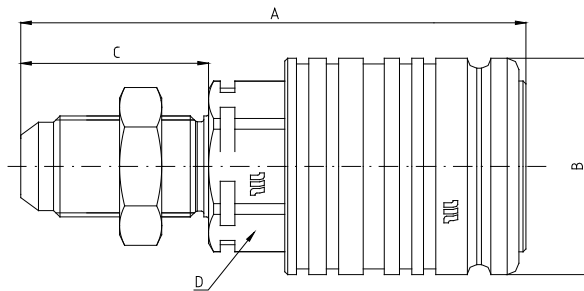
SAE



### Q01311301A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

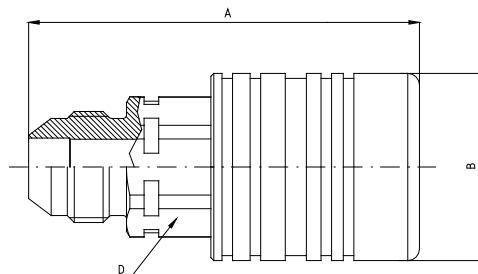
| SIZE |      |      | PART NUMBER       | THREAD       | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-------------------|--------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling   |              | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q01311301A-06-06* | 9/16"-18 UNF | 64.5          | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q01311301A-08-08  | 3/4"-16 UNF  | 67            | ø38 | 27 |  |  |  |
|      |      |      | Q01311301A-08-10  | 7/8"-14 UNF  | 69            | ø38 | 27 |  |  |  |



### Q01311230A

SAE TERMINATION END  
TO ISO 8434-2  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |      |    |  |  |
|------|------|------|------------------|-------------|---------------|-----|------|----|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | C    | D  |  |  |
| 12.5 | 1/2" | -08  | Q01311230A-08-08 | 3/4"-16 UNF | 91.8          | ø38 | 37.6 | 27 |  |  |
|      |      |      | Q01311230A-08-10 | 7/8"-14 UNF | 95.3          | ø38 | 41.1 | 27 |  |  |

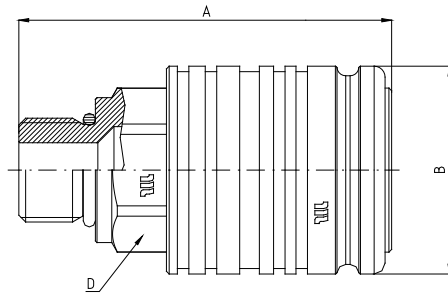


### Q01311250A

SAE TERMINATION ENDS  
TO ISO 8434-2

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q01311250A-06-08 | 3/4"-16 UNF | 66.7          | ø32 | 22 |  |  |  |

SAE



### Q01311320A

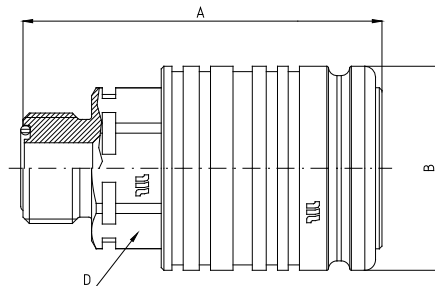
ORB TERMINATION ENDS

TO SAE J1926-2

S SERIES

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01311320A-08-08 | 3/4"-16 UNF | 68.2          | ø38 | 27 |  |  |  |

ORFS



### Q01311240A

ORFS TERMINATION ENDS

TO ISO 8434-3

| SIZE |      |      | PART NUMBER      | THREAD        | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |               | A             | B   | D  |  |  |  |
| 10   | 3/8" | -06  | Q01311240A-06-04 | 9/16"-18 UN   | 60.8          | ø32 | 22 |  |  |  |
|      |      |      | Q01311240A-06-06 | 11/16"-16 UN  | 61.2          | ø32 | 22 |  |  |  |
| 12.5 | 1/2" | -08  | Q01311240A-08-08 | 13/16"-16 UN  | 66.2          | ø38 | 27 |  |  |  |
| 25   | 1"   | -16  | Q01311240A-16-16 | 1.7/16"-12 UN | 100           | ø54 | 41 |  |  |  |

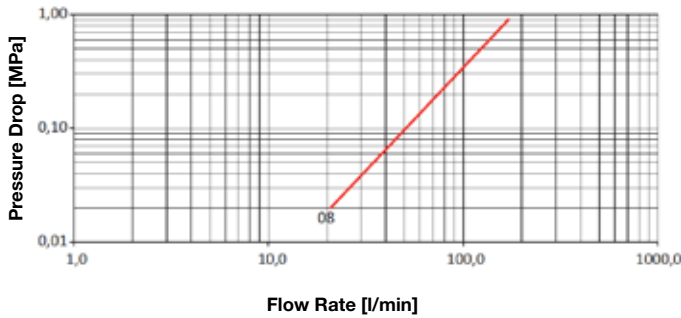


## PUSH-PULL CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

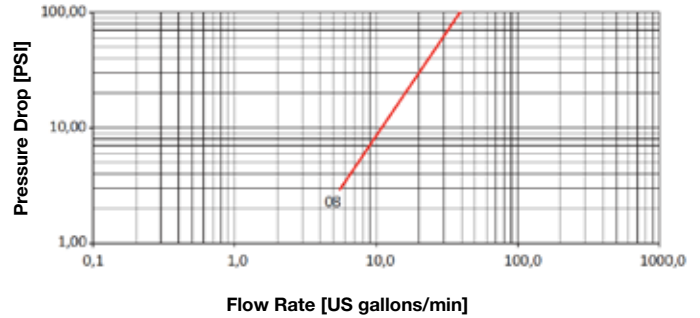
|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm                  | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       |                 |
|---------------------|------|------|-----|------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|-----------------|
|                     |      |      |     |      |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |                 |
| 12.5                | ½    | 08   | 30  | 4350 | 68    | 18.0   | 110 | 244 | 2   | 0.122      | 120    | 17400 | 140   | 20300 | Connection only |
| With 0 MPa pressure |      |      |     |      |       |        |     |     |     |            |        |       |       |       |                 |

Pressure Drop



Pressure Drop



### Product description:

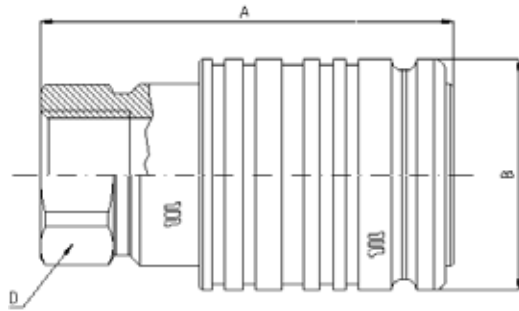
- Female coupling designed for agriculture applications, connectable with ISO 7241-1 series A male couplings
- Connectable under pressure thanks to a frontal micro-valve
- Push-Pull connection and disconnection system, in case of bulkhead mounting on the external sleeve
- Break-away function according to ISO 5675 (in case of bulkhead mounting on the external sleeve)
- Positive connection by latching balls system
- Shut-off by poppet valve
- High resistant materials
- Dimensions and performances according to ISO 7241-1 series A

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female couplings in steel with some hardened areas, in correspondence to the most stressed points. Carbonitrided valve, micro-valve and sleeve, springs in C98 steel, latching balls in 100 C6 steel, seals in NBR and polyurethane (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## PUSH-PULL CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP

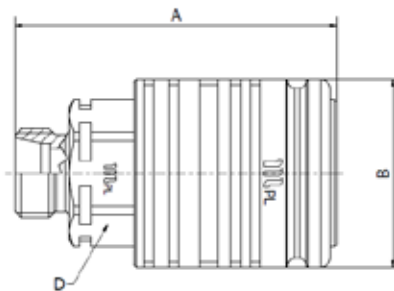


### Q01511041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01511041A-08-08 | 1/2"   | 67            | ø38 | 27 |  |  |  |

METRIC

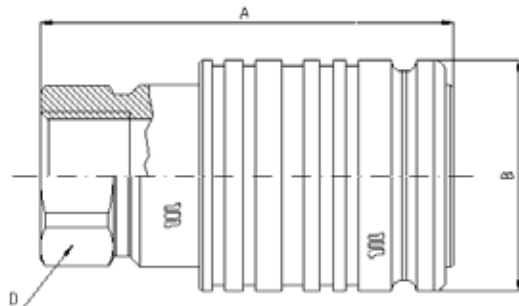


### Q0151110A

METRIC TERMINATION END  
TO ISO 8434-1  
L SERIES

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q0151110A-08-18 | M18x1,5 | 65.2          | ø38 | 27 |  |  |  |

NPT



### Q01511341A

NPT TERMINATION END  
TO ANSI B 1.20.3 STANDARD

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |           | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01511341A-08-08 | 1/2" NPTF | 67            | ø38 | 27 |  |  |  |

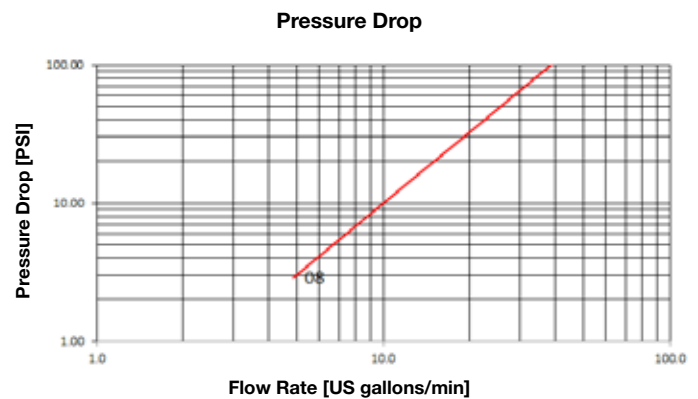
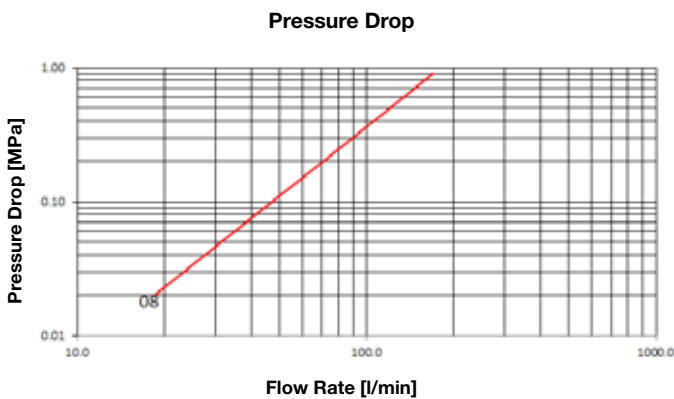




## PUSH-PULL FEMALE CONNECTABLE WITH MALE UNDER PRESSURE

|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       | Connection only, with male under pressure |
|------|------|------|-----|------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|---|
|      |      |      |     |      |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |   |
| 12.5 | ½    | 08   | 30  | 4350 | 71    | 18.8   | 170 | 378 | 2   | 0.122      | 125    | 18125 | 125   | 18125 |   |



### Product description:

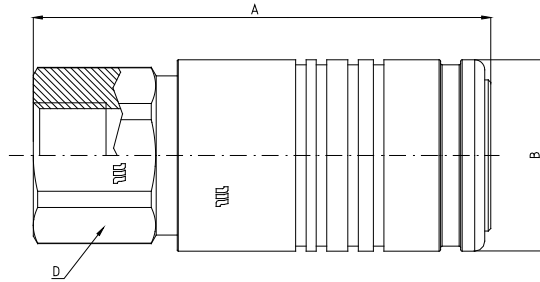
- Connectable with male ISO A under pressure
- Working pressure 30MPa
- Connection/disconnection PUSH-PULL
- No shut-off, Manuli mechanical valve block system
- Installation on hoses with coupling blocked on panel by the sleeve
- Breakaway function according to ISO 5675
- Interchangeable according to ISO 7241-1 part A
- Wide range of termination end

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in NBR, back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals          |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)                                     |
| <b>Test Specifications</b> | ISO 7241-2  |





BSP

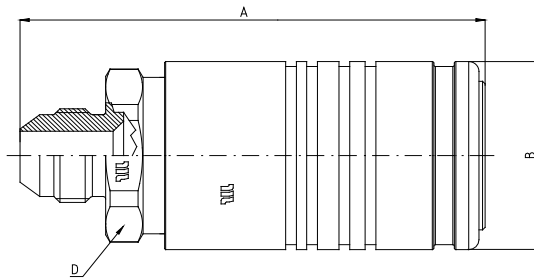


**Q01611041A**

**BSP TERMINATION ENDS  
TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01611041A-08-08 | 1/2"   | 91.2          | ø38 | 32 |  |  |  |

SAE



**Q01611250A**

**SAE TERMINATION ENDS  
TO ISO 8434-2**

| SIZE |      |      | PART NUMBER      | THREAD       | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |              | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01611250A-08-08 | 3/4"- 16 UNF | 90.7          | ø38 | 32 |  |  |  |



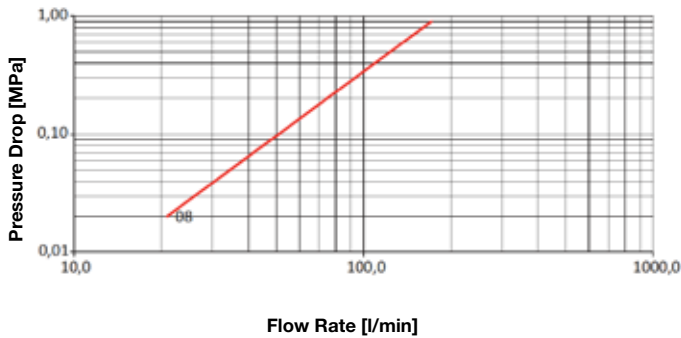


## PUSH-PULL FEMALE BOTH PARTS CONNECTABLE UNDER PRESSURE

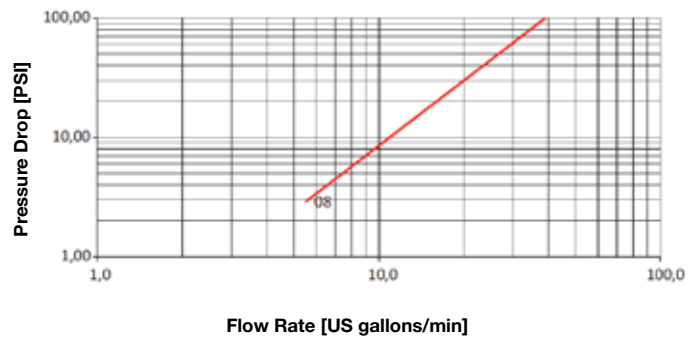
|             | <b>MPa</b>                        |   | <b>N</b>                 |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch             | Female |       | M & F |       |  |
|------|------|------|-----|------|-------|--------|-----|-----|-----|------------------------|--------|-------|-------|-------|--|
|      |      |      |     |      |       |        |     |     |     |                        | MPa    | PSI   | MPa   | PSI   |  |
| 12.5 | ½    | 08   | 30  | 4350 | 71    | 18.8   | 170 | 378 | 2   | 0.122                  | 125    | 18125 | 125   | 18125 | Connection only, with male and female under pressure |
|      |      |      |     |      |       |        |     |     |     | With 0 MPa of pressure |        |       |       |       |  |

Pressure Drop



Pressure Drop



### Product description:

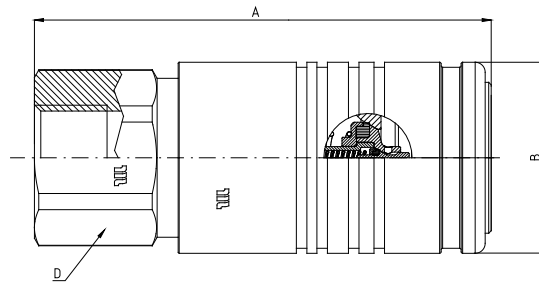
- Connectable with male ISO A and female under pressure
- Working pressure 30MPa
- Connection/disconnection PUSH-PULL
- No shut-off, Manuli mechanical valve block system
- Installation on hoses with coupling blocked on panel by the sleeve
- Breakaway function according to ISO 5675
- Interchangeable according to ISO 7241-1 part A
- Wide range of termination ends

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals                           |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



PUSH-PULL FEMALE BOTH PARTS CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP

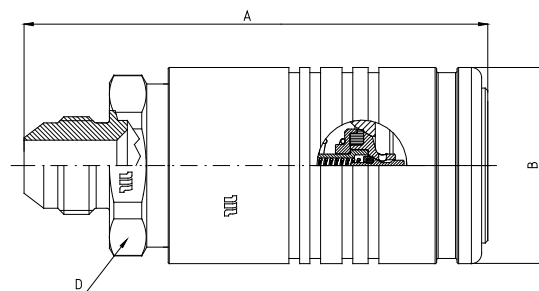


## Q01711041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |      |     |  |  |  |
|------|------|------|------------------|--------|---------------|------|-----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B    | D   |  |  |  |
| 12.5 | 1/2" | -08  | Q01711041A-08-08 |        | 1/2"          | 91.2 | ø38 |  |  |  |

SAE



## Q01711250A

SAE TERMINATION ENDS  
TO ISO 8434-2

| SIZE |      |      | PART NUMBER      | THREAD       | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |              | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01711250A-08-08 | 3/4"- 16 UNF | 90.7          | ø38 | 32 |  |  |  |

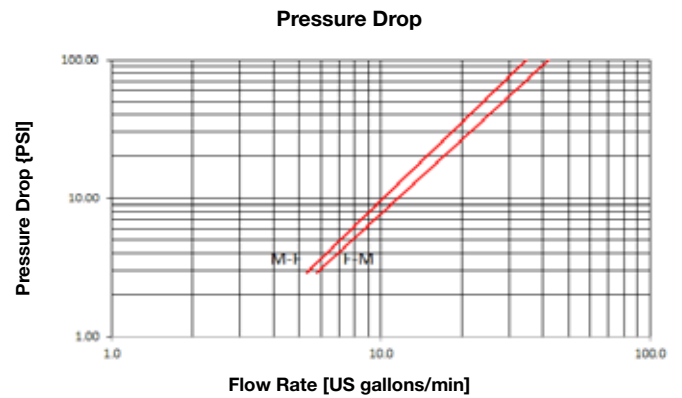
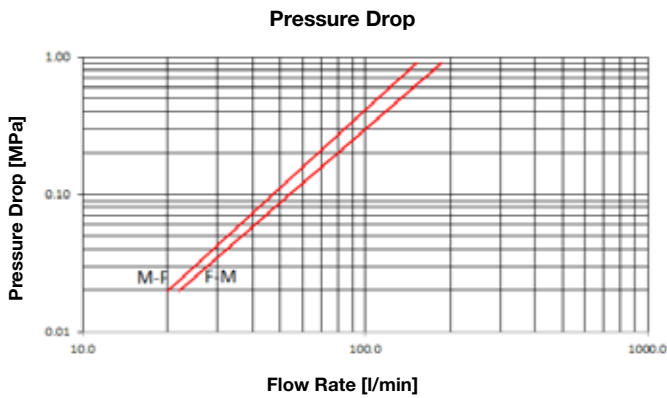




## PUSH-PULL FEMALE CONNECTABLE WITH MALE UNDER PRESSURE

|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | Flow direction | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       |   |
|------|------|------|-----|------|----------------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|---|
|      |      |      |     |      |                |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |   |
| 12.5 | ½    | 08   | 30  | 4350 | F → M          | 80    | 21.1   | 230 | 511 | 2.1 | 0.128      | 125    | 18125 | 125   | 18125 | Connection only, with male under pressure |
|      |      |      |     |      | M → F          | 68    | 18.0   |     |     |     |            |        |       |       |       |   |



### Product description:

- Connectable with male ISO A under pressure
- Working pressure 30MPa
- Connection/disconnection PUSH-PULL
- No shut-off, Manuli mechanical valve block system
- Installation on pipe and ports
- Breakaway function according to ISO 5675
- Interchangeable according to ISO 7241-1 part A
- Wide range of termination ends
- According to all requirements of ISO 5675

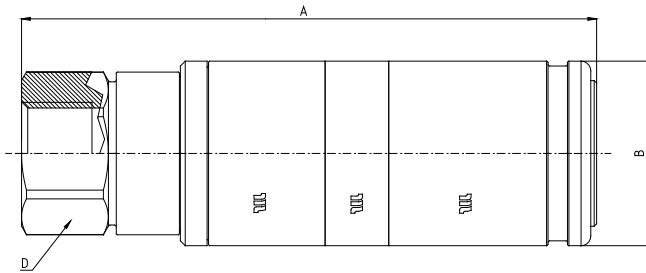
|                            |   |
|----------------------------|---|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in NBR, back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals          |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)                                     |
| <b>Test Specifications</b> | ISO 7241-2  |





## PUSH-PULL MALE CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP

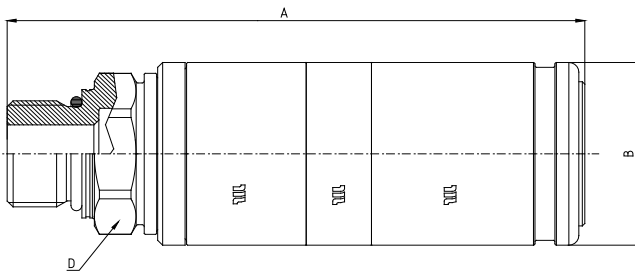


### Q01811041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811041A-08-08 | 1/2"   | 118.4         | ø38 | 30 |  |  |  |

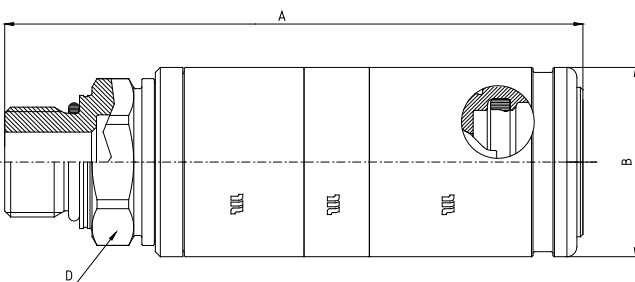
METRIC



### Q01811190A

METRIC TERMINATION ENDS  
TO ISO 6149-2

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811190A-08-22 | M22x1,5 | 115.9         | ø38 | 30 |  |  |  |



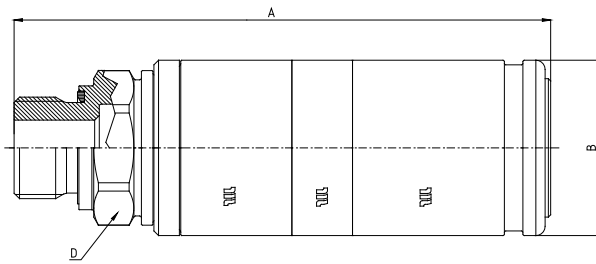
### Q01811190U

POLYURETHANE SEAL  
METRIC TERMINATION ENDS  
TO ISO 6149-2

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811190U-08-22 | M22x1,5 | 115.9         | ø38 | 30 |  |  |  |

Polyurethane seal

METRIC

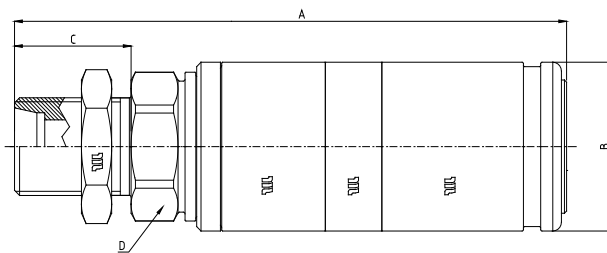


## Q0181140A

METRIC TERMINATION ENDS

TO ISO 9974-2

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q0181140A-08-22 | M22x1,5 | 115.9         | ø38 | 30 |  |  |  |



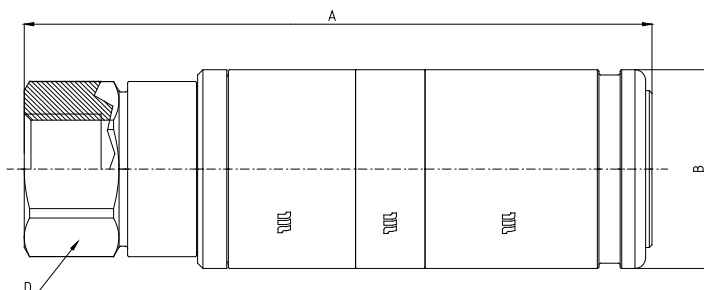
## Q01811770B

METRIC TERMINATION ENDS

ISO 8434-1 L SERIES  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  | D  |  |  |
| 12.5 | 1/2" | -08  | Q01811770B-08-22 | M22x1,5 | 127.9         | ø38 | 27 | 30 |  |  |

NPT



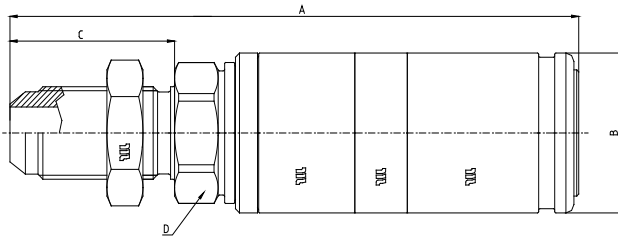
## Q01811341A

NPT TERMINATION ENDS

TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |           | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811341A-08-08 | 1/2" NPTF | 118.4         | ø38 | 30 |  |  |  |

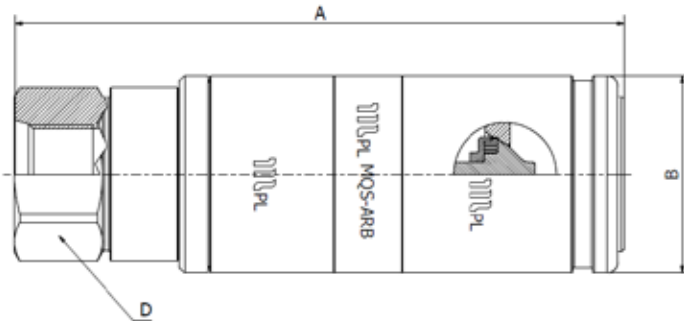
SAE



### Q01811230A

SAE TERMINATION ENDS  
ISO 8434-2 BULKHEAD

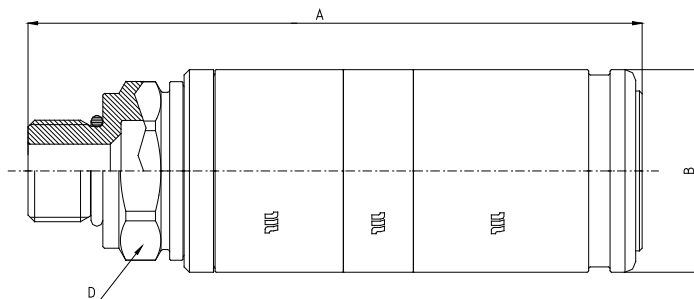
| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |      |    |  |  |
|------|------|------|------------------|-------------|---------------|-----|------|----|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | C    | D  |  |  |
| 12.5 | 1/2" | -08  | Q01811230A-08-08 | 3/4"-16 UNF | 138.5         | ø38 | 37.6 | 30 |  |  |
|      |      |      | Q01811230A-08-10 | 7/8"-14UNF  | 142           | ø38 | 40.1 | 30 |  |  |



### Q01811301A

SAE TERMINATION ENDS  
TO SAE J1926-1

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811301A-08-08 | 3/4"-16 UNF | 117.4         | ø38 | 30 |  |  |  |



### Q01811320A

ORB TERMINATION ENDS  
TO SAE J1926-2 S SERIES

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01811320A-08-08 | 3/4"-16 UNF | 115           | ø38 | 30 |  |  |  |
|      |      |      | Q01811320A-08-10 | 7/8"-14UNF  | 117           | ø38 | 30 |  |  |  |

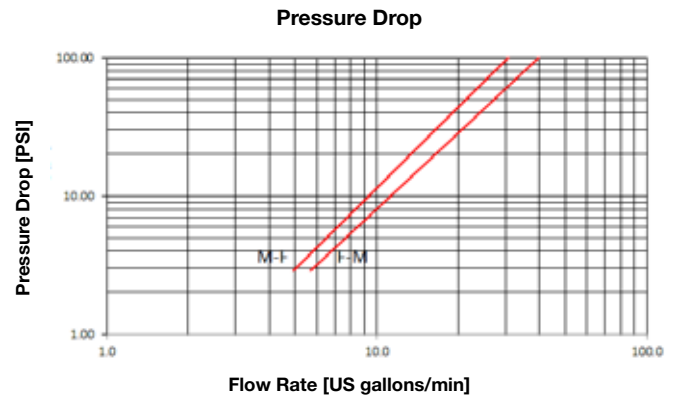
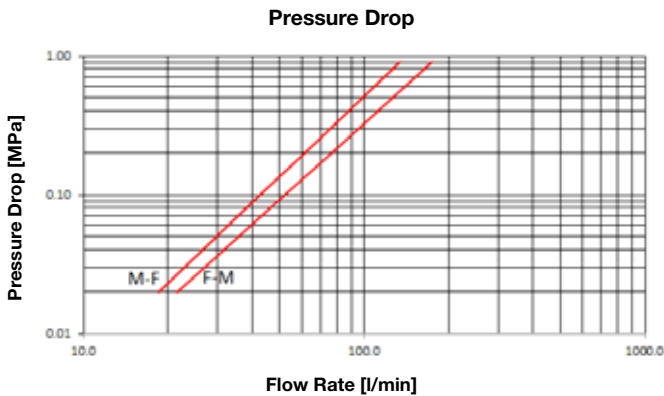




## PUSH-PULL FEMALE BOTH PARTS CONNECTABLE UNDER PRESSURE

|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | Flow direction | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       |  |
|------|------|------|-----|------|----------------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|--|
|      |      |      |     |      |                |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |  |
| 12.5 | ½    | 08   | 30  | 4350 | F → M          | 80    | 21.1   | 230 | 511 | 2.5 | 0.153      | 125    | 18125 | 125   | 18125 | Connection only, with male and female under pressure |
|      |      |      |     |      | M → M          | 68    | 18.0   |     |     |     |            |        |       |       |       |  |



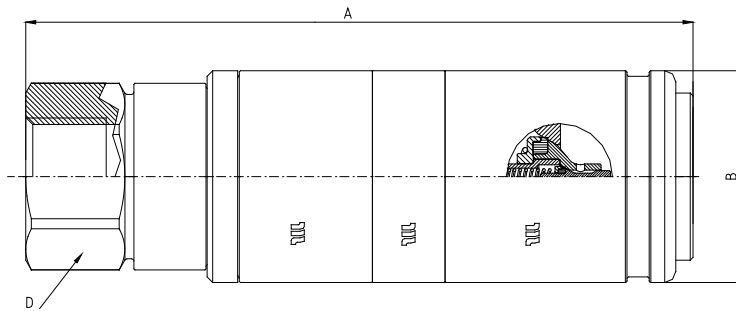
### Product description:

- Connectable with male ISO A and female under pressure
- Working pressure 30MPa
- Connection/disconnection PUSH-PULL
- No shut-off, Manuli mechanical valve block system
- Installation on pipe and ports
- Breakaway function according to ISO 5675
- Interchangeable according to ISO 7241-1 part A
- Wide range of termination ends
- According to all requirements of ISO 5675

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals                           |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



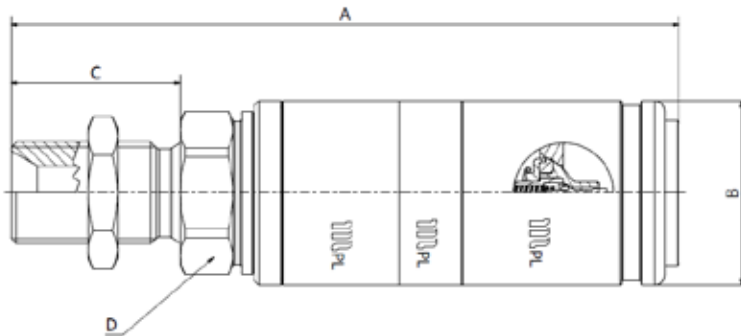
BSP



**Q01911041A**

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911041A-08-08 | 1/2"   | 120.3         | ø38 | 30 |  |  |  |

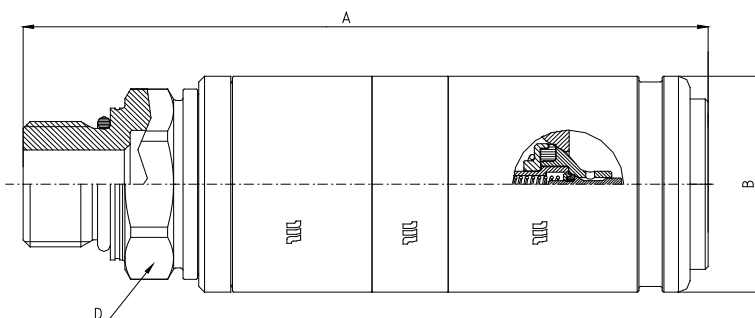


**Q01911040A**

BSP TERMINATION ENDS  
TO DIN 3852  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|--------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |        | A             | B   | C  | D  |  |  |
| 12.5 | 1/2" | -08  | Q01911040A-08-08 | 1/2"   | 137.8         | ø38 | 35 | 30 |  |  |

METRIC

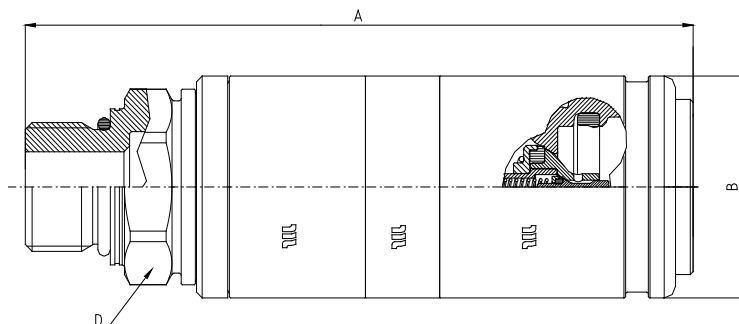


**Q01911190A**

METRIC TERMINATION ENDS  
TO ISO 6149-2

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911190A-08-22 | M22x1,5 | 117.8         | ø38 | 30 |  |  |  |

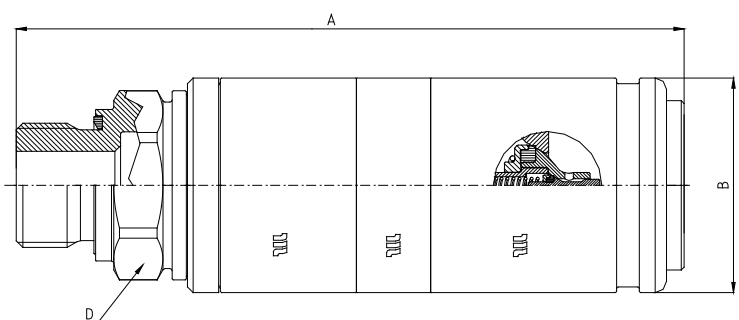
METRIC



**Q0191190U**  
 POLYURETHANE SEAL  
 METRIC TERMINATION ENDS  
 TO ISO 6149-2

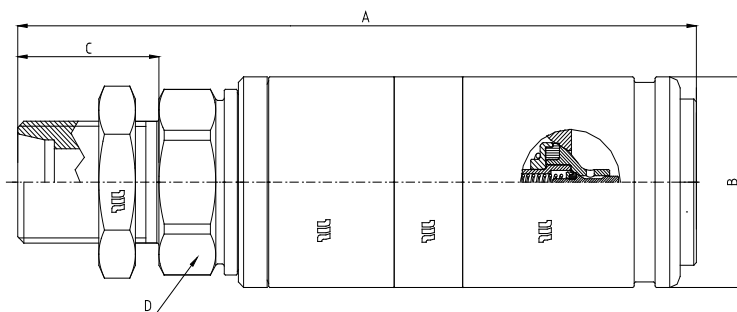
| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q0191190U-08-22 | M22x1,5 | 117.8         | ø38 | 30 |  |  |  |

Polyurethane seal



**Q0191140A**  
 METRIC TERMINATION ENDS  
 TO ISO 9974-2

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q0191140A-08-22 | M22x1,5 | 117.8         | ø38 | 30 |  |  |  |



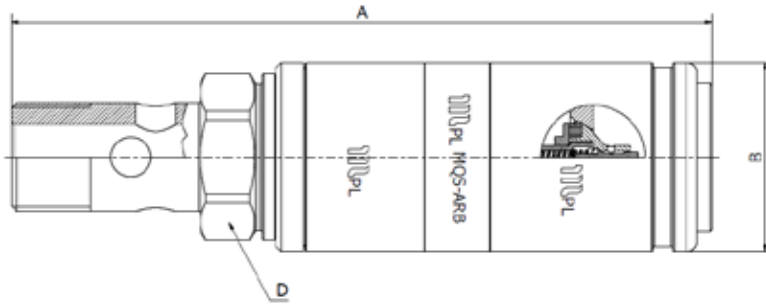
**Q01911770B**  
 METRIC TERMINATION ENDS  
 ISO 8434-1 L SERIES  
 BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |    |  |  |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  | D  |  |  |
| 12.5 | 1/2" | -08  | Q01911770B-08-22 | M22x1,5 | 129.8         | ø38 | 27 | 30 |  |  |



PUSH-PULL BOTH PARTS CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

METRIC



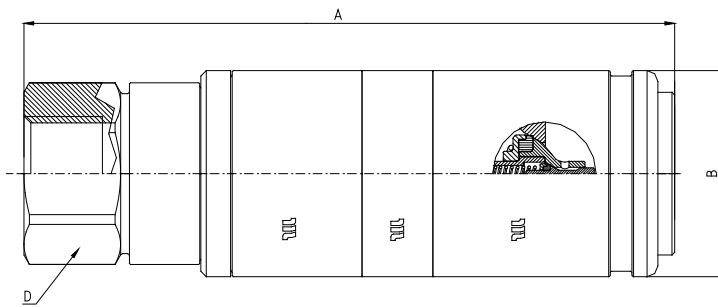
## Q01911080A

METRIC TERMINATION ENDS

DIN 7643

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911080A-08-22 | M22x1,5 | 140.8         | ø38 | 30 |  |  |  |

NPTF



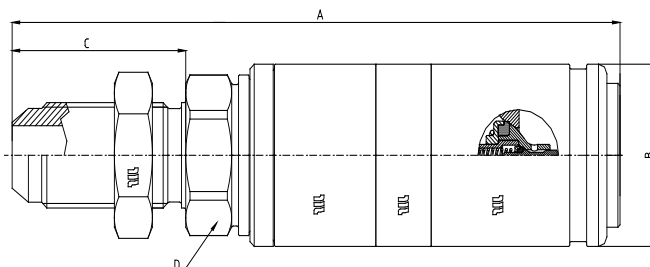
## Q01911341A

NPT TERMINATION ENDS

TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |           | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911341A-08-08 | 1/2" NPTF | 120.3         | ø38 | 30 |  |  |  |

SAE

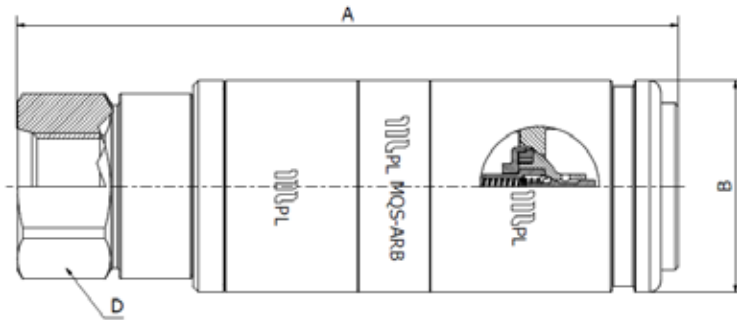


## Q01911230A

SAE TERMINATION ENDS

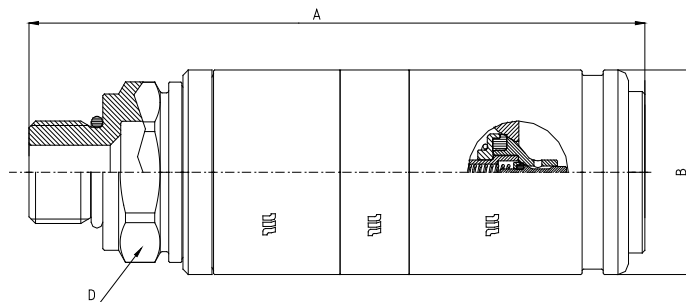
ISO 8434-2 BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD     | DIMENSIONS mm |     |      |    |  |  |
|------|------|------|------------------|------------|---------------|-----|------|----|--|--|
| DN   | inch | Size | Female coupling  |            | A             | B   | C    | D  |  |  |
| 12.5 | 1/2" | -08  | Q01911230A-08-10 | 7/8"-14UNF | 143.9         | ø38 | 40.1 | 30 |  |  |



**Q01911301A**  
**SAE TERMINATION ENDS**  
**TO SAE J1926-1**

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911301A-08-08 | 3/4"-16 UNF | 119.3         | ø38 | 30 |  |  |  |



**Q01911320A**  
**ORB TERMINATION ENDS**  
**TO SAE J1926-2 S SERIES**

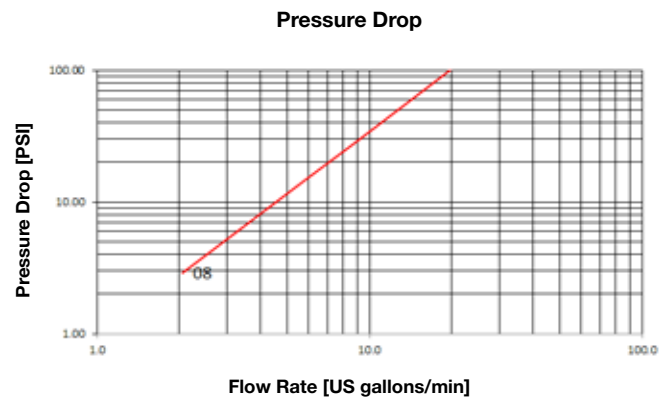
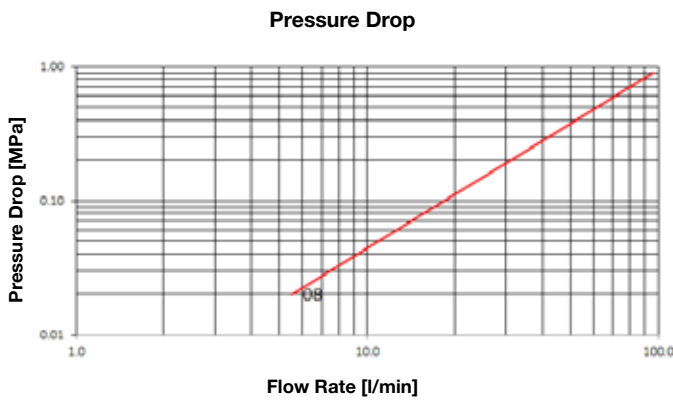
| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Female coupling  |             | A             | B   | D  |  |  |  |
| 12.5 | 1/2" | -08  | Q01911320A-08-08 | 3/4"-16 UNF | 116.9         | ø38 | 30 |  |  |  |
|      |      |      | Q01911320A-08-10 | 7/8"-14UNF  | 118.9         | ø38 | 30 |  |  |  |

## BRAKING CIRCUIT VALVES



|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb. | cc.  | cubic inch | Male |       | Female |      | M & F |       | Not allowed |
|------|------|------|-----|------|-------|--------|-----|-----|------|------------|------|-------|--------|------|-------|-------|-------------|
|      |      |      |     |      |       |        |     |     |      |            | MPa  | PSI   | MPa    | PSI  | MPa   | PSI   |             |
| 12.5 | 1/2  | 08   | 15  | 2175 | 31    | 8.2    | 110 | 224 | 0.02 | 0.001      | 130  | 18850 | 60     | 8700 | 130   | 18850 | Not allowed |



### Product description:

- Trailer brake coupling specially designed to connect the hydraulic braking system of tractors to trailers
- Connection and disconnection by pulling back the sleeve
- Positive connection by latching balls system
- Shut-off by flat valve
- The male has to be placed on the tractor and the female on the implement
- Interchangeable according to ISO 5676

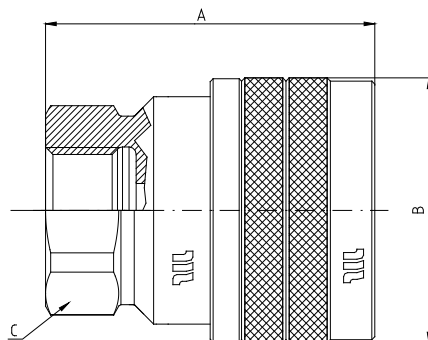
|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel, with some stressed tempered areas. Carbonitrided valve and sleeve, springs in C98 steel, seals in NBR and back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Test Specifications</b> | ISO 5676 and ISO 7241-2  |



Safety cap for male coupling and female coupling with parking included



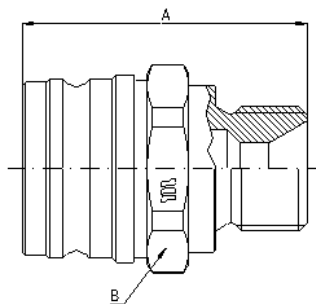
BSP



### Q04811041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

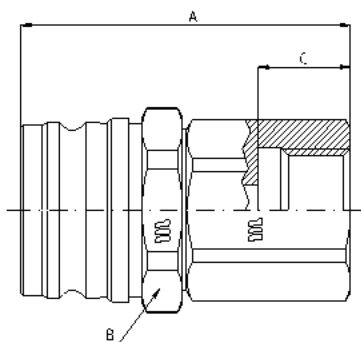
| SIZE |      |      | PART NUMBER      |  | THREAD | DIMENSIONS mm |     |    |  |  |
|------|------|------|------------------|--|--------|---------------|-----|----|--|--|
| DN   | inch | Size | Female coupling  |  |        | A             | B   | C  |  |  |
| 12.5 | 1/2" | -08  | Q04811041A-08-06 |  | 3/8"   | 55,5          | ø44 | 32 |  |  |
|      |      |      | Q04811041A-08-08 |  | 1/2"   | 56,5          | ø44 | 32 |  |  |



### Q04711050A

BSP TERMINATION ENDS  
TO ISO 8434-6

| SIZE |      |      | PART NUMBER      |  | THREAD | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|--|--------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |  |        | A             | B  |  |  |  |
| 12.5 | 1/2" | -8   | Q04711050A-08-08 |  | 1/2"   | 48            | 32 |  |  |  |

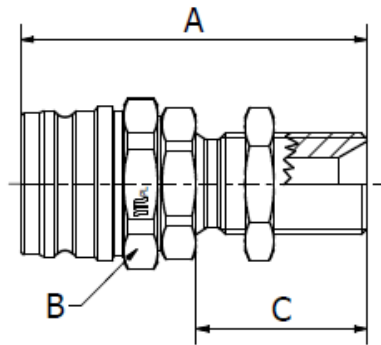


### Q04711041A

BSP TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      |  | THREAD   | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|--|----------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |  |          | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04711041A-08-08 |  | 1/2" GAS | 57            | 32 | 16 |  |  |

BSP

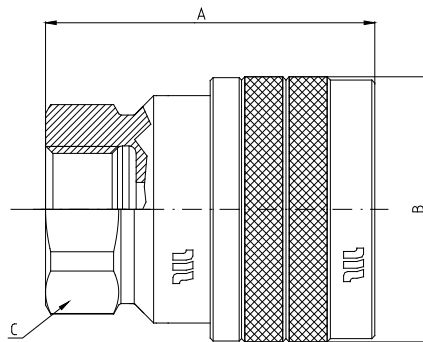


### Q04711040A

BSP TERMINATION ENDS  
TO DIN3852  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|--------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |        | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04711040A-08-08 | 1/2"   | 70.8          | 32 | 35 |  |  |

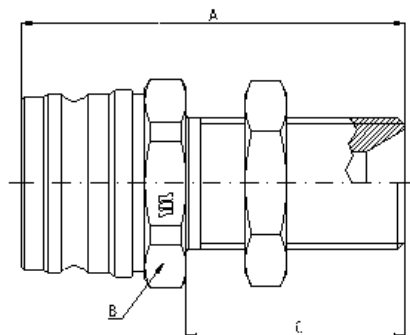
METRIC



### Q04811141A

METRIC TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |  |  |
|------|------|------|------------------|---------|---------------|-----|----|--|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  |  |  |
| 12.5 | 1/2" | -08  | Q04811141A-08-18 | M18x1,5 | 55,5          | ø44 | 32 |  |  |

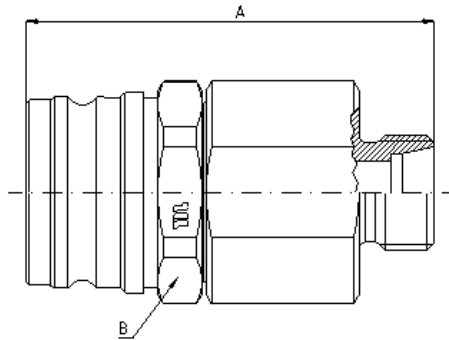


### Q04711370A

METRIC TERMINATION ENDS  
TO DIN 3863  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  |    |  |  |
| 12.5 | 1/2" | -08  | Q04711370A-08-22 | M22x1,5 | 65            | 32 | 37 |  |  |

METRIC



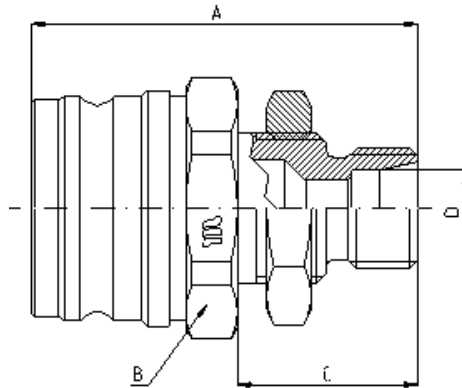
### Q0471110A

METRIC TERMINATION ENDS

TO ISO 8434-1

L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|---------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04711110A-08-18 | M18x1,5 | 65            | 32 |  |  |  |
|      |      |      | Q04711110A-08-22 | M22x1,5 | 64.7          | 32 |  |  |  |



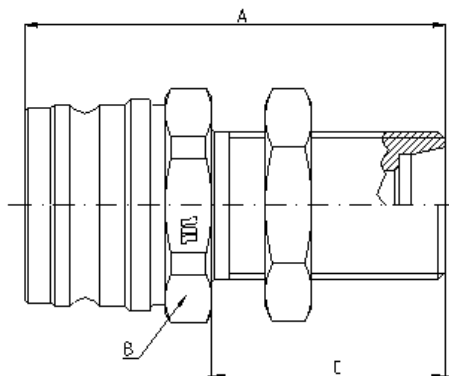
### Q04711770A

METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |      |       |  |
|------|------|------|------------------|---------|---------------|----|------|-------|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C    | D     |  |
| 12.5 | 1/2" | -08  | Q04711770A-08-16 | M16x1,5 | 52.5          | 32 | 24.5 | ø10,2 |  |
|      |      |      | Q04711770A-08-18 | M18x1,5 | 52            | 32 | 24   | ø12,2 |  |



### Q04711770A

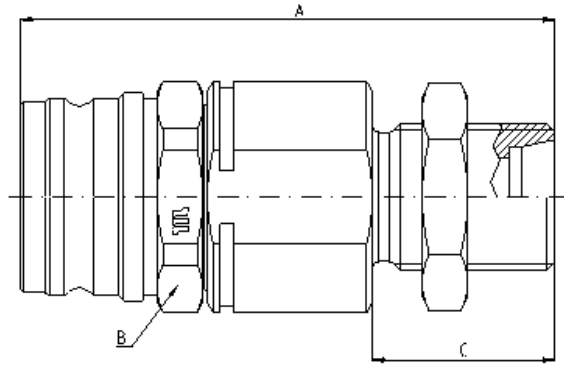
METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04711770A-08-22 | M22x1,5 | 63            | 32 | 35 |  |  |

METRIC



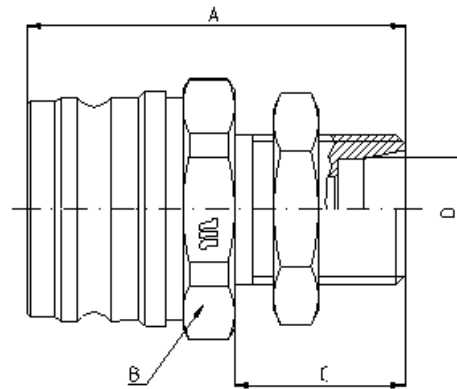
### Q04711770B

METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04711770B-08-22 | M22x1,5 | 82            | 32 | 28 |  |  |



### Q04711820A

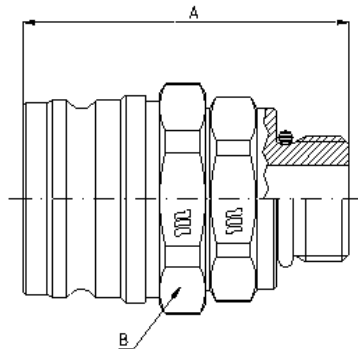
METRIC TERMINATION END

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |       |  |
|------|------|------|------------------|---------|---------------|----|----|-------|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  | D     |  |
| 12.5 | 1/2" | -08  | Q04711820A-08-20 | M20x1,5 | 51            | 32 | 23 | ø13,5 |  |



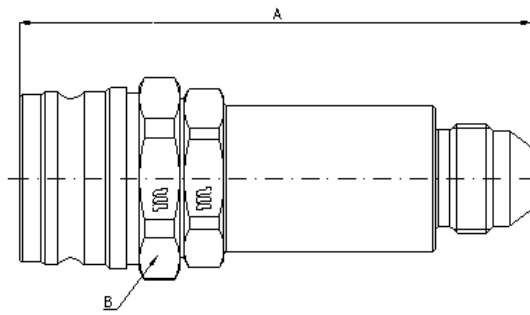
SAE



### Q04711300A

SAE TERMINATION END  
TO SAE J1926-3

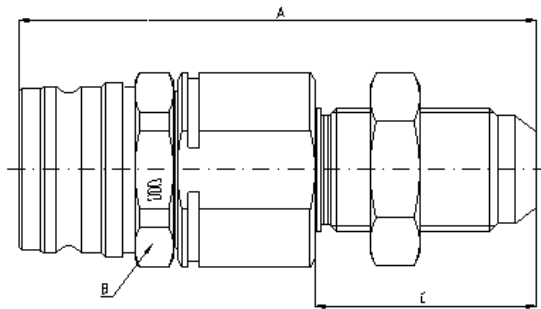
| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|-------------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04711300A-08-08 | 3/4"-16 UNF | 50            | 32 |  |  |  |



### Q04711250A

SAE TERMINATION ENDS  
TO ISO 8434-2

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|-------------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04711250A-08-08 | 3/4"-16 UNF | 89.5          | 32 |  |  |  |



### Q04711230A

SAE TERMINATION ENDS  
TO ISO 8434-2  
BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |      |  |  |
|------|------|------|------------------|-------------|---------------|----|------|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  | C    |  |  |
| 12.5 | 1/2" | -08  | Q04711230A-08-10 | 7/8"-14 UNF | 94.8          | 32 | 40.1 |  |  |

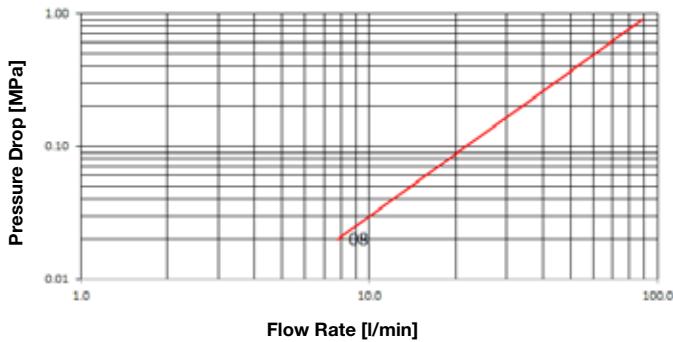




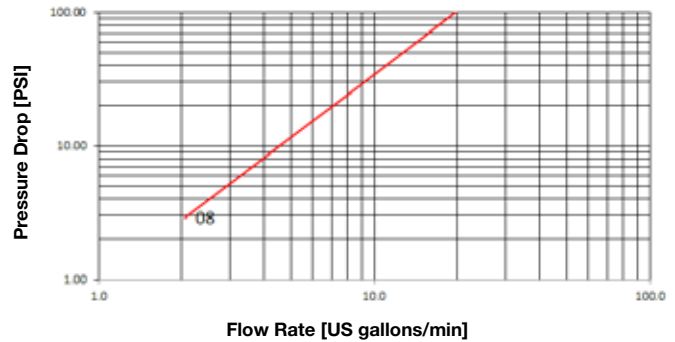
|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | cc.  | cubic inch | Male |       | Female |       | M & F |       | Allowed |
|------|------|------|-----|------|-------|--------|------|------------|------|-------|--------|-------|-------|-------|---------|
|      |      |      |     |      |       |        |      |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |         |
| 12.5 | 1/2  | 08   | 20  | 2900 | 34    | 9.0    | 0.02 | 0.001      | 130  | 18850 | 80     | 11600 | 140   | 20300 | Allowed |

Pressure Drop



Pressure Drop



### Product description:

- Trailer brake coupling specially designed to connect the hydraulic breaking system of tractors to trailers
- Connection and disconnection by screwing the sleeve
- Connection secured on the thread between the sleeve and the male coupling
- Flat-valve
- Connection and disconnection under pressure allowed
- The male has to be placed on the tractor and the female on the implement
- Interchangeable with similar products available on the market

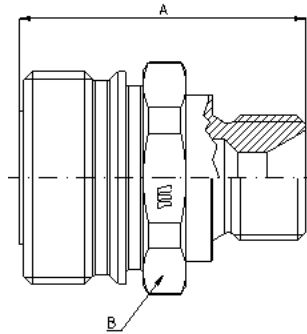
|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel, with hardened stressed areas. Carbonitrided valve, springs in C98 steel, seals in NBR and back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Test Specifications</b> | ISO 5676 and ISO 7241-2  |



Safety cap for male coupling and female coupling with parking included



BSP

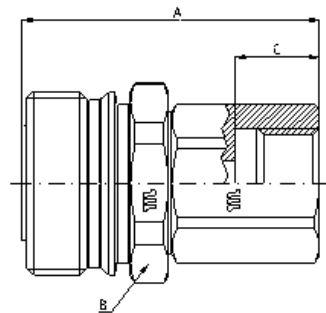


### Q04911050A

BSP TERMINATION ENDS

TO ISO 8434-6

| SIZE |      |      | PART NUMBER      | THREAD   | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|----------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |          | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04911050A-08-08 | 1/2" GAS | 48            | 36 |  |  |  |



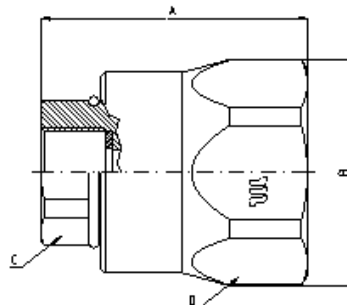
### Q04911041A

BSP TERMINATION ENDS

TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD   | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|----------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |          | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04911041A-08-08 | 1/2" BSP | 57            | 36 | 16 |  |  |

METRIC



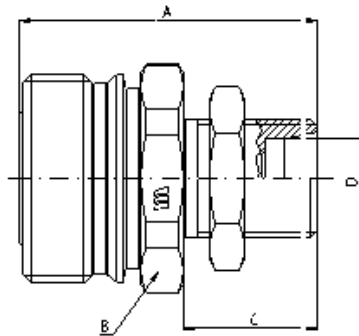
### Q05011141A

METRIC TERMINATION ENDS

TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |     |    |    |  |
|------|------|------|------------------|---------|---------------|-----|----|----|--|
| DN   | inch | Size | Female coupling  |         | A             | B   | C  | D  |  |
| 12.5 | 1/2" | -08  | Q05011141A-08-18 | M18x1,5 | 53.5          | ø45 | 27 | 41 |  |

METRIC

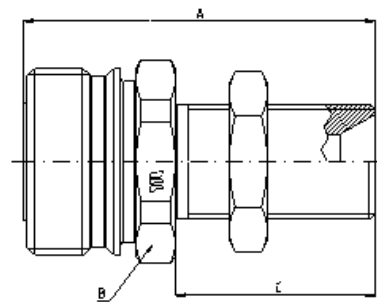


### Q04911820A

METRIC TERMINATION ENDS

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |       |  |
|------|------|------|------------------|---------|---------------|----|----|-------|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  | D     |  |
| 12.5 | 1/2" | -08  | Q04911820A-08-20 | M20x1,5 | 51            | 36 | 23 | ø13,5 |  |



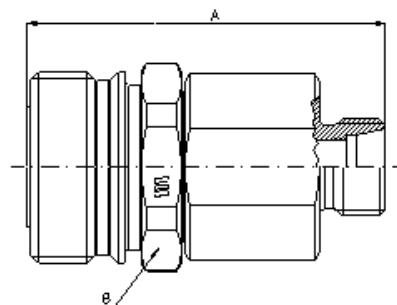
### Q04911370A

METRIC TERMINATION ENDS

TO DIN 3863

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04911370A-08-22 | M22x1,5 | 65            | 36 | 37 |  |  |



### Q04911110A

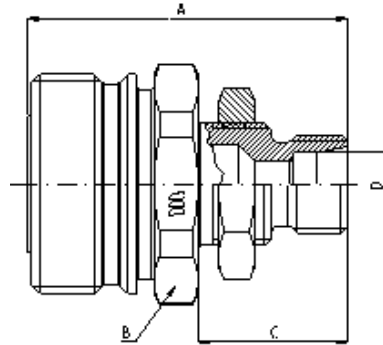
METRIC TERMINATION ENDS

TO ISO 8434-1

L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|---------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04911110A-08-18 | M18x1,5 | 65            | 36 |  |  |  |
|      |      |      | Q04911110A-08-22 | M22x1,5 | 64.7          | 36 |  |  |  |

METRIC



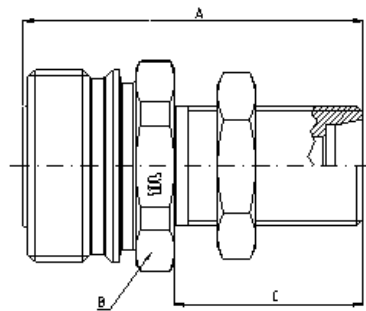
### Q04911770A

METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |      |       |  |
|------|------|------|------------------|---------|---------------|----|------|-------|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C    | D     |  |
| 12.5 | 1/2" | -08  | Q04911770A-08-16 | M16x1,5 | 52.5          | 36 | 24.5 | ø10,2 |  |
|      |      |      | Q04911770A-08-18 | M18x1,5 | 52            | 36 | 24   | ø12,2 |  |



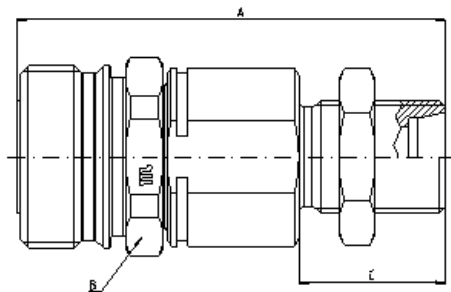
### Q04911770A

METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04911770A-08-22 | M22x1,5 | 63            | 36 | 35 |  |  |



### Q04911770B

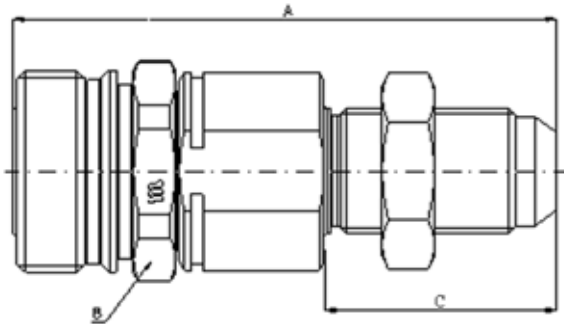
METRIC TERMINATION END

TO ISO 8434-1

BULKHEAD L SERIES

| SIZE |      |      | PART NUMBER      | THREAD  | DIMENSIONS mm |    |    |  |  |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN   | inch | Size | Male coupling    |         | A             | B  | C  |  |  |
| 12.5 | 1/2" | -08  | Q04911770B-08-22 | M22x1,5 | 82            | 36 | 28 |  |  |

### METRIC

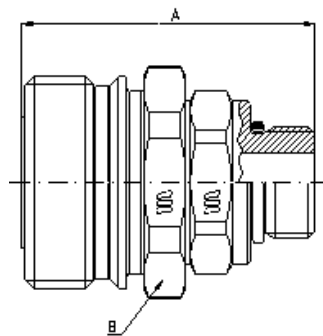


### Q0501141A

METRIC TERMINATION ENDS  
TO DIN 3852 X TYPE

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |     |    |    |  |
|------|------|------|-----------------|---------|---------------|-----|----|----|--|
| DN   | inch | Size | Male coupling   |         | A             | B   | C  | D  |  |
| 12.5 | 1/2" | -08  | Q0501141A-08-18 | M18x1,5 | 53.5          | ø45 | 27 | 41 |  |

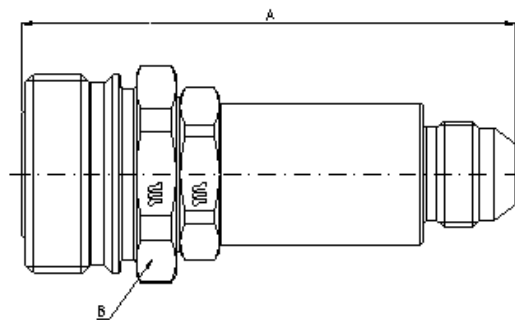
### SAE



### Q04911300A

SAE TERMINATION END  
TO SAE J1926-3

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|-------------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04911300A-08-08 | 3/4"-16 UNF | 50            | 36 |  |  |  |



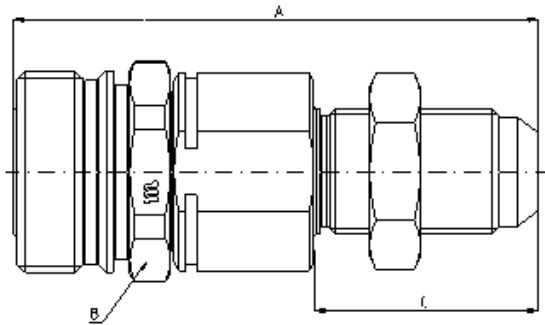
### Q04711250A

SAE TERMINATION ENDS  
TO ISO 8434-2

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |  |  |  |
|------|------|------|------------------|-------------|---------------|----|--|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  |  |  |  |
| 12.5 | 1/2" | -08  | Q04911250A-08-08 | 3/4"-16 UNF | 89.5          | 36 |  |  |  |



SAE



### Q04911230A

SAE TERMINATION ENDS




TO ISO 8434-2

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |    |      |  |  |
|------|------|------|------------------|-------------|---------------|----|------|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B  | C    |  |  |
| 12.5 | 1/2" | -08  | Q04911230A-08-10 | 7/8"-14 UNF | 94.8          | 36 | 40.1 |  |  |





|   |   |   |
|---|---|---|
|  |  |  |
| <b>SIZE</b>   | <b>WORKING PRESSURE (Dynamic)</b>   | <b>MINIMUM BURST PRESSURE</b>   |

| mm | inch | dash | MPa | PSI  | Male |       |
|----|------|------|-----|------|------|-------|
|    |      |      |     |      | MPa  | PSI   |
| 5  | 1/8  | 02   | 42  | 6090 | 250  | 36250 |

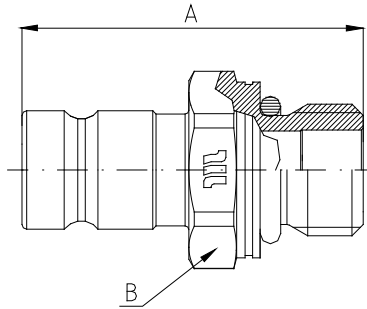
### Product description:

- Quick coupling purposely designed to easily access hydraulic systems for performance testing
- Installing male coupling in several parts of the hydraulic system, a reliable diagnosis can be carried out in a short time
- Connection by pushing the male coupling in the female of vice-versa
- Disconnection by pulling back the sleeve
- Retaining by ball latching system
- Shut-off system by flat valve
- Wide range of termination ends available on request and protective cap
- Interchangeability according to ISO 15171-1 and SAE J1502

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Male coupling in steel, with some hardened areas in correspondence to the most stressed points.<br>Carbonitrided valve, spring in C98 steel and seals in NBR (other materials on request) |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For different temperature range, the coupling can be assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 1,000,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 15171-1, SAE J1502 and ISO 7241-2   |



### METRIC



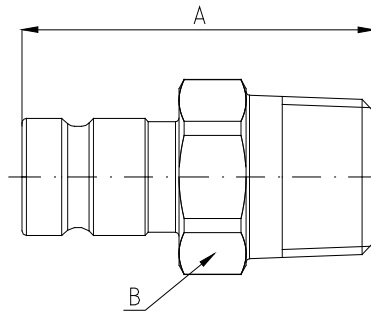
## Q0451190A

METRIC TERMINATION ENDS

TO ISO 6149-2

| SIZE |      |      | PART NUMBER     | THREAD  | DIMENSIONS mm |    |  |  |  |  |
|------|------|------|-----------------|---------|---------------|----|--|--|--|--|
| DN   | inch | Size | Female coupling |         | A             | B  |  |  |  |  |
| 5    | 1/8" | -02  | Q0451190A-02-14 | M14x1,5 | 36.4          | 19 |  |  |  |  |

### NPT



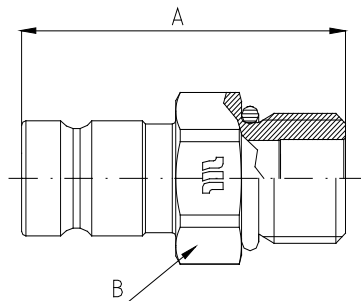
## Q04511280A

NPT TERMINATION ENDS

TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD    | DIMENSIONS mm |    |  |  |  |  |
|------|------|------|------------------|-----------|---------------|----|--|--|--|--|
| DN   | inch | Size | Female coupling  |           | A             | B  |  |  |  |  |
| 5    | 1/8" | -02  | Q04511280A-02-02 | 1/8" NPTF | 39.8          | 17 |  |  |  |  |
|      |      |      | Q04511280A-02-04 | 1/4" NPTF | 44.3          | 17 |  |  |  |  |
|      |      |      | Q04511280A-02-06 | 3/8" NPTF | 39.9          | 19 |  |  |  |  |

### SAE



## Q04511320A

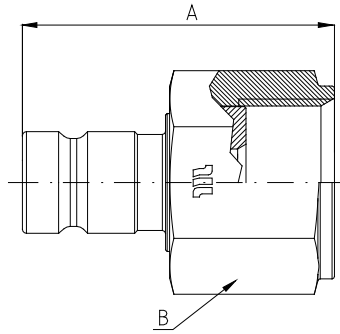
ORB TERMINATION ENDS

TO SAE J1926-2

S SERIES

| SIZE |      |      | PART NUMBER      | THREAD       | DIMENSIONS mm |    |  |  |  |  |
|------|------|------|------------------|--------------|---------------|----|--|--|--|--|
| DN   | inch | Size | Female coupling  |              | A             | B  |  |  |  |  |
| 5    | 1/8" | -02  | Q04511320A-02-04 | 7/16"-20     | 40.8          | 17 |  |  |  |  |
|      |      |      | Q04511320A-02-06 | 9/16"-18 UNF | 37.4          | 17 |  |  |  |  |

SAE



**Q04511241A**  
 ORFS TERMINATION ENDS  
 TO SAE J1453

| SIZE |      |      | PART NUMBER      | THREAD       | DIMENSIONS mm |    |  |  |  |  |
|------|------|------|------------------|--------------|---------------|----|--|--|--|--|
| DN   | inch | Size | Female coupling  |              | A             | B  |  |  |  |  |
| 5    | 1/8" | -02  | Q04511241A-02-08 | 13/16"-16 UN | 38.8          | 24 |  |  |  |  |

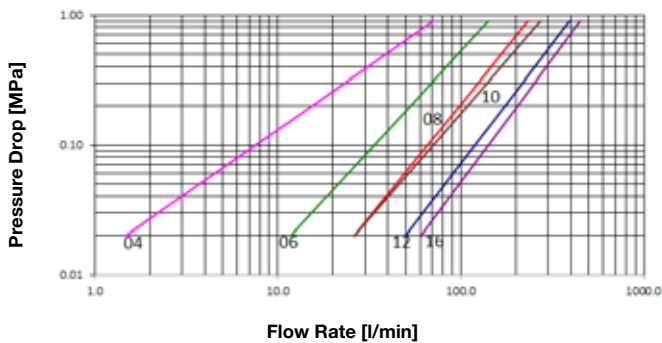
Q.SAFE  
 Q 18-2



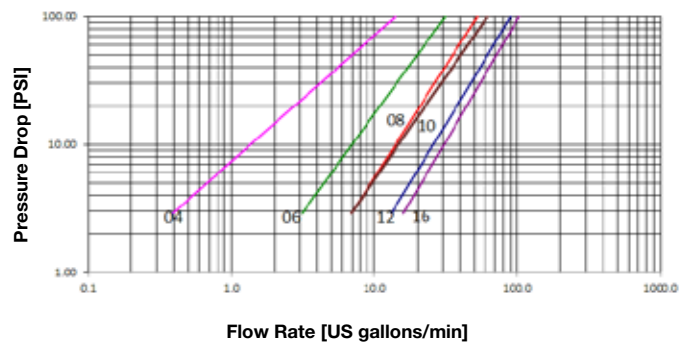
|      | MPa                                    |   | FLOW RATE                              | N                 | OIL SPILLAGE              | MINIMUM BURST PRESSURE | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|--|---|--|-------------------|---------------------------|------------------------|--|
| SIZE | WORKING PRESSURE - CONNECTED (Dynamic) | WORKING PRESSURE - DISCONNECTED (Dynamic) | RATED FLOW at 0.2 MPa of pressure drop | CONNECTION EFFORT | Connection/ Disconnection |                        |  |

| mm   | inch | dash | MPa |      | PSI |      | l/ min | US GPM | N   | lb.  | cc.   | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-----|------|--------|--------|-----|------|-------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      | MPa | PSI  | MPa | PSI  |        |        |     |      |       |            | MPa  | PSI   | MPa    | PSI   |       |       |             |
| 6.3  | ¼    | 04   | 35  | 5075 | 35  | 5075 | 15     | 4.0    | 130 | 29.2 | 0.005 | 0.0003     | 160  | 23200 | 140    | 20300 | 150   | 21750 | Not allowed |
| 10   | ⅜    | 06   | 35  | 5075 | 25  | 3625 | 53     | 14.0   | 130 | 29.2 | 0.007 | 0.0004     | 140  | 20300 | 125    | 18125 | 145   | 21025 | Not allowed |
| 12.5 | ½    | 08   | 35  | 5075 | 25  | 3625 | 98     | 25.9   | 140 | 31.5 | 0.008 | 0.0005     | 135  | 19575 | 115    | 16675 | 145   | 21025 | Not allowed |
| 16   | ⅝    | 10   | 35  | 5075 | 25  | 3625 | 109    | 28.8   | 150 | 33.7 | 0.008 | 0.0005     | 150  | 21750 | 100    | 14500 | 140   | 20300 | Not allowed |
| 19   | ¾    | 12   | 35  | 5075 | 25  | 3625 | 174    | 46.0   | 210 | 47.2 | 0.009 | 0.0005     | 110  | 15950 | 102    | 15225 | 145   | 21025 | Not allowed |
| 25   | 1    | 16   | 35  | 5075 | 21  | 3045 | 203    | 53.6   | 230 | 51.7 | 0.02  | 0.0012     | 100  | 14500 | 85     | 12325 | 150   | 21750 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

- Flat mating surfaces easily wiped clean to prevent contamination and spillage during connection/disconnection
- Connection is made by pushing the male coupling and disconnection by pulling back the sleeve of the female
- Positive, quick connection of the male into the female by the latching ball system
- Shut-off by flat valve
- Interchangeability according to ISO 16028 and HTMA standards (only for ⅜")
- 1,000,000 cycles at 133% of rated (freq. 1Hz - connected conditions)

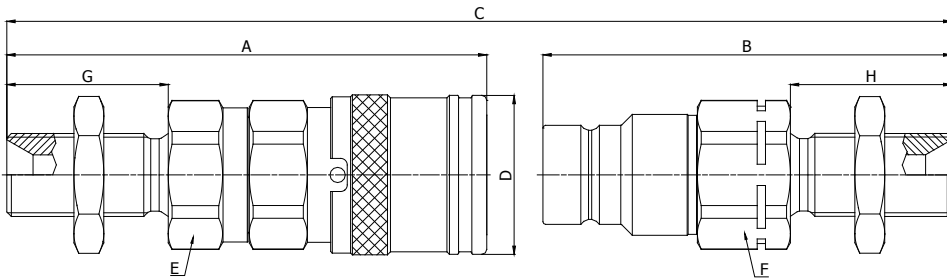
|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female and male coupling in steel, with some stressed tempered or carbonitrided areas. Springs in AISI and C98 steel, seals in polyurethane and NB. Other materials (VTON, EPDM or any others) on request |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures the coupling is assembled with the specified seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions.<br>1,000,000 cycles at 133% of rated one (freq. 1Hz) in connected conditions.   |
| <b>Test Specifications</b> | ISO 16028:1997aMD.1.2006 (E) and ISO 7241-2   |





## FLAT FACE - TERMINATION ENDS

BSP



**Q04111040A**

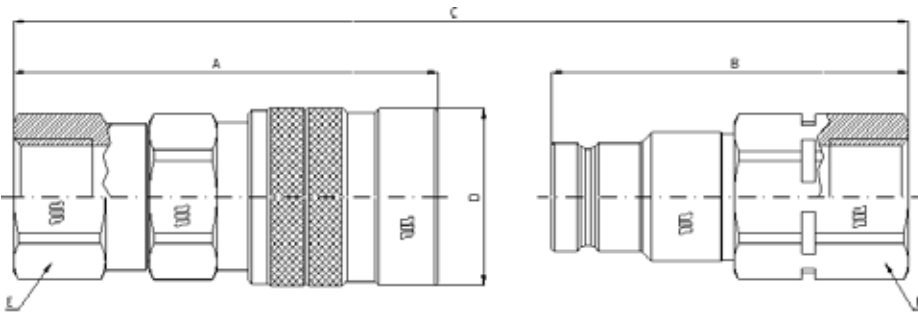
**Q03911040A**

**BSP TERMINATION ENDS**

**TO DIN3852**

**BULKHEAD**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  | G  | H  |
| 10   | 3/8" | -06  | Q04111040A-06-06 | Q03911040A-06-06 | 3/8"   | 99.9          | 82.5 | A+B-16,4 | ø32 | 27 | 27 | 32 | 32 |



**Q04111041A**

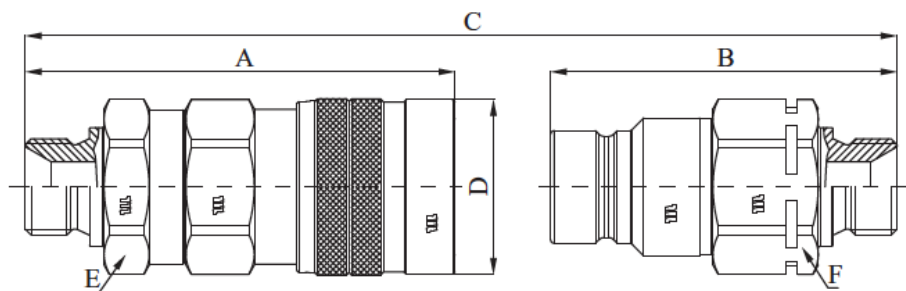
**Q03911041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q04111041A-04-04 | Q03911041A-04-04 | 1/4"   | 63.6          | 52.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
|      |      |      | Q04111041A-04-06 | Q03911041A-04-06 | 1/4"   | 63.6          | 53.6 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q04111041A-06-06 | Q03911041A-06-06 | 3/8"   | 74.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111041A-06-08 | Q03911041A-06-08 | 1/2"   | 77.9          | 65.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04111041A-08-08 | Q03911041A-08-08 | 1/2"   | 84.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04111041A-08-12 | Q03911041A-08-12 | 3/4"   | 86.7          | 74.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04111041A-10-12 | Q03911041A-10-12 | 3/4"   | 89.9          | 75.1 | A+B-17,6 | ø42 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q04111041A-12-12 | Q03911041A-12-12 | 3/4"   | 105.9         | 88.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q04111041A-12-16 | Q03911041A-12-16 | 1"     | 108.9         | 91.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 25   | 1"   | -16  | Q04111041A-16-16 | Q03911041A-16-16 | 1"     | 114.5         | 89.8 | A+B-22,9 | ø55 | 50 | 50 |  |  |
|      |      |      | Q04111041A-16-20 | Q03911041A-16-20 | 1.1/4" | 117           | 94.8 | A+B-22,9 | ø55 | 50 | 50 |  |  |

BSP



**Q04111050A**

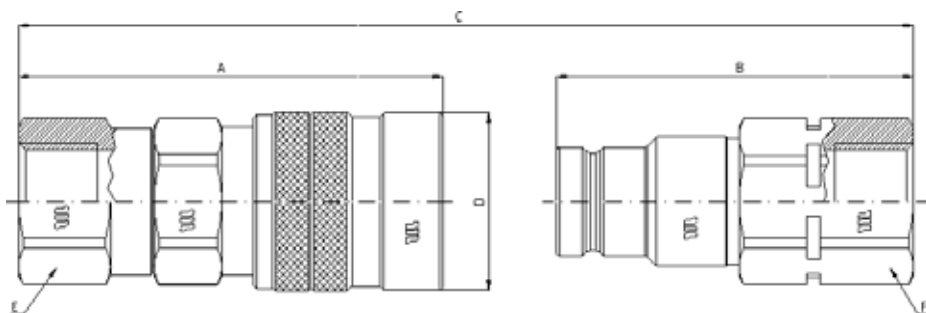
**Q03911050A**

**BSP TERMINATION ENDS**

**TO ISO 8434-6**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q04111050A-06-06 | Q03911050A-06-06 | 3/8"   | 82.6          | 65.2 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111050A-06-08 | Q03911050A-06-08 | 1/2"   | 85.1          | 67.7 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04111050A-08-08 | Q03911050A-08-08 | 1/2"   | 92.9          | 77.7 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04111050A-08-12 | Q03911050A-08-12 | 3/4"   | 94.9          | 79.7 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04111050A-10-12 | Q03911050A-10-12 | 3/4"   | 95.6          | 80.3 | A+B-17,6 | ø42 | 34 | 34 |  |  |

METRIC



**Q04111141A**

**Q03911141A**

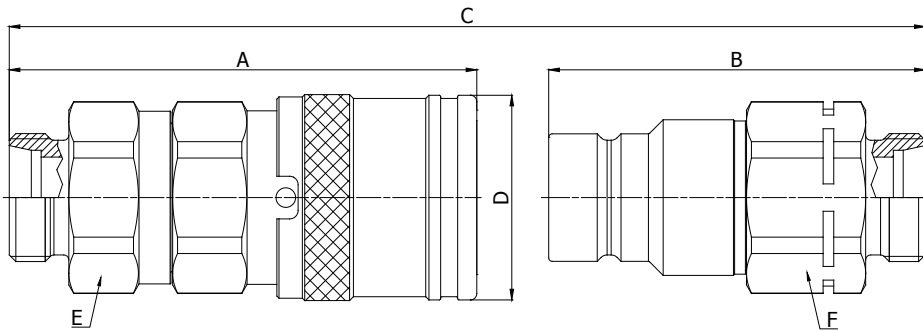
**METRIC TERMINATION ENDS**

**TO ISO 3852-1 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q04111141A-04-16 | Q03911141A-04-16 | M16x1,5 | 63.6          | 53.6 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q04111141A-06-18 | Q03911141A-06-18 | M18x1,5 | 77.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111141A-06-22 | Q03911141A-06-22 | M22x1,5 | 77.9          | 64.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |

## FLAT FACE - TERMINATION ENDS

METRIC



**Q0411110A**

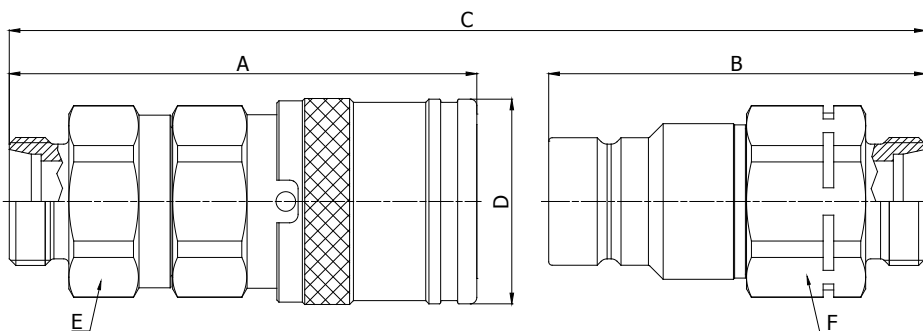
**Q0391110A**

**METRIC TERMINATION END**

**TO ISO 8434-1**

**L SERIES**

| SIZE |      |      | PART NUMBER     |                 | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|-----------------|-----------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling | Male coupling   |         | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q0411110A-04-12 | Q0391110A-04-12 | M16x1,5 | 68.6          | 50.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
|      |      |      | Q0411110A-04-14 | Q0391110A-04-14 | M14x1,5 | 68.6          | 50.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
|      |      |      | Q0411110A-04-16 | Q0391110A-04-16 | M16x1,5 | 68.6          | 50.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q0411110A-06-14 | Q0391110A-06-14 | M14x1,5 | 77.9          | 61.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q0411110A-06-16 | Q0391110A-06-16 | M16x1,5 | 78.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q0411110A-06-18 | Q0391110A-06-18 | M18x1,5 | 78.9          | 61.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q0411110A-06-22 | Q0391110A-06-22 | M22x1,5 | 79.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q0411110A-08-18 | Q0391110A-08-18 | M18x1,5 | 86.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q0411110A-08-22 | Q0391110A-08-22 | M22x1,5 | 87.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q0411110A-08-26 | Q0391110A-08-26 | M26x1,5 | 87.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q0411110A-12-26 | Q0391110A-12-26 | M26x1,5 | 101.9         | 86.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q0411110A-12-30 | Q0391110A-12-30 | M30x2   | 103.9         | 88.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 25   | 1"   | -16  | Q0411110A-16-30 | Q0391110A-16-30 | M30x2   | 110.5         | 79.8 | A+B-22,9 | ø55 | 50 | 50 |  |  |



**Q0411120A**

**Q0391120A**

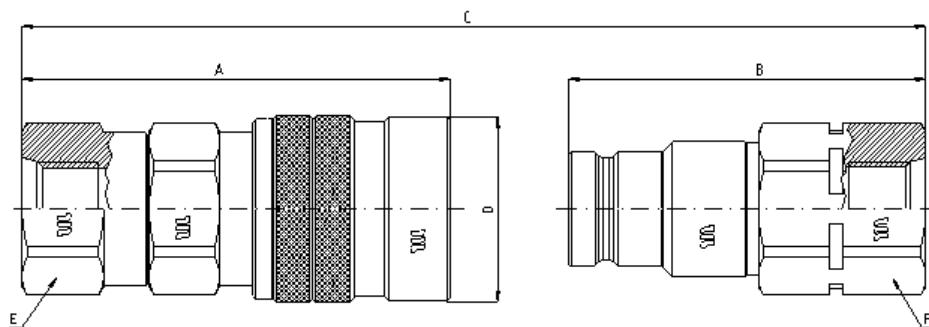
**METRIC TERMINATION END**

**TO ISO 8434-1**

**S SERIES**

| SIZE |      |      | PART NUMBER     |                 | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|-----------------|-----------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling | Male coupling   |         | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q0411120A-04-16 | Q0391120A-04-16 | M16x1,5 | 69.6          | 51.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
|      |      |      | Q0411120A-04-18 | Q0391120A-04-18 | M18x1,5 | 69.6          | 51.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q0411120A-06-18 | Q0391120A-06-18 | M18x1,5 | 79.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q0411120A-06-20 | Q0391120A-06-20 | M20x1,5 | 79.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q0411120A-08-20 | Q0391120A-08-20 | M20x1,5 | 87.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q0411120A-08-24 | Q0391120A-08-24 | M24x1,5 | 87.7          | 74.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q0411120A-12-30 | Q0391120A-12-30 | M30x2   | 105.9         | 90.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |

METRIC



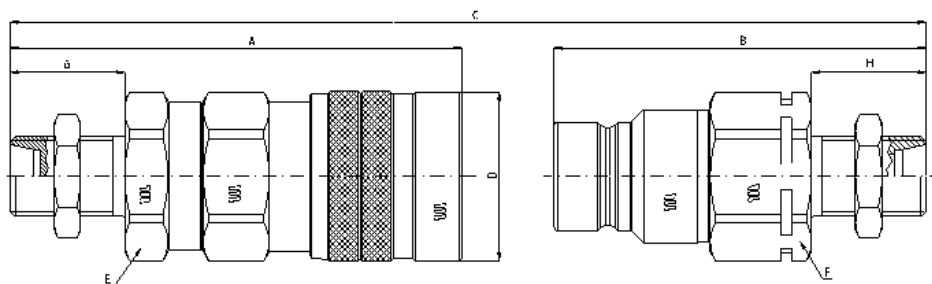
**Q0411191A**

**Q0391191A**

**METRIC TERMINATION ENDS**

**TO ISO 6149-1**

| SIZE |      |      | PART NUMBER     |                 | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|-----------------|-----------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling | Male coupling   |         | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q0411191A-06-16 | Q0391191A-06-16 | M16x1,5 | 75.4          | 63   | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q0411191A-06-18 | Q0391191A-06-18 | M18x1,5 | 76.9          | 64.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |



**Q04111770B**

**Q03911770B**

**METRIC TERMINATION END**

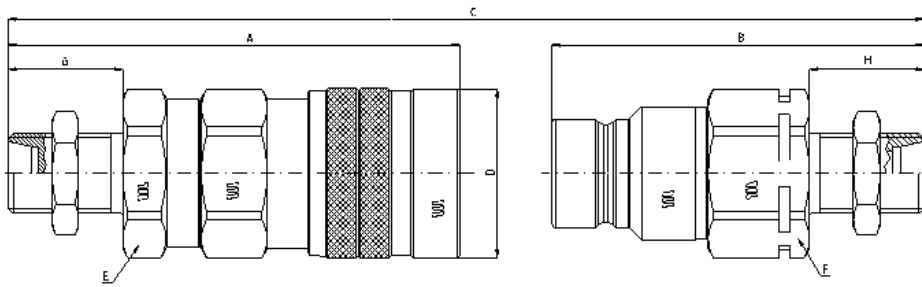
**TO ISO 8434-1**

**BULKHEAD L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  | G  | H  |
| 6.3  | 1/4" | -04  | Q04111770B-04-12 | Q03911770B-04-12 | M12x1,5 | 82.6          | 65.1  | A+B-11,1 | ø28 | 24 | 22 | 25 | 25 |
|      |      |      | Q04111770B-04-14 | Q03911770B-04-14 | M14x1,5 | 82.6          | 64.1  | A+B-11,1 | ø28 | 24 | 22 | 25 | 25 |
|      |      |      | Q04111770B-04-16 | Q03911770B-04-16 | M16x1,5 | 83.6          | 64.1  | A+B-11,1 | ø28 | 24 | 22 | 26 | 26 |
| 10   | 3/8" | -06  | Q04111770B-06-16 | Q03911770B-06-16 | M16x1,5 | 93.9          | 76.5  | A+B-15,9 | ø32 | 27 | 27 | 26 | 26 |
|      |      |      | Q04111770B-06-18 | Q03911770B-06-18 | M18x1,5 | 93.9          | 76.5  | A+B-15,9 | ø32 | 27 | 27 | 26 | 26 |
|      |      |      | Q04111770B-06-22 | Q03911770B-06-22 | M22x1,5 | 94.9          | 77.5  | A+B-15,9 | ø32 | 27 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08  | Q04111770B-08-18 | Q03911770B-08-18 | M18x1,5 | 101.7         | 86.5  | A+B-17,1 | ø38 | 34 | 34 | 26 | 26 |
|      |      |      | Q04111770B-08-22 | Q03911770B-08-22 | M22x1,5 | 102.7         | 87.5  | A+B-17,1 | ø38 | 34 | 34 | 27 | 27 |
|      |      |      | Q04111770B-08-26 | Q03911770B-08-26 | M26x1,5 | 103.7         | 88.5  | A+B-17,1 | ø38 | 34 | 34 | 28 | 28 |
| 20   | 3/4" | -12  | Q04111770B-12-26 | Q03911770B-12-26 | M26x1,5 | 114.9         | 102.5 | A+B-21,7 | ø48 | 41 | 41 | 29 | 29 |
|      |      |      | Q04111770B-12-30 | Q03911770B-12-30 | M30x2   | 118.9         | 106.5 | A+B-21,7 | ø48 | 41 | 41 | 32 | 32 |

## FLAT FACE HIGH PRESSURE - TERMINATION ENDS

METRIC



**Q04111870B**

**Q03911870B**

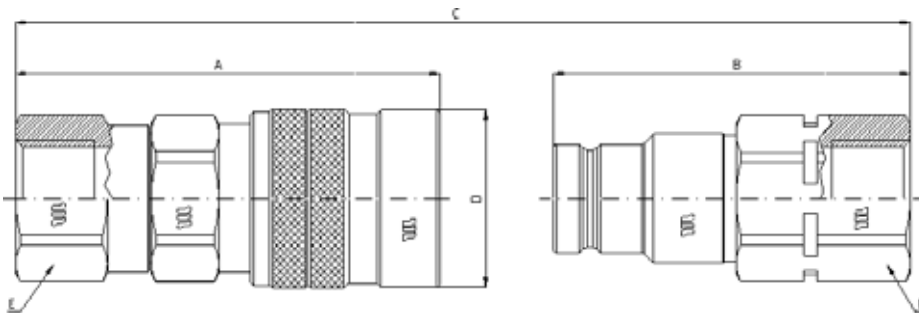
**METRIC TERMINATION END**

**TO ISO 8434-1**

**BULKHEAD S SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  | G  | H  |
| 6.3  | 1/4" | -04  | Q04111870B-04-16 | Q03911870B-04-16 | M16x1,5 | 83.6          | 65.1  | A+B-11,1 | ø28 | 24 | 22 | 27 | 27 |
|      |      |      | Q04111870B-04-18 | Q03911870B-04-18 | M18x1,5 | 83.6          | 65.1  | A+B-11,1 | ø28 | 24 | 22 | 27 | 27 |
| 10   | 3/8" | -06  | Q04111870B-06-18 | Q03911870B-06-18 | M18x1,5 | 94.9          | 77.5  | A+B-15,9 | ø32 | 27 | 27 | 27 | 27 |
|      |      |      | Q04111870B-06-20 | Q03911870B-06-20 | M20x1,5 | 94.9          | 77.5  | A+B-15,9 | ø32 | 27 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08  | Q04111870B-08-24 | Q03911870B-08-24 | M24x1,5 | 104.7         | 89.5  | A+B-17,1 | ø38 | 34 | 34 | 29 | 29 |
| 20   | 3/4" | -12  | Q04111870B-12-30 | Q03911870B-12-30 | M30x2   | 119.9         | 108.5 | A+B-21,7 | ø48 | 41 | 41 | 34 | 34 |
| 25   | 1"   | -16  | Q04111870B-16-36 | Q03911870B-16-36 | M36x2   | 128.5         | 101.8 | A+B-22,9 | ø55 | 50 | 50 | 36 | 36 |

NPT



**Q04111341A**

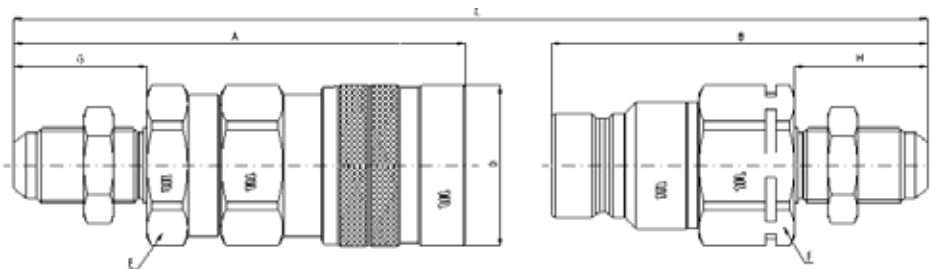
**Q03911341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q04111341A-04-04 | Q03911341A-04-04 | 1/4" NPTF   | 63.6          | 52.1 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q04111341A-06-06 | Q03911341A-06-06 | 3/8" NPTF   | 74.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111341A-06-08 | Q03911341A-06-08 | 1/2" NPTF   | 77.9          | 65.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04111341A-08-08 | Q03911341A-08-08 | 1/2" NPTF   | 84.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04111341A-08-12 | Q03911341A-08-12 | 3/4" NPTF   | 86.7          | 74.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04111341A-10-08 | Q03911341A-10-08 | 1/2" NPTF   | 87.9          | 73.1 | A+B-17,6 | ø42 | 34 | 34 |  |  |
|      |      |      | Q04111341A-10-12 | Q03911341A-10-12 | 3/4" NPTF   | 89.9          | 75.1 | A+B-17,6 | ø42 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q04111341A-12-12 | Q03911341A-12-12 | 3/4" NPTF   | 105.9         | 88.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q04111341A-12-16 | Q03911341A-12-16 | 1" NPTF     | 108.9         | 91.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 25   | 1"   | -16  | Q04111341A-16-16 | Q03911341A-16-16 | 1" NPTF     | 114.5         | 89.8 | A+B-22,9 | ø55 | 50 | 50 |  |  |
|      |      |      | Q04111341A-16-20 | Q03911341A-16-20 | 1.1/4" NPTF | 116.6         | 94.8 | A+B-23,3 | ø55 | 50 | 50 |  |  |

SAE



**Q04111230A**

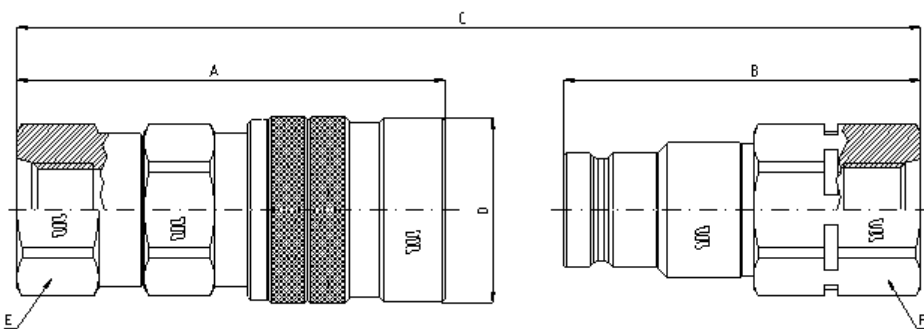
**Q03911230A**

SAE TERMINATION END

TO ISO 8434-2

BULKHEAD

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |       |          |     |    |    |      |      |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-----|----|----|------|------|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B     | C        | D   | E  | F  | G    | H    |
| 10   | 3/8" | -06  | Q04111230A-06-08 | Q03911230A-06-08 | 3/4"-16 UNF   | 105.5         | 88.1  | A+B-15,9 | ø32 | 27 | 27 | 36.6 | 36.6 |
|      |      |      | Q04111230A-06-10 | Q03911230A-06-10 | 7/8"-14 UNF   | 109           | 91.6  | A+B-15,9 | ø32 | 27 | 27 | 40.1 | 40.1 |
| 12.5 | 1/2" | -08  | Q04111230A-08-10 | Q03911230A-08-10 | 7/8"-14 UNF   | 116.8         | 101.6 | A+B-17,1 | ø38 | 34 | 34 | 40.1 | 40.1 |
|      |      |      | Q04111230A-08-12 | Q03911230A-08-12 | 1.1/16"-12 UN | 121.1         | 105.9 | A+B-17,1 | ø38 | 34 | 34 | 44.4 | 44.4 |



**Q04111301A**

**Q03911301A**

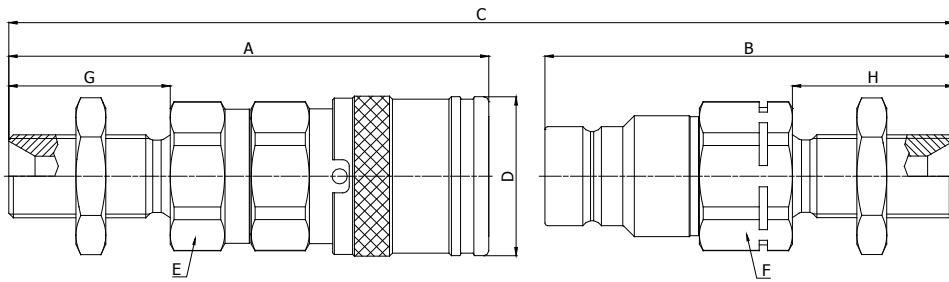
SAE TERMINATION END

TO SAE J1926-1

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q04111301A-04-06 | Q03911301A-04-06 | 9/16"-18 UNF  | 63.6          | 53.6 | A+B-11,1 | ø28 | 24 | 22 |  |  |
| 10   | 3/8" | -06  | Q04111301A-06-06 | Q03911301A-06-06 | 9/16"-18 UNF  | 75.4          | 63   | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111301A-06-08 | Q03911301A-06-08 | 3/4"-16 UNF   | 77.4          | 65   | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04111301A-06-10 | Q03911301A-06-10 | 7/8"-14 UNF   | 79.9          | 67.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04111301A-08-08 | Q03911301A-08-08 | 3/4"-16 UNF   | 84.2          | 72   | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 12.5 | 1/2" | -08  | Q04111301A-08-10 | Q03911301A-08-10 | 7/8"-14 UNF   | 86.7          | 74.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04111301A-08-12 | Q03911301A-08-12 | 1.1/16"-12 UN | 89.7          | 77.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04111301A-10-08 | Q03911301A-10-08 | 3/4"-16 UNF   | 87.4          | 72.6 | A+B-17,6 | ø42 | 34 | 34 |  |  |
|      |      |      | Q04111301A-10-10 | Q03911301A-10-10 | 7/8"-14 UNF   | 89.9          | 75.1 | A+B-17,6 | ø42 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04111301A-10-12 | Q03911301A-10-12 | 1.1/16"-12 UN | 92.9          | 78.1 | A+B-17,6 | ø42 | 34 | 34 |  |  |
|      |      |      | Q04111301A-12-12 | Q03911301A-12-12 | 1.1/16"-12 UN | 108.9         | 91.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 20   | 3/4" | -12  | Q04111301A-12-16 | Q03911301A-12-16 | 1.5/16"-12 UN | 108.9         | 91.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q04111301A-16-16 | Q03911301A-16-16 | 1.5/16"-12 UN | 114.5         | 89.8 | A+B-22,9 | ø55 | 50 | 50 |  |  |

## FLAT FACE HIGH PRESSURE - TERMINATION ENDS

ORFS



**Q04111270A**

**Q03911270A**

**ORFS TERMINATION ENDS**

**TO ISO 8434-3**

**BULKHEAD**

| SIZE |      |      | PART NUMBER      |                  | THREAD       | DIMENSIONS mm |    |          |     |    |    |      |      |
|------|------|------|------------------|------------------|--------------|---------------|----|----------|-----|----|----|------|------|
| DN   | inch | Size | Female coupling  | Male coupling    |              | A             | B  | C        | D   | E  | F  | G    | H    |
| 10   | 3/8" | -06  | Q04111270A-06-08 | Q03911270A-06-08 | 13/16"-16 UN | 104.4         | 87 | A+B-16,4 | ø32 | 27 | 27 | 36.5 | 36.5 |





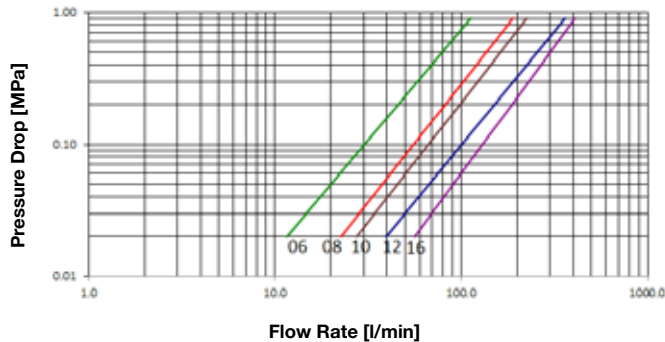
## FLAT FACE HIGH PRESSURE



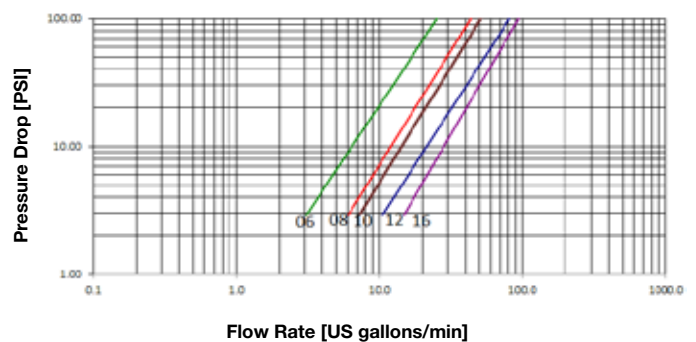
| SIZE | WORKING PRESSURE - CONNECTED (Dynamic) | WORKING PRESSURE - DISCONNECTED (Dynamic) | RATED FLOW at 0.2 MPa of pressure drop | CONNECTION EFFORT | OIL SPILLAGE Connection/ Disconnection | MINIMUM BURST PRESSURE | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|--|---|--|-------------------|--|------------------------|--|
|------|--|---|--|-------------------|--|------------------------|--|

| mm   | inch | dash | MPa       |      | PSI |      | l/ min | US GPM | N   | lb.  | cc.   | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----------|------|-----|------|--------|--------|-----|------|-------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      | MPa       | PSI  | MPa | PSI  |        |        |     |      |       |            | MPa  | PSI   | MPa    | PSI   |       |       |             |
| 6.3  | ¼    | 04   | See MQS-F |      |     |      |        |        |     |      |       |            |      |       |        |       |       |       |             |
| 10   | ⅝    | 06   | 35        | 5075 | 35  | 5075 | 44     | 11.6   | 130 | 29.2 | 0.007 | 0.0004     | 150  | 21750 | 140    | 20300 | 170   | 24650 | Not allowed |
| 12.5 | ½    | 08   | 35        | 5075 | 35  | 5075 | 84     | 22.2   | 140 | 31.5 | 0.008 | 0.0005     | 140  | 20300 | 140    | 20300 | 160   | 23200 | Not allowed |
| 16   | ⅝    | 10   | 35        | 5075 | 35  | 5075 | 108    | 28.5   | 150 | 33.7 | 0.008 | 0.0005     | 140  | 20300 | 160    | 23200 | 160   | 23200 | Not allowed |
| 19   | ¾    | 12   | 35        | 5075 | 35  | 5075 | 148    | 39.1   | 210 | 47.2 | 0.009 | 0.0005     | 140  | 20300 | 140    | 20300 | 160   | 23200 | Not allowed |
| 25   | 1    | 16   | 35        | 5075 | 35  | 5075 | 224    | 59.2   | 230 | 51.7 | 0.02  | 0.0012     | 140  | 20300 | 140    | 20300 | 160   | 23200 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

- MQS-FH is the flat-face line for heavy-duty application setting with 35MPa of working pressure in connected and disconnected conditions
- Push connection and pulling back the sleeve for disconnection with safety device
- Interchangeable with ISO 16028
- 1 Million impulse cycles qualified

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female & male couplings in high grade carbon steel with hardened areas in correspondence to the most stressed points. Male vs. female Sealing system in new Polyurethane compound; other seals in NBR with back-up in PTFE. |
| <b>Working Temperature</b> | -30°C to +110°C   |
| <b>Safety Factor</b>       | 4.1 in CONNECTED & DISCONNECTED conditions  |
| <b>Impulse Pressures</b>   | 1,000,000 cycles at 133% of rated one (freq. 1Hz) in  |
| <b>Test Specifications</b> | ISO 16028; ISO7241-2  |



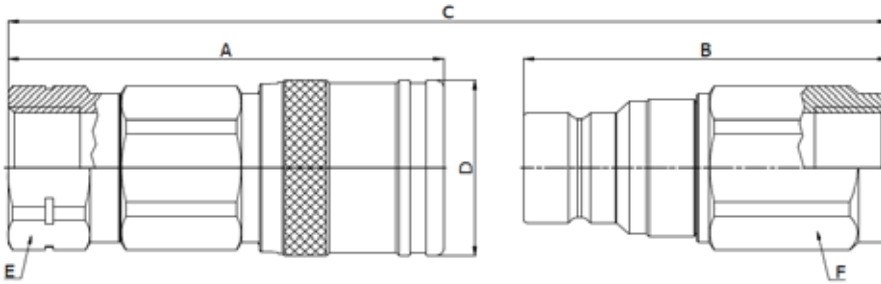
## FLAT FACE HIGH PRESSURE - TERMINATION ENDS

**BSP**

**Q04411041**

**Q04311041**

**BSP TERMINATION ENDS  
TO DIN 3852 X TYPE**



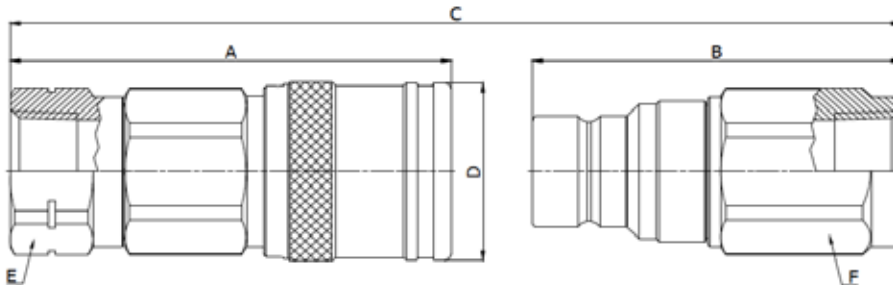
| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q04411041A-06-06 | Q04311041A-06-06 | 3/8"   | 78.3          | 63.8 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04411041A-06-08 | Q04311041A-06-08 | 1/2"   | 81.3          | 67.8 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04411041A-08-08 | Q04311041A-08-08 | 1/2"   | 88.5          | 71.3 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04411041A-08-12 | Q04311041A-08-12 | 3/4"   | 90.5          | 75.8 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 16   | 5/8" | -10  | Q04411041A-10-12 | Q04311041A-10-12 | 3/4"   | 94.6          | 76.4 | A+B-17,1 | ø42 | 36 | 34 |  |  |
| 20   | 3/4" | -12  | Q04411041A-12-12 | Q04311041A-12-12 | 3/4"   | 108           | 89.8 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q04411041A-12-16 | Q04311041A-12-16 | 1"     | 111           | 92.8 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 25   | 1"   | -16  | Q04411041A-16-16 | Q04311041A-16-16 | 1"     | 119.4         | 92.1 | A+B-22,9 | ø55 | 50 | 50 |  |  |
|      |      |      | Q04411041A-16-20 | Q04311041A-16-20 | 1.1/4" | 122.4         | 97.1 | A+B-22,9 | ø55 | 50 | 50 |  |  |

**NPT**

**Q04411341**

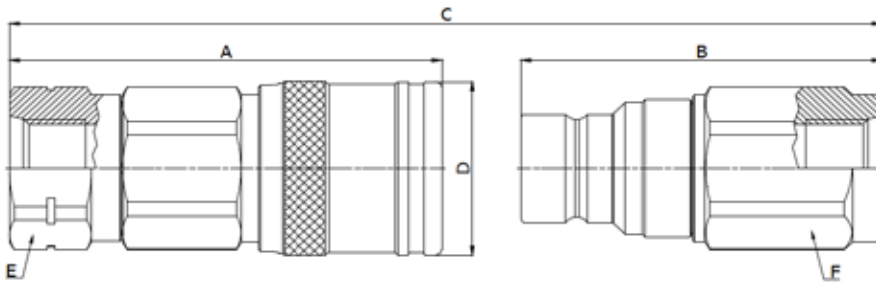
**Q04311341**

**NPTF TERMINATION END  
TO ANSI B 1.20.3**



| SIZE |      |      | PART NUMBER      |                  | THREAD   | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|----------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |          | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q04411341A-06-06 | Q04311341A-06-06 | 3/8"-NPT | 78.3          | 63.8 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04411341A-08-08 | Q04311341A-08-08 | 1/2"-NPT | 88.5          | 71.3 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q04411341A-12-12 | Q04311341A-12-12 | 3/4"-NPT | 108           | 89.8 | A+B-21,7 | ø48 | 41 | 41 |  |  |
| 25   | 1"   | -16  | Q04411341A-16-16 | Q04311341A-16-16 | 1"-NPT   | 119.4         | 92.1 | A+B-22,9 | ø55 | 50 | 50 |  |  |

SAE



**Q04411301**

**Q04311301**

**SAE TERMINATION END**

**TO SAE J1926-1**

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q04411301A-06-08 | Q04311301A-06-08 | 3/4"-16UNF    | 80,8          | 66,8 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04411301A-08-10 | Q04311301A-08-10 | 7/8"-14UNF    | 90.5          | 74.8 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04411301A-08-12 | Q04311301A-08-12 | 1.1/16"-12UNF | 93.5          | 78.8 | A+B-17,1 | ø38 | 34 | 34 |  |  |

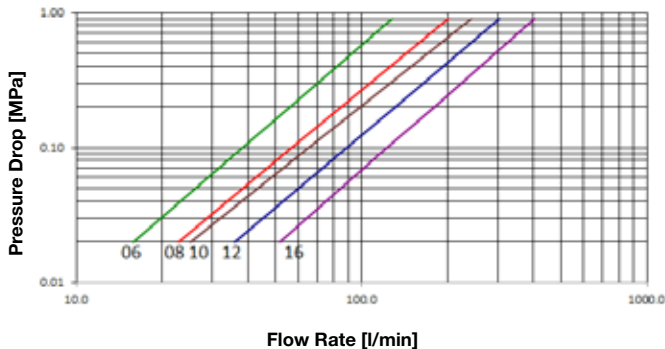


## FLAT FACE MALE CONNECTABLE UNDER PRESSURE

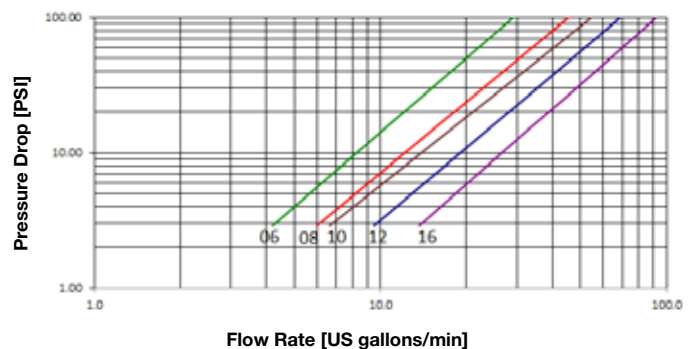
| SIZE | WORKING PRESSURE - CONNECTED (Dynamic) | WORKING PRESSURE - DISCONNECTED (Dynamic) | RATED FLOW at 0.2 MPa of pressure drop | CONNECTION EFFORT | OIL SPILLAGE Connection/ Disconnection | MINIMUM BURST PRESSURE | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|--|---|--|-------------------|--|------------------------|--|

| mm   | inch | dash | MPa | PSI  | MPa | PSI  | l/ min | US GPM | N   | lb.  | cc.   | cubic inch | Male |       | M & F |       |                    |
|------|------|------|-----|------|-----|------|--------|--------|-----|------|-------|------------|------|-------|-------|-------|--------------------|
|      |      |      |     |      |     |      |        |        |     |      |       |            | MPa  | PSI   | MPa   | PSI   |                    |
| 10   | 3/8  | 06   | 35  | 5075 | 35  | 5075 | 56     | 14.8   | 150 | 33.7 | 0.007 | 0.0004     | 170  | 24650 | 140   | 20300 | Connection allowed |
| 12.5 | 1/2  | 08   | 35  | 5075 | 35  | 5075 | 85     | 22.5   | 180 | 40.5 | 0.008 | 0.0005     | 170  | 24650 | 140   | 20300 | Connection allowed |
| 16   | 5/8  | 10   | 35  | 5075 | 35  | 5075 | 99     | 26.2   | 200 | 45.0 | 0.008 | 0.0005     | 170  | 24650 | 140   | 20300 | Connection allowed |
| 19   | 3/4  | 12   | 35  | 5075 | 35  | 5075 | 131    | 34.6   | 200 | 45.0 | 0.009 | 0.0005     | 140  | 20300 | 150   | 21750 | Connection allowed |
| 25   | 1    | 16   | 35  | 5075 | 35  | 5075 | 170    | 44.9   | 220 | 49.5 | 0.02  | 0.0012     | 140  | 23200 | 160   | 23200 | Connection allowed |

Pressure Drop



Pressure Drop



### Product description:

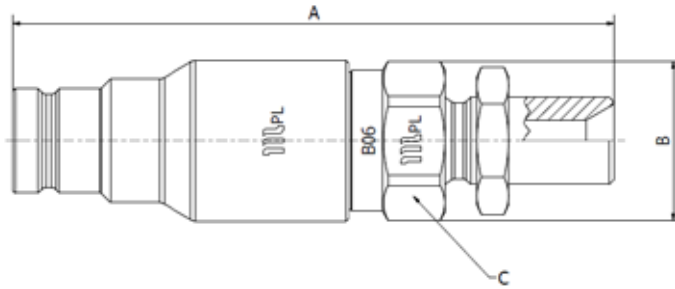
- Triple valve system that guarantees connection under pressure (female part always with OMPa) safely
- Low connection effort during connection under pressure
- Working pressure 35MPa
- Interchangeable according to ISO 16028:1997aMD.1:2006 (E)
- Sealing system with flat valve
- Polyurethane seals
- Compact design
- Wide range of termination ends

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 1,000,000 cycles (connected and disconnected conditions) at 133% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2 and ISO 16028:1997aMD.1.2006 (E)  |



## FLAT FACE MALE CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

BSP



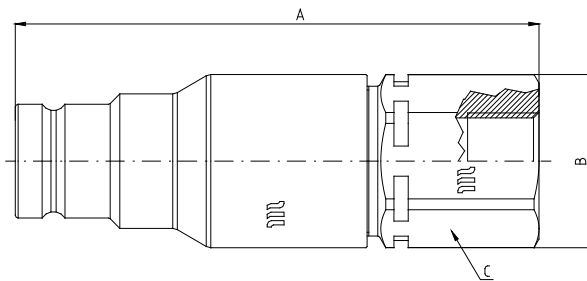
### Q04011040A

BSP TERMINATION ENDS

TO DIN 3852-2

BULKHEAD

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Male coupling    |        | A             | B   | C  |  |  |  |
| 10   | 3/8" | -06  | Q04011040A-06-06 | 3/8"   | 113.5         | ø30 | 27 |  |  |  |



### Q04011041A

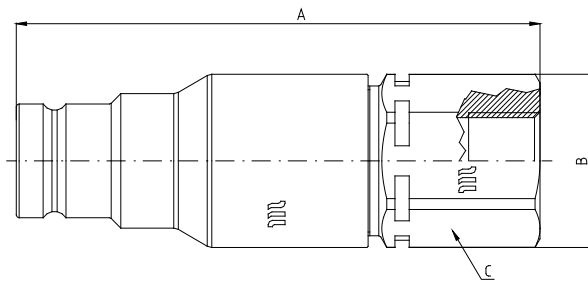
BSP TERMINATION ENDS

TO DIN 3852 TYPE

| SIZE |      |      | PART NUMBER      | THREAD | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Male coupling    |        | A             | B   | C  |  |  |  |
| 10   | 3/8" | -06  | Q04011041A-06-06 | 3/8"   | 91.7          | ø30 | 27 |  |  |  |
|      |      |      | Q04011041A-06-08 | 1/2"   | 94            | ø30 | 27 |  |  |  |
| 12   | 1/2" | -08  | Q04011041A-08-08 | 1/2"   | 98            | ø38 | 34 |  |  |  |
|      |      |      | Q04011041A-08-12 | 3/4"   | 100           | ø38 | 34 |  |  |  |
| 16   | 5/8" | -10  | Q04011041A-10-12 | 3/4"   | 114.3         | ø40 | 36 |  |  |  |
| 19   | 3/4" | -12  | Q04011041A-12-12 | 3/4"   | 118           | ø45 | 41 |  |  |  |
|      |      |      | Q04011041A-12-16 | 1"     | 122           | ø45 | 41 |  |  |  |
| 25   | 1"   | -16  | Q04011041A-16-16 | 1"     | 126.3         | ø55 | 50 |  |  |  |
|      |      |      | Q04011041A-16-20 | 1.1/4" | 130           | ø55 | 50 |  |  |  |

## FLAT FACE MALE CONNECTABLE UNDER PRESSURE - TERMINATION ENDS

NPT



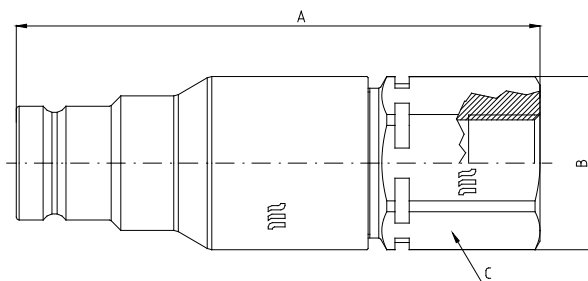
### Q04011341A

NPTF TERMINATION END

TO ANSI B 1.20.3

| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Male coupling    |             | A             | B   | C  |  |  |  |
| 10   | 3/8" | -06  | Q04011341A-06-06 | 3/8" NPTF   | 91.7          | ø30 | 27 |  |  |  |
|      |      |      | Q04011341A-06-08 | 1/2" NPTF   | 94            | ø30 | 27 |  |  |  |
| 12   | 1/2" | -08  | Q04011341A-08-08 | 1/2" NPTF   | 98            | ø38 | 34 |  |  |  |
|      |      |      | Q04011341A-08-12 | 3/4" NPTF   | 100           | ø38 | 34 |  |  |  |
| 16   | 5/8" | -10  | Q04011341A-10-12 | 3/4" NPTF   | 114.3         | ø40 | 36 |  |  |  |
| 19   | 3/4" | -12  | Q04011341A-12-12 | 3/4" NPTF   | 118           | ø45 | 41 |  |  |  |
|      |      |      | Q04011341A-12-16 | 1" NPTF     | 122           | ø45 | 41 |  |  |  |
| 25   | 1"   | -16  | Q04011341A-16-20 | 1.1/4" NPTF | 130           | ø55 | 50 |  |  |  |

SAE



### Q04011301A

SAE TERMINATION ENDS

TO SAE J1926-1

| SIZE |      |      | PART NUMBER      | THREAD       | DIMENSIONS mm |     |    |  |  |  |
|------|------|------|------------------|--------------|---------------|-----|----|--|--|--|
| DN   | inch | Size | Male coupling    |              | A             | B   | C  |  |  |  |
| 10   | 3/8" | -06  | Q04011301A-06-08 | 3/4" 16UNF   | 94.2          | ø30 | 27 |  |  |  |
| 12   | 1/2" | -08  | Q04011301A-08-10 | 7/8" -14 UNF | 100           | ø38 | 34 |  |  |  |
|      |      |      | Q04011301A-08-12 | 1.1/16"-12UN | 103           | ø38 | 34 |  |  |  |
| 19   | 3/4" | -12  | Q04011301A-12-16 | 1.5/16"-12UN | 125           | ø45 | 41 |  |  |  |



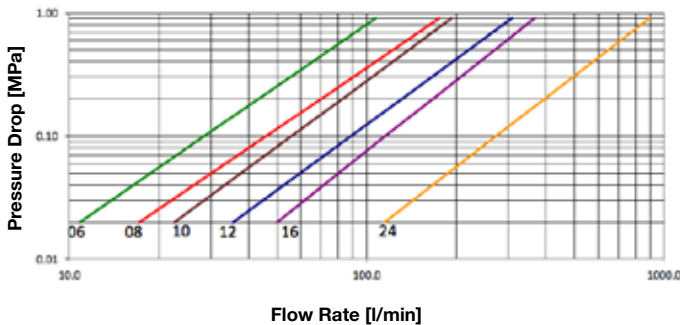
## FLAT FACE SCREW TYPE



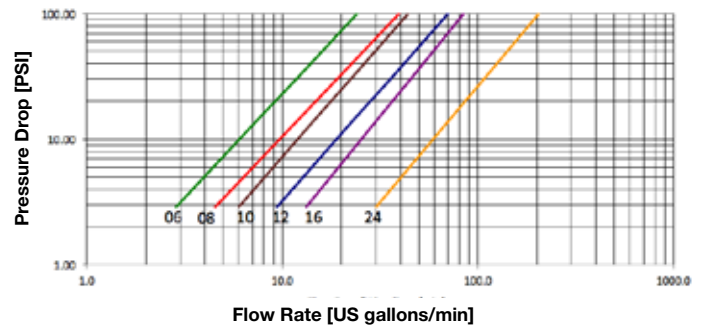
| SIZE | WORKING PRESSURE - CONNECTED (Dynamic) | WORKING PRESSURE - DISCONNECTED (Dynamic) | RATED FLOW at 0.2 MPa of pressure drop | TIGHTENING TORQUE | OIL SPILLAGE Connection/ Disconnection | MINIMUM BURST PRESSURE | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|--|---|--|-------------------|--|------------------------|--|

| mm   | inch  | dash | MPa |      | PSI |      | l/ min | US GPM | Nm  | cc.   | cubic inch | Male |       | Female |       | M & F |       |         |
|------|-------|------|-----|------|-----|------|--------|--------|-----|-------|------------|------|-------|--------|-------|-------|-------|---------|
|      |       |      | MPa | PSI  | MPa | PSI  |        |        |     |       |            | MPa  | PSI   | MPa    | PSI   |       |       |         |
| 10   | 3/8   | 06   | 35  | 5075 | 35  | 5075 | 43     | 11.4   | 60  | 0.007 | 0.0004     | 160  | 23200 | 140    | 20300 | 170   | 24650 | Allowed |
| 12.5 | 1/2   | 08   | 35  | 5075 | 35  | 5075 | 70     | 18.5   | 100 | 0.008 | 0.0005     | 170  | 24650 | 150    | 21750 | 150   | 21750 | Allowed |
| 16   | 5/8   | 10   | 35  | 5075 | 35  | 5075 | 85     | 22.5   | 100 | 0.008 | 0.0005     | 200  | 29000 | 160    | 23200 | 160   | 23200 | Allowed |
| 19   | 3/4   | 12   | 35  | 5075 | 35  | 5075 | 135    | 35.7   | 150 | 0.009 | 0.0005     | 145  | 21025 | 145    | 21025 | 160   | 23200 | Allowed |
| 25   | 1     | 16   | 35  | 5075 | 35  | 5075 | 170    | 44.9   | 200 | 0.02  | 0.0012     | 145  | 21025 | 145    | 21025 | 160   | 23200 | Allowed |
| 38   | 1 1/2 | 24   | 32  | 4640 | 32  | 4640 | 396    | 104.6  | 400 | 0.05  | 0.0031     | 130  | 18850 | 130    | 18850 | 130   | 18850 | Allowed |

Pressure Drop



Pressure Drop



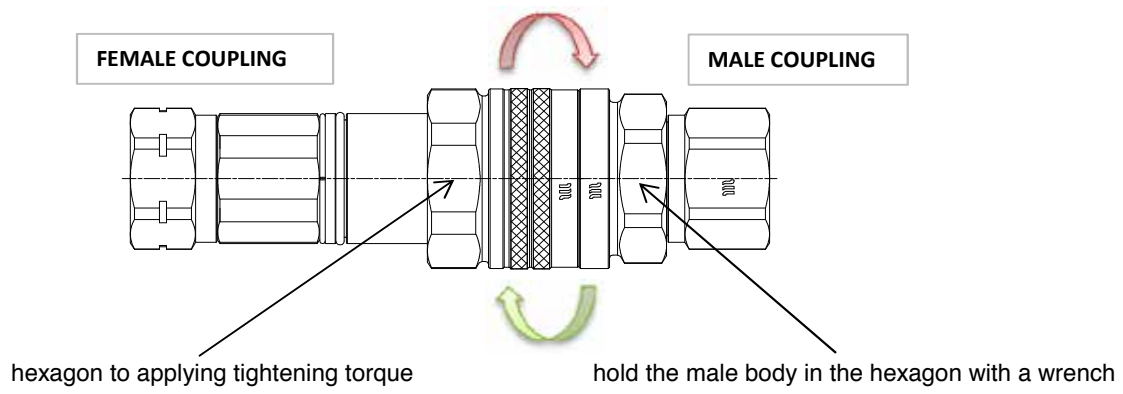
### Product description:

- Screw coupling with quick connection system
- Working pressure 35MPa
- Triple valve system that guarantees connection under pressure safely
- Interchangeable according to Manuli Q.Safe specifications
- Sealing system with flat valve
- Polyurethane seals
- Compact design
- Wide range of termination ends

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE                |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions.<br>1,000,000 cycles at 133% of the rated on (freq. 1Hz) in connected conditions |
| <b>Test Specifications</b> | ISO 7241-2 and ISO 16028:1997aMD.1.2006 (E)   |

**ASSEMBLY INSTRUCTIONS**

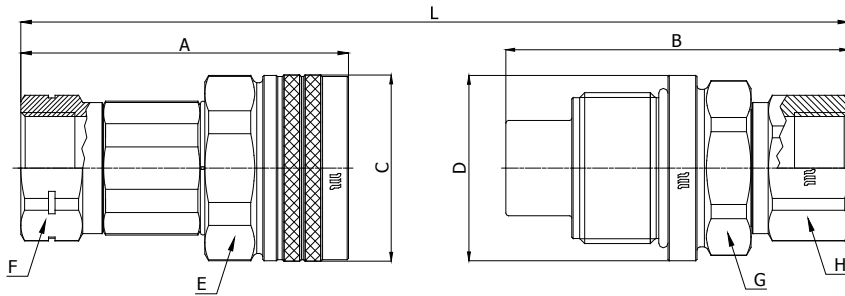
**RECOMMENDED TIGHTENING TORQUE**



| SIZE |        |      | TIGHTENING TORQUE<br>(male/female) |
|------|--------|------|------------------------------------|
| DN   | inch   | Size | Nm                                 |
| 16   | 5/8"   | -10  | 90                                 |
| 19   | 3/4"   | -12  | 120                                |
| 25   | 1"     | -16  | 200                                |
| 38   | 1-1/2" | -24  | 400                                |

## FLAT FACE SCREW TYPE - TERMINATION ENDS

**BSP**



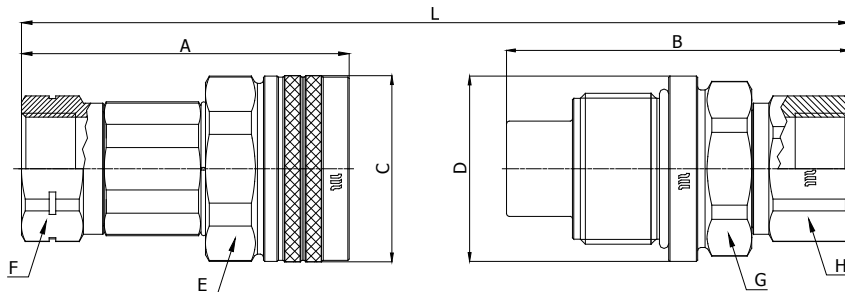
**Q06711041**

**Q06611041**

**BSP TERMINATION ENDS  
TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |       |       |     |    |    |    |    |          |
|------|------|------|------------------|------------------|--------|---------------|-------|-------|-----|----|----|----|----|----------|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B     | C     | D   | E  | F  | G  | H  | L        |
| 16   | 5/8" | -10  | Q06711041A-10-12 | Q06611041A-10-12 | 3/4"   | 96.5          | Ø55,3 | 114.3 | Ø55 | 50 | 36 | 46 | 36 | A+B-18,9 |
| 19   | 3/4" | -12  | Q06711041A-12-12 | Q06611041A-12-12 | 3/4"   | 109,9         | Ø60,3 | 118.7 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
|      |      |      | Q06711041A-12-16 | Q06611041A-12-16 | 1"     | 112.9         | Ø60,3 | 122.1 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
| 25   | 1"   | -16  | Q06711041A-16-16 | Q06611041A-16-16 | 1"     | 121.3         | Ø70,3 | 126.3 | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
|      |      |      | Q06711041A-16-20 | Q06611041A-16-20 | 1.1/4" | 124.3         | Ø70,3 | 130   | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
| 38   | 1½"  | -24  | Q06711041A-24-24 | Q06611041A-24-24 | 1.½"   | 167,6         | Ø97,3 | 166   | Ø97 | 90 | 75 | 85 | 75 | A+B-31   |

**NPT**



**Q06711341**

**Q06611341**

**NPTF TERMINATION END  
TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |       |       |     |    |    |    |    |          |
|------|------|------|------------------|------------------|-------------|---------------|-------|-------|-----|----|----|----|----|----------|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B     | C     | D   | E  | F  | G  | H  | L        |
| 16   | 5/8" | -10  | Q06711341A-10-12 | Q06611341A-10-12 | 3/4" NPTF   | 96.5          | Ø55,3 | 114.3 | Ø55 | 50 | 36 | 46 | 36 | A+B-18,9 |
| 19   | 3/4" | -12  | Q06711341A-12-16 | Q06611341A-12-16 | 1" NPTF     | 112.9         | Ø60,3 | 122.1 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
| 25   | 1"   | -16  | Q06711341A-16-20 | Q06611341A-16-20 | 1.1/4" NPTF | 124.3         | Ø70,3 | 130   | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
| 38   | 1½"  | -24  | Q06711341A-24-24 | Q06611341A-24-24 | 1.1/2" NPTF | 167,6         | Ø97,3 | 166   | Ø97 | 90 | 75 | 85 | 75 | A+B-31   |

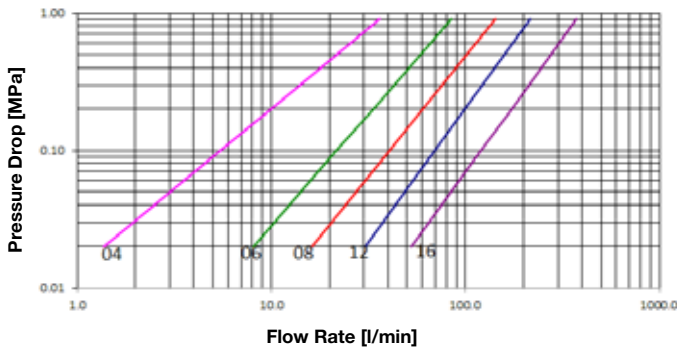




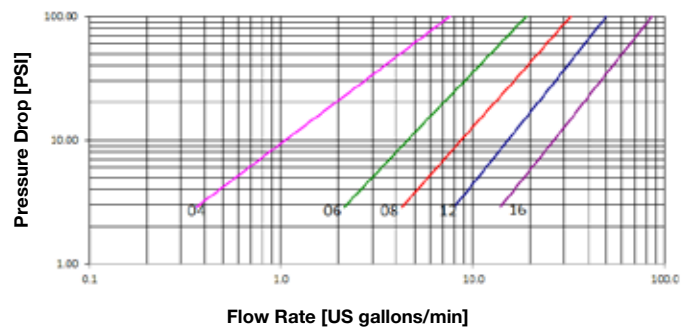
|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |                     |
|------|------|------|-----|------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|---------------------|
|      |      |      |     |      |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                     |
| 6.3  | ¼    | 04   | 35  | 5075 | 10    | 2.6    | 0.8 | 0.049      | 145  | 21025 | 190    | 27500 | 190   | 27550 | Allowed max. 10 MPa |
| 10   | ⅜    | 06   | 35  | 5075 | 34    | 9.0    | 1.5 | 0.092      | 150  | 21750 | 160    | 23200 | 150   | 21750 | Allowed max. 10 MPa |
| 12.5 | ½    | 08   | 30  | 4350 | 61    | 16.1   | 2   | 0.122      | 130  | 18850 | 140    | 20300 | 140   | 20300 | Allowed max. 10 MPa |
| 20   | ¾    | 12   | 30  | 4350 | 100   | 26.4   | 5   | 0.305      | 130  | 18850 | 130    | 18850 | 140   | 20300 | Allowed max. 10 MPa |
| 25   | 1    | 16   | 25  | 3625 | 173   | 45.7   | 9   | 0.549      | 110  | 15950 | 110    | 15950 | 110   | 15950 | Allowed max. 10 MPa |

Pressure Drop



Pressure Drop



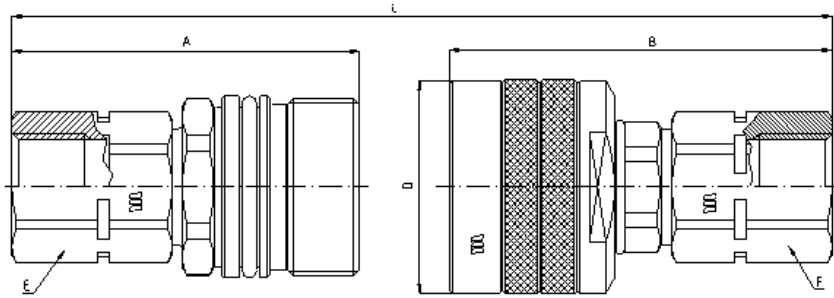
### Product description:

- Screw-type couplings specially designed for heavy duty, high pressure, pressure impulse applications such as hammers, attachments, rock crushers, etc.
- Connection and disconnection is made by screwing the sleeve, also possible with residual pressure in the line
- Connection secured on the thread between the sleeve and the female coupling
- Shut-off by poppet valve
- Hexagon around the male insert to be tightened up or released for maintenance
- Interchangeable with similar products available on the market

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female coupling in steel, male couplings high standard carbon steel. Carbonitrided valve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



BSP



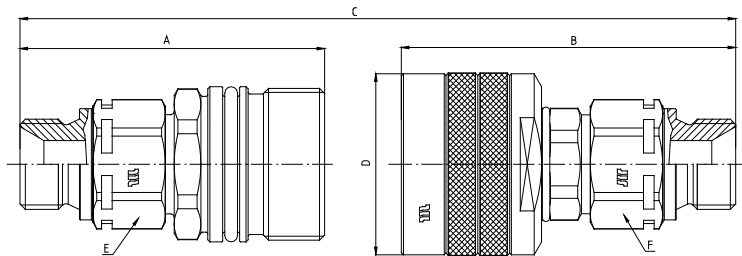
**Q05211041A**

**Q05111041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |       |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|-------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B     | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q05211041A-04-04 | Q05111041A-04-04 | 1/4"   | 61.5          | 65.5  | A+B-24,5 | ø30 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q05211041A-06-04 | Q05111041A-06-04 | 1/4"   | 68            | 74    | A+B-26,5 | ø34 | 22 | 22 |  |  |
|      |      |      | Q05211041A-06-06 | Q05111041A-06-06 | 3/8"   | 69.5          | 75.5  | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211041A-08-06 | Q05111041A-08-06 | 3/8"   | 66.5          | 74.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211041A-08-08 | Q05111041A-08-08 | 1/2"   | 69.5          | 77.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
| 20   | 3/4" | -12  | Q05211041A-12-08 | Q05111041A-12-08 | 1/2"   | 80.8          | 89.3  | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211041A-12-12 | Q05111041A-12-12 | 3/4"   | 82.8          | 91.3  | A+B-31   | ø49 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q05211041A-16-08 | Q05111041A-16-08 | 1/2"   | 92.3          | 99.3  | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211041A-16-12 | Q05111041A-16-12 | 3/4"   | 92.3          | 99.3  | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211041A-16-16 | Q05111041A-16-16 | 1"     | 95.3          | 102.3 | A+B-34,5 | ø56 | 41 | 41 |  |  |



**Q05211050A**

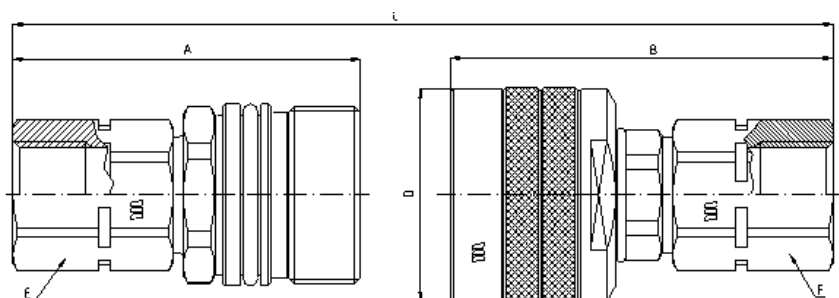
**Q05111050A**

**BSP TERMINATION ENDS**

**TO ISO 8434-6**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 12.5 | 1/2" | -08  | Q05211050A-08-06 | Q05111050A-08-06 | 3/8"   | 69.2          | 77.2 | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211050A-08-08 | Q05111050A-08-08 | 1/2"   | 71.7          | 79.7 | A+B-26,5 | ø42 | 27 | 27 |  |  |

METRIC



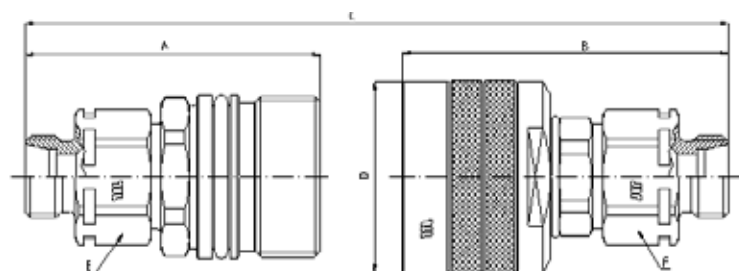
**Q05211141A**

**Q05111141A**

**METRIC TERMINATION ENDS**

**TO ISO 3852-1 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q05211141A-06-16 | Q05111141A-06-16 | M16x1,5 | 69.5          | 75.5 | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211141A-08-18 | Q05111141A-08-18 | M18x1,5 | 66.5          | 74.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211141A-08-22 | Q05111141A-08-22 | M22x1,5 | 68.5          | 76.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |



**Q05211110A**

**Q05111110A**

**METRIC TERMINATION END**

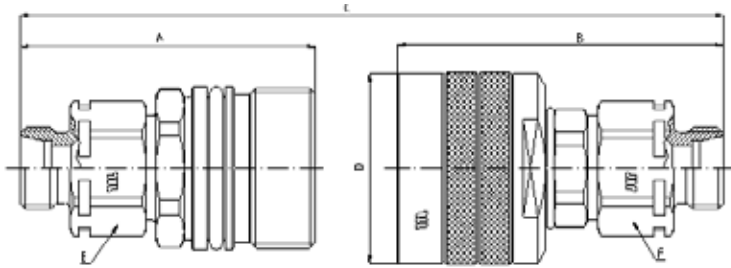
**TO ISO 8434-1**

**L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q05211110A-04-12 | Q05111110A-04-12 | M12x1,5 | 59.5          | 63.5 | A+B-24,5 | ø30 | 19 | 19 |  |  |
|      |      |      | Q05211110A-04-14 | Q05111110A-04-14 | M14x1,5 | 59.5          | 63.5 | A+B-24,5 | ø30 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q05211110A-06-12 | Q05211110A-06-12 | M12x1,5 | 66            | 72   | A+B-26,5 | ø34 | 22 | 22 |  |  |
|      |      |      | Q05211110A-06-14 | Q05211110A-06-14 | M14x1,5 | 66            | 72   | A+B-26,5 | ø34 | 22 | 22 |  |  |
|      |      |      | Q05211110A-06-16 | Q05211110A-06-16 | M16x1,5 | 66            | 72   | A+B-26,5 | ø34 | 22 | 22 |  |  |
|      |      |      | Q05211110A-06-18 | Q05211110A-06-18 | M18x1,5 | 66            | 72   | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211110A-08-14 | Q05111110A-08-14 | M14x1,5 | 65.5          | 73.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211110A-08-16 | Q05111110A-08-16 | M16x1,5 | 66.5          | 74.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211110A-08-18 | Q05111110A-08-18 | M18x1,5 | 65.5          | 73.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211110A-08-22 | Q05111110A-08-22 | M22x1,5 | 66.5          | 74.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |
| 20   | 3/4" | -12  | Q05211110A-12-18 | Q05111110A-12-18 | M18x1,5 | 80,8          | 89,3 | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211110A-12-22 | Q05111110A-12-22 | M22x1,5 | 80,8          | 89,3 | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211110A-12-26 | Q05111110A-12-26 | M26x1,5 | 80,8          | 89,3 | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211110A-12-30 | Q05111110A-12-30 | M30x2   | 82,8          | 91,3 | A+B-31   | ø49 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q05211110A-16-26 | Q05111110A-16-26 | M26x1,5 | 90,3          | 97,3 | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211110A-16-30 | Q05111110A-16-30 | M30x2   | 92,3          | 99,3 | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211110A-16-36 | Q05111110A-16-36 | M36x2   | 92,3          | 99,3 | A+B-34,5 | ø56 | 41 | 41 |  |  |



METRIC



**Q05211120A**

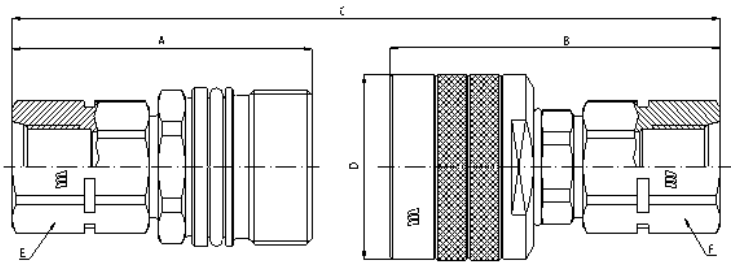
**Q05111120A**

METRIC TERMINATION END

TO ISO 8434-1

S SERIES

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q05211120A-04-16 | Q05111120A-04-16 | M16x1,5 | 61.5          | 65.5  | A+B-24,5 | ø30 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q05211120A-06-16 | Q05111120A-06-16 | M16x1,5 | 67            | 73    | A+B-26,5 | ø34 | 22 | 22 |  |  |
|      |      |      | Q05211120A-06-18 | Q05111120A-06-18 | M18x1,5 | 67            | 73    | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211120A-08-18 | Q05111120A-08-18 | M18x1,5 | 66.5          | 74.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211120A-08-20 | Q05111120A-08-20 | M20x1,5 | 66.5          | 74.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211120A-08-24 | Q05111120A-08-24 | M24x1,5 | 68.5          | 76.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
| 20   | 3/4" | -12  | Q05211120A-12-20 | Q05111120A-12-20 | M20x1,5 | 80.8          | 89.3  | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211120A-12-24 | Q05111120A-12-24 | M24x1,5 | 82.8          | 91.3  | A+B-31   | ø49 | 34 | 34 |  |  |
|      |      |      | Q05211120A-12-30 | Q05111120A-12-30 | M30x2   | 84.8          | 93.3  | A+B-31   | ø49 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q05211120A-16-30 | Q05111120A-16-30 | M30x2   | 94,3          | 101.3 | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211120A-16-36 | Q05111120A-16-36 | M36x2   | 96,3          | 103.3 | A+B-34,5 | ø56 | 41 | 41 |  |  |
|      |      |      | Q05211120A-16-42 | Q05111120A-16-42 | M42x2   | 98,3          | 105.3 | A+B-34,5 | ø56 | 41 | 41 |  |  |



**Q05211191A**

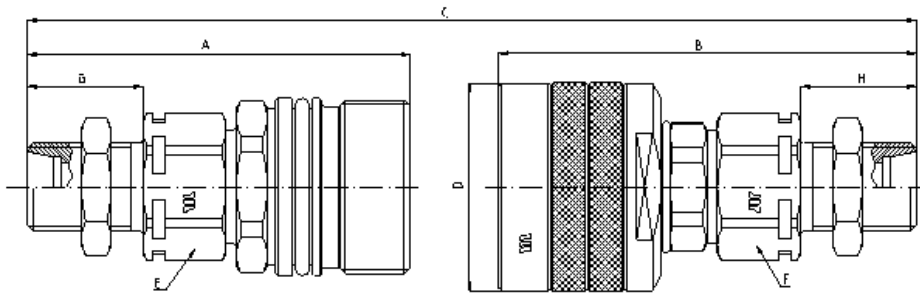
**Q05111191A**

METRIC TERMINATION ENDS

TO ISO 6149-1

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B    | C        | D   | E  | F  |  |  |
| 12.5 | 1/2" | -08  | Q05211191A-08-16 | Q05111191A-08-16 | M16x1,5 | 67            | 75   | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211191A-08-18 | Q05111191A-08-18 | M18x1,5 | 68.5          | 76.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |

METRIC



**Q05211770B**

**Q05111770B**

**METRIC TERMINATION END**

**TO ISO 8434-1**

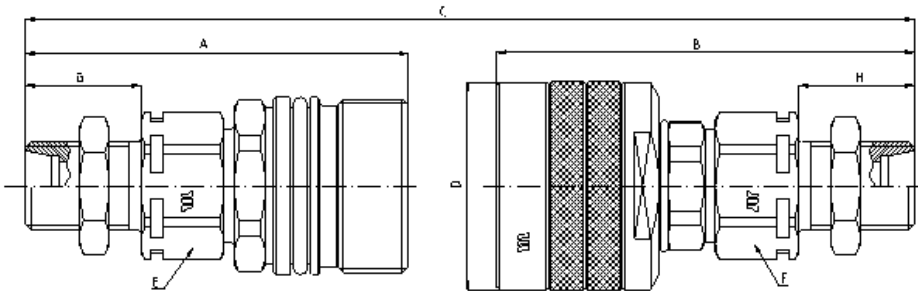
**BULKHEAD L SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  | G  | H  |
| 6.3  | 1/4" | -04  | Q05211770B-04-14 | Q05111770B-04-14 | M14x1,5 | 74.5          | 78.5  | A+B-24,5 | ø30 | 19 | 19 | 25 | 25 |
| 10   | 3/8" | -06  | Q05211770B-06-12 | Q05111770B-06-12 | M12x1,5 | 81            | 87    | A+B-26,5 | ø34 | 22 | 22 | 25 | 25 |
|      |      |      | Q05211770B-06-14 | Q05111770B-06-14 | M14x1,5 | 80            | 86    | A+B-26,5 | ø34 | 22 | 22 | 25 | 25 |
|      |      |      | Q05211770B-06-16 | Q05111770B-06-16 | M16x1,5 | 80            | 86    | A+B-26,5 | ø34 | 22 | 22 | 26 | 26 |
|      |      |      | Q05211770B-06-18 | Q05111770B-06-18 | M18x1,5 | 80            | 86    | A+B-26,5 | ø34 | 22 | 22 | 26 | 26 |
| 12.5 | 1/2" | -08  | Q05211770B-08-14 | Q05111770B-08-14 | M14x1,5 | 80.5          | 88.5  | A+B-26,5 | ø42 | 27 | 27 | 25 | 25 |
|      |      |      | Q05211770B-08-16 | Q05111770B-08-16 | M16x1,5 | 80.5          | 88.5  | A+B-26,5 | ø42 | 27 | 27 | 26 | 26 |
|      |      |      | Q05211770B-08-18 | Q05111770B-08-18 | M18x1,5 | 80.5          | 88.5  | A+B-26,5 | ø42 | 27 | 27 | 26 | 26 |
|      |      |      | Q05211770B-08-22 | Q05111770B-08-22 | M22x1,5 | 81.5          | 89.5  | A+B-26,5 | ø42 | 27 | 27 | 27 | 27 |
| 20   | 3/4" | -12  | Q05211770B-12-18 | Q05111770B-12-18 | M18x1,5 | 94.8          | 103.3 | A+B-31   | ø49 | 34 | 34 | 26 | 26 |
|      |      |      | Q05211770B-12-22 | Q05111770B-12-22 | M22x1,5 | 95.8          | 104.3 | A+B-31   | ø49 | 34 | 34 | 27 | 27 |
|      |      |      | Q05211770B-12-26 | Q05111770B-12-26 | M26x1,5 | 96.8          | 105.3 | A+B-31   | ø49 | 34 | 34 | 29 | 29 |
|      |      |      | Q05211770B-12-30 | Q05111770B-12-30 | M30x2   | 100.8         | 109.3 | A+B-31   | ø49 | 34 | 34 | 32 | 32 |
| 25   | 1"   | -16  | Q05211770B-16-26 | Q05111770B-16-26 | M26x1,5 | 106.3         | 113.3 | A+B-34,5 | ø56 | 41 | 41 | 29 | 29 |
|      |      |      | Q05211770B-16-30 | Q05111770B-16-30 | M30x2   | 110.3         | 117.3 | A+B-34,5 | ø56 | 41 | 41 | 32 | 32 |
|      |      |      | Q05211770B-16-36 | Q05111770B-16-36 | M36x2   | 110.3         | 117.3 | A+B-34,5 | ø56 | 41 | 41 | 32 | 32 |

Q.SAFE Q23-4

## SCREW - TERMINATION ENDS

### METRIC



**Q05211870B**

**Q05111870B**

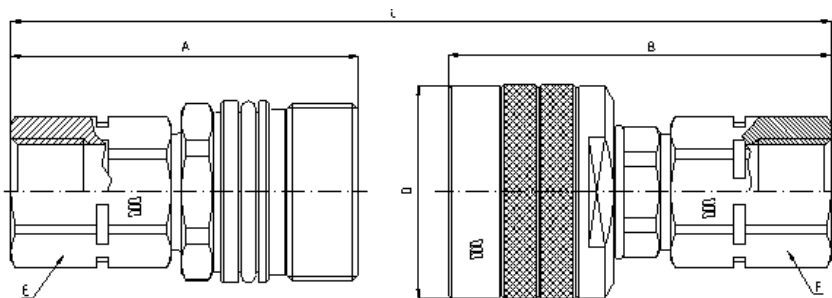
**METRIC TERMINATION END**

**TO ISO 8434-1**

**BULKHEAD S SERIES**

| SIZE |      |      | PART NUMBER      |                  | THREAD  | DIMENSIONS mm |       |          |     |    |    |    |    |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |         | A             | B     | C        | D   | E  | F  | G  | H  |
| 10   | 3/8" | -06  | Q05211870B-06-16 | Q05111870B-06-16 | M16x1,5 | 81            | 87    | A+B-26,5 | ø34 | 22 | 22 | 27 | 27 |
|      |      |      | Q05211870B-06-18 | Q05111870B-06-18 | M18x1,5 | 81            | 87    | A+B-26,5 | ø34 | 22 | 22 | 27 | 27 |
| 12.5 | 1/2" | -08  | Q05211870B-08-18 | Q05111870B-08-18 | M18x1,5 | 81.5          | 89.5  | A+B-26,5 | ø42 | 27 | 27 | 27 | 27 |
|      |      |      | Q05211870B-08-20 | Q05111870B-08-20 | M20x1,5 | 81.5          | 89.5  | A+B-26,5 | ø42 | 27 | 27 | 27 | 27 |
|      |      |      | Q05211870B-08-24 | Q05111870B-08-24 | M24x1,5 | 83.5          | 91.5  | A+B-26,5 | ø42 | 27 | 27 | 29 | 29 |
| 20   | 3/4" | -12  | Q05211870B-12-24 | Q05111870B-12-24 | M24x1,5 | 97.8          | 106.3 | A+B-31   | ø49 | 34 | 34 | 29 | 29 |
|      |      |      | Q05211870B-12-30 | Q05111870B-12-30 | M30x2   | 102.8         | 111.3 | A+B-31   | ø49 | 34 | 34 | 34 | 34 |
| 25   | 1"   | -16  | Q05211870B-16-30 | Q05111870B-16-30 | M30x2   | 112.3         | 119.3 | A+B-34,5 | ø56 | 41 | 41 | 34 | 34 |
|      |      |      | Q05211870B-16-36 | Q05111870B-16-36 | M36x2   | 114.3         | 121.3 | A+B-34,5 | ø56 | 41 | 41 | 36 | 36 |
|      |      |      | Q05211870B-16-42 | Q05111870B-16-42 | M42x2   | 116.3         | 123.3 | A+B-34,5 | ø56 | 41 | 41 | 40 | 40 |

### NPT



**Q05211341A**

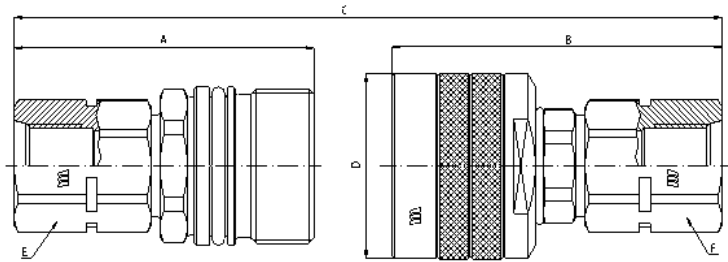
**Q05111341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |       |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-----------|---------------|-------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B     | C        | D   | E  | F  |  |  |
| 6.3  | 1/4" | -04  | Q05211341A-04-04 | Q05111341A-04-04 | 1/4" NPTF | 61.5          | 65.5  | A+B-24,5 | ø30 | 19 | 19 |  |  |
| 10   | 3/8" | -06  | Q05211341A-06-06 | Q05111341A-06-06 | 3/8" NPTF | 69.5          | 75.5  | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211341A-08-08 | Q05111341A-08-08 | 1/2" NPTF | 69.5          | 77.5  | A+B-26,5 | ø42 | 27 | 27 |  |  |
| 20   | 3/4" | -12  | Q05211341A-12-12 | Q05111341A-12-12 | 3/4" NPTF | 82,8          | 91.3  | A+B-31   | ø49 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q05211341A-16-16 | Q05111341A-16-16 | 1" NPTF   | 95.3          | 102.3 | A+B-34,5 | ø56 | 41 | 41 |  |  |

SAE



**Q05211301A**

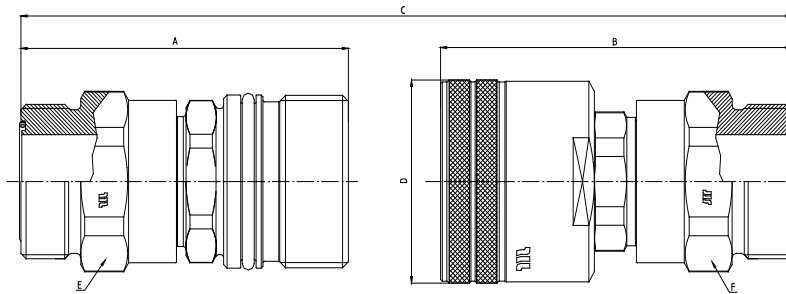
**Q05111301A**

**SAE TERMINATION END**

**TO SAE J1926-1**

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q05211301A-06-06 | Q05111301A-06-06 | 9/16"-18UNF | 69.5          | 75.5 | A+B-26,5 | ø34 | 22 | 22 |  |  |
| 12.5 | 1/2" | -08  | Q05211301A-08-08 | Q05111301A-08-08 | 3/4"-16 UNF | 69            | 77   | A+B-26,5 | ø42 | 27 | 27 |  |  |
|      |      |      | Q05211301A-08-10 | Q05111301A-08-10 | 7/8"-14 UNF | 71.5          | 79.5 | A+B-26,5 | ø42 | 27 | 27 |  |  |

ORFS



**Q05211240A**

**Q05111240A**

**ORFS TERMINATION ENDS**

**TO ISO 8434-3**

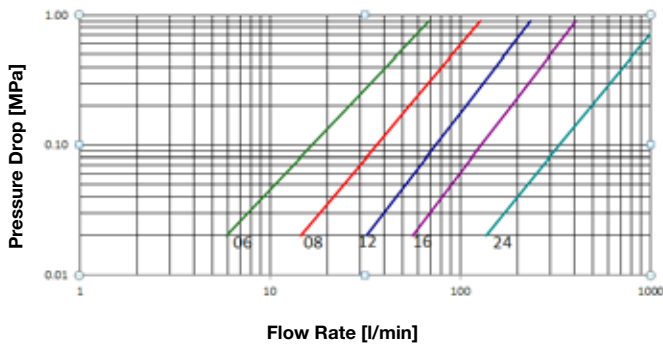
| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |       |          |     |    |    |  |  |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B     | C        | D   | E  | F  |  |  |
| 25   | 1"   | -16  | Q05211240A-16-16 | Q05111240A-16-16 | 1.7/16"-12 UN | 98.3          | 102.8 | A+B-34,5 | ø56 | 46 | 46 |  |  |
| 25   | 1"   | -16  | Q05211240A-16-20 | Q05111240A-16-20 | 1.11/16"-12UN | 95.8          | 102.8 | A+B-34,5 | ø56 | 46 | 46 |  |  |



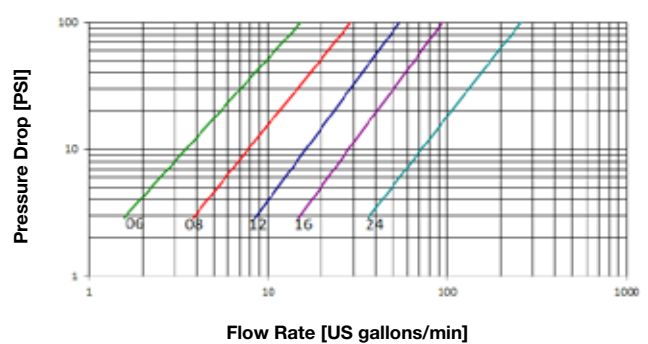
|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch  | dash | MPa | PSI  | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |         |
|------|-------|------|-----|------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|---------|
|      |       |      |     |      |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |         |
| 10   | 3/8   | 06   | 35  | 5075 | 26    | 6.9    | 1.5 | 0.092      | 150  | 21750 | 160    | 23200 | 180   | 26100 | Allowed |
| 12.5 | 1/2   | 08   | 30  | 4350 | 54    | 14.3   | 2   | 0.122      | 130  | 18850 | 140    | 20300 | 140   | 20300 | Allowed |
| 20   | 3/4   | 12   | 30  | 4350 | 107   | 28.3   | 5   | 0.305      | 130  | 17750 | 130    | 18850 | 140   | 20300 | Allowed |
| 25   | 1     | 16   | 25  | 3625 | 186   | 49.1   | 9   | 0.549      | 110  | 15950 | 110    | 15950 | 110   | 15950 | Allowed |
| 38   | 1 1/2 | 24   | 30  | 4350 | 492   | 130.0  | 25  | 1.526      | 130  | 18850 | 125    | 18125 | 130   | 18850 | Allowed |

Pressure Drop



Pressure Drop



### Product description:

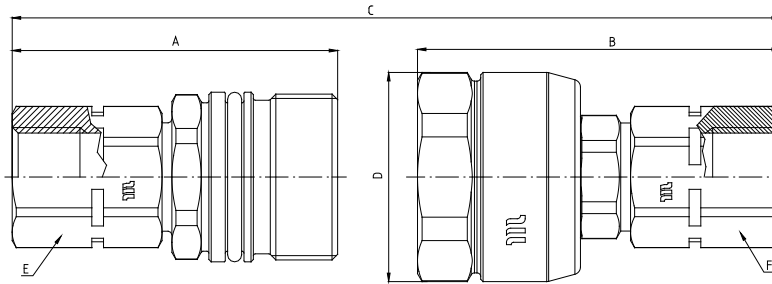
- Screw-type couplings specially designed for heavy duty applications such as hammers, attachments, rock crushers, etc.
- Thanks to strengthened internal components this series is highly resistant against backflow, flow impulses and peaks, pressure impulses, vibration and hose bending
- Connection and disconnection is made by screwing the sleeve, also possible with rated pressure in the line
- Connection secured on the thread between the sleeve and the male coupling
- Shut-off by poppet valve
- Hexagonal profile of external sleeve for an easy connection and disconnection in high pressure conditions
- Interchangeable with MQS-SG series and similar products available on the market

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in high standard steel. Carbonitrided valve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>Specific seals available in case of higher temperatures   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 200,000 cycles at 133% of the rated one (freq. 1Hz)  |
| <b>Test Specifications</b> | ISO 7241-2   |



## SCREW HEAVY DUTY - TERMINATION ENDS

BSP



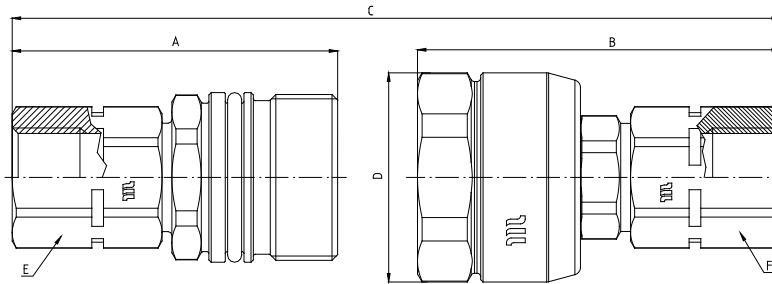
**Q06211041A**

**Q06111041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |       |          |       |    |    |  |  |
|------|--------|------|------------------|------------------|--------|---------------|-------|----------|-------|----|----|--|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B     | C        | D     | E  | F  |  |  |
| 10   | 3/8"   | -06  | Q06211041A-06-04 | Q06111041A-06-04 | 1/4"   | 68            | 74    | A+B-26,5 | ø34,7 | 22 | 22 |  |  |
|      |        |      | Q06211041A-06-06 | Q06111041A-06-06 | 3/8"   | 69.5          | 75.5  | A+B-26,5 | ø34,7 | 22 | 22 |  |  |
| 12.5 | 1/2"   | -08  | Q06211041A-08-06 | Q06111041A-08-06 | 3/8"   | 66.5          | 74.5  | A+B-26,5 | ø44,4 | 27 | 27 |  |  |
|      |        |      | Q06211041A-08-08 | Q06111041A-08-08 | 1/2"   | 69.5          | 77.5  | A+B-26,5 | ø44,4 | 27 | 27 |  |  |
| 20   | 3/4"   | -12  | Q06211041A-12-08 | Q06111041A-12-08 | 1/2"   | 80.8          | 89.3  | A+B-31   | ø54,2 | 34 | 34 |  |  |
|      |        |      | Q06211041A-12-12 | Q06111041A-12-12 | 3/4"   | 82.8          | 91.3  | A+B-31   | ø54,2 | 34 | 34 |  |  |
| 25   | 1"     | -16  | Q06211041A-16-12 | Q06111041A-16-12 | 3/4"   | 92.3          | 99.3  | A+B-34,5 | ø59,6 | 41 | 41 |  |  |
|      |        |      | Q06211041A-16-16 | Q06111041A-16-16 | 1"     | 95.3          | 102.3 | A+B-34,5 | ø59,6 | 41 | 41 |  |  |
| 38   | 1-1/2" | -24  | Q06211041A-24-20 | Q06111041A-24-20 | 1.1/4" | 124.5         | 137.3 | A+B-47,5 | ø86,6 | 60 | 60 |  |  |
|      |        |      | Q06211041A-24-24 | Q06111041A-24-24 | 1.1/2" | 127.5         | 140.3 | A+B-47,5 | ø86,6 | 60 | 60 |  |  |



**Q06213041A**

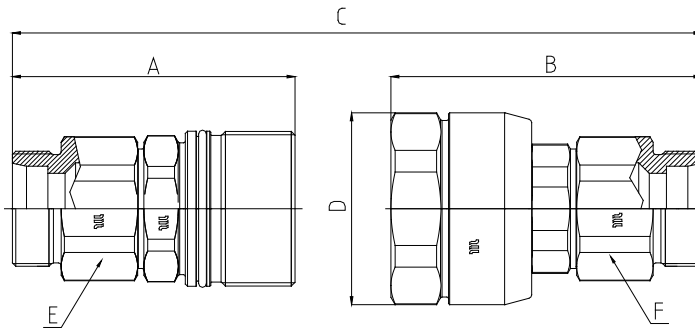
**Q06113041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |       |          |       |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|-------|----------|-------|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B     | C        | D     | E  | F  |  |  |
| 12.5 | 1/2" | -08  | Q06213041A-08-08 | Q06113041A-08-08 | 1/2"   | 69.5          | 77.5  | A+B-26,5 | ø44,4 | 27 | 27 |  |  |
| 20   | 3/4" | -12  | Q06213041A-12-12 | Q06113041A-12-12 | 3/4"   | 82.8          | 91.3  | A+B-31   | ø54,2 | 34 | 34 |  |  |
| 25   | 1"   | -16  | Q06213041A-16-16 | Q06113041A-16-16 | 1"     | 95.3          | 102.3 | A+B-34,5 | ø59,6 | 41 | 41 |  |  |

### METRIC



**Q0621120A**

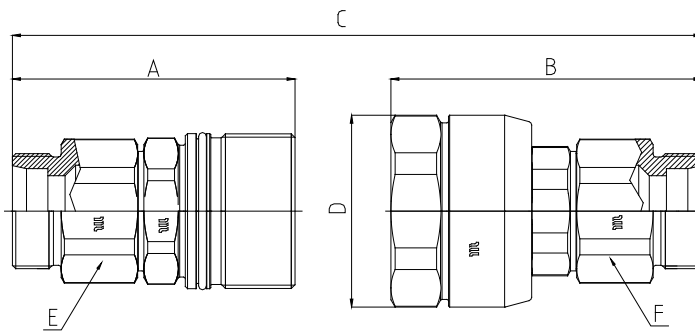
**Q0611120A**

**METRIC TERMINATION ENDS**

**TO ISO 8434-1 S SERIES**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |     |          |       |    |    |  |  |
|------|--------|------|------------------|------------------|--------|---------------|-----|----------|-------|----|----|--|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B   | C        | D     | E  | F  |  |  |
| 38   | 1-1/2" | -24  | Q06211120A-24-52 | Q06111120A-24-52 | M52x2  | 127.6         | 140 | A+B-47,3 | ø86,6 | 60 | 60 |  |  |

### ORFS



**Q06211240A**

**Q06111240A**

**ORFS TERMINATION ENDS**

**TO ISO 8434-3**

| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |       |          |       |    |    |  |  |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-------|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B     | C        | D     | E  | F  |  |  |
| 25   | 1"   | -16  | Q06211240A-16-16 | Q06111240A-16-16 | 1.7/16"-12 UN | 98.3          | 102.8 | A+B-34,5 | ø59,6 | 46 | 46 |  |  |

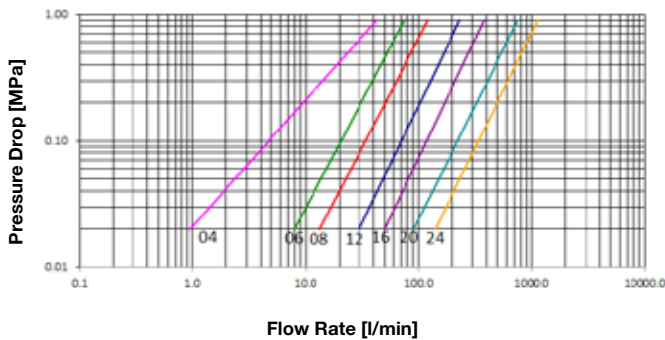




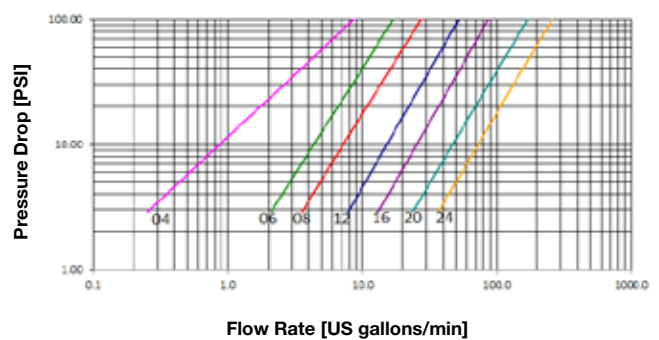
|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI   | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |                      |
|------|------|------|-----|-------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|----------------------|
|      |      |      |     |       |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                      |
| 6    | ¼    | 04   | 70  | 10150 | 10    | 2.6    | 0.4 | 0.024      | 290  | 42050 | 350    | 50750 | 300   | 43500 | Allowed up to 30 MPa |
| 10   | ¾    | 06   | 60  | 8700  | 31    | 8.2    | 1.5 | 0.092      | 250  | 36250 | 330    | 47850 | 320   | 46400 | Allowed up to 30 MPa |
| 12.5 | ½    | 08   | 50  | 7250  | 51    | 13.5   | 2.2 | 0.134      | 200  | 29000 | 260    | 37700 | 310   | 44950 | Allowed up to 30 MPa |
| 20   | ¾    | 12   | 50  | 7250  | 102   | 26.9   | 4   | 0.244      | 200  | 29000 | 250    | 36250 | 310   | 44950 | Allowed up to 30 MPa |
| 25   | 1    | 16   | 50  | 7250  | 170   | 44.9   | 7.5 | 0.458      | 200  | 29000 | 230    | 33350 | 270   | 39150 | Allowed up to 30 MPa |
| 31   | 1¼   | 20   | 40  | 5800  | 325   | 85.9   | 15  | 0.916      | 160  | 23200 | 170    | 24650 | 230   | 33350 | Allowed up to 15 MPa |
| 38   | 1½   | 24   | 32  | 4640  | 494   | 130.5  | 23  | 1.404      | 130  | 18850 | 140    | 20300 | 150   | 21750 | Allowed up to 15 MPa |

Pressure Drop



Pressure Drop



### Product description:

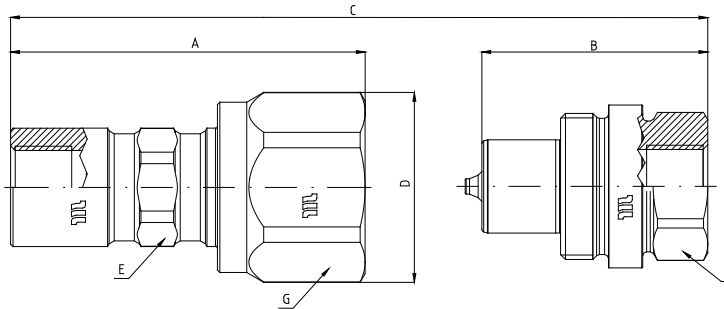
- Screw-on connection/disconnection system
- Sleeve with hexagon area internal components reinforced, made in steel
- Hardened valve bodies
- Three-part poppet valve with a moulded shaped seal
- Mechanical backstop to prevent partial enclosures of valves due to peaks and reverse flow
- Interchangeable with other products and widely used on the market
- Accessories (plugs and caps) and spare part kits available
- Wide range of termination ends

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Couplings in steel with some stressed area hardened. Carbonitrided valve, springs in C98 steel, seals in NBR and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## SCREW HEAVY DUTY - TERMINATION ENDS

BSP



**Q05411041A**

**Q05311041A**

**BSP TERMINATION ENDS**

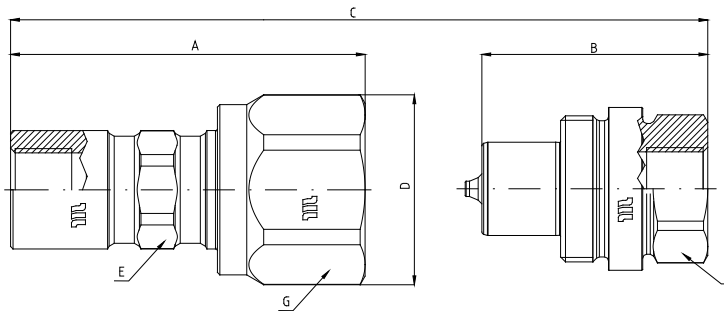
**TO DIN 3852 X TYPE**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |       |    |    |    |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|----|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D     | E  | F  | G  |
| 6.3  | 1/4"   | -04  | Q05411041A-04-04 | Q05311041A-04-04 | 1/4"   | 63            | 42.2 | A+B-20,8 | ø35   | 19 | 22 | 32 |
| 10   | 3/8"   | -06  | Q05411041A-06-06 | Q05311041A-06-06 | 3/8"   | 72.5          | 46.2 | A+B-25,9 | ø38,5 | 22 | 27 | 35 |
| 12.5 | 1/2"   | -08  | Q05411041A-08-08 | Q05311041A-08-08 | 1/2"   | 82.1          | 54.4 | A+B-27,3 | ø45   | 27 | 32 | 41 |
| 20   | 3/4"   | -12  | Q05411041A-12-12 | Q05311041A-12-12 | 3/4"   | 93.7          | 61.4 | A+B-31,9 | ø55   | 35 | 41 | 50 |
| 25   | 1"     | -16  | Q05411041A-16-16 | Q05311041A-16-16 | 1"     | 105.8         | 68.3 | A+B-37   | ø66   | 41 | 50 | 60 |
| 31.5 | 1.1/4" | -20  | Q05411041A-20-20 | Q05311041A-20-20 | 1.1/4" | 131.9         | 82   | A+B-53,9 | ø88   | 55 | 70 | 80 |
| 38   | 1 1/2" | -24  | Q05411041A-24-24 | Q05311041A-24-24 | 1.1/2" | 158.9         | 102  | A+B-70,4 | ø99   | 60 | 80 | 90 |

Q-SAFE

Q-25-1

NPT



**Q05411341A**

**Q05311341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

| SIZE |        |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |       |    |    |    |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-------|----|----|----|
| DN   | inch   | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D     | E  | F  | G  |
| 6.3  | 1/4"   | -04  | Q05411341A-04-04 | Q05311341A-04-04 | 1/4" NPTF   | 63            | 42.2 | A+B-20,8 | ø35   | 19 | 22 | 32 |
| 10   | 3/8"   | -06  | Q05411341A-06-06 | Q05311341A-06-06 | 3/8" NPTF   | 72.5          | 46.2 | A+B-25,9 | ø38,5 | 22 | 27 | 35 |
| 12.5 | 1/2"   | -08  | Q05411341A-08-08 | Q05311341A-08-08 | 1/2" NPTF   | 82.1          | 54.4 | A+B-27,3 | ø45   | 27 | 32 | 41 |
| 20   | 3/4"   | -12  | Q05411341A-12-12 | Q05311341A-12-12 | 3/4" NPTF   | 93.7          | 61.4 | A+B-31,9 | ø55   | 35 | 41 | 50 |
| 25   | 1"     | -16  | Q05411341A-16-16 | Q05311341A-16-16 | 1" NPTF     | 105.8         | 68.3 | A+B-37   | ø66   | 41 | 50 | 60 |
| 31.5 | 1.1/4" | -20  | Q05411341A-20-20 | Q05311341A-20-20 | 1.1/4" NPTF | 131.9         | 82   | A+B-53,9 | ø88   | 55 | 70 | 80 |
| 38   | 1 1/2" | -24  | Q05411341A-24-24 | Q05311341A-24-24 | 1.1/2" NPTF | 158.9         | 102  | A+B-70,4 | ø99   | 60 | 80 | 90 |

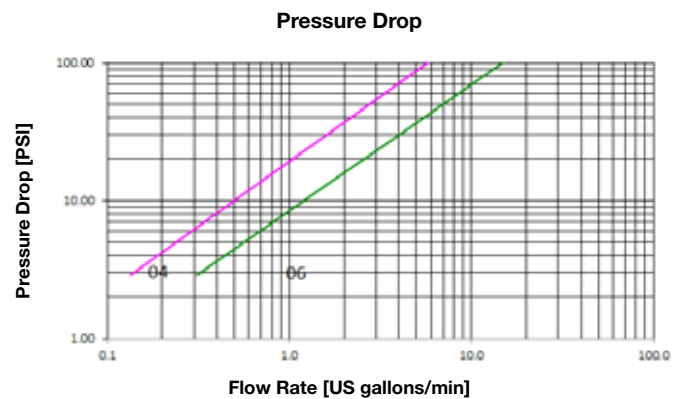
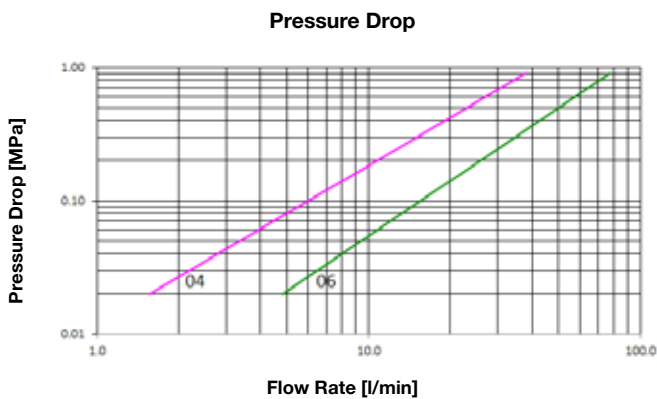




## SCREW HYDRAULIC CYLINDERS (POPPET)

|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm  | inch | dash | MPa | PSI   | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |                   |
|-----|------|------|-----|-------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|-------------------|
|     |      |      |     |       |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                   |
| 6.3 | 1/4  | 04   | 70  | 10150 | 11    | 2.9    | 0.4 | 0.024      | 350  | 50750 | 310    | 44950 | 320   | 46400 | Residual pressure |
| 10  | 3/8  | 06   | 70  | 10150 | 26    | 7      | 0.6 | 0.037      | 280  | 40600 | 300    | 43500 | 280   | 40600 | Residual pressure |



### Product description:

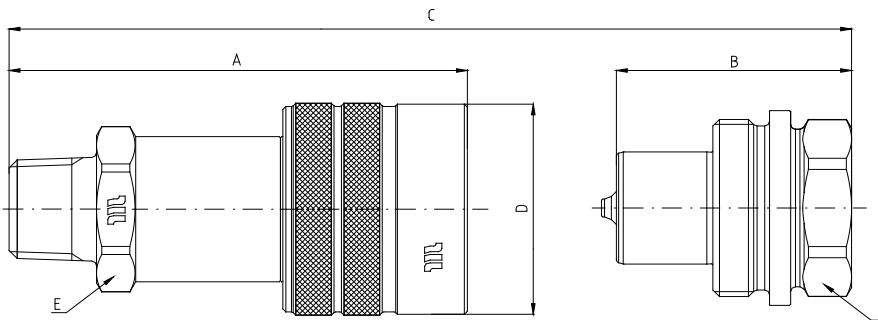
- Screw-type couplings specially designed for very high pressure applications on cylinders and hydraulic rams
- Connection and disconnection is made by screwing the sleeve and can be made with residual pressure in the line
- Connection secured on the thread between the sleeve and the male coupling
- Shut-off by poppet valve provides effective hydraulic sealing
- Interchangeable with other products and widely used in the USA and Europe
- ISO 14540 compliant

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel. Carbonitrided valve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>Specific seals available in case of higher temperatures   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 50,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |



## SCREW HYDRAULIC CYLINDERS (POPPET) - TERMINATION ENDS

NPT

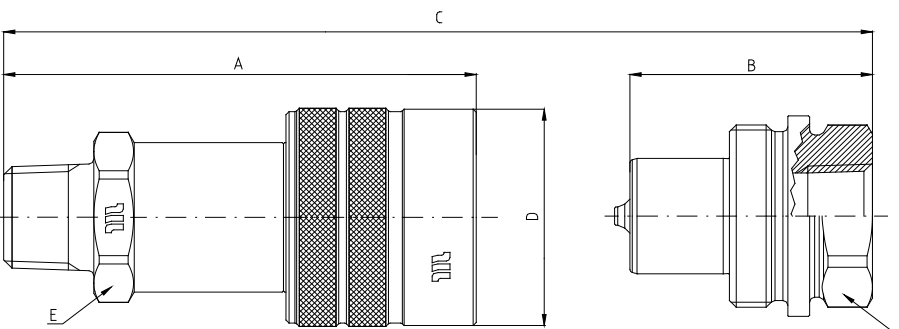


### Q05611280B

NPT TERMINATION ENDS

TO ANSI B1.20.3

| SIZE |      |      | PART NUMBER      |               | THREAD    | DIMENSIONS mm |   |        |       |    |   |  |  |
|------|------|------|------------------|---------------|-----------|---------------|---|--------|-------|----|---|--|--|
| DN   | inch | Size | Female coupling  | Male coupling |           | A             | B | C      | D     | E  | F |  |  |
| 6.3  | 1/4" | -04  | Q05611280B-04-04 | -             | 1/4" NPTF | 62.4          | - | A+B-19 | ø30   | 21 | - |  |  |
| 10   | 3/8" | -06  | Q05611280B-06-04 | -             | 1/4" NPTF | 76            | - | A+B-25 | ø35,6 | 25 | - |  |  |
|      |      |      | Q05611280B-06-06 | -             | 3/8" NPTF | 76            | - | A+B-25 | ø35,6 | 25 | - |  |  |



### Q05511341B

NPT TERMINATION ENDS

TO ANSI B1.20.3

| SIZE |      |      | PART NUMBER     |                  | THREAD    | DIMENSIONS mm |    |        |   |   |    |  |  |
|------|------|------|-----------------|------------------|-----------|---------------|----|--------|---|---|----|--|--|
| DN   | inch | Size | Female coupling | Male coupling    |           | A             | B  | C      | D | E | F  |  |  |
| 6.3  | 1/4" | -04  | -               | Q05511341B-04-04 | 1/4" NPTF | -             | 34 | A+B-19 | - | - | 22 |  |  |
| 10   | 3/8" | -06  | -               | Q05511341B-06-04 | 1/4" NPTF | -             | 39 | A+B-25 | - | - | 27 |  |  |
|      |      |      | -               | Q05511341B-06-06 | 3/8" NPTF | -             | 39 | A+B-25 | - | - | 27 |  |  |



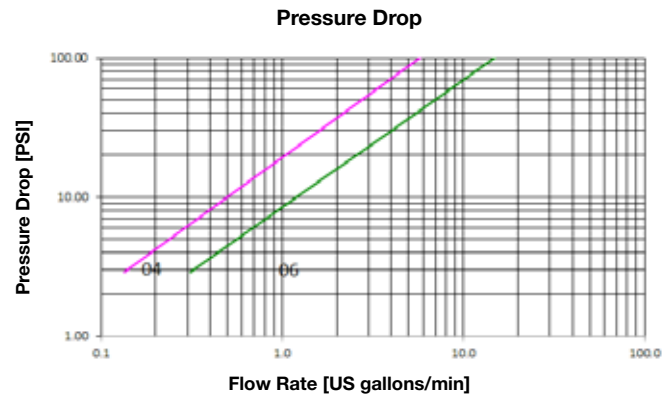
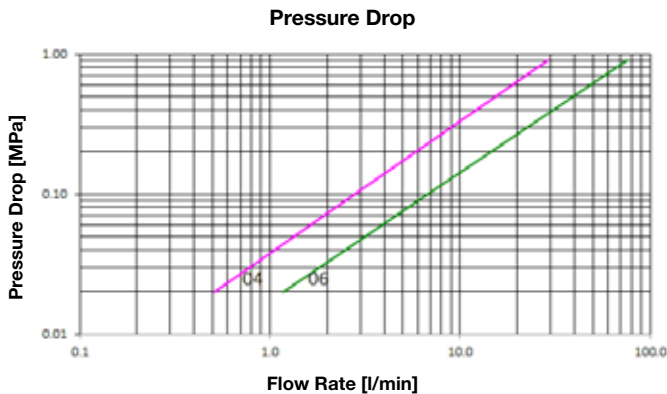




## SCREW HYDRAULIC CYLINDERS (BALL) - TERMINATION ENDS

|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm  | inch | dash | MPa | PSI   | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |                   |
|-----|------|------|-----|-------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|-------------------|
|     |      |      |     |       |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                   |
| 6.3 | 1/4  | 04   | 70  | 10150 | 6     | 1.6    | 0.3 | 0.018      | 180  | 26100 | 170    | 24650 | 320   | 46400 | Residual pressure |
| 10  | 3/8  | 06   | 70  | 10150 | 15    | 4      | 0.5 | 0.031      | 170  | 24650 | 180    | 26100 | 280   | 40600 | Residual pressure |



### Product description:

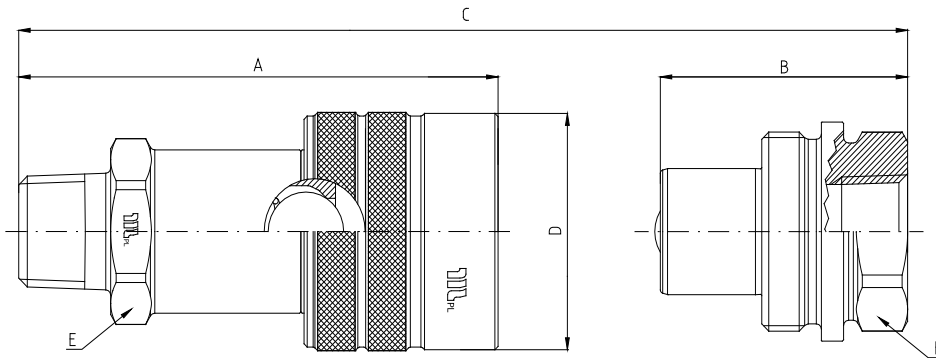
- Screw-type couplings specially designed for very high pressure applications on cylinders and hydraulic rams
- Connection and disconnection is made by screwing the sleeve and can be made with residual pressure in the line
- Connection secured on the thread between the sleeve and the male coupling
- Shut-off by ball valve provides effective hydraulic sealing
- Interchangeable with other products and widely used in the USA and Europe
- ISO 14540 compliant

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel. Carbonitrided valve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>Specific seals available in case of higher temperatures   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 50,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |



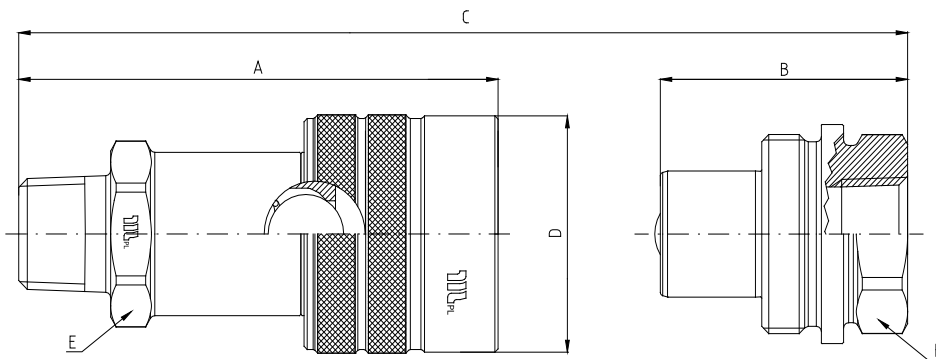
## SCREW HYDRAULIC CYLINDERS (BALL) - TERMINATION ENDS

NPT



**Q05611280C**  
**NPT TERMINATION ENDS**  
**TO ANSI B1.20.3**

| SIZE |      |      | PART NUMBER      |               | THREAD    | DIMENSIONS mm |   |        |       |    |   |  |  |
|------|------|------|------------------|---------------|-----------|---------------|---|--------|-------|----|---|--|--|
| DN   | inch | Size | Female coupling  | Male coupling |           | A             | B | C      | D     | E  | F |  |  |
| 6.3  | 1/4" | -04  | Q05611280C-04-04 |               | 1/4" NPTF | 62.4          | - | A+B-19 | ø30   | 21 |   |  |  |
| 10   | 3/8" | -06  | Q05611280C-06-04 | -             | 1/4" NPTF | 75.6          | - | A+B-25 | ø35,6 | 25 | - |  |  |
|      |      |      | Q05611280C-06-06 | -             | 3/8" NPTF | 75.6          | - | A+B-25 | ø35,6 | 25 | - |  |  |



**Q05510341C**  
**NPT TERMINATION ENDS**  
**TO ANSI B1.20.3**

| SIZE |      |      | PART NUMBER     |                  | THREAD    | DIMENSIONS mm |    |        |   |   |    |  |  |
|------|------|------|-----------------|------------------|-----------|---------------|----|--------|---|---|----|--|--|
| DN   | inch | Size | Female coupling | Male coupling    |           | A             | B  | C      | D | E | F  |  |  |
| 6.3  | 1/4" | -04  | -               | Q05510341C-04-04 | 1/4" NPTF | -             | 32 | A+B-19 | - | - | 22 |  |  |
| 10   | 3/8" | -06  | -               | Q05510341C-06-04 | 1/4" NPTF | -             | 39 | A+B-25 | - | - | 27 |  |  |
|      |      |      | -               | Q05510341C-06-06 | 3/8" NPTF | -             | 39 | A+B-25 | - | - | 27 |  |  |

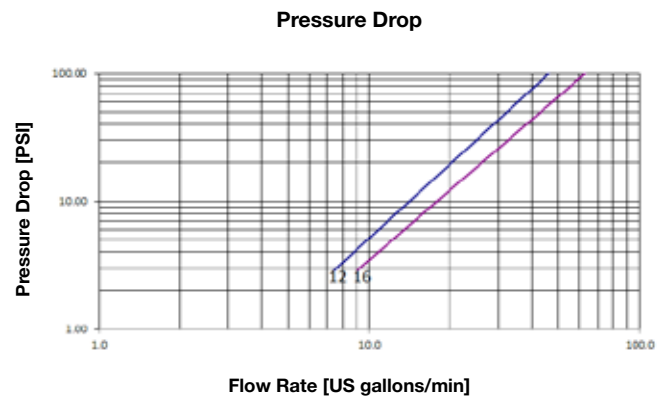
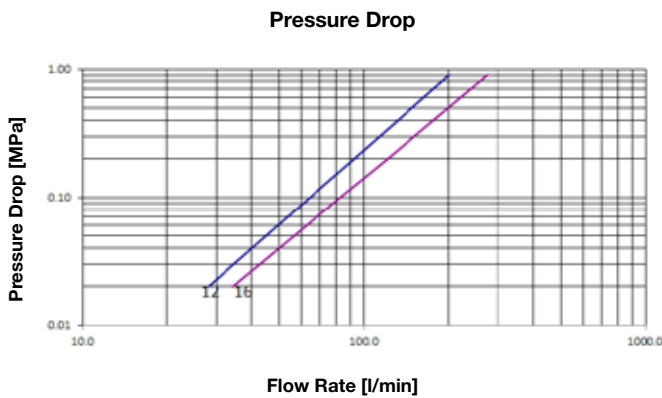
Q.SAFE  
Q 26-5





|             |                                   |   |   |                               |   |
|-------------|-----------------------------------|---|---|-------------------------------|---|
|             |                                   |   |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm | inch | dash | MPa | PSI  | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |                   |
|----|------|------|-----|------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|-------------------|
|    |      |      |     |      |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |                   |
| 20 | ¾    | 12   | 25  | 3625 | 92    | 24.3   | 7.5 | 0.458      | 100  | 14500 | 120    | 17400 | 110   | 15950 | Residual pressure |
| 25 | 1    | 16   | 25  | 3625 | 121   | 32.0   | 9   | 0.549      | 120  | 17400 | 140    | 20300 | 130   | 18850 | Residual pressure |



### Product description:

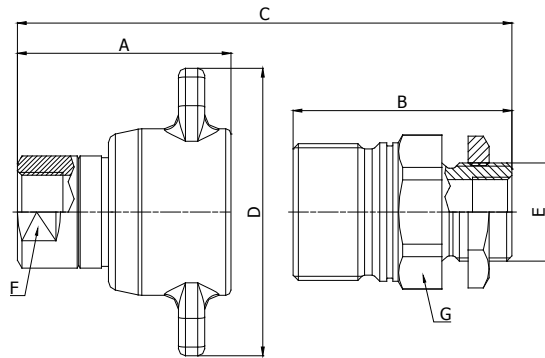
- Screw-type couplings specially designed for truck trailer applications
- Wing Nut shaped sleeve for easier connection and disconnection by hand, also in case of residual pressure in the line
- Connection secured on the thread between the sleeve and the female coupling
- Shut-off by poppet valve
- Interchangeable with similar products available on the market

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel. Carbonitrided valve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures and 1:2 for static pressures   |
| <b>Test Specifications</b> | ISO 7241-2   |



## SCREW FOR TRUCK - TERMINATION ENDS

BSP



**Q05811041A**

**Q05711041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |    |     |     |        |    |    |  |
|------|------|------|------------------|------------------|--------|---------------|----|-----|-----|--------|----|----|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B  | C   | D   | E      | F  | G  |  |
| 20   | 3/4" | -12  | Q05811041A-12-12 | Q05711041A-12-12 | 3/4"   | 78            | 78 | 138 | 117 | 1.1/4" | 33 | 46 |  |
| 25   | 1"   | -16  | Q05811041A-16-16 | Q05711041A-16-16 | 1"     | 83            | 83 | 148 | 117 | 1.1/4" | 40 | 55 |  |



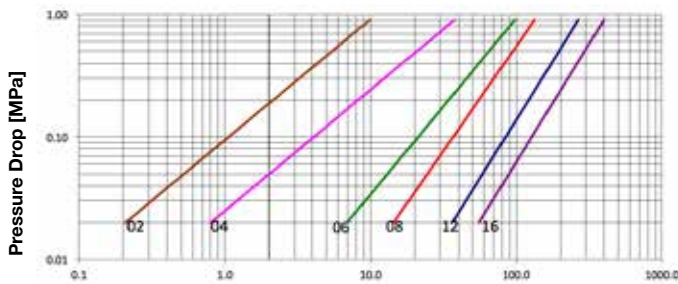




|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

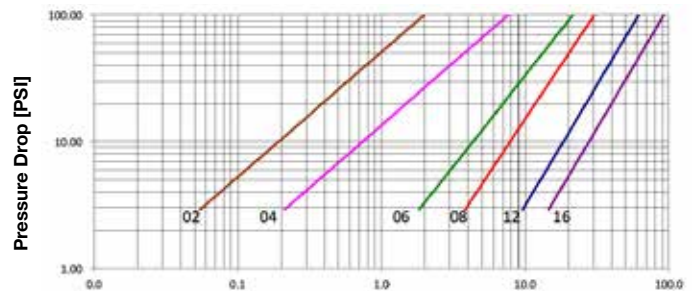
| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb.  | cc.  | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|----|------|------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |      |      |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 5    | 1/8  | 02   | 40  | 5800 | 2     | 0.6    | 28 | 6.3  | 0.5  | 0.031      | 210  | 30450 | 280    | 40600 | 160   | 23200 | Not allowed |
| 6.3  | 1/4  | 04   | 35  | 5075 | 8     | 2.2    | 36 | 8.1  | 0.8  | 0.049      | 150  | 21750 | 220    | 31900 | 230   | 33350 | Not allowed |
| 10   | 3/8  | 06   | 30  | 4350 | 34    | 9.1    | 38 | 8.5  | 1.5  | 0.092      | 130  | 18850 | 160    | 23200 | 180   | 26100 | Not allowed |
| 12.5 | 1/2  | 08   | 30  | 4350 | 55    | 14.6   | 50 | 11.2 | 2.5  | 0.153      | 120  | 17400 | 130    | 18850 | 140   | 20300 | Not allowed |
| 20   | 3/4  | 12   | 25  | 3625 | 122   | 32.1   | 56 | 12.6 | 8.5  | 0.519      | 110  | 15950 | 110    | 15950 | 130   | 18850 | Not allowed |
| 25   | 1    | 16   | 25  | 3625 | 183   | 48.3   | 56 | 12.6 | 15.0 | 0.915      | 110  | 15950 | 110    | 15950 | 100   | 14500 | Not allowed |

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

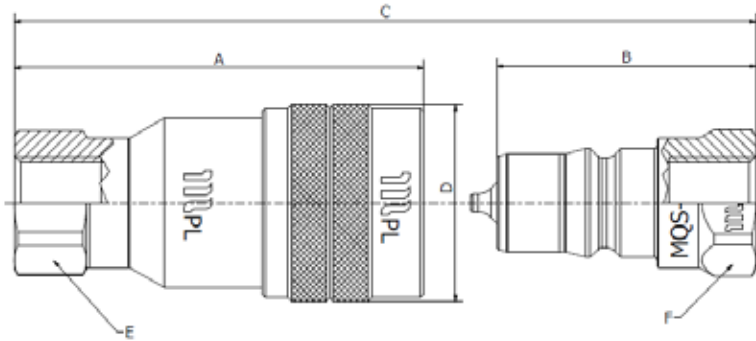
### Product description:

- Reference series for all industrial applications
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by latching the ball system
- Shut-off by poppet valve
- High resistant materials
- Interchangeable according to ISO 7241-1 series B
- FKM (VITON) seal

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male in AISI 316 steel. Couplings in high grade carbon steel hardened. Springs in C98 steel, seals in FKM (VITON) (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -25°C up to +200°C<br>For other temperatures, the quick coupling is assembled with specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |



**BSP**



**Q02423041A**

**Q02123041A**

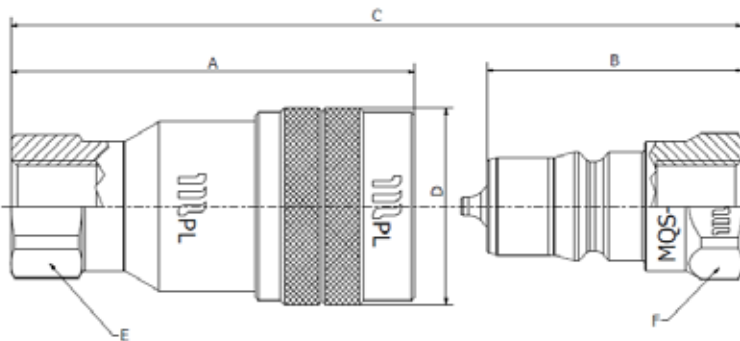
**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

**FKM (VITON) SEAL**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q02423041A-04-04 | Q02123041A-04-04 | 1/4"   | 58.8          | 37.2 | A+B-21,6 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q02423041A-06-06 | Q02123041A-06-06 | 3/8"   | 66.2          | 41.5 | A+B-24,7 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08  | Q02423041A-08-08 | Q02123041A-08-08 | 1/2"   | 74            | 46.5 | A+B-27,5 | ø42 | 30 | 27 |
| 20   | 3/4" | -12  | Q02423041A-12-12 | Q02123041A-12-12 | 3/4"   | 91            | 56.5 | A+B-34,5 | ø52 | 36 | 36 |
| 25   | 1"   | -16  | Q02423041A-16-16 | Q02123041A-16-16 | 1"     | 104           | 64.5 | A+B-39,5 | ø60 | 41 | 41 |

**NPT**



**Q02423341A**

**Q02123341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

**FKM (VITON) SEAL**

| SIZE |      |      | PART NUMBER      |                  | THREAD    | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |           | A             | B    | C        | D   | E  | F  |
| 5    | 1/8" | -02  | Q02423341A-02-02 | Q02123341A-02-02 | 1/8" NPTF | 48.5          | 30   | A+B-18,5 | ø22 | 15 | 14 |
| 6.3  | 1/4" | -04  | Q02423341A-04-04 | Q02123341A-04-04 | 1/4" NPTF | 58.8          | 37.2 | A+B-21,6 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q02423341A-06-06 | Q02123341A-06-06 | 3/8" NPTF | 66.2          | 41.5 | A+B-24,7 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08  | Q02423341A-08-08 | Q02123341A-08-08 | 1/2" NPTF | 74            | 46.5 | A+B-27,5 | ø42 | 30 | 27 |
| 20   | 3/4" | -12  | Q02423341A-12-12 | Q02123341A-12-12 | 3/4" NPTF | 91            | 56.5 | A+B-34,5 | ø52 | 36 | 36 |
| 25   | 1"   | -16  | Q02423341A-16-16 | Q02123341A-16-16 | 1" NPTF   | 104           | 64.5 | A+B-39,5 | ø60 | 41 | 41 |

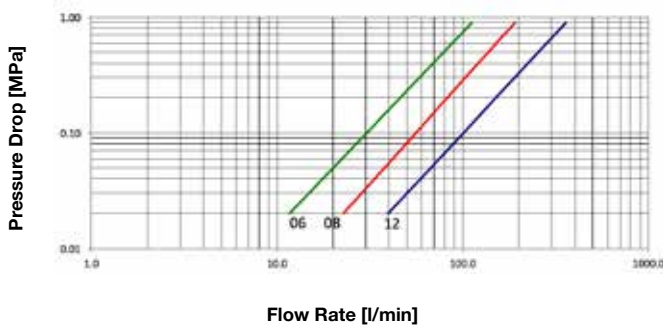




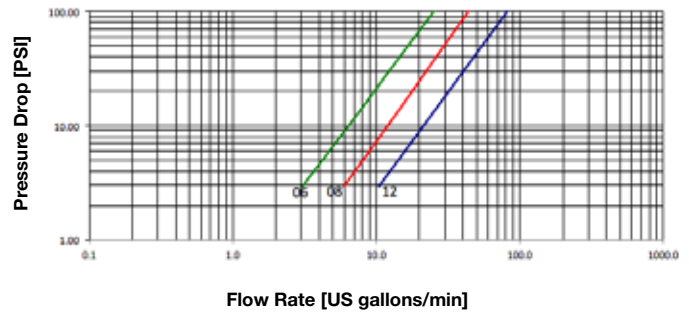
|             |   |  |   |                          |   |                               |   |
|-------------|---|--|---|--------------------------|---|-------------------------------|---|
|             | <b>MPa</b>                                    |  | <b>N</b>                                      |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE - CONNECTED (Dynamic)</b> | <b>WORKING PRESSURE - DISCONNECTED (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa |      | PSI |      | l/ min | US GPM | N   | lb.  | cc.   | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-----|------|--------|--------|-----|------|-------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      | MPa | PSI  | MPa | PSI  |        |        |     |      |       |            | MPa  | PSI   | MPa    | PSI   |       |       |             |
| 10   | 3/8  | 06   | 25  | 3625 | 25  | 3625 | 46     | 12.2   | 130 | 29.2 | 0.007 | 0.0004     | 100  | 14500 | 100    | 14500 | 140   | 20300 | Not allowed |
| 12.5 | 1/2  | 08   | 25  | 3625 | 25  | 3625 | 82     | 21.7   | 140 | 31.5 | 0.008 | 0.0005     | 100  | 14500 | 100    | 14500 | 140   | 20300 | Not allowed |
| 19   | 3/4  | 12   | 22  | 3190 | 22  | 3190 | 150    | 39.6   | 210 | 47.2 | 0.009 | 0.0005     | 90   | 13050 | 100    | 14500 | 120   | 17400 | Not allowed |

Pressure Drop



Pressure Drop



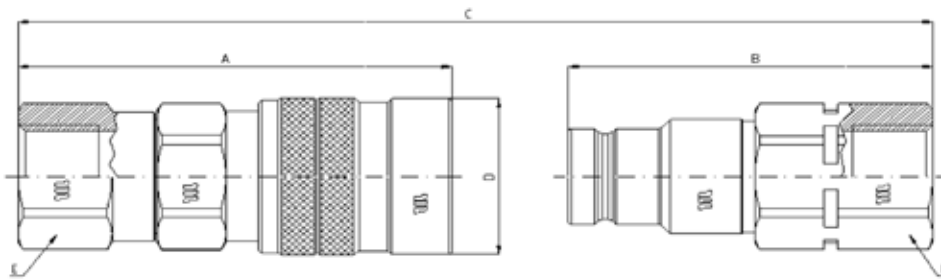
### Product description:

- Flat mating surfaces easily wiped clean to prevent contamination and spillage during connection/ disconnection
- Connection is made by pushing the male coupling and disconnection by pulling back the sleeve of the female
- Positive, quick connection of the male into the female by the latching ball system
- Shut-off by flat valve
- Interchangeability according to ISO 16028 and HTMA standards (only for 3/8")
- 1,000,000 cycles at 133% of rated (freq. 1Hz - connected conditions)
- FKM (VITON) seal

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female and male coupling in steel, with some stressed tempered or carbonitrided areas. Springs in AISI and C98 steel, FKM (VITON) seal. Other materials (VITON, EPDM or any others) on request |
| <b>Working Temperature</b> | -25°C up to +200°C<br>For other temperatures the coupling is assembled with the specified seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions.<br>1,000,000 cycles at 133% of rated one (freq. 1Hz) in connected conditions.                                  |
| <b>Test Specifications</b> | ISO 16028:1997aMD.1.2006 (E) and ISO 7241-2  |



BSP



**Q04123041A**

**Q03923041A**

**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**







**FKM (VITON) SEAL**

| SIZE |      |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |     |    |    |  |  |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN   | inch | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D   | E  | F  |  |  |
| 10   | 3/8" | -06  | Q04123041A-06-06 | Q03923041A-06-06 | 3/8"   | 74.9          | 62.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
|      |      |      | Q04123041A-06-08 | Q03923041A-06-08 | 1/2"   | 77.9          | 65.5 | A+B-15,9 | ø32 | 27 | 27 |  |  |
| 12.5 | 1/2" | -08  | Q04123041A-08-08 | Q03923041A-08-08 | 1/2"   | 84.7          | 72.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
|      |      |      | Q04123041A-06-12 | Q03923041A-08-12 | 3/4"   | 86.7          | 74.5 | A+B-17,1 | ø38 | 34 | 34 |  |  |
| 20   | 3/4" | -12  | Q04123041A-12-12 | Q03923041A-12-12 | 3/4"   | 105.9         | 88.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |
|      |      |      | Q04123041A-12-16 | Q03923041A-12-16 | 1"     | 108.9         | 91.5 | A+B-21,7 | ø48 | 41 | 41 |  |  |



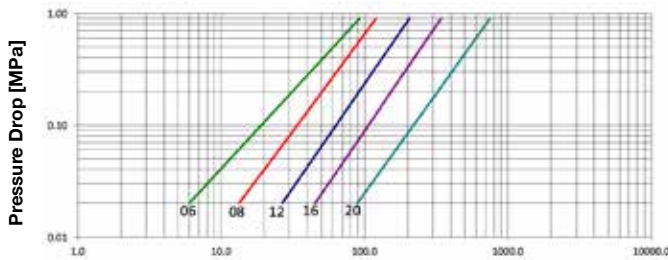




|  |  |  |  |  |  |
|---|---|---|---|---|---|
| SIZE  | WORKING PRESSURE (Dynamic)  | RATED FLOW at 0.2 MPa of pressure drop  | OIL SPILLAGE Connection/ Disconnection  | MINIMUM BURST PRESSURE  | CONNECTION/ DISCONNECTION UNDER PRESSURE  |

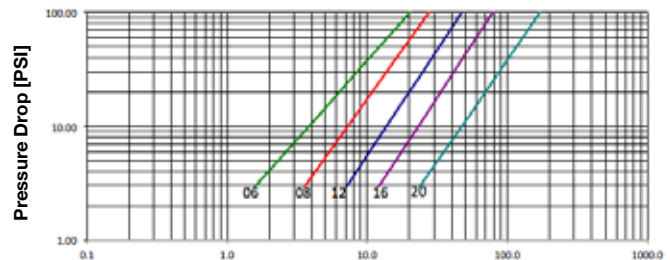
| mm   | inch  | dash | MPa | PSI  | l/min | US GPM | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|-------|------|-----|------|-------|--------|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |       |      |     |      |       |        |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 10   | 3/8   | 06   | 35  | 5075 | 31    | 8.2    | 1.5 | 0.092      | 150  | 21750 | 180    | 26100 | 180   | 26100 | Not allowed |
| 12.5 | 1/2   | 08   | 35  | 5075 | 51    | 13.5   | 2.2 | 0.134      | 140  | 20300 | 220    | 31900 | 250   | 36250 | Not allowed |
| 20   | 3/4   | 12   | 32  | 4640 | 92    | 24.3   | 4   | 0.244      | 130  | 18850 | 220    | 31900 | 200   | 29000 | Not allowed |
| 25   | 1     | 16   | 32  | 4640 | 156   | 41.2   | 7.5 | 0.458      | 130  | 18850 | 180    | 26100 | 180   | 26100 | Not allowed |
| 31   | 1 1/4 | 20   | 30  | 4350 | 325   | 85.9   | 15  | 0.916      | 120  | 17400 | 150    | 21750 | 160   | 23200 | Not allowed |

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

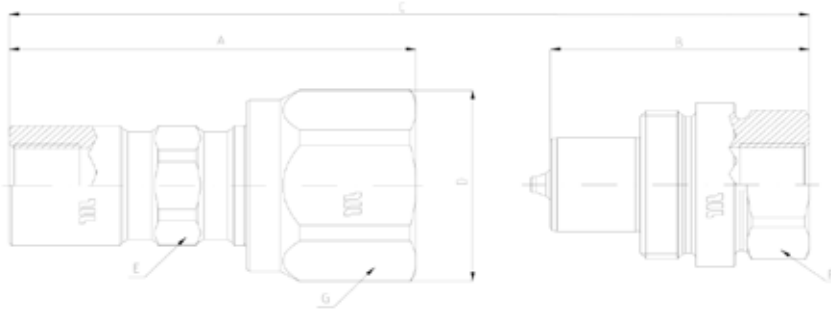
### Product description:

- Screw-on connection/disconnection system
- Sleeve with hexagon area internal components reinforced, made in steel
- Hardened valve bodies
- Three-part poppet valve with a moulded shaped seal
- Mechanical backstop to prevent partial enclosures of valves due to peaks and reverse flow
- Interchangeable with other products and widely used on the market
- Accessories (plugs and caps) and spare part kits available
- Wide range of termination ends
- FKM (VITON) seal

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Couplings in steel with some stressed area hardened. Carbonitrided valve, springs in C98 steel, FKM (VITON) seal and back-up ring in PTFE |
| <b>Working Temperature</b> | -25°C up to +200°C  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



BSP



**Q05423041A**

**Q05323041A**

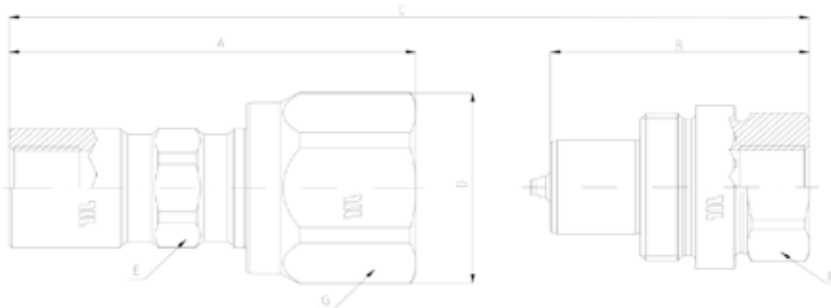
**BSP TERMINATION ENDS**

**TO DIN 3852 X TYPE**

**FKM (VITON) SEALS**

| SIZE |        |      | PART NUMBER      |                  | THREAD | DIMENSIONS mm |      |          |       |    |    |    |  |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|----|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |        | A             | B    | C        | D     | E  | F  | G  |  |
| 10   | 3/8"   | -06  | Q05423041A-06-06 | Q05323041A-06-06 | 3/8"   | 72.5          | 46.2 | A+B-25,9 | ø38,5 | 22 | 27 | 35 |  |
| 12.5 | 1/2"   | -08  | Q05423041A-08-08 | Q05323041A-08-08 | 1/2"   | 82.1          | 54.4 | A+B-27,3 | ø45   | 27 | 32 | 41 |  |
| 20   | 3/4"   | -12  | Q05423041A-12-12 | Q05323041A-12-12 | 3/4"   | 93.7          | 61.4 | A+B-31,9 | ø55   | 35 | 41 | 50 |  |
| 25   | 1"     | -16  | Q05423041A-16-16 | Q05323041A-16-16 | 1"     | 105.8         | 68.3 | A+B-37   | ø66   | 41 | 50 | 60 |  |
| 31.5 | 1.1/4" | -20  | Q05423041A-20-20 | Q05323041A-20-20 | 1.1/4" | 131.9         | 82   | A+B-53,9 | ø88   | 55 | 70 | 80 |  |

NPT



**Q05423341A**

**Q05323341A**

**NPTF TERMINATION END**

**TO ANSI B 1.20.3**

**FKM (VITON) SEALS**

| SIZE |        |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |       |    |    |    |  |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-------|----|----|----|--|
| DN   | inch   | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D     | E  | F  | G  |  |
| 10   | 3/8"   | -06  | Q05423341A-06-06 | Q05323341A-06-06 | 3/8" NPTF   | 72.5          | 46.2 | A+B-25,9 | ø38,5 | 22 | 27 | 35 |  |
| 12.5 | 1/2"   | -08  | Q05423341A-08-08 | Q05323341A-08-08 | 1/2" NPTF   | 82.1          | 54.4 | A+B-27,3 | ø45   | 27 | 32 | 41 |  |
| 20   | 3/4"   | -12  | Q05423341A-12-12 | Q05323341A-12-12 | 3/4" NPTF   | 93.7          | 61.4 | A+B-31,9 | ø55   | 35 | 41 | 50 |  |
| 25   | 1"     | -16  | Q05423341A-16-16 | Q05323341A-16-16 | 1" NPTF     | 105.8         | 68.3 | A+B-37   | ø66   | 41 | 50 | 60 |  |
| 31.5 | 1.1/4" | -20  | Q05423341A-20-20 | Q05323341A-20-20 | 1.1/4" NPTF | 131.9         | 82   | A+B-53,9 | ø88   | 55 | 70 | 80 |  |





# QUICK COUPLINGS

DHI



# Q.SAFE DHI

## INTRODUCTION

---

### **MQS-DHI “DIRECT HOSE INTEGRATION”**

An innovative system to enable direct assembly of the quick-release coupling to the flexible hose, and therefore avoiding intermediate connection elements.

Some of the benefits of this solution are:

- Reduced risk of oil leakage
- Elimination of unscrewing problems in the field
- Reduction in the number of assembly elements leading to reduced assembly cost, minimised risk of assembly operation mistakes and greater safety in severe working conditions, as well as easier maintenance and replacement operations

Design solutions are available for most common series ISO A, ISO B, Push-Pull & Flat-Face

**DHI quick release coupling maintenance is possible without the need to replace the flexible hose.**

# Q.SAFE DHI INDEX

| QUICK COUPLINGS SERIES     | FEMALE COUPLING | MALE COUPLING | SHUT-OFF SYSTEM | SPECIFICATIONS    | CONNECTION    | SIZE |      |      |      |      |      |    |        |        |    | SECTION | PAGE |
|----------------------------|-----------------|---------------|-----------------|-------------------|---------------|------|------|------|------|------|------|----|--------|--------|----|---------|------|
|                            |                 |               |                 |                   |               | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |         |      |
| MQS-DHI<br>ISO A           | Q308            | Q302          | Poppet Valve    | ISO 7241 SERIES A | Locking Balls |      |      |      |      |      |      |    |        |        |    | Q29     | 1    |
| MQS-DHI<br>ISO A push-pull | Q313            | -             | Poppet Valve    | ISO 7421 SERIES A | Locking Balls |      |      |      |      |      |      |    |        |        |    |         | 5    |
| MQS-DHI<br>ISO B           | Q324            | Q321          | Poppet Valve    | ISO 7241 SERIES B | Locking Balls |      |      |      |      |      |      |    |        |        |    |         | 9    |
| MQS-DHI<br>Flat-face       | Q341            | Q339          | Flat Valve      | ISO 16028 e HTMA  | Locking Balls |      |      |      |      |      |      |    |        |        |    |         | 13   |

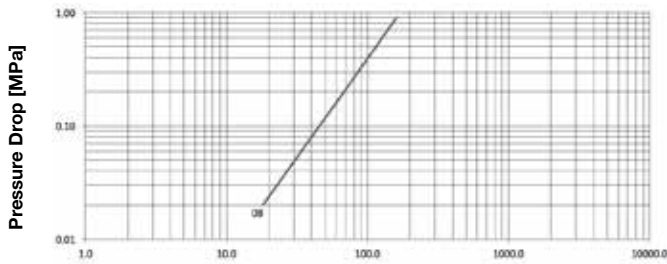




|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

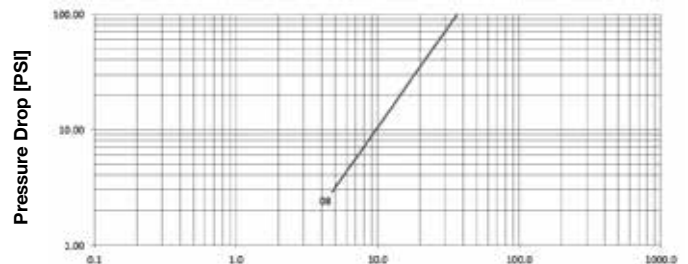
| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb.  | cc. | cubic inch | Male |       | Female |       | M & F |       | Not allowed |
|------|------|------|-----|------|-------|--------|----|------|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |      |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 12.5 | 1/2  | 08   | 30  | 4350 | 75    | 19.8   | 80 | 18.0 | 1.8 | 0.110      | 125  | 18125 | 150    | 21750 | 150   | 21750 | Not allowed |

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

### Product description:

- Dimensional and performance requirements conform to ISO 7241-1 series A, ensuring worldwide interchangeability
- Connect by pulling back the sleeve (with female ISO A)
- Positive connection by the locking ball system
- Shut-off poppet valve provides an effective hydraulic sealing
- When female bulkhead is mounted on the outside sleeve (PUSH-PULL), the coupling ensures breakaway features according to ISO 5675

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female coupling in steel with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel. Carbonitrided valve and sleeve, springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling may be assembled with the specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



Quick release couplings DHI maintenance without flexible hose replacement

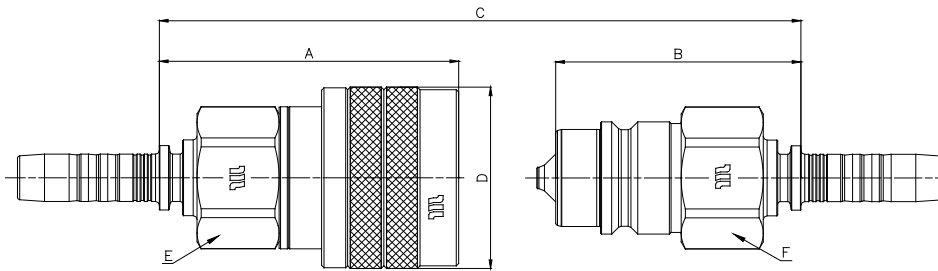


### Q30811MF1A

FEMALE ISO-A COUPLING  
MULTIFIT INSERT

### Q30211MF1A

MALE ISO-A COUPLING  
MULTIFIT INSERT



| SIZE |      |      | PART NUMBER      |                  | THREAD       | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |              | A             | B    | C        | D   | E  | F  |
| 12.5 | 1/2" | -08  | Q30811MF1A-08-04 | Q30211MF1A-08-04 | 1/4" MF2000  | 62.5          | 51.3 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q30811MF1A-08-05 | Q30211MF1A-08-05 | 5/16" MF2000 | 62            | 51   | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q30811MF1A-08-06 | Q30211MF1A-08-06 | 3/8" MF2000  | 62            | 50.8 | A+B-21,8 | ø38 | 27 | 27 |
|      |      |      | Q30811MF1A-08-08 | Q30211MF1A-08-08 | 1/2" MF2000  | 60.4          | 49.2 | A+B-21,8 | ø38 | 27 | 27 |



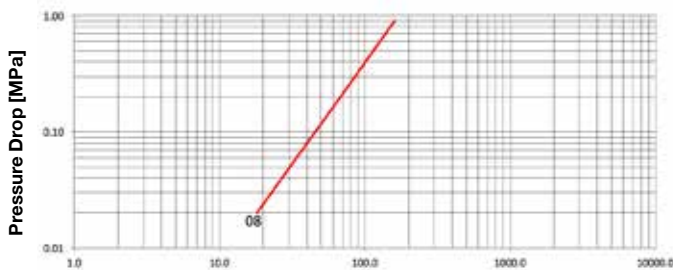
## PUSH-PULL - TERMINATION ENDS



|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

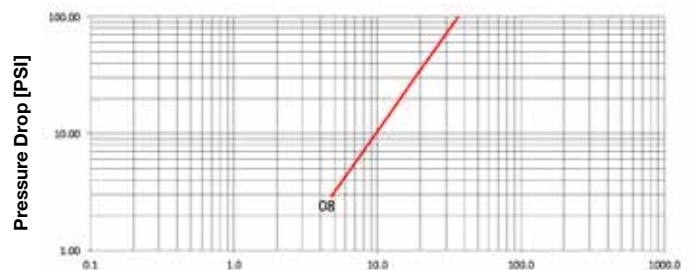
| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N   | lb. | cc. | cubic inch | Female |       | M & F |       | Not allowed |
|------|------|------|-----|------|-------|--------|-----|-----|-----|------------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |     |     |     |            | MPa    | PSI   | MPa   | PSI   |             |
| 12.5 | ½    | 08   | 30  | 4350 | 68    | 18.0   | 110 | 244 | 2   | 0.122      | 140    | 20300 | 140   | 20300 |             |

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

### Product description:

- Female coupling designed for agriculture applications, connectable with ISO 7241-1 series A male couplings
- PUSH-PULL connection and disconnection system, in case of bulkhead mounting on the external sleeve
- Break-away function according to ISO 5675 (in case of bulkhead mounting on the external sleeve)
- Positive connection by latching balls system
- Shut-off by poppet valve
- High resistant materials
- Dimensions and performances according to ISO 7241-1 series A

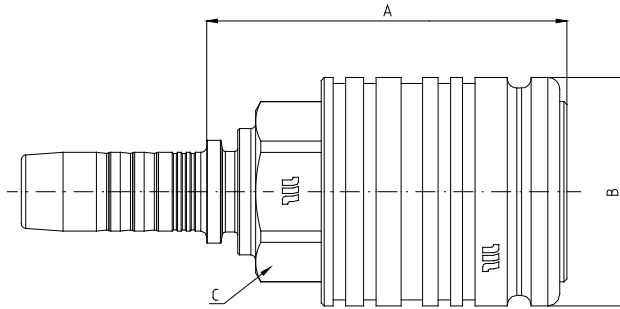
|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female couplings in steel with some hardened areas, in correspondence to the most stressed points. Carbonitrided valve and sleeve, springs in C98 steel, latching balls in high resistance 100 C6 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling is assembled with specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2  |



## Q31311MF1A

FEMALE PUSH PULL  
COUPLING

MULTIFIT INSERT



| SIZE |      |      | PART NUMBER      | THREAD      | DIMENSIONS mm |     |    |   |   |   |
|------|------|------|------------------|-------------|---------------|-----|----|---|---|---|
| DN   | inch | Size | Female coupling  |             | A             | B   | C  | D | E | F |
| 12.5 | 1/2" | -08  | Q31311MF1A-08-06 | 3/8" MF2000 | 62            | ø38 | 27 |   |   |   |
|      |      |      | Q31311MF1A-08-08 | 1/2" MF2000 | 60.4          | ø38 | 27 |   |   |   |



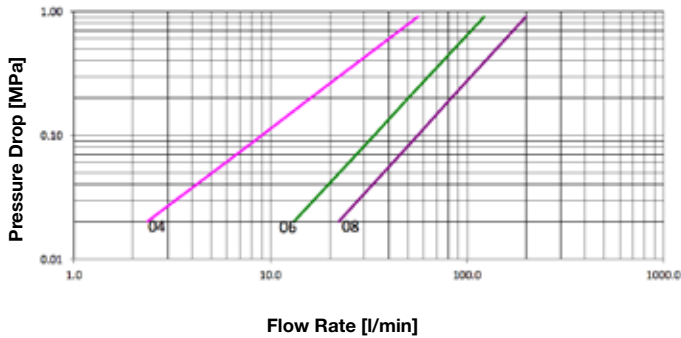




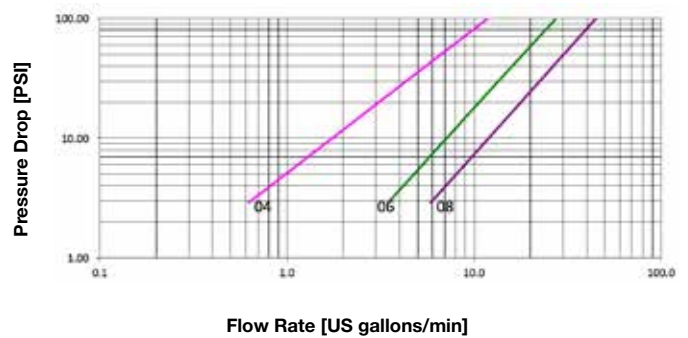
|             |                                   |   |                          |   |                               |   |
|-------------|-----------------------------------|---|--------------------------|---|-------------------------------|---|
|             |                                   |   |                          |   |                               |   |
| <b>SIZE</b> | <b>WORKING PRESSURE (Dynamic)</b> | <b>RATED FLOW at 0.2 MPa of pressure drop</b> | <b>CONNECTION EFFORT</b> | <b>OIL SPILLAGE Connection/ Disconnection</b> | <b>MINIMUM BURST PRESSURE</b> | <b>CONNECTION/ DISCONNECTION UNDER PRESSURE</b> |

| mm   | inch | dash | MPa | PSI  | l/min | US GPM | N  | lb.  | cc. | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-------|--------|----|------|-----|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      |     |      |       |        |    |      |     |            | MPa  | PSI   | MPa    | PSI   | MPa   | PSI   |             |
| 6.3  | ¼    | 04   | 40  | 5800 | 16    | 4.3    | 40 | 9.0  | 0.8 | 0.049      | 180  | 26100 | 190    | 27550 | 165   | 23925 | Not allowed |
| 10   | ¾    | 06   | 35  | 5075 | 51    | 13.5   | 40 | 9.0  | 1.5 | 0.092      | 145  | 21025 | 160    | 23200 | 160   | 23200 | Not allowed |
| 12.5 | ½    | 08   | 35  | 5075 | 84    | 22.0   | 70 | 15.7 | 2.5 | 0.153      | 145  | 21025 | 145    | 21025 | 160   | 23200 | Not allowed |

Pressure Drop



Pressure Drop



### Product description:

- Reference series for all industrial applications
- Simple connection and disconnection by pulling back the sleeve
- Positive, quick connection of the male into the female by latching the ball system
- Shut-off by poppet valve
- High resistant materials
- Interchangeable according to ISO 7241-1 series B

|                            |  |
|----------------------------|--|
| <b>Material</b>            | Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Male couplings in high grade carbon steel hardened. Springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the quick coupling is assembled with specific seals   |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures  |
| <b>Impulse Pressures</b>   | Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)   |
| <b>Test Specifications</b> | ISO 7241-2   |

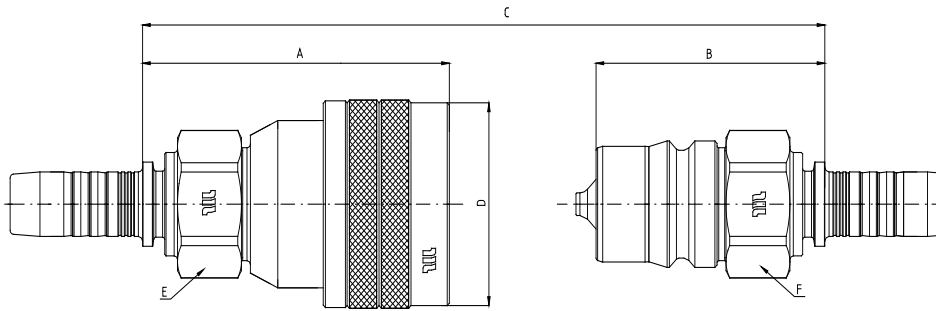


**Q32411MF1A**

**Q32111MF1A**

**FEMALE & MALE ISO B  
COUPLINGS**

**MULTIFIT INSERT**



| SIZE |      |      | PART NUMBER      |                  | THREAD        | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |               | A             | B    | C        | D   | E  | F  |
| 6.3  | 1/4" | -04  | Q32411MF1A-04-06 | Q32111MF1A-04-06 | 3/8" multifit | 56            | 45.1 | A+B-21,2 | ø28 | 19 | 19 |
| 10   | 3/8" | -06  | Q32411MF1A-06-06 | Q32111MF1A-06-06 | 3/8" multifit | 65.2          | 51.3 | A+B-24,4 | ø35 | 22 | 22 |
| 12.5 | 1/2" | -08  | Q32411MF1A-08-08 | Q32111MF1A-08-08 | 1/2" multifit | 72            | 53.7 | A+B-27,2 | ø42 | 27 | 27 |



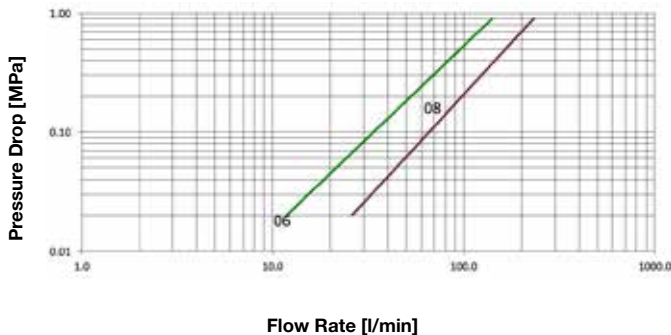
## FLAT FACE - TERMINATION ENDS



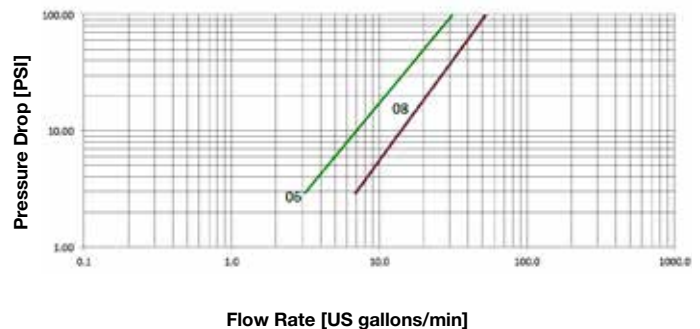
|      | MPa                                    |   | FLOW RATE →                            | N                 | OIL SPILLAGE Connection/Disconnection | MINIMUM BURST PRESSURE | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|--|---|--|-------------------|---------------------------------------|------------------------|---|
| SIZE | WORKING PRESSURE - CONNECTED (Dynamic) | WORKING PRESSURE - DISCONNECTED (Dynamic) | RATED FLOW at 0.2 MPa of pressure drop | CONNECTION EFFORT |                                       |                        |   |

| mm   | inch | dash | MPa |      | PSI |      | l/min | US GPM | N   | lb.  | cc.   | cubic inch | Male |       | Female |       | M & F |       |             |
|------|------|------|-----|------|-----|------|-------|--------|-----|------|-------|------------|------|-------|--------|-------|-------|-------|-------------|
|      |      |      | MPa | PSI  | MPa | PSI  |       |        |     |      |       |            | MPa  | PSI   | MPa    | PSI   |       |       |             |
| 10   | 3/8  | 06   | 35  | 5075 | 25  | 3625 | 53    | 14.0   | 130 | 29.2 | 0.007 | 0.0004     | 140  | 20300 | 125    | 18125 | 145   | 21025 | Not allowed |
| 12.5 | 1/2  | 08   | 35  | 5075 | 25  | 3625 | 98    | 25.9   | 140 | 31.5 | 0.008 | 0.0005     | 135  | 19575 | 115    | 16675 | 145   | 21025 | Not allowed |

Pressure Drop



Pressure Drop

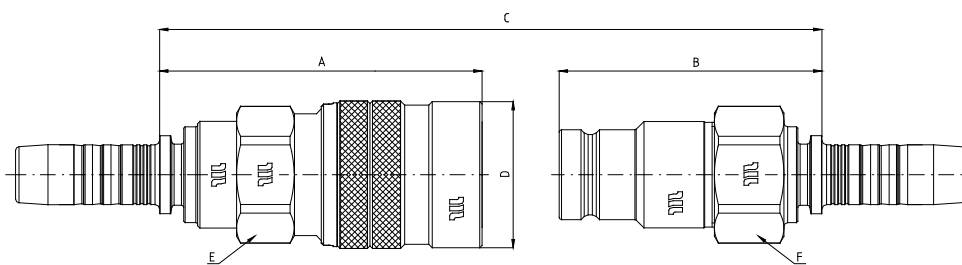


### Product description:

- Connection is made by pushing the male coupling and disconnection by pulling back the sleeve of the female
- Flat mating surfaces easily wiped clean to prevent contamination and spillage during connection/disconnection
- Stainless steel springs in the female coupling
- Interchangeability according to ISO 16028 and HTMA standards

|                            |   |
|----------------------------|---|
| <b>Material</b>            | Female and male coupling in steel, with some stressed tempered or carbonitrided areas. Springs in AISI and C98 steel, seals in polyurethane NBR. Other materials (MTON, EPDM or any others) on request. |
| <b>Working Temperature</b> | -22°F up to +230°F (-30°C up to +110°C)<br>For other temperatures, the coupling may be assembled with the specific seals  |
| <b>Safety Factor</b>       | 4:1 for dynamic pressures   |
| <b>Impulse Pressures</b>   | 100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions.<br>1,000,000 cycles at 133% of the rated one (freq. 1Hz) in connected conditions.                                       |
| <b>Test Specifications</b> | ISO 16028:1997aMD.1.2006 (E) and ISO 7241-2   |





### Q34111MF1A

FEMALE FLAT FACE  
COUPLING

MULTIFIT INSERT

### Q33911MF1A

MALE FLAT FACE COUPLING

MULTIFIT INSERT

| SIZE |      |      | PART NUMBER      |                  | THREAD      | DIMENSIONS mm |      |          |     |    |    |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN   | inch | Size | Female coupling  | Male coupling    |             | A             | B    | C        | D   | E  | F  |
| 10   | 3/8" | -06  | Q34111MF1A-06-06 | Q33911MF1A-06-06 | 3/8" MF2000 | 69.7          | 58.3 | A+B-15,9 | ø32 | 27 | 27 |
|      |      |      | Q34111MF1A-06-08 | Q33911MF1A-06-08 | 1/2" MF2000 | 69.6          | 56.7 | A+B-15,9 | ø32 | 27 | 27 |
| 12.5 | 1/2" | -08  | Q34111MF1A-08-08 | Q33911MF1A-08-08 | 1/2" MF2000 | 78.9          | 66.7 | A+B-17,1 | ø38 | 34 | 34 |
|      |      |      | Q34111MF1A-08-12 | Q33911MF1A-08-12 | 3/4" MF2000 | 75.8          | 65.1 | A+B-17,1 | ø38 | 34 | 34 |







# QUICK COUPLINGS

## ACCESSORIES & SPARE PARTS



# Q.SAFE ACCESSORIES INDEX

| QUICK COUPLINGS SERIES | FEMALE COUPLING | MALE COUPLING | SHUT-OFF SYSTEM | SPECIFICATIONS | CONNECTION | SIZE |      |      |      |      |      |    |        |        |    | SECTION NUMBER |  |     |
|------------------------|-----------------|---------------|-----------------|----------------|------------|------|------|------|------|------|------|----|--------|--------|----|----------------|--|-----|
|                        |                 |               |                 |                |            | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |                |  |     |
| Parking                | All range       | -             | -               | -              | -          |      |      |      |      |      |      |    |        |        |    |                |  | Q30 |
| Plug and Caps          | All range       | -             | -               | -              | -          |      |      |      |      |      |      |    |        |        |    |                |  | Q31 |
| Spare Parts            | All range       | -             | -               | -              | -          |      |      |      |      |      |      |    |        |        |    |                |  | Q32 |





### Q1A0114

PARKING FOR MQS-A MALE  
BULKHEAD MOUNTING

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size | Parking     |          |        |
| 12.5 | 1/2" | -08  | Q1A0114N-08 | STEEL    | -      |



### Q1A0104

PARKING FOR MQS-A MALE

| SIZE |      |      | PART NUMBER  | MATERIAL | COLOUR |
|------|------|------|--------------|----------|--------|
| DN   | inch | Size | Parking      |          |        |
| 12.5 | 1/2" | -08  | Q1A0104N-08  | STEEL    | -      |
|      |      |      | Q1A0104N-08B | STEEL    | -      |



### Q1AF104

PARKING  
FOR MQS-VB (BREAKING  
VALVES)

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size | Parking     |          |        |
| 12.5 | 1/2" | -08  | Q1AF104N-08 | STEEL    | -      |



## Q1AH104

PARKING

FOR MQS-VS  
(AGRICULTURAL VALVES)

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size | Parking     |          |        |
| 12.5 | 1/2" | -08  | Q1AH104N-08 | STEEL    | -      |

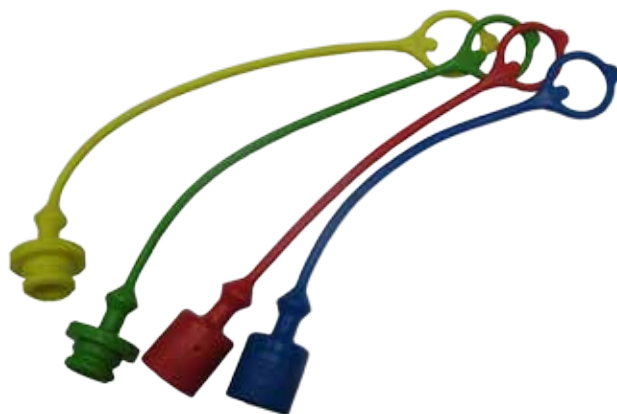


## Q1AP104

PARKING

FOR MQS-ST  
(SCREW TYPE MALE FOR TRUCK)

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size | Parking     |          |        |
| 20   | 3/4" | -12  | Q1AP104N-12 | STEEL    | -      |
| 25   | 1"   | -16  | Q1AP104N-16 | STEEL    | -      |



**Q1A0B00**

**Q1A1B00**

**PLUGS AND CAPS**

**FOR MQS-A (ISO A)**

**AND MQS-AP (ISO A UNDER PRESSURE) SERIES**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |          |        |
| 6.3  | 1/4" | -04  | Q1A1B00R-04              | Q1A0B00R-04           | PVC      | RED    |
|      |      |      | Q1A1B00Y-04              | Q1A0B00Y-04           | PVC      | YELLOW |
| 10   | 3/8" | -06  | Q1A1B00R-06              | Q1A0B00R-06           | PVC      | RED    |
|      |      |      | Q1A1B00Y-06              | Q1A0B00Y-06           | PVC      | YELLOW |
|      |      |      | Q1A1B00K-06              | Q1A0B00K-06           | PVC      | BLACK  |
| 12.5 | 1/2" | -08  | Q1A1B00R-08              | Q1A0B00R-08           | PVC      | RED    |
|      |      |      | Q1A1B00B-08              | Q1A0B00B-08           | PVC      | BLUE   |
|      |      |      | Q1A1B00G-08              | Q1A0B00G-08           | PVC      | GREEN  |
|      |      |      | Q1A1B00Y-08              | Q1A0B00Y-08           | PVC      | YELLOW |
|      |      |      | Q1A1B00K-08              | Q1A0B00K-08           | PVC      | BLACK  |
| 20   | 3/4" | -12  | Q1A1B00R-12              | Q1A0B00R-12           | PVC      | RED    |
|      |      |      | Q1A1B00Y-12              | Q1A0B00Y-12           | PVC      | YELLOW |
| 25   | 1"   | -16  | Q1A1B00R-16              | Q1A0B00R-16           | PVC      | RED    |
|      |      |      | Q1A1B00Y-16              | Q1A0B00Y-16           | PVC      | YELLOW |



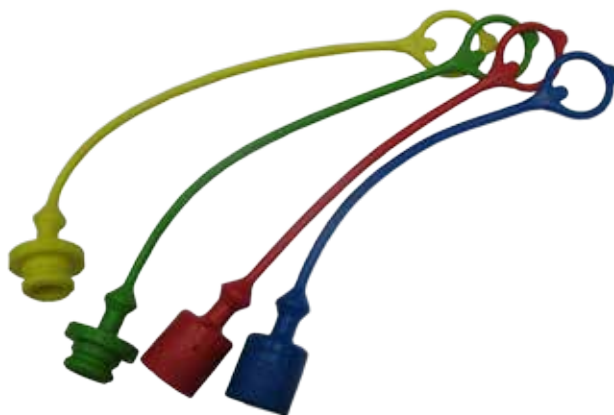
**Q1A5B00**

**Q1A4B00**

**PLUGS AND CAPS**

**FOR MQS-N (STANDARD SERIES)**

| SIZE |      |      | PART NUMBER                         |                       | MATERIAL | COLOUR |
|------|------|------|-------------------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling            | Cap for male coupling |          |        |
| 6.3  | 1/4" | -04  | Q1A5B00R-04                         | Q1A4B00R-04           | PVC      | RED    |
|      |      |      | Q1A5B00B-04                         | Q1A4B00B-04           | PVC      | BLUE   |
|      |      |      | Q1A5B00G-04                         | Q1A4B00G-04           | PVC      | GREEN  |
| 10   | 3/8" | -06  | Q1A5B00R-06                         | Q1A4B00R-06           | PVC      | RED    |
|      |      |      | Q1A5B00B-06                         | Q1A4B00B-06           | PVC      | BLUE   |
| 12.5 | 1/2" | -08  | SEE PLUGS AND CAPS FOR ISO SERIES A |                       |          |        |
| 20   | 3/4" | -12  | Q1A5B00R-12                         | Q1A4B00R-12           | PVC      | RED    |
|      |      |      | Q1A5B00B-12                         | Q1A4B00B-12           | PVC      | BLUE   |
|      |      |      | Q1A5B00Y-12                         | Q1A4B00Y-12           | PVC      | YELLOW |



**Q1A1B00**

**PLUGS**

**MQS-AF (PUSH-PULL)**

**AND MQS-AFP (PUSH-PULL UNDER PRESSURE)**

| SIZE |      |      | PART NUMBER              |  | MATERIAL | COLOUR |
|------|------|------|--------------------------|--|----------|--------|
| DN   | inch | Size | Plug for female coupling |  |          |        |
| 10   | 3/8" | -06  | Q1A1B00R-06              |  | PVC      | RED    |
|      |      |      | Q1A1B00Y-06              |  | PVC      | YELLOW |
| 12.5 | 1/2" | -08  | Q1A1B00R-08              |  | PVC      | RED    |
|      |      |      | Q1A1B00B-08              |  | PVC      | BLUE   |
|      |      |      | Q1A1B00G-08              |  | PVC      | GREEN  |
|      |      |      | Q1A1B00Y-08              |  | PVC      | YELLOW |
|      |      |      | Q1A1B00K-08              |  | PVC      | BLACK  |
|      |      |      | Q1A1B00H-08              |  | PVC      | WHITE  |
|      |      |      | Q1A1B00R-04              |  | PVC      | RED    |
| 6.3  | 1/4" | -04  | Q1A1B00Y-04              |  | PVC      | YELLOW |
|      |      |      | Q1A1B00R-12              |  | PVC      | RED    |
| 20   | 3/4" | -12  | Q1A1B00Y-12              |  | PVC      | YELLOW |
|      |      |      | Q1A1B00R-16              |  | PVC      | RED    |
| 25   | 1"   | -16  | Q1A1B00Y-16              |  | PVC      | YELLOW |





**Q1A9B00**

**Q1A8B00**

**CAPS**

**FOR MQS-F (FLAT-FACE),  
MQS-FH (FLAT-FACE  
AND MQS-FP (MALE FLAT-FACE))**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |          |        |
| 6.3  | 1/4" | -04  | Q1A9B00R-04              | Q1A8B00R-04           | PVC      | RED    |
| 10   | 3/8" | -06  | Q1A9B00R-06              | Q1A8B00R-06           | PVC      | RED    |
| 12.5 | 1/2" | -08  | Q1A9B00R-08              | Q1A8B00R-08           | PVC      | RED    |
| 16   | 5/8" | -10  | Q1A9B00R-10              | Q1A8B00R-10           | PVC      | RED    |
| 20   | 3/4" | -12  | Q1A9B00R-12              | Q1A8B00R-12           | PVC      | RED    |
|      |      |      | Q1A9B00B-12              | Q1A8B00B-12           | PVC      | BLUE   |
| 25   | 1"   | -16  | Q1A9B00R-16              | Q1A8B00R-16           | PVC      | RED    |



**Q1AJA00**

**Q1AIA00**

**CAPS AND PLUGS**

**FOR MQS-SGR (SCREW-TYPE)  
AND MQS-SG (SCREW-TYPE)**

| SIZE |        |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|--------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch   | Size | Plug for female coupling | Cap for male coupling |          |        |
| 6.3  | 1/4"   | -04  | Q1AJA00R-04              | Q1AIA00R-04           | PE-HD    | RED    |
| 10   | 3/8"   | -06  | Q1AJA00R-06              | Q1AIA00R-06           | PE-HD    | RED    |
| 12.5 | 1/2"   | -08  | Q1AJA00R-08              | Q1AIA00R-08           | PE-HD    | RED    |
| 20   | 3/4"   | -12  | Q1AJA00R-12              | Q1AIA00R-12           | PE-HD    | RED    |
| 25   | 1"     | -16  | Q1AJA00R-16              | Q1AIA00R-16           | PE-HD    | RED    |
| 40   | 1.1/2" | -24  | Q1AJA00R-24              | Q1AIA00R-24           | PE-HD    | RED    |



**Q1AN100**

**Q1AM100**

**CAPS AND PLUGS**

**FOR MQS-SC (SCREW-TYPE HYDRAULIC CYLINDERS)**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL      | COLOUR |
|------|------|------|--------------------------|-----------------------|---------------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |               |        |
| 6.3  | 1/4" | -04  | Q1AN100N-04              | Q1AM100N-04           | STEEL + PE-HD | -      |
| 10   | 3/8" | -06  | Q1AN100N-06              | Q1AM100N-06           | STEEL + PE-HD | -      |



**Q1AQ100**

**Q1AP100**

**CAPS AND PLUGS**

**FOR MQS-ST (SCREW-TYPE TRUCKS)**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |          |        |
| 20   | 3/4" | -12  | Q1AQ100N-12              | Q1AP100N-12           | STEEL    | -      |
| 25   | 1"   | -16  | Q1AQ100N-16              | Q1AP100N-16           | STEEL    | -      |



**Q1AL100**

**Q1AK100**

**CAPS AND PLUGS**

**FOR MQS-SH (SCREW-TYPE FOR VERY HIGH PRESSURE)**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL      | COLOUR |
|------|------|------|--------------------------|-----------------------|---------------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |               |        |
| 6.3  | 1/4" | -04  | Q1AL100N-04              | Q1AK100N-04           | STEEL + PE-HD | -      |
| 10   | 3/8" | -06  | Q1AL100N-06              | Q1AK100N-06           | STEEL + PE-HD | -      |
| 12.5 | 1/2" | -08  | Q1AL100N-08              | Q1AK100N-08           | STEEL + PE-HD | -      |
| 20   | 3/4" | -12  | Q1AL100N-12              | Q1AK100N-12           | STEEL + PE-HD | -      |
| 25   | 1"   | -16  | Q1AL100N-16              | Q1AK100N-16           | STEEL + PE-HD | -      |



### Q1ACB00

CAPS

FOR MQS-D (DIAGNOSTIC)

| SIZE |      |      | PART NUMBER              | MATERIAL | COLOUR |
|------|------|------|--------------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling |          |        |
| 5    | 1/8" | -02  | Q1ACB00K-02              | PVC      | BLACK  |



### Q1AEA00

PLUG

FOR MQS-VB  
(BRAKING VALVES)

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size |             |          |        |
| 12.5 | 1/2" | -08  | Q1AEA00R-08 | PLUG     | PE-HD  |



### Q1AGA00

PLUG

FOR MQS-VS  
(AGRICULTURAL VALVES)

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size |             |          |        |
| 12.5 | 1/2" | -08  | Q1AGA00R-08 | PLUG     | PE-HD  |



### Q1A1D02

**AUTOMATIC PLUG  
FOR MQS-AF (PUSH-PULL)**

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size |             |          |        |
| 12.5 | 1/2" | -08  | Q1A1D02Y-08 | POM      | YELLOW |
|      |      |      | Q1A1D02R-08 | POM      | RED    |
|      |      |      | Q1A1D02K-08 | POM      | BLACK  |
|      |      |      | Q1A1D02G-08 | POM      | GREEN  |
|      |      |      | Q1A1D02B-08 | POM      | BLUE   |
| 20   | 3/4" | -12  | Q1A1D02Y-12 | POM      | YELLOW |
|      |      |      | Q1A1D02R-12 | POM      | RED    |
|      |      |      | Q1A1D02K-12 | POM      | BLACK  |
|      |      |      | Q1A1D02G-12 | POM      | GREEN  |
|      |      |      | Q1A1D02B-12 | POM      | BLUE   |



### Q1A3B00

### Q1A2B00

**CAPS AND PLUGS  
FOR MQS-B (ISO B)**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |          |        |
| 6.3  | 1/4" | -04  | Q1A3B00R-04              | Q1A2B00R-04           | PVC      | RED    |



### Q1A9D02

**AUTOMATIC PLUG  
FOR MQS-F (FEMALE FLAT-FACE)  
AND MQS-FH (FEMALE FLAT\_FACE)**

| SIZE |      |      | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN   | inch | Size |             |          |        |
| 12.5 | 1/2" | -08  | Q1A9D02R-08 | POM      | RED    |
| 16   | 5/8" | -10  | Q1A9D02B-10 | POM      | BLUE   |
| 20   | 3/4" | -12  | Q1A9D02B-12 | POM      | BLUE   |



**Q1AJ100**

**Q1AI100**

**CAPS AND PLUGS**

**FOR MQS-SG AND MQS-SGR  
(SCREW-TYPE  
GERMAN MARKET)**

| SIZE |      |      | PART NUMBER              |                       | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN   | inch | Size | Plug for female coupling | Cap for male coupling |          |        |
| 6.3  | 1/4" | -04  | Q1AJ100N-04              | Q1AI100N-04           | STEEL    | -      |
| 10   | 3/8" | -06  | Q1AJ100N-06              | Q1AI100N-06           | STEEL    | -      |
| 12.5 | 1/2" | -08  | Q1AJ100N-08              | Q1AI100N-08           | STEEL    | -      |
| 20   | 3/4" | -12  | Q1AJ100N-12              | Q1AI100N-12           | STEEL    | -      |
| 25   | 1"   | -16  | Q1AJ100N-16              | Q1AI100N-16           | STEEL    | -      |



**Q1AL500**

**Q1AK500**

**CAPS AND PLUGS**

**FOR MQS-SH ( SCREW-TYPE  
VERY HIGH PRESSURE)**

| SIZE |        |      | PART NUMBER              |                       | MATERIAL  | COLOUR |
|------|--------|------|--------------------------|-----------------------|-----------|--------|
| DN   | inch   | Size | Plug for female coupling | Cap for male coupling |           |        |
| 31,5 | 1.1/4" | -20  | Q1AL500N-20              | Q1AK500N-20           | ALUMINIUM | -      |



### Q1AW500N

**PLUG FOR FEMALE COUPLING  
FOR MQS-FS (SCREW-TYPE  
FLAT-FACE)**

| SIZE |      |      | PART NUMBER              | MATERIAL        | COLOUR |
|------|------|------|--------------------------|-----------------|--------|
| DN   | inch | Size | Plug for female coupling |                 |        |
| 16   | 5/8" | -10  | Q1AW500N-10              | ALUMINIUM+STEEL | -      |
| 19   | 3/4" | -12  | Q1AW500N-12              | ALUMINIUM+STEEL | -      |
| 25   | 1"   | -16  | Q1AW500N-16              | ALUMINIUM+STEEL | -      |
| 38   | 1½"  | -25  | Q1AW500N-24              | ALUMINIUM+STEEL | -      |



### Q1AV500N

**CAP FOR MALE COUPLING  
FOR MQS-FS (SCREW-TYPE  
FLAT-FACE)**

| SIZE |      |      | PART NUMBER              | MATERIAL        | COLOUR |
|------|------|------|--------------------------|-----------------|--------|
| DN   | inch | Size | Plug for female coupling |                 |        |
| 16   | 5/8" | -10  | Q1AV500N-10              | ALUMINIUM+STEEL | -      |
| 19   | 3/4" | -12  | Q1AV500N-12              | ALUMINIUM+STEEL | -      |
| 25   | 1"   | -16  | Q1AV500N-16              | ALUMINIUM+STEEL | -      |
| 38   | 1½"  | -25  | Q1AV500N-24              | ALUMINIUM+STEEL | -      |



### Q1A1013

**O-RING AND BACK-UP RING  
FOR MQS-A (ISO A)  
AND MQS-AP  
(ISO A UNDER PRESSURE)**

| SIZE |        |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|--------|------|-------------|-----------------------|----------|--------------|
| DN   | inch   | Size |             |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4"   | -04  | Q1A1013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8"   | -06  | Q1A1013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2"   | -08  | Q1A1013N-08 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 20   | 3/4"   | -12  | Q1A1013N-12 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"     | -16  | Q1A1013N-16 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 31.5 | 1.1/4" | -20  | Q1A1013N-20 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 40   | 1.1/2" | -24  | Q1A1013N-24 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 51   | 2"     | -32  | Q1A1013N-32 | O-RING + BACK-UP RING | NBR      | PTFE         |



### Q1A5013

**O-RING AND BACK-UP RING  
FOR MQS-N  
(STANDARD SERIES)**

| SIZE |        |      | PART NUMBER                    | KIT                   | MATERIAL |              |
|------|--------|------|--------------------------------|-----------------------|----------|--------------|
| DN   | inch   | Size |                                |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4"   | -04  | Q1A5013N-04                    | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8"   | -06  | Q1A5013N-06                    | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2"   | -08  | SEE SPARE PARTS FOR ISO SERIES |                       |          |              |
| 20   | 3/4"   | -12  | Q1A5013N-12                    | O-RING + BACK-UP RING | NBR      | PTFE         |
|      |        |      | Q1A5013N-12B                   | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"     | -16  | Q1A5013N-16                    | O-RING + BACK-UP RING | NBR      | PTFE         |
|      |        |      | Q1A5013N-16B                   | O-RING + BACK-UP RING | NBR      | PTFE         |
|      |        |      | Q1A5013N-16C                   | O-RING + BACK-UP RING | NBR      | PTFE         |
| 31.5 | 1.1/4" | -20  | Q1A5013N-20                    | O-RING + BACK-UP RING | NBR      | PTFE         |
| 40   | 1.1/2" | -24  | Q1A5013N-24                    | O-RING + BACK-UP RING | NBR      | PTFE         |

### Q1A1013

O-RING AND BACK-UP RING

FOR MQS-AF (PUSH-PULL)

AND MQS-AFP  
(PUSH-PULL UNDER PRESSURE)



| SIZE |      |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|------|------|-------------|-----------------------|----------|--------------|
| DN   | inch | Size |             |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4" | -04  | Q1A1013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8" | -06  | Q1A1013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2" | -08  | Q1A1013N-08 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 20   | 3/4" | -12  | Q1A1013N-12 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"   | -16  | Q1A1013N-16 | O-RING + BACK-UP RING | NBR      | PTFE         |

### Q1A3013

O-RING AND BACK-UP RING

FOR MQS-B (ISO B)



| SIZE |      |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|------|------|-------------|-----------------------|----------|--------------|
| DN   | inch | Size |             |                       | O-RING   | BACK-UP RING |
| 5    | 1/8" | -02  | Q1A3013N-02 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 6.3  | 1/4" | -04  | Q1A3013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8" | -06  | Q1A3013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2" | -08  | Q1A3013N-08 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 20   | 3/4" | -12  | Q1A3013N-12 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"   | -16  | Q1A3013N-16 | O-RING + BACK-UP RING | NBR      | PTFE         |

### Q1AJ013

O-RING AND BACK-UP RING

FOR MQS-SG

AND MQS-SGR (SCREW-TYPE)



| SIZE |        |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|--------|------|-------------|-----------------------|----------|--------------|
| DN   | inch   | Size |             |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4"   | -04  | Q1AJ013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8"   | -06  | Q1AJ013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2"   | -08  | Q1AJ013N-08 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 20   | 3/4"   | -12  | Q1AJ013N-12 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"     | -16  | Q1AJ013N-16 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 40   | 1.1/2" | -24  | Q1AJ013N-24 | O-RING + BACK-UP RING | NBR      | PTFE         |





### Q1AN013

**O-RING AND BACK-UP RING  
FOR MQS-SC  
(SCREW-TYPE HYDRAULIC  
CYLINDERS)**

| SIZE |      |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|------|------|-------------|-----------------------|----------|--------------|
| DN   | inch | Size |             |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4" | -04  | Q1AN013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8" | -06  | Q1AN013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |



### Q1AQ013

**O-RING AND BACK-UP RING  
FOR MQS-ST  
(SCREW-TYPE TRUCKS)**

| SIZE |      |      | PART NUMBER | KIT    | MATERIAL |              |
|------|------|------|-------------|--------|----------|--------------|
| DN   | inch | Size |             |        | O-RING   | BACK-UP RING |
| 20   | 3/4" | -12  | Q1AQ013N-12 | O-RING | NBR      | -            |
| 25   | 1"   | -16  | Q1AQ013N-16 | O-RING | NBR      | -            |



### Q1AL013

**O-RING AND BACK-UP RING  
FOR MQS-SH  
(SCREW-TYPE FOR VERY  
HIGH PRESSURE)**

| SIZE |        |      | PART NUMBER | KIT                   | MATERIAL |              |
|------|--------|------|-------------|-----------------------|----------|--------------|
| DN   | inch   | Size |             |                       | O-RING   | BACK-UP RING |
| 6.3  | 1/4"   | -04  | Q1AL013N-04 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 10   | 3/8"   | -06  | Q1AL013N-06 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 12.5 | 1/2"   | -08  | Q1AL013N-08 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 20   | 3/4"   | -12  | Q1AL013N-12 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 25   | 1"     | -16  | Q1AL013N-16 | O-RING + BACK-UP RING | NBR      | PTFE         |
| 31.5 | 1 1/4" | -20  | Q1AL013N-20 | O-RING + BACK-UP RING | NBR      | PTFE         |





# **WATER CLEANING & BLASTING**



# WATER CLEANING & BLASTING

## INTRODUCTION

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The water cleaning hose range offered by Manuli can be applied to both hobby and professional water cleaning machines with both hot and cold water (not suitable for vapour steam applications).

They are designed according to safety norm IEC-2 with a safety factor (burst / working pressure) of 4:1.

The water blasting hose range is designed for maximum robustness and ease of handling.

Given the importance of safety and performance when connected with any blasting application, this range has a complete, dedicated fittings range, whilst the safety factor (burst / working pressure) of 2,5:1 is compliant with international specifications (AS/NZ 4233.2, RMA-USA, ISO7751, BFPA-UK, EN 1829-2).

# WATER CLEANING & BLASTING INDEX

| RANGE          | HOSE          | HOSE STRUCTURE | KEY PERFORMANCE | SECTION | ITEM |
|----------------|---------------|----------------|-----------------|---------|------|
| WATER CLEANING | K-JET         | Wire braided   | Pressure wash   | W1      | 1    |
|                | SUPERJET      | Wire braided   | Pressure wash   |         | 2    |
|                | SUPERJET/PLUS | Wire braided   | Pressure wash   |         | 3    |
|                | PROJET        | Wire braided   | Pressure wash   |         | 4    |


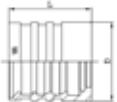


|                |                  |             |                            |    |   |
|----------------|------------------|-------------|----------------------------|----|---|
| WATER BLASTING | GOLDENBLAST      | Wire spiral | Safe waterblast technology | W2 | 1 |
|                | GOLDENBLAST/PLUS | Wire spiral | Safe waterblast technology |    | 2 |
|                | GOLDENBLAST/SIX  | Wire spiral | Safe waterblast technology |    | 3 |

## GUIDE TO SELECT MANULI HOSE BY W.P.

| HOSE SIZE        | WORKING PRESSURE (bar) |    |     |     |      |      |     |      |     |  |
|------------------|------------------------|----|-----|-----|------|------|-----|------|-----|--|
|                  | DN                     | 5  | 6   | 8   | 10   | 12   | 16  | 19   | 25  |  |
|                  | DASH                   | -3 | -4  | -5  | -6   | -8   | -10 | -12  | -16 |  |
| K-JET            |                        |    | 210 | 210 | 210  | 210  |     |      |     | Safety factor burst/working pressure 4:1   |
| SUPERJET         |                        |    | 280 | 250 |      |      |     |      |     |  |
| SUPERJET/PLUS    |                        |    | 400 | 350 | 330  | 275  |     |      |     |  |
| PROJET           |                        |    | 400 | 400 | 400  | 350  |     |      |     |  |
| GOLDENBLAST      |                        |    |     |     | 750  | 750  |     |      |     | Safety factor burst/working pressure 2,5:1 |
| GOLDENBLAST/PLUS |                        |    |     |     | 1250 | 1100 |     | 1000 | 700 |  |
| GOLDENBLAST/SIX  |                        |    |     |     |      | 1450 |     | 1350 |     |  |

# WATER CLEANING & BLASTING VISUAL INDEX




## WATER CLEANING

| APPEARANCE  | CODE   | DESCRIPTION                                   | SECTION | ITEM |
|---|--------|---|---------|------|
|  | M00120 | SKIVE FERRULE FOR WIRE BRAID HOSES            |         | 1    |
|  | M00910 | SKIVE FERRULE FOR WIRE BRAID AND SPIRAL HOSES |         | 1    |
|  | M03300 | NO-SKIVE FERRULE FOR WIRE BRAID HOSES         | W3      | 1    |
|  | M03400 | NO-SKIVE FERRULE FOR WIRE BRAID HOSES         |         | 2    |

## MF2000® MULTIFIT TYPE INSERT

|   |        |                     |    |   |
|---|--------|---------------------|----|---|
|  | M24913 | WASH CLEANER FEMALE | W3 | 2 |
|---|--------|---------------------|----|---|


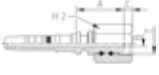

## WATER BLASTING

| APPEARANCE  | CODE   | DESCRIPTION  | SECTION | ITEM |
|---|--------|--|---------|------|
|  | M01500 | DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY) |         | 1    |
|  | M01700 | DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY) | W4      | 1    |
|  | M01800 | DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY) |         | 1    |

# WATER CLEANING & BLASTING VISUAL INDEX

| APPEARANCE | CODE | DESCRIPTION | SECTION | ITEM |
|------------|------|-------------|---------|------|
|------------|------|-------------|---------|------|

## MF2000® BLASTLOCK TYPE INSERT

|   |        |  |    |   |
|---|--------|--|----|---|
|  | M57810 | NPTF MALE 60° CONE SEAT - SAE J516/J514  |    | 2 |
|  | M65514 | BSP FEMALE 50° CONE - BS5200/ISO 8434-6  | W4 | 2 |
|  | M66613 | METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066/ISO 12151-2 (SLIP-ON NUT) |    | 3 |

## WATER BLASTING

| APPEARANCE | CODE | DESCRIPTION | SECTION | ITEM |
|------------|------|-------------|---------|------|
|------------|------|-------------|---------|------|

## MF3000® OPF TYPE FERRULE

|   |         |   |    |   |
|---|---------|---|----|---|
|  | OPF3100 | NO-SKIVE FLAT CRIMP FERRULE FOR BRAIDED HOSES | W5 | 1 |
|---|---------|---|----|---|



## K-JET (BLACK)

### PRESSURE WASH - BLACK VERSION

#### KEY FEATURES

- Dust free smooth surface
- Indelible branding
- Compact structure: easy handling, reduced bend radius
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

#### APPLICATIONS & FLUIDS

- Water-cleaning equipment, ideal for hobby and semiprofessional machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

#### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H02003006* | 6         | - 4  | 1/4"  | 10,3   | 0,41 | 12,4 | 0,49 | 210      | 3040 | 840   | 12180 | 50       | 1,97 | 165    | 0,11  | MF+M03300-04 | OPF-04 |
| H02003008* | 8         | - 5  | 5/16" | 11,9   | 0,47 | 14,0 | 0,55 | 210      | 3040 | 840   | 12180 | 55       | 2,17 | 205    | 0,14  | MF+M03300-05 |        |
| H02003010* | 10        | - 6  | 3/8"  | 14,5   | 0,57 | 16,5 | 0,65 | 210      | 3040 | 840   | 12180 | 65       | 2,56 | 300    | 0,20  | MF+M03400-06 | OPF-06 |
| H02003012* | 12        | - 8  | 1/2"  | 17,7   | 0,70 | 19,9 | 0,78 | 210      | 3040 | 840   | 12180 | 90       | 3,54 | 410    | 0,28  | MF+M03400-08 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## K-JET (BLUE)

### PRESSURE WASH - BLUE VERSION

#### KEY FEATURES

- Dust free smooth surface
- Indelible branding
- Compact structure: easy handling, reduced bend radius
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

#### APPLICATIONS & FLUIDS

- Water-cleaning equipment, ideal for hobby and semiprofessional machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

#### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2   |
| H02008006* | 6         | - 4  | 1/4"  | 10,3   | 0,41 | 12,4 | 0,49 | 210      | 3040 | 840   | 12180 | 50        | 1,97 | 165    | 0,11  | MF+M03300-04 | OPF-04 |
| H02008008* | 8         | - 5  | 5/16" | 11,9   | 0,47 | 14,0 | 0,55 | 210      | 3040 | 840   | 12180 | 55        | 2,17 | 200    | 0,13  | MF+M03300-05 |        |
| H02008010* | 10        | - 6  | 3/8"  | 14,5   | 0,57 | 16,5 | 0,65 | 210      | 3040 | 840   | 12180 | 65        | 2,56 | 295    | 0,20  | MF+M03400-06 | OPF-06 |
| H02008012* | 12        | - 8  | 1/2"  | 17,7   | 0,70 | 19,9 | 0,78 | 210      | 3040 | 840   | 12180 | 90        | 3,54 | 405    | 0,27  | MF+M03400-08 |        |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## SUPERJET (BLACK)

PRESSURE WASH - BLACK VERSION



### KEY FEATURES

- Dust free smooth surface
- Indelible branding
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

### APPLICATIONS & FLUIDS



- Water-cleaning equipment, ideal for hobby and semiprofessional machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H02001006* | 6         | - 4  | 1/4"  | 11,2   | 0,44 | 13,3 | 0,52 | 280      | 4060 | 1120  | 16240 | 100      | 3,94 | 225    | 0,15  | MF+M03400-04 | OPF-04 |
| H02001008* | 8         | - 5  | 5/16" | 12,8   | 0,50 | 14,9 | 0,59 | 250      | 3620 | 1000  | 14500 | 114      | 4,49 | 260    | 0,17  | MF+M03400-05 | OPF-05 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## SUPERJET (BLUE)

PRESSURE WASH - BLUE VERSION

### KEY FEATURES

- Dust free smooth surface
- Indelible branding
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

### APPLICATIONS & FLUIDS

- Water-cleaning equipment, ideal for hobby and semiprofessional machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN.BEND |      | WEIGHT |       | FITTINGS     |        |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|----------|------|--------|-------|--------------|--------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm       | inch | g/m    | lb/ft | Std1         | Std2   |
| H02002006* | 6         | - 4  | 1/4"  | 11,2   | 0,44 | 13,4 | 0,53 | 280      | 4060 | 1120  | 16240 | 100      | 3,94 | 225    | 0,15  | MF+M03400-04 | OPF-04 |
| H02002008* | 8         | - 5  | 5/16" | 12,8   | 0,50 | 15,0 | 0,59 | 250      | 3620 | 1000  | 14500 | 114      | 4,49 | 265    | 0,18  | MF+M03400-05 | OPF-05 |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

One high tensile steel braid

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## SUPERJET/PLUS (BLACK)

PRESSURE WASH - BLACK VERSION



### KEY FEATURES

- Very high pressure resistance
- Lightness and flexibility
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

### APPLICATIONS & FLUIDS

- Professional water-cleaning machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H01A78006* | 6         | - 4  | 1/4"  | 12,7   | 0,50 | 14,7 | 0,58 | 400      | 5800 | 1600  | 23200 | 55        | 2,17 | 370    | 0,25  | MF+M03400-04 |      |
| H01A78008* | 8         | - 5  | 5/16" | 14,3   | 0,56 | 16,3 | 0,64 | 350      | 5070 | 1400  | 20300 | 60        | 2,36 | 410    | 0,28  | MF+M03400-05 |      |
| H01A78010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 16,8 | 0,66 | 330      | 4780 | 1320  | 19140 | 65        | 2,56 | 390    | 0,26  | MF+M03400-06 |      |
| H01A78012* | 12        | - 8  | 1/2"  | 18,5   | 0,73 | 20,3 | 0,80 | 275      | 3980 | 1100  | 15950 | 80        | 3,15 | 480    | 0,32  | MF+M03400-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## SUPERJET/PLUS (BLUE)

PRESSURE WASH - BLUE VERSION



### KEY FEATURES

- Very high pressure resistance
- Lightness and flexibility
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)

### APPLICATIONS & FLUIDS

- Professional water-cleaning machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H01A79006* | 6         | - 4  | 1/4"  | 12,7   | 0,50 | 14,7 | 0,58 | 400      | 5800 | 1600  | 23200 | 55        | 2,17 | 365    | 0,25  | MF+M03400-04 |      |
| H01A79008* | 8         | - 5  | 5/16" | 14,3   | 0,56 | 16,3 | 0,64 | 350      | 5070 | 1400  | 20300 | 60        | 2,36 | 405    | 0,27  | MF+M03400-05 |      |
| H01A79010* | 10        | - 6  | 3/8"  | 15,0   | 0,59 | 16,8 | 0,66 | 330      | 4780 | 1320  | 19140 | 65        | 2,56 | 390    | 0,26  | MF+M03400-06 |      |
| H01A79012* | 12        | - 8  | 1/2"  | 18,5   | 0,73 | 20,3 | 0,80 | 275      | 3980 | 1100  | 15950 | 80        | 3,15 | 475    | 0,32  | MF+M03400-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## PROJET (BLACK)

PRESSURE WASH - BLACK VERSION



### KEY FEATURES

- Very high pressure resistance
- Lightness and flexibility
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)
- Skive fitting solution for maximum robustness in professional long lasting applications

### APPLICATIONS & FLUIDS

- Professional water-cleaning machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H01A94006* | 6         | - 4  | 1/4"  | 11,3   | 0,44 | 13,1 | 0,52 | 400      | 5800 | 1600  | 23200 | 45        | 1,77 | 280    | 0,19  | MF+M00120-04 |      |
| H01A94008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,6 | 0,57 | 400      | 5800 | 1600  | 23200 | 100       | 3,94 | 315    | 0,21  | MF+M00120-05 |      |
| H01A94010* | 10        | - 6  | 3/8"  | 16,7   | 0,66 | 18,5 | 0,73 | 400      | 5800 | 1600  | 23200 | 130       | 5,12 | 520    | 0,35  | MF+M00910-06 |      |
| H01A94012* | 12        | - 8  | 1/2"  | 19,8   | 0,78 | 21,8 | 0,86 | 350      | 5070 | 1400  | 20300 | 178       | 7,01 | 660    | 0,44  | MF+M00910-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR

## PROJET (BLUE)

PRESSURE WASH - BLUE VERSION



### KEY FEATURES

- Very high pressure resistance
- Lightness and flexibility
- Easy handling
- Good abrasion resistance
- Designed to meet IEC-2 (safety factor 4:1)
- Skive fitting solution for maximum robustness in professional long lasting applications

### APPLICATIONS & FLUIDS

- Professional water-cleaning machines
- Water, mineral oils, vegetable and rape seed oils, glycol and polyglycol based oils, synthetic ester based oils, oils in aqueous emulsion

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |       | R.O.D. |      | O.D. |      | MAX W.P. |      | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|-------|--------|------|------|------|----------|------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch  | mm     | inch | mm   | inch | bar      | psi  | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H01A95006* | 6         | - 4  | 1/4"  | 11,3   | 0,44 | 13,1 | 0,52 | 400      | 5800 | 1600  | 23200 | 45        | 1,77 | 275    | 0,18  | MF+M00120-04 |      |
| H01A95008* | 8         | - 5  | 5/16" | 12,9   | 0,51 | 14,6 | 0,57 | 400      | 5800 | 1600  | 23200 | 100       | 3,94 | 310    | 0,21  | MF+M00120-05 |      |
| H01A95010* | 10        | - 6  | 3/8"  | 16,7   | 0,66 | 18,5 | 0,73 | 400      | 5800 | 1600  | 23200 | 130       | 5,12 | 520    | 0,35  | MF+M00910-06 |      |
| H01A95012* | 12        | - 8  | 1/2"  | 19,8   | 0,78 | 21,8 | 0,86 | 350      | 5070 | 1400  | 20300 | 178       | 7,01 | 650    | 0,44  | MF+M00910-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 275 °F  
-10 °C / 135 °C

#### MAX OPERATING TEMPERATURE

150 °C, 300 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Two high tensile steel braids

#### COVER

Environment resistant synthetic rubber

#### APPLICABLE SPECS

MANULI® Design

#### TYPE APPROVALS

CU-TR



## GOLDENBLAST

SAFE WATERBLAST TECHNOLOGY



### KEY FEATURES

- Basic hose line for scale removing applications
- Compactness, lightness and flexibility
- Safety factor 2,5:1 (accepted world standard as specified by RMA-USA, BFPA-UK, DIN-Germany, ISO 7751)
- High abrasion resistant cover

### APPLICATIONS & FLUIDS



- Waterblasting, scale removing applications using extreme high working pressures:
  - building and industrial sectors (roadworks, removal of concrete from reinforced concrete structures safeguarding metal components);
  - scale removal ships hulls in shipyard;
  - dust elimination
- Water, water soap, emulsions

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |       | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|-------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi   | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H10072010* | 10        | - 6  | 3/8" | 17,6   | 0,69 | 20,2 | 0,80 | 750      | 10870 | 1875  | 27190 | 180       | 7,09 | 756    | 0,51  | BL+M01700-06 |      |
| H10072A12* | 12        | - 8  | 1/2" | 20,4   | 0,80 | 23,0 | 0,91 | 750      | 10870 | 1875  | 27190 | 220       | 8,66 | 905    | 0,61  | BL+M01700-08 |      |

#### CONTINUOUS SERVICE TEMPERATURE

**RANGE**  
15 °F / 158 °F  
-10 °C / 70 °C

#### MAX OPERATING TEMPERATURE

93 °C, 200 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Synthetic rubber with high temperature, ozone and abrasion resistance

#### APPLICABLE SPECS

MANULI® Design, Australian Std. AS/NZS 4233.2

#### TYPE APPROVALS

CU-TR; MSHA

## GOLDENBLAST/PLUS

SAFE WATERBLAST TECHNOLOGY



### KEY FEATURES

- Hose line for waterblasting with pressures up to 1250 bar
- Compactness, lightness and flexibility
- Safety factor 2,5:1 (accepted world standard as specified by RMA-USA, BFPA-UK, DIN-Germany, ISO 7751)
- High abrasion resistance cover

### APPLICATIONS & FLUIDS

- Waterblasting, scale removing applications using extreme high working pressures:
  - building and industrial sectors (roadworks, removal of concrete from reinforced concrete structures safeguarding metal components);
  - scale removal ships hulls in shipyard;
  - dust elimination
- Water, water soap, emulsions

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |       | BURST |       | MIN. BEND |      | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|-------|-------|-------|-----------|------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi   | bar   | psi   | mm        | inch | g/m    | lb/ft | Std1         | Std2 |
| H10066010* | 10        | - 6  | 3/8" | 17,4   | 0,69 | 20,0 | 0,79 | 1250     | 18120 | 3125  | 45320 | 230       | 9,06 | 800    | 0,54  | BL+M01700-06 |      |
| H10066A12* | 12        | - 8  | 1/2" | 21,5   | 0,85 | 24,1 | 0,95 | 1100     | 15950 | 2750  | 39880 | 230       | 9,06 | 1110   | 0,75  | BL+M01700-08 |      |
| H10066019* | 19        | - 12 | 3/4" | 29,0   | 1,14 | 32,0 | 1,26 | 1000     | 14500 | 2500  | 36250 | 250       | 9,84 | 1730   | 1,16  | BL+M01700-12 |      |
| H10066025* | 25        | - 16 | 1"   | 35,1   | 1,38 | 38,1 | 1,50 | 700      | 10150 | 1750  | 25380 | 250       | 9,84 | 2040   | 1,37  | BL+M01500-16 |      |

#### CONTINUOUS SERVICE TEMPERATURE RANGE

15 °F / 158 °F  
-10 °C / 70 °C

#### MAX OPERATING TEMPERATURE

93 °C, 200 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Four high tensile steel spirals

#### COVER

Synthetic rubber with very high temperature, ozone and abrasion resistance

#### APPLICABLE SPECS

MANULI® Design, Australian Std. AS/NZS 4233.2

#### TYPE APPROVALS

CU-TR; MSHA

## GOLDENBLAST/SIX

SAFE WATERBLAST TECHNOLOGY



### KEY FEATURES

- Six wire spiral hose dedicated to severe applications with pressures up to 1450 bar
- Compactness, lightness and flexibility
- Safety factor 2,5:1 (accepted world standard as specified by RMA-USA, BFPA-UK, DIN-Germany, ISO 7751)
- High abrasion resistance cover

### APPLICATIONS & FLUIDS



- Waterblasting, scale removing applications using extreme high working pressures:
  - building and industrial sectors (roadworks, removal of concrete from reinforced concrete structures safeguarding metal components);
  - scale removal ships hulls in shipyard;
  - dust elimination
- Water, water soap, emulsions

### TECHNICAL DATA

| PART. REF. | HOSE SIZE |      |      | R.O.D. |      | O.D. |      | MAX W.P. |       | BURST |       | MIN. BEND |       | WEIGHT |       | FITTINGS     |      |
|------------|-----------|------|------|--------|------|------|------|----------|-------|-------|-------|-----------|-------|--------|-------|--------------|------|
|            | DN        | dash | inch | mm     | inch | mm   | inch | bar      | psi   | bar   | psi   | mm        | inch  | g/m    | lb/ft | Std1         | Std2 |
| H10067012* | 12        | - 8  | 1/2" | 25,9   | 1,02 | 28,9 | 1,14 | 1450     | 21030 | 3625  | 52570 | 250       | 9,84  | 1880   | 1,26  | BL+M01800-08 |      |
| H10067019* | 19        | - 12 | 3/4" | 32,4   | 1,28 | 35,4 | 1,39 | 1350     | 19580 | 3375  | 48950 | 280       | 11,02 | 2630   | 1,77  | BL+M01800-12 |      |

#### CONTINUOUS SERVICE TEMPERATURE

##### RANGE

15 °F / 158 °F  
-10 °C / 70 °C

#### MAX OPERATING TEMPERATURE

93 °C, 200 °F

#### TUBE

Water resistant synthetic rubber

#### REINFORCEMENT

Six high tensile steel spirals

#### COVER

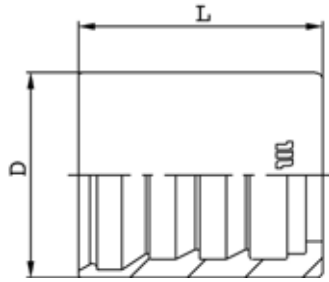
Synthetic rubber with very high temperature, ozone and abrasion resistance

#### APPLICABLE SPECS

MANULI® Design, Australian Std. AS/NZS 4233.2

#### TYPE APPROVALS

CU-TR; MSHA

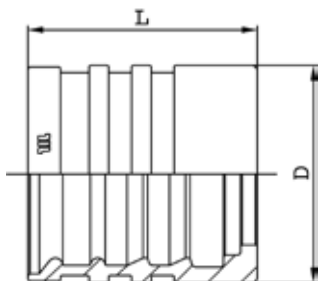


FERRULE

## M00110/M00120/M00130

SKIVE FERRULE FOR WIRE BRAID HOSES

| PART. REF. | HOSE BORE |      |       | DIMENSIONS mm |  |      |      |  |  |  |  |
|------------|-----------|------|-------|---------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch  |               |  | D    | L    |  |  |  |  |
| M00120-04  | 6         | - 4  | 1/4"  |               |  | 19,5 | 28   |  |  |  |  |
| M00120-05  | 8         | - 5  | 5/16" |               |  | 20   | 28,6 |  |  |  |  |

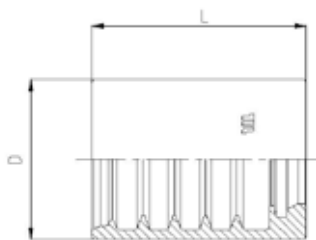


FERRULE

## M00910/M00920/M00930

SKIVE FERRULE FOR WIRE BRAID AND SPIRAL HOSES

| PART. REF. | HOSE BORE |      |      | DIMENSIONS mm |  |    |    |  |  |  |  |
|------------|-----------|------|------|---------------|--|----|----|--|--|--|--|
|            | DN        | Dash | inch |               |  | D  | L  |  |  |  |  |
| M00910-06  | 10        | - 6  | 3/8" |               |  | 26 | 33 |  |  |  |  |
| M00910-08  | 12        | - 8  | 1/2" |               |  | 30 | 34 |  |  |  |  |

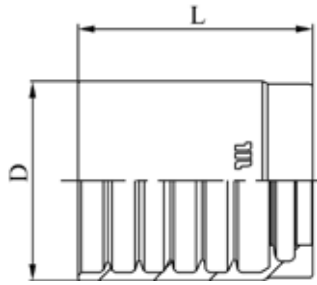


FERRULE

## M03300

NO-SKIVE FERRULE FOR WIRE BRAID HOSES

| PART. REF. | HOSE BORE |      |       | DIMENSIONS mm |  |      |      |  |  |  |  |
|------------|-----------|------|-------|---------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch  |               |  | D    | L    |  |  |  |  |
| M03300-04  | 6         | - 4  | 1/4"  |               |  | 20,5 | 27,5 |  |  |  |  |
| M03300-05  | 8         | - 5  | 5/16" |               |  | 22,8 | 28,5 |  |  |  |  |

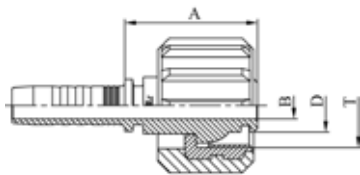


FERRULE

**M03400**

NO-SKIVE FERRULE FOR WIRE BRAID HOSES

| PART. REF. | HOSE BORE |      |       | DIMENSIONS<br>mm |      |  |  |  |  |  |  |
|------------|-----------|------|-------|------------------|------|--|--|--|--|--|--|
|            | DN        | Dash | inch  | D                | L    |  |  |  |  |  |  |
| M03400-04  | 6         | - 4  | 1/4"  | 23               | 30,1 |  |  |  |  |  |  |
| M03400-05  | 8         | - 5  | 5/16" | 24               | 30   |  |  |  |  |  |  |
| M03400-06  | 10        | - 6  | 3/8"  | 26               | 31,1 |  |  |  |  |  |  |
| M03400-08  | 12        | - 8  | 1/2"  | 29               | 34   |  |  |  |  |  |  |
| M03400-10  | 16        | - 10 | 5/8"  | 33               | 37   |  |  |  |  |  |  |
| M03400-12  | 19        | - 12 | 3/4"  | 37               | 42   |  |  |  |  |  |  |



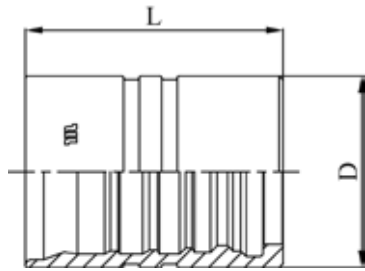
CONNECTIONS - CLEANING

**M24913**

WASH CLEANER FEMALE

| PART. REF.   | HOSE BORE |      |       | Thread   | DIMENSIONS<br>mm |      |      |   |  |  |  |  |
|--------------|-----------|------|-------|----------|------------------|------|------|---|--|--|--|--|
|              | DN        | Dash | inch  |          | T                | B    | A    | D |  |  |  |  |
| M24913-04-22 | 6         | - 4  | 1/4"  | M 22x1,5 | 4                | 34   | 13,9 |   |  |  |  |  |
| M24913-05-22 | 8         | - 5  | 5/16" | M 22x1,5 | 5,5              | 34   | 13,9 |   |  |  |  |  |
| M24913-06-22 | 10        | - 6  | 3/8"  | M 22x1,5 | 7                | 34,5 | 13,9 |   |  |  |  |  |

CLEANING & BLASTING W3-2

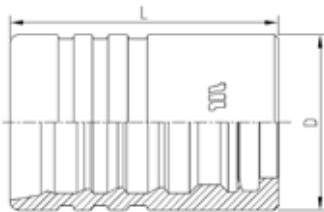


FERRULE

**M01500**

DOUBLE SKIVE FERRULE FOR HEAVY DUTY SPIRAL HOSES (4 PLY)

| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |    |      |  |  |  |  |
|------------|-----------|------|------|------------------|--|----|------|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D  | L    |  |  |  |  |
| M01500-16  | 25        | - 16 | 1"   |                  |  | 48 | 64,5 |  |  |  |  |

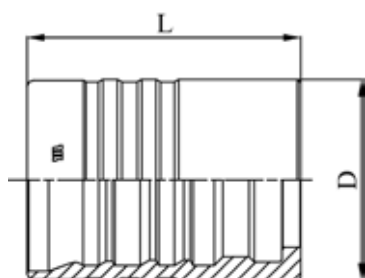


FERRULE - BLASTING

**M01700**

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (4 PLY)

| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D    | L    |  |  |  |  |
| M01700-06  | 10        | - 6  | 3/8" |                  |  | 29,7 | 57,5 |  |  |  |  |
| M01700-08  | 12        | - 8  | 1/2" |                  |  | 34   | 65   |  |  |  |  |
| M01700-12  | 19        | - 12 | 3/4" |                  |  | 45,1 | 69   |  |  |  |  |



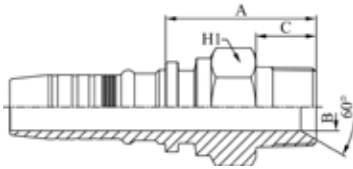
FERRULE - BLASTING

**M01800**

DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY)

| PART. REF. | HOSE BORE |      |      | DIMENSIONS<br>mm |  |      |      |  |  |  |  |
|------------|-----------|------|------|------------------|--|------|------|--|--|--|--|
|            | DN        | Dash | inch |                  |  | D    | L    |  |  |  |  |
| M01800-08  | 12        | - 8  | 1/2" |                  |  | 38,3 | 64,4 |  |  |  |  |
| M01800-12  | 19        | - 12 | 3/4" |                  |  | 48,6 | 69   |  |  |  |  |

## CONNECTIONS - BLASTING



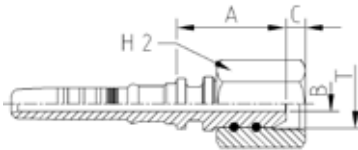
### M57810 (DN 16: M52810)

NPTF MALE 60° CONE SEAT - SAE J516/J514

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS mm |      |      |    |  |  |  |
|--------------|-----------|------|------|-----------|--|---------------|------|------|----|--|--|--|
|              | DN        | Dash | inch |           |  | T             | B    | A    | C  |  |  |  |
| M57810-06-06 | 10        | - 6  | 3/8" | 3/8" - 18 |  | 8,5           | 38   | 15,5 | 22 |  |  |  |
| M57810-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 10            | 44,5 | 21   | 27 |  |  |  |
| M57810-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 15            | 49,5 | 21   | 32 |  |  |  |
| M52810-16-16 | 25        | - 16 | 1"   | 1" - 11   |  | 19,5          | 55   | 24,2 | 41 |  |  |  |

The BLASTLOCK fittings have to be used with the GOLDENBLAST hoses only, that are suggested for waterblasting applications. For hydraulic applications please refer to dedicated fittings (ILP)

## CONNECTIONS - BLASTING



### M65514

BSP FEMALE 60° CONE  
(BS5200 - ISO 8434-6)

| PART. REF.   | HOSE BORE |      |      | Thread    |  | DIMENSIONS mm |      |     |    |  |  |  |
|--------------|-----------|------|------|-----------|--|---------------|------|-----|----|--|--|--|
|              | DN        | Dash | inch |           |  | T             | B    | A   | C  |  |  |  |
| M65514-06-06 | 10        | - 6  | 3/8" | 3/8" - 19 |  | 4,8           | 34,5 | 6   | 24 |  |  |  |
| M65514-08-08 | 12        | - 8  | 1/2" | 1/2" - 14 |  | 9             | 37   | 6,5 | 30 |  |  |  |
| M65514-12-12 | 19        | - 12 | 3/4" | 3/4" - 14 |  | 12            | 43   | 8,7 | 36 |  |  |  |

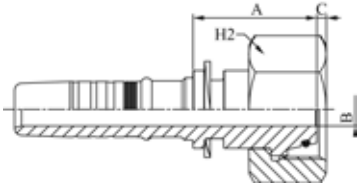
The BLASTLOCK fittings have to be used with the GOLDENBLAST hoses only, that are suggested for waterblasting applications. For hydraulic applications please refer to dedicated fittings (ILP)

"B" dimension does not comply with: BS5200 and ISO8434-6 spec.

## CONNECTIONS - BLASTING

### M66613

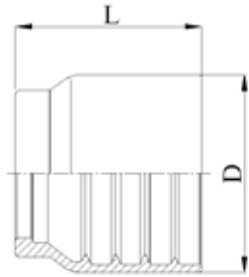
**METRIC O-RING FEMALE 24° CONE HEAVY DUTY - DIN 20066/ISO 12151-2 (SLIP-ON NUT)**



| PART. REF.   | HOSE BORE |      |      | Thread   | Pipe | DIMENSIONS<br>mm |      |     |    |   |    |  |
|--------------|-----------|------|------|----------|------|------------------|------|-----|----|---|----|--|
|              | DN        | Dash | inch |          |      | T                | mm   | B   | A  | C | H2 |  |
| M66613-06-22 | 10        | - 6  | 3/8" | M 22x1,5 | 14   | 4,8              | 32   | 3,5 | 27 |   |    |  |
| M66613-06-24 | 10        | - 6  | 3/8" | M 24x1,5 | 16   | 6,3              | 34   | 4   | 32 |   |    |  |
| M66613-08-24 | 12        | - 8  | 1/2" | M 24x1,5 | 16   | 9                | 35,5 | 4   | 32 |   |    |  |
| M66613-12-36 | 19        | - 12 | 3/4" | M 36x2   | 25   | 12               | 44,5 | 3,4 | 46 |   |    |  |
| M66613-16-42 | 25        | - 16 | 1"   | M 42x2   | 30   | 19,5             | 43,5 | 5,3 | 50 |   |    |  |

The BLASTLOCK fittings have to be used with the GOLDENBLAST hoses only, that are suggested for waterblasting applications. For hydraulic applications please refer to dedicated fittings (ILP)





FERRULE

**OPF3100**

**NO-SKIVE FLAT CRIMP  
FERRULE FOR BRAIDED HOSES**

| PART. REF. | HOSE BORE |      |       | DIMENSIONS<br>mm |  |      |      |  |  |  |  |  |
|------------|-----------|------|-------|------------------|--|------|------|--|--|--|--|--|
|            | DN        | Dash | inch  |                  |  | D    | L    |  |  |  |  |  |
| OPF3100-04 | 6         | - 4  | 1/4"  |                  |  | 23   | 27,5 |  |  |  |  |  |
| OPF3100-05 | 8         | - 5  | 5/16" |                  |  | 24   | 27   |  |  |  |  |  |
| OPF3100-06 | 10        | - 6  | 3/8"  |                  |  | 26,5 | 29,5 |  |  |  |  |  |

# BLASTLOCK TYPE

## ASSEMBLING INSTRUCTIONS



**The following assembling instructions are strongly recommended for heavy-duty applications**

The crimping operation to apply BLASTLOCK fittings must be carried out with proper high performance crimping/assembling machines, with a crimping force higher than 2,800-3,000 kN, and approved by Manuli Hydraulics. This is in order to guarantee the optimum coupling assembly deformations and correct hose gripping.

It is recommended that the detailed assembling instructions are followed. These are supplied by Manuli Hydraulics to customers, assemblers and operators using the integrated package, GOLDENBLAST hose & BLASTLOCK fittings.

Each assembly must be pressure tested at the pressure level required by the reference specifications (e.g. EN 1829-2 requirement is 1.5 times the WP for minimum 30 seconds) and taking into consideration all safety implications.

Specialised personnel are recommended for the assembling operation of BLASTLOCK fittings.

| PART REF.    | THREAD SIZE | OR SUPPLIED (NBR 90 ShA) | TIGHTENING TORQUE (Nm) |
|--------------|-------------|--------------------------|------------------------|
| M66613-6-22  | M 22 x 1.5  | 10 x 2                   | 70                     |
| M66613-08-24 | M 24 x 1.5  | 12 x 2                   | 100                    |
| M66613-12-36 | M 36 x 2    | 20.3 x 2.4               | 190                    |
| M66613-16-42 | M 42 x 2    | 25.3 x 2.4               | 220                    |

# BLASTLOCK TYPE

## RECOMMENDATIONS

Please see the following recommendations for the safe and correct use of the Manuli Goldenblast product line:

- **Don't mix and match:** MRI highly recommends the use of its integrated waterblasting package. The use of alternative hose or fittings can result in poor quality and reliability of the assembly.
- In line with international regulations, **all** waterblasting assemblies should be **tested to 150% of the indicated maximum static working pressure** before using.
- If waterblasting assemblies are used at a pressure exceeding the maximum working pressure indicated, the assemblies structure can cause an over-stressed situation. For the same reason **pulsating pressure** situations also need to be avoided.
- **Relief valves** should be used to preserve waterblasting equipment and hose assemblies.
- When **safety devices** are applied to prevent fitting blow-off, hose elongation and contraction needs to be taken in consideration. Under pressure, the hose length can vary between -4% to +2%.
- **Waterblasting assemblies should never be used in "hang down" positions.** These conditions can cause hose reinforcement restriction to contraction/elongation and over-stress fittings when supporting the weight of the hanging hose.
- Strictly avoid applying any **external force** on the hose assembly, such as axial tension, twisting, kinking or crushing.
- **Temperature** influences the resistance to leakage. Working temperature should be maintained below 70°C.
- Hose assemblies need to be replaced in case of damage, such as:
  - ✓ hose cover abrasion, cuts, chemical attack, corrosion
  - ✓ reinforcement crushing or twisting
- **High pressure water must always be considered as extremely dangerous.** Anyone handling waterblasting equipment should wear proper protective clothing, boots and eye protection.





# ASSEMBLY MACHINES



# ASSEMBLY MACHINES

## INTRODUCTION

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Manuli assembling machines are part of our integrated product range and are designed according to high quality standards and optimised through Manuli's extensive experience in the hydraulic market.

Manuli assembling machines are recommended for a high-performance, safe hose assembling procedure.

All Manuli assembling machines are tested and approved in both laboratory and field validation exercises.

The following index offers a guideline to aid selection of the proper machine with reference to the applications and performance requested.

Special machines (not included in this catalogue) are available upon request, as well as original spare parts.

Manuli hose and fittings products must be assembled in strict accordance with Manuli instructions and limitations.

Don't mix and match: use always Manuli original couplings and hoses.

Manuli hose, couplings and assembling machines are tested as an effective and reliable system. The use of different products and machines may cause premature hose failures, property damage, serious injury or death.

**MANULI MAKES NO WARRANTIES, EXPRESS OR IMPLIED, AND ASSUMES NO RESPONSIBILITY OR LIABILITY FOR ANY LOSS OR DAMAGE, WHETHER DIRECT, INDIRECT, CONSEQUENTIAL OR INCIDENTAL WHICH MIGHT ARISE OUT OF CRIMPED HOSE ASSEMBLIES NOT PRODUCED FROM GENUINE MANULI HOSE FITTINGS, HOSE AND EQUIPMENT, IN CONFORMANCE WITH MANULI PROCESS SPECIFICATIONS FOR EACH SPECIFIC HOSE ASSEMBLY.**

The latest edition of the Manuli crimping booklet is the only official guide to selecting proper hose and fittings combinations and for determining crimping compatibility and parameters.

# ASSEMBLY MACHINES INDEX

|          | MODEL           | MACHINE TYPE                                   | APPLICATION SECTOR                                   | MACHINE PERFORMANCE  | SECTION | ITEM |
|----------|-----------------|--|--|--|---------|------|
| CRIMPING | MHP 80          | Hand pump, portable                            | On site repair                                       | Manual machine for small sizes                                   | M1      | 1    |
|          | MHP 137         | Hand pump, portable                            | On site repair                                       | Manual machine for small/medium sizes                            |         | 2    |
|          | MB 137 PLUS     | Benchtop                                       | Aftermarket service                                  | Medium crimping force, small/medium sizes, limited productivity  |         | 3    |
|          | MB 240          | Benchtop                                       | Aftermarket service                                  | Medium crimping force, medium productivity                       |         | 4    |
|          | MB 350          | Benchtop: very high crimp force                | Aftermarket service                                  | High crimping force, medium productivity, large size             |         | 5    |
|          | MB 350 L        | Benchtop: very high crimp force                | Aftermarket service                                  | High crimping force, medium productivity, large size             |         | 6    |
|          | MV 137          | Field service and mobile workshop              | On site repair mobile van                            | Medium crimping force, limited productivity                      |         | 7    |
|          | MV 137 L        | Field service and mobile workshop              | On site repair mobile van                            | Medium crimping force, limited productivity                      |         | 8    |
|          | MV 240          | Field service and mobile workshop              | On site repair mobile van                            | Medium crimping force, limited productivity                      |         | 9    |
|          | MV 240 L        | Field service and mobile workshop              | On site repair mobile van                            | Medium crimping force, limited productivity                      |         | 10   |
|          | MV 350          | Field service and mobile or container workshop | On site repair mobile van                            | High crimping force, medium productivity, large size             |         | 11   |
|          | GOLDENCRIMP 450 | Benchtop                                       | Field maintenance shops, wide hose range             | Very high crimping force, tough environments, large size         |         | 12   |
|          | MVB 140         | Vertical benchtop, cage dies                   | On site repair; Aftermarket service                  | Medium crimping force, small/medium sizes, limited productivity  |         | 13   |
|          | MS 140          | Stand type crimp machine                       | Assembling production unit, small/medium sizes       | Medium crimping force, high productivity for small - medium bore |         | 14   |
|          | MS 280 L        | Stand-type crimp machine, SCS control          | Aftermarket service, First OEM eq                    | Medium crimping force, whole size range                          |         | 15   |
|          | MS 320          | Stand-type crimp machine, SCS control          | Assembling production unit, OEM and distribution     | High crimping force, high productivity, large size               |         | 16   |
|          | MS 480          | Stand-type crimp machine, SCS control          | Assembling production unit, OEM and large bore focus | Very high crimping force, high productivity, very large opening  |         | 17   |
|          | MS 800          | Stand-type crimp machine, SCS control          | Assembling production unit                           | Very high crimping force for large bore hose focus               |         | 18   |



# ASSEMBLY MACHINES INDEX



|                | MODEL           | MACHINE TYPE                                   | APPLICATION SECTOR                                | MACHINE PERFORMANCE       | SECTION | ITEM |
|----------------|-----------------|--|---|---------------------------|---------|------|
| CUTTING        | M22 CUT         | Benchtop                                       | Aftermarket service                               | Medium size capacity      | M2      | 1    |
|                | M30 CUT E       | Benchtop cutting machine, optional skiving     | Aftermarket service                               | Wide hose range capacity  |         | 2    |
|                | M30 CUT L       | Stand type cutting machine                     | Aftermarket service (smoke absorption integrated) | Wide hose range capacity  |         | 3    |
|                | M30 CUT & SKIVE | Benchtop: integrated cutting & skiving         | Aftermarket service                               | Wide hose range capacity  |         | 4    |
|                | M55 CUT         | Stand type cutting machine                     | Aftermarket service and small-medium OEM workshop | Whole hose range capacity |         | 5    |
|                | M75 CUT         | Stand type cutting machine                     | Production unit                                   | Whole hose range capacity |         | 6    |
|                | M90 CUT         | Stand type cutting machine                     | Production unit                                   | Whole hose range capacity |         | 7    |
| SKIVING        | MH SKY          | Manual, portable skiving tool                  | Aftermarket service                               | Wide hose range capacity  | M3      | 1    |
|                | M50 SKY         | Benchtop, skiving                              | Aftermarket service                               | Wide hose range capacity  |         | 2    |
|                | M205 SKY        | Stand type skive machine                       | Production unit                                   | Whole hose range capacity |         | 3    |
| MARKING        | M50 MARK        | Benchtop, ferrules marking                     | Aftermarket service                               | Wide hose range capacity  | M4      | 1    |
| INSERT PUSHING | M1500 INS       | Benchtop coupling inserter                     | Production unit                                   | Whole hose range capacity | M5      | 1    |
| TEST BENCH     | MTB 1500        | Stand type machine; proof pressure and certif. | Production unit                                   | Wide hose range capacity  | M6      | 1    |
|                | MTB 2500        | Stand type machine; proof pressure and certif. | Production unit                                   | Wide hose range capacity  |         | 2    |

# MODULAR ASSEMBLY UNITS

In order to simplify the process of selecting appropriate equipment for new workshops, Manuli Hydraulics also offers a range of scaled machine modules. These modules include suitable combinations of cutting and crimping machines (and skiving where appropriate), based on the scale and planned throughput of the intended assembly operation.

| MODULE |        | DESCRIPTION                   | CAPACITY  | CUTTING           | SKIVING       | CRIMPING   |   |
|--------|--------|-------------------------------|---|-------------------|---------------|--|---|
| M0     | STATIC | Small Service Workshop        | <ul style="list-style-type: none"> <li>1 1/4" 4WS</li> <li>25 Hoses / Day</li> <li>Mixed sizes</li> </ul>       | M22 CUT           | M50 SKY       | MB 137 PLUS  |    |
|        | MOBILE |                               |   | M22 CUT (12/24 V) | MH SKY        | MV 137 (12/24V)                                    |    |
| M1     | STATIC | Intermittent Service Workshop | <ul style="list-style-type: none"> <li>2" 4WS</li> <li>50 Hoses / Day</li> <li>Mixed sizes</li> </ul>           | M30 CUT & SKIVE   |               | MB 240   |   |
|        | MOBILE |                               |   |                   |               | MV 240 (12/24 V or 220 1Ph)                        |  |
| M2     | STATIC | Continuous Service Workshop   | <ul style="list-style-type: none"> <li>2" 6WS - 3" 2WB</li> <li>100 Hoses / Day</li> <li>Mixed sizes</li> </ul> | M55 CUT           | M205 SKY PLUS | MB 350   |  |
|        | MOBILE |                               |   |                   |               | MV 350 (12/24 V or 220 1Ph/3Ph) or GoldenCrimp/450 |  |

# MODULAR ASSEMBLY UNITS

| MODULE |        | DESCRIPTION           | CAPACITY  | CUTTING    | SKIVING  | CRIMPING |   |
|--------|--------|-----------------------|---|------------|--|----------|---|
| P1     | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> <li>1 1/4" 4WS - 2" 2WB</li> <li>&gt;100 Hoses / Day</li> <li>Mixed sizes</li> </ul>             | M55 CUT-P  | M205 SKY   | MS 280 L |    |
| P2     | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> <li>2" 4WS - 3" 2WB</li> <li>&gt;100 Hoses / Day</li> <li>Mixed sizes</li> </ul>                 | M90 CUT    | M205 SKY<br><i>(With reinforced clamping system)</i> | MS 320   |   |
| P3     | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> <li>2" 6WS - 3" 4WS</li> <li>&gt;100 Hoses / Day</li> <li>Mixed sizes</li> </ul>                 | M90 CUT    | M205 SKY<br><i>(With reinforced clamping system)</i> | MS 480   |   |
| P4     | STATIC | XXL Assembly Workshop | <ul style="list-style-type: none"> <li>3" 8WS - 4" 4WS - 8" Industrial Hose</li> <li>50 Hoses / Day</li> <li>Mixed sizes</li> </ul> | MDH 15 CUT | MDH 205 SKY  | MS 800   |  |

## Key

### M Maintenance Operations

Intended for small or medium aftermarket, repair service

### P Production Operations

Intended for small/medium/large OEM activity or large production aftermarket



# DIE SET INDEX

| MODEL              |      | DIE N° |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |                | DIE SET PACKAGES | QTY            | KIT    |        |
|--------------------|------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------|------------------|----------------|--------|--------|
|                    |      | 10     | 12    | 15    | 18    | 21    | 24    | 27    | 30    | 33    | 36    | 39    | 42    | 45    | 48    | 51    | 57    | 62    | 66    | 70    | 72    | 73    | 76    | 86    | 92    | 95    | 105   | 112            |                  |                |        | 130    |
| MHP80              | mm   | 56     | 56    | 56    | 56    | 56    | 56    | 56    | 56    | -     | -     | 56    | -     | -     | -     | -     |       |       |       |       |       |       |       |       |       |       |       |                | ESA3110NH80KT    | 6              |        |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | -     | -     | 2.205 | -     | -     | -     | -     |       |       |       |       |       |       |       |       |       |       |                |                  | ESA3110NH80KT  | 6      |        |
| MHP137             | mm   | 56     | 56    | 56    | 56    | 56    | 56    | 56    | 56    | 70    | 75    | 70    | 70    | 70    | 70    | 75    |       |       |       |       |       |       |       |       |       |       |       |                | ESA3220N137KT    | 10             | KIT 10 |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 2.953 | 2.756 | 2.756 | 2.756 | 2.756 | 2.953 |       |       |       |       |       |       |       |       |       |       |                | ESA3220NKT13JF   | 13             | KIT 13 |        |
| MB 137<br>MV 137   | mm   | 56     | 56    | 56    | 56    | 56    | 56    | 56    | 56    | 70    | 75    | 70    | 70    | 70    | 70    | 75    |       |       |       |       |       |       |       |       |       |       |       |                | ESA3220N137KT    | 10             | KIT 10 |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 2.953 | 2.756 | 2.756 | 2.756 | 2.756 | 2.953 |       |       |       |       |       |       |       |       |       |       |                | ESA3220NKT13JF   | 13             | KIT 13 |        |
| MB 240<br>MV 240   | mm   | 56     | 56    | 56    | 56    | 56    | 70    | 90    | 90    | 90    | 90    | 90    | 90    | 100   | 100   | 100   | 100   | 100   | 100   | 100   | 100   |       |       |       |       |       |       |                | ESA3320N240KT    | 12             | KIT 12 |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.937 | 3.937 | 3.937 | 3.937 | 3.937 | 3.937 | 3.937 |       |       |       |       |       |                | ESA3320N240KTF   | 18             | KIT 18 |        |
| MB 350<br>MV 350   | mm   | 56     | 56    | 56    | 56    | 56    | 70    | 90    | 90    | 90    | 90    | 90    | 90    | 100   | 100   | 110   | 110   | 110   | 110   | 100   | 100   | 125   | 125   |       | 125   | 125   |       |                | ESA3330N340KT    | 13             | KIT 13 |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.937 | 4.331 | 4.331 | 4.331 | 4.331 | 3.937 | 3.937 | 4.921 | 4.921 |       | 4.921 | 4.921 |                | ESA3330N340KTF   | 20             | KIT 20 |        |
| GOLDENCRIMP<br>450 | mm   | 56     | 56    | 56    | 56    | 56    | 70    | 90    | 90    | 90    | 90    | 90    | 90    | 100   | 100   | 110   | 110   | 110   | 110   | 100   | 100   | 125   | 125   | 150   | 125   | 150   | 150   | 150            | ESA3330N450KT    | 13             | KIT 13 |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.937 | 4.331 | 4.331 | 4.331 | 4.331 | 3.937 | 3.937 | 4.921 | 4.921 | 5.906 | 4.921 | 5.906 | 5.906          | 5.906            | ESA3330N450KTF | 20     | KIT 20 |
| MS140              | mm   | 56     | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 70    | 75    | 70    | 70    | 70    | 70    | 75    |       |       |       |       |       |       |       |       |       |       |       |                | ESA3540N140KT    | 10             | KIT 10 |        |
|                    | inch | 2.205  | 2.756 | 2.756 | 2.756 | 2.756 | 2.756 | 2.756 | 2.756 | 2.756 | 2.756 | 2.953 | 2.756 | 2.756 | 2.756 | 2.756 | 2.953 |       |       |       |       |       |       |       |       |       |       |                | ESA3540N140KTF   | 12             | KIT 12 |        |
| MS280L             | mm   | 56     | 56    | 56    | 56    | 56    | 70    | 90    | 90    | 90    | 90    | 90    | 90    | 100   | 100   | 100   | 100   | 110   | 100   | 100   | 100   |       |       |       |       |       |       | -              | 18               |                |        |        |
|                    | inch | 2.205  | 2.205 | 2.205 | 2.205 | 2.205 | 2.756 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.937 | 3.937 | 3.937 | 4.331 | 3.937 | 3.937 | 3.937 |       |       |       |       |       | ESA3320N240KTF | 18               | KIT 18         |        |        |
| MS320              | mm   | 90     | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 90    | 95    | 100   | 110   | 110   | 110   | 110   | 100   | 100   | 120   | 120   | -     | 125   | 125   |       |                | ESA3540N320KT    | 13             | KIT 13 |        |
|                    | inch | 3.543  | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.740 | 3.937 | 4.331 | 4.331 | 4.331 | 4.331 | 3.937 | 3.937 | 4.724 | 4.724 |       | 4.921 | 4.921 |                | ESA3540N320KTF   | 20             | KIT 20 |        |
| MS480              | mm   | 90     | 90    | 90    | 90    | 90    | 90    | 90    | 100   | 90    | 90    | 90    | 90    | 100   | 100   | 110   | 110   | 110   | 110   | 100   | 100   | 125   | 125   | 150   | 125   | 150   | 150   | 150            | ESA3540N480KT    | 13             | KIT 13 |        |
|                    | inch | 3.543  | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.937 | 4.331 | 4.331 | 4.331 | 4.331 | 3.937 | 3.937 | 4.921 | 4.921 | 5.906 | 4.921 | 5.906 | 5.906          | 5.906            | ESA3540N480KTF | 20     | KIT 20 |
| MS800              | mm   |        |       | 90    | 90    | 90    | 90    | 90    | 100   | 90    |       | 90    | 90    | 100   | 100   | 110   | 110   | 110   | 110   | 100   | 100   | 125   | 125   | 150   | 125   | 150   | 180   | 150            | 180              | ESA3540N480KT  | 13     | KIT 13 |
|                    | inch |        |       | 3.543 | 3.543 | 3.543 | 3.543 | 3.543 | 3.937 | 3.543 |       | 3.543 | 3.543 | 3.937 | 3.937 | 4.331 | 4.331 | 4.331 | 4.331 | 3.937 | 3.937 | 4.921 | 4.921 | 5.906 | 4.921 | 5.906 | 7.087 | 5.906          | 7.087            | ESA3540N800KTF | 18     | KIT 18 |

- xx Die set standard package
- xx Die set full package
- xx Optional die sets
- xx Diamondspir die sets (optional)
- xx Master die



# CRIMPING MACHINES

## MHP 80

FIELD SERVICE & MOBILE WORKSHOP

**HAND PUMP, PORTABLE**



### KEY ADVANTAGES

- Compact
- Lightweight
- Easy to use
- Balanced design
- Dual stage pump

### MAIN APPLICATIONS

Dedicated to repair shops or maintenance departments making low volumes of small and medium sized hose assemblies. Also ideal for carrying out on-site repairs.

### TECHNICAL SPECIFICATIONS

|                      |                                    |                           |                            |
|----------------------|------------------------------------|---------------------------|----------------------------|
| <b>Dimensions:</b>   | 330 x 250 x 400 mm (13 x 10 x 16") | <b>Crimp Range:</b>       | 4 - 43 mm (0.157 - 1.693") |
| <b>Net Weight:</b>   | 28 kg (62 lb)                      | <b>Crimp Force:</b>       | 80 t                       |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33") | <b>Opening with Dies:</b> | +20 mm (+0.787")           |
| <b>Gross Weight:</b> | 41 kg (90 lb)                      | <b>Complete Opening:</b>  | 59 mm (2.323")             |
| <b>Capacity:</b>     | 2wb: 1" max.                       | <b>Master Die Length:</b> | 56 mm (2.205")             |
|                      | 4ws: 1/2" max.                     | <b>Standard Dies:</b>     | 15, 18, 21, 24, 27, 30, 39 |

#### Technical Features:

- Hand pump: 5000 psi (double speed)
- Options available: hydropneumatic pump

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type   | Max. Hose Size | Ref. Hoses  |
|------------------------|-----------------|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit | 1"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit | 1/2"           | Rockmaster/12; Rockmaster/4SP; Shieldmaster 6000 (DN10 & DN12 spiral)   |

### ORDERING INFORMATION

| Product Code      | Description               |
|-------------------|---------------------------|
| EOA3110NMHP80     | MHP 80 (NO DIES)          |
| EOA3110NMHP80PPPM | MHP 80 MANUAL PUMP + PPPM |

# CRIMPING MACHINES

## MHP 80

**FIELD SERVICE & MOBILE WORKSHOP**

**HAND PUMP, PORTABLE**

### AVAILABLE DIE SETS

| Product Code       | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3110N80-06      | Die set n. 06 - length 56 mm             | 6  | 06-08       | 56              | 2.205             |
| ESA3220NL056D008L2 | Die set n. 08 - length 56 mm             | 8  | 08-10       | 56              | 2.205             |
| ESA3110N80-10      | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3110N80-12      | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3110N80-15      | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3110N80-18      | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3110N80-21      | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3110N80-24      | Die set n. 24 - length 56 mm             | 24 | 24-27       | 56              | 2.205             |
| ESA3110N80-27      | Die set n. 27 - length 56 mm             | 27 | 27-30       | 56              | 2.205             |
| ESA3110N80-30      | Die set n. 30 - length 56 mm             | 30 | 30-43       | 56              | 2.205             |
| ESA3110NH80KT      | Kit 6 dies MHP80/HCRIMP80 (n.15 to n.30) | -  | -           | -               | -                 |



# CRIMPING MACHINES

## MHP 137

FIELD SERVICE & MOBILE WORKSHOP

**HAND PUMP, PORTABLE**



### KEY ADVANTAGES

- High capacity
- Narrow head
- Audio-visual signal
- 350 bar technology more robust & reliable than 700 bar
- Large opening

### MAIN APPLICATIONS

Dedicated to repair shops or maintenance departments making low volumes of small and medium sized hose assemblies. Can also be used in a vehicle for on-site repairs.

### TECHNICAL SPECIFICATIONS

|                            |                                      |                           |  |
|----------------------------|--------------------------------------|---------------------------|--|
| <b>Dimensions:</b>         | 480 x 250 x 340 mm (19 x 10 x 13")   | <b>Crimp Range:</b>       | 4 - 70 mm (0.157 - 2.756")   |
| <b>Net Weight:</b>         | 55 kg (121 lb)                       | <b>Crimp Force:</b>       | 137 t  |
| <b>Packaging:</b>          | 800 x 600 x 830 mm (31 x 24 x 33")   | <b>Opening with Dies:</b> | +28 mm (+1.102")   |
| <b>Gross Weight:</b>       | 75 kg (165 lb)                       | <b>Complete Opening:</b>  | 100 mm (3.937")  |
| <b>Capacity:</b>           | 2wb: 1 1/4" max.<br>4ws: 1 1/4" max. | <b>Master Die Length:</b> | 75 mm (2.362")   |
| <b>Technical Features:</b> |                                      | <b>Standard Dies:</b>     | 15, 18, 21, 24, 27, 30,<br>33, 36, 39, 42, 45, 48, 51<br>and Refrifast dies 14, 18, 21 |

Options available: Hydropneumatic pump

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type                           | Max. Hose Size                 | Ref. Hoses  |
|------------------------|---|--------------------------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4" (with extra dies 45/51) | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4" (with extra dies 45/51) | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock  | 3/4"                           | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |

### ORDERING INFORMATION

| Product Code       | Description |
|--------------------|-------------|
| EOA3110NMHP137P2   | MHP 137     |
| EOA3110NMHP137PHP  | MHP 137 HP  |
| EOA3110NMHP137PHPM | MHP 137 HPM |

# CRIMPING MACHINES

## MHP 137

FIELD SERVICE & MOBILE WORKSHOP

HAND PUMP, PORTABLE

### AVAILABLE DIE SETS

| Product Code    | Description                             | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|-----------------|---|----|-------------|-----------------|-------------------|
| ESA3220NL56-6   | Die set n. 6 - length 56 mm             | 6  | 06-08       | 56              | 2.205             |
| ESA3220NL56-8   | Die set n. 8 - length 56 mm             | 8  | 08-10       | 56              | 2.205             |
| ESA3220NL56-10  | Die set n. 10 - length 56 mm            | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12  | Die set n. 12 - length 56 mm            | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15  | Die set n. 15 - length 56 mm            | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-17  | Die set n. 17 - length 56 mm            | 17 | 17-18       | 56              | 2.205             |
| ESA3220NL56-18  | Die set n. 18 - length 56 mm            | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-20  | Die set n. 20 - length 56 mm            | 20 | 20-21       | 56              | 2.205             |
| ESA3220NL56-21  | Die set n. 21 - length 56 mm            | 21 | 21-24       | 56              | 2.205             |
| ESA3220N137-24  | Die set n. 24 - length 56 mm            | 24 | 24-27       | 56              | 2.205             |
| ESA3220N137-27  | Die set n. 27 - length 56 mm            | 27 | 27-30       | 56              | 2.205             |
| ESA3220N137-30  | Die set n. 30 - length 56 mm            | 30 | 30-33       | 56              | 2.205             |
| ESA3220N137-33  | Die set n. 33 - length 70 mm            | 33 | 33-36       | 70              | 2.756             |
| ESA3220N75-36   | Die set n. 36 - length 75 mm            | 36 | 36-39       | 75              | 2.953             |
| ESA3220N137-39  | Die set n. 39 - length 70 mm            | 39 | 39-42       | 70              | 2.756             |
| ESA3320N140-42  | Die set n. 42 - length 70 mm            | 42 | 42-45       | 70              | 2.756             |
| ESA3220N137-45  | Die set n. 45 - length 70 mm            | 45 | 45-48       | 70              | 2.756             |
| ESA3220N137-48  | Die set n. 48 - length 70 mm            | 48 | 48-51       | 70              | 2.756             |
| ESA3220N137-51  | Die set n. 51 - length 75 mm            | 51 | 51-57       | 75              | 2.953             |
| ESA3220N137KT   | Kit 10 dies MB137/S/MV137(n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220N137KT9J | Kit 9 dies MB137/S/MV137 (n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220NKIT6J   | Kit 6 dies MB137/S/MV137 (n.15 to n.39) | -  | -           | -               | -                 |
| ESA3220N137KTF  | Kit 13 dies MB137/S/MV137(n.15 to n.51) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES



## MB 137 PLUS

SMALL SERVICE WORKSHOP (1 1/4" 4WS)

**BENCHTOP**

### KEY ADVANTAGES

- Compact, short head
- Micrometer and cylinder protection
- Large opening
- Die storage included
- Easy to move
- Accurate
- Easy die set up
- Ergonomic design

### MAIN APPLICATIONS

Dedicated to maintenance departments or repair shops, as well as hose distributors.

### TECHNICAL SPECIFICATIONS

|                      |                                    |                            |                                     |
|----------------------|------------------------------------|----------------------------|-------------------------------------|
| <b>Dimensions:</b>   | 600 x 650 x 550 mm (24 x 26 x 22") | <b>Motor:</b>              | 2.2 kW                              |
| <b>Net Weight:</b>   | 120 kg (265 lb)                    | <b>Noise Level:</b>        | 72 dB A                             |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33") | <b>Crimp Range:</b>        | 4 - 70 mm (0.157 - 2.756")          |
| <b>Gross Weight:</b> | 130 kg (287 lb)                    | <b>Crimp Force:</b>        | 137 t                               |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz              | <b>Opening with Dies:</b>  | +28 mm (+1.102")                    |
|                      | 380/415 V, 3Ph, 50 Hz              | <b>Complete Opening:</b>   | 100 mm (3.937")                     |
|                      | 208/240 V, 3Ph, 60 Hz              | <b>Master Die Length:</b>  | 75 mm (2.953")                      |
|                      | 380/415 V, 3Ph, 60 Hz              | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33          |
| <b>Capacity:</b>     | 2wb: 1 1/4" max.                   |                            | 36, 39, 42, 45, 48, 51              |
|                      | 4ws: 1 1/4" max.                   | <b>Technical Features:</b> | Other voltages available on request |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type                           | Max. Hose Size | Ref. Hoses  |
|------------------------|---|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock  | 3/4"           | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MB 137 PLUS

SMALL WORKSHOP SERVICE (1¼" 4WS)

**BENCHTOP**

### ORDERING INFORMATION

| Product Code  | Description               |
|---------------|---------------------------|
| EOA3224NMB137 | MB 137+ 380/415V 3PH 50HZ |
| EOA3227NMB137 | MB 137+ 220/240V 3PH 50HZ |
| EOA3229NMB137 | MB 137+ 208/240V 3PH 60HZ |
| EOA322BNMB137 | MB 137+ 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code    | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|-----------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-6   | Die set n. 6 - length 56 mm              | 6  | 06-08       | 56              | 2.205             |
| ESA3220NL56-8   | Die set n. 8 - length 56 mm              | 8  | 08-10       | 56              | 2.205             |
| ESA3220NL56-10  | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12  | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15  | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-17  | Die set n. 17 - length 56 mm             | 17 | 17-18       | 56              | 2.205             |
| ESA3220NL56-18  | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-20  | Die set n. 20 - length 56 mm             | 20 | 20-21       | 56              | 2.205             |
| ESA3220NL56-21  | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3220N137-24  | Die set n. 24 - length 56 mm             | 24 | 24-27       | 56              | 2.205             |
| ESA3220N137-27  | Die set n. 27 - length 56 mm             | 27 | 27-30       | 56              | 2.205             |
| ESA3220N137-30  | Die set n. 30 - length 56 mm             | 30 | 30-33       | 56              | 2.205             |
| ESA3220N137-33  | Die set n. 33 - length 70 mm             | 33 | 33-36       | 70              | 2.756             |
| ESA3220N75-36   | Die set n. 36 - length 75 mm             | 36 | 36-39       | 75              | 2.953             |
| ESA3220N137-39  | Die set n. 39 - length 70 mm             | 39 | 39-42       | 70              | 2.756             |
| ESA3320N140-42  | Die set n. 42 - length 70 mm             | 42 | 42-45       | 70              | 2.756             |
| ESA3220N137-45  | Die set n. 45 - length 70 mm             | 45 | 45-48       | 70              | 2.756             |
| ESA3220N137-48  | Die set n. 48 - length 70 mm             | 48 | 48-51       | 70              | 2.756             |
| ESA3220N137-51  | Die set n. 51 - length 75 mm             | 51 | 51-57       | 75              | 2.953             |
| ESA3220N137KT   | Kit 10 dies MB137+/S/MV137(n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220N137KT9J | Kit 9 dies MB137+/S/MV137 (n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220NKIT6J   | Kit 6 dies MB137+/S/MV137 (n.15 to n.39) | -  | -           | -               | -                 |
| ESA3220N137KTF  | Kit 13 dies MB137+/S/MV137(n.15 to n.51) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MB 240

PROFESSIONAL WORKSHOP

**BENCHTOP**



### KEY ADVANTAGES

- Ergonomic micrometer
- Radial die movement
- High crimping force
- Electronic control including counters and semi-automatic opening
- Built-in safety system to prevent incorrect die choice
- Cylinder protection
- Easy front access for elbow fittings
- Energy savings

### MAIN APPLICATIONS

Dedicated to hydraulic maintenance specialists working on medium sized machines and equipment. Also suitable for assemblers involved in medium sized hoses and quantities.

### TECHNICAL SPECIFICATIONS

|                      |                                      |                           |   |
|----------------------|--------------------------------------|---------------------------|---|
| <b>Dimensions:</b>   | 1120 x 670 x 915 mm (44 x 26 x 36")  | <b>Motor:</b>             | 4.0 kW  |
| <b>Net Weight:</b>   | 190 kg (419 lb)                      | <b>Noise Level:</b>       | 66 dB A   |
| <b>Packaging:</b>    | 1170 x 770 x 1100 mm (46 x 30 x 43") | <b>Crimp Range:</b>       | 4 - 76 mm (0.157 - 2.992")  |
| <b>Gross Weight:</b> | 234 kg (516 lb)                      | <b>Crimp Force:</b>       | 240 t   |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz                | <b>Opening with Dies:</b> | +38 mm (+1.496")  |
|                      | 380/415 V, 3Ph, 50 Hz                | <b>Complete Opening:</b>  | 118 mm (4.645")   |
|                      | 208/240 V, 3Ph, 60 Hz                | <b>Master Die Length:</b> | 100 mm (3.937")   |
|                      | 380/415 V, 3Ph, 60 Hz                | <b>Standard Dies:</b>     | 15, 18, 21, 24, 27, 30, 33, 36, 39,<br>42, 45, 48, 51, 57, 62, 66, 70, 72 |
| <b>Capacity:</b>     | 2ws: 2" max.                         |                           |   |
|                      | 4ws: 2" max.                         |                           |   |
|                      | 6ws: 1" max.                         |                           |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size | Ref. Hoses  |
|------------------------|--|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock                   | 1"             | Diamondspir; Goldenblast/Six  |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MB 240

PROFESSIONAL WORKSHOP

**BENCHTOP**

### ORDERING INFORMATION

| Product Code   | Description              |
|----------------|--------------------------|
| EOA3324NMB240P | MB 240 380/415V 3PH 50HZ |
| EOA3327NMB240P | MB 240 220/240V 3PH 50HZ |
| EOA3329NMB240P | MB 240 208/240V 3PH 60HZ |
| EOA332BNMB240P | MB 240 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                            | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm           | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm           | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm           | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm           | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm           | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm           | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm           | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm           | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm           | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm           | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm           | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm           | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm          | 45 | 45-48       | 100             | 3.937             |
| ESA3320N100-48     | Die set n. 48 - length 100 mm          | 48 | 48-51       | 100             | 3.937             |
| ESA3320N100-51     | Die set n. 51 - length 100 mm          | 51 | 51-57       | 100             | 3.937             |
| ESA3320N100-54     | Die set n. 54 - length 100 mm          | 54 | 54-57       | 100             | 3.937             |
| ESA3320N100-57     | Die set n. 57 - length 100 mm          | 57 | 57-62       | 100             | 3.937             |
| ESA3320N100-62     | Die set n. 62 - length 110 mm          | 62 | 62-66       | 110             | 4.331             |
| ESA3320N100-66     | Die set n. 66 - length 100 mm          | 66 | 66-70       | 100             | 3.937             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm          | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm          | 72 | 72-73       | 100             | 3.937             |
| ESA3320N240KT      | Kit 12 dies MB240/MV240 (n.15 to n.66) | -  | -           | -               | -                 |
| ESA3320N240KTF     | Kit 18 dies MB240/MV240 (n.15 to n.72) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MB 350

FULL SERVICE WORKSHOP

**BENCHTOP; VERY HIGH CRIMP FORCE**



### KEY ADVANTAGES

- High power and large opening in a very compact design
- Radial die movement (easy positioning of fitting: no axial movement during crimping)
- Groove for 90° long drop fittings
- Energy savings (stop & start concept)
- Electronic control including counter and semi-automatic opening
- Easy set up with ergonomic, intuitive and precise micrometer

### MAIN APPLICATIONS

Dedicated to professional hydraulic maintenance specialists, professional service workshops, and large bore after-market hose assemblers.

### TECHNICAL SPECIFICATIONS

|                      |                                       |                            |  |
|----------------------|---------------------------------------|----------------------------|--|
| <b>Dimensions:</b>   | 1005 x 655 x 668 mm (40 x 26 x 26.5") | <b>Motor:</b>              | 5.5 kW   |
| <b>Net Weight:</b>   | 290 kg (639 lb)                       | <b>Noise Level:</b>        | <65 dB A   |
| <b>Packaging:</b>    | 1170 x 760 x 1100 mm (46 x 30 x 43")  | <b>Crimp Range:</b>        | 4 - 130 mm (0.157 - 5.118")  |
| <b>Gross Weight:</b> | 350 kg (772 lb)                       | <b>Crimp Force:</b>        | 350 t  |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz                 | <b>Opening with Dies:</b>  | +54 mm (+2.125")   |
|                      | 380/415 V, 3Ph, 50 Hz                 | <b>Complete Opening:</b>   | 180 mm (7.086")  |
|                      | 208/240 V, 3Ph, 60 Hz                 | <b>Master Die Length:</b>  | 115 mm (4.523")  |
|                      | 380/415 V, 3Ph, 60 Hz                 | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42,<br>45, 48, 51, 57, 62, 66, 70, 72, 73, 76                                      |
| <b>Capacity:</b>     | 2wb: 3" max.                          | <b>Technical Features:</b> | - Automatic maintenance alerts<br>- Cylinder protection against dust - durable design                                  |
|                      | Textile / Suction Hose: 4" max.       | <b>Safety remarks:</b>     | Please consider hose-fitting-machine integration when crimping. Possible limitations in case of double elbow fittings. |
|                      | 4ws: 2" max.                          |                            |  |
|                      | 6ws: 2" max.                          |                            |  |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size     | Ref. Hoses  |
|------------------------|--|--------------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK  | 3" with extra dies | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Spiralfit; MF3000 OPF; MF3000 OPK | 2"                 | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Spiralfit  | 2"                 | Rockmaster/13; GoldenISO/35 Xtraflex; Goldenblast   |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Spiralfit; MF2000 Xtralock                         | 1½"                | Diamondspir; Rockmaster/15; GoldenISO/42 Xtraflex; Shieldmaster/6000  |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MB 350

**FULL SERVICE WORKSHOP**

**BENCHTOP, VERY HIGH CRIMP FORCE**

### ORDERING INFORMATION

| Product Code     | Description                    |
|------------------|--------------------------------|
| EOA3324NMB350P   | MB 350+380/415V 3PH 50HZ       |
| EOA3334NMB350SCS | MB 350 380/415V 3PH 50HZ 5.5KW |
| EOA3327NMB350P   | MB 350 220/240V 3PH 50HZ       |
| EOA3337NMB350SCS | MB 350 220/240V 3PH 50HZ 5.5KW |
| EOA3329NMB350P   | MB 350 208/240V 3PH 60HZ       |
| EOA3339NMB350SCS | MB 350 208/240V 3PH 60HZ 5.5KW |
| EOA332BNMB350P   | MB 350 380/415V 3PH 60HZ       |

### AVAILABLE DIE SETS

| Product Code       | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm             | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm             | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm             | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm             | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm             | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm             | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm             | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm            | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm            | 48 | 48-51       | 100             | 3.937             |
| ESA3320N110-51     | Die set n. 51 - length 110 mm            | 51 | 51-57       | 110             | 4.331             |
| ESA3320N110-57     | Die set n. 57 - length 110 mm            | 57 | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm            | 62 | 62-66       | 110             | 4.331             |
| ESA3330N125-66     | Die set n. 66 - length 110 mm            | 66 | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm            | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm            | 72 | 72-73       | 100             | 3.937             |
| ESA3540N125-73     | Die set n. 73 - length 125 mm            | 73 | 73-76       | 125             | 4.921             |
| ESA3540N125-76A    | Die set n. 76 - length 125 mm            | 76 | 76-86       | 125             | 4.921             |
| ESA3540N125-90     | Die set n. 90 - length 125 mm            | 90 | 90-95       | 125             | 4.921             |
| ESA3540N12595      | Die set n. 95 - length 125 mm            | 95 | 95-105      | 125             | 4.921             |
| ESA3330N340KT      | Kit 13 dies MB350/L/MV350 (n.15 to n.73) | -  | -           | -               | -                 |
| ESA3330N340KTF     | Kit 20 dies MB350/L/MV350 (n.15 to n.76) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*



# CRIMPING MACHINES

## MB 350 L

FULL SERVICE WORKSHOP

**BENCHTOP; VERY HIGH CRIMP FORCE**



### KEY ADVANTAGES

- High power and large opening in a very compact design
- Radial die movement (easy positioning of fitting: no axial movement during crimping)
- Groove for 90° long drop fittings
- Energy savings (stop & start concept)
- Electronic control including counter and semi-automatic opening
- Easy set up with ergonomic, intuitive and precise micrometer

### MAIN APPLICATIONS

Dedicated to professional hydraulic maintenance specialists, professional service workshops, and large bore after-market hose assemblers.

### TECHNICAL SPECIFICATIONS

**Dimensions:** 1005 x 655 x 668 mm (40 x 26 x 26.5")  
**Net Weight:** 260 kg (573 lb)  
**Packaging:** 1170 x 760 x 1100 mm (46 x 30 x 43")  
**Gross Weight:** 350 kg (772 lb)  
**Voltages:** 220/240 V, 3Ph, 50 Hz  
 380/415 V, 3Ph, 50 Hz  
 208/240 V, 3Ph, 60 Hz  
 380/415 V, 3Ph, 60 Hz  
**Capacity:** 2wb: 3" max.  
 Textile / Suction Hose: 4" max.  
 4ws: 2" max.  
 6ws: 1½" max.

**Motor:** 4.0 kW  
**Noise Level:** <65 dB A  
**Crimp Range:** 4 - 130 mm (0.157 - 5.118")  
**Crimp Force:** 350 t  
**Opening with Dies:** +54 mm (+2.125")  
**Complete Opening:** 180 mm (7.086")  
**Master Die Length:** 115 mm (4.523")  
**Standard Dies:** 15, 18, 21, 24, 27, 30, 33, 36, 39, 42,  
 45, 48, 51, 57, 62, 66, 70, 72, 73, 76

#### Technical Features:

- Automatic maintenance alerts
- Cylinder protection against dust (durable design)

#### Safety Remarks:

Please consider hose-fitting-machine integration when crimping. Possible limitations in case of double elbow fittings.

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type   | Max. Hose Size     | Ref. Hoses  |
|------------------------|---|--------------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK   | 3" with extra dies | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit; MF3000 OPF; MF3000 OPK | 2"                 | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit  | 1½"                | Rockmaster/13; Rockmaster/15; GoldenISO/35 Xtraflex; GoldenISO/42 Xtraflex; Diamondspir; Shieldmaster/6000; Goldenblast/six               |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MB 350 L

FULL SERVICE WORKSHOP

**BENCHTOP; VERY HIGH CRIMP FORCE**

### ORDERING INFORMATION

| Product Code    | Description                |
|-----------------|----------------------------|
| EOA3324NMB350LP | MB 350 L 380/415V 3PH 50HZ |
| EOA3327NMB350LP | MB 350 L 220/240V 3PH 50HZ |
| EOA3329NMB350LP | MB 350 L 208/240V 3PH 60HZ |
| EOA332BNMB350LP | MB 350 L 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm             | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm             | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm             | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm             | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm             | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm             | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm             | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm            | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm            | 48 | 48-51       | 100             | 3.937             |
| ESA3320N110-51     | Die set n. 51 - length 110 mm            | 51 | 51-57       | 110             | 4.331             |
| ESA3320N110-57     | Die set n. 57 - length 110 mm            | 57 | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm            | 62 | 62-66       | 110             | 4.331             |
| ESA3330N125-66     | Die set n. 66 - length 110 mm            | 66 | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm            | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm            | 72 | 72-73       | 100             | 3.937             |
| ESA3540N125-73     | Die set n. 73 - length 125 mm            | 73 | 73-76       | 125             | 4.921             |
| ESA3540N125-76A    | Die set n. 76 - length 125 mm            | 76 | 76-86       | 125             | 4.921             |
| ESA3540N125-86     | Die set n. 86 - length 125 mm            | 86 | 86-90       | 125             | 4.921             |
| ESA3540N125-90     | Die set n. 90 - length 125 mm            | 90 | 90-95       | 125             | 4.921             |
| ESA3540N12595      | Die set n. 95 - length 125 mm            | 95 | 95-105      | 125             | 4.921             |
| ESA3330N340KT      | Kit 13 dies MB350/L/MV350 (n.15 to n.73) | -  | -           | -               | -                 |
| ESA3330N340KTF     | Kit 20 dies MB350/L/MV350 (n.15 to n.76) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MV 137

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN



### KEY ADVANTAGES

- Robust and compact design
- Lightweight
- High crimping speed
- Suitable also for 90° elbow fittings
- Cylinder protection
- Remote head mounting option possible

### MAIN APPLICATIONS

Designed for hydraulic maintenance specialists for on-site repairs with mobile vans. It is possible to install the crimp head separately from the power pack to gain space inside the vehicle and obtain a lower centre of gravity.

### TECHNICAL SPECIFICATIONS

|                      |                                    |                           |   |
|----------------------|------------------------------------|---------------------------|---|
| <b>Dimensions:</b>   | 650 x 550 x 610 mm (26 x 22 x 24") | <b>Motor:</b>             | 2.0 kW  |
| <b>Net Weight:</b>   | 103 kg (227 lb)                    | <b>Noise Level:</b>       | 72 dB A   |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33") | <b>Crimp Range:</b>       | 4 - 70 mm (0.157 - 2.756")                            |
| <b>Gross Weight:</b> | 120 kg (265 lb)                    | <b>Crimp Force:</b>       | 137 t   |
| <b>Voltages:</b>     | 12 V                               | <b>Opening with Dies:</b> | +28 mm (+1.102")                                      |
|                      | 24 V                               | <b>Complete Opening:</b>  | 100 mm (3.937")                                       |
| <b>Capacity:</b>     | 2wb: 1 1/4" max.                   | <b>Master Die Length:</b> | 75 mm (2.952")  |
|                      | 4ws: 1 1/4" max.                   | <b>Standard Dies:</b>     | 15, 18, 21, 24, 27, 30, 33,<br>36, 39, 42, 45, 48, 51 |

#### Technical Features:

Options available: Die storage, ergonomic gun, battery and charger, die sets for brake and air-conditioning hoses, marking dies

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type                           | Max. Hose Size | Ref. Hoses  |
|------------------------|---|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock  | 3/4"           | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |

# CRIMPING MACHINES

## MV 137

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN

### ORDERING INFORMATION

| Product Code  | Description |
|---------------|-------------|
| EOA3251N12137 | MV 137 12V  |
| EOA3252N24137 | MV 137 24V  |

### AVAILABLE DIE SETS

| Product Code    | Description                             | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|-----------------|---|----|-------------|-----------------|-------------------|
| ESA3220NL56-6   | Die set n. 6 - length 56 mm             | 6  | 06-08       | 56              | 2.205             |
| ESA3220NL56-8   | Die set n. 8 - length 56 mm             | 8  | 08-10       | 56              | 2.205             |
| ESA3220NL56-10  | Die set n. 10 - length 56 mm            | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12  | Die set n. 12 - length 56 mm            | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15  | Die set n. 15 - length 56 mm            | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-17  | Die set n. 17 - length 56 mm            | 17 | 17-18       | 56              | 2.205             |
| ESA3220NL56-18  | Die set n. 18 - length 56 mm            | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-20  | Die set n. 20 - length 56 mm            | 20 | 20-21       | 56              | 2.205             |
| ESA3220NL56-21  | Die set n. 21 - length 56 mm            | 21 | 21-24       | 56              | 2.205             |
| ESA3220N137-24  | Die set n. 24 - length 56 mm            | 24 | 24-27       | 56              | 2.205             |
| ESA3220N137-27  | Die set n. 27 - length 56 mm            | 27 | 27-30       | 56              | 2.205             |
| ESA3220N137-30  | Die set n. 30 - length 56 mm            | 30 | 30-33       | 56              | 2.205             |
| ESA3220N137-33  | Die set n. 33 - length 70 mm            | 33 | 33-36       | 70              | 2.756             |
| ESA3220N75-36   | Die set n. 36 - length 75 mm            | 36 | 36-39       | 75              | 2.953             |
| ESA3220N137-39  | Die set n. 39 - length 70 mm            | 39 | 39-42       | 70              | 2.756             |
| ESA3320N140-42  | Die set n. 42 - length 70 mm            | 42 | 42-45       | 70              | 2.756             |
| ESA3220N137-45  | Die set n. 45 - length 70 mm            | 45 | 45-48       | 70              | 2.756             |
| ESA3220N137-48  | Die set n. 48 - length 70 mm            | 48 | 48-51       | 70              | 2.756             |
| ESA3220N137-51  | Die set n. 51 - length 75 mm            | 51 | 51-57       | 75              | 2.953             |
| ESA3220N137KT   | Kit 10 dies MB137/S/MV137(n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220N137KT9J | Kit 9 dies MB137/S/MV137 (n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220NKIT6J   | Kit 6 dies MB137/S/MV137 (n.15 to n.39) | -  | -           | -               | -                 |
| ESA3220N137KTF  | Kit 13 dies MB137/S/MV137(n.15 to n.51) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES



## MV 137 L

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN

### KEY ADVANTAGES

- Robust and compact design
- Lightweight
- High crimping speed
- Suitable also for 90° elbow fittings
- Cylinder protection

### MAIN APPLICATIONS

Designed for hydraulic maintenance specialists for on-site repairs with mobile vans. It is possible to install the crimp head separately from the power pack to gain space inside the vehicle and obtain a lower centre of gravity. This machine is equipped with a cable remote control.

### TECHNICAL SPECIFICATIONS

|                      |                                      |                            |   |
|----------------------|--------------------------------------|----------------------------|---|
| <b>Dimensions:</b>   | 250 x 320 x 300 mm (10 x 13 x 12")   | <b>Crimp Range:</b>        | 4 - 70 mm (0.157 - 2.756")  |
| <b>Net Weight:</b>   | 86 kg (190 lb)                       | <b>Crimp Force:</b>        | 137 t   |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33")   | <b>Opening with Dies:</b>  | +28 mm (+1.102")  |
| <b>Gross Weight:</b> | 102 kg (225 lb)                      | <b>Complete Opening:</b>   | 100 mm (3.937")   |
| <b>Voltages:</b>     | 12 V                                 | <b>Master Die Length:</b>  | 75 mm (2.952")  |
|                      | 24 V                                 | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33,<br>36, 39, 42, 45, 48, 51   |
| <b>Capacity:</b>     | 2wb: 1 1/4" max.<br>4ws: 1 1/4" max. | <b>Technical Features:</b> | - Options available: Die storage, ergonomic gun, battery and charger, die sets for brake and air-conditioning hoses, marking dies<br>- Dimensions of power pack: 440 x 320 x 320 mm (17 x 13 x 13") |
| <b>Motor:</b>        | 2.0 kW                               |                            |   |
| <b>Noise Level:</b>  | 72 dB A                              |                            |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type                           | Max. Hose Size | Ref. Hoses  |
|------------------------|---|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock  | 3/4"           | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |

# CRIMPING MACHINES

## MV 137 L

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN

### ORDERING INFORMATION

| Product Code   | Description  |
|----------------|--------------|
| EOA3251NMV137L | MV 137 L 12V |
| EOA3252NMV137L | MV 137 L 24V |

### AVAILABLE DIE SETS

| Product Code    | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|-----------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-6   | Die set n. 6 - length 56 mm              | 6  | 06-08       | 56              | 2.205             |
| ESA3220NL56-8   | Die set n. 8 - length 56 mm              | 8  | 08-10       | 56              | 2.205             |
| ESA3220NL56-10  | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12  | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15  | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-17  | Die set n. 17 - length 56 mm             | 17 | 17-18       | 56              | 2.205             |
| ESA3220NL56-18  | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-20  | Die set n. 20 - length 56 mm             | 20 | 20-21       | 56              | 2.205             |
| ESA3220NL56-21  | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3220N137-24  | Die set n. 24 - length 56 mm             | 24 | 24-27       | 56              | 2.205             |
| ESA3220N137-27  | Die set n. 27 - length 56 mm             | 27 | 27-30       | 56              | 2.205             |
| ESA3220N137-30  | Die set n. 30 - length 56 mm             | 30 | 30-33       | 56              | 2.205             |
| ESA3220N137-33  | Die set n. 33 - length 70 mm             | 33 | 33-36       | 70              | 2.756             |
| ESA3220N75-36   | Die set n. 36 - length 75 mm             | 36 | 36-39       | 75              | 2.953             |
| ESA3220N137-39  | Die set n. 39 - length 70 mm             | 39 | 39-42       | 70              | 2.756             |
| ESA3320N140-42  | Die set n. 42 - length 70 mm             | 42 | 42-45       | 70              | 2.756             |
| ESA3220N137-45  | Die set n. 45 - length 70 mm             | 45 | 45-48       | 70              | 2.756             |
| ESA3220N137-48  | Die set n. 48 - length 70 mm             | 48 | 48-51       | 70              | 2.756             |
| ESA3220N137-51  | Die set n. 51 - length 75 mm             | 51 | 51-57       | 75              | 2.953             |
| ESA3220N137KT   | Kit 10 dies MB137/S/MV137 (n.15 to n.48) | -  | -           | -               | -                 |
| ESA3220N137KT9J | Kit 9 dies MB137/S/MV137 (n.15 to n.48)  | -  | -           | -               | -                 |
| ESA3220NKIT6J   | Kit 6 dies MB137/S/MV137 (n.15 to n.39)  | -  | -           | -               | -                 |
| ESA3220N137KTF  | Kit 13 dies MB137/S/MV137 (n.15 to n.51) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MV 240

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN



### KEY ADVANTAGES

- Robust design
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection
- Remote head mounting option possible

### MAIN APPLICATIONS

Designed for hydraulic maintenance specialists for on-site repairs with mobile vans. It is possible to install the crimp head separately from the power pack to gain space inside the vehicle and obtain a lower centre of gravity.

### TECHNICAL SPECIFICATIONS

|                      |                                    |   |                                     |
|----------------------|------------------------------------|---|-------------------------------------|
| <b>Dimensions:</b>   | 650 x 550 x 670 mm (26 x 22 x 26") | <b>Motor:</b>   | 2.0 kW                              |
| <b>Net Weight:</b>   | 145 kg (320 lb)                    | <b>Noise Level:</b>   | 72 dB A                             |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33") | <b>Crimp Range:</b>   | 4 - 76 mm (0.157 - 2.992")          |
| <b>Gross Weight:</b> | 180 kg (397 lb)                    | <b>Crimp Force:</b>   | 240 t                               |
| <b>Voltages:</b>     | 12 V                               | <b>Opening with Dies:</b>   | +38 mm (+1.496")                    |
|                      | 24 V                               | <b>Complete Opening:</b>  | 118 mm (4.646")                     |
|                      | 220/240 V, 3Ph, 50 Hz              | <b>Master Die Length:</b>   | 100 mm (3.937")                     |
|                      | 380/415 V, 3Ph, 50 Hz              | <b>Standard Dies:</b>   | 15, 18, 21, 24, 27, 30, 33, 36, 39, |
|                      | 208/240 V, 3Ph, 60 Hz              |   | 42, 45, 48, 51, 57, 62, 66, 70, 72  |
|                      | 380/415 V, 3Ph, 60 Hz              | <b>Technical Features:</b>  |                                     |
| <b>Capacity:</b>     | 2ws: 2" max.                       | Options available: Die storage, ergonomic gun, battery and charger, die sets for brake and air-conditioning hoses, marking dies |                                     |
|                      | 4ws: 2" max.                       |   |                                     |
|                      | 6ws: 1" max.                       |   |                                     |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size | Ref. Hoses  |
|------------------------|--|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 1¼"            | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock                   | 1"             | Diamondspir; Goldenblast/Six  |

# CRIMPING MACHINES

## MV 240

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN

### ORDERING INFORMATION

| Product Code  | Description              |
|---------------|--------------------------|
| EOA3351N12240 | MV 240 12V               |
| EOA3352N24240 | MV 240 24V               |
| EOA3324NMV240 | MV 240 380/415V 3PH 50HZ |
| EOA3327NMV240 | MV 240 220/240V 3PH 50HZ |
| EOA3329NMV240 | MV 240 208/240V 3PH 60HZ |
| EOA332BNMV240 | MV 240 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                            | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm           | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm           | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm           | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm           | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm           | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm           | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm           | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm           | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm           | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm           | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm           | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm           | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm          | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm          | 48 | 48-51       | 100             | 3.937             |
| ESA3320N100-51     | Die set n. 51 - length 100 mm          | 51 | 51-57       | 100             | 3.937             |
| ESA3320N100-54     | Die set n. 54 - length 100 mm          | 54 | 54-57       | 100             | 3.937             |
| ESA3320N100-57     | Die set n. 57 - length 100 mm          | 57 | 57-62       | 100             | 3.937             |
| ESA3320N100-62     | Die set n. 62 - length 100 mm          | 62 | 62-66       | 110             | 4.331             |
| ESA3320N100-66     | Die set n. 66 - length 100 mm          | 66 | 66-70       | 100             | 3.937             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm          | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm          | 72 | 72-73       | 100             | 3.937             |
| ESA3320N240KT      | Kit 12 dies MB240/MV240 (n.15 to n.66) | -  | -           | -               | -                 |
| ESA3320N240KTF     | Kit 18 dies MB240/MV240 (n.15 to n.72) | -  | -           | -               | -                 |

#### Notes:

Refrigeration hose special dies available upon request



# CRIMPING MACHINES

## MV 240 L

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN



### KEY ADVANTAGES

- Robust design
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection

### MAIN APPLICATIONS

Designed for hydraulic maintenance specialists for on-site repairs with mobile vans. It is possible to install the crimp head separately from the power pack to gain space inside the vehicle and obtain a lower centre of gravity. This machine is equipped with a cable remote control.

### TECHNICAL SPECIFICATIONS

|                      |                                      |   |                                     |
|----------------------|--------------------------------------|---|-------------------------------------|
| <b>Dimensions:</b>   | 320 x 360 x 350 mm (13 x 13.5 x 14") | <b>Motor:</b>   | 2.0 kW                              |
| <b>Net Weight:</b>   | 130 kg (287 lb)                      | <b>Noise Level:</b>   | 72 dB A                             |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33")   | <b>Crimp Range:</b>   | 4 - 76 mm (0.157 - 2.992")          |
| <b>Gross Weight:</b> | 180 kg (397 lb)                      | <b>Crimp Force:</b>   | 240 t                               |
| <b>Voltages:</b>     | 12 V                                 | <b>Opening with Dies:</b>   | +38 mm (+1.496")                    |
|                      | 24 V                                 | <b>Complete Opening:</b>  | 118 mm (4.646")                     |
|                      | 220/240 V, 3Ph, 50 Hz                | <b>Master Die Length:</b>   | 100 mm (3.937")                     |
|                      | 380/415 V, 3Ph, 50 Hz                | <b>Standard Dies:</b>   | 15, 18, 21, 24, 27, 30, 33, 36, 39, |
|                      | 208/240 V, 3Ph, 60 Hz                |   | 42, 45, 48, 51, 57, 62, 66, 70, 72  |
|                      | 380/415 V, 3Ph, 60 Hz                | <b>Technical Features:</b>  |                                     |
| <b>Capacity:</b>     | 2wb: 2" max.                         | - Options available: Die storage, ergonomic gun, battery and charger, die sets for brake and air-conditioning hoses, marking dies |                                     |
|                      | 4ws: 2" max.                         | - Dimensions of power pack: 440 x 320 x 320 mm (17 x 13 x 13")  |                                     |
|                      | 6ws: 1" max.                         |   |                                     |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size | Ref. Hoses  |
|------------------------|--|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPF; MF3000 OPK                  | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock                   | 1"             | Diamondspir; Goldenblast/Six  |

# CRIMPING MACHINES

## MV 240 L

FIELD SERVICE & MOBILE WORKSHOP

MOBILE VAN

### ORDERING INFORMATION

| Product Code   | Description  |
|----------------|--------------|
| EOA3251NMV240L | MV 240 L 12V |

### AVAILABLE DIE SETS

| Product Code       | Description                            | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm           | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm           | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm           | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm           | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm           | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm           | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm           | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm           | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm           | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm           | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm           | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm           | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm          | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm          | 48 | 48-51       | 100             | 3.937             |
| ESA3320N100-51     | Die set n. 51 - length 100 mm          | 51 | 51-57       | 100             | 3.937             |
| ESA3320N100-54     | Die set n. 54 - length 100 mm          | 54 | 54-57       | 100             | 3.937             |
| ESA3320N100-57     | Die set n. 57 - length 100 mm          | 57 | 57-62       | 100             | 3.937             |
| ESA3320N100-62     | Die set n. 62 - length 100 mm          | 62 | 62-66       | 110             | 4.331             |
| ESA3320N100-66     | Die set n. 66 - length 100 mm          | 66 | 66-70       | 100             | 3.937             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm          | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm          | 72 | 72-73       | 100             | 3.937             |
| ESA3320N240KT      | Kit 12 dies MB240/MV240 (n.15 to n.66) | -  | -           | -               | -                 |
| ESA3320N240KTF     | Kit 18 dies MB240/MV240 (n.15 to n.72) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MV 350

FIELD SERVICE & MOBILE / CONTAINER WORKSHOP

MOBILE VAN



### KEY ADVANTAGES

- Robust design
- Large opening
- High crimping force
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection
- Remote head mounting option possible

### MAIN APPLICATIONS

Designed for hydraulic maintenance specialists for on-site repairs in mobile vans and an ideal solution for container shops. The high crimp force makes this machine a versatile solution for the whole hydraulic hose range. It is possible to install the crimp head separately from the power pack to gain space inside the vehicle and obtain a lower centre of gravity.

### TECHNICAL SPECIFICATIONS

|                      |                                    |                            |   |
|----------------------|------------------------------------|----------------------------|---|
| <b>Dimensions:</b>   | 650 x 550 x 750 mm (26 x 22 x 30") | <b>Motor:</b>              | 2.0 kW  |
| <b>Net Weight:</b>   | 210 kg (463 lb)                    | <b>Noise Level:</b>        | <65 dB A  |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33") | <b>Crimp Range:</b>        | 4 - 130 mm (0.157 - 5.118")   |
| <b>Gross Weight:</b> | 260 kg (573 lb)                    | <b>Crimp Force:</b>        | 350 t   |
| <b>Voltages:</b>     | 12 V                               | <b>Opening with Dies:</b>  | +54 mm (+2.125")  |
|                      | 24 V                               | <b>Complete Opening:</b>   | 180 mm (7.086")   |
|                      | 220/240 V, 3Ph, 50 Hz              | <b>Master Die Length:</b>  | 115 mm (4.528")   |
|                      | 380/415 V, 3Ph, 50 Hz              | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42,   |
|                      | 208/240 V, 3Ph, 60 Hz              |                            | 45, 48, 51, 57, 62, 66, 70, 72, 73, 76  |
|                      | 380/415 V, 3Ph, 60 Hz              | <b>Technical Features:</b> |   |
| <b>Capacity:</b>     | 2wb: 3" max.                       |                            | Options available: Die storage, ergonomic gun, battery and charger, die sets for brake and air-conditioning hoses, marking dies |
|                      | 4ws: 2" max.                       |                            | <b>Safety Remarks:</b>  |
|                      | 6ws: 2" max.                       |                            | Possible limitations in case of double elbow fittings   |
|                      | Textile / Suction Hose: 4"         |                            |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size     | Ref. Hoses  |
|------------------------|--|--------------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPK; MF3000 OPF  | 3" with extra dies | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Spiralfit; MF3000 OPK; MF3000 OPF | 2"                 | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Spiralfit  | 2"                 | Rockmaster/13; GoldenISO/35 Xtraflex; Goldenblast/six   |
| 6 Wire Spirals         | MF2000 Interlock Plus; MF2000 Spiralfit; MF2000 Xtralock                         | 1½"                | Diamondspir; Rockmaster/15; GoldenISO/42 Xtraflex; Shieldmaster/6000  |

# CRIMPING MACHINES

## MV 350

FIELD SERVICE & MOBILE / CONTAINER WORKSHOP

MOBILE VAN

### ORDERING INFORMATION

| Product Code  | Description              |
|---------------|--------------------------|
| EOA3351N12350 | MV 350 12V 12V           |
| EOA3352N24350 | MV 350 24V 24V           |
| EOA3324NMV350 | MV 350 380/415V 3PH 50HZ |
| EOA3327NMV350 | MV 350 220/240V 3PH 50HZ |
| EOA3329NMV350 | MV 350 208/240V 3PH 60HZ |
| EOA332BNMV350 | MV 350 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                              | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm             | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm             | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm             | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm             | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm             | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm             | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm             | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm             | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm             | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm             | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm             | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm             | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm            | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm            | 48 | 48-51       | 100             | 3.937             |
| ESA3320N110-51     | Die set n. 51 - length 110 mm            | 51 | 51-57       | 110             | 4.331             |
| ESA3320N110-57     | Die set n. 57 - length 110 mm            | 57 | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm            | 62 | 62-66       | 110             | 4.331             |
| ESA3330N125-66     | Die set n. 66 - length 110 mm            | 66 | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm            | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm            | 72 | 72-73       | 100             | 3.937             |
| ESA3540N125-73     | Die set n. 73 - length 125 mm            | 73 | 73-76       | 125             | 4.921             |
| ESA3540N125-76A    | Die set n. 76 - length 125 mm            | 76 | 76-86       | 125             | 4.921             |
| ESA3540N125-90     | Die set n. 90 - length 125 mm            | 90 | 90-95       | 125             | 4.921             |
| ESA3540N12595      | Die set n. 95 - length 125 mm            | 95 | 95-105      | 125             | 4.921             |
| ESA3330N340KT      | Kit 13 dies MB350/L/MV350 (n.15 to n.73) | -  | -           | -               | -                 |
| ESA3330N340KTF     | Kit 20 dies MB350/L/MV350 (n.15 to n.76) | -  | -           | -               | -                 |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## GOLDENCRIMP 450

ASSEMBLING FOR FIELD REPAIR

**BENCHTOP CRIMP MACHINE**



### KEY ADVANTAGES

- High crimp force (450 tons)
- Large opening
- Wide family of dies for industrial hoses
- Long master dies
- Robust - designed for harsh environments
- Low noise level
- Easy die set-up with ergonomic gun
- Metallic guard for the set stop

### MAIN APPLICATIONS

**Dedicated to field repair assemblers operating in harsh environments (mines, construction areas, drilling rigs, etc.). Suitable for the whole hose range (small and large bore hoses). Designed to be extremely robust to resist aggressive environmental conditions (wiper seal, powder protection, grease connections for master dies, easy accessibility for maintenance and handling).**

### TECHNICAL SPECIFICATIONS

|                    |                                       |                           |   |
|--------------------|---------------------------------------|---------------------------|---|
| <b>Dimensions:</b> | 830 x 775 x 1450 mm (33 x 31 x 57")   | <b>Noise Level:</b>       | <65 dB A  |
| <b>Net Weight:</b> | 720 kg (1587 lb)                      | <b>Crimp Range:</b>       | 4 - 130 mm (0.157 - 5.118")   |
| <b>Packaging:</b>  | 1120 x 1020 x 1770 mm (44 x 40 x 70") | <b>Crimp Force:</b>       | 450 t   |
| <b>Voltages:</b>   | 220/240 V, 3Ph, 50 Hz                 | <b>Opening with Dies:</b> | +70 mm (+2.755")  |
|                    | 380/415 V, 3Ph, 50 Hz                 | <b>Complete Opening:</b>  | 202 mm (7.950")   |
|                    | 208/240 V, 3Ph, 60 Hz                 | <b>Master Die Length:</b> | 140 mm (5.512")   |
|                    | 380/415 V, 3Ph, 60 Hz                 | <b>Standard Dies:</b>     | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42,<br>45, 48, 51, 57, 62, 66, 70, 72, 73, 76 |
| <b>Capacity:</b>   | 6ws: 3" max.                          | <b>Safety remarks:</b>    | Please consider hose-fitting-machine integration when crimping                    |
|                    | Industrial: 4" max.                   |                           |   |
|                    | 6ws: 3" max.                          |                           |   |
| <b>Motor:</b>      | 5.5 kW                                |                           |   |

### HOSE AND FITTING SELECTION

| Hose Type                | Fittings Type   | Max. Hose Size | Ref. Hoses  |
|--------------------------|---|----------------|---|
| 2 Wire Braid & Textile   | MF2000 Multifit; MF3000 OPF; MF3000 OPK   | 4"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals           | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit; MF3000 OPF; MF3000 OPK | 3"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Xtraflow/4WS; Goldenblast   |
| 6 Wire Spirals           | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit  | 3"             | Diamondspir/21; Rockmaster/13; Rockmaster/15; Goldenblast/Six   |
| Industrial Textile Hoses |   | 4"             | Spirtex/K; Others   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## GOLDENCRIMP 450

ASSEMBLING FOR FIELD REPAIR

**BENCHTOP CRIMP MACHINE**

### ORDERING INFORMATION

| Product Code      | Description                       |
|-------------------|-----------------------------------|
| EOA3324NMSCRIG450 | GOLDENCRIMP/450 380/415V 3PH 50HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                                      | N°  | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|-----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm                     | 10  | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm                     | 12  | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm                     | 15  | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm                     | 18  | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm                     | 21  | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm                     | 24  | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm                     | 27  | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm                     | 30  | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm                     | 33  | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm                     | 36  | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm                     | 39  | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm                     | 42  | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm                    | 45  | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm                    | 48  | 48-51       | 100             | 3.937             |
| ESA3320N110-51     | Die set n. 51 - length 110 mm                    | 51  | 51-57       | 110             | 4.331             |
| ESA3320N110-57     | Die set n. 57 - length 110 mm                    | 57  | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm                    | 62  | 62-66       | 110             | 4.331             |
| ESA3330N125-66     | Die set n. 66 - length 110 mm                    | 66  | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm                    | 70  | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm                    | 72  | 72-73       | 100             | 3.937             |
| ESA3330NL125D073L4 | Die set n. 73 - length 125-28 mm, Reinforced pin | 73  | 73-76       | 125             | 4.921             |
| ESA3540N125-76     | Die set n. 76 - length 125 mm                    | 76  | 76-86       | 125             | 4.921             |
| ESA3540NL150D086L6 | Die set n. 86 - length 150 mm                    | 86  | 86-90       | 150             | 5.906             |
| ESA3540N125-90F    | Die set n. 90 - length 125 mm                    | 90  | 90-95       | 125             | 4.921             |
| ESA3440NL150D095L6 | Die set n. 95 - length 150 mm                    | 95  | 95-105      | 150             | 5.906             |
| ESA3550NL150D105L  | Die set n. 105 - length 150 mm                   | 105 | 105-112     | 150             | 5.906             |
| ESA3550NL150D112L  | Die set n. 112 - length 150 mm                   | 112 | 112-122     | 150             | 5.906             |
| ESA3440NL130D122L5 | Die set n. 122 - length 130 mm REINF PIN         | 122 | 122-130     | 130             | 5.118             |
| ESA3330N450KT      | Kit 13 die set GC 450 (15 to 73)                 | -   | -           | -               | -                 |
| ESA3330N450KTF     | Kit 20 die set GC4 50 (15 to 76)                 | -   | -           | -               | -                 |

# CRIMPING MACHINES

## MVB 140

### MAINTENANCE WORKSHOP

### VERTICAL BENCHTOP, CAGE DIES



#### KEY ADVANTAGES

- Easy use and maintenance
- Easy intuitive adjustment of crimp diameter
- Micrometer set-up with automatic stop
- Retractable pusher for easy insertion of the dies
- 'Plug & play' system (power pack already integrated)
- Wide clearance for tooling installation and fitting positioning
- Easy positioning of the spacer plates

#### MAIN APPLICATIONS

Dedicated to hydraulic maintenance shops and on-site repairs (construction machines, public works equipment, handling and lifting equipment, agriculture machines, etc.). Designed to crimp small size hoses up to 1 1/4" 4 wire spiral hose (with the exception of double skive type fittings). It can be used for small series productions due to its precise crimp operations and high durability.

#### TECHNICAL SPECIFICATIONS

|                      |  |  |                                |
|----------------------|--|--|--------------------------------|
| <b>Dimensions:</b>   | 690 x 280 x 550 mm (48 x 19.5 x 38.5") | <b>Motor:</b>  | 0.8 kW                         |
| <b>Net Weight:</b>   | 86 kg (190 lb)                         | <b>Noise Level:</b>  | <86 dB A                       |
| <b>Gross Weight:</b> | 110 kg (243 lb)                        | <b>Crimp Range:</b>  | 11.5 to 55 mm (0.453 - 2.165") |
| <b>Voltages:</b>     | 110 V, 1Ph, 60 Hz                      | <b>Crimp Force:</b>  | 140 t                          |
| <b>Capacity:</b>     | 2wb: 1 1/4" max.<br>4ws: 1 1/4" max.   | <b>Standard Dies:</b>  | 20, 30, 40, 50, 80, S1         |
|                      |  | <b>Technical Features:</b>   |                                |
|                      |  | - Spacer plates supplied as standard: size 0 (positive crimping set by dedicated spacers)                                    |                                |
|                      |  | - Professional approach with set stop and remote control drive allows easy crimping both in the field and in-shop assembling |                                |
|                      |  | - Possible limitations if used with double-elbow fittings  |                                |
|                      |  | - Not suitable for hoses with double skive fittings (Interlock Plus, Xtralock)   |                                |

#### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type                           | Max. Hose Size | Ref. Hoses  |
|------------------------|---|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPK; MF3000 OPF | 1 1/4          | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPK; MF3000 OPF | 1 1/4          | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |

# CRIMPING MACHINES

## MVB 140

### MAINTENANCE WORKSHOP

### VERTICAL BENCHTOP, CAGE DIES

### ORDERING INFORMATION

| Product Code     | Description                               |
|------------------|---|
| EOA3225NMVB140   | MVB 140 110V 1PH 60HZ                     |
| EOA3225SMVB140   | MVB 140 110V 60Hz (STD. DIES INCLUDED)    |
| EOA3225SMVB140S1 | MVB 140 110V 60Hz (w 30,40,50,80,S1 DIES) |

### AVAILABLE DIE SETS

| Product Code      | Description                   | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|-------------------|-------------------------------|----|-------------|-----------------|-------------------|
| ESA3210NSUD-10    | DIES SET USA market 10        | -  | 11,5-13,9   | 45              | 1.772             |
| ESA3210NSUD-20    | DIES SET USA market 20        | -  | 14,0-15,9   | 45              | 1.772             |
| ESA3210NSUD-30    | DIES SET USA market 30        | -  | 16,0-18,9   | 45              | 1.772             |
| ESA3210NSUD-40    | DIES SET USA market 40        | -  | 19,0-21,9   | 45              | 1.772             |
| ESA3210NSUD-50    | DIES SET USA market 50        | -  | 22,0-23,9   | 45              | 1.772             |
| ESA3210NSUD-60    | DIES SET USA market 60        | -  | 24,0-26,9   | 57              | 2.244             |
| ESA3210NSUD-70    | DIES SET USA market 70        | -  | 27,0-29,9   | 57              | 2.244             |
| ESA3210NSUD-80    | DIES SET USA market 80        | -  | 30,0-33,9   | 57              | 2.244             |
| ESA3210NSUD-90    | DIES SET USA market 90        | -  | 34,0-36,9   | 57              | 2.244             |
| ESA3210NSUD-S1    | DIES SET USA market S1        | -  | 37,0-40,9   | 70              | 2.756             |
| ESA3210NSUD-S2    | DIES SET USA market S2        | -  | 41,0-45,9   | 70              | 2.756             |
| ESA3210NSUD-S3    | DIES SET USA market S3        | -  | 46,0-48,9   | 70              | 2.756             |
| ESA3210NSUD-S4    | DIES SET USA market S4        | -  | 49,0-55,0   | 70              | 2.756             |
| ESA3320NTKIT5JB   | DIE SET 5J MVB140             | -  | -           | -               | -                 |
| ESA3330NTKIT3J    | KIT 3 DIE SETS 5/8-3/4 MVB140 | -  | -           | -               | -                 |
| ESA3330NTKIT5JOPT | KIT 5 DIE SETS OPTION MVB140  | -  | -           | -               | -                 |

### Notes:

*Crimp head weight: 46 kg (101 lb)*

*Retraction of the cylinder and consequent crimp stroke start position is governed by the remote control crimp switch, to enable quicker crimping and increased productivity*



# CRIMPING MACHINES



## MS 140

**ASSEMBLING FOR MASS PRODUCTION  
STAND TYPE CRIMP MACHINE, SCS CONTROL**

### KEY ADVANTAGES

- The quickest machine of the MS machine series
- Safe Crimp System (SCS) control
- Large production capacity (small/medium bore)
- Low noise level
- Precise
- Robust
- Easy die set-up with ergonomic gun

### MAIN APPLICATIONS

**Dedicated to professional assemblers for mass production of small/medium bore hoses, OEM assembly shops and large maintenance activities. Ideal when high production speeds are required.**

### TECHNICAL SPECIFICATIONS

|                    |                                       |                            |  |
|--------------------|---------------------------------------|----------------------------|--|
| <b>Dimensions:</b> | 890 x 810 x 1390 mm (35 x 32 x 55")   | <b>Motor:</b>              | 5.5 kW   |
| <b>Net Weight:</b> | 675 kg (1488 lb)                      | <b>Noise Level:</b>        | <69 dB A   |
| <b>Packaging:</b>  | 1120 x 1020 x 1770 mm (44 x 40 x 70") | <b>Crimp Range:</b>        | 4 - 70 mm (0.157 - 2.756")   |
| <b>Voltages:</b>   | 220/240 V, 3Ph, 50 Hz                 | <b>Crimp Force:</b>        | 140 t  |
|                    | 380/415 V, 3Ph, 50 Hz                 | <b>Opening with Dies:</b>  | +45 mm (+1.772")   |
|                    | 208/240 V, 3Ph, 60 Hz                 | <b>Complete Opening:</b>   | 125 mm (4.921")  |
| <b>Capacity:</b>   | 2wb: 1 1/4" max.                      | <b>Master Die Length:</b>  | 80 mm (3.150")   |
|                    | 4ws: 1 1/4" max.                      | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30,<br>33, 36, 39, 42, 45, 48                              |
|                    |                                       | <b>Technical Features:</b> | Options available: Die sets for brake and air-conditioning hoses, marking dies |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size | Ref. Hoses  |
|------------------------|--|----------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPK; MF3000 OPF                  | 1 1/4"         | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF3000 OPK                              | 1 1/4"         | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex  |
| 4 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 1"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; GoldenBlast   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MS 140

**ASSEMBLING FOR MASS PRODUCTION**

**STAND TYPE CRIMP MACHINE, SCS CONTROL**

### ORDERING INFORMATION

| Product Code  | Description                  |
|---------------|------------------------------|
| EOA3434NSC140 | MS 140 SCS 380/415V 3PH 50HZ |
| EOA3437NSC140 | MS 140 SCS 220/240V 3PH 50HZ |
| EOA3439NSC140 | MS 140 SCS 208/240V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code   | Description                      | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|----------------|----------------------------------|----|-------------|-----------------|-------------------|
| ESA3220NL56-10 | Die set n. 10 - length 56 mm     | 10 | 10-12       | 56              | 2.205             |
| ESA3320N140-12 | Die set n. 12 - length 70 mm     | 12 | 12-15       | 70              | 2.756             |
| ESA3320N140-15 | Die set n. 15 - length 70 mm     | 15 | 15-18       | 70              | 2.756             |
| ESA3320N140-18 | Die set n. 18 - length 70 mm     | 18 | 18-21       | 70              | 2.756             |
| ESA3320N140-21 | Die set n. 21 - length 70 mm     | 21 | 21-24       | 70              | 2.756             |
| ESA3320N140-24 | Die set n. 24 - length 70 mm     | 24 | 24-27       | 70              | 2.756             |
| ESA3320N140-27 | Die set n. 27 - length 70 mm     | 27 | 27-30       | 70              | 2.756             |
| ESA3320N140-30 | Die set n. 30 - length 70 mm     | 30 | 30-33       | 70              | 2.756             |
| ESA3220N137-33 | Die set n. 33 - length 70 mm     | 33 | 33-36       | 70              | 2.756             |
| ESA3220N75-36  | Die set n. 36 - length 75 mm     | 36 | 36-39       | 75              | 2.953             |
| ESA3220N137-39 | Die set n. 39 - length 70 mm     | 39 | 39-42       | 70              | 2.756             |
| ESA3320N140-42 | Die set n. 42 - length 70 mm     | 42 | 42-45       | 70              | 2.756             |
| ESA3220N137-45 | Die set n. 45 - length 70 mm     | 45 | 45-48       | 70              | 2.756             |
| ESA3220N137-48 | Die set n. 48 - length 70 mm     | 48 | 48-51       | 70              | 2.756             |
| ESA3220N137-51 | Die set n. 51 - length 75 mm     | 51 | 51-57       | 75              | 2.953             |
| ESA3540N140KT  | Kit 10 dies MS140 (n.15 to n.48) |    |             |                 |                   |
| ESA3540N140KTF | Kit 12 dies MS140 (n.15 to n.48) |    |             |                 |                   |

#### Notes:

*Refrigeration hose special dies available upon request*

# CRIMPING MACHINES

## MS 280 L

**ASSEMBLING FOR MASS PRODUCTION  
STAND TYPE CRIMP MACHINE, SCS CONTROL**



### KEY ADVANTAGES

- Robust structure for tough working environments
- First OEM machine up to 1 1/4"
- Safe Crimp System (SCS) integrated function
- Separate power pack
- Low noise
- Fast and ergonomic
- Low maintenance
- Easy die set-up with ergonomic gun

### MAIN APPLICATIONS

**Dedicated to professional maintenance shops and small OEM workshops. Versatile crimp machine for the whole hose range up to 2" size 4 wire spiral included. The optimum choice for professional assemblers that require high precision and quality control with SCS (Safe Crimp System) for small/medium OEM activities.**

### TECHNICAL SPECIFICATIONS

|                      |                                     |                            |  |
|----------------------|-------------------------------------|----------------------------|--|
| <b>Net Weight:</b>   | 450 kg (992 lb)                     | <b>Motor:</b>              | 5.5 kW   |
| <b>Packaging:</b>    | 850 x 850 x 1300 mm (34 x 34 x 51") | <b>Noise Level:</b>        | <65 dB A   |
| <b>Gross Weight:</b> | 500 kg (1102 lb)                    | <b>Crimp Range:</b>        | 4 - 130 mm (0.157 - 5.118")  |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz               | <b>Crimp Force:</b>        | 280 t  |
|                      | 380/415 V, 3Ph, 50 Hz               | <b>Opening with Dies:</b>  | +54 mm (+2.126")   |
|                      | 208/240 V, 3Ph, 60 Hz               | <b>Complete Opening:</b>   | 180 mm (7.087")  |
|                      | 380/415 V, 3Ph, 60 Hz               | <b>Master Die Length:</b>  | 115 mm (4.528")  |
| <b>Capacity:</b>     | 2wb: 3" max.                        | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33, 36, 39,<br>42, 45, 48, 51, 57, 62, 66, 70, 72                                      |
|                      | 4ws: 2" max.                        | <b>Technical Features:</b> | Net weight includes the separate power pack: 180 kg (396 lb); dimensions 1000 x 700 x 870 mm (39 x 27.5 x 34") |

### Safety Remarks:

Please consider hose-fitting-machine integration when crimping

### HOSE AND FITTING SELECTION

| Hose Type                | Fittings Type   | Max. Hose Size | Ref. Hoses   |
|--------------------------|---|----------------|--|
| 2 Wire Braid & Textile   | MF2000 Multifit   | 2"             | Tractor; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals           | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast  |
| Industrial Textile Hoses | Various   | 2"             | Spirtex/K; Others  |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MS 280 L

**ASSEMBLING FOR MASS PRODUCTION**

**STAND TYPE CRIMP MACHINE, SCS CONTROL**

### ORDERING INFORMATION

| Product Code   | Description                |
|----------------|----------------------------|
| EOA3434NMS280L | MS 280 L 380/415V 3PH 50HZ |
| EOA3437NMS280L | MS 280 L 220/240V 3PH 50HZ |
| EOA3439NMS280L | MS 280 L 208/240V 3PH 60HZ |
| EOA343BNMS280L | MS 280 L 380/415V 3PH 60HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                            | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|----|-------------|-----------------|-------------------|
| ESA3220NL56-10     | Die set n. 10 - length 56 mm           | 10 | 10-12       | 56              | 2.205             |
| ESA3220NL56-12     | Die set n. 12 - length 56 mm           | 12 | 12-15       | 56              | 2.205             |
| ESA3220NL56-15     | Die set n. 15 - length 56 mm           | 15 | 15-18       | 56              | 2.205             |
| ESA3220NL56-18     | Die set n. 18 - length 56 mm           | 18 | 18-21       | 56              | 2.205             |
| ESA3220NL56-21     | Die set n. 21 - length 56 mm           | 21 | 21-24       | 56              | 2.205             |
| ESA3320N140-24     | Die set n. 24 - length 70 mm           | 24 | 24-27       | 70              | 2.756             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm           | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm           | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm           | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm           | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm           | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm           | 42 | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm          | 45 | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm          | 48 | 48-51       | 100             | 3.937             |
| ESA3320N100-51     | Die set n. 51 - length 100 mm          | 51 | 51-57       | 100             | 3.937             |
| ESA3320N100-57     | Die set n. 57 - length 100 mm          | 57 | 57-62       | 110             | 3.937             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm          | 62 | 62-66       | 110             | 4.331             |
| ESA3330N100-66     | Die set n. 66 - length 100 mm          | 66 | 66-70       | 100             | 3.937             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm          | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm          | 72 | 72-73       | 100             | 3.937             |
| ESA3320N240KTF     | Kit 18 dies MB240/MV240 (n.15 to n.72) | -  | -           | -               | -                 |

# CRIMPING MACHINES

## MS 320

**ASSEMBLING FOR MASS PRODUCTION  
STAND TYPE CRIMP MACHINE, SCS CONTROL**



### KEY ADVANTAGES

- High crimp force
- Large opening
- Safe Crimp System (SCS) control
- Wide family of dies for industrial hoses
- Robust structure
- Fast and ergonomic
- Low noise level
- Easy die-set up with ergonomic gun

### MAIN APPLICATIONS

**Dedicated to professional assemblers for mass production, OEM assembly shops and large maintenance activities.**

### TECHNICAL SPECIFICATIONS

|                      |                                       |                            |   |
|----------------------|---------------------------------------|----------------------------|---|
| <b>Dimensions:</b>   | 1240 x 995 x 1615 mm (49 x 39 x 64")  | <b>Motor:</b>              | 5.5 kW  |
| <b>Net Weight:</b>   | 1900 kg (4189 lb)                     | <b>Noise Level:</b>        | <65 dB A  |
| <b>Packaging:</b>    | 1400 x 1100 x 1960 mm (55 x 43 x 77") | <b>Crimp Range:</b>        | 4 - 130 mm (0.157 - 5.118")   |
| <b>Gross Weight:</b> | 2230 kg (4916 lb)                     | <b>Crimp Force:</b>        | 320 t   |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz                 | <b>Opening with Dies:</b>  | +80 mm (+3.149")  |
|                      | 380/415 V, 3Ph, 50 Hz                 | <b>Complete Opening:</b>   | 207 mm (8.149")   |
|                      | 208/240 V, 3Ph, 60 Hz                 | <b>Master Die Length:</b>  | 100 mm (3.937")   |
|                      | 380/415 V, 3Ph, 60 Hz                 | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33, 36, 39,<br>42, 45, 48, 51, 57, 62, 66, 70, 72, 73, 76 |
| <b>Capacity:</b>     | 2wb: 3" max.                          | <b>Technical Features:</b> | Options available: Die sets for brake and air-conditioning hoses, marking dies    |
|                      | 4ws: 2" max.                          | <b>Safety Features:</b>    | Please consider hose-fitting-machine integration when crimping                    |
|                      | 6ws: 2" max.                          |                            |   |
|                      | Textile & Suction Hose: 4" max.       |                            |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type   | Max. Hose Size     | Ref. Hoses  |
|------------------------|---|--------------------|---|
| 2 Wire Braid & Textile | MF2000 Multifit   | 3" with extra dies | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock | 2"                 | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast/six   |
| 6 Wire Spirals         | MF2000 Interlock Plus                                   | 2"                 | Rockmaster/13   |
| 6 Wire Spirals         | MF2000 Spiralfit; MF2000 Xtralock                       | 2"                 | Shieldmaster/6000; Diamondspir; Goldenblast/six; GoldenISO Xtraflex   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MS 320

**ASSEMBLING FOR MASS PRODUCTION**

**STAND TYPE CRIMP MACHINE, SCS CONTROL**

### ORDERING INFORMATION

| Product Code  | Description                  |
|---------------|------------------------------|
| EOA3434NSC320 | MS 320 SCS 380/415V 3PH 50HZ |
| EOA3437NSC320 | MS 320 SCS 220/240V 3PH 50HZ |
| EOA3439NSC320 | MS 320 SCS 208/240V 3PH 60HZ |
| EOA343BNSC320 | MS 320 SCS 380/415V 3PH 60HZ |

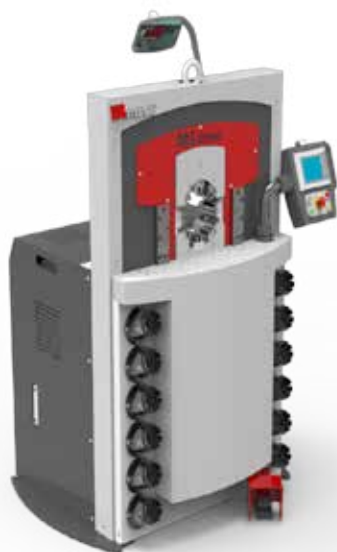
### AVAILABLE DIE SETS

| Product Code       | Description                                   | N° | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|---|----|-------------|-----------------|-------------------|
| ESA3430NL90-10     | Die set n. 10 - length 90 mm                  | 10 | 10-12       | 90              | 3.543             |
| ESA3430NL90-12     | Die set n. 12 - length 90 mm                  | 12 | 12-15       | 90              | 3.543             |
| ESA3430NL90-15     | Die set n. 15 - length 90 mm                  | 15 | 15-18       | 90              | 3.543             |
| ESA3430NL90-18     | Die set n. 18 - length 90 mm                  | 18 | 18-21       | 90              | 3.543             |
| ESA3430NL90-21     | Die set n. 21 - length 90 mm                  | 21 | 21-24       | 90              | 3.543             |
| ESA3320NL90-24     | Die set n. 24 - length 90 mm                  | 24 | 24-27       | 90              | 3.543             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm                  | 27 | 27-30       | 90              | 3.543             |
| ESA3320NL90-30     | Die set n. 30 - length 90 mm                  | 30 | 30-33       | 90              | 3.543             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm                  | 33 | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm                  | 36 | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm                  | 39 | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm                  | 42 | 42-45       | 90              | 3.543             |
| ESA3430N100-45     | Die set n. 45 - length 95 mm                  | 45 | 45-48       | 95              | 3.740             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm                 | 48 | 48-51       | 100             | 3.937             |
| ESA3430N110-51     | Die set n. 51 - length 110 mm                 | 51 | 51-57       | 110             | 4.331             |
| ESA3430N110-57     | Die set n. 57 - length 110 mm                 | 57 | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm                 | 62 | 62-66       | 110             | 4.331             |
| ESA3430N110-66     | Die set n. 66 - length 110 mm                 | 66 | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm                 | 70 | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm                 | 72 | 72-73       | 100             | 3.937             |
| ESA3340NL120D073L8 | Die set n. 73 - length 120 mm                 | 73 | 73-76       | 120             | 4.724             |
| ESA3340NL120D076L8 | Die set n. 76 - length 120 mm                 | 76 | 76-86       | 120             | 4.724             |
| ESA3340NL100D086L6 | Die set n. 86 - length 100-65 mm              | 86 | 86-90       | 100             | 3.937             |
| ESA3430NL100D090L6 | Die set n. 90 - length 100 mm, Reinforced Pin | 90 | 90-95       | 100             | 3.937             |
| ESA3430NL100D095L6 | Die set n. 95 - length 100 mm, Reinforced Pin | 95 | 95-105      | 100             | 3.937             |
| ESA3540N320KT      | Kit 13 dies MS320 (n.15 to n.73)              |    |             |                 |                   |
| ESA3540N320KTF     | Kit 20 dies MS320 (n.15 to n.76)              |    |             |                 |                   |

# CRIMPING MACHINES

## MS 480

**ASSEMBLING FOR MASS PRODUCTION  
STAND TYPE CRIMP MACHINE, SCS CONTROL**



### KEY ADVANTAGES

- High crimp force
- Large opening
- Safe Crimp System (SCS) control
- Wide family of dies for industrial hoses
- Long master dies
- Robust
- Low noise level
- Easy die set-up with ergonomic gun

### MAIN APPLICATIONS

**Dedicated to professional assemblers, large OEM suppliers and special applications. This machine is particularly suited to medium and large bore hose assembly operations.**

### TECHNICAL SPECIFICATIONS

|                      |                                       |                            |   |
|----------------------|---------------------------------------|----------------------------|---|
| <b>Dimensions:</b>   | 1300 x 900 x 1700 mm (51 x 35 x 67")  | <b>Motor:</b>              | 5.5 kW  |
| <b>Net Weight:</b>   | 2200 kg (4850 lb)                     | <b>Noise Level:</b>        | <65 dB A  |
| <b>Packaging:</b>    | 1400 x 1100 x 1960 mm (55 x 43 x 77") | <b>Crimp Range:</b>        | 4 - 160 mm (0.157 - 6.299")   |
| <b>Gross Weight:</b> | 2230 kg (4916 lb)                     | <b>Crimp Force:</b>        | 480 t   |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz                 | <b>Opening with Dies:</b>  | +85 mm (+3.346")  |
|                      | 380/415 V, 3Ph, 50 Hz                 | <b>Complete Opening:</b>   | 212 mm (8.346")   |
|                      | 208/240 V, 3Ph, 60 Hz                 | <b>Master Die Length:</b>  | 125 mm (4.921")   |
|                      | 380/415 V, 3Ph, 60 Hz                 | <b>Standard Dies:</b>      | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42,<br>45, 48, 51, 57, 62, 66, 70, 72, 73, 76 |
| <b>Capacity:</b>     | 6ws: 3" max.                          | <b>Technical Features:</b> | Options available: Die sets for brake and air-conditioning hoses, marking dies    |
|                      | 8ws: 3" max.                          | <b>Safety Remarks:</b>     | Please consider hose-fitting-machine integration when crimping                    |
|                      | Industrial Textile Hoses: 4" max.     |                            |   |

### HOSE AND FITTING SELECTION

| Hose Type                | Fittings Type   | Max. Hose Size | Ref. Hoses   |
|--------------------------|---|----------------|--|
| 2 Wire Braid & Textile   | MF2000 Multifit   | 3½"            | Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals           | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 4"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Xtraflow/4WS; Goldenblast  |
| 6 Wire Spirals           | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit                  | 3"             | Diamondspir/21; Rockmaster/13; Rockmaster/15; Goldenblast/six  |
| Industrial Textile Hoses |   | 4"             | Spirtex/K; Others  |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MS 480

**ASSEMBLING FOR MASS PRODUCTION**

**STAND TYPE CRIMP MACHINE, SCS CONTROL**

### ORDERING INFORMATION

| Product Code  | Description                   |
|---------------|-------------------------------|
| EOA3544NSC480 | MS 480 SCS 380/415V 3Ph 50 Hz |
| EOA3547NSC480 | MS 480 SCS 220/240V 3Ph 50 Hz |
| EOA3549NSC480 | MS 480 SCS 208/240V 3Ph 60 Hz |
| EOA354BNSC480 | MS 480 SCS 380/415V 3Ph 60 Hz |

### AVAILABLE DIE SETS

| Product Code       | Description                                      | N°  | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|-----|-------------|-----------------|-------------------|
| ESA3430NL90-10     | Die set n. 10 - length 90 mm                     | 10  | 10-12       | 90              | 3.543             |
| ESA3430NL90-12     | Die set n. 12 - length 90 mm                     | 12  | 12-15       | 90              | 3.543             |
| ESA3430NL90-15     | Die set n. 15 - length 90 mm                     | 15  | 15-18       | 90              | 3.543             |
| ESA3430NL90-18     | Die set n. 18 - length 90 mm                     | 18  | 18-21       | 90              | 3.543             |
| ESA3430NL90-21     | Die set n. 21 - length 90 mm                     | 21  | 21-24       | 90              | 3.543             |
| ESA3320NL90-24     | Die set n. 24 - length 90 mm                     | 24  | 24-27       | 90              | 3.543             |
| ESA3320NL90-27     | Die set n. 27 - length 90 mm                     | 27  | 27-30       | 90              | 3.543             |
| ESA3430NL100D30L2  | Die set n. 30 - length 100 mm                    | 30  | 30-33       | 100             | 3.937             |
| ESA3320NL90-33     | Die set n. 33 - length 90 mm                     | 33  | 33-36       | 90              | 3.543             |
| ESA3320NL90-36     | Die set n. 36 - length 90 mm                     | 36  | 36-39       | 90              | 3.543             |
| ESA3320NL90-39     | Die set n. 39 - length 90 mm                     | 39  | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm                     | 42  | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm                    | 45  | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm                    | 48  | 48-51       | 100             | 3.937             |
| ESA3320N110-51     | Die set n. 51 - length 110 mm                    | 51  | 51-57       | 110             | 4.331             |
| ESA3320N110-57     | Die set n. 57 - length 110 mm                    | 57  | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm                    | 62  | 62-66       | 110             | 4.331             |
| ESA3320N125-66     | Die set n. 66 - length 110 mm                    | 66  | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm                    | 70  | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm                    | 72  | 72-73       | 100             | 3.937             |
| ESA3330NL236D073L4 | Die set n. 73 - length 125-28 mm, Reinforced Pin | 73  | 73-76       | 125             | 4.921             |
| ESA3540N125-76     | Die set n. 76 - length 125 mm                    | 76  | 76-86       | 125             | 4.921             |
| ESA3440NL150D086L6 | Die set n. 86 - length 150 mm                    | 86  | 86-90       | 150             | 5.906             |
| ESA3540N125-90F    | Die set n. 90 - length 125 mm                    | 90  | 90-95       | 125             | 4.921             |
| ESA3440NL150D095L6 | Die set n. 95 - length 150 mm                    | 95  | 95-105      | 150             | 5.906             |
| ESA3550NL150D105L  | Die set n. 105 - length 150 mm                   | 105 | 105-112     | 150             | 5.906             |
| ESA3550NL150D112L  | Die set n. 112 - length 150 mm                   | 112 | 112-122     | 150             | 5.906             |
| ESA3440NL130D122L5 | Die set n. 122 - length 130 mm, Reinforced Pin   | 122 | 122 -130    | 130             | 5.118             |
| ESA3550NL150D130L1 | Die set n. 130 - length 145 mm                   | 130 | 130-140     | 145             | 5.709             |
| ESA3540N480KT      | Kit 13 dies MS480 (n.15 to n.73)                 |     |             |                 |                   |
| ESA3540N400KTF     | Kit 20 dies MS480 (n.15 to n.76)                 |     |             |                 |                   |



# CRIMPING MACHINES

## MS 800

### ASSEMBLING FOR LARGE BORE HOSES STAND TYPE CRIMP MACHINE, SCS CONTROL



#### KEY ADVANTAGES

- Designed for heavy duty large bore hydraulic hoses
- High power and speed
- Ergonomically designed for large bore hoses
- Safe Crimp System (SCS) for maximum reliability during the crimping process
- Large opening up to 8"
- Long master dies
- Very high crimping force

#### MAIN APPLICATIONS

Dedicated to professional assemblers operating in off-shore, mining and giant hydraulics. This machine is designed for large bore, robust hoses - not advised for small bore hoses (DN 12 and smaller).

#### TECHNICAL SPECIFICATIONS

|                      |  |                            |  |
|----------------------|--|----------------------------|--|
| <b>Dimensions:</b>   | 1400 x 1400 x 2060 mm (55 x 55 x 81")                          | <b>Motor:</b>              | 7.5 kW   |
| <b>Net Weight:</b>   | 4300 kg (9480 lb)  | <b>Noise Level:</b>        | < 70 dB A  |
| <b>Packaging:</b>    | Not available  | <b>Crimp Range:</b>        | 4 - 230 mm (0.157 - 9.055")  |
| <b>Gross Weight:</b> | 5000 kg (11023 lb)   | <b>Crimp Force:</b>        | 800 t  |
| <b>Voltages:</b>     | 380/415 V, 3Ph, 50 Hz  | <b>Opening with Dies:</b>  | +100 mm (+3.937")  |
| <b>Capacity:</b>     | 4ws: 4" max.<br>6ws: 3" max.<br>8ws: 3" max.<br>Industrial: 8" | <b>Complete Opening:</b>   | 350 mm (13.779")   |
|                      |  | <b>Master Die Length:</b>  | 180 mm (7.087")  |
|                      |  | <b>Technical Features:</b> | - Machine platform equipped with rollers to support the hose at working height (1100 mm) in order to handle large bore hoses more easily<br>- Supplied as standard: Intermediate dies 250/130<br>- Options available: Die storage panel, die size upon request |

#### HOSE AND FITTING SELECTION

| Hose Type                | Fittings Type   | Max. Hose Size      | Ref. Hoses  |
|--------------------------|---|---------------------|---|
| 4 Wire Spirals           | MF2000 Multifit; MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Spiralfit | 4" with extra dies  | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Xtraflow/4WS; Goldenblast |
| 6/8 Wire Spirals         | MF2000 Interlock Plus; MF2000 Xtralock; MF2000 Interlock Super            | >3" with extra dies | Diamondspir up to 3"; Rockmaster/13; Rockmaster/15  |
| Industrial Textile Hoses | Various   | 8"                  | Spirtex/K; Others   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CRIMPING MACHINES

## MS 800

**ASSEMBLING FOR LARGE BORE HOSES**

**STAND TYPE CRIMP MACHINE, SCS CONTROL**

### ORDERING INFORMATION

| Product Code   | Description                  |
|----------------|------------------------------|
| EOA3434NMMS800 | MS 800 SCS 380/415V 3PH 50HZ |

### AVAILABLE DIE SETS

| Product Code       | Description                                      | N°  | Crimp Range | Die Length (mm) | Die Length (inch) |
|--------------------|--|-----|-------------|-----------------|-------------------|
| ESA3320NL90-39     | Die set n. 39 - length 90 mm                     | 39  | 39-42       | 90              | 3.543             |
| ESA3320NL90-42     | Die set n. 42 - length 90 mm                     | 42  | 42-45       | 90              | 3.543             |
| ESA3320N100-45     | Die set n. 45 - length 100 mm                    | 45  | 45-48       | 100             | 3.937             |
| ESA3320NL100-48    | Die set n. 48 - length 100 mm                    | 48  | 48-51       | 100             | 3.937             |
| ESA3430N110-51     | Die set n. 51 - length 110 mm                    | 51  | 51-57       | 110             | 4.331             |
| ESA3430N110-57     | Die set n. 57 - length 110 mm                    | 57  | 57-62       | 110             | 4.331             |
| ESA3320N110-62     | Die set n. 62 - length 110 mm                    | 62  | 62-66       | 110             | 4.331             |
| ESA3330N125-66     | Die set n. 66 - length 110 mm                    | 66  | 66-70       | 110             | 4.331             |
| ESA3320N100-70     | Die set n. 70 - length 100 mm                    | 70  | 70-72       | 100             | 3.937             |
| ESA3330NL100D072L2 | Die set n. 72 - length 100 mm                    | 72  | 72-73       | 100             | 3.937             |
| ESA3330NL125D073L4 | Die set n. 73 - length 125-28 mm, Reinforced Pin | 73  | 73-76       | 125             | 4.921             |
| ESA3540N125-76     | Die set n. 76 - length 125 mm                    | 76  | 76-86       | 125             | 4.921             |
| ESA3440NL150D086L6 | Die set n. 86 - length 150 mm                    | 86  | 86-90       | 150             | 5.906             |
| ESA3540N125-90F    | Die set n. 90 - length 125 mm                    | 90  | 90-95       | 125             | 4.921             |
| ESA3440NL150D095L6 | Die set n. 95 - length 150 mm                    | 95  | 95-105      | 150             | 5.906             |
| ESA3530NL180D105L5 | Die set n. 105 - length 180 mm                   | 105 | 105-112     | 180             | 7.087             |
| ESA3550NL150D112L  | Die set n. 112 - length 150 mm                   | 112 | 112-122     | 150             | 5.906             |
| ESA3530NL180D130L5 | Die set n. 130 - length 180 mm                   | 130 | 130-140     | 180             | 7.087             |
| ESA3540N800KTF     | Kit 18 dies MS800 (n.39 to n.130)                |     |             |                 |                   |

# CUTTING MACHINES

## M22 CUT STARTER WORKSHOP BENCHTOP



### KEY ADVANTAGES

- Smooth bending system
- 90° cut
- Clean cut
- Scalloped blade
- Dust collector included
- Multiple voltage options

### MAIN APPLICATIONS

Dedicated to repair shops or maintenance departments making low volumes of small and medium sized hose assemblies.

### TECHNICAL SPECIFICATIONS

|                      |  |                                  |   |
|----------------------|--|----------------------------------|---|
| <b>Dimensions:</b>   | 630 x 485 x 650 mm (25 x 19 x 26")   | <b>Motor:</b>                    | 2.2 kW  |
| <b>Net Weight:</b>   | 42 kg (93 lb)  | <b>Rotation Speed:</b>           | 3000 rpm  |
| <b>Packaging:</b>    | 800 x 600 x 830 mm (31 x 24 x 33")   | <b>Scalloped Blade Diameter:</b> | 254 mm (10") included   |
| <b>Gross Weight:</b> | 55 kg (121 lb)   | <b>Max. Hose OD:</b>             | 50 mm (1.969")  |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz | <b>Technical Features:</b>       | - Dust collector included as standard<br>- Dimensions van type machine: 488 x 630 x 650 mm (19.2 x 24.8 x 25.6"); 38 kg (84 lb) |
| <b>Capacity:</b>     | 2wb: 1 1/4" max.<br>4ws: 1 1/4" max.   |                                  |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses  |
|------------------------|----------------|---|
| 2 Wire Braid & Textile | 1 1/4"         | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; |
| 4 Wire Spirals         | 1 1/4"         | Rockmaster (spiral); GoldenISO Xtraflex   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

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## M22 CUT

**STARTER WORKSHOP**

**BENCHTOP**

### ORDERING INFORMATION

| Product Code   | Description                |
|----------------|----------------------------|
| EOC3114NCUT22P | M 22 CUT 380/415V 3PH 50HZ |
| EOC3117NCUT22P | M 22 CUT 220/240V 3PH 50HZ |
| EOC3119NCUT22P | M 22 CUT 208/240V 3PH 60HZ |
| EOC311BNCUT22P | M 22 CUT 380/415V 3PH 60HZ |

### AVAILABLE ACCESSORIES

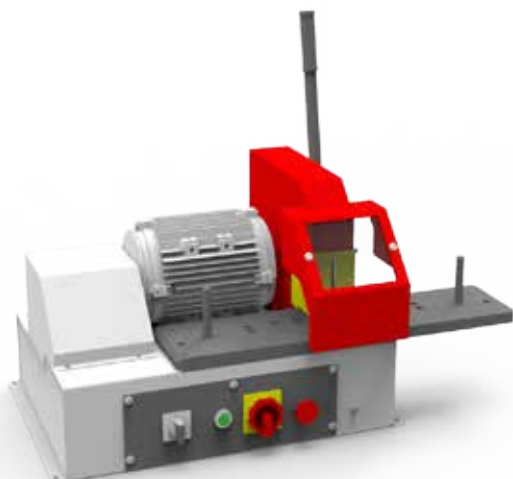
| Product Code | Description                         |
|--------------|-------------------------------------|
| 3012309      | Cutting Disc Scalloped Style 250 mm |

# CUTTING MACHINES

## M30 CUT E

**STARTER & PROFESSIONAL WORKSHOP**

**BENCHTOP CUTTING MACHINE, OPTIONAL SKIVING**



### KEY ADVANTAGES

- Compact design
- Easy and safe to use
- Versatile, scalloped blade for high performance and efficient cutting with minimal smoke
- Electronic brake
- Skiving module can be ordered as optional and integrated on this machine

### MAIN APPLICATIONS

**Benchtop machine for after-market service, container workshop or mobile van service and field repair. Also workshops for intermittent service.**

### TECHNICAL SPECIFICATIONS

|                      |  |                                  |                |
|----------------------|--|----------------------------------|----------------|
| <b>Dimensions:</b>   | 835 x 545 x 640 mm (33 x 21 x 25")   | <b>Motor:</b>                    | 3.0 kW         |
| <b>Net Weight:</b>   | 75 kg (165 lb)   | <b>Rotation Speed:</b>           | 3000 rpm       |
| <b>Packaging:</b>    | 1170 x 770 x 1100 mm (46 x 30 x 43")   | <b>Scalloped Blade Diameter:</b> | 300 mm (11.8") |
| <b>Gross Weight:</b> | 90 kg (198 lb)   | <b>Max. Hose OD:</b>             | 85 mm (3.346") |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz |                                  |                |
| <b>Capacity:</b>     | 2wb: 2" max.<br>4ws: 2" max.<br>6ws: 1 1/4" max.<br>Industrial: 2" max.                          |                                  |                |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses  |
|------------------------|----------------|---|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | 1 1/4"         | Rockmaster/13; Rockmaster/15; Diamondspir   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

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## M30 CUT E

**STARTER & PROFESSIONAL WORKSHOP**

**BENCHTOP CUTTING MACHINE, OPTIONAL SKIVING**

### ORDERING INFORMATION

| Product Code    | Description                     |
|-----------------|---------------------------------|
| EOC3324NM30CUTE | M30 CUT E 380/415V 3PH 50HZ ECO |
| EOC3327NM30CUTE | M30 CUT E 220/240V 3PH 50HZ ECO |
| EOC3329NM30CUTE | M30 CUT E 208/240V 3PH 60HZ ECO |
| EOC332BNM30CUTE | M30 CUT E 380/415V 3PH 60HZ ECO |

### AVAILABLE ACCESSORIES

| Product Code | Description                         |
|--------------|-------------------------------------|
| 3015126      | Cutting Disc Scalloped Style 300 mm |

# CUTTING MACHINES

## M30 CUT L

**STARTER AND PROFESSIONAL WORKSHOP  
STAND TYPE CUTTING MACHINE**



### KEY ADVANTAGES

- Compact design
- Easy and safe to use
- Versatile, scalloped blade for high performance and efficient cutting with minimal smoke
- Ergonomic, easy to clean
- Integrated dust collector

### MAIN APPLICATIONS

**Benchtop machine for after-market service, container workshop or mobile van service, field repair and intermittent service workshops.**

### TECHNICAL SPECIFICATIONS

|                      |  |                                  |               |
|----------------------|--|----------------------------------|---------------|
| <b>Dimensions:</b>   | 765 x 500 x 1150 mm (30 x 20 x 45")  | <b>Motor:</b>                    | 3.0 kW        |
| <b>Net Weight:</b>   | 92 kg (203 lb)   | <b>Rotation Speed:</b>           | 3000 rpm      |
| <b>Packaging:</b>    | 800 x 600 x 1200 mm (32 x 24 x 47")  | <b>Scalloped Blade Diameter:</b> | 254 mm (10")  |
| <b>Gross Weight:</b> | 120 kg (265 lb)  | <b>Max. Hose OD:</b>             | 85 mm (3.34") |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz |                                  |               |
| <b>Capacity:</b>     | 2wb: 2" max.<br>4ws: 2" max.<br>6ws: 1 1/4" max.<br>Industrial: 2"                               |                                  |               |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses  |
|------------------------|----------------|---|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | 1 1/4"         | Rockmaster/13; Rockmaster/15; Diamondspir   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

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## M30 CUT L

**STARTER AND PROFESSIONAL WORKSHOP**

**STAND TYPE CUTTING MACHINE**

### ORDERING INFORMATION

| Product Code    | Description                 |
|-----------------|-----------------------------|
| EOC3424NM30CUTL | M30 CUT L 380/415V 3PH 50HZ |
| EOC3427NM30CUTL | M30 CUT L 220/240V 3PH 50HZ |

### AVAILABLE ACCESSORIES

| Product Code  | Description                         |
|---------------|-------------------------------------|
| 3015309       | Cutting Disc Scalloped Style 250 mm |
| ESC3440NCRL2M | Cutting Rail Length 2 M             |
| ESC3440NCRL3M | Cutting Rail Length 3 M             |
| ESC3440NJUCUR | Junction for Cutting Rail           |



# CUTTING MACHINES

## M30 CUT & SKIVE

STARTER & PROFESSIONAL WORKSHOP

**BENCHTOP, INTEGRATED CUTTING & SKIVING**



### KEY ADVANTAGES

- Compact design
- Two operations in one machine
- Easy and safe to use
- Versatile, scalloped blade for high performance and efficient cutting with minimal smoke
- Dust free skive operation (drawers for dust collection)
- Electronic brake

### MAIN APPLICATIONS

Benchtop machine for after-market service, container workshops or mobile van service. Also suitable for field repair and intermittent service workshops.

### TECHNICAL SPECIFICATIONS

|                      |  |                                  |  |
|----------------------|--|----------------------------------|--|
| <b>Dimensions:</b>   | 835 x 545 x 640 mm (33 x 21 x 25")   | <b>Motor:</b>                    | 3.0 kW   |
| <b>Net Weight:</b>   | 85 kg (187 lb)   | <b>Rotation Speed (Cut):</b>     | 3000 rpm   |
| <b>Packaging:</b>    | 1170 x 770 x 1100 mm (46 x 30 x 43")   | <b>Rotation Speed (Skive):</b>   | 200 rpm  |
| <b>Gross Weight:</b> | 100 kg (220 lb)  | <b>Scalloped Blade Diameter:</b> | 300 mm (11.8")   |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz | <b>Max. Hose OD:</b>             | 85 mm (3.34")  |
| <b>Capacity:</b>     | 2wb: 2" max.<br>4ws: 2" max.<br>6ws: 1 1/4" max.<br>Industrial: 2" max.                          | <b>Technical Features:</b>       | Skiving tools: for External Skiving (ESE) and for Internal Skiving (IS) to be ordered separately |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses  |
|------------------------|----------------|---|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | 1 1/4"         | Rockmaster/13; Rockmaster/15; Diamondspir   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

## M30 CUT & SKIVE

**STARTER & PROFESSIONAL WORKSHOP**

**BENCHTOP, INTEGRATED CUTTING & SKIVING**

### ORDERING INFORMATION

| Product Code      | Description                     |
|-------------------|---------------------------------|
| EOC3224NM30CUTSKY | M30 CUT/SKIVE 380/415V 3PH 50HZ |
| EOC3227NM30CUTSKY | M30 CUT/SKIVE 220/240V 3PH 50HZ |
| EOC3229NM30CUTSKY | M30 CUT/SKIVE 208/240V 3PH 60HZ |
| EOC322BNM30CUTSKY | M30 CUT/SKIVE 380/415V 3PH 60HZ |

### AVAILABLE ACCESSORIES

| Product Code  | Description                                       |
|---------------|---|
| ESS3430NKTESE | KIT ESE 6 TO 50 10 MANDRELS 1/4" TO 2"            |
| ESS3430NKTIS  | KIT IS 12/51 7 MANDRELS 1/2" TO 2"                |
| ESS3430NIS10  | IS 10 (3/8")                                      |
| ESS3430NIS13  | IS 13 (1/2")                                      |
| ESS3430NIS16  | IS 16 (5/8")                                      |
| ESS3430NIS19  | IS 19 (3/4")                                      |
| ESS3430NIS25  | IS 25 (1")  |
| ESS3430NIS32  | IS 32 (1"1/4)                                     |
| ESS3430NIS38  | IS 38 (1"1/2)                                     |
| ESS3430NIS50  | IS 50 (2")  |
| 3001795       | Spare knife for ESE Ext Skiving 6/50 mm           |
| 3011245       | Spare knife for internal tool diameter 13 & 16 mm |
| 3011246       | Spare knife for internal tool diameter 19 & 25 mm |
| 3011247       | Spare knife for internal tool diameter 32 & 38 mm |
| 3011248       | Spare knife for internal tool diameter 50 mm      |
| 3015126       | Cutting Disc Scalloped Style 300 mm               |

# CUTTING MACHINES

## M55 CUT

**FULL SERVICE WORKSHOP, STARTER PRODUCTION UNITS**  
**STAND TYPE CUTTING MACHINE**



### KEY ADVANTAGES

- Versatile, scalloped blade for high performance smoke free cutting
- Ergonomic and functional design
- Double foot pedal system
- Safety cover and feeding guides for hose (easy and fast cutting operation)
- Digital counter for maintenance assistance

### MAIN APPLICATIONS

Stand type hose cutting machine for professional service workshops and after-market service. With pneumatic bending option it is suitable for small/medium OEM productions. This is a versatile machine, suitable for hoses up to 2" (intermittent service).

### TECHNICAL SPECIFICATIONS

|                      |  |                                  |   |
|----------------------|--|----------------------------------|---|
| <b>Dimensions:</b>   | 1140 x 1000 x 1280 mm (45 x 39 x 50")  | <b>Motor:</b>                    | 7.5 kW  |
| <b>Net Weight:</b>   | 240 kg (529 lb)  | <b>Rotation Speed:</b>           | 3000 rpm  |
| <b>Packaging:</b>    | 1600 x 1200 x 1600 mm (63 x 47 x 63")  | <b>Scalloped Blade Diameter:</b> | 400 mm (15.7")  |
| <b>Gross Weight:</b> | 280 kg (617 lb)  | <b>Max. Hose OD:</b>             | 80 mm (3.15")   |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz | <b>Technical Features:</b>       | - Diameter of the suction connection: 150 mm (6")<br>- Options: Pneumatic bending system, OEM slotted blade |
| <b>Capacity:</b>     | 2wb: 2" max.<br>4ws: 2" max.<br>6ws: 2" max.<br>Industrial: 2"                                   |                                  |   |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses  |
|------------------------|----------------|---|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Spirtex/K |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Goldenblast   |
| 6 Wire Spirals         | 2"             | Rockmaster/13; Rockmaster/15; Diamondspir   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

## M55 CUT

**FULL SERVICE WORKSHOP, STARTER PRODUCTION UNITS**

**STAND TYPE CUTTING MACHINE**

### ORDERING INFORMATION

| Product Code     | Description                         |
|------------------|-------------------------------------|
| EOC3434NCUT55    | M55 CUT 380/415V 3PH+N 50HZ         |
| EOC3434NCUT55SK  | M55 CUT 380/415V 3PH+N 50HZ SUCTION |
| EOC3437NMCUT55   | M55 CUT 220/240V 3PH 50HZ           |
| EOC3437NMCUT55SK | M55 CUT 220/240V 3PH 50HZ SUCTION   |
| EOC3339NMCUT55   | M55 CUT 208/240V 3PH 60HZ           |
| EOC3339NMCUT55SK | M55 CUT 208/240V 3PH 60Hz SUCTION   |
| EOC343BNMCUT55   | M55 CUT 380/415V 3PH+N 60HZ         |
| EOC343BNMCUT55SK | M55 CUT 380/415V 3PH+N 60HZ SUCTION |

### AVAILABLE ACCESSORIES

| Product Code  | Description                           |
|---------------|---------------------------------------|
| 3016443       | Cutting Disc Scalloped Style 400 mm   |
| 3021317       | OEM Cutting Disc Slotted Style 400 mm |
| ESC3440NCRL2M | Cutting Rail Length 2 M               |
| ESC3440NCRL3M | Cutting Rail Length 3 M               |
| ESC3440NJUCUR | Junction for Cutting Rail             |

# CUTTING MACHINES



## M75 CUT

EXPERT SERVICE LINE

STAND TYPE CUTTING MACHINE

### KEY ADVANTAGES

- Powerful
- Safety cover
- High visibility
- Suitable for cutting large bore hoses

### MAIN APPLICATIONS

Dedicated to hydraulic maintenance specialists working on medium and large size machines and equipment. Also suitable for small OEM suppliers.

### TECHNICAL SPECIFICATIONS

|                    |                                     |   |                         |
|--------------------|-------------------------------------|---|-------------------------|
| <b>Dimensions:</b> | 910 x 820 x 1280 mm (36 x 32 x 50") | <b>Motor:</b>   | 7.5 kW                  |
| <b>Net Weight:</b> | 215 kg (474 lb)                     | <b>Rotation Speed:</b>  | 3000 rpm                |
| <b>Voltages:</b>   | 220/240 V, 3Ph, 50 Hz               | <b>Scalloped Blade Diameter:</b>                              | 520 mm (20.5") included |
|                    | 380/415 V, 3Ph, 50 Hz               | <b>Max. Hose OD:</b>  | 125 mm (5")             |
|                    | 208/240 V, 3Ph, 60 Hz               | <b>Technical Features:</b>                                    |                         |
|                    | 380/415 V, 3Ph, 60 Hz               | - Diameter of suction connection: 110 mm (4.33 ")             |                         |
| <b>Capacity:</b>   | 2wb: 3" max.                        | - Optional tool: Brake motor, serrated disc, OEM slotted disc |                         |
|                    | 4ws: 2" max.                        |   |                         |
|                    | 6ws: 2" max.                        |   |                         |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses   |
|------------------------|----------------|--|
| 2 Wire Braid & Textile | 3"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |
| 6 Wire Spirals         | 2"             | Diamondspir up to 2"; Rockmaster/13; Rockmaster/15   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

## M75 CUT

**EXPERT SERVICE LINE**

**STAND TYPE CUTTING MACHINE**

### ORDERING INFORMATION

| Product Code   | Description                           |
|----------------|---------------------------------------|
| EOC3334NCUT75  | M75 CUT 380/415V 3PH 50HZ             |
| EOC3334NM75BM  | M75 CUT 380/415V 3PH 50HZ Brake motor |
| EOC3337NCUT75  | M75 CUT 220/240V 3PH 50HZ             |
| EOC3339NCUT75  | M75 CUT 208/240V 3PH 60HZ             |
| EOC3339NCUT75F | M75 CUT 208/240V 3PH 60HZ BRAKE       |

### AVAILABLE ACCESSORIES

| Product Code  | Description                           |
|---------------|---------------------------------------|
| 3016797       | Cutting Disc Scalloped Style 520 mm   |
| 3021075       | OEM Cutting Disc Slotted Style 520 mm |
| ESC3440NCRL2M | Cutting Rail Length 2 M               |
| ESC3440NCRL3M | Cutting Rail Length 3 M               |
| ESC3440NJUCUR | Junction for Cutting Rail             |

# CUTTING MACHINES



## M90 CUT

EXPERT SERVICE LINE

STAND TYPE CUTTING MACHINE

### KEY ADVANTAGES

- Very powerful
- Heavy duty for difficult cuts
- Hydraulic bending
- Brake motor
- Electronic soft start

### MAIN APPLICATIONS

Dedicated to professional assemblers, large OEM suppliers and special applications.

### TECHNICAL SPECIFICATIONS

**Dimensions:** 1000 x 1060 x 1350 mm (39 x 42 x 53")

**Net Weight:** 260 kg (573 lb)

**Voltages:** 220/240 V, 3Ph, 50 Hz

380/415 V, 3Ph, 50 Hz

208/240 V, 3Ph, 60 Hz

380/415 V, 3Ph, 60 Hz

**Capacity:** 2wb: 3½" max.

4ws: 3½" max.

6ws: 3" max.

**Motor:** 9.0 kW

**Rotation Speed:** 3000 rpm

**Scalloped Blade Diameter:** 520 mm (20.5") included

**Max. Hose OD:** 125 mm (5")

#### Technical Features:

- Diameter of suction connection: 110 mm (4.33")

- Standard tool: Hydraulic bending, brake motor

- Optional tool: Serrated disc, OEM slotted disc

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size   | Ref. Hoses   |
|------------------------|------------------|--|
| 2 Wire Braid & Textile | 3½"              | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast; Xtraflow |
| 4 Wire Spirals         | 3½"              | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex; Xtraflow/4WS   |
| 6 Wire Spirals         | 3" (21 MPa type) | Diamondspir (up to 3")   |



Performances measured on a 400 V, 3Ph, 50 Hz network

# CUTTING MACHINES

## M90 CUT

**EXPERT SERVICE LINE**

**STAND TYPE CUTTING MACHINE**

### ORDERING INFORMATION

| Product Code    | Description                         |
|-----------------|-------------------------------------|
| EOC3444NCUT90   | M90 CUT 380/415V 3PH 50HZ           |
| EOC3444NCUT90HP | M90 CUT 380/415V 3PH 50HZ HIGH PROD |
| EOC3447NCUT90   | M90 CUT 220/240V 3PH 50HZ           |
| EOC3449NCUT90   | M90 CUT 208/240V 3PH 60HZ           |
| EOC344BNCUT90   | M90 CUT 380/415V 3PH 60HZ           |

### AVAILABLE ACCESSORIES

| Product Code  | Description                           |
|---------------|---------------------------------------|
| 3016797       | Cutting Disc Scalloped Style 520 mm   |
| 3021075       | OEM Cutting Disc Slotted Style 520 mm |
| 3002792       | Cutting Disc Serrated Style           |
| ESC3440NCRL2M | Cutting Rail Length 2 M               |
| ESC3440NCRL3M | Cutting Rail Length 3 M               |
| ESC3440NJUCUR | Junction for Cutting Rail             |



# SKIVING MACHINES

**MH SKY**

**FIELD SERVICE & MOBILE WORKSHOP**

**MANUAL, PORTABLE SKIVING TOOL**



## KEY ADVANTAGES

- Portable, lightweight
- Economic
- Simple
- Compact
- Robust
- Plug'n skive system

## MAIN APPLICATIONS

Dedicated to small repair shops and maintenance departments making low volumes of hose assemblies a day. Also ideal for carrying out on-site repairs or for placement in a service van.

## TECHNICAL SPECIFICATIONS

**Dimensions:** 413 x 52 x 224 mm (16 x 2 x 9")

**Net Weight:** 3 kg (7 lb)

**Capacity:** 2wb: 2" max.

4ws: 2" max.

### Technical Features:

- Tool selection:

External Skiving Kit (ESE) including 10 mandrels (6-8-10-13-16-19-25-32-38-50)

Internal Skiving Kit (IS) including 7 mandrels (13-16-19-25-32-38-50)

Internal skiving tools can also be ordered per diameter

## HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses   |
|------------------------|----------------|--|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |

# SKIVING MACHINES

## MH SKY

**FIELD SERVICE & MOBILE WORKSHOP**

**MANUAL, PORTABLE SKIVING TOOL**

### ORDERING INFORMATION

| Product Code | Description              |
|--------------|--------------------------|
| EOS3410NHSK  | MH SKY HAND SKIVING TOOL |

### AVAILABLE ACCESSORIES

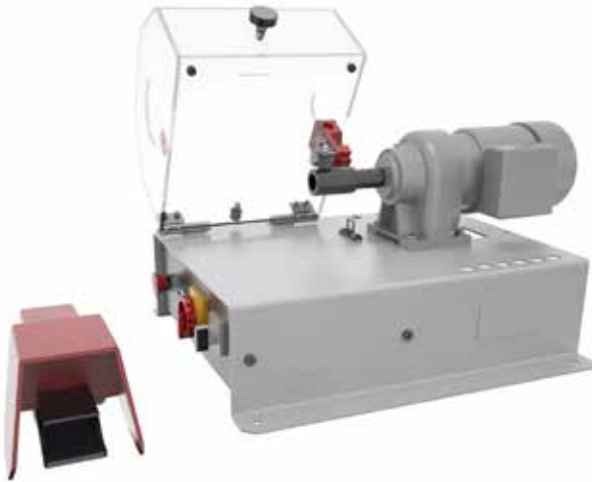
| Product Code  | Description                                       |
|---------------|---|
| ESS3430NKTESE | KIT ESE 6 TO 50 10 MANDRELS 1/4" TO 2"            |
| ESS3430NKTIS  | KIT IS 12/51 7 MANDRELS 1/2" TO 2"                |
| ESS3430NIS10  | IS 10 (3/8")                                      |
| ESS3430NIS13  | IS 13 (1/2")                                      |
| ESS3430NIS16  | IS 16 (5/8")                                      |
| ESS3430NIS19  | IS 19 (3/4")                                      |
| ESS3430NIS25  | IS 25 (1")  |
| ESS3430NIS32  | IS 32 (1"1/4)                                     |
| ESS3430NIS38  | IS 38 (1"1/2)                                     |
| ESS3430NIS50  | IS 50 (2")  |
| 3001795       | Spare knife for ESE Ext Skiving 6/50 mm           |
| 3011245       | Spare knife for internal tool diameter 13 & 16 mm |
| 3011246       | Spare knife for internal tool diameter 19 & 25 mm |
| 3011247       | Spare knife for internal tool diameter 32 & 38 mm |
| 3011248       | Spare knife for internal tool diameter 50 mm      |

# SKIVING MACHINES

## M50 SKY

SMALL SERVICE WORKSHOP

**BENCHTOP SKIVING**



### KEY ADVANTAGES

- Plug'n skive system
- Compact & stable
- Safety switch on the cover
- Good visibility
- Tool storage included
- Foot pedal drive with emergency stop
- 2-way rotation

### MAIN APPLICATIONS

Dedicated to hydraulic maintenance specialists working on medium sized machines and equipment. Also suitable for assemblers involved in medium sized hose assemblies and quantities.

### TECHNICAL SPECIFICATIONS

|                      |  |                            |  |
|----------------------|--|----------------------------|--|
| <b>Dimensions:</b>   | 500 x 660 x 360 mm (19 x 26 x 14")   | <b>Capacity:</b>           | 2wb: 2" max.   |
| <b>Net Weight:</b>   | 45 kg (99 lb)  |                            | 4ws: 2" max.   |
| <b>Packaging:</b>    | 800 x 600 x 830 (31 x 24 x 33")  | <b>Motor:</b>              | 0.25 kW  |
| <b>Gross Weight:</b> | 55 kg (121 lb)   | <b>Rotation Speed:</b>     | 100 rpm  |
| <b>Voltages:</b>     | 220/240 V, 1Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>220/240 V, 1Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz | <b>Technical Features:</b> | Tools available (to be ordered separately) ESE, IS, ESP1, ESP2 |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses   |
|------------------------|----------------|--|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |

# SKIING MACHINES

## M50 SKY

**SMALL SERVICE WORKSHOP**

**BENCHTOP SKIVING**

### ORDERING INFORMATION

| Product Code  | Description               |
|---------------|---------------------------|
| EOS3434N50PSK | M50 SKY 380/415V 3PH 50HZ |
| EOS3437N50PSK | M50 SKY 220/240V 3PH 50HZ |
| EOS3439N50PSK | M50 SKY 208/240V 3PH 60HZ |
| EOS343BN50PSK | M50 SKY 380/415V 3PH 60HZ |

### AVAILABLE ACCESSORIES

| Product Code    | Description                                       |
|-----------------|---|
| ESS3430NKTESE   | KIT ESE 6 TO 50 10 MANDRELS 1/4" TO 2"            |
| ESS3430NKTIS    | KIT IS 12/51 7 MANDRELS 1/2" TO 2"                |
| ESS3430NIS10    | IS 10 (3/8")                                      |
| ESS3430NIS13    | IS 13 (1/2")                                      |
| ESS3430NIS16    | IS 16 (5/8")                                      |
| ESS3430NIS19    | IS 19 (3/4")                                      |
| ESS3430NIS25    | IS 25 (1")  |
| ESS3430NIS32    | IS 32 (1"1/4)                                     |
| ESS3430NIS38    | IS 38 (1"1/2)                                     |
| ESS3430NIS50    | IS 50 (2")  |
| ESS3430NKTESP   | KIT ESP 06/51 10 MANDRELS 1/4" TO 2"              |
| ESS3430NESP5    | ESP 05 (3/16")                                    |
| ESS3430NESP6    | ESP 06 (1/4")                                     |
| ESS3430NESP8    | ESP 08 (5/16")                                    |
| ESS3430NESP10   | ESP 10 (3/8")                                     |
| ESS3430NESP12   | ESP 12 (1/2")                                     |
| ESS3430NESP16   | ESP 16 (5/8")                                     |
| ESS3430NESP19   | ESP 19 (3/4")                                     |
| ESS3430NESP25   | ESP 25 (1")                                       |
| ESS3430NESP31   | ESP 31 (1"1/4)                                    |
| ESS3430NESP38   | ESP 38 (1"1/2)                                    |
| ESS3430NESP51   | ESP 51 (2")                                       |
| ESS3220NMESP19F | ESP 19 FORESTMASTER HOSE                          |
| ESS3220NMESP25F | ESP 25 FORESTMASTER HOSE                          |
| ESS3430N2KNESP  | KIT 2ND KNIFE FOR ESP                             |
| 3001795         | Spare knife for ESE Ext Skiving 6/50 mm           |
| 3011245         | Spare knife for internal tool diameter 13 & 16 mm |
| 3011246         | Spare knife for internal tool diameter 19 & 25 mm |
| 3011247         | Spare knife for internal tool diameter 32 & 38 mm |
| 3011248         | Spare knife for internal tool diameter 50 mm      |

# SKIVING MACHINES



## M205 SKY

EXPERT SERVICE LINE

STAND TYPE SKIVING MACHINE

### KEY ADVANTAGES

- Plug'n skive system
- Large dust collector
- Robust & easily adjustable knife for quick and easy changeover
- Suitable for high volume production
- 2-way rotation

### MAIN APPLICATIONS

Dedicated to professional assemblers, large OEM suppliers and special applications.

### TECHNICAL SPECIFICATIONS

|                      |  |                            |  |
|----------------------|--|----------------------------|--|
| <b>Dimensions:</b>   | 675 x 550 x 1130 mm (27 x 22 x 44")  | <b>Motor:</b>              | 0.9 kW   |
| <b>Net Weight:</b>   | 100 kg (220 lb)  | <b>Speed Rotation:</b>     | 205 rpm  |
| <b>Packaging:</b>    | 800 x 600 x 1200 mm (32 x 24 x 47")  | <b>Technical Features:</b> | - Options available: speed regulator, hose clamping system (limited to distribution workshop using sizes under 2") |
| <b>Gross Weight:</b> | 160 kg (353 lb)  |                            | - Tools available (to be ordered separately): ESA, IS, ESP1, ESP2  |
| <b>Voltages:</b>     | 220/240 V, 3Ph, 50 Hz<br>380/415 V, 3Ph, 50 Hz<br>208/240 V, 3Ph, 60 Hz<br>380/415 V, 3Ph, 60 Hz |                            |  |
| <b>Capacity:</b>     | 2wb: 2" max.<br>4ws: 2" max.<br>6ws: 3" max. with original tools                                 |                            |  |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size                | Ref. Hoses   |
|------------------------|-------------------------------|--|
| 2 Wire Braid & Textile | 3" with optional skiving tool | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 3" with optional skiving tool | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |
| 6 Wire Spirals         | 3" with optional skiving tool | Diamondspir; Rockmaster/15   |

# SKIING MACHINES

## M205 SKY

**EXPERT SERVICE LINE**

**STAND TYPE SKIING MACHINE**

### ORDERING INFORMATION

| Product Code      | Description                               |
|-------------------|---|
| EOS3434N205PSK    | M205 SKY 380/415V 3PH 50HZ W/O ADJ.SPEED  |
| EOS3434N205PSKRSA | M205 SKY 380/415V 50/60HZ W / ADJ. SPEED  |
| EOS3327NM205PRSA  | M205 SKY 208/240V 3PH 50/60Hz /adj.speed  |
| EOS3437N205PSK    | M205 SKY 220/240V 3PH 50HZ W/O AJD. SPEED |
| EOS343BN205PSK    | M205 SKY 380/415V 3PH 60HZ W/O ADJ. SPEED |

### AVAILABLE ACCESSORIES

| Product Code    | Description   |
|-----------------|---|
| ESS3430NKTESA   | KIT ESA Ext Skiing - 11 mandrels 5/50 (5/6/8/10/13/16/19/25/32/38/50) M205 SKY PLUS |
| ESS3430NKTIS    | KIT IS 12/51 7 MANDRELS 1/2' TO 2"  |
| ESS3430NIS10    | IS 10 (3/8")  |
| ESS3430NIS13    | IS 13 (1/2")  |
| ESS3430NIS16    | IS 16 (5/8")  |
| ESS3430NIS19    | IS 19 (3/4")  |
| ESS3430NIS25    | IS 25 (1")  |
| ESS3430NIS32    | IS 32 (1"1/4)   |
| ESS3430NIS38    | IS 38 (1"1/2)   |
| ESS3430NIS50    | IS 50 (2")  |
| ESS3430NIS63    | IS 63 (2"1/2) for M205 SKY+   |
| ESS3430NIS76    | IS 76 (3") for M205 SKY+  |
| ESS3430NKTESP   | KIT ESP 06/51 10 MANDRELS 1/4" TO 2"  |
| ESS3430NESP5    | ESP 05 (3/16")  |
| ESS3430NESP6    | ESP 06 (1/4")   |
| ESS3430NESP8    | ESP 08 (5/16")  |
| ESS3430NESP10   | ESP 10 (3/8")   |
| ESS3430NESP12   | ESP 12 (1/2")   |
| ESS3430NESP16   | ESP 16 (5/8")   |
| ESS3430NESP19   | ESP 19 (3/4")   |
| ESS3430NESP25   | ESP 25 (1")   |
| ESS3430NESP31   | ESP 31 (1"1/4)  |
| ESS3430NESP38   | ESP 38 (1"1/2)  |
| ESS3430NESP51   | ESP 51 (2")   |
| ESS3430NESP63   | ESP 63 (2"1/2)  |
| ESS3430NESP76   | ESP 76 (3")   |
| ESS3430N2KNESP  | KIT 2ND KNIFE FOR ESP   |
| ESS3220NMESP19F | ESP 19 FORESTMASTER HOSE  |
| ESS3220NMESP25F | ESP 25 FORESTMASTER HOSE  |
| 3011245         | Spare knife for internal tool diameter 13 & 16 mm                                   |
| 3011246         | Spare knife for internal tool diameter 19 & 25 mm                                   |
| 3011247         | Spare knife for internal tool diameter 32 & 38 mm                                   |
| 3011248         | Spare knife for internal tool diameter 50   |
| 3011221         | Spare knife for external skiing for M205 SKY  |

# MARKING MACHINES



## M50 MARK

AFTER MARKET SERVICE

**BENCHTOP, FERRULE MARKING**

### KEY ADVANTAGES

- Robust
- Easy to use
- Compact
- Large space for 14 stamps

### MAIN APPLICATIONS

**Dedicated to repair shops and distributors for marking low volumes of ferrules.**

### TECHNICAL SPECIFICATIONS

**Dimensions:** 390 x 360 x 520 mm (15 x 14 x 20")

**Net Weight:** 34 kg (75 lb)

**Packaging:** 800 x 600 x 830 mm (31 x 24 x 33")

**Gross Weight:** 50 kg (110 lb)

**Capacity:** 2wb: 4" max.

4ws: 4" max.

**Standard stamp holder:** 2 x 14 stamps

**Size of the stamps:** 6 x 3 mm (0.236 x 0.118")

**Height of the letters:** 2.5 mm (0.098")

#### Technical Features:

Optional stamp holder with numbering wheel: 3 figures on the wheel and one groove for 10 stamps

#### Stamp Box Containing:

Letters (quantity in brackets): A(3), B(2), C(2), D(2), E(4), F(2), G(2), H(2), I(3), J(2), K(2), L(3), M(2), N(2), O(1), P(2), Q(1), R(3), S(3), T(2), U(3), V(2), W(1), X(1), Y(1), Z(1)

Numbers (quantity in brackets): 0(3), 1(3), 2(4), 3(4), 4(4), 5(3), 6(3), 7(3), 8(3), 9(3)

Signs (quantity in brackets): / (2), , (2), - (2), . (2)

# MARKING MACHINES

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## M50 MARK

**AFTER MARKET SERVICE**

**BENCHTOP, FERRULES MARKING**

### ORDERING INFORMATION

| Product Code | Description                     |
|--------------|---------------------------------|
| EOM3120N     | M50 MARK MANUAL MARKING MACHINE |

### AVAILABLE ACCESSORIES

| Product Code       | Description                                   |
|--------------------|---|
| ESM3220NTCOF120PB  | Box with 120 characters (letters and numbers) |
| ESM3220NTPOINCBRUT | Characters 6 x 3 mm (to be indicated)         |
| 3011158            | Numbering wheel with 3 figures M50 MARK       |
| 3003814            | Blank character M 50 MARK                     |



# INSERT PUSHING MACHINES

## M1500 INS

EXPERT SERVICE LINE

**BENCHTOP COUPLING INSERTER**



### KEY ADVANTAGES

- Compact
- Sturdy
- Powerful

### MAIN APPLICATIONS

Dedicated to assemblers involved in relevant productions and professional workshops.

### TECHNICAL SPECIFICATIONS

**Dimensions:** 750 x 660 x 300 mm (30 x 26 x 12")

**Net Weight:** 70 kg (154 lb)

**Capacity:**  
2wb: 2" max.  
4ws: 2" max.  
6ws: 2" max.

**Power Supply:** compressed air (7 bar)

**Technical Features:**

Optional tool: for small bore 1/4", 3/8", 1/2" shell

### HOSE AND FITTING SELECTION

| Hose Type              | Fittings Type  | Max. Hose Size | Ref. Hoses   |
|------------------------|--|----------------|--|
| 2 Wire Braid & Textile | MF2000 Multifit; MF3000 OPF; MF3000 OPK                              | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | MF2000 Multifit; MF2000 Interlock Plus; MF3000 OPK; MF2000 Spiralfit | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |
| 6 Wire Spirals         | MF2000 Xtralock; MF2000 Interlock Plus                               | 2"             | Diamondspir (up to 2")   |

# INSERT PUSHING MACHINES

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## M1500 INS

**EXPERT SERVICE LINE**

***BENCHTOP COUPLING INSERTER***

### ORDERING INFORMATION

| Product Code  | Description                            |
|---------------|--|
| EOI3430S1500I | M1500 INS (COUPLING INSERTER ½" to 2") |

# TEST BENCHES

## MTB 1500

**TEST BENCH, PROOF PRESSURE & CERTIFY  
STAND TYPE MACHINE**



### KEY ADVANTAGES

- Large testing area for up to 5 hoses
- 2 manometers: 0 - 400 bar for precision reading and 0 - 1500 bar for high pressure
- Double safety interlock on the lid to turn the pressure off when opening
- Test assemblies up to 1500 bar (see MTB 2500)

### MAIN APPLICATIONS

**Dedicated to assemblers involved in limited quantities of high pressure hoses. Recommended for professional workshops.**

### TECHNICAL SPECIFICATIONS

|                      |                                       |                                      |           |
|----------------------|---------------------------------------|--------------------------------------|-----------|
| <b>Dimensions:</b>   | 2500 x 800 x 1050 mm (98 x 31 x 41")  | <b>Max. Pressure</b>                 | 21755 psi |
| <b>Net Weight:</b>   | 175 kg (386 lb)                       | <b>Technical Features:</b>           |           |
| <b>Packaging:</b>    | 2360 x 1130 x 1330 mm (93 x 44 x 52") | Compressed air input 7 bar (100 psi) |           |
| <b>Gross Weight:</b> | 330 kg (728 lb)                       |                                      |           |
| <b>Capacity:</b>     | Wide hose range                       |                                      |           |

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses   |
|------------------------|----------------|--|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |
| 6 Wire Spirals         | 2"             | Diamondspir (up to 2"); Goldenblast/Six; Rockmaster/13; Rockmaster/15  |

# TEST BENCHES

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## MTB 1500

**TEST BENCH, PROOF PRESSURE & CERTIFY**

**STAND TYPE MACHINE**

### ORDERING INFORMATION

| Product Code       | Description                              |
|--------------------|--|
| EOT3420SMTB1500    | MTB 1500 BAR (STATIC TEST RIG- ¼" to 2") |
| EOT3420SMTB1500TSD | MTB 1500 WITH TSD & PRINTER              |

### AVAILABLE ACCESSORIES

| Product Code     | Description                            |
|------------------|--|
| EST3433NMTBLIGHT | Optional internal light - MTB1500/2500 |
| EST3433NMTBEMU   | Optional emulsion test (40 liter tank) |

# TEST BENCHES

## MTB 2500

**TEST BENCH, PROOF PRESSURE & CERTIFY  
STAND TYPE MACHINE**



### KEY ADVANTAGES

- Large testing area for up to 5 hoses
- 2 manometers: 0 - 400 bar for precision reading and 0 - 2500 bar for high pressure
- Double safety interlock on the lid to turn the pressure off when opening
- Test assemblies up to 2500 bar

### MAIN APPLICATIONS

**Dedicated to assemblers involved in limited quantities of high pressure hoses. Recommended for professional workshops.**

### TECHNICAL SPECIFICATIONS

**Dimensions:** 2500 x 800 x 1050 mm (98 x 31 x 41")  
**Net Weight:** 175 kg (386 lb)  
**Packaging:** 2360 x 1130 x 1330 mm (93 x 44 x 52")  
**Gross Weight:** 330 kg (728 lb)  
**Capacity:** Wide hose range  
**Max. Pressure:** 36259 psi

#### Technical Features:

- Compressed air input 7 bar (100 psi)
- Minimum compressed air input: 7 bar with minimum air flow 1000 l/min (dry air)
- Standard fluid used for tests: filtered water; minimum inlet pressure 3 bar
- Options available: computer and printer for test report, internal light, second pump for low pressure, test with emulsion in filtered closed circuit

### HOSE AND FITTING SELECTION

| Hose Type              | Max. Hose Size | Ref. Hoses   |
|------------------------|----------------|--|
| 2 Wire Braid & Textile | 2"             | Tractor; Harvester; Lyteflex; Pilot; Cover; Equator; Rockmaster (braided); Shieldmaster (braided); Astro; Multitex; Hydroplast |
| 4 Wire Spirals         | 2"             | Rockmaster (spiral); Shieldmaster (spiral); GoldenISO Xtraflex   |
| 6 Wire Spirals         | 2"             | Diamondspir (up to 2"); Goldenblast/Six; Rockmaster/13; Rockmaster/15  |

# TEST BENCHES

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## MTB 2500

**TEST BENCH, PROOF PRESSURE & CERTIFY**

**STAND TYPE MACHINE**

### ORDERING INFORMATION

| Product Code       | Description                               |
|--------------------|---|
| EOT3420SMTB2500TSD | MTB 2500 WITH TSD & PRINTER               |
| EOT3430SMTB2500    | MTB 2500 BAR (STATIC TEST RIG 1/4" to 2") |

### AVAILABLE ACCESSORIES

| Product Code     | Description                            |
|------------------|--|
| EST3433NMTBLIGHT | Optional internal light - MTB1500/2500 |
| EST3433NMTBEMU   | Optional emulsion test (40 litre tank) |

# ACCESSORIES AND TOOLS

## CUTTING DISCS

### Preferred blade type as standard:

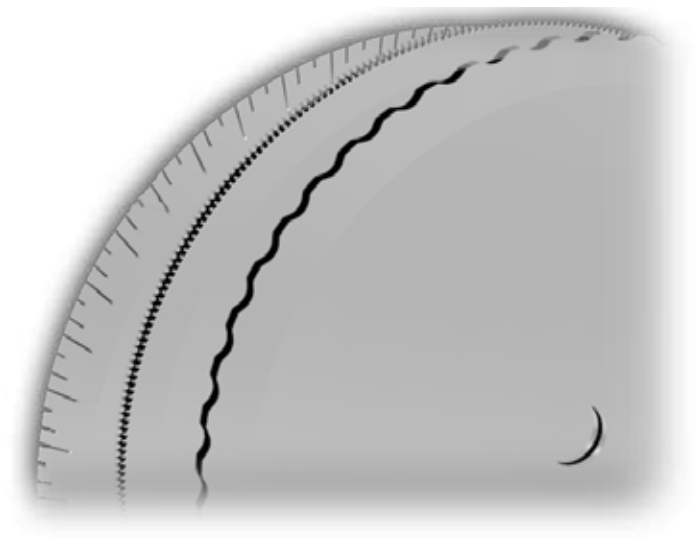
The scalloped blade is suitable for all hose types. It is the optimum solution for the whole hose range and is able to reach a high quality of cutting surface.

### Alternative blade type:

The serrated disc is recommended for cutting small bore wire braided hoses (up to DN 31), and is also suitable for cutting spiral hoses.

### High performance blade type:

The slotted blade is recommended for cutting standard and heavy duty hoses. It is ideal for continuous service, as the blade profile has been optimised to maintain a low temperature on the cutting edge. It is dedicated to OEM assembling.



## BRAKE MOTOR

The brake motor is a safety device - when the stop button is pushed, the disc stops immediately.

## PNEUMATIC BENDING

### AVAILABLE ON M75 CUT AND M55 CUT

Pneumatic bending facilitates cutting, as the operator does not have to force the hose on the blade. The pneumatic system, activated by a foot switch, offers hands free operation. This is the same principle for the hydraulic bending on M90 CUT.

## HOSE CLAMPING SYSTEM

Recommended for skiving hoses over 2" (DN 50)

# ACCESSORIES AND TOOLS

## SKIVING MACHINES

All Manuli skiving machines are equipped with the Plug'n Skive System which allows the quick and easy insertion of tools.

With the Plug n'Skive System no tools are needed to insert the skiving mandrel, simply push the mandrel into the locking system to unlock it, lift a knob and pull out the tool.

## EXTERNAL SKIVING TOOLS

Depending on the machine and on customer needs, Manuli offers 3 types of external skiving tools:

### ESE (EXTERNAL SKIVING ECONOMIC)

**FOR MH SKY, M50 SKY AND M30 CUT & SKIVE**

The ESE kit includes 10 mandrels:  $\frac{1}{4}$ " ,  $\frac{5}{16}$ " ,  $\frac{3}{8}$ " ,  $\frac{1}{2}$ " ,  $\frac{5}{8}$ " ,  $\frac{3}{4}$ " , 1" , 1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ " , 2"

### ESA (EXTERNAL SKIVING ADJUSTABLE)

**FOR M205 SKY**

The ESA kit includes 11 mandrels:  $\frac{3}{16}$ " ,  $\frac{1}{4}$ " ,  $\frac{5}{16}$ " ,  $\frac{3}{8}$ " ,  $\frac{1}{2}$ " ,  $\frac{5}{8}$ " ,  $\frac{3}{4}$ " , 1" , 1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ " , 2"

ESA mandrels are also available in 2 $\frac{1}{2}$ " and 3"

### ESP (EXTERNAL SKIVING PRODUCTION)

**FOR M50 SKY AND M205 SKY**

ESP tools are individual 'skiving heads' intended to be pre-set to the right depth and length for greater productivity. They are recommended for batch skiving operations and a second knife can be added for abrasion resistant covers.

ESP is available in:  $\frac{3}{16}$ " ,  $\frac{1}{4}$ " ,  $\frac{5}{16}$ " ,  $\frac{3}{8}$ " ,  $\frac{1}{2}$ " ,  $\frac{5}{8}$ " ,  $\frac{3}{4}$ " , 1" , 1 $\frac{1}{4}$ " , 1 $\frac{1}{2}$ " , 2" , 2 $\frac{1}{2}$ " , 3"



*ESE skiving tools*



# ACCESSORIES AND TOOLS

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## INTERNAL SKIVING TOOLS

### IS (INTERNAL SKIVING)

#### FOR ALL MACHINES

The IS kit includes 7 mandrels:  $\frac{1}{2}$ " ,  $\frac{5}{8}$ " ,  $\frac{3}{4}$ " , 1" ,  $1\frac{1}{4}$ " ,  $1\frac{1}{2}$ " , 2"

They are also available in  $\frac{3}{8}$ " ,  $2\frac{1}{2}$ " and 3"

The ring is heat treated to resist the abrasion of the hose wires.



# ACCESSORIES AND TOOLS

## SAFE CRIMP SYSTEM (SCS)

### DIGITAL CONTROL

SCS is the revolutionary expert system created to manage the crimping operations for Manuli hose assemblies. It includes the integration of the Manuli Hydraulics fluid connectors assembling parameters, allowing easy machine set-up and automated quality control of the assembling process for improved production consistency and safety.

Large OEM hose assembly productions in particular require increasingly high quality standards from suppliers. They need proven and certified systems and processes with measurable and repeatable parameters.

### SCS is the answer.

SCS provides:

- Automated counting, mistake proofing, pressure control and quality control
- Automated crimp diameter set-up, according to hose selection and the required combination of fittings (insert and ferrule), with the Manuli crimp chart database embedded
- Pre-set calibration of the crimp diameter to compensate for instances of elastic rebound after the crimping operation
- Automatic measurement of the crimping diameter and crimping force, allowing for 100% quality checking and statistical data gathering
- Automated opening control to vary the opening process according to the requirements of the fitting geometry
- Possibility of progressive crimping (in steps rather than continuous) for use with tubing and thermoplastic hoses - Not suitable for rubber hose assemblies
- Possibility to program crimping sequences for elbows and straight fittings
- Assembly line identification (login / logout functions) to enhance traceability
- Maintenance alert for machine service
- Updates according to the latest Manuli crimping data for ongoing compliance with current requirements

Additionally, SCS creates and maintains a database of your assembling activities (including logs of recurrent and customised assemblies), recording the related control and custom parameters as well as personalised solutions.

SCS also provides an immediate alert for possible mistakes in production (eg: an incorrectly inserted fitting or an incomplete crimping operation). Mistakes are immediately detected and rejected by the system, minimising the possibility of the incorrect component being supplied to a customer.

SCS is available on all Manuli Hydraulics stand type crimp machines and on relevant new benchtop models.



# ACCESSORIES AND TOOLS

## ELECTRONIC PANEL

A modern flat panel with electronic buttons, which includes maintenance functions essential for keeping the machine in good condition.

### Maintenance functions include:

- **2 Counters:** 1 daily counter and 1 machine life counter
- **3 LED Indicator Lights:** 1 for daily maintenance, 1 for advanced maintenance and 1 for expert maintenance
- **Semi-automatic function:** The semi-automatic opening is ideal for serial assemblies as it can be adjusted specifically to allow the fitting to pass through the dies with minimal clearance, reducing the cycle time.



## NUMERICAL VERNIER

### AVAILABLE ON ALL MACHINES EXCEPT MHP 80

The ergonomic numerical vernier is the standard control system offered on Manuli machines.

This system is designed for machines used in repair workshops where assemblies are mostly composed of small batches. The crimping diameter is easily adjusted by a numerical vernier (2 colours highlighting mm and 0.1mm).

100 units on the dial change the crimping diameter by 1 mm. The adjustment of the crimping diameter can be controlled up to 1/100 mm. The counter is oriented toward the operator to provide high visibility. The unit also includes an end crimping light and a guard which is firmly fixed to the machine, protecting the vernier from damage.



*From MB 137 to MB 350*

# ACCESSORIES AND TOOLS

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## ELECTRICAL FOOT SWITCH (EFS)

**AVAILABLE ON MACHINES FROM MB 137 PLUS TO GOLDENCRIMP 450 AND ALL STAND-TYPE MODELS**

The electrical foot switch allows the operator to use both hands during the crimping process, increasing ease of use and improving safety.



## MECHANICAL BACKSTOP (MBS)

**AVAILABLE ON MACHINES FROM MB 240 TO MB 350 AND STAND-TYPE MODELS**

The mechanical backstop allows quick positioning of the fittings in the crimp head. There is also an electronic version.

## ERGONOMIC TABLE (ET)

**AVAILABLE ON BENCHTOP CRIMPERS**

Specifically designed for the MB 240 and MB 350 crimpers, the ergonomic table provides a perfect working height, complete access around the machine and a minimal footprint. The front hook and the shelf also provide storage facilities.



# ACCESSORIES AND TOOLS

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## ERGONOMIC QUICK CHANGE GUN

**AVAILABLE ON ALL MACHINES EXCEPT MHP 80**

This innovative quick change system is available on all electric crimping machines. The ergonomic quick change gun is ideal for maximising comfort and increasing productivity when changing die sets.

### **Fast, clean and ergonomic**

An ergonomic quick change gun provides the ability to change all of the dies simultaneously. The die sets are organised and stored in die pods on the machine panel.

### **Easy and safe**

The system is designed to be simple to use. Dies are changed in a static position to minimise the possibility of the die pins breaking.

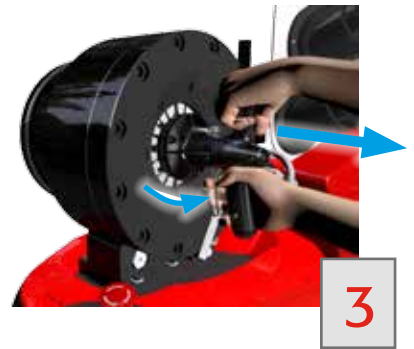


# ACCESSORIES AND TOOLS

## HOW TO CHANGE THE DIE

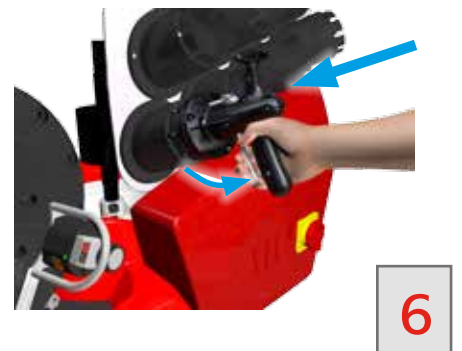
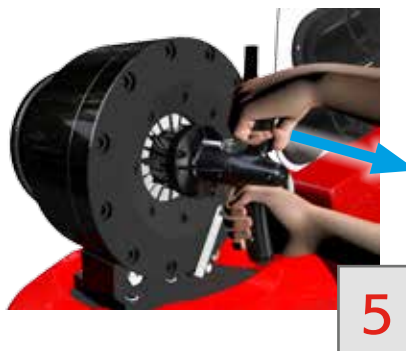
### To insert the dies:

1. Choose the correct die set and take it out of the die rack.
2. Ensure the master dies are closed, then insert the die set into the head.
3. Release the die set into the head by pulling the trigger of the quick change gun.



### To remove the dies:

4. Once the dies are closed, insert the quick change gun into the head until the die set is fixed to the magnets.
5. Pull the quick change gun out without pulling the trigger. The die set comes out of the head and is held by the magnets on the gun.
6. Place the die set back into the die rack.





# APPENDICES





# LEGEND OF SYMBOLS



**Inside Diameter (I.D.)**



**Outside Diameter (O.D.)**



**Minimum Bend Radius**



**Reinforcement Outside Diameter (R.O.D.)**



**Maximum Working Pressure**



**Ferrule / Socket**



**Weight**



**Burst Pressure:** The minimum guaranteed burst pressure of the hose; Equivalent or superior to the minimum requirements of the reference specifications.

## Insert



- MF** MF2000<sup>®</sup> Multifit type
- IP** MF2000<sup>®</sup> Interlock Plus type
- SP** MF2000<sup>®</sup> Spiralfit type
- XL** MF2000<sup>®</sup> Xtralock type
- IS** MF2000<sup>®</sup> Interlock Super type
- BL** MF2000<sup>®</sup> Blastlock type
- PL** MF2000<sup>®</sup> Push-Lock type



**Working pressure:** The maximum pressure at which correct functioning of the quick coupling is assured. The working pressure is assured in both connected and disconnected states.



**Flow Rate:** The quantity of fluid which passes through a cross section of the quick coupling in a specified unit of time.



**Connection Effort:** The effort required to lock the male insert into the female.



**Oil Spillage:** The quantity of fluid lost from the coupling during the connection/disconnection process.



**Connection/Disconnection under pressure:** Ability to connect and disconnect with the quick coupling under pressure.

# GLOSSARY OF TERMS

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**Continuous service:** Refers to the working temperature range

**Max. operating temperature (Intermittent service):** Peaks of temperature of short duration and total cumulative duration lower than 5% of the total service life.

**Recommended fluids:** Fluid types that the hose can convey with excellent / good chemical compatibility.

**Hose service life:** Cumulative duration of time in which the hose is under operative conditions.

# HOSE SIZE CONVERSION CHART

## HYDRAULICS

| HOSE SIZE |      |       |                |
|-----------|------|-------|----------------|
| DN        | dash | mm    | inch           |
| 5         | -03  | 4.7   | $\frac{3}{16}$ |
| 6         | -04  | 6.4   | $\frac{1}{4}$  |
| 8         | -05  | 7.9   | $\frac{5}{16}$ |
| 10        | -06  | 9.5   | $\frac{3}{8}$  |
| 12        | -08  | 12.7  | $\frac{1}{2}$  |
| 16        | -10  | 16.0  | $\frac{5}{8}$  |
| 19        | -12  | 19.0  | $\frac{3}{4}$  |
| 25        | -16  | 25.4  | 1              |
| 31        | -20  | 31.8  | $1\frac{1}{4}$ |
| 38        | -24  | 38.1  | $1\frac{1}{2}$ |
| 51        | -32  | 50.8  | 2              |
| 60        | -38  | 60.3  | $2\frac{3}{8}$ |
| 63        | -40  | 63.5  | $2\frac{1}{2}$ |
| 76        | -48  | 76.2  | 3              |
| 89        | -56  | 88.9  | $3\frac{1}{2}$ |
| 102       | -64  | 101.6 | 4              |

# FLUID COMPATIBILITY CHART

**WARNING: Compatibility of hose and fittings with conveyed fluid is an essential factor in avoiding chemical reactions that may result in release of fluids or failure of the hose or connection. This chemical compatibility guide must not be used in conjunction with any other compatibility guides from previous or future catalogue editions, bulletins or publications. Incorrect use of these charts could result in personal injury or property damage.**

## HOSE SELECTION BY MEDIUM AND HOSE TYPE

This hose compatibility chart is a reference of Manuli Hydraulics hose compatibility with various fluid media. It is intended as a guide to chemical compatibility with inner tube materials and assembly lubricants applied internally to the hose. The Fluid Compatibility Chart lists the relative resistance of hose tube and fitting materials to more common:

- **hydraulic oils**
- **other diversified oils families (for hydrokinetic and lubrication applications)**
- **chemicals**

in three relative separated charts.

The ratings shown do not cover all possible variations of all factors, such as temperature, concentration, degradation or fluid contamination, etc. Testing under actual conditions is the best way to assure chemical compatibility for critical applications.

## PART 1: HYDROSTATIC OILS COMPATIBILITY CHART (ACTUAL HYDRAULIC SYSTEMS AND APPLICATIONS)

The specific recommendations regarding **hydraulic fluids** are based upon specific laboratory bench tests with fluids, performed according to ISO 1817 and internal methodology, integrated with field experiences and the advices of various polymers or fluid suppliers. **It must be stressed, however, that this information is offered only as a guide and is not a guarantee.** Final hose selection also depends upon pressure, fluid and ambient temperatures, concentration, duration of exposure and special requirements or variations, which may not be known by Manuli Hydraulics. Legal and other regulations must be followed with particular attention.

All the combined factors in working operations may impact on the service life of the hose assembly and must be carefully considered before releasing a hose for a specific application: the chemical compatibility with the service fluid is only one of the factors to be considered.

It is always recommended to test the specific fluid brand name with the requested hose, in order to verify chemical compatibility. Manuli Hydraulics constantly performs compatibility tests as service to market, progressively updating the compatibility chart.

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# FLUID COMPATIBILITY CHART

## PART 2: HYDROKINETIC APPLICATIONS AND LUBRICANT OILS COMPATIBILITY CHART (AUTOMATED TRANSMISSIONS AND VARIOUS LUBRICATION SYSTEMS)

This second part of the compatibility chart list a particular family of oils, not designed for standard hydraulics (hydrostatic applications), rather studied for many diversified applications such as lubrication for gear, compressors, turbines, diathermic oils for cooling or heat transmission, and ATF (Automatic Transmission Fluids) oils for the hydrokinetic (hydrodynamic) applications. These fluids are often very aggressive on traditional tube rubbers, more than hydraulic oils, due to the nature of the fluids and additives, aimed to give properties of long life duration and high temperature resistance; that's why their chemical compatibility with tube rubbers must be carefully checked before eventual use.

It is to be underlined that Manuli hoses are designed in principle for use with hydraulic oils only, and that diversified applications such as the ones with these categories of other oils, must be verified case by case with lab and/or field tests by users under their sole and exclusive responsibility and no liability whatsoever can be attributed to Manuli Hydraulics in that regard.

For more detailed information contact Manuli Hydraulics or visit [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com)

## PART 3: BEHAVIOUR TO CHEMICALS (GUIDELINES FROM LITERATURE) FOR NON-HYDRAULIC APPLICATIONS

**WARNING: Manuli hoses are designed for hydraulics use and applications, they are not intended for industrial diversified applications with various chemicals.**

The recommendations regarding **generic chemicals** are mainly based on literature data in conjunction with polymers used for the tube compound. The field results of the fluid conveyed in the hose should be carefully tested and field validated by users.

No test on finished hose assemblies in combination with the mentioned chemicals has been normally performed.

**The possible good rating and on field performance of the hose with a chemical mentioned in the list does not mean in any case the release by Manuli Hydraulics of the product for that application or any guarantee. The possible validation for use is under the sole and exclusive responsibility of the end user and no liability whatsoever can be attributed to Manuli Hydraulics in that regard. In fact Manuli Hydraulics hoses are designed for hydraulics use and applications, they are not intended for industrial diversified applications with various chemicals.**

The outer cover of the hose is intended to protect the reinforcement layer(s) from mechanical influences (abrasion, weathering etc.); cover compounds are not designed to exhibit the same chemical resistance as the tube compounds. Manuli Hydraulics should be consulted about the compatibility of the cover, should the application involve the extended exposure or immersion in a liquid: **anyway the hydraulic hoses of the Manuli Hydraulics product range are not designed in general for immersion in the service fluid.**

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# FLUID COMPATIBILITY CHART

This type of special applications should be avoided or carefully studied with additional external protections for the hoses, selection of special hose types, e.g. with thermoplastic cover and validation on the specific application. The turbulence of the fluid, the high temperature and nature of the fluid as well as other elements may impact the properties or integrity of the hose cover material (the cover compound of the hose is designed to resist to oil drops and external agents, not immersion in the service fluid).

For more detailed information contact Manuli Hydraulics or visit [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com)

**WARNING:** No tests on finished hose assemblies in combination with the mentioned chemicals has been normally performed. The possible good rating and on field performance of the hose with a chemical mentioned in the list, does not mean in any case the release by Manuli Hydraulics of the product for that application or any guarantee. The possible validation for use is under the sole and exclusive responsibility of the end user and no liability whatsoever can be attributed to Manuli Hydraulics in that regard. In fact Manuli Hydraulics hoses are designed for hydraulics use and applications, they are not intended for industrial diversified applications with various chemicals. No tests on finished hose assemblies in combination with the mentioned chemicals has been normally performed.

## LEGEND OF HOSE TYPES BY TUBE COMPOUNDS

| Tube compound categories       | Hose Types  |
|--------------------------------|---|
| NITRILE                        | std wire braid, textile braid & wire spiral hoses (Tractor, Harvester, Lyteflex, Firend, Goldenspir, Astro, Multitex, Pushfit, Cover, Spirtex/K, Rockmaster, Shieldmaster, Twinpower, GoldenISO, Goldenguard, Diamondspir, Xtraflow/4WS & 2WB, Pilot, Jackmaster) |
| CHLOROPRENE                    | Eternity/2, Nozone/2K, Goldenblast  |
| CHLOROSULPHONATED POLYETHYLENE | Equator/1 (Blue & Black), Equator/2 (Blue & Black), Xtraflow/HT   |
| CHLORINATED POLYETHELENE       | Mastertex   |
| POLYESTER                      | Hydroplast, Hydrotwin   |

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# FLUID COMPATIBILITY CHART

## HOW TO USE THE CHART

- Hydraulic fluids are listed in alphabetic order with the manufacturer brand name and ISO identification symbol (DIN when available), chemicals are listed alphabetically;
- Find the hose type and read the compatibility rating (see rating scale);
- Define the proper hose selection for the application by choosing the best rating.

## LEGEND OF RATINGS

**E = Excellent** - Small or negligible changes of compound properties: no problem for use. Service life can exceed the expectations.

**G = Good** - There are only minor changes of some compound properties. Service life is normally in line with state of the art (standard) expectations.

**C = Conditional** - Significant changes on some compound properties. Service life can be reduced; higher durability can be achieved with reduced severity of working conditions (temperature in particular) or with an upgraded hose selection. Whenever possible, a field validation under actual working conditions is recommended.

**X = Not recommended** - Unsuitable, severe effects on physical properties.

## REMARKS

- O-Rings used with couplings must also be considered for chemical compatibility with the fluid to be conveyed. This includes fittings containing internal O-Rings; for example Metric Female 24° Cone seat fittings, etc. Standard O-Ring of Manuli Hydraulics fittings are made of Nitrile rubber (NBR), highly chemically compatible with all hydraulic fluids. If you use special fluids or very high temperatures, different O-Ring materials should be used, contact Manuli Hydraulics for specific information. See Technical Manual for dimensions of O-Rings.
- Compatibility of hose fittings with conveyed fluids is an essential factor in avoiding chemical reactions that may result in release of fluids and failure of the connection with the potential of causing severe personal injury or property damage. Standard Manuli Hydraulics fittings are made of carbon steel with Hexavalent chromium free plating.

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# FLUID COMPATIBILITY CHART

## OILS CLASSIFICATION - ACCORDING TO ISO 6743-4

ISO 6743-4 is an important norm regarding "Lubricants, industrial oils and related products (class L)". The norm defines a very wide family of oils, used in many different sectors and applications.

The oils must be carefully understood and properly managed to avoid problems and possible mistakes. The Part 4 of the norm in particular regards the Hydraulic Oils (Family H), for hydrostatic and hydrokinematic applications, the other parts of the norm regard other fluids, of different nature or aimed to different applications than hydraulics.

Manuli Hydraulics hoses are designed and qualified for use with Hydraulic Oils (Family H of the ISO 6743-4), and the behaviour of the particular oil formulation has to be verified case by case.

The applications with oils of the families different than H must be checked carefully but in principle Manuli Hydraulics hoses are not designed for use with them.

Here below the classification of oils by ISO 6743 spec.

Part 1: Family A (Total Loss systems)

Part 2: Family F (Spindle bearings, bearings and associated clutches)

Part 3A: Family D (Compressors)

Part 3B: Family D (Gas and refrigeration compressors)

### **Part 4: Family H (Hydraulic Systems)**

Part 5: Family T (Turbines)

Part 6: Family C (Gears)

Part 7: Family M (Metalworking)

Part 8: Family R (Temporary protection against corrosion)

Part 9: Family X (Greases)

Part 10: Family Y (Miscellaneous)

Part 11: Family P (Pneumatic tools)

Part 12: Family Q (Heat Transfer Fluids)

Part 13: Family G (Slideways)

Part 14: Family U (Heat treatment)

Part 15: Family E (Internal combustion engines)

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# FLUID COMPATIBILITY CHART

The Family H in particular, object of use with Manuli Hydraulics hoses is composed by the following families of oils, identified by ISO dedicated symbols, used also in the compatibility chart.

| General application      | Particular application          | More specific applications   | Composition and properties   | Symbol ISO-L |
|--------------------------|---------------------------------|--|--|--------------|
| <b>HYDRAULIC SYSTEMS</b> | <b>HYDROSTATIC APPLICATIONS</b> | (std hydraulic applications)                                       | Non-inhibited refined mineral oils   | HH           |
|                          |                                 |  | Refined mineral oils with improved anti-rust and anti-oxidation properties | HL           |
|                          |                                 |  | Oils of HL type with improved anti-wear properties                         | HM           |
|                          |                                 |  | Oils of HL type with improved viscosity/temperature properties             | HR           |
|                          |                                 |  | Oils of HM type with improved viscosity/temperature properties             | HV           |
|                          |                                 |  | Synthetic fluids with no specific fire resistant properties                | HS           |
|                          |                                 | Applications where environmentally acceptable fluids are requested | Triglycerides  | HETG         |
|                          |                                 |  | Polyglycols  | HEPG         |
|                          |                                 |  | Synthetic esters   | HEES         |
|                          |                                 |  | Polyalpaoelefin and related hydrocarbon products                           | HEPR         |
|                          |                                 | Hydraulic slide-way systems  | Oils of HM tyoe with anti-stick/slip properties                            | HG           |
|                          |                                 | Applications where fire resistant fluids are required              | Oils in water emulsion   | HFAE         |
|                          |                                 |  | Chemical solution in water   | HFAS         |
|                          |                                 |  | Water in oil emulsion  | HFB          |
|                          |                                 |  | Water polymer soultions  | HFC          |
|                          |                                 |  | Synthetic fluids containing no water and consisting of phosphate esters    | HFDR         |
|                          |                                 |  | Synthetic fluids containing no water and of other composition              | HFDU         |
|                          |                                 | <b>HYDROKINETIC APPLICATIONS</b>                                   | Automatic transmissions  | (ATF oils)   |
|                          | Couplers and converters         |  | HN   |              |

- XXXX      Generally good compatibility with hoses, anyway the behaviour of the particular oil formation to be verified case by case
- HA & HN      ATF oils, chemical compatibility with hoses to be carefully verified case by case upon request and application
- HFAS & HFDR      No compatibility with Manuli Hydraulics hoses. Dedicated hoses are requested

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# FLUID COMPATIBILITY CHART

## PART 1: HYDROSTATIC APPLICATION OILS COMPATIBILITY CHART

(ACTUAL HYDRAULIC SYSTEMS AND APPLICATIONS)

| HYDRAULIC FLUID                  | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                              | TPE Textile Braid       |
|----------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                                  | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| ACT Ecosafe FR 46                | HFDU       | -         | E   | E                       | C   | -            | C       | G  | -                       |
| ACT FR WG 200 D                  | HFC        | -         | E   | X                       | E   | -            | X       | E  | -                       |
| ADDINOL Ökosynth Super HEES 46   | HEES       | -         | G   | C                       | G   | -            | C       | G  | -                       |
| ADDINOL Ökosynth Super HEES 46 S | HEES       | -         | G   | C                       | G   | G            | C       | G  | -                       |
| AGIP Arnica 46                   | HV         | HVLP      | E   | G                       | G   | G            | E       | G  | -                       |
| AGIP Arnica Extra Plus           | HEES       | HVLP      | G   | G                       | G   | G            | C       | G  | E                       |
| AGIP Arnica Plus                 | HEES       | HVLP      | E   | E                       | G   | G            | C       | E  | E                       |
| AGIP Arnica S46                  | HFDU       | -         | E   | E                       | G   | G            | C       | E  | E                       |
| AGIP Oso 32                      | HM         | HLP       | E   | E                       | G   | -            | E       | E  | G                       |
| AGIP Oso 46 S                    | HM         | HLP       | E   | G                       | G   | G            | G       | G  | G                       |
| AGIP Oso D 46                    | HM         | HLPD      | G   | G                       | C   | E            | G       | G  | -                       |
| AGROL Mendo 46 G4                | HEES       | -         | -   | C                       | -   | -            | C       | -  | -                       |
| AKZO Fyrquel                     | HFDR       | -         | X   | X                       | X   | X            | -       | X  | -                       |
| AMBRA Hitech 46                  | HL         | HLP       | E   | E                       | G   | -            | G       | E  | G                       |
| ANDEROL 8768 (PAO)               | HEPR       | -         | G   | G                       | C   | G            | C       | G  | -                       |
| API HS 46                        | HV         | HVLP      | E   | G                       | G   | -            | E       | -  | -                       |
| ARAL Vitam EHF 46                | HEES       | -         | E   | E                       | G   | -            | G       | G  | G                       |
| ARAL Vitam GF 68                 | HL         | HLP       | E   | E                       | E   | -            | E       | E  | E                       |
| AVIA Avilub HLP 46               | HM         | HLP       | G   | G                       | G   | G            | E       | G  | -                       |
| AVIA Avilub SF 568               | HM         | HLP       | -   | -                       | -   | -            | G       | -  | -                       |
| AVIA Biofluid BP 32              | HEES       | -         | G   | C                       | G   | E            | X       | G  | -                       |

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# FLUID COMPATIBILITY CHART

| HYDRAULIC FLUID                    | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                               | TPE Textile Braid       |
|------------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|---|-------------------------|
|                                    | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRITEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| AVIA Fluid RSL 32                  | HM         | HLP       | E   | G                       | G   | -            | -       | -   | -                       |
| AVIA Fluid RSL 68                  | HM         | HLP       | G   | G                       | G   | G            | E       | G   | -                       |
| AVIA HVI 46                        | HV         | HVLP      | G   | G                       | G   | -            | E       | G   | -                       |
| AVIA Syntofluid F 46               | HEES       | -         | E   | G                       | E   | -            | G       | G   | E                       |
| AVIA Syntofluid N 32               | HEES       | -         | G   | G                       | E   | G            | G       | E   | G                       |
| AVIA Syntofluid N 46               | HEES       | -         | E   | E                       | G   | -            | G       | E   | G                       |
| AVIA Syntofluid PE B 30 (PAO)      | HEPR       | -         | E   | G                       | G   | G            | G       | G   | G                       |
| AVIA Syntofluid PE B 50 (PAO)      | HEPR       | -         | E   | E                       | G   | G            | G       | G   | -                       |
| BECEM Hydrostar PM 46              | HH         | -         | E   | E                       | G   | -            | G       | E   | -                       |
| BINOL Hydrap 46                    | HETG       | -         | E   | E                       | G   | G            | -       | G   | -                       |
| BP A 0629L/028                     | HS         | -         | G   | C                       | G   | G            | E       | G   | G                       |
| BP Bartran HV                      | HV         | HVLP      | E   | G                       | G   | G            | E       | G   | -                       |
| BP Biohyd SE-S 46                  | HEES       | -         | G   | G                       | E   | -            | C       | E   | -                       |
| BP Energol HLP 46                  | HL         | HLP       | G   | G                       | G   | -            | -       | -   | -                       |
| BREMER Rivolta SBH 23              | HEES       | -         | E   | G                       | E   | G            | G       | G   | E                       |
| CALTEX Rando DSZ 46                | HV         | HVLP      | G   | G                       | C   | -            | G       | C   | -                       |
| CALTEX Rando HD                    | HM         | HLP       | E   | G                       | G   | G            | G       | G   | G                       |
| CALTEX Rando HD LVZ 46             | HV         | HVLP      | G   | G                       | C   | G            | G       | C   | -                       |
| CASTROL Aero HF 585 B (MIL 56006H) | HH         | HL        | E   | C                       | G   | -            | C       | E   | C                       |
| CASTROL Anvol SWX 68 (POE based)   | HFDU       | -         | E   | C                       | E   | -            | C       | G   | -                       |
| CASTROL Biobar VG 68               | HEES       | -         | E   | C                       | E   | E            | X       | G   | -                       |
| CASTROL Biotech Alpin 22           | HETG       | -         | E   | E                       | E   | -            | C       | E   | -                       |
| CASTROL Brayco 717 (MIL 17111c)    | HS         | -         | G   | C                       | G   | -            | C       | G   | G                       |
| CASTROL Brayco Micronic 882        | HH         | HL        | G   | G                       | G   | G            | G       | G   | G                       |

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# FLUID COMPATIBILITY CHART

| HYDRAULIC FLUID               | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                              | TPE Textile Braid       |
|-------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                               | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| CASTROL Carelube HTG          | HETG       | -         | E   | C                       | E   | -            | C       | E  | G                       |
| CASTROL Carelube HY 46        | HEES       | -         | G   | G                       | G   | -            | C       | G  | G                       |
| CASTROL Hyspin HDH 7000       | HM         | -         | E   | G                       | G   | -            | E       | E  | -                       |
| CASTROL Hyspin ZZ32           | HM         | HLP       | G   | G                       | G   | G            | E       | G  | G                       |
| CASTROL Lift oil              | HH         | HL        | G   | G                       | G   | G            | G       | G  | G                       |
| CASTROL Product L 320         | HFDU       | -         | E   | G                       | G   | -            | X       | G  |                         |
| CASTROL Product L 571         | HH         | HL        | E   | G                       | G   | G            | X       | G  | -                       |
| CENEX Indol Premium AW 4646   | HM         | HLP       | G   | E                       | G   | G            | -       | G  | -                       |
| CEPSA Hidraulico HM 46        | HM         | HLP       | E   | E                       | G   | -            | E       | G  | E                       |
| CHEVRON ETL 10328             | HV         | HVLP      | G   | E                       | C   | G            | G       | G  | -                       |
| CHEVRON Extra Hyd oil VG 46   | HM         | -         | G   | G                       | G   | G            | C       | -  | -                       |
| CHEVRON Hydraulic AW 46       | HM         | HLP       | E   | G                       | G   | -            | E       | G  | -                       |
| CHEVRON Machine oil AW 220    | HV         | HLP       | G   | G                       | G   | -            | G       | G  | G                       |
| CHEVRON Machine oil AW ISO 46 | HV         | HLP       | G   | G                       | G   | -            | G       | G  | G                       |
| CHEVRON Rando HD 68           | HM         | HLP       | G   | G                       | G   | G            | G       | G  | -                       |
| CHEVRON Rycon MV              | HM         | -         | E   | G                       | G   | -            | G       | G  | -                       |
| COAST OIL A/W 68              | HM         | -         | G   | G                       | C   | -            | G       | -  | -                       |
| CONDAT D 46                   | HFDU       | -         | E   | C                       | G   | -            | C       | G  | -                       |
| CONOCO Ecoterra               | HM         | HLP       | G   | G                       | -   | G            | -       | -  | -                       |
| DEA Econa E 46                | HEES       | -         | G   | C                       | E   | G            | C       | E  | E                       |
| DOT 3                         | HPG        | -         | -   | -                       | X   | -            | X       | X  | G                       |
| DOT 4                         | HPG        | -         | -   | -                       | X   | -            | X       | X  | G                       |
| ELAN Hydraulic 46             | HV         | HVLP      | E   | G                       | G   | -            | E       | G  | G                       |
| ESSO Hidraulikoel HE 46       | HEES       | -         | E   | E                       | E   | -            | G       | E  | E                       |
| ESSO Nuto H46                 | HM         | HLP       | G   | G                       | G   | -            | E       | G  | E                       |

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# FLUID COMPATIBILITY CHART

| HYDRAULIC FLUID                         | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                               | TPE Textile Braid       |
|---|------------|-----------|---|-------------------------|---|--------------|---------|---|-------------------------|
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| EXXON HUMBLE H 46                       | HM         | HLP       | E   | G                       | G   | -            | E       | G   | -                       |
| EXXON RL 002775B                        | HM         | -         | G   | G                       | C   | G            | C       | -   | -                       |
| EXXON Univis N46                        | HV         | HVLP      | E   | G                       | G   | G            | E       | G   | -                       |
| FINKE Aviaticon HY HE                   | HEES       | -         | G   | G                       | E   | -            | -       | E   | G                       |
| FOLTZERMSPRINGOLI Hydra 46              | HH         | -         | G   | G                       | G   | G            | E       | G   | -                       |
| FRAGOL HE 46                            | HEES       | -         | E   | C                       | G   | -            | C       | G   | E                       |
| FUCHS Eco Hyd 46S NWG                   | HEES       | -         | G   | C                       | G   | -            | X       | G   | -                       |
| FUCHS OM 13                             | HH         | HL        | G   | G                       | G   | -            | G       | E   | E                       |
| FUCHS OM 65                             | HH         | HL        | G   | G                       | G   | -            | -       | G   | G                       |
| FUCHS Plantohyd S 46                    | HEES       | -         | E   | C                       | E   | -            | C       | E   | E                       |
| FUCHS Plantohyd N 46                    | HETG       | -         | G   | C                       | E   | G            | C       | E   | E                       |
| FUCHS Plantohyd SUPER S46               | HEES       | -         | G   | X                       | E   | G            | X       | -   | -                       |
| FUCHS Plantosyn 3268 Eco                | HEES       | -         | G   | C                       | E   | -            | G       | E   | G                       |
| FUCHS Plantosyn 46 HVI                  | HEES       | -         | E   | C                       | G   | -            | C       | G   | G                       |
| FUCHS RENOLIN B 46 HVI                  | HV         | HVLP      | E   | G                       | G   | -            | E       | G   | G                       |
| FUCHS Renolin B15 VG46                  | HM         | HVLP'     | G   | G                       | G   | -            | -       | -   | -                       |
| FUCHS Renolin D15 VG 46                 | HM         | HLPD      | E   | G                       | G   | G            | -       | G   | -                       |
| FUCHS Renolin MR 520                    | HV         | HVLPD     | G   | G                       | G   | -            | G       | E   | E                       |
| GULF Armony AW 46                       | HM         | HLP       | E   | E                       | G   | -            | E       | G   | E                       |
| HOUGHTON Cosmolubric HF 130 (POE based) | HFDU       | -         | G   | G                       | G   | -            | C       | G   | -                       |
| HOUGHTON Hydravis BC 84005 (60°C)       | HFA        | -         | E   | G                       | E   | -            | C       | E   | E                       |
| HOUGHTON Isocore E 68 plus              | HFC        | -         | E   | G                       | E   | -            | C       | G   | -                       |
| HOUGHTON Safe 620                       | HFC        | -         | G   | G                       | G   | -            | X       | -   | -                       |
| HOUGHTON Safe OX 40                     | HFC        | -         | E   | G                       | E   | -            | C       | E   | E                       |
| HOUGHTON Vital fluid L46AL              | HFDU       | -         | G   | G                       | E   | -            | C       | -   | -                       |

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# FLUID COMPATIBILITY CHART

| HYDRAULIC FLUID  | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                              | TPE Textile Braid       |
|--|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|  | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| HOUGHTON-Safe 273 CTF  | HFC        | -         | E   | C                       | E   | -            | X       | E  | E                       |
| IDEMITSU Daphne 46   | HM         | HLP       | G   | G                       | G   | G            | G       | G  | -                       |
| IGOL Matic ZNS 46  | HV         | -         | E   | G                       | G   | -            | E       | -  | -                       |
| IGOL Ticma Fluid   | HV         | -         | E   | G                       | G   | -            | E       | G  | -                       |
| IGOL Ticma Fluid BIO 46  | HEES       | -         | G   | G                       | G   | -            | C       | G  | -                       |
| INGERSOLL RAND SSR Ultracoolant<br>(Polyglycole comp. coolant) | HEPG       | -         | G   | G                       | G   | -            | G       | G  | -                       |
| INGERSOLL RAND Techtrol<br>Gold(Polyglycole comp. coolant)     | HEPG       | -         | G   | C                       | G   | -            | G       | G  | -                       |
| IRVING hydraulic 46  | HM         | HLP       | G   | G                       | G   | -            | E       | G  | -                       |
| JIANGSU GAOKE L-HM32   | HM         | HLP       | -   | -                       | G   | -            | E       | -  | -                       |
| JOHN DEERE Bio Guard II  | HETG       | -         | E   | E                       | E   | -            | E       | G  | G                       |
| KLUBER Hysyn FG46  | HS         | -         | G   | G                       | C   | -            | G       | C  | -                       |
| KLUBER KluberBIO LR 9 68                                       | HEES       | -         | E   | C                       | G   | G            | X       | G  | -                       |
| KLUBERFOOD 4 NH1 46  | HM         | HLP       | G   | C                       | C   | -            | C       | C  | -                       |
| KOMATSU Genuine Bio 46 G4                                      | HEES       | -         | E   | G                       | G   | -            | G       | G  | E                       |
| KOMATSU KPO 10 Powertrain TO 10                                | HH         | -         | E   | E                       | G   | -            | G       | G  | E                       |
| KUNLUN LHM 46  | HM         | HLP       | E   | G                       | G   | G            | E       | G  | G                       |
| LIEBHERR Hyd Basic 68  | HM         | HLPD      | E   | G                       | G   | -            | -       | -  | -                       |
| LIEBHERR Hydraulic HVI   | HV         | HVLDP     | E   | G                       | G   | -            | -       | G  | -                       |
| LIEBHERR Hydraulic Plus  | HEPR       | HVLDP     | G   | G                       | C   | G            | -       | -  | -                       |
| LIEBHERR Hydraulic Plus Arctic                                 | HEPR       | HVLDP     | E   | E                       | G   | -            | -       | -  | -                       |
| LUKOIL Geyser ST   | HM         | -         | E   | G                       | G   | G            | E       | G  | G                       |
| LUKOIL Geyser ZF   | HM         | HLP       | G   | G                       | G   | G            | E       | G  | G                       |
| MACDERMID Oceanic BTC 181                                      | HS         | -         | E   | G                       | G   | G            | -       | G  | G                       |
| MLC MetLube HFR 220  | HFDU       | -         | G   | G                       | G   | G            | E       | C  | -                       |
| MICRO QUIMICA Microcorte 530                                   | HFB        | -         | C   | X                       | C   | -            | X       | C  | -                       |

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| HYDRAULIC FLUID                 | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                               | TPE Textile Braid       |
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|                                 | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRITEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| MILLERS Millmax 22              | HM         | -         | E   | G                       | G   | G            | G       | G   | -                       |
| MILLERS Millfood 32             | HS         | -         | G   | G                       | G   | -            | E       | G   | E                       |
| MOBIL Aero HF 46 (MIL 5606H)    | HH         | HL        | E   | G                       | G   | -            | C       | G   | -                       |
| MOBIL DTE 10 Excel 46           | HV         | HVLP      | G   | E                       | G   | G            | C       | G   | -                       |
| MOBIL DTE 10 Excel 68           | HV         | HVLP      | G   | G                       | C   | G            | C       | -   | -                       |
| MOBIL DTE 13                    | HV         | HVLP      | E   | G                       | G   | -            | E       | G   | -                       |
| MOBIL DTE 24                    | HV         | HVLP      | G   | G                       | G   | -            | E       | G   | -                       |
| MOBIL DTE 25                    | HV         | HVLP      | E   | G                       | G   | -            | E       | G   | E                       |
| MOBIL DTE 26                    | HV         | HVLP      | G   | G                       | G   | -            | E       | C   | E                       |
| MOBIL DTE EXCEL 46              | HM         | HLP       | E   | E                       | G   | G            | E       | G   | G                       |
| MOBIL DTE EXCEL 68              | HM         | HLP       | G   | -                       | -   | -            | E       | -   | -                       |
| MOBIL DTE FM 32                 | HM         | -         | E   | G                       | G   | -            | G       | G   | -                       |
| MOBIL EAL 224 H                 | HETG       | -         | G   | G                       | E   | G            | X       | E   | G                       |
| MOBIL Hydrofluid HFDU           | HFDU       | -         | E   | E                       | E   | E            | G       | E   | E                       |
| MOBIL SHC 524                   | HM         | -         | E   | G                       | C   | G            | E       | -   | -                       |
| MORRIS Triad 32                 | HM         | -         | -   | G                       | G   | G            | G       | -   | -                       |
| MOTOREX Alpine Corex Polar S370 | HV         | HVLP      | G   | G                       | C   | G            | -       | G   | -                       |
| MOTOREX Corex HW                | HV         | HVLP      | E   | G                       | G   | E            | E       | E   | G                       |
| MOTUL Shock oil VI 400          | HEES       | -         | G   | C                       | G   | -            | X       | G   | -                       |
| NALCO Varidos FSK 40%           | HFB        | -         | E   | G                       | E   | E            | C       | E   | -                       |
| NESTE BIO Hydraulik LONGLIFE 46 | HEES       | -         | G   | C                       | G   | -            | C       | G   | -                       |
| NESTE BIO Hydraulik SE 46       | HEES       | -         | G   | C                       | G   | G            | C       | G   | -                       |
| NESTE Hydraulik 32 SUPER        | HV         | HVLP      | E   | G                       | G   | G            | E       | -   | -                       |
| NESTE Hydraulik 46 SUPER        | HV         | HVLP      | E   | G                       | G   | G            | E       | -   | -                       |
| NESTE Hydraulik 68 Super        | HV         | HVLP      | G   | E                       | G   | G            | E       | G   | E                       |

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| NEW PROCESS AG NP Hyd oil PC HV1 46       | HV         | HVLP      | -   | C                       | C   | G            | G       | -  | -                       |
| NOALOIL Idro 32                           | HV         | HLP       | E   | G                       | G   | -            | E       | G  | G                       |
| NYCO Hydraulic Oil FH 3 (MIL H 46170 C-1) | HH         | HL        | E   | G                       | G   | G            | E       | G  | -                       |
| NYCO Hydraulic Oil FH 51 (MIL 5606H)      | HH         | HL        | E   | G                       | G   | G            | C       | G  | -                       |
| NYCO Hydraulic Oil FH 6 (MIL 6083H)       | HH         | HL        | G   | G                       | E   | -            | C       | E  | C                       |
| OEST Dopp-Synth 60                        | HLP        | -         | G   | X                       | G   | G            | X       | G  | -                       |
| OEST Dopp-Synth 70                        | HLP        | -         | G   | X                       | G   | -            | X       | G  | -                       |
| OMD 90                                    | HH         | HL        | G   | G                       | G   | -            | -       | G  | G                       |
| OMV Biohyd MS 46 (100°C)                  | HEES       | -         | G   | G                       | G   | G            | -       | G  | G                       |
| OMV HLP AL 46                             | HL         | HLP       | E   | G                       | C   | -            | E       | C  | -                       |
| OMV HLP M32                               | HV         | HVLP      | G   | G                       | G   | E            | -       | G  | -                       |
| OMV Hyd HLP M15                           | HV         | HVLP      | E   | C                       | G   | G            | -       | G  | -                       |
| PANOLIN EP Gear Synth 30 VDT              | HEES       | -         | G   | X                       | G   | G            | X       | G  | G                       |
| PANOLIN GRO Synth 46                      | HEES       | -         | G   | C                       | G   | G            | C       | -  | E                       |
| PANOLIN HLP Synth 15                      | HEES       | -         | G   | X                       | X   | -            | X       | G  | -                       |
| PANOLIN HLP Synth 46                      | HEES       | -         | E   | C                       | G   | G            | X       | G  | G                       |
| PANOLIN HLP Synth E 46                    | HEES       | -         | E   | C                       | G   | G            | X       | G  | E                       |
| PANOLIN HLP Uni 46                        | HV         | HVLP      | E   | G                       | G   | -            | G       | G  | -                       |
| PANOLIN Orcon Hyd 46                      | HV         | HVLP      | G   | G                       | C   | G            | G       | G  | -                       |
| PANOLIN Trafosynth 2                      | HEES       | -         | G   | X                       | G   | -            | X       | G  | -                       |
| PENTOSIN CHF 11 S (Power Steering)        | HV         | -         | E   | G                       | G   | G            | E       | G  | -                       |
| PETRO CANADA Hydrex AW 46                 | HM         | HLP       | E   | G                       | C   | G            | C       | C  | -                       |
| PETRO CANADA Hydrex MV 60                 | HV         | HVLP      | E   | E                       | G   | G            | C       | G  | -                       |
| PETROFER Ultra Safe 620                   | HFC        | -         | G   | C                       | E   | -            | X       | E  | -                       |
| PFINDER Aapresol                          | HH         | -         | G   | G                       | G   | -            | E       | G  | E                       |

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| HYDRAULIC FLUID                            | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                               | TPE Textile Braid       |
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| Q8 Handel 68                               | HV         | HVLP      | G   | G                       | G   | -            | E       | G   | E                       |
| Q8 Haydn                                   | HM         | HLP       | E   | G                       | G   | G            | E       | G   | -                       |
| Q8 Heller 46                               | HV         | HVLP      | E   | G                       | G   | -            | E       | G   | -                       |
| Q8 Hogarth 46                              | HV         | HVLP      | G   | G                       | C   | G            | C       | G   | -                       |
| Q8 Holbein                                 | HEES       | -         | E   | G                       | G   | -            | G       | G   | -                       |
| Q8 Hummel 46                               | HM         | HLP       | E   | E                       | G   | -            | G       | -   | -                       |
| QUAKER Greensave N 40                      | HETG       | -         | G   | G                       | G   | -            | C       | G   | G                       |
| QUAKER Quintolubric 888                    | HFDU       | -         | G   | G                       | G   | G            | C       | G   | -                       |
| QUAKER Quintolubric 888-46                 | HFDU       | -         | G   | C                       | G   | G            | C       | -   | -                       |
| QUAKER Quintolubric 888-68                 | HFDU       | -         | G   | C                       | G   | -            | C       | -   | -                       |
| QUAKER Quintolubric N 822-300              | HFDU       | -         | G   | C                       | G   | -            | -       | G   | -                       |
| QUAKER Quintolubric N852                   | HFDU       | -         | G   | X                       | G   | G            | X       | E   | -                       |
| RAUTIO ERGO MIX                            | HH         | -         | E   | G                       | G   | -            | E       | -   | -                       |
| REPSOL Telex 32                            | HM         | HLP       | G   | E                       | G   | E            | G       | G   | G                       |
| ROLOIL Estin S46                           | HFDU       | -         | G   | C                       | G   | G            | X       | G   | -                       |
| SAFETY KLEEN Performance PLUS AW 32        | HM         | -         | G   | G                       | C   | G            | G       | -   | -                       |
| SHAEFFER 112 HTC                           | HM         | HLP       | G   | G                       | G   | -            | E       | -   | -                       |
| SHAEFFER 112 NZ HTC 32                     | HM         | HLPD      | G   | G                       | C   | G            | G       | C   | -                       |
| SHAEFFER 254 SUPREME ISO 32 TH 220         | HM         | HLP       | G   | C                       | C   | G            | G       | C   | -                       |
| SHAEFFER 275 S Dilux Supreme MEHF HYD      | HV         | HLPD      | G   | E                       | G   | E            | E       | C   | -                       |
| SHELL Aeroshell Fluid 41 (MIL 5606H)       | HH         | HL        | E   | G                       | G   | -            | C       | G   | -                       |
| SHELL Aeroshell Fluid 602 (MIL-PRF 87252C) | HEPR       | -         | E   | E                       | G   | -            | E       | G   | G                       |
| SHELL Astron HL 46                         | HH         | -         | E   | E                       | G   | G            | G       | -   | -                       |
| SHELL Donax TA (Torque conv. Allison C-3)  | HM         | -         | -   | -                       | G   | G            | G       | -   | -                       |
| SHELL Hydraulic oil PW 46                  | HV         | HVLP      | E   | G                       | G   | E            | G       | G   | G                       |

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| HYDRAULIC FLUID                            | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                              | TPE Textile Braid       |
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| SHELL Irus Fluid DU-NA 46                  | HFDU       | -         | E   | E                       | E   | -            | G       | G  | -                       |
| SHELL Irus Fluid DU-NA 68                  | HFDU       | -         | E   | E                       | E   | -            | G       | G  | -                       |
| SHELL Morlina 220                          | HL         | HLP       | G   | G                       | G   | G            | E       | C  | G                       |
| SHELL Morlina S2 BL10                      | HL         | HLP       | G   | C                       | G   | G            | X       | G  | G                       |
| SHELL Morlina S2 BL5                       | HL         | HLP       | C   | X                       | G   | C            | X       | G  | G                       |
| SHELL Naturelle HF-E15                     | HEES       | -         | E   | C                       | G   | -            | X       | G  | G                       |
| SHELL Naturelle HF-E46                     | HEES       | -         | E   | C                       | G   | -            | X       | E  | G                       |
| SHELL Targon AL plus                       | HH         | -         | E   | C                       | E   | -            | C       | G  | -                       |
| SHELL Tellus Arctic 32                     | HH         | HL        | G   | G                       | G   | G            | G       | G  | E                       |
| SHELL Tellus S1 M 46 (ex Tellus H 46)      | HM         | -         | G   | G                       | G   | G            | -       | -  | -                       |
| SHELL Tellus S2 M 100 (ex Tellus 100)      | HM         | -         | E   | G                       | G   | G            | G       | G  | G                       |
| SHELL Tellus S2 M 46 (ex Tellus 46)        | HM         | HLP       | E   | G                       | G   | G            | E       | G  | E                       |
| SHELL Tellus S2 M 68 (ex Tellus 68)        | HM         | HLP       | E   | G                       | G   | G            | E       | G  | -                       |
| SHELL Tellus S2 MA 46                      | HM         | HVLP      | E   | G                       | G   | E            | G       | G  | -                       |
| SHELL Tellus S2 V 32 (ex Tellus T 32)      | HV         | HVLP      | E   | G                       | G   | E            | E       | G  | G                       |
| SHELL Tellus S2 V 46 (ex Tellus T 46)      | HV         | HVLP      | E   | G                       | G   | E            | E       | G  | G                       |
| SHELL Tellus S2 V 68 (ex Tellus T 68)      | HV         | HVLP      | E   | G                       | G   | -            | E       | G  | -                       |
| SHELL Tellus S3 V 32 (ex Tellus STX)       | HV         | HVLP      | E   | G                       | C   | G            | E       | G  | G                       |
| SHELL Tellus S3 V 46 (ex Tellus STX)       | HV         | HVLP      | E   | G                       | C   | G            | E       | G  | G                       |
| SHELL Tellus S46                           | HM         | HLP       | E   | G                       | G   | -            | E       | G  | E                       |
| SHELL Tellus S4ME 46 (ex Tellus EE 46)     | HM         | HLP       | E   | C                       | -   | -            | -       | -  | -                       |
| SHELL Tellus TX 68                         | HV         | -         | G   | C                       | G   | E            | G       | G  | -                       |
| SHENYANG TeLi Aeronautic Hydraulic Oil 10# | HV         | -         | G   | -                       | G   | G            | C       | -  | -                       |
| SINOPEC L HM 32                            | HM         | HLP       | E   | -                       | G   | -            | G       | -  | -                       |
| SMALLMAN Crownpress 46                     | HH         | -         | G   | G                       | G   | -            | E       | G  | E                       |

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| SOLUTIA Skydroll 500         | HFDR       | -         | X   | X                       | X   | -            | X       | X   | X                       |
| STATOIL Hydraway Extreme 46  | HM         | HLP       | E   | G                       | G   | E            | E       | -   | -                       |
| STATOIL Hydraway HVXA 15     | HV         | HVLP      | G   | -                       | G   | G            | -       | G   | -                       |
| STATOIL Hydrocor CC44        | HFC        | -         | E   | G                       | E   | -            | C       | G   | -                       |
| STUART Isocore E 68 Plus     | HPG        | -         | E   | G                       | G   | G            | C       | E   | -                       |
| SUNOCO Sunvis 746            | HM         | HLP       | E   | G                       | G   | G            | E       | C   | G                       |
| SUNOCO Sunvis 846            | HV         | HVLP      | E   | G                       | G   | G            | G       | G   | G                       |
| SUNOCO Sunvis 846 WR         | HV         | HLP       | E   | G                       | G   | G            | G       | G   | G                       |
| TAMOIL Green Hydro Safety 46 | HETG       | -         | E   | E                       | G   | -            | -       | E   | G                       |
| TEBOIL Hydraulic arctic      | HH         | -         | G   | G                       | E   | G            | G       | E   | E                       |
| TEBOIL Eco 46                | HEES       | -         | E   | E                       | G   | G            | C       | G   | G                       |
| TERRESOLVE Greenscare 46     | HETG       | -         | G   | G                       | G   | G            | G       | G   | -                       |
| TEXACO Biostar Hydraulic 32  | HETG       | -         | E   | C                       | E   | G            | C       | E   | -                       |
| TEXACO Hydra 46              | HEES       | -         | E   | C                       | G   | -            | C       | G   | G                       |
| TEXACO Rando HD 46           | HM         | HLP       | E   | G                       | C   | -            | G       | C   | G                       |
| TEXACO Rando HD LVZ 46       | HV         | HVLP      | G   | G                       | C   | G            | G       | C   | -                       |
| TEXACO Rando HD VZ 46        | HV         | HVLP      | G   | G                       | G   | G            | C       | G   | G                       |
| TEXACO Rando HD VZ 68        | HV         | HVLP      | G   | G                       | G   | C            | G       | G   | -                       |
| TEXACO Rando HD Z 46         | HV         | HVLP      | E   | G                       | G   | G            | G       | G   | -                       |
| TEXACO Synstar HT 68         | HFDU       | -         | G   | G                       | E   | -            | C       | E   | G                       |
| TOTAL Azolla HZS 46          | HM         | HLP       | E   | G                       | G   | -            | E       | -   | -                       |
| TOTAL Azolla ZS 46           | HM         | HLP       | E   | G                       | G   | -            | E       | G   | G                       |
| TOTAL Biohydran SE 46        | HEES       | -         | G   | C                       | G   | -            | X       | E   | G                       |
| TOTAL Equivis ZS 46          | HV         | HVLP      | G   | G                       | G   | -            | -       | C   | -                       |
| TOTAL Hydransafe HFDU 46     | HFDU       | -         | E   | -                       | G   | -            | -       | -   | -                       |

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# FLUID COMPATIBILITY CHART

| HYDRAULIC FLUID             | Type       |           | Wire Spiral   | Wire Braid              |   |              |         | Textile Braid                               | TPE Textile Braid       |
|-----------------------------|------------|-----------|---|-------------------------|---|--------------|---------|---|-------------------------|
|                             | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRITEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| TOTAL LHM (Brake fluid)     | HS         | -         | G   | X                       | C   | G            | X       | G   | -                       |
| UKABIOL HY 46 HTG           | HETG       | -         | G   | G                       | E   | -            | G       | E   | G                       |
| UNIL Hydro S46              | HM         | HLP       | G   | G                       | G   | -            | E       | C   | G                       |
| UNIL Opal HV 46             | HV         | HVLP      | G   | G                       | G   | G            | E       | -   | -                       |
| UNIL Opal HVB 46            | HV         | HLPD      | G   | G                       | G   | -            | E       | -   | -                       |
| UNIL Opal PO 6              | HV         | HVLP      | E   | G                       | G   | G            | G       | G   | G                       |
| UNIL Unihyd ISO WG 46       | HV         | HLPD      | E   | G                       | G   | G            | E       | G   | G                       |
| VALVOLINE Ultramax HVLP 68  | HV         | HVLP      | G   | E                       | G   | G            | E       | -   | -                       |
| VICKERS Ecosure HSE 68      | HEES       | -         | G   | C                       | G   | G            | X       | C   | -                       |
| WISURA WM 3021 2,8% in H2O  | HFA        | -         | E   | E                       | E   | -            | X       | E   | E                       |
| WURTH Triathlon HLP 46      | HM         | HLP       | E   | G                       | C   | G            | -       | -   | -                       |
| YORK 777                    | HEES       | -         | G   | C                       | G   | -            | X       | G   | E                       |
| ZELLER+GMELIN Divinol HE 46 | HEES       | -         | E   | C                       | G   | E            | -       | G   | -                       |

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# FLUID COMPATIBILITY CHART

## PART 2: HYDROKINETIC APPLICATIONS AND LUBRICANT OILS COMPATIBILITY CHART

### (AUTOMATIC TRANSMISSION AND VARIOUS LUBRICATION SYSTEMS)

| AUTOMATIC TRANSMISSION FLUID (ATF) | TYPE       |           | WIRE SPIRAL   | WIRE BRAID              |   |              |         | TEXTILE BRAID                              | TPE TEXTILE BRAID       |
|------------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                                    | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |

|  |    |   |   |   |   |   |   |   |   |
|--|----|---|---|---|---|---|---|---|---|
| AGIP ATF 2D Gear (ATF Dexron II, Mercon II spec)     | HA | - | G | G | C | - | G | C | E |
| AVIA Fluid ATF 86                                    | HA | - | G | G | C | G | E | G | G |
| BP Autran MBX (ATF Dexron IID) - 100°C               | HA | - | E | G | G | G | E | G | - |
| CASTROL Transynd RD (ATF Allison C4)                 | HA | - | G | G | C | - | E | - | E |
| CHEVRON Drivetrain HD (ATF Caterpillar TO4)          | HA | - | G | G | C | G | G | C | - |
| MAG 1 Fully synthetic ATF (ATF Mercon V, Dexron III) | HA | - | - | G | C | - | G | - | - |
| MILLERS Millermatic ATF UN (ATF Dexron II)           | HA | - | - | C | C | - | G | - | - |
| MOBIL ATF 320  | HA | - | G | G | C | G | E | C | G |
| SHELL ATF III D (ATF Dexron III)                     | HA | - | G | C | C | G | E | - | - |
| SHELL Donax ATF III (ATF Dexron III)                 | HA | - | G | G | C | - | E | G | - |
| SHELL Donax TX (ATF Dexron III)                      | HA | - | G | C | C | - | G | - | - |
| SHELL Spirax S6ATF ZM                                | HA | - | C | G | X | - | C | - | - |
| TAMOIL ATF II D (ATF Dexron IID) - 100°C             | HA | - | G | G | G | - | E | - | - |
| TOTAL Fluid NA H3                                    | HA | - | G | G | C | G | E | - | - |

| GEAR (MECHANICAL TRANSMISSION) FLUID | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
|--------------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|--------------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| EXXON MOBIL 424 (gear oil)              | C | - | G | G | G | - | G | - | - |
| FUCHS Planto Hytrac (UTTO gear oil)     | C | - | G | C | G | - | C | G | - |
| LIEBHERR Gear Basic 90 LS (Gearbox oil) | C | - | G | G | G | - | - | G | - |

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# FLUID COMPATIBILITY CHART

| GEAR (MECHANICAL TRANSMISSION) FLUID | TYPE       |           | WIRE SPIRAL   | WIRE BRAID              |   |              |         | TEXTILE BRAID                              | TPE TEXTILE BRAID       |
|--------------------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                                      | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |

|  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
| MOBIL SHC PM 320 (Gear oil)                | C | - | G | G | C | - | E | - | - |
| PENZOIL Long Life Gearplus 75w 90          | C | - | E | G | G | E | G | G | - |
| SHELL Donax TD (UTTO gear OIL)             | C | - | E | G | G | - | E | - | - |
| SHELL Omala 320 (Gear oil)                 | C | - | G | G | C | - | C | G | G |
| SHELL Omala HD 150 (Gear oil)              | C | - | G | G | C | - | C | G | G |
| SHELL Spirax ASX (Gear oil SAE 80W140)     | C | - | G | C | C | - | C | G | - |
| SHELL Tegula V32 (Gear oil)                | C | - | E | G | G | - | E | G | E |
| TEXACO Textran TDH Premium (UTTO Gear oil) | C | - | E | G | G | G | E | G | - |
| VALTRA Transmission oil XT 60 (Gearbox)    | C | - | G | G | C | - | E | C | - |

| COMPRESSOR OILS | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
|-----------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|-----------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|

|   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|
| ANDEROL 497 (Di-ester based compressor oil)                   | D | - | G | C | G | - | C | G | - |
| ATLAS COPCO Paroil S BULK (ester based compr. oil)            | D | - | G | G | C | - | C | C | - |
| ATLAS COPCO Roto Foodgrade fluid (Synt blend compr. Oil)      | D | - | - | - | - | - | G | - | - |
| ATLAS COPCO Roto H (mineral based Compressor oil)             | D | - | G | G | C | - | G | G | E |
| ATLAS COPCO Roto Inject Fluid Plus (mineral based compr. Oil) | D | - | G | G | C | - | G | G | E |
| ATLAS COPCO Roto Inject Fluid (mineral based compr. Oil)      | D | - | E | G | G | - | G | G | E |
| ATLAS COPCO Roto Xtend Duty (PAO compr. Oil)                  | D | - | - | - | - | - | G | - | - |
| ATLAS COPCO Roto Z  | D | - | - | - | - | - | G | - | - |
| CASTROL Icematic SW 100 (POE based compressor oil)            | D | - | G | G | G | - | - | G | E |
| CHEVRON Machine oil ISO 32 (Compressor oil)                   | D | - | G | G | G | - | G | G | G |
| FUCHS Dea Triton SE 55 (POE based)                            | D | - | G | G | G | G | - | G | E |

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# FLUID COMPATIBILITY CHART

| COMPRESSOR OILS | TYPE       |           | WIRE SPIRAL   | WIRE BRAID              |   |              |         | TEXTILE BRAID                              | TPE TEXTILE BRAID       |
|-----------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                 | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |

|  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
| INGERSOLL RAND SSR Ultra plus coolant (POE based compr. oil) | D | - | G | G | G | - | E | G | G |
| KLUBER Summit Hysyn FG 46 (Synt hydrocarbon comp. Oil)       | D | - | G | G | C | G | G | C | - |
| LUBRIZOL Emkarate RL 100S                                    | D | - | G | G | - | - | - | C | G |
| MOBIL Arctic EAL 22 (POE based A/C comp. Oil)                | D | - | E | E | G | - | G | G | G |
| MOBIL Glycol 30 (PAG based comp.oil)                         | D | - | E | E | E | E | E | E | G |
| MOBIL Rarus SHC 1026 (Compressor oil)                        | D | - | E | G | G | - | E | G | - |
| PAG SP 10 (compressor oil)                                   | D | - | G | G | G | - | - | C | E |
| SHELL Corena D (compressor oil)                              | D | - | G | G | C | - | E | C | G |
| SULLAIR AWF  | D | - | - | - | - | - | G | - | - |
| TOTAL Dacnis SH 46 (PAO based comp. Oil)                     | D | - | - | G | G | G | E | G | - |
| TOTAL Dacnis VS 46 (mineral based comp. Oil)                 | D | - | G | G | G | G | E | C | - |
| VALVOLINE Valcomp Synth 68 Comp. Oil                         | D | - | - | - | - | - | G | - | - |

| ENGINE OILS | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
|-------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|-------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|

|  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
| AGIP SINT 2000 (engine oil 10W40)              | E | - | G | G | G | - | G | E | G |
| AGIP Tec sint SL5W40 (engine oil 5W40)         | E | - | E | G | C | - | G | - | - |
| BP Vanellus C 5 (engine oil 15W40)             | E | - | E | G | G | G | G | - | - |
| CHEVRON Delo 400LE (Engine oil 15W40)          | E | - | G | G | C | G | G | G | - |
| CHEVRON RPM 30 (Engine oil)                    | E | - | G | G | G | G | E | G | - |
| FUCHS Plantohydramot SL 5W40 (STOU engine oil) | E | - | G | G | C | G | G | G | - |
| FUCHS Titan GTI Pro C 2 (Engine oil 5W30)      | E | - | G | G | G | - | C | G | - |
| IGOL Marine 15W-40 (engine oil )               | E | - | G | G | G | - | - | - | - |

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# FLUID COMPATIBILITY CHART

| TURBINE OILS | TYPE       |           | WIRE SPIRAL   | WIRE BRAID              |   |              |         | TEXTILE BRAID                              | TPE TEXTILE BRAID       |
|--------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|              | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |

|                                      |   |   |   |   |   |   |   |   |   |
|--------------------------------------|---|---|---|---|---|---|---|---|---|
| JCB Engine oil EP (Engine oil 15W40) | E | - | E | G | G | - | G | G | G |
| MOBIL Delvac 1310 (engine oil 10W20) | E | - | E | G | G | - | G | E | G |
| Q8 T720 (engine oil 15w40)           | E | - | E | G | G | - | E | G | - |
| SHELL Helix Ultra (Engine oil 5W40)  | E | - | G | G | G | - | E | G | - |
| SHELL Rimula R3 (Engine oil 10W)     | E | - | E | G | G | - | E | G | E |
| SHELL Rimula X30 (Engine oil 10W)    | E | - | E | G | G | G | E | G | E |
| SHELL Rotella TMG (Engine oil 15W40) | E | - | G | G | G | G | E | G | - |
| SHELL V oil 1404                     | E | - | G | G | G | - | G | G | G |
| MOBIL Jet oil II                     | T | - | E | C | G | E | C | E | - |
| NYCO Turbonicoil TN 13 B             | T | - | G | X | X | G | X | E | - |

| HEAT TRANSFER FLUIDS | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
|----------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|----------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|

|  |   |   |   |   |   |   |   |   |   |
|--|---|---|---|---|---|---|---|---|---|
| CHEVRON Havoline XLC (Fluid cooler)      | Q | - | E | G | G | - | X | G | - |
| MOBIL Therm 605                          | Q | - | G | G | G | - | E | G | - |
| NESTE Fluid cooler BIO                   | Q | - | E | G | G | G | - | G | - |
| NESTE Super fluid cooler XLC             | Q | - | E | G | G | - | - | G | - |
| PETROCANADA Calflo (Heat transfer fluid) | Q | - | G | G | G | E | G | G | - |
| PETRONAS Paraflo HT (OAT) at 100°C       | Q | - | E | G | G | - | X | G | - |
| Water Glycol emulsion (50%) at 100°C     | Q | - | E | G | G | - | X | G | E |

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# FLUID COMPATIBILITY CHART

| METAL WORKING FLUIDS      | TYPE       |           | WIRE SPIRAL   | WIRE BRAID              |   |              |         | TEXTILE BRAID                              | TPE TEXTILE BRAID       |
|---------------------------|------------|-----------|---|-------------------------|---|--------------|---------|--|-------------------------|
|                           | ISO 6743-4 | DIN 51524 | DIAMONDSPIR<br>SHIELDMASTER<br>ROCKMASTER<br>GOLDENISO/XF<br>FORESTMASTER | ETERNITY/2<br>NOZONE 2K | TRACTOR<br>SHIELDMASTER<br>ROCKMASTER<br>HARVESTER/17<br>GOLDENISO<br>LYTEFLEX<br>COVER | GOLDENISO/LL | EQUATOR | ASTRO<br>SPIRTEX/K<br>MULTITEX<br>PUSH FIT | HYDROPLAST<br>HYDROTWIN |
| BUDEMEIM Phosphatherm 948 | M          | -         | E   | E                       | E   | -            | X       | E  | -                       |

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# FLUID COMPATIBILITY CHART

## PART 3: BEHAVIOUR TO CHEMICALS FOR NON-HYDRAULIC APPLICATIONS (GUIDELINES FROM LITERATURE)

| FLUID  | NITRILE | CHLOROPRENE | CHLOROSULPHONATED<br>POLYETHYLENE | CHLORINATED<br>POLYETHYLENE | POLYESTER |
|--|---------|-------------|-----------------------------------|-----------------------------|-----------|
| Acetaldeide                                    | X       | C           | X                                 | C                           | G         |
| Acetic Acid, 10%                               | X       | C           | G                                 | G                           | G         |
| Acetic Acid glacial                            | X       | X           | C                                 | G                           | C         |
| Acetone  | C       | C           | X                                 | G                           | G         |
| Air (60°C)                                     | G       | G           | E                                 | E                           | E         |
| Air (100°C)                                    | C       | G           | E                                 | E                           | G         |
| Air (150°C)                                    | X       | X           | G                                 | G                           | X         |
| Ammonia, gaseous                               | C       | G           | -                                 | -                           | X         |
| Ammonia, liquid cold                           | E       | E           | G                                 | -                           | X         |
| Ammonia, liquid 70°C                           | X       | C           | C                                 | -                           | X         |
| Ammonium Hydroxide, 10%                        | G       | G           | E                                 | E                           | -         |
| Ammonium Hydroxide, conc                       | C       | C           | C                                 | C                           | -         |
| Ammonium nitrate (aqueous solutions)           | G       | G           | G                                 | G                           | G         |
| Ammonium phosphate, mon-di-tri basic (aq. Sol) | E       | E           | E                                 | E                           | C         |
| Ammonium sulphate (aqueous solution)           | E       | E           | E                                 | E                           | C         |
| Aniline  | X       | C           | X                                 | X                           | X         |
| Aqua regia                                     | C       | C           | X                                 | C                           | -         |
| ASTM oil n°1, 100°C                            | E       | E           | G                                 | G                           | E         |
| ASTM oil n°2, 100°C                            | E       | G           | C                                 | C                           | E         |
| ASTM oil n°3, 100°C                            | E       | C           | C                                 | C                           | E         |
| Benzene  | X       | X           | X                                 | C                           | C         |
| Boric acid 10% 100°C                           | G       | G           | G                                 | X                           | G         |
| Brake fluid (SAE J 1703d)                      | X       | -           | X                                 | G                           | -         |
| Brine  | E       | C           | C                                 | G                           | G         |
| Butanol  | E       | G           | G                                 | G                           | E         |

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# FLUID COMPATIBILITY CHART

| FLUID                                   | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|---|---------|-------------|--------------------------------|--------------------------|-----------|
| Calcium bicarbonate                     | E       | E           | E                              | E                        | -         |
| Calcium hydroxide (Aqueous suspensions) | E       | E           | G                              | G                        | -         |
| Carbonic anhydride                      | G       | E           | G                              | G                        | E         |
| Chlorine                                | X       | X           | X                              | X                        | X         |
| Chloroform                              | C       | C           | X                              | X                        | X         |
| Citric Acid, 33%                        | G       | G           | G                              | -                        | E         |
| Crude oil                               | E       | X           | X                              | X                        | G         |
| Detergent water solution                | G       | G           | C                              | G                        | G         |
| Dibenzyl ether                          | X       | X           | X                              | X                        | -         |
| Diethyl phtalate (DEPH)                 | C       | X           | X                              | X                        | E         |
| Epichlorhydrine                         | X       | X           | C                              | X                        | X         |
| Ethyl acetate                           | C       | X           | C                              | C                        | G         |
| Ethyl alcohol                           | E       | E           | E                              | E                        | E         |
| Ethyl ether                             | G       | C           | -                              | -                        | -         |
| Ethylene                                | E       | G           | -                              | -                        | G         |
| Ethylene glycole                        | E       | E           | G                              | G                        | E         |
| Ethylene glycole (100°C)                | E       | G           | G                              | G                        | G         |
| Formaldehyde                            | C       | G           | C                              | G                        | G         |
| Formic acid 23°C (saturated solution)   | G       | G           | G                              | X                        | G         |
| Formic acid 75°C (saturated solution)   | C       | G           | C                              | X                        | C         |
| Glycerine                               | E       | E           | E                              | E                        | E         |
| Heptane                                 | G       | C           | X                              | C                        | E         |
| Hydraulic oils (see detailed table)     | *       | *           | *                              | *                        | *         |
| Hydrochloric acid, 10%                  | G       | G           | G                              | X                        | G         |
| Hydrochloric acid, 37%                  | C       | C           | C                              | X                        | X         |
| Hydrochloric acid, 37% 70°C             | X       | X           | X                              | X                        | X         |
| Hydrocyanic acid 20%                    | C       | C           | -                              | -                        | -         |
| Hydrogen sulphide                       | C       | G           | C                              | X                        | E         |

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# FLUID COMPATIBILITY CHART

| FLUID                                   | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|---|---------|-------------|--------------------------------|--------------------------|-----------|
| Isobutyl alcohol                        | G       | G           | G                              | G                        | E         |
| Isopropyl alcohol                       | G       | E           | E                              | E                        | E         |
| Iso-octane                              | G       | C           | X                              | C                        | E         |
| Kerosene (aromatics 40%max, 70°C)       | G       | C           | X                              | C                        | -         |
| Lead free petrol                        | G       | C           | X                              | C                        | E         |
| Magnesium hydroxide (aqueous solutions) | G       | E           | E                              | E                        | -         |
| Mercury                                 | E       | E           | E                              | E                        | E         |
| Methanol                                | G       | E           | E                              | E                        | G         |
| Methyl methacrylate                     | X       | X           | X                              | X                        | -         |
| Methylethylketone (MEK)                 | X       | C           | X                              | C                        | E         |
| Nitric acid, concentrated 65%           | X       | X           | X                              | X                        | X         |
| Nitric acid, diluted 10% 50°C           | C       | X           | X                              | C                        | X         |
| Nitric acid fuming                      | X       | X           | X                              | X                        | X         |
| Nitrogen                                | E       | E           | E                              | E                        | E         |
| Oleic acid                              | G       | C           | C                              | C                        | E         |
| Oleum                                   | X       | X           | X                              | X                        | X         |
| Oxalic acid 25% 80°C                    | G       | E           | G                              | X                        | -         |
| Oxygen (80°C)                           | C       | G           | C                              | G                        | E         |
| Paraffin                                | E       | E           | C                              | E                        | E         |
| Pentane                                 | G       | C           | X                              | C                        | E         |
| Petrol                                  | E       | C           | X                              | C                        | E         |
| Petroleum, 70°C                         | E       | G           | X                              | C                        | E         |
| Phenol                                  | X       | X           | X                              | X                        | C         |
| Phosphoric acid 20%                     | G       | E           | E                              | X                        | -         |
| Phosphoric acid 60% 50°C                | C       | G           | C                              | X                        | -         |
| Phosphoric acid 85%                     | C       | G           | C                              | X                        | -         |
| Phosphorous tri-chloride                | X       | X           | X                              | X                        | -         |
| Picric acid 10% 100°C                   | C       | C           | G                              | G                        | -         |

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# FLUID COMPATIBILITY CHART

| FLUID  | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|--|---------|-------------|--------------------------------|--------------------------|-----------|
| Potassium chloride (aqueous solution)        | E       | E           | E                              | E                        | -         |
| Potassium hydroxide 70°C (medium high conc.) | G       | G           | -                              | -                        | E         |
| Potassium sulphate (aqueous solution)        | E       | E           | E                              | E                        | -         |
| Sea water                                    | E       | G           | C                              | G                        | E         |
| Soaps  | E       | G           | G                              | G                        | E         |
| Soda caustic                                 | C       | G           | G                              | C                        | G         |
| Sodium bicarbonate                           | E       | E           | E                              | E                        | G         |
| Sodium chloride (aqueous solution)           | E       | E           | G                              | G                        | E         |
| Sodium hydroxide                             | C       | G           | G                              | C                        | E         |
| Sodium hydroxide 70°C (medium high conc.)    | C       | G           | G                              | C                        | F         |
| Sodium hypochlorite (aqueous solutions)      | C       | G           | C                              | X                        | E         |
| Sodium silicate (aqueous solutions)          | E       | E           | E                              | E                        | -         |
| Sodium sulphate (aqueous solution)           | E       | E           | E                              | E                        | -         |
| Sodium sulphide                              | E       | E           | E                              | E                        | -         |
| Stearic acid                                 | E       | E           | C                              | E                        | E         |
| Sulphur                                      | X       | X           | G                              | G                        | -         |
| Sulphur dioxide                              | X       | X           | X                              | X                        | -         |
| Sulphuric acid (hot concentrated 96°C)       | X       | X           | X                              | X                        | X         |
| Sulphuric acid (diluted 20%)                 | X       | X           | C                              | C                        | E         |
| Sulphuric anhydride                          | X       | C           | C                              | C                        | -         |
| Sulphurous acid                              | X       | X           | C                              | C                        | X         |
| Tannic acid                                  | G       | G           | G                              | X                        | E         |
| Tannin                                       | E       | E           | E                              | E                        | E         |
| Tartaric acid 20%                            | E       | G           | G                              | X                        | -         |
| Tetraethyl lead                              | G       | C           | X                              | -                        | -         |
| Toluene                                      | X       | X           | X                              | X                        | E         |
| Turpentine                                   | G       | X           | X                              | X                        | -         |
| Urea   | E       | E           | G                              | G                        | -         |

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# FLUID COMPATIBILITY CHART

| FLUID                             | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|-----------------------------------|---------|-------------|--------------------------------|--------------------------|-----------|
| Vinyl acetate                     | C       | C           | C                              | G                        | -         |
| Vinyl chloride                    | X       | X           | X                              | X                        | -         |
| Water                             | E       | G           | X                              | G                        | E         |
| Xylene                            | C       | X           | X                              | X                        | G         |
| Zinc chloride (aqueous solutions) | E       | E           | G                              | X                        | E         |
| Zinc sulphate (aqueous solutions) | E       | E           | G                              | X                        | -         |

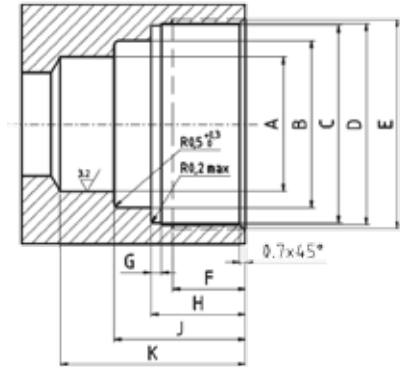
**WARNING:** No tests on finished hose assemblies in combination with the mentioned chemicals has been normally performed. The possible good rating and on field performance of the hose with a chemical mentioned in the list, does not mean in any case the release by Manuli Hydraulics of the product for that application or any guarantee. The possible validation for use is under the sole and exclusive responsibility of the end user and no liability whatsoever can be attributed to Manuli Hydraulics in that regard. In fact Manuli Hydraulics hoses are designed for hydraulics use and applications, they are not intended for industrial diversified applications with various chemicals. No tests on finished hose assemblies in combination with the mentioned chemicals has been normally performed.



# EASY FIT

## DIRECT TO PORT CONCEPT

The male threadless termination can be connected directly to the port, by means of pre-installed cartridge, with a simple axial pushing action of the fitting into the port.



## FEMALE PORT DESIGN

| SIZE | DIMENSIONS (MM) |             |              |            |           | RECOMMENDED TORQUE |
|------|-----------------|-------------|--------------|------------|-----------|--------------------|
|      | A               | B           | C            | D          | E         |                    |
| -04  | 10.03 + 0.08    | 12.75 + 0.1 | 16.55 + 0.07 | 17.0 + 0.1 | M18 x 1   | 23 - 35 Nm         |
| -06  | 13.03 + 0.08    | 16.9 + 0.2  | 20.55 + 0.07 | 21.0 + 0.1 | M22 x 1   | 30 - 40 Nm         |
| -08  | 16.03 + 0.08    | 19.9 + 0.2  | 23.55 + 0.07 | 24.0 + 0.1 | M25 x 1   | 40 - 50 Nm         |
| -12  | 23.03 + 0.08    | 27.9 + 0.2  | 31.05 + 0.07 | 31.5 + 0.1 | M33 x 1.5 | 70 - 80 Nm         |

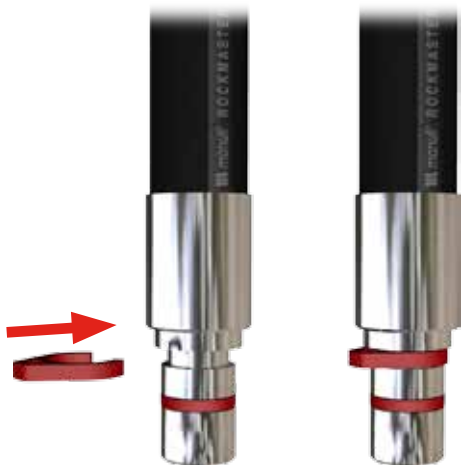
| SIZE | DIMENSIONS (MM) |            |             |             |              | RECOMMENDED TORQUE |
|------|-----------------|------------|-------------|-------------|--------------|--------------------|
|      | F               | G          | H           | J           | K            |                    |
| -04  | 8.5 + 1         | 1.1 - 0.1  | 10.35 + 0.1 | 14.15 + 0.2 | 19.56 + 0.15 | 23 - 35 Nm         |
| -06  | 8.7 + 1         | 1.15 - 0.1 | 11.1 + 0.1  | 15.5 + 0.2  | 21.95 + 0.15 | 30 - 40 Nm         |
| -08  | 8.7 + 1         | 1.25 - 0.1 | 11.3 + 0.1  | 15.7 + 0.2  | 22.15 + 0.15 | 40 - 50 Nm         |
| -12  | 11.5 + 1        | 1.7 - 0.1  | 16.5 + 0.1  | 21.4 + 0.2  | 31.35 + 0.15 | 70 - 80 Nm         |



## ASSEMBLING INSTRUCTIONS

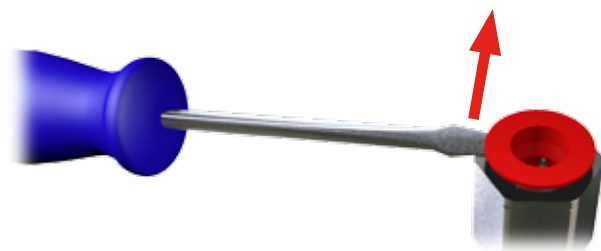
### ASSEMBLING PROCEDURE

1



Fit the safety clip into the dedicated groove on the male fitting.

2



Use a flat-headed screwdriver, or similar tool, to remove the protective cap on the cartridge.

3



Connect the fitting by pushing it into the cartridge.

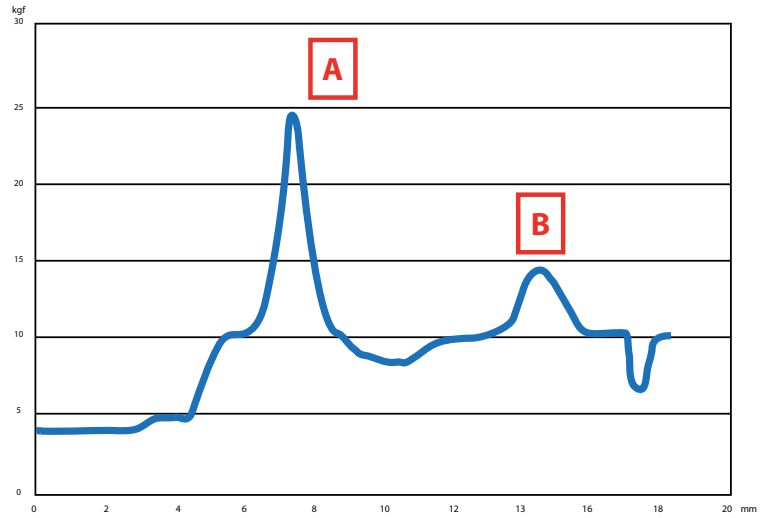
The fitting is correctly locked and connected when the safety clip touches the cartridge.

## ASSEMBLING INSTRUCTIONS

When inserting the male fitting into the cartridge, the axial force required to ensure correct and secure assembly will vary throughout the insertion process (see graph opposite). In particular there will be a two points where the amount of force required will be noticeably higher.

The first peak (A), occurs when the internal collars of the cartridge are opening; For a -08 fitting this would typically be around 20 kgf.

The second peak (B), occurs when the plastic retaining ring is being inserted into the cartridge. This peak is significantly lower than the first.



## DISASSEMBLING INSTRUCTIONS

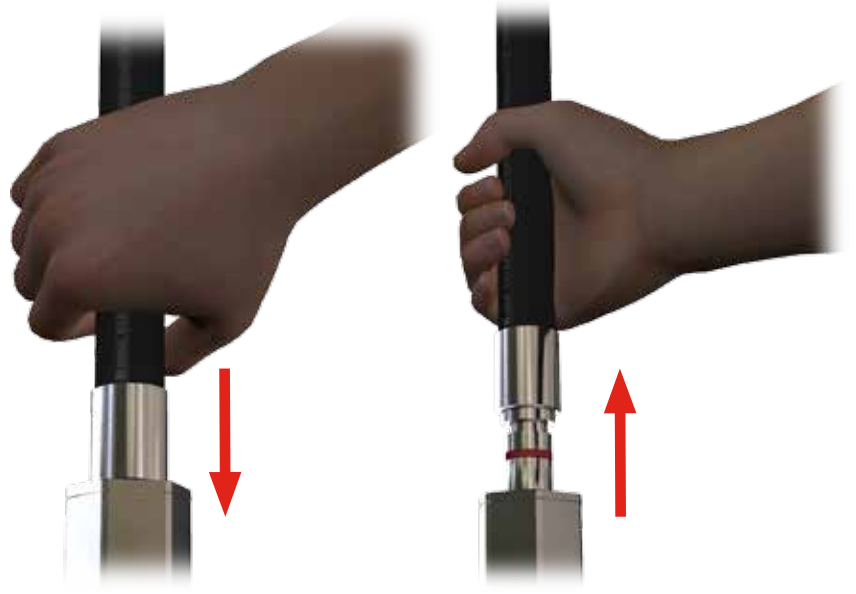
### DISASSEMBLING PROCEDURE



**Before disconnection, ensure the system is not under pressure**



- 1** Use a flat-headed screwdriver, or similar tool, to remove the safety clip.



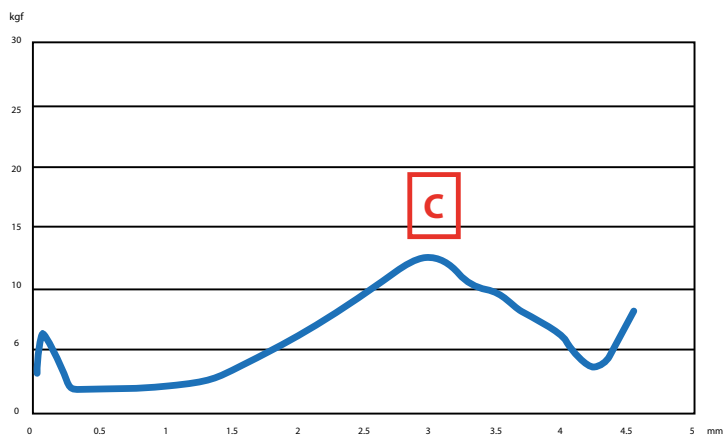
- 2** Push the fitting in until the collar touches the cartridge, then pull out to complete the disconnection process.

# EASY FIT

## DISASSEMBLING INSTRUCTIONS

The maximum axial force required to separate the components (after the initial "push") is approximately 10 kgf for a -08 fitting - see graph opposite.

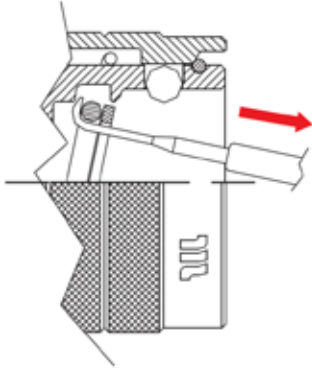
The peak (C) represents the force required to open the internal retaining ring to allow the withdrawal of the male fitting.



## REPLACEMENT INSTRUCTIONS

### O-RING AND BACK-UP RING SEAL REPLACEMENT ON FEMALE COUPLINGS

1

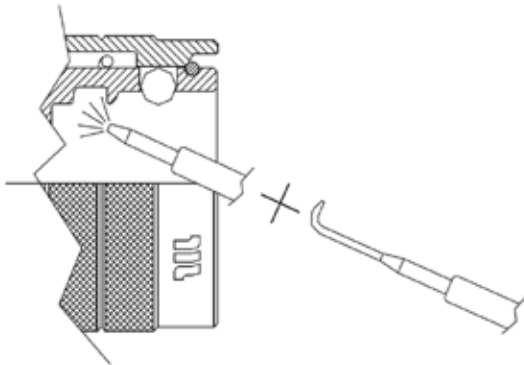


Remove the damaged O-ring and back-up ring



**Do not use sharpened tools.  
Take care not to damage the components.**

2

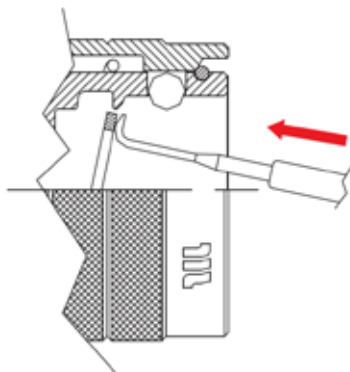


Clean the seal area



**Remove all residual parts of damaged  
O-ring and back-up ring.**

3



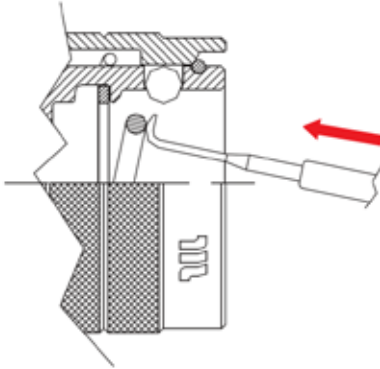
Insert the new back-up ring



**Take care not to deform or scratch the  
back-up ring.  
Ensure the back-up ring is correctly  
located in it's seat.**

## REPLACEMENT INSTRUCTIONS

4

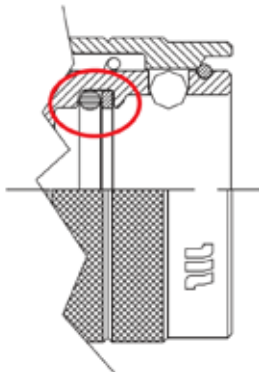


Insert the new O-ring



**Lubricate the O-ring before inserting. Take care not to scratch the O-ring. Ensure the O-ring is correctly located in its seat.**

5



The replacement process is now complete

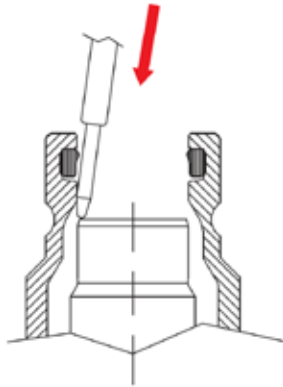


**Lubricate the seal system.**

## REPLACEMENT INSTRUCTIONS

### POLYURETHANE SEAL REPLACEMENT ON MALE FLAT-FACE

1

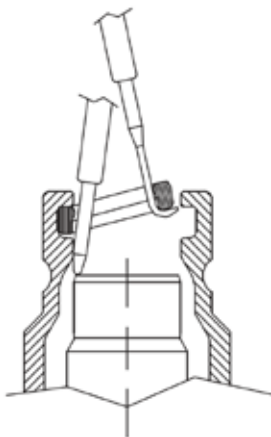


Use a suitable tool to pull back the valve and hold it in place



**Do not use sharpened tools.  
Take care not to damage the components.**

2

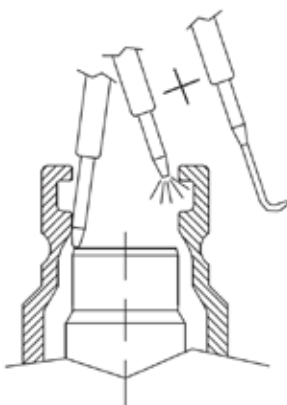


Remove the damaged seal



**Take care not to damage the components.**

3



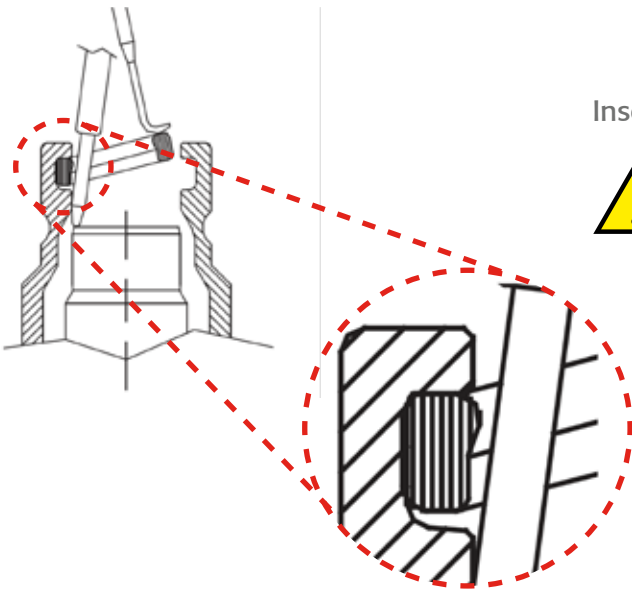
Clean the seal area



**Remove all residual parts of polyurethane seal.**

## REPLACEMENT INSTRUCTIONS

4

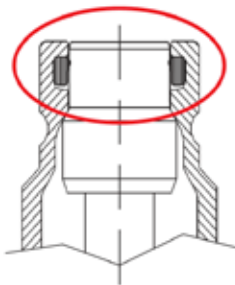


Insert the new seal, ensuring it is correctly orientated



**Lubricate the seal before inserting.  
Take care not to scratch the seal.  
Ensure the seal is correctly located in it's seat.**

5



Release the valve to complete the replacement process

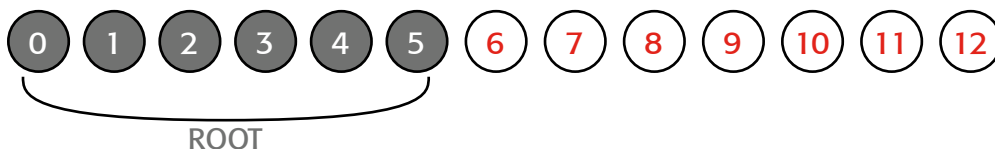


**Lubricate the seal system.**



# PART NUMBERING SYSTEM

## HOSES



### DIGIT "0"



"H" letter always means "Hoses"

### DIGITS "1-2-3-4-5"



### Family

"Five digit number" that defines a specific hose family - see "Hose Family Table".

| Digit "1" | Hose Type             |
|-----------|-----------------------|
| 0         | Hydraulic rubber hose |
| 2         | Thermoplastic hose    |
| 3         | Traded hose           |
| 7         | Oil & marine hose     |
| 8         | Industrial hose       |
| 9         | PTFE hose             |

| Digits "1-2" | Hose Type                |
|--------------|--------------------------|
| 10           | Hydraulic rubber hose    |
| 16           | Textile braided - Traded |

### DIGIT "6"



Progressive **letter** (A, B, ...) is used to identify an updated structure

In case a **number** is used, it must be read together with digits "7" and "8" to identify the hose's diameter in mm

### DIGITS "7-8"



### Diameter in millimetres

In case digit "6" is a number, the hose diameter in millimetres should be read including it.

### DIGIT "9"



| Value | Package               | Marking Technology  |
|-------|-----------------------|---------------------|
| 0     | Box                   | Ink transfer        |
| B     | Reel                  | Ink transfer        |
| P     | Plastic reel          | Ink transfer        |
| R     | Roll                  | Ink transfer        |
| W     | Wooden reel           | Ink transfer        |
| E     | Defined in digit "10" | Embossed / embedded |
| I     | Defined in digit "10" | Inkjet              |
| M     | Defined in digit "10" | Mylar               |

# PART NUMBERING SYSTEM

## HOSES (CONTINUED)

### DIGIT "10"



| Value      | Package                                     | Special                                   |
|------------|---|---|
| L          | Box ( $\leq$ DN51); Wooden reel ( $>$ DN51) | Branding with License Number              |
| O          | Box   | -   |
| B          | Reel  | -   |
| P          | Plastic reel                                | -   |
| R          | Roll  | -   |
| W          | Wooden reel                                 | -   |
| A          | Box   | 100 ft (spiralled) / 50 ft (GoldenBlast)  |
| Q          | Box   | 40 m (GoldenBlast)                        |
| S, V, Z, Y | Box   | Special length                            |
| C          | -   | Branding without "Made in..." declaration |

### DIGIT "11"



| Value      | Special                                   |
|------------|---|
| S, V, Z, Y | Special length                            |
| C          | Branding without "Made in..." declaration |
| 9          | Manuli standard branding                  |
| 0-8        | Private brand                             |

### DIGIT "12"



| Value | Special                  |
|-------|--------------------------|
| 9     | Manuli standard branding |
| 0-8   | Private brand            |

### Notes for digits "9-10-11-12"

If the above convention is NOT followed then the branding is considered "Private". Exceptions related to "Manuli Brand" hoses are: x900; xx90; x556; x833; x962; xx97; xx95

# PART NUMBERING SYSTEM

## HOSE FAMILIES

| First 6 Digits | Prod. Tech. | Prod. Tech. Description        | Family | Family Description       |
|----------------|-------------|--------------------------------|--------|--------------------------|
| H01006         | 1           | Wire Braided                   | 6      | TRACTOR/1SN              |
| H01007         | 1           | Wire Braided                   | 7      | ROCKMASTER/1SN           |
| H01013         | 1           | Wire Braided                   | 13     | TRACTOR/1SC              |
| H01015         | 1           | Wire Braided                   | 15     | PILOT                    |
| H01025         | 1           | Wire Braided                   | 25     | TRACTOR/2SC              |
| H01027         | 1           | Wire Braided                   | 27     | TRACTOR/2SN              |
| H01030         | 1           | Wire Braided                   | 30     | ROCKMASTER/2SC           |
| H01031         | 1           | "Wire Braided; Wire Spiralled" | 31     | SHIELDMASTER/4000        |
| H01032         | 1           | "Wire Braided; Wire Spiralled" | 32     | SHIELDMASTER/5000        |
| H01033         | 1           | Wire Braided                   | 33     | CPH/2SC                  |
| H01034         | 1           | Wire Braided                   | 34     | JACKMASTER               |
| H01035         | 1           | Wire Braided                   | 35     | ROCKMASTER/2ST           |
| H01038         | 1           | Wire Braided                   | 38     | ROCKMASTER/2SN           |
| H01039         | 1           | Wire Braided                   | 39     | NOZONE/2K                |
| H01056         | 1           | Wire Braided                   | 56     | HARVESTER/17             |
| H01058         | 1           | Wire Braided                   | 58     | EQUATOR/1 BLACK          |
| H01059         | 1           | Wire Braided                   | 59     | EQUATOR/1 BLUE           |
| H01060         | 1           | Wire Braided                   | 60     | EQUATOR/2 BLACK          |
| H01061         | 1           | Wire Braided                   | 61     | EQUATOR/2 BLUE           |
| H01084         | 1           | Wire Braided                   | 84     | LYTE-FLEX                |
| H01101         | 1           | Wire Braided                   | 101    | ROCKMASTER/2 PLUS        |
| H01102         | 1           | Wire Braided                   | 102    | ETERNITY/2               |
| H01104         | 1           | "Wire Braided; Wire Spiralled" | 104    | SHIELDMASTER/5000 MINE   |
| H01105         | 1           | Wire Braided                   | 105    | SHIELDMASTER/2SC MINE    |
| H01106         | 1           | Wire Braided                   | 106    | SHIELDMASTER/2000        |
| H01108         | 1           | Wire Braided                   | 108    | ROCKMASTER/1SC           |
| H01110         | 1           | Wire Braided                   | 110    | REFRISTAR                |
| H01112         | 1           | Wire Braided                   | 112    | TWINPOWER/PLUS           |
| H01113         | 1           | Wire Braided                   | 113    | FLUICONNECTO 2SN         |
| H01119         | 1           | Wire Braided                   | 119    | TWINPOWER 4000           |
| H01120         | 1           | Wire Braided                   | 120    | TWINPOWER 5000           |
| H01122         | 1           | Wire Braided                   | 122    | SHIELDMASTER/2 PLUS MINE |
| H01124         | 1           | Wire Braided                   | 124    | FIREND                   |
| H01125         | 1           | Wire Braided                   | 125    | GOLDENISO/21 ANTIWEAR    |
| H01126         | 1           | Wire Braided                   | 126    | GOLDENISO/28 ANTIWEAR    |
| H01127         | 1           | Wire Braided                   | 127    | TREX                     |

# PART NUMBERING SYSTEM

## HOSE FAMILIES (CONTINUED)

| First 6 Digits | Prod. Tech. | Prod. Tech. Description         | Family | Family Description     |
|----------------|-------------|---------------------------------|--------|------------------------|
| H01128         | 1           | Wire Braided                    | 128    | XTRAFLOW/ HT           |
| H01129         | 1           | Wire Braided                    | 129    | XTRAFLOW/2WB           |
| H01133         | 1           | Wire Braided                    | 133    | ULTRASTAR              |
| H01134         | 1           | Wire Braided                    | 134    | GOLDENISO/35 LONGLIFE  |
| H01135         | 1           | Wire Braided                    | 135    | LUBEMASTER             |
| H01A32         | 1           | "Wire Braided; Wire Spiralled " | A32    | SHIELDMASTER/6000      |
| H01A78         | 1           | Wire Braided                    | A78    | SUPERJET/PLUS          |
| H01A79         | 1           | Wire Braided                    | A79    | SUPERJET/PLUS BLUE     |
| H01A94         | 1           | Wire Braided                    | A94    | PROJET                 |
| H01A95         | 1           | Wire Braided                    | A95    | PROJET BLUE            |
| H02001         | 2           | Smooth Hoses                    | 1      | SUPERJET               |
| H02002         | 2           | Smooth Hoses                    | 2      | SUPERJET BLUE          |
| H02003         | 2           | Smooth Hoses                    | 3      | K-JET                  |
| H02004         | 2           | Smooth Hoses                    | 4      | TRACTOR/1SN            |
| H02008         | 2           | Smooth Hoses                    | 8      | K-JET BLUE             |
| H02011         | 2           | Smooth Hoses                    | 11     | GOLDENISO/14           |
| H05002         | 5           | Wire Braided (R5 hose type)     | 2      | COVER                  |
| H09002         | 9           | Textile                         | 2      | REFRIMASTER            |
| H09045         | 9           | Textile                         | 45     | ASTRO/2                |
| H09046         | 9           | Textile                         | 46     | ASTRO/3                |
| H09066         | 9           | Textile                         | 66     | PUSHFIT                |
| H09067         | 9           | Textile                         | 67     | MULTITEX               |
| H09069         | 9           | Textile                         | 69     | MASTERTEX              |
| H09071         | 9           | Textile                         | 71     | REFRIMASTER PLUS       |
| H09073         | 9           | Textile                         | 73     | MULTITEX               |
| H10008         | 10          | Wire Spiralled                  | 8      | ROCKMASTER/4SP         |
| H10018         | 10          | Wire Spiralled                  | 18     | DIAMONDSPIR            |
| H10031         | 10          | Wire Spiralled                  | 31     | ROCKMASTER/12          |
| H10035         | 10          | Wire Spiralled                  | 35     | ROCKMASTER/13          |
| H10044         | 10          | Wire Spiralled                  | 44     | ROCKMASTER/4SH         |
| H10049         | 10          | Wire Spiralled                  | 49     | ROCKMASTER/15          |
| H10066         | 10          | Wire Spiralled                  | 66     | GOLDENBLAST/PLUS       |
| H10067         | 10          | Wire Spiralled                  | 67     | GOLDENBLAST/SIX        |
| H10072         | 10          | Wire Spiralled                  | 72     | GOLDENBLAST            |
| H10086         | 10          | Wire Spiralled                  | 86     | SHIELDMASTER/6000 MINE |
| H10089         | 10          | Wire Spiralled                  | 89     | GOLDENISO/45 LONGLIFE  |

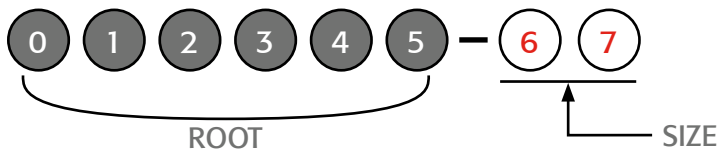
# PART NUMBERING SYSTEM

## HOSE FAMILIES (CONTINUED)

| First 6 Digits | Prod. Tech. | Prod. Tech. Description | Family | Family Description    |
|----------------|-------------|-------------------------|--------|-----------------------|
| H10091         | 10          | Wire Spiralled          | 91     | XTRAFLOW/4WS          |
| H10093         | 10          | Wire Spiralled          | 93     | GOLDENISO/21 XTRAFLEX |
| H10095         | 10          | Wire Spiralled          | 95     | GOLDENISO/28 XTRAFLEX |
| H10096         | 10          | Wire Spiralled          | 96     | GOLDENISO/35 XTRAFLEX |
| H10097         | 10          | Wire Spiralled          | 97     | GOLDENISO/42 XTRAFLEX |
| H10098         | 10          | Wire Spiralled          | 98     | GOLDENISO/38 LONGLIFE |
| H10102         | 10          | Wire Spiralled          | 102    | DIAMONDSPIR/21        |
| H10103         | 10          | Wire Spiralled          | 103    | DIAMONDSPIR/35        |
| H10104         | 10          | Wire Spiralled          | 104    | DIAMONDSPIR/14        |
| H10108         | 10          | Wire Spiralled          | 108    | GOLDENISO/50 DIAMOND  |
| H10109         | 10          | Wire Spiralled          | 109    | GOLDENISO/56 DIAMOND  |
| H30005         | 30          | Textile, helix wire     | 5      | SPIRTEX/K             |
| H30010         | 30          | Thermoplastic           | 10     | HYDROPLAST            |
| H30011         | 30          | Thermoplastic           | 11     | HYDROTWIN             |

# PART NUMBERING SYSTEM

## FERRULES



### DIGIT "0"



#### Value

#### Ferrule Type

|   |                      |
|---|----------------------|
| M | Ferrule MF2000       |
| C | Ferrule or clamp A/C |
| K | Reusable ferrule     |

### DIGIT "1"



#### Value

#### Description

|   |        |
|---|--------|
| 0 | Always |
|---|--------|

### DIGITS "2-3"



Refer to Ferrule Series table.

### DIGIT "4"



#### Value

#### Issue of Ferrule

|   |                                |
|---|--------------------------------|
| 0 | First issue of ferrule series  |
| 1 | Second issue of ferrule series |
| 2 | Third issue of ferrule series  |
| 3 | Fourth issue of ferrule series |

### DIGIT "5"



#### Value

#### Special

|     |                    |
|-----|--------------------|
| 0   | Standard           |
| 1   | Customised version |
| 2   | Customised version |
| ... | ...                |

### DIGITS "6-7"



Hose bore size

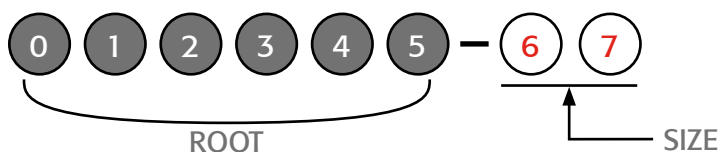
# PART NUMBERING SYSTEM

## FERRULE SERIES

| Digits | Description  |
|--------|--|
| 01     | Skive Ferrule for W.B Hoses  |
| 03     | No-Skive Ferrule for Textile Braided Hoses / Star-Crimp Ferrule AC for RefriStar |
| 04     | Reusable Star-Fit Ferrule AC for RefriStar                                       |
| 07     | Refrimaster Ferrule AC   |
| 08     | No-Skive Ferrule for Compact Hoses   |
| 09     | Skive Ferrule for W.B and W.S Hoses  |
| 10     | Refrimaster Clamp  |
| 13     | Double Skive Ferrule for H.D. Spiral Hoses (Interlock 4-6 ply)                   |
| 14     | Double Skive Ferrule for H.D. Spiral Hoses (Interlock 4 ply)                     |
| 15     | Double Skive Ferrule for H.D. Spiral Hoses (Interlock Plus 4 ply)                |
| 16     | Double Skive Ferrule for H.D. Spiral Hoses (Interlock Plus 6 ply)                |
| 17     | Double Skive Ferrule for Extra Duty Spiral Hoses (Blastlock-Xtralock 4 ply)      |
| 18     | Double Skive Ferrule for Extra Duty Spiral Hoses (Blastlock-Xtralock 6 ply)      |
| 24     | No-Skive Ferrule for Minifit   |
| 26     | Double Skive Ferrule for Extra Duty Spiral Hoses (Interlock Super)               |
| 28     | Double Skive Ferrule for Extra Duty Spiral Hoses (Interlock Super)               |
| 31     | No-Skive Ferrule for 1 W.B. Hoses  |
| 33     | No-Skive Ferrule for W.B. Hoses  |
| 34     | No-Skive Ferrule for W.B. Hoses  |
| 54     | No-Skive Ferrule for 4 W.S. - 2 W.B. Hoses (Spiralfit)                           |
| 55     | No-Skive Ferrule for 4 W.S. - 6 W.S. Hoses (Spiralfit)                           |
| 90     | Frigostar Clamp  |

# PART NUMBERING SYSTEM

## SPECIAL FERRULES



### DIGIT "0"



#### Value

#### Description

J

Always means "Accessories"

### DIGIT "1"



#### Value

#### Ferrule Type

B

Always means "Special Ferrule"

### DIGITS "2-3"



#### Value

#### Hose Type

01

Ferrule for PTFE hose

### DIGIT "4"



The progressive number in this position specifies the customisation / release

### DIGIT "5"



#### Value

#### Material

2

Carbon steel

3

Stainless steel

### DIGITS "6-7"

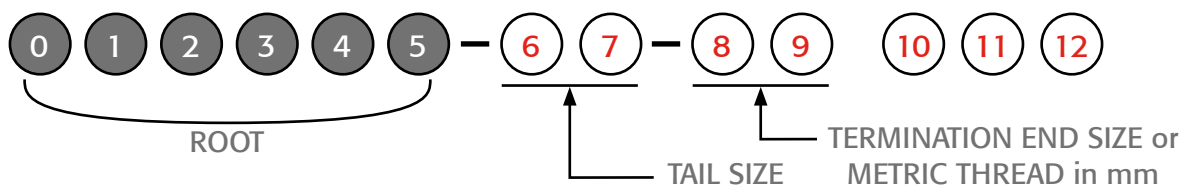


Hose bore size



# PART NUMBERING SYSTEM

## TWO-PIECE HYDRAULIC FITTINGS



### DIGIT "0"



#### Value

#### Description

|   |   |
|---|---|
| M | MF2000 Connector (Multifit, Interlock, Xtralock, ...) |
| O | Accessories (banjo, flange clamps, bolt, ...)         |
| L | Push-Lock Connector                                   |

### DIGIT "1"



#### Value

#### Description

|   |  |
|---|--|
| 1 | Male or Double connector type Multifit                                 |
| 2 | Female or Flange type Multifit   |
| 3 | Male or Double connector type Interlock and Interlock Plus             |
| 4 | Female or Flange type Interlock and Interlock Plus                     |
| 5 | Male or Double connector type Xtralock                                 |
| 6 | Female or Flange type Xtralock   |
| 7 | Male or Double connector type Spiralfit                                |
| 8 | Female or Flange type Spiralfit / Accessories (flange clamps and bolt) |
| A | Male or Double connector type Interlock Super                          |
| B | Female or Flange type Interlock Super                                  |
| S | Female type Minifit  |
| T | Male type Minifit  |

### DIGITS "2-3"



The numbers in these positions specify the termination end or the second tail.  
See "Termination Ends Type" table for coding details.

# PART NUMBERING SYSTEM

## TWO-PIECE HYDRAULIC FITTINGS (CONTINUED)

### DIGIT "4"



#### Value

#### Bending Angle

|   |                       |
|---|-----------------------|
| 0 | Special Bending Angle |
| 1 | Straight              |
| 2 | 22,5° Swept           |
| 3 | 30° Swept             |
| 4 | Double connector      |
| 5 | 45° Swept             |
| 6 | 60° Swept             |
| 7 | 67,5° Swept           |
| 8 | Compact type          |
| 9 | 90° Swept             |

### DIGIT "5"



#### Value

#### Description

|   |  |
|---|--|
| 0 | No Nut / Male / Double skive Flange type Interlock/InterlockPlus/Xtralock    |
| 1 | Crimped-back Nut / No-skive or External-skive Flange type Multifit/Spiralfit |
| 2 | Thrust-wire Nut  |
| 3 | Slip-on Nut  |
| 4 | Double Thrust-wire Nut   |
| 7 | One-piece flange clamp (only for O8... Codes)                                |
| 8 | ISO/SAE code 61 split flange clamp (only for O8... Codes)                    |
| 9 | ISO/SAE code 62 split flange clamp (only for O8... Codes)                    |

### DIGITS "6-7"



Tail size

### DIGITS "8-9"



Termination end size

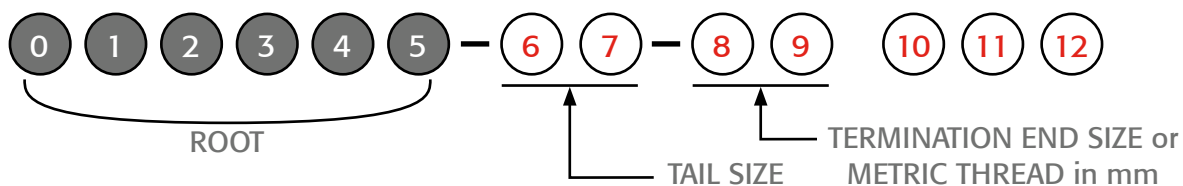
### DIGITS "10-11-12"



These digits specify various customisations related to dimensions, threads, drops, ...

# PART NUMBERING SYSTEM

## ONE-PIECE HYDRAULIC FITTINGS



### DIGIT "0"



#### Value

#### Description

|             |                                     |
|-------------|-------------------------------------|
| <b>OPB</b>  | One-Piece (MF3000) Braided          |
| <b>OPNS</b> | One-Piece (MF3000) No Skive         |
| <b>OPS</b>  | One-Piece (MF3000) Spiral           |
| <b>OPK</b>  | One-Piece (MF3000) No Skive Kompact |
| <b>OPF</b>  | One-Piece (MF3000) No Skive Flat    |

### DIGIT "1"



#### Value

#### Description

|          |                       |
|----------|-----------------------|
| <b>1</b> | Male                  |
| <b>2</b> | Female or Flange type |

### DIGITS "2-3"



The numbers in these positions specify the termination end or the second tail.  
See "Termination Ends Type" table for coding details.

### DIGIT "4"



#### Value

#### Bending Angle

|          |                       |
|----------|-----------------------|
| <b>0</b> | Special Bending Angle |
| <b>1</b> | Straight              |
| <b>2</b> | 22,5° Swept           |
| <b>3</b> | 30° Swept             |
| <b>4</b> | 45° Swept             |
| <b>6</b> | 60° Swept             |
| <b>7</b> | 67,5° Swept           |
| <b>8</b> | Compact type          |
| <b>9</b> | 90° Swept             |

# PART NUMBERING SYSTEM

## ONE-PIECE HYDRAULIC FITTINGS (CONTINUED)

### DIGIT "5"



#### Value

#### Description

| Value | Description  |
|-------|--|
| 0     | Flange type Interlock/Xtralock/Multispiral or Male |
| 1     | Crimped-back Nut or Flange type Multifit           |
| 2     | Thrust-wire Nut                                    |
| 3     | Slip-on Nut  |

### DIGITS "6-7"



Tail size

### DIGITS "8-9"



Termination end size

### DIGITS "10-11-12"



These digits specify various customisations related to dimensions, threads, drops, ...

# PART NUMBERING SYSTEM

## TERMINATION END TYPES

| Digit | Fittings | Q.Safe | Description (Male End)  | Description (Female End)   |
|-------|----------|--------|---|--|
| 00    | 00       | -      | Double connector (same tail in two-ends connectors) / No end (plug) | No end (plug)  |
| 01    | -        | 01     | BSP Male DIN 3852-11 - ISO 1179-2 Heavy Duty "form E"               | Fixed Female GAS JIS B 2351 "type O"                                     |
| 02    | -        | 02     | BSP Male Tapered Thread Long  | BSP Female Tapered   |
| 03    | 03       |        | BSP Male Parallel Thread O'R Flat Face (ISO 1179-3)                 | BSP Banjo  |
| 04    | -        | 04     | BSP Male Bulkhead   | BSP Fixed Female DIN 3852-2 "form X" / ISO 1179-1                        |
| 05    | 05       | 05     | BSP Male 60° cone seat BS5200 / ISO 8434-6                          | BSP Female 60° cone BS5200 / ISO 8434-6                                  |
| 06    | 06       | -      | BSP Male Flat Face  | BSP Female Flat seat   |
| 07    | 07       | -      | BSPT Male   | JIS B 8363 (BSP - Nissan) Swivel Female                                  |
| 08    | 08       | 08     | Metric Bolt DIN 7643  | BSP O-Ring Female 60° cone BS5200 / ISO 8434-6                           |
| 09    | 09       | -      | BSP Male O'Ring Boss Adjustable ISO 1179-3                          | Metric Banjo DIN 7642  |
| 10    | 10       | -      | Metric male 60° cone superlight DIN 3863                            | Metric female 60° cone superlight DIN 3863                               |
| 11    | 11       | 11     | Metric male 24° cone seat light type DIN 3861 / ISO 8434-1          | -  |
| 12    | 12       | 12     | Metric male 24° cone seat heavy type DIN 3861 / ISO 8434-1          | Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-1 Long Drop |
| 13    | 13       | -      | -   | Metric Female Multiseal cone DIN 3868                                    |
| 14    |          | 14     | Metric Male DIN 3852-11 "form E" b/ ISO 9974-2                      | "Metric Fixed Female DIN 3852-1 "form X" and "form Y"                    |
| 15    | 15       | -      | -   | Metric Female 24° cone O'Ring light type DIN 3865 / ISO 8434-1           |
| 16    | 16       | -      | -   | Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-1           |
| 17    | 17       | -      | French Millimetric metric male 24° cone seat                        | French Millimetric metric female   |
| 18    | 18       | -      | French GAZ metric male 24° cone seat                                | French GAZ metric female   |
| 19    | -        | 19     | Metric Male (Adjustable + Non-Adjustable Heavy) ISO 6149-2          | Metric Fixed Female ISO 6149-1   |
| 20    | 20       | -      | -   | DIN Metric Standpipe L.T. DIN 2353                                       |
| 21    | 21       | -      | -   | DIN Metric Standpipe H.T. DIN 2353                                       |
| 23    | -        | 23     | JIC Bulkhead male 37° cone ISO 8434-2 / SAE J514                    | -  |
| 24    | 24       | 24     | ORFS male ISO 8434-3 / SAE J1453                                    | ORFS female ISO 8434-3 / SAE J1453                                       |

# PART NUMBERING SYSTEM

## TERMINATION END TYPES (CONTINUED)

| Digit | Fittings | Q.Safe | Description (Male End)   | Description (Female End)  |
|-------|----------|--------|--|---|
| 25    | 25       | 25     | JIC male (37° cone) ISO 8434-2 / SAE J514                              | JIC female (37° cone seat) ISO 8434-2 / SAE J514                              |
| 26    | 26       | -      | -  | SAE female (45° cone seat) SAE J512   |
| 27    | 27       | 27     | ORFS Bulkhead male ISO 8434-3 / SAE J1453                              | JIC female double hexagon 37° cone seat                                       |
| 28    | 28       | 28     | NPTF Male 60° cone seat SAE J476a                                      | NPSM Swivel Female 60° cone SAE J514  |
| 30    | 30       | 30     | Male O'Ring Boss type SAE J1926-3                                      | Female Port SAE J1926-1   |
| 32    | -        | 32     | Male O'Ring Boss (Adjustable + Non-Adjustable Heavy) SAE J1926-2       | -   |
| 33    | 33       | -      | Flange head (not including Clamps) Code 61 without O'Ring (adapters)   | Flange ISO/SAE 61 (ISO 6162-1 / SAE J518 code 61)                             |
| 34    | 34       | 34     | API Male   | NPTF Fixed Female SAE J476a   |
| 35    | 35       | -      | NPT Male   | NPT Fixed Female  |
| 36    | 36       | -      | Flange head (not including Clamps) Code 62 without O'Ring (adapters)   | Flange ISO/SAE 62 (ISO 6162-2 / SAE J518 code 62)                             |
| 37    | 37       | 37     | Metric male 60° cone superlight DIN 3863 Bulkhead                      | Flange ISO/SAE 62 Plus / Flange (A/C)   |
| 38    | 38       | -      | JIS B8363 Toyota male  | JIS B 8363 (Toyota) Swivel Female   |
| 39    | 39       | -      | JIS male O-Ring boss - JIS B 8363 type CO                              | SUPERCAT flange   |
| 40    | 40       | -      | Komatsu Metric male 60° cone seat                                      | JIS B 8363 (Komatsu) Swivel Female  |
| 41    | 41       | -      | NPTF Swivel Male SAE J476a   | Komatsu Flange  |
| 43    | 43       | -      | SAE O'Ring Boss Swivel Male  | -   |
| 44    | 44       | -      | Male BSPP Flat Face Bonded Washer                                      | ORFS Female Long Drop Elbow ISO 12151-1 / SAE                                 |
| 46    | 46       | -      | Super Staple Male  | Super Staple Fixed Female   |
| 47    | 47       | -      | Super Staple Male (only for Interlock Plus and Spiralfit )             | JIC (37° cone) Female Long Drop Elbow ISO 12151-5 / SAE J516                  |
| 48    | 48       | -      | Staple Male SAE J1467  | Staple Fixed Female SAE J1467   |
| 49    | 49       | -      | -  | Wash Cleaning   |
| 52    | 52       | -      | SAE 45° cone Metric Thread   | SAE 45° cone Metric Thread  |
| 55    | 55       | -      | BSP Parallel Thread 60° cone BS5200 (only for Interlock/Xtralock tail) | BSP Parallel Thread 60° cone BS5200 (only for Interlock/Xtralock tail)        |
| 56    | 56       | -      | Union Fitting (Male SUB)   | Union Fitting (Female SUB)  |
| 57    | -        | -      | BSP Male Tapered Thread - JIS B 8363                                   | BSP Swivel Female (only for Interlock/Xtralock tail)                          |
| 58    | 58       | -      | GOST Male  | BSP Parallel Thread O'Ring 60° cone BS5200 (only for Interlock/Xtralock tail) |

# PART NUMBERING SYSTEM

## TERMINATION END TYPES (CONTINUED)

| Digit | Fittings | Q.Safe | Description (Male End)   | Description (Female End)  |
|-------|----------|--------|--|---|
| 59    | 59       | -      | Flushfit Male Low Pressure   | Flushfit Fixed Female Low Pressure  |
| 60    | -        | -      | Metric thread 74° cone   | Metric thread 74° cone  |
| 61    | 61       | -      | Flushfit Male High Pressure  | Flushfit Fixed Female High Pressure   |
| 62    | 62       | -      | Male Metric Thread 24° cone heavy type DIN 3861 (only for Interlock/Xtralock tail) | Flushfit Swivel Female Low Pressure   |
| 63    | 63       | -      | Type M Female 58° cone   | -   |
| 64    | -        | -      | BSP Male front seal Flushfit Swivel Female High Pressure                           | -   |
| 66    | 66       | -      | -  | Metric Female 24° cone O'Ring heavy type DIN 3865 / ISO 8434-2 (only for Blastlock / Xtralock); Grayloc Hub (only for Drilling) |
| 67    | 67       | -      | Standard SSKV  | Standard SSKV   |
| 68    | 68       | -      | Super SSKV   | Super SSKV  |
| 74    | 74       | -      | ORFS type (only for Interlock/Xtralock tail)                                       | ORFS type (only for Interlock/Xtralock tail)  |
| 75    | 75       | -      | JIC Thread 37° cone (only for Interlock/Xtralock tail)                             | JIC Thread 37° cone (only for Interlock/Xtralock tail)  |
| 76    | 76       | -      | Expansion valve short pilot (A/C)  | ISO 6164 FLANGE type 40MPa / Expansion valve (A/C)  |
| 77    | -        | 77     | DIN Bulkhead Male 24° cone Light type ISO 8434-1                                   | -   |
| 78    | 78       | -      | "NPTF Male 60° cone seat SAE J476a (only for Interlock                             | Blastlock/Xtralock)"  |
| 79    | 79       | -      | Fixed Male O'Ring seat (A/C)   | HUB API 16A (type 16BX) / Female O'Ring (A/C)   |
| 80    | 80       | -      | Male Swivel O'Ring (A/C)   | FLANGE API 6A (type 6B/6BX) / O'Ring short pilot (A/C)  |
| 81    | 81       | -      | Male Grooved   | French GAZ Standpipe  |
| 82    | -        | 82     | French GAZ Bulkhead metric male 24° cone seat                                      | Staple Lock Swivel Female   |
| 83    | 83       | -      | 4-Bolts Flange head Code 61 without O'Ring (adapters)                              | Flange ISO/SAE 61 (ISO 6162-1 / SAE J518 code 61) / 4-Bolts Flange head Code 61 (adapters)                                      |
| 84    | 84       | -      | -  | Xtraflange 61 (ISO6162-1 / SAE J518 code 61 port compatible)  |
| 85    | 85       | -      | -  | XtraFlange 62 (ISO 6162-2 / SAE J518 code 62 port compatible)   |
| 86    | 86       | -      | 4-Bolts Flange head Code 62 without O'Ring (adapters)                              | Flange ISO/SAE 62 (ISO 6162-2 / SAE J518 code 62) - only for Xtralock / 4-Bolts Flange head Code 62 (Adapters)                  |

# PART NUMBERING SYSTEM

## TERMINATION END TYPES (CONTINUED)

| Digit | Fittings | Q.Safe | Description (Male End)                             | Description (Female End)                                    |
|-------|----------|--------|--|---|
| 87    | 87       | 87     | DIN Bulkhead Male 24° cone Heavy type ISO 8434-1   | ASME B16.5 FLANGE / SDB compressor (A/C)                    |
| 88    | -        | -      | Male Metric Tapered Thread                         | Male Metric Tapered Thread                                  |
| 89    | 89       | -      | SUPERCAT flange (only for Interlock/Xtralock tail) | SUPERCAT flange (only for Interlock/Xtralock tail)          |
| 91    | 91       | -      | -  | Gear Pump Flange  |
| 92    | 92       | -      | -  | NSD ( Non Stop Driller) Clamp Connection                    |
| 95    | 95       | -      | Brazing Pipe (Fittings)                            | Brazing socket (Fittings) / Beveled To Weld (only Drilling) |
| 97    | 97       | -      | Metric Male with 90° Male Cone ISO 4038            | Metric Female DIN 74225                                     |

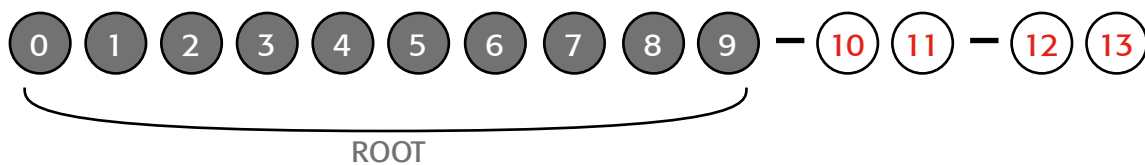
| Digits | Easy-Fit / Fast-Fit            |
|--------|--------------------------------|
| 1H     | Oyster High Pressure           |
| 2H     | Easy-Fit High Pressure (Cejn)  |
| 1L     | Easy-Fit Low Pressure (Oyster) |
| 3H     | Fast-Fit                       |

| Digits | Accessories for connectors (08...)   |
|--------|--------------------------------------|
| 33     | Clamps for flange ISO/SAE 61         |
| 36     | Clamps for flange ISO/SAE 62         |
| 85     | Xtraflange Clamps                    |
| 02     | BSP Bolt                             |
| 08     | BSP Bolt Double Hole                 |
| 08     | Metric Bolt DIN 7643                 |
| 2H     | Cartridge for Easy-Fit High Pressure |
| 00     | Drilling Safety Clamp                |
| 00     | Drilling Lift Eye                    |
| 20     | Anti-Kink                            |
| 21     | Metal Sleeve                         |
| 41     | 2 Holes Flange Clamp                 |
| 42     | Armour - Joint                       |
| 81     | Clamps for Male Grooved              |



# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLINGS



| DIGIT "0" | 0              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Description    |   |   |   |   |   |   |   |   |   |    |    |    |    |
| Q         | Quick Coupling |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "1" | 0           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Description |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 0         | Hydraulic   |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGITS "2-3"   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--|---|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Quick Coupling Series - refer to "Quick Coupling Series" table |   |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "4" | 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Material  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 1         | Steel     |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 2         | AISI 316  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 3         | AISI 303  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 4         | Brass     |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 5         | Aluminium |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "5" | 0                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Seal Material         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 0         | None                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 1         | NBR (Nitrile)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 2         | HNBR                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 3         | FKM (Viton, FPM)      |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 4         | CR (Neoprene)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 5         | EPDM                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 6         | FFPM (Kalrez)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 7         | NBR - Low Temperature |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 8         | VMQ (Silicone Rubber) |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 9         | AU (Polyurethane)     |   |   |   |   |   |   |   |   |   |    |    |    |    |
| A         | PTFE                  |   |   |   |   |   |   |   |   |   |    |    |    |    |

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLINGS (CONTINUED)

### DIGITS "6-7"



The numbers in these positions specify the termination end.  
See "Termination Ends Type" table for coding details.

### DIGIT "8"



#### Value

#### Description

|   |        |
|---|--------|
| 0 | Male   |
| 1 | Female |

### DIGIT "9"



A letter in this position indicates a customised version.

### DIGITS "10-11"



The numbers in this position indicate the Quick Coupling size.

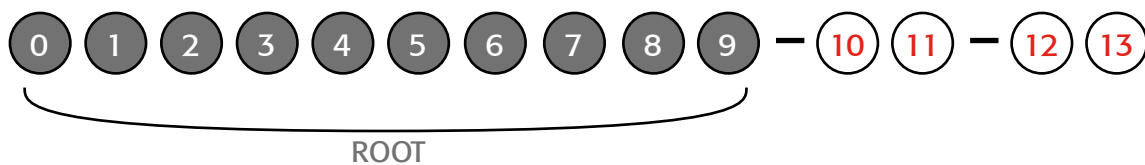
### DIGITS "12-13"



The numbers in this position indicate the thread size.

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING TAILS



| DIGIT "0" | 0              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Description    |   |   |   |   |   |   |   |   |   |    |    |    |    |
| Q         | Quick Coupling |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "1" | 0           | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Description |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 3         | Q. Tail     |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGITS "2-3"   | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|--|---|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Quick Coupling Series - refer to "Quick Coupling Series" table |   |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "4" | 0         | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-----------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Material  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 1         | Steel     |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 2         | AISI 316  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 3         | AISI 303  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 4         | Brass     |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 5         | Aluminium |   |   |   |   |   |   |   |   |   |    |    |    |    |

| DIGIT "5" | 0                     | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-----------|-----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| Value     | Seal Material         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 0         | None                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 1         | NBR (Nitrile)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 2         | HNBR                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 3         | FKM (Viton, FPM)      |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 4         | CR (Neoprene)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 5         | EPDM                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 6         | FFPM (Kalrez)         |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 7         | PTFE                  |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 8         | VMQ (Silicone Rubber) |   |   |   |   |   |   |   |   |   |    |    |    |    |
| 9         | AU (Polyurethane)     |   |   |   |   |   |   |   |   |   |    |    |    |    |

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING TAILS (CONTINUED)

### DIGITS "6-7"



**Value**

**Insert Type**

MF

Multifit type

### DIGIT "8"



**Value**

**Insert Angle**

1

Straight

### DIGIT "9"



A letter in this position indicates a customised version.

### DIGITS "10-11"



The numbers in this position indicate the Quick Coupling size.

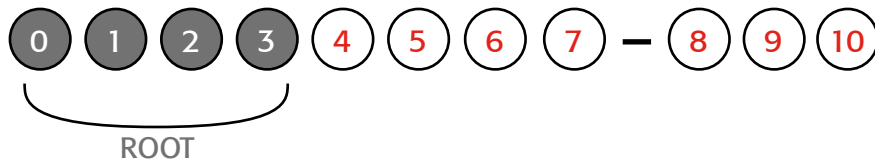
### DIGITS "12-13"



The numbers in this position indicate the Insert size.

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING PLUGS, SEALS & CARTRIDGES



**Value** **Description**

|   |                |
|---|----------------|
| Q | Quick Coupling |
|---|----------------|



**Value** **Description**

|   |                 |
|---|-----------------|
| 1 | Plugs and Seals |
|---|-----------------|



Quick Coupling Series - refer to "Quick Coupling Series" table



**Value** **Material**

|   |                      |
|---|----------------------|
| 0 | None                 |
| 1 | Steel                |
| 2 | AISI 316             |
| 3 | AISI 303             |
| 4 | Brass                |
| 5 | Aluminium            |
| A | PE (polyethylene)    |
| B | PVC                  |
| C | PA (polyamide)       |
| D | POM (acetalic resin) |

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING PLUGS, SEALS & CARTRIDGES (CONTINUED)

### DIGIT "5"



| Value | Seal Material         |
|-------|-----------------------|
| 0     | None                  |
| 1     | NBR (Nitrile)         |
| 2     | HNBR                  |
| 3     | FKM (Viton, FPM)      |
| 4     | CR (Neoprene)         |
| 5     | EPDM                  |
| 6     | FFPM (Kalrez)         |
| 7     | PTFE                  |
| 8     | VMQ (Silicone Rubber) |
| 9     | AU (Polyurethane)     |

### DIGIT "6"



| Value | Function                  |
|-------|---------------------------|
| 0     | Simple cap / plug         |
| 1     | EcoCap (with oil recycle) |
| 2     | Automatic cap             |
| 3     | Seal                      |
| 4     | Parking                   |
| 5     | Cartridge                 |

### DIGIT "7"



| Value | Colour                   |
|-------|--------------------------|
| N     | Not specified or natural |
| R     | Red                      |
| B     | Blue                     |
| Y     | Yellow                   |
| G     | Green                    |
| K     | Black                    |
| W     | Brown                    |
| H     | White                    |
| O     | Orange                   |
| E     | Grey                     |

### DIGITS "8-9"



Quick coupling size - corresponds to nominal internal hose diameter recommended for use with the coupling (see ISO 4397)

### DIGIT "10"



Free digit for Version or other.

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING SERIES

| QC Series | Plug & Seals Series | Description  |   |
|-----------|---------------------|--|---|
| 01        | A0                  | Male according to ISO 7241-1 standards, series A   | Free flow   |
| 02        |                     | Male according to ISO 7241-1 standards, series A   | Poppet valve  |
| 03        |                     | Male according to ISO 7241-1 standards, series A   | Ball valve  |
| 04        |                     | Male according to ISO 7241-1 standards, series A   | Poppet valve, special guidevalve                                    |
| 05        |                     | Male according to ISO 7241-1 standards, series A   | Ball valve, special guidevalve                                      |
| 06        |                     | Male according to ISO 7241-1 standards, series A   | Connectable under pressure  |
| 07        | A1                  | Female according to ISO 7241-1 standards, series A | Free flow   |
| 08        |                     | Female according to ISO 7241-1 standards, series A | One-way release, poppet valve                                       |
| 09        |                     | Female according to ISO 7241-1 standards, series A | One-way release, ball valve   |
| 10        |                     | Female according to ISO 7241-1 standards, series A | One-way release, connectable under pressure                         |
| 11        |                     | Female according to ISO 7241-1 standards, series A | One-way release, connectable with male under pressure               |
| 12        |                     | Female according to ISO 7241-1 standards, series A | One-way release, connectable with both parts under pressure         |
| 13        |                     | Female according to ISO 7241-1 standards, series A | Two-ways release, poppet valve                                      |
| 14        |                     | Female according to ISO 7241-1 standards, series A | Two-ways release, ball valve  |
| 15        |                     | Female according to ISO 7241-1 standards, series A | Two-ways release, connectable under pressure                        |
| 16        |                     | Female according to ISO 7241-1 standards, series A | Two-ways release, connectable with male under pressure              |
| 17        |                     | Female according to ISO 7241-1 standards, series A | Two-ways release, connectable with both parts under pressure        |
| 18        |                     | Female according to ISO 7241-1 standards, series A | Rigid, two-ways release, connectable with male under pressure       |
| 19        |                     | Female according to ISO 7241-1 standards, series A | Rigid, two-ways release, connectable with both parts under pressure |

# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING SERIES (CONTINUED)

| QC Series | Plug & Seals Series | Description  |                                |
|-----------|---------------------|--|--------------------------------|
| 20        | A2                  | Male according to ISO 7241-1 standards, series B     | Free flow                      |
| 21        |                     | Male according to ISO 7241-1 standards, series B     | Poppet valve                   |
| 22        |                     | Male according to ISO 7241-1 standards, series B     | Ball valve                     |
| 23        | A3                  | Female according to ISO 7241-1 standards, series B   | Free flow                      |
| 24        |                     | Female according to ISO 7241-1 standards, series B   | One-way release, poppet valve  |
| 25        |                     | Female according to ISO 7241-1 standards, series B   | One-way release, ball valve    |
| 26        |                     | Female according to ISO 7241-1 standards, series B   | Safety sleeve, poppet valve    |
| 27        |                     | Female according to ISO 7241-1 standards, series B   | Safety sleeve, ball valve      |
| 28        | A4                  | Male standard series                                 | Free flow                      |
| 29        |                     | Male standard series                                 | Poppet valve                   |
| 30        |                     | Male standard series                                 | Ball valve                     |
| 31        | A5                  | Female standard series                               | Free flow                      |
| 32        |                     | Female standard series                               | One-way release, poppet valve  |
| 33        |                     | Female standard series                               | One-way release, ball valve    |
| 34        |                     | Female standard series                               | Safety sleeve, poppet valve    |
| 35        |                     | Female standard series                               | Safety sleeve, ball valve      |
| 36        |                     | Female standard series                               | Two-ways release, poppet valve |
| 37        | A6                  | Compact Male   | Free flow                      |
| 38        | A7                  | Compact Female                                       | Free flow                      |
| 39        | A8                  | Flat face male according to ISO 16028                |                                |
| 40        |                     | Flat face male according to ISO 16028                | Connectable under pressure     |
| 41        | A9                  | Flat face female according to ISO 16028              | With safety sleeve             |
| 42        |                     | Flat face female according to ISO 16028              | Without safety sleeve          |
| 43        | A8                  | Flat face male according to ISO 16028                | Working Pressure 35MPa         |
| 44        | A9                  | Flat face female according to ISO 16028              | Working Pressure 35MPa         |
| 45        | AC                  | Male for diagnostic purpose according to ISO 15171   |                                |
| 46        | AD                  | Female for diagnostic purpose according to ISO 15171 |                                |



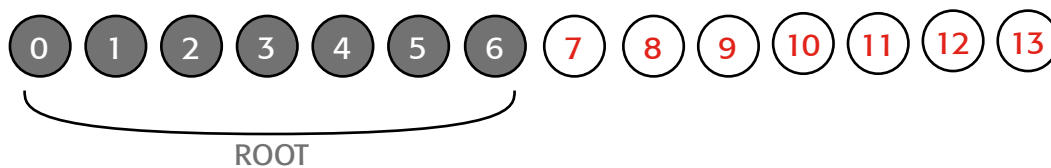
# PART NUMBERING SYSTEM

## HYDRAULIC QUICK COUPLING SERIES (CONTINUED)

| QC Series | Plug & Seals Series | Description  |   |
|-----------|---------------------|--|---|
| 47        | AE                  | Male for hydraulic braking circuit according to ISO 5676   |   |
| 48        | AF                  | Female for hydraulic braking circuit according to ISO 5676 |   |
| 49        | AG                  | Screw type male for hydraulic braking circuit              |   |
| 50        | AH                  | Screw type female for hydraulic braking circuit            |   |
| 51        | AI                  | Screw type male for german market                          |   |
| 52        | AJ                  | Screw type female for german market                        |   |
| 53        | AK                  | Screw type male for very high pressure                     |   |
| 54        | AL                  | Screw type female for very high pressure                   |   |
| 55        | AM                  | Screw type male for hydraulic cylinder                     |   |
| 56        | AN                  | Screw type female for hydraulic cylinder                   |   |
| 57        | AP                  | Screw type male for truck                                  |   |
| 58        | AQ                  | Screw type female for truck                                |   |
| 59        | AR                  | Compact Flat face male Screw type                          |   |
| 60        | AS                  | Compact Flat face female Screw type                        |   |
| 61        | AI                  | Screw type male for german market                          | Heavy duty                                      |
| 62        | AJ                  | Screw type female for german market                        | Heavy duty                                      |
| 63        | AT                  | Screw type male for U.S. market                            | (Not available in other markets - No catalogue) |
| 64        | AU                  | Screw type female for U.S. market                          | (Not available in other markets - No catalogue) |
| 65        | A1                  | Female according to ISO 7241-1 standard, series A          | Rigid, two ways release                         |
| 66        | AV                  | Flat face male Screw type                                  |   |
| 67        | AW                  | Flat face female Screw type                                |   |

# PART NUMBERING SYSTEM

## HOSE PROTECTIONS



### DIGIT "0"



**Value**

**Description**

|   |                            |
|---|----------------------------|
| J | Always means "Accessories" |
|---|----------------------------|

### DIGIT "1"



**Value**

**Description**

|   |                           |
|---|---------------------------|
| P | Always means "Protection" |
|---|---------------------------|

### DIGIT "2"



**Value**

**Protection Type**

|   |                 |
|---|-----------------|
| 1 | Spring          |
| 2 | Sleeve          |
| 3 | Clinch          |
| 4 | Flexible armour |

### DIGIT "3"



**Value**

**Material**

|   |                 |
|---|-----------------|
| 1 | Polyethylene    |
| 2 | Polyamide       |
| 3 | Polyester       |
| 4 | Silicone        |
| 5 | Stainless steel |
| 6 | Steel           |

### DIGIT "4"



**Value**

**Colour**

|   |        |
|---|--------|
| B | Black  |
| Y | Yellow |
| A | Orange |
| G | Grey   |
| M | Metal  |
| T | Other  |

# PART NUMBERING SYSTEM

## HOSE PROTECTIONS (CONTINUED)

| DIGITS "5-6" |                          |
|--------------|--------------------------|
| Value        | Product Family           |
| 01           | Protection spring        |
| 02           | Mining protection spring |
| 03           | HT Protection spring     |
| 04           | Light protection spring  |
| 05           | Fire sleeve              |
| 06           | Textile sleeve           |
| 07           | Round metal sleeve       |
| 08           | Heat protection spring   |
| 09           | BOP hose flexible armour |
| 10           | Clinch                   |

| DIGITS "7-8-9" |   |   |   |   |   |   |   |   |   |    |    |    |    |
|----------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| 0              | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

The numbers in these positions indicate the internal diameter in mm.

| DIGITS "10-11-12-13" |   |   |   |   |   |   |   |   |   |    |    |    |    |
|----------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|
| 0                    | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |

Letters and numbers in these positions describe branding, packaging or special length information.

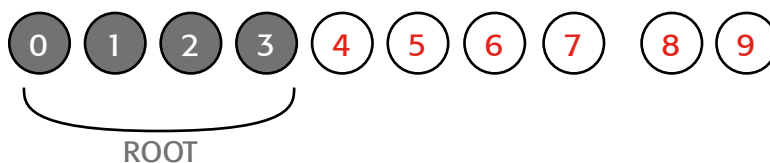
| Value | Branding Information |
|-------|----------------------|
| E     | Embossed / Embedded  |
| I     | Inkjet               |
| T     | Textile              |

| Value | Packaging Information |
|-------|-----------------------|
| 0     | Embossed / Embedded   |

| Value | Branding |
|-------|----------|
| 99    | Standard |

# PART NUMBERING SYSTEM

## RING AND SEAL



### DIGIT "0"



#### Value

#### Description

J

Always means "Accessories"

### DIGIT "1"



#### Value

#### Description

0

Always means "Rings"

### DIGITS "2-3"



#### Value

#### Description

#### Value

#### Description

01

O'ring for SAE 3000 and 6000 PSI flange

02

O'ring imperial size

03

O'ring metric size

04

O'ring for Staple Lock

05

O'ring for MSAE

06

O'ring and metallic anti-extrusion ring for metric series

07

O'ring for BSPP

08

Metallic anti-extrusion ring for male BSPP

09

O'ring for ETCAO

10

Flat seal built in

11

Copper sealing ring

12

Bonded seal ring

13

Flange counter-ring for "Caterpillar" insert

14

Seal type for SAE 3000 and 6000 PSI flange

15

Support plastic ring (open ring)

16

kit bonded seal rings

17

kit copper sealing rings

18

kit O'ring metric size

19

O'ring for ORFS

20

O'ring for H.P washer fitting

21

O'ring for refri fitting

22

Cylindrical seal for refri connector

23

O'ring for Super Staple Lock

24

Metal sealing ring for banjos

25

Metal sealing ring for pressure gauge connectors

26

Soft sealing ring for banjos

27

Elastomeric (captive) seal - NBR

28

Elastomeric (captive) seal - Viton

29

Interlock Plus O-Ring

30

One-piece Polyurethane seal for Staple Low Pressure (Yellow)

31

One-Piece Polyurethane seal for Staple High Pressure (Red)

# PART NUMBERING SYSTEM

## RING AND SEAL

### DIGITS "4-5"



The numbers in these positions indicate the external diameter in mm.

### DIGITS "6-7"



The numbers in these positions indicate the internal diameter in mm.

### DIGITS "8-9"

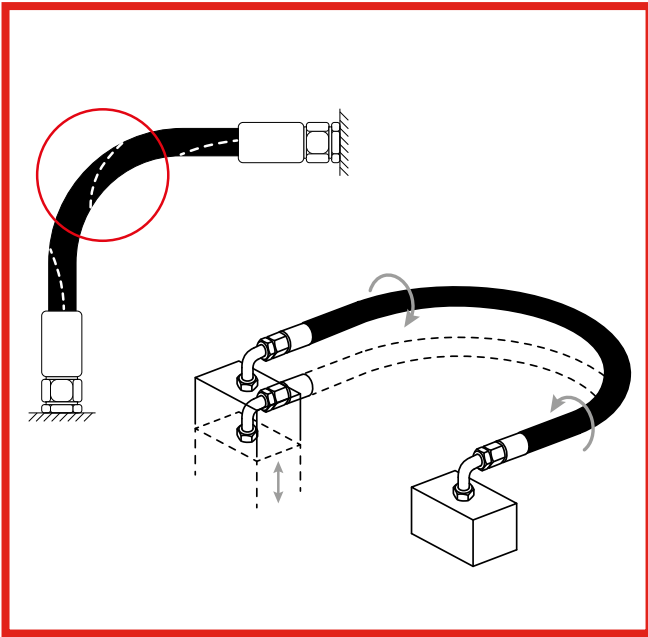


The numbers in these positions indicate the axial thickness in mm.

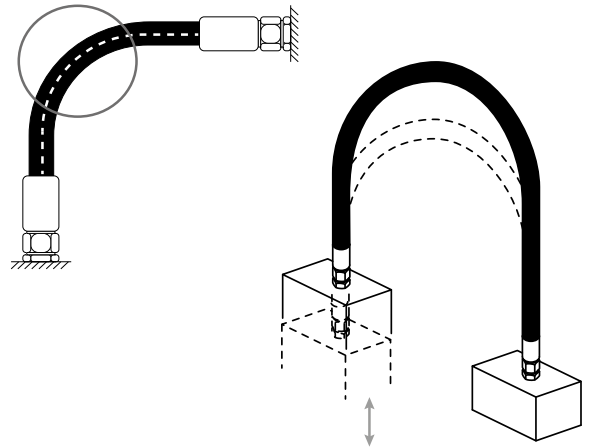


# HOSE INSTALLATION GUIDE

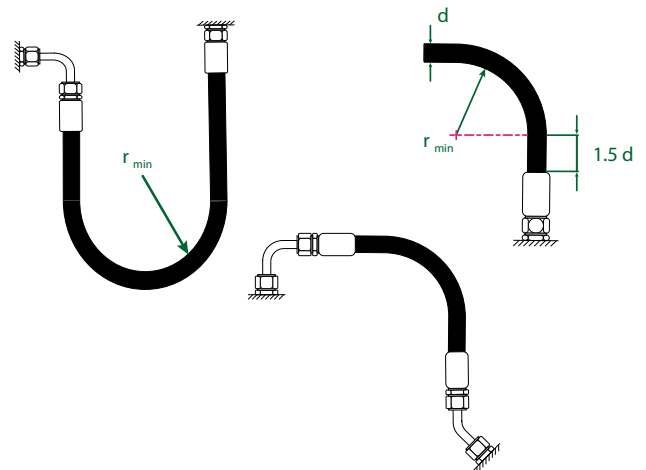
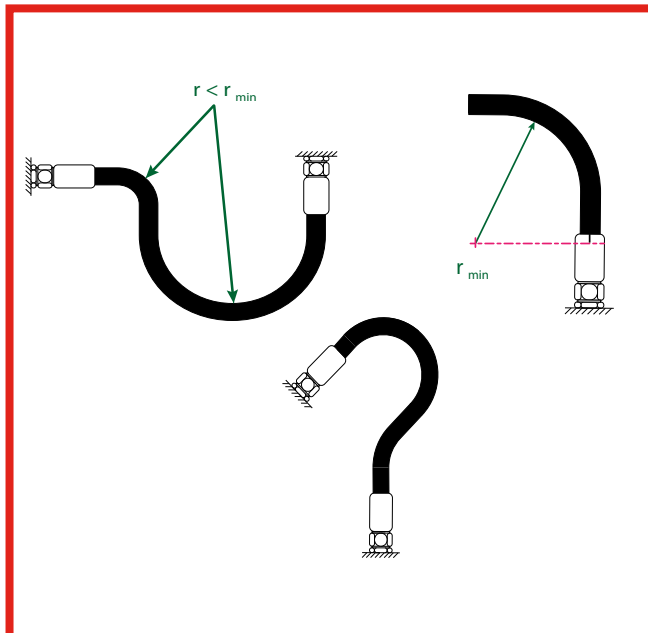
## INCORRECT USE



## CORRECT USE



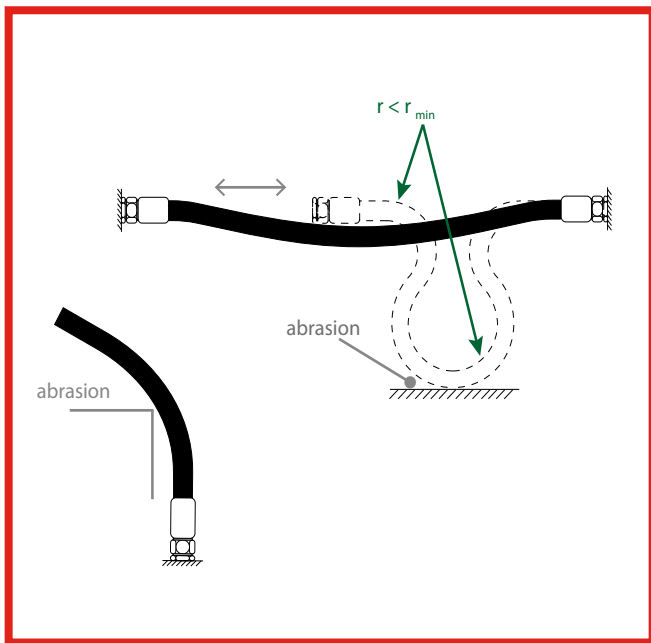
- Avoid twisting the hose assembly when installing.
- Avoid situations where moving parts will cause twisting effects on the hose assemblies after installation.



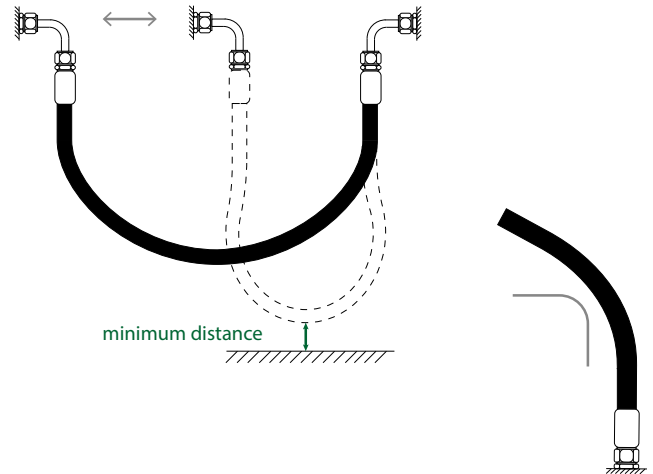
- Select the correct fittings to avoid tight bend radii.
- Ensure a minimum distance of 1.5 x "d" after the ferrule before hose bending.

# HOSE INSTALLATION GUIDE

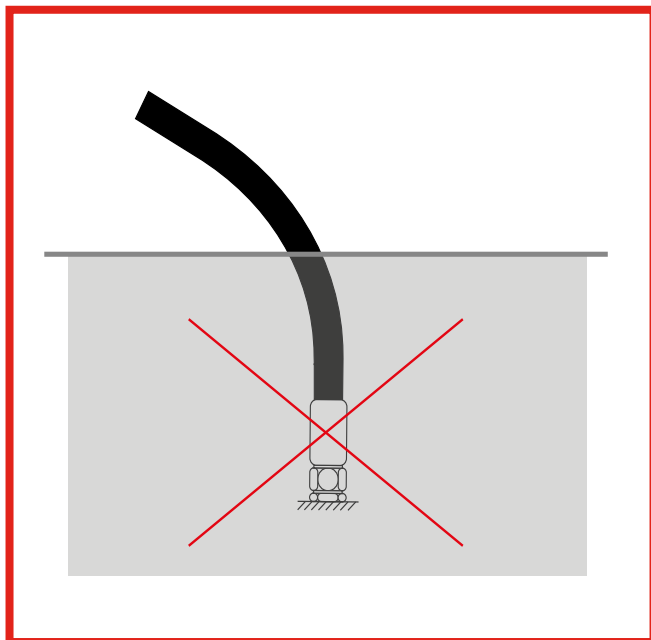
## INCORRECT USE



## CORRECT USE



- Avoid interference with objects that can cause abrasion or damage to the hose.
- In flexing applications ensure that the hose is not subjected to tensile stresses or to impacts / abrasion from the surrounding environment.



The Manuli hydraulic hose product range is not designed for immersion in the service fluid. This type of special application should be avoided or carefully studied with reference to the hose specifications.

For detailed information concerning recommended practices for hydraulic hose assemblies, please refer to **SAE J1273**. This document should be used as a guide when selecting, routing, fabricating, installing, replacing, maintaining and storing hose for hydraulic systems.



# HOSE INSTALLATION GUIDE

## PRODUCT SELECTION AND INSTALLATION

The information in this document concerning hoses, fittings and other items manufactured and provided by Manuli Rubber Industries and its subsidiaries, is provided for the express purpose of aiding in the correct selection of products for particular applications. However it is the responsibility of the customer to ensure that they consider the specific details of the application during the selection process.

Important factors to consider include:

- Hose size
- Hose length
- Fluid compatibility
- Ambient and operating temperatures
- System operating pressures
- Static head pressures
- Installation design
- Minimum bend radii
- Possible abrasion of the hose
- Movement and flexing of the hose during operation

Improper selection and / or installation of hydraulic hose assemblies can result in reduced assembly life, equipment failure, property damage, bodily injury or death.

## HOSE INTEGRATION

Manuli hoses and fittings are designed to be part of an integrated hose assembly system. As such they should only be used together or in conjunction with other types of fittings recommended by Manuli Rubber Industries and its subsidiaries. Failure to observe these requirements may result in a reduced lifespan of the hose assemblies or other failures which can cause equipment failure, property damage, bodily injury or death.

Manuli provides guidelines for the proper assembly, installation, maintenance and use of its products and further information on recommended practices is available in [SAE J1273](#).

Should you have any questions regarding proper assembly, installation or application usage of any Manuli product, please contact our Technical Centre in Italy.

## WARNING!

**Improper selection or use of any of the products found in this document may result in property damage, bodily injury or death. Consider all aspects of your application carefully to ensure that the products selected are the most appropriate for the task.**

Manuli Rubber Industries reserves the right to modify the data provided in this catalogue without notice.

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# SALES TERMS AND CONDITIONS

## STANDARD TERMS AND CONDITIONS OF SALES<sup>®</sup> MANULI HYDRAULICS GROUP ("MHG") ALL GOODS AND SERVICES PROVIDED BY MHG ARE FURNISHED ONLY ON THE TERMS AND CONDITIONS STATED BELOW:

**1. PURPOSE.** These standard terms and conditions of sales apply to the relationship involving the supply of products by any company owned or controlled by Manuli Rubber Industries S.p.A. operating in the Manuli Hydraulics Group (referred to below as MHG) to professional operators (referred to below as Buyer or Buyers).

**2. SUPPLY ORDERING PROCESS.** The Buyer may issue purchase orders to MHG in the following ways:

**2.A)** By fax

**2.B)** By e-mail

**2.C)** On-line, only in the case of Buyers previously authorized to do so by means of a suitable activation procedure. This activation is essential if orders are to be placed on-line. The Buyer activation is by allocation of an identity code (user-id) and password to enable it to be recognized each time an order is placed, and takes place by filling in and returning the schedule set out in the home page of MHG's web site as described in the Request for Information section. The Buyer has the right to refuse the request for activation or cancel an existing activation.

**3. CONTRACT FORMATION.** All orders for MHG goods are subject to written acceptance by MHG by e-mail, fax or post. For on-line orders to MHG as described in point 2.C above, the authorized Buyer is first identified through his user-id and password, then selects the products, quantities and delivery address as guided by the system and issued the supply order. The order sent to MHG on-line is accepted only if specifically confirmed by this latter by email, fax or post.

Any and all terms in Buyer's purchase orders, acknowledgments, confirmations, or other business forms ("Buyer's Forms") which vary, conflict with or add to, or are in any way inconsistent with, the terms provided below are REJECTED by MHG and shall not be part of any agreement between the Buyer and MHG unless specifically agreed to in a writing document signed by MHG. MHG's acceptance of a purchase order or the commencement of performance by MHG shall neither change nor add to this Agreement;

**THE TERMS PROVIDED BELOW SHALL PREVAIL OVER ANY VARYING, ADDITIONAL OR CONFLICTING TERMS IN THE BUYER'S FORMS.**

For all on-line orders, these Standard Terms and Conditions of Sale, as available to the Buyer on the web site [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com), are applicable.

**4. INFORMATION MADE AVAILABLE TO THE BUYER.** Before the issue of the purchase order, MHG will provide the Buyer with all the commercial information on the products that it may require. After the order has been placed, MHG will inform the Buyer of the stages of the order through MHG service structure or, for those Buyers in possession of User\_ID and Password, through MHG's web site.

**5. PRICES.** MHG reserves the right to alter the prices, discounts and payment conditions in force when the contract is confirmed and the Buyer expressly acknowledges and agrees upon such right. However, any modifications will become effective after notification of these has been issued, and they will apply only to the part of the supply that has not been completed. In such a case the Buyer may cancel the contract for the part not completed within 2 (two) weeks of the issue of notification of the increase and MHG shall have no liability, directly or indirectly, whatsoever.

**6. TAXES.** Prices do not include country, federal, state or local taxes, now or hereafter enacted, applicable to the goods sold, which tax or taxes will be added by MHG to the sales prices where MHG has the legal obligation to collect them, and will be paid by the Buyer or reimbursed by the Buyer to MHG if paid by MHG, unless the Buyer provides MHG with a proper tax exemption certificate.

**7. SHIPPING, TITLE AND DELIVERY.** Shipments shall be EXW as such term is defined in the Incoterms 2000, unless differently agreed upon in writing. Shipping dates are approximate and are based to a great extent on prompt receipt by MHG of all necessary information from the Buyer. MHG shall not be liable for any loss or expense incurred by the Buyer in the event that MHG fails to meet the specified delivery schedule(s) due to production or other delays due to unforeseen circumstances. Buyer must collect the products within 5 working days from the declaration by MHG of readiness for shipment EXW. For shipment FCA or FOB, Buyer must notify MHG with all necessary information for the shipment FCA or FOB within 10 working days from the declaration by MHG of readiness for shipment. In case of not respect of the above mentioned period, MHG will have the right to terminate the order or to store the products at MHG's warehouse at risk and expense of the Buyer at a rate of €0,5 per day per pallet. Unless differently agreed upon in writing, shipments shall be only for Lot or multiple of Lot for each product code. The term "Lot" is the minimum order quantity for each product code as indicated in the current price list/catalogue and must be a multiple of the minimum quantity per product code.

**8. WITHDRAWAL RIGHT.** In case of communication by MHG of his impossibility to respect the shipping date indicated in the confirmation of order, and unless a new shipping date will be agreed upon in writing, the Buyer can, waiving any other rights, withdraw the order by means of written notice to be sent to MHG within 7 days from the communication of MHG.

**9. RETURNS.** MHG will accept returns only upon prior agreement and at conditions to be defined between the parties.

**10. TOLERANCES.** Due to MHG's requirements, tolerances of +/-10% of the confirmed quantities, as and if applicable, are always allowed and accepted.

**11. PAYMENT.** Payment shall be made within the agreed upon period from the date of invoice, in the agreed upon currency at the address shown on the invoice. If payment in full is not received by MHG by the due date, the Buyer shall be in breach hereof. In the event of late payment, the Buyer will incur an interest charge calculated at the reference rate of the local national central bank plus 2 percentage points per year on the unpaid balance to cover the administration costs of collection. Moreover, MHG reserves the right to suspend all further deliveries, to recover all unpaid materials and to require an immediate payment of all

# SALES TERMS AND CONDITIONS

other claims. Such charges may be in addition to other remedies exercisable by MHG. The amount of credit may be changed or credit withdrawn by MHG at any time. On any order on which credit is not extended by MHG, shipment or delivery shall be made, at MHG's election, Cash on order (in whole or part), letters of credit with all costs of collection paid by the Buyer or other terms as agreed between the parties.

**12. SUSPENSION OF THE CONTRACT.** Should the Buyer fail to comply in whole or in part even with only one of the supply conditions or if there are any changes of any kind in the Buyer's company name, form or trading capacity, as well as in the event of proven difficulty in meeting the payments to MHG or third parties, MHG will have the right to suspend any further deliveries and convert any premiums that have matured, bank transfers or other deeds of payment unless a suitable guarantee is issued.

**13. FORCE MAJEURE.** MHG shall not be responsible for any delay or failure to perform due to causes beyond its reasonable control. These causes shall include, without limitation, fire, flood, earthquake, accident, acts of the public enemy, war, acts of terrorism, riot, epidemic, quarantine restrictions, labor dispute, labor shortages, interruption of transportation, inability to secure raw materials or machinery, extraordinary increases in such raw materials prices, rationing or embargoes, acts of God, acts of Government or any agency thereof, acts of any state or local government or any agency thereof, and judicial action. Similar causes shall excuse the Buyer for failure to take goods ordered by the Buyer, provided reasonable notice is given to MHG of such contingency. However, the Buyer shall not be excused from the terms hereof for (i) any goods shipped prior to receipt of such notice; or (ii) goods already in transit when the contingency occurs.

**14. LIMITATION OF LIABILITIES. THE BUYER AND MHG AGREE THAT (I) THE SOLE AND EXCLUSIVE REMEDIES FOR BREACH OF ANY WARRANTY CONCERNING THE GOODS SHALL BE REPAIR OR REPLACEMENT OF THOSE GOODS OR THEIR COMPONENT PARTS OR REFUND OF THE PURCHASE PRICE; AND (II) MHG SHALL HAVE THE EXCLUSIVE RIGHT TO SELECT ANY SUCH REMEDY IN ITS SOLE DISCRETION. MHG SHALL NOT BE LIABLE FOR CONTINGENT, INCIDENTAL OR CONSEQUENTIAL DAMAGES TO PERSONS OR PROPERTY AND MHG'S SOLE LIABILITIES AND BUYER'S EXCLUSIVE REMEDIES HEREUNDER ARE AS PROVIDED IN THESE STANDARD TERMS AND CONDITIONS OF SALES. MHG SHALL NOT BE LIABLE FOR ANY EXCESS REPROCUREMENT COSTS, SPECIFIC PERFORMANCE OR DELAY IN DELIVERY.**

Notwithstanding any implication to the contrary, MHG shall have no liability whatsoever unless and until the Buyer shall have paid the full purchase price of all goods delivered.

**15. WARRANTY AND CLAIMS.** MHG warrants that the Products will be free of defects in material and workmanship for a period equal to twelve (12) months from the date of shipping from MHG to the Buyer or, with the sole exception of assembly machines, within two thousand (2000) hours of use, whichever comes first. In case of claims presented in the correct way and regarded as founded, MHG agrees to replace or repair the defective product when these are returned to its premises.

a. This warranty does not cover any faults caused by normal deterioration, accelerated deterioration caused by special

physical, chemical or electrochemical conditions, insufficient maintenance or incorrect repair, failure to follow the storage, user and operating instructions, use of unsuitable materials, the effects of a chemical or electrolyte process, assembly operations not carried out using only MHG's original parts or MHG's original certified parts, using MHG's assembly machines and in strict accordance with MHG's latest assembly instructions to be found always updated at [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com), or any other faults arising as a result of circumstances over which the supplier has no control. This warranty does not cover faults caused by modifications made by the customer or a third party, or assembly or installation operations carried out by these latter without observance of the operating and installation conditions and/or the technical specifications of the products.

**b. IN NO EVENT SHALL MHG BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. NO PRODUCT IS WARRANTED AS BEING FIT FOR A PARTICULAR PURPOSE.** The warranties described above apply only if (i) the Product has not been misused, tampered or abused in any manner nor have repairs been attempted thereon; (ii) written notice of failure within the warranty period is forwarded – exclusively by means of the form available on the website [www.manuli-hydraulics.com](http://www.manuli-hydraulics.com) to be filled in each section - to MHG and MHG's direction for properly identifying Products returned under warranty are followed; and (iii) with the return, a notice authorizing MHG to examine and disassemble returned Products to the extent MHG deems it necessary to ascertain the cause of failure. The warranties stated herein are exclusive.

**THERE ARE NO OTHER WARRANTIES, EITHER EXPRESSED OR IMPLIED, BEYOND THOSE SET FORTH HEREIN,** and MHG does not assume any other obligation or liability in connection with the sale or use of the Products.

c. The receipt by the Buyer or its customer(s) of any of the Products shall constitute the Buyer' unqualified acceptance of same and waiver by the Buyer of all claims hereunder (**OTHER THAN CLAIMS NOT DISCOVERABLE UPON RECEIPT AND INSPECTION**) unless the Buyer gives written notice of the same to MHG within eight (8) days after its receipt or, in the event of concealed defects, the claim should be sent to MHG in writing within eight (8) days of their discovery, and in any case within a period of twelve (12) months from shipping from MHG to the Buyer, or, with the sole exception of assembly machines, within two thousand (2000) hours of use, whichever comes first. In any case, whenever possible, the Buyer shall send MHG a sample of the defective product to follow up the claim procedure.

d. No claim of any kind, where as to Products delivered or for delay in delivery or failure to deliver, and whether or not based on negligence, shall be greater in amount than the purchase price of the Products with respect to which such claim is made. **IN NO EVENT SHALL MHG BE LIABLE FOR INDIRECT, INCIDENTAL SPECIAL, OR CONSEQUENTIAL DAMAGES, WHETHER OR NOT CAUSED BY OR RESULTING FROM THE NEGLIGENCE THEREOF.** It is expressly understood that any technical advice furnished by MHG with respect to the use of the Products, shall not be deemed to be a representation that the Products may be so used successfully or that such use will offer any specific result, and MHG does not assume any obligation or liability for any advice given or results obtained.

e. The Buyer shall indemnify and hold MHG harmless against

# SALES TERMS AND CONDITIONS

any and all loss damage, cost, or expense of any kind incurred by reason of any negligence, breach or other fault of the Buyer imposed by law upon MHG for damages assessed because of property damage or bodily injuries or death sustained or resulting from the sale, use, or handling of the Products except to the extent caused by the negligence of or breach of this Agreement by MHG, and the MHG has notified the Buyer in writing of any third party's claims or demands within sixty (60) days after MHG received notice thereof.

**16. RESERVE.** For the orders sent to MHG on-line, these will be accepted only after the correct completion of the activation procedure described in point 2.C above, which takes place using a user-id and password. The Buyer is aware that the revelation of the user-id and password to unauthorized parties would enable these to make orders in his name. Consequently, the Buyer will guard his identity code and password with maximum diligence and reserve, as he will be held responsible for any abusive use of these. MHG will take no responsibility for abusive use of the user-id and password, and the order will remain fully valid and effective after confirmation of it has been issued.

a. The Buyer agrees to exonerate MHG from any action, request or claim, including claims for compensation for damages, deriving directly or indirectly from the use or abuse of the user-id and password by any party.

b. The Buyer agrees to inform MHG of the loss or theft of the password, whereupon MHG will deactivate the password in question and issue a new one.

**17 ENTIRE AGREEMENT. THESE TERMS AND CONDITIONS, INCLUDING THE LIMITED WARRANTY AND DISCLAIMER AND LIMITATIONS OF LIABILITY, ARE A COMPLETE AND FULL EXPRESSION OF THE AGREEMENT BETWEEN THE PARTIES.** The terms hereof may not be varied, supplemented, qualified, modified, waived or interpreted by any prior or subsequent course of performance or conduct between the parties (including the shipment of goods hereunder) or by any usage of the trade or by conflicting or additional terms upon the face or reverse of any form to which this is attached or a part of, nor may it be modified by any agent, employee, or representatives of MHG unless such modification or representation is made in writing and signed by a duly authorized officer of MHG. Stenographic or clerical errors are subject to correction.

**18. SEVERABILITY.** If any term of this Agreement is held to be illegal or unenforceable, such term shall be severed from this Agreement and the remaining terms shall remain in force.

**18. ASSIGNS.** This Agreement shall be binding on and inure to the benefit of the successors and assigns of the entire business and goodwill of either MHG or Buyer, or of that part of the business of either used in the performance of such contract, but shall not be otherwise assignable by Buyer.

**20. PROPRIETARY RIGHTS.** Trademarks, service marks and other product identifications are MHG's property at all times and shall only be used in connection with the products. The Buyer shall not remove or deface any such marks.

**21. CORRESPONDENCE.** All correspondence regarding this contract will be sent to the MHG's Customer Service structures geographically competent:

**Manuli Rubber Industries S.p.A**

fax: +39 02 62713383;

telephone: +39 02 62713450;

email address: service.southeu@manulirubber.com.

**Manuli Hydraulics Polska S.A.**

fax: +48 32 2220 147;

telephone: +48 32 2220 222;

email address: service.northeu@manulirubber.com.

**Manuli Hydraulics (Suzhou) Co. Ltd.**

fax +86 512 6283 7399;

telephone and help desk: +86 512 6283 7099;

email address: service@manuli-hydraulics.com

**22. INTERPRETATION.** The validity, performance and construction of these terms and conditions and any sale made hereunder shall be governed by the laws of the Italy. All the terms hereof shall be interpreted in the manner which enhances its enforceability.





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