



GENERAL HYDRAULICS

PRODUCT CATALOGUE

2020

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MANULI HYDRAULICS - OUR MISSION

Manuli Hydraulics is 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

Manuli Hydraulics R&D activities are based at the Manuli Innovation Centre (MIC) 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 MIC laboratories feature special rooms and equipment that allow researchers to simulate the most extreme environmental and operational conditions including:

- Heat
- Cold
- Fog
- Fatigue (Impulse testing)
- Hydrostatic testing
- Saline environments
- Vibrations

MIC are responsible for the design and development of every aspect of our product range, from rubber compounds and hose structures, to fitting design and assembly machines. 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 Americas (Chambersburg) - USA, Hose assemblies
- 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
-

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





HYDRAULIC HOSES

INTRODUCTION TO THE MANULI HOSE RANGE

The Manuli Hydraulics range of hydraulic hoses is a comprehensive selection of products aimed at supporting both general and speciality hydraulics applications in a wide range of environments. From construction and agriculture to mining, forestry and offshore, Manuli hoses are designed to meet and surpass the most demanding operational and environmental requirements, ensuring long life, high performance and reliable service.

Manuli hoses are categorised according to our unique G.H.P. System, which helps users to identify the type of properties required for their specific applications.

The G.H.P. System for hydraulic hoses comprises the following 3 categories:

GLOBAL STANDARD

Suitable for a wide variety of general hydraulic applications, the Global Standard range of hoses are designed to meet the requirements of various international norms, including ISO, BS, SAE and JIC. Featuring some of Manuli's most successful and widely used product lines, the Global Standard range offers high quality and reliability in most standard hydraulic applications.

HI-GRADE

These hoses are designed to meet and exceed the international specifications, making them ideal for high performance products and harsh environments. Suited to both OEM and aftermarket maintenance these hoses are split into two sections according to the selection criteria across the range. As such the range comprises hoses which use traditional design methodologies where working pressure varies according to the hose size, and Isobaric hoses, where working pressure is constant across all sizes according to the specifications of ISO 18752.

PREMIUM

A superior range of products designed for the utmost performance in specific applications, these hoses are designed to surpass expectations and requirements. Featuring some of the most advanced hose design on the market today, these products demonstrate what can be achieved when decades of experience, intelligent design and collaboration with industry leaders are brought seamlessly together. Many of the hoses in this range have advanced properties or are designed to resist specific environmental challenges.



MANULI COVER TECHNOLOGY

Choosing the correct hydraulic hose for the job requires careful consideration. The widespread use of hydraulics in a variety of industries and environments means that characteristics such as robustness, flexibility, chemical resistance and operating temperature must all be considered.

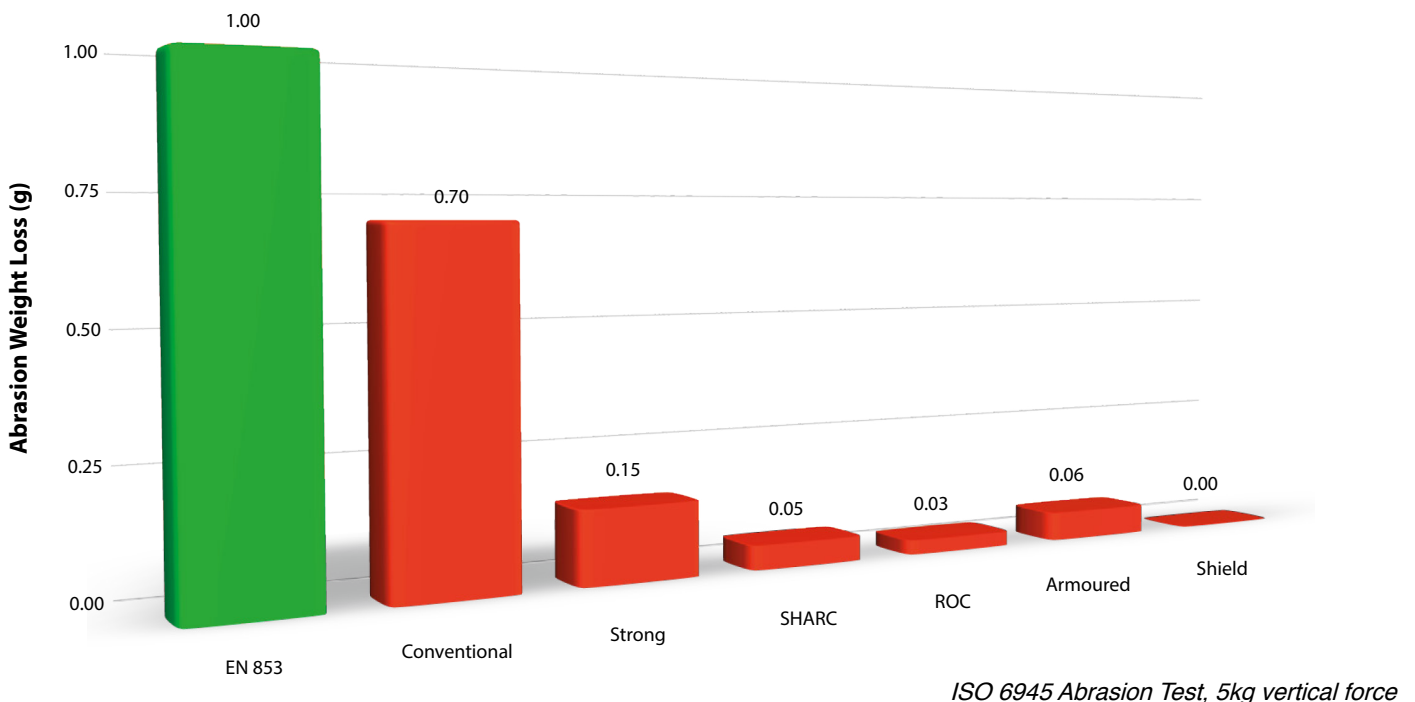
However, most experts agree that the hose cover is the singular most important part of a hose's construction, as wear of the cover due to environmental factors is the primary cause of hose failure. It is therefore critical that the hose cover be as robust and long-lasting as it can be, whilst also meeting the other specific requirements of the system it is included in.

Manuli Hydraulics has developed a range of highly innovative and proprietary cover materials and structures to ensure maximum service life in even the most harsh of environmental conditions. The outstanding performance of our cover materials compared to many of our competitors' products illustrates the fact that, whilst hose selection itself may be complex, making sure you choose the right cover need not be.

Progressively developed over several years and multiple hose families, the Manuli Hydraulics range of hose cover solutions is many and varied. Aside from certain application-specific covers dedicated to unique hose families, Manuli offers 6 fundamental hose cover types:

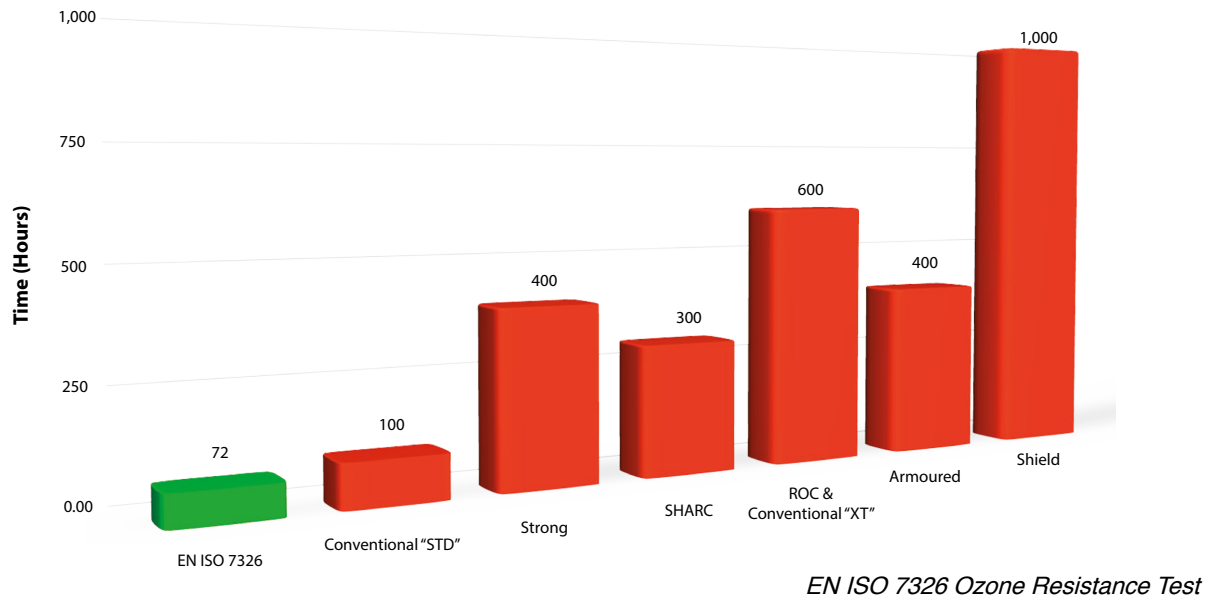
- **Conventional Cover** - "STD" & "XT" Type
- **Strong Cover** - "SD" & "SC" Type
- **Super High Abrasion Resistant Cover (SHARC)**
- **Rubber Outstanding Cover (ROC.)**
- **Armoured Cover**
- **Shield Cover**

The relative abrasion resistance performance of each of these cover types compared to EN 853 can be assessed from the below graph:



In addition to their outstanding performance against abrasion, these covers also boast a high level of resistance to cracking due to ozone exposure. The general rule of thumb is that abrasion resistance and ozone resistance for a cover compound are inversely proportional. So high abrasion resistance leads to poor ozone resistance, and vice versa.

However, in contrast to these typical material limitations, each of the above Manuli cover compounds performs noticeably better than the required test specification, EN ISO 7326.



CONVENTIONAL COVER

As Manuli's base-line cover compound, the Conventional Cover is fully compliant to current international specifications for both abrasion and ozone resistance.

Used primarily on the classic Manuli hose ranges, such as **Tractor**, this cover is robust enough for most general hydraulic applications where excessive abrasion or ozone exposure is not expected.

With a working temperature range of -40°C to +100°C, hoses with the Conventional Cover are prime examples of the perfect balance between reliability, toughness and value.

"XT" Type - The Conventional Cover is also used as the basis for the "XT" type covers used on premium hose ranges such as **Equator**. In these cases, the abrasion resistance characteristic remain consistent with the Conventional Cover, but the covers have significantly upgraded ozone resistance and an extended operational temperature range of -55°C to + 135°C.

STRONG COVER

As the first major performance step change in both abrasion and ozone resistance, the Strong Cover outperforms the Conventional Cover four times over in these areas. It is for this reason that two of Manuli's core product families, **RockMaster** and **GoldenIso** (except AntiWear) use this cover type.

The Strong Cover comes in two types:

"SD" Type - Used on the majority of **RockMaster** products, the "SD" cover has a minimum working temperature of -40°C.

"SC" Type - Used on the new **Cryoflex** range, the "SC" cover compound has an extreme resistance to low temperatures, allowing it to remain flexible down to -60°C.

SUPER HIGH ABRASION RESISTANT COVER - SHARC

Developed as a high-protection cover, the SHARC solution provides abrasion and weathering resistance to a standard which makes it ideal for all but the most extreme of applications.

Used on the **GoldenIso AntiWear** and **Xtraflow** hydraulic hose ranges, the SHARC solution ensures long lasting, reliable hose protection in some of the toughest operational environments.

The SHARC solution also has high fire resistance and anti-static properties, making it suitable for use in highly regulated applications such as mining and offshore drilling.

RUBBER OUTSTANDING COVER - ROC

Specifically designed for extreme abrasion and weathering resistance on heavy duty hoses, the ROC solution easily out-performs all but the toughest and most resilient hose cover solutions.

Used on the newly released **RockMaster/2 Plus Super-AntiWear** hose family and within the new **ForeMaster** range, the ROC solution has already proven itself to be a superb investment for use in the harshest of environmental conditions.

Once again, a high fire and anti-static resistance, coupled with an ability to function at very low temperatures, makes the ROC solution a highly versatile addition to the Manuli Hydraulics cover solutions range.

ARMOURED COVER

The Armoured Cover is the culmination of years of research and development in both hose structural design and rubber compound formulation. This innovative new cover is made up of two fundamental elements:

- Outer cover made from a proprietary, specially formulated anti-wear rubber compound
- High-tensile textile breaker layer

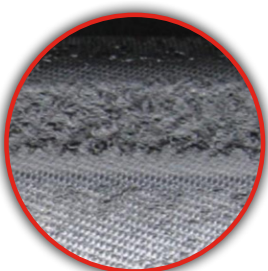
The Armoured Cover is currently used on the higher pressure hose lines within the **ForeMaster** range of hoses.

Putting it to the test

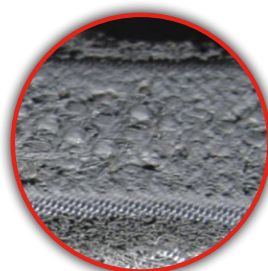
In standard ISO 6945 abrasion tests a reciprocating 5kg load is used to create wear on the hose cover. The test lasts for 2,000 cycles and measures the mass of material lost. The lower the result, the better the performance.

However, to truly test the performance of the Armoured Cover, Manuli devised a more severe test. A 10kg reciprocating load was used, and the number of cycles required to expose the steel reinforcement was determined. In this case, the higher the result, the better the performance.

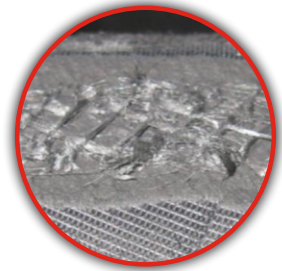
Whilst hoses with the Armoured Cover performed up to 4 times better than the competition in standard ISO 6945 abrasion tests, they lasted as much as 30 times longer before the steel reinforcement was exposed.



2,000 cycles (10kg)

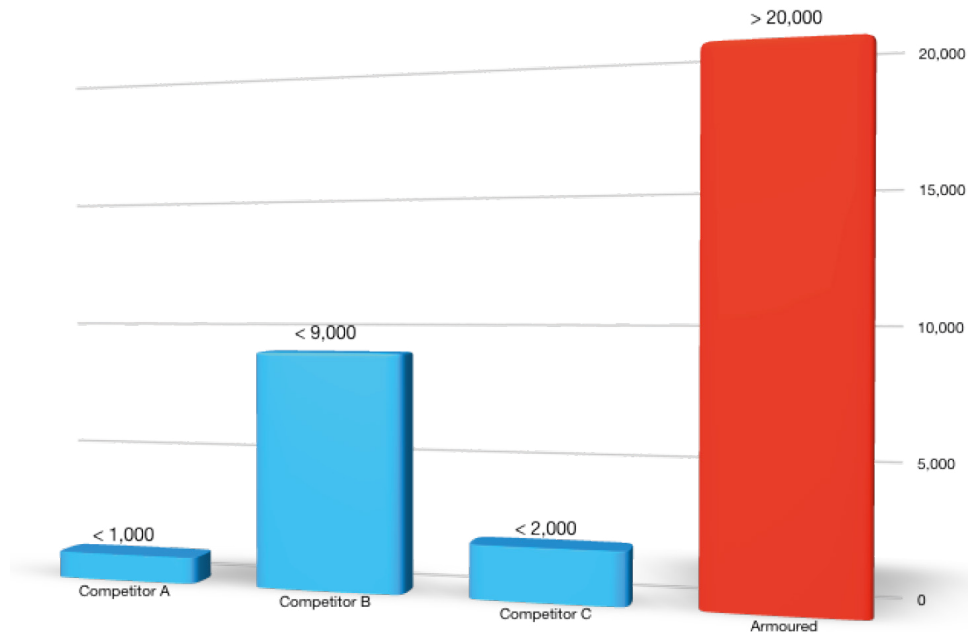


20,000 cycles (10kg)



60,000 cycles (10kg)

Number of Cycles Before Reinforcement Exposure



Modified ISO 6945 Abrasion Test, 10kg vertical force

SHIELD COVER

The Shield Cover solution is designed for maximum hose to hose abrasion and weathering resistance in none friction-flexing and non-impact applications.

Used throughout the **ShieldMaster** hose family and comprising a robust synthetic rubber layer with an additional ultra-high molecular weight polyethylene (UHMWPE) outer skin, the Shield Cover outperforms all other Manuli cover types in its resistance to both abrasion and ozone.

In fact the abrasion resistance of the Shield Cover is so great that under standard ISO 6945 test conditions it is necessary to perform around 1 million cycles to register a discernible weight loss.

The self-lubricating properties of UHMWPE make the Shield Cover perfect for situations where bunches of hoses rub against each other, and the smooth cover finish provides an easy-to-clean alternative to spring guards.

In addition to its outstanding abrasion and weathering resistance, the Shield Cover also resists cracking down to -46°C and has flame retardant and anti-static properties, making it suitable for use in even the harshest environments.

WHERE ARE THE COVERS USED?

HOSES
6

| | DN | 5 | 6 | 8 | 10 | 12 | 16 | 19 | 25 | 31 | 38 | 51 | 60 | 63 | 76 | 89 | 102 |
|----------------------------|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|-----|-----|-----|-----|
| ASTRO/2 | | | STD | STD | STD | STD | STD | STD | STD | STD | | | | | | | |
| ASTRO/3 | | | STD | STD | STD | STD | STD | STD | STD | STD | STD | STD | | | | | |
| HARVESTER/17 | | | STD | STD | STD | STD | | | | | | | | | | | |
| JACKMASTER/70 | | | STD | | STD | | | | | | | | | | | | |
| LUBEMASTER | | | STD | | STD | | | | | | | | | | | | |
| LYTE-FLEX | | | STD | STD | STD | STD | STD | STD | STD | | | | | | | | |
| MULTITEX | | STD | STD | STD | STD | STD | STD | STD | STD | | | | | | | | |
| PUSHFIT | | | STD | STD | STD | STD | STD | STD | STD | | | | | | | | |
| SPIRTEX | | | | | | | | STD | STD | STD | STD | STD | | STD | STD | STD | STD |
| TRACTOR/1SN | | | STD | STD | STD | STD | | | | | | | | | | | |
| TRACTOR/2SN | | | STD | STD | STD | STD | | | | | | | | | | | |
| TWINPOWER 4000 | | | | | STD | STD | | | | | | | | | | | |
| EQUATOR/1 (BLACK) | | | XT | XT | XT | XT | XT | XT | XT | XT | XT | XT | | XT | | | |
| EQUATOR/1 (BLUE) | | | XT | XT | XT | XT | XT | XT | XT | XT | XT | XT | | XT | | | |
| EQUATOR/2 (BLACK) | | | XT | XT | XT | XT | XT | XT | XT | XT | XT | XT | | | | | |
| EQUATOR/2 (BLUE) | | | XT | XT | XT | XT | XT | XT | XT | XT | XT | XT | | | | | |
| DIAMONDSPIR | | | | | | | | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/12 | | | | | SD | SD | SD | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/13 | | | SD | | SD | SD | | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/15 | | | | | | | | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/1SC | | | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | | | SD | | |
| ROCKMASTER/1SN | | | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | | | | |
| ROCKMASTER/2SC | | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | | SD | SD | | |
| ROCKMASTER/2SN | | | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | | | | |
| ROCKMASTER/2ST | | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/4SH | | | | | | | SD | SD | SD | SD | SD | SD | | | | | |
| ROCKMASTER/4SP | | | SD | | SD | SD | SD | SD | SD | SD | SD | SD | | | | | |
| SYNERGY | | | SC | | SC | SC | SC | SC | SC | SC | | | | | | | |
| TWINPOWER 5000 | | | | SD | SD | SD | | | | | | | | | | | |
| TWINPOWER/PLUS | | | | | SD | | | | | | | | | | | | |
| ANACONDA | | | | | | | | SC | SC | SC | SC | | | | | | |
| CRYOFLEX/21 | | | | | | | SC | SC | SC | | | | | | | | |
| CRYOFLEX/35 | | | SC | SC | SC | SC | | SC | SC | SC | | | | | | | |
| CRYOFLEX/42 | | | | | | | | SC | SC | SC | | SC | | | | | |
| DIAMONDSPIR/14 | | | | | | | | | | | | | | | | SC | |
| DIAMONDSPIR/17 | | | | | | | | | | | | | | | | SC | SC |
| DIAMONDSPIR/21 | | | | | | | | | | | | | | | | SC | SC |
| DIAMONDSPIR/35 | | | | | | | | | | | | | | | | SC | SC |
| DIAMONDSPIR/62 | | | | | | | | | | | SC | SC | | | | | |
| GOLDENISO/38 LONGLIFE | | | | | | | | SC | SC | SC | SC | SC | | | | | |
| GOLDENISO/45 LONGLIFE | | | SC | | | SD | SD | SD | | | | | | | | | |
| GOLDENISO/14 PILOT | | | SC | SC | SC | SC | | | | | | | | | | | |
| GOLDENISO/21 XTRAFLEX | | | | | | | | | | | SC | SC | SC | | | | |
| GOLDENISO/28 XTRAFLEX | | | | | SC | SC | SC | SC | SC | SC | SC | SC | | | | | |
| GOLDENISO/35 XTRAFLEX | | | | | SC | SC | SC | SC | SC | SC | SC | SC | | | | | |
| GOLDENISO/42 XTRAFLEX | | | SC | | SC | SC | SC | SC | SC | SC | SC | | | | | | |
| GOLDENMINE | | | | | | | | | | | | | | | | SC | |
| HERCULES/HT | | | | | | | | | | | SC | SC | SC | | | | |
| HYDROROPE | | | | | | | | | | | SC | SC | SC | | | | |
| INFINITY | | | SC | SC | SC | SC | SC | SC | | | | | | | | | |
| GOLDENISO/21 ANTIWEAR | | | | | | | | | | | | | | | | | |
| GOLDENISO/28 ANTIWEAR | | | | | | | | | | | | | | | | | |
| XTRAFLOW/2WB | | | | | | | | | | | | | | | | | |
| XTRAFLOW/4WS | | | | | | | | | | | | | | | | | |
| XTRAFLOW/HT | | | | | | | | | | | | | | | XT | XT | XT |
| ROCKMASTER/2 PLUS SUPER-AW | | | | | | | | | | | | | | | | | |
| FOREMASTER/21 | | | | | | | | | | | | | | | | | |
| FOREMASTER/28 | | | | | | | | | | | | | | | | | |
| FOREMASTER/35 | | | | | | | | | | | | | | | | | |
| FOREMASTER/42 | | | | | | | | | | | | | | | | | |
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| RANGE | HOSE | HOSE STRUCTURE | NORM | KEY PERFORMANCE | PAGE |
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|-----------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 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 |
| ANACONDA | | | | | | | 420 | | 420 | | 420 | | 420 | | | | | | | |
| ASTRO/2 | | 75 | 68 | 63 | 58 | 50 | 45 | | 40 | | 35 | | | | | | | | | |
| ASTRO/3 | | 145 | 130 | 110 | 93 | 80 | 70 | | 55 | | 45 | | 40 | | 33 | | | | | |
| COVER | 210 | 210 | 157 | 140 | 122 | 105 | | 56 | | 43 | | 35 | | 24 | | | | | | |
| CRYOFLEX/21 | | | | | | 210 | 210 | | | | | | | | | | | | | |
| CRYOFLEX/35 | | 350 | | 350 | 350 | | 350 | | 350 | | 350 | | | | | | | | | |
| CRYOFLEX/42 | | | | | | | 420 | | 420 | | | | | | 420 | | | | | |
| DIAMONDSPIR | | | | | | | 560 | | 560 | | 525 | | 475 | | 420 | | | | | |
| DIAMONDSPIR/14 | | | | | | | | | | | | | | | | | | 140 | | |
| DIAMONDSPIR/17 | | | | | | | | | | | | | | | | | | 170 | 170 | |
| DIAMONDSPIR/21 | | | | | | | | | | | | | | | | | 210 | 210 | | |
| DIAMONDSPIR/35 | | | | | | | | | | | | | | | | | 350 | 350 | | |
| DIAMONDSPIR/62 | | | | | | | | | | | 621 | | | | | | | | | |
| 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 | | | | | |
| FIREND | | 225 | | 180 | 160 | | 105 | | 88 | | | | | | | | | | | |
| FOREMASTER/21 | | 210 | 210 | 210 | 210 | 210 | 210 | | 210 | | | | | | | | | | | |
| FOREMASTER/28 | | 280 | 280 | 280 | 280 | 280 | 280 | | | | | | | | | | | | | |
| FOREMASTER/35 | | | | | | | 350 | | 350 | | 350 | | | | | | | | | |
| FOREMASTER/42 | | | | | | | 420 | | 420 | | | | | | 420 | | | | | |
| GOLDENARMOUR | | | | 345 | 345 | 345 | 345 | | 345 | | 345 | | 345 | | 345 | | | | | |
| GOLDENGUARD/3000 | | | | | | | 207 | | 207 | | | | | | | | | | | |
| GOLDENGUARD/5000 | | | | 345 | 345 | 345 | 345 | | 345 | | 345 | | 345 | | 345 | | | | | |
| GOLDENISO/14 PILOT | 140 | 140 | 140 | 140 | 140 | | | | | | | | | | | | | | | |
| GOLDENISO/21 ANTIWEAR | 210 | 210 | 210 | 210 | 210 | 210 | 210 | | 210 | | | | | | | | | | | |
| GOLDENISO/28 ANTIWEAR | | 280 | 280 | 280 | 280 | 280 | 280 | | | | | | | | | | | | | |
| GOLDENISO/38 LONGLIFE | | | | | | | 380 | | 380 | | 380 | | | | | | | | | |
| GOLDENISO/45 LONGLIFE | | 460 | | | | 460 | 460 | | 460 | | 450 | | 450 | | | | | | | |
| 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 | | 420 | | 420 | | | | | |
| GOLDENMINE | | | | | | | | | | | | | | | | | 350 | | | |
| HARVESTER/17 | | 210 | 210 | 210 | 210 | | | | | | | | | | | | | | | |
| HERCULES/HT | | | | | | | | | | | 420 | | 420 | | 420 | | | | | |
| HYDROROPE | | | | | | | | | | | 420 | | 420 | | | | | | | |
| INFINITY | | 450 | 400 | 400 | 360 | 320 | 320 | | 225 | | | | | | | | | | | |
| JACKMASTER/70 | | 700 | | 700 | | | | | | | | | | | | | | | | |
| LUBEMASTER | | 210 | | 210 | | | | | | | | | | | | | | | | |
| LYTE-FLEX | | 350 | 297 | 280 | 245 | 210 | 210 | | 140 | | | | | | | | | | | |
| MASTERTEX | | 30 | | 30 | 30 | 30 | | | | | | | | | | | | | | |
| MULTITEX | 35 | 30 | 30 | 30 | 30 | 30 | 30 | | 30 | | | | | | | | | | | |
| PUSHFIT | | 35 | 35 | 35 | 25 | 25 | 21 | | 14 | | | | | | | | | | | |
| ROCKMASTER/1SC | | 260 | 250 | 225 | 190 | 150 | 150 | | 110 | | 75 | | 50 | | 50 | | | | | |

| HOSE SIZE | WORKING PRESSURE (bar) | | | | | | | | | | | | | | | | | | | |
|-----------------------------|------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 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 |
| ROCKMASTER/2SC | 420 | 400 | 350 | 330 | 275 | 250 | 245 | | 210 | | 140 | | 100 | | 90 | | 70 | 45 | | |
| 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 SUPER A/W | | 450 | | 400 | 362 | 340 | 310 | | 240 | | 175 | | 146 | | 112 | | | 70 | | |
| ROCKMASTER/4SH | | | | | | 450 | 420 | | 385 | | 350 | | 300 | | 250 | | | | | |
| ROCKMASTER/4SP | | 485 | | 450 | 420 | 380 | 380 | | 320 | | 210 | | 185 | | 175 | | | | | |
| 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 | | | | | | | |
| SAFEMASTER/2SC | | 400 | 350 | 350 | 275 | 250 | 245 | | 210 | | | | | | | | | | | |
| SAFEMASTER/2SN | | 400 | 350 | 350 | 350 | 250 | 215 | | 175 | | 140 | | 100 | | | | | | | |
| SHIELDMASTER/21 | | 210 | 210 | 210 | 210 | 210 | 210 | | 210 | | | | | | | | | | | |
| SHIELDMASTER/28 | | 280 | 280 | 280 | 280 | 280 | 280 | | 280 | | 280 | | | | | | | | | |
| SHIELDMASTER/35 | | 350 | 350 | 350 | 350 | 350 | 350 | | 350 | | 350 | | 350 | | 350 | | | | | |
| SHIELDMASTER/42 | | 420 | | 420 | 420 | | 420 | | 420 | | 420 | | 420 | | 420 | | | | | |
| SPIRTEX | | | | | | | 21 | | 17 | | 14 | | 11 | | 7 | | 4 | 4 | 3 | 3 |
| SPIRTEX/HT | | | | | | | 25 | | 25 | | 17 | | 17 | | 10 | | 10 | 7 | 5 | 5 |
| SYNERGY | | 450 | | 450 | 420 | | 365 | | 300 | | 210 | | | | | | | | | |
| T°REX | | | | | | | | | | | 43 | | | | | | | | | |
| TRACTOR/1SN | | 225 | 215 | 180 | 160 | | | | | | | | | | | | | | | |
| TRACTOR/2SN | | 400 | 350 | 330 | 275 | | | | | | | | | | | | | | | |
| TWINPOWER 4000 | | | | 280 | 280 | | | | | | | | | | | | | | | |
| TWINPOWER 5000 | | | 350 | 350 | 350 | | | | | | | | | | | | | | | |
| TWINPOWER/PLUS | | | | | 310 | | | | | | | | | | | | | | | |
| XTRAFLOW/2WB | | | | | | | | | | | | | | | | | 105 | 80 | 35 | |
| XTRAFLOW/4WS | | | | | | | | | | | | | | | | | 140 | 105 | 80 | 35 |
| XTRAFLOW/HT | | | | | | | | | | | | | | | | | 35 | 35 | 35 | |
| XTRAFLOW/HTEX | | | | | | | | | | | | | | | | | 35 | | | |

HOSES 12

| | HYDRAULICS, MARINE EQUIPMENT TYPE APPROVALS | | | | | | | | | MINING SAFETY TYPE APPROVALS | | | | GOVERNMENT, SAFETY AND SPECIAL TYPE APPROVALS | |
|-----------------------|---|----|-----|--------|-----|------------------|------|-----|----|------------------------------|------------|------|----|---|-------|
| | ABS | BV | CCS | DNV-GL | KRS | LLOYD'S REGISTER | RINA | MED | NK | MSHA | POLISH "B" | FRAS | MA | Railways EN 44545-2 | CU-TR |
| ANACONDA | | | | | | | | | * | | | | | | * |
| ASTRO/2 | | | | * | | | | | | | | | | | |
| ASTRO/3 | | | | * | | | | | | | | | | | |
| COVER | | | | | | | | | | | | | | | * |
| CPH/2SC | | | | | | | | | * | | | | | | * |
| CRYOFLEX/21 | | | | | | | | | * | | | | | | * |
| CRYOFLEX/35 | | | | | | | | | * | | | | | | * |
| CRYOFLEX/42 | | | | | | | | | * | | | | | | * |
| DIAMONDSPIR | * | | | | | | | | * | | * | * | | | * |
| DIAMONDSPIR/14 | * | | * | * | | | | | * | | * | * | | | * |
| DIAMONDSPIR/17 | | | | | | | | | * | | | | | | * |
| DIAMONDSPIR/21 | * | | * | * | | | | | * | | | * | | | * |
| DIAMONDSPIR/35 | * | | * | * | | | | | * | | * | * | | | * |
| DIAMONDSPIR/62 | | | | | | | | | * | | | | | | * |
| EQUATOR/1 | * | | | * | | * | | * | * | | | | | | * |
| EQUATOR/1 (BLUE) | * | * | | * | | * | | * | * | | | | | | * |
| EQUATOR/2 | * | | | * | | * | | * | * | | | | | | * |
| EQUATOR/2 (BLUE) | * | * | | * | | * | | * | * | | | | | | * |
| FIREND | | | | | | | | | * | | | | | | * |
| FOREMASTER/21 | | | | | | | | | * | | | | | | * |
| FOREMASTER/28 | | | | | | | | | * | | | | | | * |
| FOREMASTER/35 | | | | | | | | | * | | | | | | * |
| FOREMASTER/42 | | | | | | | | | * | | | | | | * |
| GOLDENARMOUR | * | | * | * | | * | | | | | | | | | * |
| GOLDENGUARD/3000 | * | | * | * | | * | | | * | | | | | | * |
| GOLDENGUARD/5000 | * | | * | * | | * | | | * | | | | | | * |
| GOLDENISO/14 PILOT | | | | | | | | | * | | | | | | * |
| GOLDENISO/21 ANTIWEAR | | | | | | | | * | * | | * | | | | * |
| GOLDENISO/28 ANTIWEAR | | | | * | | | | * | * | | * | | | | * |
| GOLDENISO/38 LONGLIFE | | | | | | | | | * | | * | | | | * |
| GOLDENISO/45 LONGLIFE | | | | | | | | | * | | * | | | | * |
| GOLDENISO/21 XTRAFLEX | * | * | | | | * | | * | * | | * | * | | | * |
| GOLDENISO/28 XTRAFLEX | * | * | * | | | * | | * | * | | * | * | | | * |
| GOLDENISO/35 XTRAFLEX | * | * | | * | | * | * | * | * | * | * | * | | | * |
| GOLDENISO/42 XTRAFLEX | * | * | | * | | * | * | * | * | * | * | * | | | * |
| GOLDENMINE | | | | | | | | | * | | | * | | | * |
| HARVESTER/17 | | | | | | * | | | | | | | | | * |
| HERCULES/HT | | | | | | | | | * | | | | | | * |
| HYDROROPE | | | | | | | | | * | | | | | | * |
| INFINITY | | | | | | | | | | | | | | | * |
| JACKMASTER/70 | | | | | | | | | | | | | | | * |
| LUBEMASTER | | | | | | | | | | | | | | | * |
| LYTE-FLEX | | | | | | * | | | | | | | | | * |
| MASTERTEX | | | | | | | | | | | | | | | |

| | HYDRAULICS, MARINE EQUIPMENT TYPE APPROVALS | | | | | | | | | MINING SAFETY TYPE APPROVALS | | | | GOVERNMENT, SAFETY AND SPECIAL TYPE APPROVALS | |
|-----------------------------|---|----|-----|--------|-----|------------------|------|-----|----|------------------------------|------------|------|----|---|-------|
| | ABS | BV | CCS | DNV-GL | KRS | LLOYD'S REGISTER | RINA | MED | NK | MSHA | POLISH "B" | FRAS | MA | Railways EN 44545-2 | CU-TR |
| MULTITEX | | | | | | | | | | | | | | | |
| PUSHFIT | | | | | | | | | | | | | | | |
| ROCKMASTER/1SC | * | | * | * | | * | | | | * | | | | | * |
| ROCKMASTER/2SC | * | * | * | * | | * | * | * | * | * | * | * | * | | * |
| ROCKMASTER/1SN | * | * | * | * | * | * | * | * | * | * | * | * | * | | * |
| ROCKMASTER/2SN | * | * | * | * | * | * | * | * | * | * | * | * | * | | * |
| ROCKMASTER/2ST | * | * | | | | * | * | | | * | * | * | | | * |
| ROCKMASTER/2 PLUS SUPER A/W | | | | | | | | | | * | | | | | * |
| ROCKMASTER/4SH | * | * | * | * | * | * | * | * | * | * | * | * | * | | * |
| ROCKMASTER/4SP | * | * | * | * | * | * | * | * | * | * | * | * | * | * | * |
| ROCKMASTER/12 | * | * | | * | | * | | * | * | * | * | * | * | | * |
| ROCKMASTER/13 | * | * | * | * | | * | * | * | | * | * | * | * | | * |
| ROCKMASTER/15 | * | * | * | * | | * | * | * | | * | * | * | * | | * |
| SAFEMASTER/2SC | | | | | | | | | | | | | | * | * |
| SAFEMASTER/2SN | | | | | | | | | | | | | | * | * |
| SHIELDMASTER/21 | | | | | | | | | | * | | * | | | * |
| SHIELDMASTER/28 | | | | | | | | | | * | | * | | | * |
| SHIELDMASTER/35 | | | | | | | | | | * | | * | | | * |
| SHIELDMASTER/42 | | | | | | | | | | * | | * | | | * |
| SPIRTEX | | | | | | | | | | | | | | | * |
| SPIRTEX/HT | | | | | | | | | | | | | | | * |
| SYNERGY | | | | | | | | | | * | | | | | * |
| T°REX | | | | | | | | | | | | | | | * |
| TRACTOR/1SN | | * | | * | * | | | * | * | * | | | | | * |
| TRACTOR/2SN | | * | | * | * | | | * | * | * | | | | | * |
| TWINPOWER 4000 | | | | | | | | | | | | | | | * |
| TWINPOWER 5000 | | | | | | | | | | * | | | | | * |
| TWINPOWER/PLUS | | | | | | | | | | * | | | | | * |
| XTRAFLOW/2WB | * | | | * | | | | | | * | | * | * | | * |
| XTRAFLOW/4WS | * | | | * | | | | | | * | | | | | * |
| XTRAFLOW/HT | * | | | * | | | | | | * | | | | | * |



GLOBAL STD. ● HI-GRADE ● PREMIUM

TRACTOR/1SN

INTEGRATED, RELIABLE HOSE ASSEMBLY



HOSES 16

| 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 | Std 1 | Std 2 |
| H02004A06* | 6 | -4 | 1/4" | 11.2 | 0.44 | 13.2 | 0.52 | 225 | 3,260 | 900 | 13,050 | 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 | 3,110 | 850 | 12,320 | 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 | 2,610 | 720 | 10,440 | 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 | 2,320 | 640 | 9,280 | 178 | 7.01 | 400 | 0.27 | MF+M03400-08 | OPF-08 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

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

TYPE APPROVALS

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

TRACTOR/2SN

INTEGRATED, RELIABLE HOSE ASSEMBLY



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 | Std 1 | Std 2 |
| H01027006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.7 | 0.58 | 400 | 5,800 | 1,600 | 23,200 | 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 | 5,070 | 1,400 | 20,300 | 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 | 4,780 | 1,320 | 19,140 | 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 | 3,980 | 1,100 | 15,950 | 178 | 7.01 | 620 | 0.42 | MF+M03400-08 | OPF-08 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Weather 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; DNV-GL(MED)

LYTE-FLEX

COMPACT WIRE BRAID, INTEGRATED RELIABLE HOSE ASSEMBLY



HOSES 18

| 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 | Std 1 | Std 2 |
| H01084006* | 6 | -4 | 1/4" | 11.6 | 0.46 | 13.2 | 0.52 | 350 | 5,070 | 1,400 | 20,300 | 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 | 4,300 | 1,190 | 17,250 | 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 | 4,060 | 1,120 | 16,240 | 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 | 3,550 | 980 | 14,210 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 120 | 4.72 | 790 | 0.53 | MF+M03400-12 | OPF-12 |
| H01084025* | 25 | -16 | 1" | 32.3 | 1.27 | 34.6 | 1.36 | 140 | 2,030 | 560 | 8,120 | 150 | 5.91 | 1,090 | 0.73 | MF+M03400-16 | OPF-16 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

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

TYPE APPROVALS

CU-TR; LR

HARVESTER/17

INTEGRATED, RELIABLE HOSE ASSEMBLY



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 | Std 1 | Std 2 |
| H01056006* | 6 | -4 | 1/4" | 10.2 | 0.40 | 12.0 | 0.47 | 210 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 90 | 3.54 | 420 | 0.28 | MF+M03400-08 | OPF-08 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

SAE 100 R17; ISO 11237 R17

TYPE APPROVALS

CU-TR; LR

COVER

INTEGRATED, RELIABLE HOSE ASSEMBLY



HOSES

20

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 | Std 1 | Std 2 |
| H05002005* | 5 | -4 | 3/16" | - | - | 13.2 | 0.52 | 210 | 3,040 | 840 | 12,180 | 75 | 2.95 | 220 | 0.15 | MF+M00310-03 | OPF-03 |
| H05002006* | 6 | -5 | 1/4" | - | - | 14.8 | 0.58 | 210 | 3,040 | 840 | 12,180 | 85 | 3.35 | 260 | 0.17 | MF+M00310-04 | OPF-04 |
| H05002008* | 8 | -6 | 5/16" | - | - | 17.1 | 0.67 | 157 | 2,270 | 630 | 9,130 | 100 | 3.94 | 305 | 0.20 | MF+M00310-05 | OPF-05 |
| H05002010* | 10 | -8 | 13/32" | - | - | 19.4 | 0.76 | 140 | 2,030 | 560 | 8,120 | 115 | 4.53 | 365 | 0.25 | MF+M00310-06 | OPF-06 |
| H05002012* | 12 | -10 | 1/2" | - | - | 23.3 | 0.92 | 122 | 1,760 | 490 | 7,100 | 140 | 5.51 | 495 | 0.33 | MF+M00310-08 | OPF-08 |
| H05002016* | 16 | -12 | 5/8" | - | - | 27.3 | 1.07 | 105 | 1,520 | 420 | 6,090 | 165 | 6.50 | 650 | 0.44 | MF+M00310-10 | |
| H05002022* | 22 | -16 | 7/8" | - | - | 31.2 | 1.23 | 56 | 810 | 224 | 3,240 | 185 | 7.28 | 600 | 0.40 | | |
| H05002028* | 28 | -20 | 1.1/8" | - | - | 38.0 | 1.50 | 43 | 620 | 175 | 2,530 | 229 | 9.02 | 780 | 0.52 | | |
| H05002035* | 35 | -24 | 1.3/8" | - | - | 44.3 | 1.74 | 35 | 500 | 140 | 2,030 | 265 | 10.43 | 1,010 | 0.68 | | |
| H05002046* | 46 | -32 | 1.13/16" | - | - | 56.1 | 2.21 | 24 | 340 | 98 | 1,420 | 335 | 13.19 | 1,400 | 0.94 | | |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °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

SAE 100 R4 SUCTION AND DELIVERY HOSE



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 | Std 1 | Std 2 |
| H80002019* | 19 | -12 | 3/4" | - | - | 29.0 | 1.14 | 21 | 300 | 84 | 1,210 | 80 | 3.15 | 533 | 0.36 | MF+M00321-12 | |
| H80002025* | 25 | -16 | 1" | - | - | 35.5 | 1.40 | 17 | 240 | 70 | 1,010 | 100 | 3.94 | 666 | 0.45 | MF+M00930-16 | |
| H80002031* | 31 | -20 | 1.1/4" | - | - | 42.5 | 1.67 | 14 | 200 | 56 | 810 | 130 | 5.12 | 812 | 0.55 | MF+M00920-20 | |
| H80002038* | 38 | -24 | 1.1/2" | - | - | 49.0 | 1.93 | 11 | 160 | 44 | 630 | 170 | 6.69 | 1,047 | 0.70 | MF+M00910-24 | |
| H80002051* | 51 | -32 | 2" | - | - | 62.0 | 2.44 | 7 | 100 | 28 | 400 | 200 | 7.87 | 1,414 | 0.95 | MF+M00910-32 | |
| H80002063* | 63 | -40 | 2.1/2" | - | - | 76.0 | 2.99 | 4 | 60 | 17 | 240 | 235 | 9.25 | 2,357 | 1.58 | MF+M03400-40 | |
| H80002076* | 76 | -48 | 3" | - | - | 88.0 | 3.46 | 4 | 60 | 17 | 240 | 300 | 11.81 | 2,712 | 1.82 | MF+M03400-48 | |
| H80002089* | 89 | -56 | 3.1/2" | - | - | 103.5 | 4.07 | 3 | 40 | 12 | 170 | 350 | 13.78 | 3,465 | 2.33 | MF+M03400-56 | |
| H80002102* | 102 | -64 | 4" | - | - | 115.0 | 4.53 | 3 | 20 | 12 | 170 | 400 | 15.75 | 3,832 | 2.58 | MF+M03400-64 | |

KEY FEATURES

- Hardwall hose used for the suction and delivery of hydraulic oils
- High robustness of hose structure
- Long lasting in severe applications
- Resistance to Vacuum
- Improved minimum bend radius
- Max. length: 60m

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

NBR synthetic rubber

REINFORCEMENT

High tensile synthetic cord, helix body wire

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

SAE J517 100 R4, Manuli® Design; two-thirds the SAE J517 100R4 minimum bend radius

TYPE APPROVALS

CU-TR

MULTITEX

INTEGRATED, RELIABLE HOSE ASSEMBLY



HOSES 22

| 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 | Std 1 | Std 2 |
| H09067005* | 5 | -3 | 3/16" | 0.0 | 0.00 | 11.0 | 0.43 | 35 | 500 | 140 | 2,030 | 35 | 1.38 | 90 | 0.06 | MF+M00820-03 | |
| H09067006* | 6 | -4 | 1/4" | 0.0 | 0.00 | 12.6 | 0.50 | 30 | 430 | 120 | 1,740 | 45 | 1.77 | 115 | 0.08 | MF+M00830-04 | |
| H09067008* | 8 | -5 | 5/16" | 0.0 | 0.00 | 14.1 | 0.56 | 30 | 430 | 120 | 1,740 | 65 | 2.56 | 140 | 0.09 | MF+M00830-05 | |
| H09067010* | 10 | -6 | 3/8" | 0.0 | 0.00 | 15.8 | 0.62 | 30 | 430 | 120 | 1,740 | 75 | 2.95 | 160 | 0.11 | MF+M00820-06 | |
| H09067012* | 12 | -8 | 1/2" | 0.0 | 0.00 | 19.4 | 0.76 | 30 | 430 | 120 | 1,740 | 90 | 3.54 | 210 | 0.14 | MF+M00820-08 | |
| H09073016* | 16 | -10 | 5/8" | 0.0 | 0.00 | 23.0 | 0.91 | 30 | 430 | 120 | 1,740 | 115 | 4.53 | 290 | 0.19 | MF+M00820-10 | |
| H09073019* | 19 | -12 | 3/4" | 0.0 | 0.00 | 26.0 | 1.02 | 30 | 430 | 120 | 1,740 | 140 | 5.51 | 325 | 0.22 | MF+M00820-12 | |
| H09073025* | 25 | -16 | 1" | 0.0 | 0.00 | 32.0 | 1.26 | 30 | 430 | 120 | 1,740 | 150 | 5.91 | 400 | 0.27 | MF+M00820-16 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high resistance textile braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

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

ASTRO/2

INTEGRATED, RELIABLE HOSE ASSEMBLY



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 | Std 1 | Std 2 |
| H09045006* | 6 | -4 | 1/4" | - | - | 13.0 | 0.51 | 75 | 1,080 | 300 | 4,350 | 40 | 1.57 | 125 | 0.08 | MF+M00830-04 | |
| H09045008* | 8 | -5 | 5/16" | - | - | 14.6 | 0.57 | 68 | 980 | 272 | 3,940 | 50 | 1.97 | 150 | 0.10 | MF+M00830-05 | |
| H09045010* | 10 | -6 | 3/8" | - | - | 16.1 | 0.63 | 63 | 910 | 252 | 3,650 | 60 | 2.36 | 180 | 0.12 | MF+M00820-06 | |
| H09045012* | 12 | -8 | 1/2" | - | - | 19.2 | 0.76 | 58 | 840 | 232 | 3,360 | 70 | 2.76 | 220 | 0.15 | MF+M00820-08 | |
| H09045016* | 16 | -10 | 5/8" | - | - | 23.6 | 0.93 | 50 | 720 | 200 | 2,900 | 90 | 3.54 | 290 | 0.19 | MF+M00820-10 | |
| H09045019* | 19 | -12 | 3/4" | - | - | 26.5 | 1.04 | 45 | 650 | 180 | 2,610 | 110 | 4.33 | 360 | 0.24 | MF+M00820-12 | |
| H09045025* | 25 | -16 | 1" | - | - | 33.4 | 1.31 | 40 | 580 | 160 | 2,320 | 130 | 5.12 | 440 | 0.30 | MF+M00820-16 | |
| H09045032* | 31 | -20 | 1.1/4" | - | - | 41.5 | 1.63 | 35 | 500 | 140 | 2,030 | 140 | 5.51 | 650 | 0.44 | MF+M00820-20 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high resistance textile braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

EN 854 2TE; ISO 4079 2TE

TYPE APPROVALS

DNV-GL

ASTRO/3

INTEGRATED, RELIABLE HOSE ASSEMBLY



HOSES

24

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 | Std 1 | Std 2 |
| H09046006* | 6 | -4 | 1/4" | - | - | 14.2 | 0.56 | 145 | 2,100 | 580 | 8,410 | 45 | 1.77 | 150 | 0.10 | MF+M00310-04 | |
| H09046008* | 8 | -5 | 5/16" | - | - | 16.6 | 0.65 | 130 | 1,880 | 520 | 7,540 | 55 | 2.17 | 210 | 0.14 | MF+M00310-05 | |
| H09046010* | 10 | -6 | 3/8" | - | - | 18.2 | 0.72 | 110 | 1,590 | 440 | 6,380 | 70 | 2.76 | 230 | 0.15 | MF+M00310-06 | |
| H09046012* | 12 | -8 | 1/2" | - | - | 21.5 | 0.85 | 93 | 1,340 | 372 | 5,390 | 85 | 3.35 | 290 | 0.19 | MF+M00310-08 | |
| H09046016* | 16 | -10 | 5/8" | - | - | 25.6 | 1.01 | 80 | 1,160 | 320 | 4,640 | 105 | 4.13 | 395 | 0.27 | MF+M00310-10 | |
| H09046019* | 19 | -12 | 3/4" | - | - | 28.8 | 1.13 | 70 | 1,010 | 280 | 4,060 | 130 | 5.12 | 455 | 0.31 | MF+M00321-12 | |
| H09046025* | 25 | -16 | 1" | - | - | 35.4 | 1.39 | 55 | 790 | 220 | 3,190 | 150 | 5.91 | 580 | 0.39 | MF+M00310-16 | |
| H09046032* | 31 | -20 | 1.1/4" | - | - | 42.5 | 1.67 | 45 | 650 | 180 | 2,610 | 190 | 7.48 | 740 | 0.50 | MF+M00310-20 | |
| H09046040* | 38 | -24 | 1.1/2" | - | - | 49.4 | 1.94 | 40 | 580 | 160 | 2,320 | 240 | 9.45 | 920 | 0.62 | MF+M00910-24 | |
| H09046051* | 51 | -32 | 2" | - | - | 62.2 | 2.45 | 33 | 470 | 132 | 1,910 | 300 | 11.81 | 1,140 | 0.77 | MF+M00910-32 | |

KEY FEATURES

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

125 °C, 257 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high resistance textile braids

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

EN 854 3TE; ISO 4079 3TE

TYPE APPROVALS

DNV-GL



GLOBAL STD. • HI-GRADE • PREMIUM

GOLDENISO/14 PILOT

COMPACTNESS AND FLEXIBILITY



HOSES

26

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 | Std 1 | Std 2 |
| H01160005* | 5 | -3 | 3/16" | 8.7 | 0.34 | 10.5 | 0.41 | 140 | 2,030 | 560 | 8,120 | 20 | 0.79 | 144 | 0.10 | MN+M02400-03 | MF+M03300-03 |
| H01160006* | 6 | -4 | 1/4" | 9.9 | 0.39 | 11.5 | 0.45 | 140 | 2,030 | 560 | 8,120 | 25 | 0.98 | 160 | 0.11 | MN+M02400-04 | MF+M03300-04 |
| H01160008* | 8 | -5 | 5/16" | 11.5 | 0.45 | 13.1 | 0.52 | 140 | 2,030 | 560 | 8,120 | 30 | 1.18 | 183 | 0.12 | MN+M02400-05 | MF+M03300-05 |
| H01160010 | 10 | -6 | 3/8" | 13.2 | 0.52 | 14.8 | 0.58 | 140 | 2,030 | 560 | 8,120 | 40 | 1.57 | 220 | 0.15 | MN+M02400-06 | MF+M03300-06 |
| H01160012* | 12 | -8 | 1/2" | 16.2 | 0.64 | 18.0 | 0.71 | 140 | 2,030 | 560 | 8,120 | 50 | 1.97 | 277 | 0.19 | MN+M02400-08 | MF+M03300-08 |

KEY FEATURES

- Compact dimensions
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752 Type C

TYPE APPROVALS

MSHA; CU-TR

GOLDENISO/21 ANTIWEAR

OUTSTANDING ABRASION RESISTANCE



HOSES
27

| 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 | Std 1 | Std 2 |
| H01125A05* | 5 | -3 | 3/16" | 9.1 | 0.36 | 11.1 | 0.44 | 210 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 120 | 4.72 | 780 | 0.52 | MF+M03400-12 | OPF-12 |
| H01125025* | 25 | -16 | 1" | 33.0 | 1.30 | 35.2 | 1.39 | 210 | 3,040 | 840 | 12,180 | 150 | 5.91 | 1,120 | 0.75 | MF+M03400-16 | OPF-16 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

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

COVER

S.H.A.R.C.
Synthetic rubber with very high abrasion, ozone and weather resistance

APPLICABLE SPECS

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

TYPE APPROVALS

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

GOLDENISO/28 ANTIWEAR

OUTSTANDING ABRASION RESISTANCE



HOSES

28

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 | Std 1 | Std 2 |
| H01126006* | 6 | -4 | 1/4" | 11.6 | 0.46 | 13.2 | 0.52 | 280 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 120 | 4.72 | 1,060 | 0.71 | MF+M03400-12 | OPK-12 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

Two wire braids

COVER

S.H.A.R.C.
Synthetic rubber with very high abrasion, ozone and weather resistance

APPLICABLE SPECS

ISO 18752 grade A; SAE J517 Type 100R19

TYPE APPROVALS

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

GOLDENISO/21 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



HOSES 29

| 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 | Std 1 | Std 2 |
| H10093031* | 31 | -20 | 1.1/4" | 41.7 | 1.64 | 44.5 | 1.75 | 210 | 3,040 | 840 | 12,180 | 210 | 8.27 | 2,071 | 1.39 | MF+M00920-20 | OPK-20 |
| H10093038* | 38 | -24 | 1.1/2" | 48.9 | 1.93 | 52.1 | 2.05 | 210 | 3,040 | 840 | 12,180 | 260 | 10.24 | 2,989 | 2.01 | IP+M01500-24 | SP+M05400-24 |
| H10093051* | 51 | -32 | 2" | 63.2 | 2.49 | 66.8 | 2.63 | 210 | 3,040 | 840 | 12,180 | 330 | 12.99 | 4,311 | 2.90 | IP+M01500-32 | SP+M05400-32 |

KEY FEATURES

- Bend radius which exceeds the standard requirements by -50%
- Good flexibility in the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752 Grade D (with skive / double-skive fittings)
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

4 high tensile steel spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

TYPE APPROVALS

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

GOLDENISO/28 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



HOSES

30

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 | Std 1 | Std 2 |
| H10095010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 18.9 | 0.74 | 280 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 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 | 4,060 | 1,120 | 16,240 | 120 | 4.72 | 1,040 | 0.70 | MF+M00920-12 | OPK-12 |
| H10095025* | 25 | -16 | 1" | 34.1 | 1.34 | 36.5 | 1.44 | 280 | 4,060 | 1,120 | 16,240 | 150 | 5.91 | 1,530 | 1.03 | MF+M00930-16 | OPK-16 |
| H10095031* | 31 | -20 | 1.1/4" | 41.7 | 1.64 | 44.5 | 1.75 | 280 | 4,060 | 1,120 | 16,240 | 210 | 8.27 | 2,160 | 1.45 | MF+M00920-20 | OPK-20 |
| H10095038* | 38 | -24 | 1.1/2" | 48.9 | 1.93 | 52.1 | 2.05 | 280 | 4,060 | 1,120 | 16,240 | 280 | 11.02 | 2,994 | 2.01 | IP+M01500-24 | SP+M05400-24 |
| H10095051* | 51 | -32 | 2" | 63.9 | 2.52 | 67.5 | 2.66 | 280 | 4,060 | 1,120 | 16,240 | 350 | 13.78 | 4,633 | 3.11 | IP+M01500-32 | SP+M05400-32 |

KEY FEATURES

- Bend radius which exceeds 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 Grade D (with skive / double-skive fittings)
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

4 high tensile steel spirals

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-C/D; JIS K6349-3

TYPE APPROVALS

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

GOLDENISO/35 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



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 | Std 1 | Std 2 |
| H10096010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 18.9 | 0.74 | 350 | 5,070 | 1,400 | 20,300 | 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 | 5,070 | 1,400 | 20,300 | 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 | 5,070 | 1,400 | 20,300 | 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 | 5,070 | 1,400 | 20,300 | 120 | 4.72 | 1,220 | 0.82 | IP+M01500-12 | SP+M05400-12 |
| H10096025* | 25 | -16 | 1" | 34.6 | 1.36 | 37.0 | 1.46 | 350 | 5,070 | 1,400 | 20,300 | 150 | 5.91 | 1,800 | 1.21 | IP+M01500-16 | SP+M05400-16 |
| H10096031* | 31 | -20 | 1.1/4" | 42.1 | 1.66 | 44.9 | 1.77 | 350 | 5,070 | 1,400 | 20,300 | 230 | 9.06 | 2,340 | 1.57 | IP+M01500-20 | SP+M05400-20 |
| H10096038* | 38 | -24 | 1.1/2" | 52.9 | 2.08 | 56.1 | 2.21 | 350 | 5,070 | 1,400 | 20,300 | 300 | 11.81 | 4,165 | 2.80 | IP+M01600-24 | SP+M05500-24 |
| H10096051* | 51 | -32 | 2" | 66.8 | 2.63 | 70.4 | 2.77 | 350 | 5,070 | 1,400 | 20,300 | 360 | 14.17 | 6,161 | 4.14 | IP+M01800-32 | SP+M05500-32 |

KEY FEATURES

- Bend radius which exceeds 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
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 10-31). Six high tensile steel spirals (DN 38, 51).

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-C/D, JIS K6349-3, meets and exceed EN 856-R13 & ISO 3862-R13 performance

TYPE APPROVALS

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

GOLDENISO/42 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



HOSES

32

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 | Std 1 | Std 2 |
| H10097006* | 6 | -4 | 1/48" | 11.3 | 0.44 | 13.1 | 0.52 | 420 | 6,090 | 1,680 | 24,360 | 45 | 1.77 | 284 | 0.19 | MF+M00120-04 | |
| H10097010* | 10 | -6 | 3/8" | 17.6 | 0.69 | 20.0 | 0.79 | 420 | 6,090 | 1,680 | 24,360 | 100 | 3.94 | 688 | 0.46 | MF+M00910-06 | |
| H10097012* | 12 | -8 | 1/2" | 20.3 | 0.80 | 22.7 | 0.89 | 420 | 6,090 | 1,680 | 24,360 | 120 | 4.72 | 807 | 0.54 | MF+M00910-08 | |
| H10097016* | 16 | -10 | 5/8" | 23.9 | 0.94 | 26.4 | 1.04 | 420 | 6,090 | 1,680 | 24,360 | 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 | 6,090 | 1,680 | 24,360 | 150 | 5.91 | 1,285 | 0.86 | IP+M01500-12 | SP+M05400-12 |
| H10097025* | 25 | -16 | 1" | 34.8 | 1.37 | 37.3 | 1.47 | 420 | 6,090 | 1,680 | 24,360 | 210 | 8.27 | 2,007 | 1.35 | IP+M01500-16 | SP+M05400-16 |
| H10097031* | 31 | -20 | 1.1/4" | 46.3 | 1.82 | 49.5 | 1.95 | 420 | 6,090 | 1,680 | 24,360 | 260 | 10.24 | 3,663 | 2.46 | IP+M01600-20 | SP+M05500-20 |
| H10097038* | 38 | -24 | 1.1/2" | 53.2 | 2.09 | 56.4 | 2.22 | 420 | 6,090 | 1,680 | 24,360 | 310 | 12.20 | 4,450 | 2.99 | IP+M01600-24 | SPGX+M05500-24GX |
| H10097051* | 51 | -32 | 2" | 68.9 | 2.71 | 72.4 | 2.85 | 420 | 6,090 | 1,680 | 24,360 | 500 | 19.69 | 7,310 | 4.91 | IS+M02700-32 | SPGX+M05500-32GX |

KEY FEATURES

- Bend radius which exceeds 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids (DN 6). Four high tensile steel spirals (DN 10-31). Six high tensile steel spirals (DN 38-51).

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-C (Grade C "Plus" approved 1 Mil impulse cycles with Interlock Plus fittings), meets and exceed ISO 3862-R15 performance

TYPE APPROVALS

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

REMARKS



- Size -20 is qualified to reduced bend radius with Interlock Plus fitting solution
-20: MBR = 210mm

GOLDENISO/38 LONGLIFE

HIGH FATIGUE RESISTANCE



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 | Std 1 | Std 2 |
| H10098006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 380 | 5,510 | 1,680 | 24,360 | 45 | 1.77 | 284 | 0.19 | MF+M00120-04 | |
| H10098008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.7 | 0.58 | 380 | 5,510 | 1,680 | 24,360 | 55 | 2.17 | 318 | 0.21 | MF+M00120-05 | |
| H10098010* | 10 | -6 | 3/8" | 15.5 | 0.61 | 17.1 | 0.67 | 380 | 5,510 | 1,680 | 24,360 | 65 | 2.56 | 440 | 0.30 | MF+M00120-06 | |
| H10098012* | 12 | -8 | 1/2" | 18.6 | 0.73 | 20.6 | 0.81 | 380 | 5,510 | 1,680 | 24,360 | 80 | 3.15 | 573 | 0.39 | MF+M00120-08 | |
| H10098019* | 19 | -12 | 3/4" | 27.7 | 1.09 | 32.0 | 1.26 | 380 | 5,510 | 1,680 | 24,360 | 170 | 6.69 | 1,410 | 0.95 | IP+M01500-12 | |
| H10098025* | 25 | -16 | 1" | 34.8 | 1.37 | 38.1 | 1.50 | 380 | 5,510 | 1,680 | 24,360 | 220 | 8.66 | 1,964 | 1.32 | IP+M01500-16 | |
| H10098031* | 31 | -20 | 1.1/4" | 46.3 | 1.82 | 49.5 | 1.95 | 380 | 5,510 | 1,680 | 24,360 | 267 | 10.51 | 3,663 | 2.46 | IP+M01600-20 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids (DN 6 - 12), four high tensile steel wire spirals (DN 19 & 25), six high tensile steel wire spirals (DN 31)

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design: DN 6 to 12 exceeds ISO 18752-C extension; DN 19 to 31 exceeds SAE J517 Type 100R13; ISO 3862 R13; ISO 18752-C-D extension

TYPE APPROVALS

CU-TR; MSHA; FRAS

GOLDENISO/45 LONGLIFE

HIGH FATIGUE RESISTANCE



HOSES

34

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 | Std 1 | Std 2 |
| H10089006* | 6 | -4 | 1/4" | 14.7 | 0.58 | 17.1 | 0.67 | 460 | 6,670 | 1,840 | 26,680 | 125 | 4.92 | 567 | 0.38 | IP+M01500-04 | |
| H10089016* | 16 | -10 | 5/8" | 25.5 | 1.00 | 28.5 | 1.12 | 460 | 6,670 | 1,840 | 26,680 | 250 | 9.84 | 1,290 | 0.87 | IP+M01500-10 | |
| H10089019* | 19 | -12 | 3/4" | 28.4 | 1.12 | 32.0 | 1.26 | 460 | 6,670 | 1,840 | 26,680 | 280 | 11.02 | 1,530 | 1.03 | IP+M01500-12 | |
| H10089025* | 25 | -16 | 1" | 35.4 | 1.39 | 38.2 | 1.50 | 460 | 6,670 | 1,840 | 26,680 | 340 | 13.39 | 2,150 | 1.44 | IP+M01500-16 | |
| H10089031* | 31 | -20 | 1.1/4" | 46.3 | 1.82 | 49.5 | 1.95 | 450 | 6,520 | 1,800 | 26,100 | 420 | 16.54 | 3,790 | 2.55 | IP+M01800-20 | |
| H10089038* | 38 | -24 | 1.1/2" | 54.2 | 2.13 | 58.0 | 2.28 | 450 | 6,520 | 1,800 | 26,100 | 450 | 17.72 | 5,002 | 3.36 | IP+M01600-24 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel wire spirals (DN 6-25). Six high tensile steel wire spirals (DN 31-38)

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design exceeds SAE J517 Type 100R15; ISO 3862 R15; ISO 18752-D extension

TYPE APPROVALS

CU-TR; MSHA; FRAS

SHIELDMASTER/21

OUTSTANDING WEAR RESISTANCE



HOSES 35

| 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 | Std 1 | Std 2 |
| H01154006* | 6 | -4 | 1/4" | 10,2 | 0,40 | 12,2 | 0,48 | 210 | 3040 | 840 | 12180 | 50 | 1,97 | 188 | 0,13 | MF+M00120-04 | OPF-04 |
| H01154008* | 8 | -5 | 5/16" | 11,5 | 0,45 | 13,6 | 0,54 | 210 | 3040 | 840 | 12180 | 55 | 2,17 | 212 | 0,14 | MF+M00120-05 | OPF-05 |
| H01154010* | 10 | -6 | 3/8" | 14,4 | 0,57 | 16,0 | 0,63 | 210 | 3040 | 840 | 12180 | 65 | 2,56 | 306 | 0,21 | MF+M00120-06 | OPF-06 |
| H01154012* | 12 | -8 | 1/2" | 18,1 | 0,71 | 20,1 | 0,79 | 210 | 3040 | 840 | 12180 | 90 | 3,54 | 444 | 0,30 | MF+M00120-08 | OPK-08 |
| H01154016* | 16 | -10 | 5/8" | 22,2 | 0,87 | 24,2 | 0,95 | 210 | 3040 | 840 | 12180 | 100 | 3,94 | 624 | 0,42 | MF+M00120-10 | OPF-10 |
| H01154019* | 19 | -12 | 3/4" | 25,6 | 1,01 | 27,7 | 1,09 | 210 | 3040 | 840 | 12180 | 120 | 4,72 | 771 | 0,52 | MF+M00120-12 | OPF-12 |
| H01154025* | 25 | -16 | 1" | 33,0 | 1,30 | 34,8 | 1,37 | 210 | 3040 | 840 | 12180 | 150 | 5,91 | 1,193 | 0,80 | MF+M00130-16 | OPF-16 |

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structure
- Very low bend radius makes this product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- Low, medium pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing amongst 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
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile wire braid (DN 6 to 12), two high tensile wire braids (DN 16 to 25)

COVER

SHIELD
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752-B

TYPE APPROVALS

MSHA, FRAS (requested); CU-TR

REMARKS



- Applications with material projections 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/28

OUTSTANDING WEAR RESISTANCE



HOSES 36

| 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 | Std 1 | Std 2 |
| H01155006* | 6 | -4 | 1/4" | 11.6 | 0.46 | 13.6 | 0.54 | 280 | 4,060 | 1,120 | 16,240 | 50 | 1.97 | 272 | 0.18 | MF+M00120-04 | OPF-04 |
| H01155008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.9 | 0.59 | 280 | 4,060 | 1,120 | 16,240 | 55 | 2.17 | 299 | 0.20 | MF+M00120-05 | OPF-05 |
| H01155010* | 10 | -6 | 3/8" | 15.4 | 0.61 | 17.4 | 0.69 | 280 | 4,060 | 1,120 | 16,240 | 63 | 2.48 | 397 | 0.27 | MF+M00120-06 | OPF-06 |
| H01155012* | 12 | -8 | 1/2" | 18.5 | 0.73 | 20.5 | 0.81 | 280 | 4,060 | 1,120 | 16,240 | 80 | 3.15 | 507 | 0.34 | MF+M00120-08 | OPK-08 |
| H01155016* | 16 | -10 | 5/8" | 22.7 | 0.89 | 24.7 | 0.97 | 280 | 4,060 | 1,120 | 16,240 | 90 | 3.54 | 731 | 0.49 | MF+M00120-10 | OPK-10 |
| H01155019* | 19 | -12 | 3/4" | 27.1 | 1.07 | 29.3 | 1.15 | 280 | 4,060 | 1,120 | 16,240 | 120 | 4.72 | 1,058 | 0.71 | MF+M00120-12 | OPK-12 |
| H01155025* | 25 | -16 | 1" | 34.1 | 1.34 | 36.5 | 1.44 | 280 | 4,060 | 1,120 | 16,240 | 150 | 5.91 | 1,536 | 1.03 | MF+M00930-16 | OPK-16 |
| H01155031* | 31 | -20 | 1.1/4" | 41.7 | 1.64 | 44.5 | 1.75 | 280 | 4,060 | 1,120 | 16,240 | 210 | 8.27 | 2,171 | 1.46 | MF+M00920-20 | OPK-20 |

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structure
- Very low bend radius makes this product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- Medium and high pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing amongst 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
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 6-19); Four high tensile steel spirals (DN 25-31)

COVER

SHIELD

Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752-B

TYPE APPROVALS

MSHA, FRAS (requested); CU-TR

REMARKS



- Applications with material projections 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/35

OUTSTANDING WEAR RESISTANCE



HOSES 37

| 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 | Std 1 | Std 2 |
| H10119006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 350 | 5,070 | 1,400 | 20,300 | 45 | 1.77 | 288 | 0.19 | MF+M00120-04 | OPF-04 |
| H10119008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.9 | 0.59 | 350 | 5,070 | 1,400 | 20,300 | 55 | 2.17 | 330 | 0.22 | MF+M00120-05 | OPF-05 |
| H10119010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 16.8 | 0.66 | 350 | 5,070 | 1,400 | 20,300 | 65 | 2.56 | 393 | 0.26 | MF+M00120-06 | OPF-06 |
| H10119012* | 12 | -8 | 1/2" | 18.6 | 0.73 | 20.4 | 0.80 | 350 | 5,070 | 1,400 | 20,300 | 80 | 3.15 | 556 | 0.37 | MF+M00120-08 | OPK-08 |
| H10119016* | 16 | -10 | 5/8" | 23.5 | 0.93 | 25.9 | 1.02 | 350 | 5,070 | 1,400 | 20,300 | 100 | 3.94 | 964 | 0.65 | MF+M00910-10 | OPK-10 |
| H10119019* | 19 | -12 | 3/4" | 27.5 | 1.08 | 29.9 | 1.18 | 350 | 5,070 | 1,400 | 20,300 | 120 | 4.72 | 1,229 | 0.83 | IP+M01500-12 | SP+M05400-12 |
| H10119025* | 25 | -16 | 1" | 34.6 | 1.36 | 37.0 | 1.46 | 350 | 5,070 | 1,400 | 20,300 | 150 | 5.91 | 1,795 | 1.21 | IP+M01500-16 | SP+M05400-16 |
| H10119031* | 31 | -20 | 1.1/4" | 42.1 | 1.66 | 44.9 | 1.77 | 350 | 5,070 | 1,400 | 20,300 | 230 | 9.06 | 2,369 | 1.59 | IP+M01500-20 | SP+M05400-20 |
| H10119038* | 38 | -24 | 1.1/2" | 51.2 | 2.02 | 56.1 | 2.21 | 350 | 5,070 | 1,400 | 20,300 | 300 | 11.81 | 4,214 | 2.83 | IP+M01600-24 | SP+M05500-24 |
| H10119051* | 51 | -32 | 2" | 66.8 | 2.62 | 70.4 | 2.77 | 350 | 5,070 | 1,400 | 20,300 | 360 | 14.17 | 6,205 | 4.17 | IP+M01800-32 | SP+M05500-32 |

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structure
- Very low bend radius makes this product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- High resistance to abrasion conditions, including rubbing amongst 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
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 6-12); Four high tensile steel spirals (DN 16-31); Six high tensile steel spirals (DN 38-51)

COVER

SHIELD
Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752-B

TYPE APPROVALS

MSHA, FRAS (requested); CU-TR

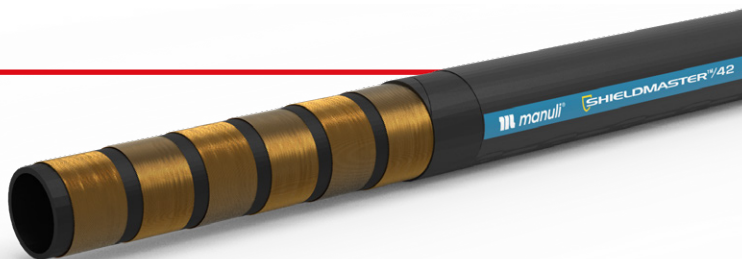
REMARKS



- Applications with material projections 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/42

OUTSTANDING WEAR RESISTANCE



HOSES

38

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 | Std 1 | Std 2 |
| H10120006* | 6 | -4 | 1/4" | 11,3 | 0,44 | 13,3 | 0,52 | 420 | 6090 | 1680 | 24360 | 45 | 1,77 | 294 | 0,20 | MF+M00120-04 | OPF-04 |
| H10120010* | 10 | -6 | 3/8" | 17,6 | 0,69 | 20,0 | 0,79 | 420 | 6090 | 1680 | 24360 | 100 | 3,94 | 699 | 0,47 | MF+M00910-08 | OPK-08 |
| H10120012* | 12 | -8 | 1/2" | 20,3 | 0,80 | 22,7 | 0,89 | 420 | 6090 | 1680 | 24360 | 120 | 4,72 | 808 | 0,54 | MF+M00910-08 | OPK-08 |
| H10120019* | 19 | -12 | 3/4" | 27,7 | 1,09 | 30,2 | 1,19 | 420 | 6090 | 1680 | 24360 | 150 | 5,91 | 1,307 | 0,88 | IP+M01500-12 | SP+M05400-12 |
| H10120025* | 25 | -16 | 1" | 35,0 | 1,38 | 37,5 | 1,48 | 420 | 6090 | 1680 | 24360 | 210 | 8,27 | 2,031 | 1,36 | IP+M01500-16 | SP+M05400-16 |
| H10120031* | 31 | -20 | 1.1/4" | 44,7 | 1,76 | 49,5 | 1,95 | 420 | 6090 | 1680 | 24360 | 260 | 10,24 | 3,701 | 2,49 | IP+M01600-20 | SP+M05500-20 |
| H10120038* | 38 | -24 | 1.1/2" | 53,2 | 2,09 | 56,4 | 2,22 | 420 | 6090 | 1680 | 24360 | 310 | 12,20 | 4,498 | 3,01 | IP+M01600-24 | SPGX+M05500-24GX |
| H10120051* | 51 | -32 | 2" | 68,9 | 2,71 | 72,4 | 2,85 | 420 | 6090 | 1680 | 24360 | 500 | 19,69 | 7,388 | 4,96 | IS+M02700-32 | |

KEY FEATURES

- Outstanding abrasion and ozone resistance
- Compact and light structure
- Very low bend radius makes this product suitable for difficult installations
- Easy assembling and mounting operations (no protection sleeves required)
- Isobaric pressure rating
- Suitable for very cold environments

APPLICATIONS & FLUIDS

- High pressure hydraulic lines
- Heavy duty power lines
- High resistance to abrasion conditions, including rubbing amongst 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
- Skive and no-skive fitting solutions
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

100 °C, 212 °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

SHIELD

Composite bi-layer structure with outstanding abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752-B

TYPE APPROVALS

MSHA, FRAS (requested); CU-TR

REMARKS



- Applications with material projections 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



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 | Std 1 | Std 2 |
| H10104076* | 76 | -48 | 3" | 87.8 | 3.46 | 92.2 | 3.63 | 140 | 2,030 | 560 | 8,120 | 700 | 27.56 | 5,900 | 3.96 | IP+M01500-48 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile wire spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design, ISO 18752-C Ext.

TYPE APPROVALS

CU-TR; MSHA; CCS; DNV-GL; ABS; FRAS

DIAMONDSPIR/17

HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE



HOSES

40

| 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 | Std 1 | Std 2 |
| H10104076* | 76 | -48 | 3" | 89.0 | 3.50 | 92.1 | 3.63 | 170 | 2,460 | 700 | 10,150 | 600 | 25.98 | 6,060 | 4.07 | IP+M01500-48 | |
| H10104089* | 89 | -56 | 3.1/2" | 109.7 | 4.32 | 115.6 | 4.55 | 170 | 2,460 | 800 | 11,600 | 1,200 | 47.24 | 12,735 | 8.56 | IS+M02610-56 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four or six high tensile wire spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design, ISO 18752-C Ext.

TYPE APPROVALS

CU-TR; MSHA;

DIAMONDSPIR/21

VERY HIGH HYDRAULIC POWER TRANSMISSION



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 | Std 1 | Std 2 |
| H10102063* | 63 | -40 | 2.1/2" | 77.5 | 3.05 | 81.5 | 3.21 | 210 | 3,040 | 840 | 12,180 | 700 | 27.56 | 5,890 | 3.96 | IP+M01500-40 | |
| H10102076* | 76 | -48 | 3" | 990.8 | 3.57 | 94.6 | 3.72 | 210 | 3,040 | 840 | 12,180 | 900 | 35.43 | 7,910 | 5.32 | IP+M01810-48 | |

KEY FEATURES

- Very high flow rates in high pressure hydraulics
- Extremely robust hose structure
- Compact hose 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 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four to six high tensile wire spirals

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design, ISO 18752-C Ext.

TYPE APPROVALS

CU-TR; MSHA; MA; CCS; ABS; DNV-GL

DIAMONDSPIR/35

VERY HIGH HYDRAULIC POWER TRANSMISSION



HOSES

42

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 | Std 1 | Std 2 |
| H10103063* | 63 | -40 | 2.1/2" | 80.6 | 3.17 | 84.8 | 3.34 | 350 | 5,070 | 1,400 | 20,300 | 800 | 31.50 | 8,105 | 5.45 | IP+M01810-40 | |
| H10103076* | 76 | -48 | 3" | 97.9 | 3.85 | 101.9 | 4.01 | 350 | 5,070 | 1,400 | 20,300 | 1,000 | 39.37 | 12,249 | 8.23 | IS+M02700-48 | IS+M02800-48 |

KEY FEATURES

- Very high flow rates in high pressure hydraulics
- Extremely robust hose structure
- Compact hose 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 fitting 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six to eight high tensile wire spirals

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design, ISO 18752-C Ext.

TYPE APPROVALS

CU-TR; MSHA; MA; CCS;ABS; DNV-GL; FRAS

MASTERTEX

LOW PRESSURE, HIGH TEMPERATURE HOSE



| 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 | Std 1 | Std 2 |
| H09069006* | 6 | -4 | 1/4" | | | 12.6 | 0.50 | 30 | 430 | 120 | 1,740 | 45 | 1.77 | 115 | 0.08 | MF+M00830-04 | |
| H09069010* | 10 | -6 | 3/8" | | | 15.8 | 0.62 | 30 | 430 | 120 | 1,740 | 75 | 2.95 | 160 | 0.11 | MF+M00820-06 | |
| H09069012* | 12 | -8 | 1/2" | | | 19.4 | 0.76 | 30 | 430 | 120 | 1,740 | 90 | 3.54 | 210 | 0.14 | MF+M00820-08 | |
| H09069016* | 16 | -10 | 5/8" | | | 23.0 | 0.91 | 30 | 430 | 120 | 1,740 | 115 | 4.53 | 285 | 0.19 | MF+M00820-10 | |

KEY FEATURES

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

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
135 °C, 275 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high resistance textile braid

COVER

Weather and high heat resistant synthetic rubber

APPLICABLE SPECS

Exceeds SAE 100 R6; ISO 4079 R6/1TE

ROCKMASTER/1SC

ABRASION, WEATHER & HEAT RESISTANCE



HOSES 44

| 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 | Std 1 | Std 2 |
| H01108006* | 6 | -4 | 1/4" | 10.2 | 0.40 | 12.0 | 0.47 | 260 | 3,770 | 1,050 | 15,220 | 50 | 1.97 | 180 | 0.12 | MF+M03300-04 | MF+M00120-04 |
| H01108008* | 8 | -5 | 5/16" | 11.5 | 0.45 | 13.6 | 0.54 | 250 | 3,620 | 1,000 | 14,500 | 55 | 2.17 | 210 | 0.14 | MF+M03300-05 | MF+M00120-05 |
| H01108010* | 10 | -6 | 3/8" | 13.6 | 0.54 | 15.5 | 0.61 | 225 | 3,260 | 900 | 13,050 | 60 | 2.36 | 255 | 0.17 | MF+M03300-06 | MF+M00120-06 |
| H01108012* | 12 | -8 | 1/2" | 17.3 | 0.68 | 19.1 | 0.75 | 190 | 2,750 | 760 | 11,020 | 70 | 2.76 | 355 | 0.24 | MF+M03300-08 | MF+M00120-08 |
| H01108016* | 16 | -10 | 5/8" | 20.6 | 0.81 | 22.4 | 0.88 | 150 | 2,170 | 600 | 8,700 | 90 | 3.54 | 430 | 0.29 | MF+M03400-10 | MF+M00820-10 |
| H01108019* | 19 | -12 | 3/4" | 23.9 | 0.94 | 25.9 | 1.02 | 150 | 2,170 | 600 | 8,700 | 100 | 3.94 | 520 | 0.35 | MF+M03400-12 | MF+M00820-12 |
| H01108025* | 25 | -16 | 1" | 31.3 | 1.23 | 33.1 | 1.30 | 110 | 1,590 | 440 | 6,380 | 160 | 6.30 | 730 | 0.49 | MF+M03400-16 | MF+M00820-16 |
| H01108031* | 31 | -20 | 1.1/4" | 38.4 | 1.51 | 40.9 | 1.61 | 75 | 1,080 | 300 | 4,350 | 210 | 8.27 | 1,040 | 0.70 | MF+M03400-20 | MF+M00820-20 |
| H01108038* | 38 | -24 | 1.1/2" | 45.0 | 1.77 | 47.5 | 1.87 | 50 | 720 | 200 | 2,900 | 300 | 11.81 | 1,170 | 0.79 | MF+M00820-24 | |
| H01108051* | 51 | -32 | 2" | 58.0 | 2.28 | 60.5 | 2.38 | 50 | 720 | 200 | 2,900 | 400 | 15.75 | 1,560 | 1.05 | MF+M00820-32 | |
| H01108063* | 63 | -40 | 2.1/2" | 70.5 | 2.78 | 73.0 | 2.87 | 50 | 720 | 200 | 2,900 | 760 | 29.92 | 2,090 | 1.40 | MF+M03400-40 | |
| H01108076* | 76 | -48 | 3" | 85.0 | 3.35 | 87.7 | 3.45 | 35 | 500 | 140 | 2,030 | 900 | 35.43 | 2,616 | 1.76 | MF+M03400-48 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds EN 857 1SC; ISO 11237 1SC

TYPE APPROVALS

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

REMARKS



- For hydraulic lift applications according to EN 81-20 applications, the following sizes and working pressures are recommended: DN 19 - WP = 50 bar; DN 25 - WP = 50 bar; DN 31 - WP = 50 bar

ROCKMASTER/2SC

ABRASION, WEATHER & HEAT RESISTANCE



HOSES
45

| 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 | Std 1 | Std 2 |
| H01030005* | 5 | -3 | 3/16" | 9.7 | 0.38 | 11.5 | 0.45 | 420 | 6,090 | 2,000 | 29,000 | 40 | 1.57 | 220 | 0.15 | MF+M03300-03 | OPF-03 |
| H01030006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 400 | 5,800 | 1,850 | 26,830 | 45 | 1.77 | 275 | 0.18 | MF+M03300-04 | OPF-04 |
| H01030008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.7 | 0.58 | 350 | 5,070 | 1,700 | 24,650 | 55 | 2.17 | 325 | 0.22 | MF+M03300-05 | OPF-05 |
| H01030010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 16.8 | 0.66 | 330 | 4,780 | 1,500 | 21,750 | 65 | 2.56 | 390 | 0.26 | MF+M03300-06 | OPF-06 |
| H01030012* | 12 | -8 | 1/2" | 18.5 | 0.73 | 20.3 | 0.80 | 275 | 3,980 | 1,220 | 17,690 | 80 | 3.15 | 500 | 0.34 | MF+M03300-08 | OPF-08 |
| H01030016* | 16 | -10 | 5/8" | 21.8 | 0.86 | 23.6 | 0.93 | 250 | 3,620 | 1,050 | 15,220 | 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 | 3,550 | 980 | 14,210 | 120 | 4.72 | 790 | 0.53 | MF+M03400-12 | OPF-12 |
| H01030025* | 25 | -16 | 1" | 33.0 | 1.30 | 35.2 | 1.39 | 210 | 3,040 | 840 | 12,180 | 150 | 5.91 | 1,180 | 0.79 | MF+M03400-16 | OPF-16 |
| H01030031* | 31 | -20 | 1.1/4" | 41.1 | 1.62 | 43.6 | 1.72 | 140 | 2,030 | 560 | 8,120 | 250 | 9.84 | 1,550 | 1.04 | MF+M03400-20 | OPK-20 |
| H01030038* | 38 | -24 | 1.1/2" | 47.7 | 1.88 | 50.7 | 2.00 | 100 | 1,450 | 400 | 5,800 | 300 | 11.81 | 1,880 | 1.26 | MF+M03400-24 | OPK-24 |
| H01030051* | 51 | -32 | 2" | 60.4 | 2.38 | 63.4 | 2.50 | 90 | 1,300 | 360 | 5,220 | 400 | 15.75 | 2,430 | 1.63 | MF+M03400-32 | OPK-32 |
| H01030063* | 63 | -40 | 2.1/2" | 73.0 | 2.87 | 76.0 | 2.99 | 70 | 1,010 | 300 | 4,350 | 760 | 29.92 | 2,900 | 1.95 | MF+M03400-40 | |
| H01030076* | 76 | -48 | 3" | 87.8 | 3.46 | 90.5 | 3.56 | 45 | 650 | 180 | 2,610 | 900 | 35.43 | 3,120 | 2.10 | MF+M03400-48 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STRONG - TYPE "SD"
Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

Exceeds 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; MSHA; RINA; B; FRAS; CCS; NK; DNV-GL(MED)

REMARKS



- For hydraulic lift applications according to EN 81-20 applications, the following sizes and working pressures are recommended: DN 31 - WP = 50 bar; DN 38 - WP = 50 bar; DN 51 - WP = 45 bar

ROCKMASTER/1SN

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

46

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 | Std 1 | Std 2 |
| H01007006* | 6 | -4 | 1/4" | 11.0 | 0.43 | 13.0 | 0.51 | 225 | 3,260 | 1,000 | 14,500 | 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 | 3,110 | 950 | 13,770 | 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 | 2,610 | 800 | 11,600 | 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 | 2,320 | 680 | 9,860 | 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 | 1,880 | 600 | 8,700 | 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 | 1,520 | 500 | 7,250 | 240 | 9.45 | 600 | 0.40 | MF+M03400-12 | OPF-12 |
| H01007025* | 25 | -16 | 1" | 33.1 | 1.30 | 35.1 | 1.38 | 90 | 1,300 | 360 | 5,220 | 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 | 3,770 | 419 | 16.50 | 1,243 | 0.84 | MF+M03400-20 | OPK-20 |
| H01007040* | 38 | -24 | 1.1/2" | 47.0 | 1.85 | 49.7 | 1.96 | 50 | 720 | 260 | 3,770 | 500 | 19.69 | 1,450 | 0.97 | MF+M03400-24 | OPK-24 |
| H01007051* | 51 | -32 | 2" | 60.4 | 2.38 | 63.1 | 2.48 | 40 | 580 | 250 | 3,620 | 630 | 24.80 | 2,050 | 1.38 | MF+M03400-32 | OPK-32 |
| H01007060* | 60 | -38 | 2.3/8" | 68.8 | 2.71 | 71.5 | 2.81 | 50 | 720 | 200 | 2,900 | 650 | 25.59 | 2,190 | 1.47 | MF+M03400-38 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds 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; CCS; KRS; RINA

ROCKMASTER/2SN

ABRASION, WEATHER & HEAT RESISTANCE



HOSES
47

| 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 | Std 1 | Std 2 |
| H01038006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.7 | 0.58 | 400 | 5,800 | 1,750 | 25,380 | 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 | 5,070 | 1,480 | 21,460 | 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 | 5,070 | 1,400 | 20,300 | 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 | 5,070 | 1,400 | 20,300 | 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 | 3,620 | 1,020 | 14,790 | 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 | 3,110 | 900 | 13,050 | 130 | 5.12 | 930 | 0.62 | MF+M03400-12 | OPF-12 |
| H01038025* | 25 | -16 | 1" | 34.8 | 1.37 | 36.8 | 1.45 | 175 | 2,530 | 670 | 9,710 | 160 | 6.30 | 1,290 | 0.87 | MF+M03400-16 | OPF-16 |
| H01038032* | 31 | -20 | 1.1/4" | 44.3 | 1.74 | 47.0 | 1.85 | 140 | 2,030 | 600 | 8,700 | 419 | 16.50 | 1,930 | 1.30 | MF+M03400-20 | OPK-20 |
| H01038040* | 38 | -24 | 1.1/2" | 50.7 | 2.00 | 53.4 | 2.10 | 100 | 1,450 | 500 | 7,250 | 500 | 19.69 | 2,262 | 1.52 | MF+M03400-24 | OPK-24 |
| H01038051* | 51 | -32 | 2" | 63.5 | 2.50 | 66.2 | 2.61 | 90 | 1,300 | 420 | 6,090 | 630 | 24.80 | 2,880 | 1.94 | MF+M03400-32 | OPK-32 |
| H01038060* | 60 | -38 | 2.3/8" | 68.8 | 2.71 | 71.5 | 2.81 | 90 | 1,300 | 360 | 5,220 | 650 | 25.59 | 2,670 | 1.79 | MF+M03400-38 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STRONG - TYPE "SD"
Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

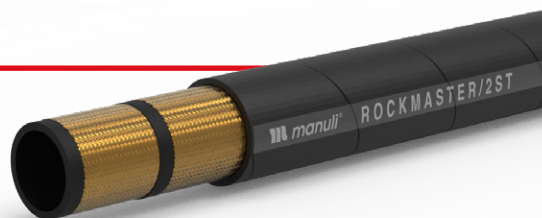
Exceeds EN 853 2SN; SAE 100 R2AT; ISO 1436 2SN/R2AT

TYPE APPROVALS

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

ROCKMASTER/2ST

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

48

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 | Std 1 | Std 2 |
| H01035005* | 5 | -3 | 3/16" | 11.3 | 0.44 | 15.6 | 0.61 | 415 | 6,010 | 2,000 | 29,000 | 89 | 3.50 | 385 | 0.26 | MF+M00910-03 | |
| H01035006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 17.2 | 0.68 | 400 | 5,800 | 1,750 | 25,380 | 100 | 3.94 | 450 | 0.30 | MF+M00910-04 | |
| H01035008* | 8 | -5 | 5/16" | 14.3 | 0.56 | 18.9 | 0.74 | 350 | 5,070 | 1,480 | 21,460 | 114 | 4.49 | 500 | 0.34 | MF+M00910-05 | |
| H01035010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 21.3 | 0.84 | 350 | 5,070 | 1,400 | 20,300 | 127 | 5.00 | 640 | 0.43 | MF+M00910-06 | |
| H01035012* | 12 | -8 | 1/2" | 19.8 | 0.78 | 24.5 | 0.96 | 350 | 5,070 | 1,400 | 20,300 | 178 | 7.01 | 790 | 0.53 | MF+M00910-08 | |
| H01035016* | 16 | -10 | 5/8" | 23.0 | 0.91 | 27.7 | 1.09 | 250 | 3,620 | 1,020 | 14,790 | 200 | 7.87 | 870 | 0.58 | MF+M00910-10 | |
| H01035019* | 19 | -12 | 3/4" | 27.0 | 1.06 | 31.6 | 1.24 | 215 | 3,110 | 900 | 13,050 | 240 | 9.45 | 1,100 | 0.74 | MF+M00920-12 | |
| H01035025* | 25 | -16 | 1" | 34.8 | 1.37 | 39.5 | 1.56 | 175 | 2,530 | 670 | 9,710 | 300 | 11.81 | 1,510 | 1.01 | MF+M00930-16 | |
| H01035032* | 31 | -20 | 1.1/4" | 44.3 | 1.74 | 50.6 | 1.99 | 140 | 2,030 | 600 | 8,700 | 419 | 16.50 | 2,310 | 1.55 | MF+M00920-20 | |
| H01035040* | 38 | -24 | 1.1/2" | 50.7 | 2.00 | 57.0 | 2.24 | 100 | 1,450 | 500 | 7,250 | 500 | 19.69 | 2,683 | 1.80 | MF+M00910-24 | |
| H01035051* | 51 | -32 | 2" | 63.5 | 2.50 | 69.8 | 2.75 | 90 | 1,300 | 420 | 6,090 | 630 | 24.80 | 3,410 | 2.29 | MF+M00910-32 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

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

TYPE APPROVALS

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

ROCKMASTER/2 PLUS SUPER ANTI-WEAR

ABRASION, WEATHER & HEAT RESISTANCE



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 | Std 1 | Std 2 |
| H01139006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 450 | 6,520 | 1,800 | 26,100 | 45 | 1.77 | 269 | 0.18 | MF+M03400-04 | |
| H01139010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 18.5 | 0.73 | 400 | 5,800 | 1,600 | 23,200 | 127 | 5.00 | 518 | 0.35 | MF+M00910-06 | OPK-06 |
| H01139012* | 12 | -8 | 1/2" | 20.1 | 0.79 | 22.1 | 0.87 | 362 | 5,250 | 1,450 | 21,030 | 150 | 5.91 | 683 | 0.46 | MF+M00910-08 | OPK-08 |
| H01139016* | 16 | -10 | 5/8" | 23.2 | 0.91 | 25.2 | 0.99 | 340 | 4,930 | 1,360 | 19,720 | 200 | 7.87 | 833 | 0.56 | MF+M00910-10 | OPK-10 |
| H01139019* | 19 | -12 | 3/4" | 27.1 | 1.07 | 29.3 | 1.15 | 310 | 4,490 | 1,240 | 17,980 | 230 | 9.06 | 1,034 | 0.69 | MF+M00920-12 | OPK-12 |
| H01139025* | 25 | -16 | 1" | 35.1 | 1.38 | 37.8 | 1.49 | 240 | 3,480 | 960 | 13,920 | 300 | 11.81 | 1,531 | 1.03 | MF+M00930-16 | OPK-16 |
| H01139032* | 31 | -20 | 1.1/4" | 44.5 | 1.75 | 47.2 | 1.86 | 175 | 2,530 | 700 | 10,150 | 380 | 14.96 | 2,055 | 1.38 | MF+M00920-20 | OPK-20 |
| H01139038* | 38 | -24 | 1.1/2" | 51.0 | 2.01 | 53.7 | 2.11 | 146 | 2,110 | 584 | 8,470 | 450 | 17.72 | 2,444 | 1.64 | MF+M00910-24 | |
| H01139051* | 51 | -32 | 2" | 62.8 | 2.47 | 65.5 | 2.58 | 112 | 1,620 | 448 | 6,490 | 600 | 23.62 | 3,013 | 2.02 | MF+M00910-32 | |
| H01139076* | 76 | -48 | 3" | 87.8 | 3.46 | 91.4 | 3.60 | 70 | 1,010 | 280 | 4,060 | 500 | 19.69 | 3,901 | 2.62 | MF+M03400-48 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

R.O.C.
Synthetic rubber with extreme abrasion and ozone resistance

APPLICABLE SPECS

Manuli® Design exceeds ISO 1436-2SN; EN 853-2SN; SAE J517 Type 100R2AT. Performance BCS 174; ISO 6805 Type 4

TYPE APPROVALS

MSHA; CU-TR

ROCKMASTER/4SH

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

50

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 | Std 1 | Std 2 |
| H10044016* | 16 | -10 | 5/8" | 25.5 | 1.00 | 28.5 | 1.12 | 450 | 6,520 | 1,850 | 26,830 | 180 | 7.09 | 1,290 | 0.87 | IP+M01500-10 | |
| H10044019* | 19 | -12 | 3/4" | 28.2 | 1.11 | 31.9 | 1.26 | 420 | 6,090 | 1,750 | 25,380 | 210 | 8.27 | 1,500 | 1.01 | IP+M01500-12 | SP+M05400-12 |
| H10044025* | 25 | -16 | 1" | 35.1 | 1.38 | 38.1 | 1.50 | 385 | 5,580 | 1,750 | 25,380 | 220 | 8.66 | 2,040 | 1.37 | IP+M01500-16 | SP+M05400-16 |
| H10044032* | 31 | -20 | 1.1/4" | 42.2 | 1.66 | 45.0 | 1.77 | 350 | 5,070 | 1,400 | 20,300 | 420 | 16.54 | 2,410 | 1.62 | IP+M01500-20 | SP+M05400-20 |
| H10044038* | 38 | -24 | 1.1/2" | 49.1 | 1.93 | 53.1 | 2.09 | 300 | 4,350 | 1,250 | 18,120 | 560 | 22.05 | 3,170 | 2.13 | IP+M01500-24 | SP+M05400-24 |
| H10044051* | 51 | -32 | 2" | 63.5 | 2.50 | 67.5 | 2.66 | 250 | 3,620 | 1,000 | 14,500 | 700 | 27.56 | 4,460 | 3.00 | IP+M01500-32 | SP+M05400-32 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds EN 856 4SH; ISO 3862 4SH

TYPE APPROVALS

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

ROCKMASTER/4SP

ABRASION, WEATHER & HEAT RESISTANCE



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 | Std 1 | Std 2 |
| H10008006* | 6 | -4 | 1/4" | 14.7 | 0.58 | 17.6 | 0.69 | 485 | 7,030 | 2,400 | 34,800 | 125 | 4.92 | 590 | 0.40 | MF+M00910-04 | |
| H10008010* | 10 | -6 | 3/8" | 17.6 | 0.69 | 21.0 | 0.83 | 450 | 6,520 | 2,000 | 29,000 | 125 | 4.92 | 740 | 0.50 | MF+M00910-06 | |
| H10008012* | 12 | -8 | 1/2" | 20.3 | 0.80 | 24.2 | 0.95 | 420 | 6,090 | 1,750 | 25,380 | 175 | 6.89 | 880 | 0.59 | MF+M00910-08 | |
| H10008016* | 16 | -10 | 5/8" | 23.7 | 0.93 | 27.6 | 1.09 | 380 | 5,510 | 1,600 | 23,200 | 200 | 7.87 | 1,080 | 0.73 | MF+M00910-10 | |
| H10008019* | 19 | -12 | 3/4" | 28.2 | 1.11 | 31.7 | 1.25 | 380 | 5,510 | 1,600 | 23,200 | 240 | 9.45 | 1,450 | 0.97 | MF+M00920-12 | SP+M05400-12 |
| H10008025* | 25 | -16 | 1" | 35.0 | 1.38 | 39.0 | 1.54 | 320 | 4,640 | 1,400 | 20,300 | 340 | 13.39 | 1,880 | 1.26 | MF+M00930-16 | SP+M05400-16 |
| H10008032* | 31 | -20 | 1.1/4" | 46.1 | 1.81 | 49.7 | 1.96 | 210 | 3,040 | 1,250 | 18,120 | 460 | 18.11 | 2,990 | 2.01 | MF+M00920-20 | SP+M05500-20 |
| H10008038* | 38 | -24 | 1.1/2" | 52.4 | 2.06 | 56.1 | 2.21 | 185 | 2,680 | 1,000 | 14,500 | 560 | 22.05 | 3,500 | 2.35 | MF+M00910-24 | SP+M05500-24 |
| H10008051* | 51 | -32 | 2" | 65.4 | 2.57 | 69.0 | 2.72 | 175 | 2,530 | 1,000 | 14,500 | 660 | 25.98 | 5,010 | 3.37 | MF+M00910-32 | SP+M05400-32 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

STRONG - TYPE "SD"
Synthetic rubber with high abrasion, ozone, weather and heat resistance

APPLICABLE SPECS

Exceeds EN 856 4SP; ISO 3862 4SP; DN 16 & 19: thin cover style, exceeds 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); CCS; KRS

ROCKMASTER/12

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

52

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 | Std 1 | Std 2 |
| H10031010* | 10 | -6 | 3/8" | 17.3 | 0.68 | 20.0 | 0.79 | 280 | 4,060 | 1,600 | 23,200 | 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 | 4,060 | 1,350 | 19,580 | 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 | 4,060 | 1,300 | 18,850 | 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 | 4,060 | 1,300 | 18,850 | 150 | 5.91 | 1,160 | 0.78 | MF+M00920-12 | OPK-12 |
| H10031025* | 25 | -16 | 1" | 35.0 | 1.38 | 37.6 | 1.48 | 280 | 4,060 | 1,150 | 16,670 | 225 | 8.86 | 1,740 | 1.17 | MF+M00930-16 | OPK-16 |
| H10031A32* | 31 | -20 | 1.1/4" | 43.1 | 1.70 | 45.9 | 1.81 | 210 | 3,040 | 1,000 | 14,500 | 250 | 9.84 | 2,280 | 1.53 | MF+M00920-20 | OPK-20 |
| H10031040* | 38 | -24 | 1.1/2" | 50.0 | 1.97 | 53.3 | 2.10 | 175 | 2,530 | 1,000 | 14,500 | 500 | 19.69 | 3,130 | 2.10 | MF+M00910-24 | OPK-24 |
| H10031051* | 51 | -32 | 2" | 63.6 | 2.50 | 66.7 | 2.63 | 175 | 2,530 | 800 | 11,600 | 630 | 24.80 | 4,440 | 2.98 | MF+M00910-32 | OPK-32 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

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

TYPE APPROVALS

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

ROCKMASTER/13

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

53

| 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 | Std 1 | Std 2 |
| H10035A06* | 6 | -4 | 1/4" | 14.6 | 0.57 | 17.6 | 0.69 | 690 | 10,000 | 3,250 | 47,130 | 120 | 4.72 | 660 | 0.44 | | |
| H10035A10* | 10 | -6 | 3/8" | 17.4 | 0.69 | 20.4 | 0.80 | 690 | 10,000 | 2,900 | 42,060 | 150 | 5.91 | 830 | 0.56 | | |
| H10035A12* | 12 | -8 | 1/2" | 21.5 | 0.85 | 24.5 | 0.96 | 620 | 8,990 | 2,500 | 36,250 | 200 | 7.87 | 1,140 | 0.77 | | |
| H10035019* | 19 | -12 | 3/4" | 29.0 | 1.14 | 31.8 | 1.25 | 350 | 5,070 | 1,950 | 28,280 | 240 | 9.45 | 1,630 | 1.10 | IP+M01500-12 | SP+M05400-12 |
| H10035025* | 25 | -16 | 1" | 36.0 | 1.42 | 39.2 | 1.54 | 350 | 5,070 | 1,650 | 23,930 | 300 | 11.81 | 2,190 | 1.47 | IP+M01500-16 | SP+M05400-16 |
| H10035032* | 31 | -20 | 1.1/4" | 47.0 | 1.85 | 50.0 | 1.97 | 350 | 5,070 | 1,500 | 21,750 | 420 | 16.54 | 3,600 | 2.42 | IP+M01600-20 | SP+M05500-20 |
| H10035040* | 38 | -24 | 1.1/2" | 54.6 | 2.15 | 57.5 | 2.26 | 350 | 5,070 | 1,600 | 23,200 | 500 | 19.69 | 4,700 | 3.16 | IP+M01600-24 | SP+M05500-24 |
| H10035051* | 51 | -32 | 2" | 68.4 | 2.69 | 72.0 | 2.83 | 350 | 5,070 | 1,500 | 21,750 | 630 | 24.80 | 6,800 | 4.57 | IP+M01800-32 | SP+M05500-32 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

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

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

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

TYPE APPROVALS

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

ROCKMASTER/15

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

54

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 | Std 1 | Std 2 |
| H10049019* | 19 | -12 | 3/4" | 28.2 | 1.11 | 31.0 | 1.22 | 420 | 6,090 | 1,750 | 25,380 | 265 | 10.43 | 1,440 | 0.97 | IP+M01500-12 | SP+M05400-12 |
| H10049025* | 25 | -16 | 1" | 35.1 | 1.38 | 38.1 | 1.50 | 420 | 6,090 | 1,750 | 25,380 | 267 | 10.51 | 2,040 | 1.37 | IP+M01500-16 | SP+M05400-16 |
| H10049A32* | 31 | -20 | 1.1/4" | 46.3 | 1.82 | 49.5 | 1.95 | 420 | 6,090 | 1,680 | 24,360 | 267 | 10.51 | 3,660 | 2.46 | IP+M01600-20 | SP+M05500-20 |
| H10049040* | 38 | -24 | 1.1/2" | 54.6 | 2.15 | 57.5 | 2.26 | 420 | 6,090 | 1,680 | 24,360 | 315 | 12.40 | 4,700 | 3.16 | IP+M01600-24 | SP+M05500-24 |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

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

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds SAE 100 R15; ISO 3862 R15

TYPE APPROVALS

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

EQUATOR/1 (BLACK)

EXTREME HIGH TEMPERATURE - BLACK VERSION



HOSES 55

| 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 | Std 1 | Std 2 |
| H01058006* | 6 | -4 | 1/4" | 11.0 | 0.43 | 13.4 | 0.53 | 225 | 3,260 | 1,000 | 14,500 | 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 | 3,110 | 900 | 13,050 | 114 | 4.49 | 280 | 0.19 | MF+M00120-05 | |
| H01058010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 17.3 | 0.68 | 180 | 2,610 | 800 | 11,600 | 127 | 5.00 | 335 | 0.23 | MF+M00120-06 | |
| H01058012* | 12 | -8 | 1/2" | 18.1 | 0.71 | 20.5 | 0.81 | 160 | 2,320 | 680 | 9,860 | 178 | 7.01 | 430 | 0.29 | MF+M00120-08 | |
| H01058016* | 16 | -10 | 5/8" | 21.3 | 0.84 | 23.5 | 0.93 | 130 | 1,880 | 600 | 8,700 | 200 | 7.87 | 500 | 0.34 | MF+M00120-10 | |
| H01058019* | 19 | -12 | 3/4" | 25.2 | 0.99 | 27.7 | 1.09 | 105 | 1,520 | 500 | 7,250 | 240 | 9.45 | 640 | 0.43 | MF+M00120-12 | |
| H01058025* | 25 | -16 | 1" | 33.1 | 1.30 | 35.8 | 1.41 | 88 | 1,270 | 360 | 5,220 | 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 | 5,000 | 420 | 16.54 | 1,300 | 0.87 | MF+M00110-20 | OPK-20 |
| H01058038* | 38 | -24 | 1.1/2" | 46.9 | 1.85 | 50.0 | 1.97 | 50 | 720 | 290 | 4,200 | 500 | 19.69 | 1,540 | 1.03 | MF+M00110-24 | OPK-24 |
| H01058051* | 51 | -32 | 2" | 60.4 | 2.38 | 63.1 | 2.48 | 40 | 580 | 250 | 3,620 | 630 | 24.80 | 2,100 | 1.41 | MF+M00110-32 | OPK-32 |
| H01058063* | 63 | -40 | 2.1/2" | 72.0 | 2.83 | 74.6 | 2.94 | 35 | 500 | 140 | 2,030 | 600 | 23.62 | 2,400 | 1.61 | MF+M03400-40 | |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F
135 °C, 275 °F

MAX. OPERATING TEMPERATURE

150 °C, 300 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

STANDARD - TYPE "XT"
Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

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

TYPE APPROVALS

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

REMARKS



- Compressed air applications require cover pin-pricking and additional safety devices. High pressure compressed air applications must be carefully analysed to verify the suitability of the hose, contact Manuli Hydraulics Help Desk for technical guidelines.
- 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/1 (BLUE)

EXTREME HIGH TEMPERATURE - BLUE VERSION



HOSES 56

| 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 | Std 1 | Std 2 |
| H01059006* | 6 | -4 | 1/4" | 11.0 | 0.43 | 13.4 | 0.53 | 225 | 3,260 | 1,000 | 14,500 | 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 | 3,110 | 900 | 13,050 | 114 | 4.49 | 285 | 0.19 | MF+M00120-05 | |
| H01059010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 17.3 | 0.68 | 180 | 2,610 | 800 | 11,600 | 127 | 5.00 | 340 | 0.23 | MF+M00120-06 | |
| H01059012* | 12 | -8 | 1/2" | 18.1 | 0.71 | 20.5 | 0.81 | 160 | 2,320 | 680 | 9,860 | 178 | 7.01 | 435 | 0.29 | MF+M00120-08 | |
| H01059016* | 16 | -10 | 5/8" | 21.3 | 0.84 | 23.5 | 0.93 | 130 | 1,880 | 600 | 8,700 | 200 | 7.87 | 510 | 0.34 | MF+M00120-10 | |
| H01059019* | 19 | -12 | 3/4" | 25.2 | 0.99 | 27.7 | 1.09 | 105 | 1,520 | 500 | 7,250 | 240 | 9.45 | 640 | 0.43 | MF+M00120-12 | |
| H01059025* | 25 | -16 | 1" | 33.1 | 1.30 | 35.8 | 1.41 | 88 | 1,270 | 360 | 5,220 | 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 | 5,000 | 420 | 16.54 | 1,300 | 0.87 | MF+M00110-20 | OPK-20 |
| H01059038* | 38 | -24 | 1.1/2" | 46.9 | 1.85 | 50.0 | 1.97 | 50 | 720 | 290 | 4,200 | 500 | 19.69 | 1,540 | 1.03 | MF+M00110-24 | OPK-24 |
| H01059051* | 51 | -32 | 2" | 60.4 | 2.38 | 63.1 | 2.48 | 40 | 580 | 250 | 3,620 | 630 | 24.80 | 2,100 | 1.41 | MF+M00110-32 | OPK-32 |
| H01059063* | 63 | -40 | 2.1/2" | 72.0 | 2.83 | 74.6 | 2.94 | 35 | 500 | 140 | 2,030 | 600 | 23.62 | 2,400 | 1.61 | MF+M03400-40 | |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F

135 °C, 275 °F

MAX. OPERATING TEMPERATURE

150 °C, 300 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

STANDARD - TYPE "XT"

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

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

TYPE APPROVALS

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

REMARKS



- *Compressed air applications require cover pin-pricking and additional safety devices. High pressure compressed air applications must be carefully analysed to verify the suitability of the hose, contact Manuli Hydraulics Help Desk for technical guidelines.*
- *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 HIGH TEMPERATURE - BLACK VERSION



| 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 | Std 1 | Std 2 |
| H01060006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.9 | 0.59 | 400 | 5,800 | 1,725 | 25,010 | 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 | 5,070 | 1,480 | 21,460 | 114 | 4.49 | 435 | 0.29 | MF+M00910-05 | |
| H01060010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 19.0 | 0.75 | 330 | 4,780 | 1,400 | 20,300 | 127 | 5.00 | 530 | 0.36 | MF+M00910-06 | |
| H01060012* | 12 | -8 | 1/2" | 19.8 | 0.78 | 22.0 | 0.87 | 275 | 3,980 | 1,200 | 17,400 | 178 | 7.01 | 640 | 0.43 | MF+M00910-08 | |
| H01060016* | 16 | -10 | 5/8" | 23.0 | 0.91 | 25.2 | 0.99 | 250 | 3,620 | 1,020 | 14,790 | 200 | 7.87 | 760 | 0.51 | MF+M00910-10 | |
| H01060019* | 19 | -12 | 3/4" | 27.0 | 1.06 | 29.0 | 1.14 | 215 | 3,110 | 900 | 13,050 | 240 | 9.45 | 940 | 0.63 | MF+M00920-12 | |
| H01060025* | 25 | -16 | 1" | 34.8 | 1.37 | 37.0 | 1.46 | 175 | 2,530 | 700 | 10,150 | 300 | 11.81 | 1,350 | 0.91 | MF+M00930-16 | |
| H01060031* | 31 | -20 | 1.1/4" | 44.3 | 1.74 | 47.0 | 1.85 | 150 | 2,170 | 600 | 8,700 | 420 | 16.54 | 2,010 | 1.35 | MF+M00920-20 | |
| H01060038* | 38 | -24 | 1.1/2" | 50.7 | 2.00 | 53.4 | 2.10 | 100 | 1,450 | 410 | 5,940 | 500 | 19.69 | 2,250 | 1.51 | MF+M00910-24 | OPK-24 |
| H01060051* | 51 | -32 | 2" | 63.5 | 2.50 | 66.2 | 2.61 | 90 | 1,300 | 370 | 5,360 | 630 | 24.80 | 3,080 | 2.07 | MF+M00910-32 | OPK-32 |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F
135 °C, 275 °F

MAX. OPERATING TEMPERATURE

150 °C, 300 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STANDARD - TYPE "XT"
Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

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

TYPE APPROVALS

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

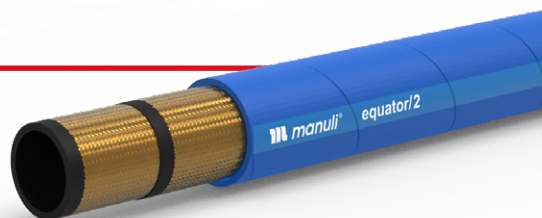
REMARKS



- Compressed air applications require cover pin-pricking and additional safety devices. High pressure compressed air applications must be carefully analysed to verify the suitability of the hose, contact Manuli Hydraulics Help Desk for technical guidelines.
- 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 (BLUE)

EXTREME HIGH TEMPERATURE - BLUE VERSION



HOSES

58

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 | Std 1 | Std 2 |
| H01061006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.9 | 0.59 | 400 | 5,800 | 1,725 | 25,010 | 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 | 5,070 | 1,480 | 21,460 | 114 | 4.49 | 435 | 0.29 | MF+M00910-05 | |
| H01061010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 19.0 | 0.75 | 330 | 4,780 | 1,400 | 20,300 | 127 | 5.00 | 530 | 0.36 | MF+M00910-06 | |
| H01061012* | 12 | -8 | 1/2" | 19.8 | 0.78 | 22.0 | 0.87 | 275 | 3,980 | 1,200 | 17,400 | 178 | 7.01 | 640 | 0.43 | MF+M00910-08 | |
| H01061016* | 16 | -10 | 5/8" | 23.0 | 0.91 | 25.2 | 0.99 | 250 | 3,620 | 1,020 | 14,790 | 200 | 7.87 | 760 | 0.51 | MF+M00910-10 | |
| H01061019* | 19 | -12 | 3/4" | 27.0 | 1.06 | 29.0 | 1.14 | 215 | 3,110 | 900 | 13,050 | 240 | 9.45 | 940 | 0.63 | MF+M00920-12 | |
| H01061025* | 25 | -16 | 1" | 34.8 | 1.37 | 37.0 | 1.46 | 175 | 2,530 | 700 | 10,150 | 300 | 11.81 | 1,350 | 0.91 | MF+M00930-16 | |
| H01061032* | 31 | -20 | 1.1/4" | 44.3 | 1.74 | 47.0 | 1.85 | 150 | 2,170 | 600 | 8,700 | 420 | 16.54 | 2,010 | 1.35 | MF+M00920-20 | |
| H01061040* | 38 | -24 | 1.1/2" | 50.7 | 2.00 | 53.4 | 2.10 | 100 | 1,450 | 410 | 5,940 | 500 | 19.69 | 2,250 | 1.51 | MF+M00910-24 | OPK-24 |
| H01061051* | 51 | -32 | 2" | 63.5 | 2.50 | 66.2 | 2.61 | 90 | 1,300 | 370 | 5,360 | 630 | 24.80 | 3,080 | 2.07 | MF+M00910-32 | OPK-32 |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F

135 °C, 275 °F

MAX. OPERATING TEMPERATURE

150 °C, 300 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STANDARD - TYPE "XT"

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

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

TYPE APPROVALS

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

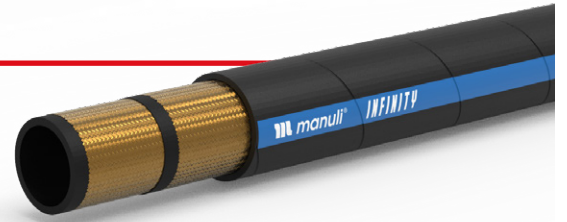
REMARKS



- Compressed air applications require cover pin-pricking and additional safety devices. High pressure compressed air applications must be carefully analysed to verify the suitability of the hose, contact Manuli Hydraulics Help Desk for technical guidelines.
- 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

INFINITY

LONG SERVICE LIFE & HIGH RELIABILITY



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 | Std 1 | Std 2 |
| H01164006 | 6 | -04 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 450 | 6,520 | 1,800 | 26,100 | 45 | 1.77 | 275 | 0.18 | MF+M00120-04 | OPF-04 |
| H01164008 | 8 | -05 | 5/16" | 12.9 | 0.51 | 14.7 | 0.58 | 400 | 5,800 | 1,600 | 23,200 | 55 | 2.17 | 325 | 0.22 | MF+M00120-05 | OPF-05 |
| H01164010 | 10 | -06 | 3/8" | 15.0 | 0.59 | 16.8 | 0.66 | 400 | 5,800 | 1,600 | 23,200 | 65 | 2.56 | 440 | 0.30 | MF+M00120-06 | OPK-06 |
| H01164012 | 12 | -08 | 1/2" | 18.6 | 0.73 | 20.4 | 0.80 | 360 | 5,220 | 1,440 | 20,880 | 80 | 3.15 | 560 | 0.38 | MF+M00120-08 | OPK-08 |
| H01164016 | 16 | -10 | 5/8" | 22.7 | 0.89 | 24.7 | 0.97 | 320 | 4,640 | 1,280 | 18,560 | 90 | 3.54 | 730 | 0.49 | MF+M00120-10 | OPK-10 |
| H01164019 | 19 | -12 | 3/4" | 27.1 | 1.07 | 29.3 | 1.15 | 320 | 4,640 | 1,280 | 18,560 | 120 | 4.72 | 1,070 | 0.72 | MF+M00120-12 | OPK-12 |
| H01164025 | 25 | -16 | 1" | 33.7 | 1.33 | 35.9 | 1.41 | 225 | 3,263 | 900 | 13,050 | 160 | 6.30 | 1,340 | 0.90 | MF+M00130-16 | OPK-16 |

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
- Wide chemical compatibility with hydraulic fluids

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

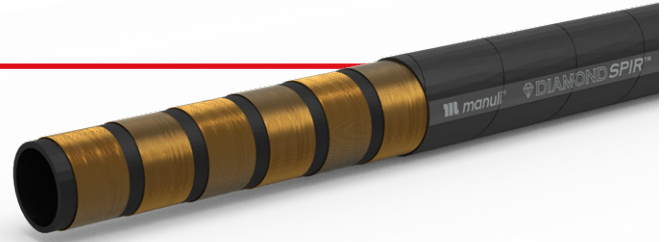
Exceed EN 857 2SC, SAE 100R16, ISO 11237-2SC

TYPE APPROVALS

MSHA; CU-TR; FRAS; B

DIAMONDSPIR

VERY HIGH PRESSURE



HOSES
60

| 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 | Std 1 | Std 2 |
| H10018019* | 19 | -12 | 3/4" | 29.1 | 1.15 | 32.1 | 1.26 | 560 | 8,120 | 2,240 | 32,480 | 280 | 11.02 | 1,660 | 1.12 | IP+M01850-12 | |
| H10018025* | 25 | -16 | 1" | 38.2 | 1.50 | 41.2 | 1.62 | 560 | 8,120 | 2,240 | 32,480 | 350 | 13.78 | 2,910 | 1.96 | IP+M01850-16 | |
| H10018032* | 31 | -20 | 1.1/4" | 47.7 | 1.88 | 50.9 | 2.00 | 525 | 7,610 | 2,100 | 30,450 | 420 | 16.54 | 4,210 | 2.83 | IP+M01850-20 | |
| H10018038* | 38 | -24 | 1.1/2" | 55.2 | 2.17 | 58.7 | 2.31 | 475 | 6,880 | 1,900 | 27,550 | 500 | 19.69 | 5,230 | 3.51 | IS+M02700-24 | |
| H10018051* | 51 | -32 | 2" | 68.4 | 2.69 | 71.9 | 2.83 | 420 | 6,090 | 1,680 | 24,360 | 600 | 23.62 | 6,680 | 4.49 | IS+M02700-32 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

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

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Manuli® Design exceeds ISO 3862 R15

TYPE APPROVALS

ABS; FRAS; CU-TR; MSHA; MA

SYNERGY

HIGH PRESSURE HYDRAULICS



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 | Std 1 | Std 2 |
| H10137006* | 6 | -4 | 1/4" | 14,0 | 0,55 | 16,6 | 0,65 | 450 | 6525 | 1800 | 26100 | 100 | 3,94 | 462 | 0,31 | MF+M00910-04 | |
| H10137010* | 10 | -6 | 3/8" | 16,2 | 0,64 | 18,2 | 0,72 | 450 | 6525 | 1800 | 26100 | 125 | 4,92 | 513 | 0,34 | MF+M03500-06 | MF+M00910-06 |
| H10137012* | 12 | -8 | 1/2" | 20,5 | 0,81 | 23,8 | 0,94 | 420 | 6090 | 1680 | 24360 | 160 | 6,30 | 798 | 0,54 | MF+M03500-08 | MF+M00910-08 |
| H10137019* | 19 | -12 | 3/4" | 28,4 | 1,12 | 31,3 | 1,23 | 365 | 5292,5 | 1460 | 21170 | 240 | 9,45 | 1274 | 0,86 | SP+M05400-12 | MF+M00920-12GX |
| H10137025* | 25 | -16 | 1" | 34,2 | 1,35 | 37,8 | 1,49 | 300 | 4350 | 1200 | 17400 | 340 | 13,39 | 1714 | 1,15 | SP+M05400-16 | MF+M00930-16 |
| H10137031* | 31 | -20 | 1-1/4" | 43,2 | 1,70 | 46,2 | 1,82 | 210 | 3045 | 840 | 12180 | 460 | 18,11 | 2231 | 1,50 | SP+M05400-20 | MF+M00920-20 |

KEY FEATURES

- Long life resistance in severe hydraulic applications
- High abrasion resistance
- High ozone and weather resistance
- Flame retardant and antistatic cover
- High flexibility and durability
- Low bend radii
- Compact dimensions

APPLICATIONS & FLUIDS

- Hydraulics: very high pressure hydraulic 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, glycols and polyglycols, mineral oils in aqueous emulsion, water.

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

1 wire braid and 2 wire spirals, high tensile steel

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

Manuli® Design, exceeds 4SP performance

TYPE APPROVALS

MSHA

XTRAFLOW/2WB

HIGH FLOW RATES, LOW PRESSURE DROPS



HOSES

62

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 | Std 1 | Std 2 |
| H01129063* | 63 | -40 | 2.1/2" | 75.8 | 2.98 | 78.5 | 3.09 | 105 | 1,520 | 420 | 6,090 | 510 | 20.08 | 3,531 | 2.37 | SP+M05400-40 | |
| H01129076* | 76 | -48 | 3" | 89.0 | 3.50 | 93.6 | 3.69 | 80 | 1,160 | 320 | 4,640 | 510 | 20.08 | 4,976 | 3.34 | SP+M05400-48 | |
| H01129089* | 89 | -56 | 3.1/2" | 102.2 | 4.02 | 107.4 | 4.23 | 35 | 500 | 140 | 2,030 | 710 | 27.95 | 5,530 | 3.72 | SP+M05400-56 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

S.H.A.R.C.
Synthetic rubber with very high abrasion, ozone and weather resistance

APPLICABLE SPECS

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

TYPE APPROVALS

CU-TR; MSHA; ABS; DNV-GL; FRAS; MA

XTRAFLOW/4WS

HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE



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 | Std 1 | Std 2 |
| H10091063* | 63 | -40 | 2.1/2" | 77.5 | 3.05 | 81.5 | 3.21 | 140 | 2,030 | 700 | 10,150 | 700 | 27.56 | 5,890 | 3.96 | SP+M05400-40 | |
| H10091076* | 76 | -48 | 3" | 87.8 | 3.46 | 92.2 | 3.63 | 105 | 1,520 | 525 | 7,610 | 700 | 27.56 | 5,367 | 3.61 | SP+M05400-48 | |
| H10091089* | 89 | -56 | 3.1/2" | 103.7 | 4.08 | 108.7 | 4.28 | 80 | 1,160 | 400 | 5,800 | 800 | 31.50 | 8,187 | 5.50 | SP+M05400-56 | |
| H10091102* | 102 | -64 | 4" | 120.0 | 4.72 | 126.0 | 4.96 | 35 | 500 | 140 | 2,030 | 900 | 35.43 | 10,210 | 6.86 | SP+M05400-64 | |

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, long wall water lines
- Mineral oils, vegetable oils and synthetic ester based oils, glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel wire spirals

COVER

S.H.A.R.C.
Synthetic rubber with very high abrasion, ozone and weather resistance

APPLICABLE SPECS

Manuli® Design

TYPE APPROVALS

CU-TR; MSHA; ABS; DNV-GL

XTRAFLOW/HT

HIGH TEMPERATURE SUCTION & RETURN LINES



HOSES

64

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 | Std 1 | Std 2 |
| H01128063* | 63 | -40 | 2.1/2" | 75.8 | 2.98 | 78.5 | 3.09 | 35 | 500 | 140 | 2,030 | 254 | 10.00 | 3,589 | 2.41 | MF+M03400-40 | |
| H01128076* | 76 | -48 | 3" | 87.8 | 3.46 | 90.5 | 3.56 | 35 | 500 | 140 | 2,030 | 355 | 13.98 | 3,291 | 2.21 | MF+M03400-48 | |
| H01128089* | 89 | -56 | 3.1/2" | 102.2 | 4.02 | 106.0 | 4.17 | 35 | 500 | 140 | 2,030 | 475 | 18.70 | 5,708 | 3.84 | MF+M03400-56 | |

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.
- Mineral oils, glycols and polyglycols, transmission fluids, mineral oils in aqueous emulsion (up to 212°F 100°C), air with oil vapours.

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F

135 °C, 275 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two wire braids of high tensile steel wire

COVER

STANDARD - TYPE "XT"

Synthetic rubber with high ozone, weather and heat resistance

APPLICABLE SPECS

Manuli® Design

TYPE APPROVALS

CU-TR; MSHA; ABS; DNV-GL

XTRAFLOW/HTEX

HIGH TEMPERATURE SUCTION & RETURN LINES



| 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 | Std 1 | Std 2 |
| H01161063* | 63 | -40 | 2.1/2" | 73.3 | 2.89 | 76.7 | 3.02 | 35 | 500 | 140 | 2,030 | 400 | 15.75 | 2,502 | 1.68 | MF+M03400-40 | |

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
- Easier heat dissipation

APPLICATIONS & FLUIDS

- Suction and return lines in hydraulic systems with high temperature fluids, low pressure hydraulic systems in mining equipment.
- Mineral oils, glycols and polyglycols, transmission fluids, mineral oils in aqueous emulsion (up to 212°F 100°C), air with oil vapours.

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F
135 °C, 275 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One wire braid of high tensile steel wire

COVER

Black textile braid with high ozone, weather and heat resistance

APPLICABLE SPECS

Manuli® Design

SPIRTEX/HT

HIGH PERFORMANCE R4 SUCTION AND DELIVERY HOSE



HOSES

66

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 | Std 1 | Std 2 |
| H80003019* | 19 | -12 | 3/4" | - | - | 28.5 | 1.12 | 25 | 360 | 100 | 1,450 | 80 | 3.15 | 530 | 0.36 | MF+M00321-12 | |
| H80003025* | 25 | -16 | 1" | - | - | 35.0 | 1.38 | 25 | 360 | 100 | 1,450 | 100 | 3.94 | 672 | 0.45 | MF+M00930-16 | |
| H80003031* | 31 | -20 | 1.1/4" | - | - | 42.0 | 1.65 | 17 | 250 | 70 | 1,010 | 130 | 5.12 | 836 | 0.56 | MF+M00920-20 | |
| H80003038* | 38 | -24 | 1.1/2" | - | - | 48.5 | 1.91 | 17 | 250 | 70 | 1,010 | 170 | 6.69 | 1,098 | 0.74 | MF+M00910-24 | |
| H80003051* | 51 | -32 | 2" | - | - | 61.5 | 2.42 | 10 | 150 | 42 | 600 | 200 | 7.87 | 1,408 | 0.95 | MF+M00910-32 | |
| H80003063* | 63 | -40 | 2.1/2" | - | - | 75.0 | 2.95 | 10 | 150 | 42 | 600 | 235 | 9.25 | 2,250 | 1.51 | MF+M03400-40 | |
| H80003076* | 76 | -48 | 3" | - | - | 87.5 | 3.44 | 7 | 100 | 28 | 400 | 300 | 11.81 | 2,703 | 1.82 | MF+M03400-48 | |
| H80003089* | 89 | -56 | 3.1/2" | - | - | 103.0 | 4.06 | 5 | 70 | 21 | 300 | 350 | 13.78 | 3,683 | 2.47 | MF+M03400-56 | |
| H80003102* | 102 | -64 | 4" | - | - | 114.5 | 4.51 | 5 | 70 | 21 | 300 | 400 | 15.75 | 3,937 | 2.65 | MF+M03400-64 | |

KEY FEATURES

- Hardwall hose used for the suction and delivery of hydraulic oils
- Improved minimum bend radius
- Higher working pressure than SAE J517 100R4 spec.
- Long lasting in severe applications
- Resistance to Vacuum
- Special rubber compounds for high aging resistance
- Max. length: 60m

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

135 °C, 275 °F

TUBE

Special synthetic rubber

REINFORCEMENT

High tensile synthetic cord, helix body wire

COVER

Weather and ozone resistant synthetic rubber, flame retardant with high heat resistance

APPLICABLE SPECS

SAE J517 100 R4, Manuli® Design; two-thirds the SAE J517 100R4 minimum bend radius

TYPE APPROVALS

CU-TR

PUSHFIT

PUSH-ON HOSE



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 | Std 1 | Std 2 |
| H09066006* | 6 | -4 | 1/4" | 0.0 | 0.00 | 12.7 | 0.50 | 35 | 500 | 140 | 2,030 | 76 | 2.99 | 130 | 0.09 | PL-04 | |
| H09066008* | 8 | -5 | 5/16" | 0.0 | 0.00 | 14.3 | 0.56 | 35 | 500 | 140 | 2,030 | 76 | 2.99 | 155 | 0.10 | PL-05 | |
| H09066010* | 10 | -6 | 3/8" | 0.0 | 0.00 | 15.8 | 0.62 | 35 | 500 | 140 | 2,030 | 76 | 2.99 | 175 | 0.12 | PL-06 | |
| H09066012* | 12 | -8 | 1/2" | 0.0 | 0.00 | 19.6 | 0.77 | 25 | 360 | 100 | 1,450 | 127 | 5.00 | 235 | 0.16 | PL-08 | |
| H09066016* | 16 | -10 | 5/8" | 0.0 | 0.00 | 23.6 | 0.93 | 25 | 360 | 100 | 1,450 | 150 | 5.91 | 320 | 0.22 | PL-10 | |
| H09066019* | 19 | -12 | 3/4" | 0.0 | 0.00 | 26.2 | 1.03 | 21 | 300 | 84 | 1,210 | 180 | 7.09 | 340 | 0.23 | PL-12 | |
| H09066025* | 25 | -16 | 1" | 0.0 | 0.00 | 33.0 | 1.30 | 14 | 200 | 56 | 810 | 240 | 9.45 | 455 | 0.31 | PL-16 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One textile braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

Manuli® Design

TYPE APPROVALS

CU-TR



GLOBAL STD. ● HI-GRADE ● PREMIUM

FOREMASTER/21

OUTSTANDING ABRASION RESISTANCE



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 | Std 1 | Std 2 |
| H01166A06* | 6 | -4 | 1/4" | 10.2 | 0.40 | 12.0 | 0.47 | 210 | 3,040 | 840 | 12,180 | 50 | 1.97 | 177 | 0.12 | MF+M00120-04 | OPF-04 |
| H01166A08* | 8 | -5 | 5/16" | 11.5 | 0.45 | 13.6 | 0.54 | 210 | 3,040 | 840 | 12,180 | 55 | 2.17 | 207 | 0.14 | MF+M00120-05 | OPF-05 |
| H01166A10* | 10 | -6 | 3/8" | 14.4 | 0.57 | 16.4 | 0.65 | 210 | 3,040 | 840 | 12,180 | 65 | 2.56 | 301 | 0.20 | MF+M00120-06 | OPF-06 |
| H01166A12* | 12 | -8 | 1/2" | 18.1 | 0.71 | 20.3 | 0.80 | 210 | 3,040 | 840 | 12,180 | 90 | 3.54 | 441 | 0.30 | MF+M00120-08 | OPF-08 |
| H01166A16* | 16 | -10 | 5/8" | 22.2 | 0.87 | 24.2 | 0.95 | 210 | 3,040 | 840 | 12,180 | 100 | 3.94 | 616 | 0.41 | MF+M00120-10 | OPF-10 |
| H01166A19* | 19 | -12 | 3/4" | 25.6 | 1.01 | 27.7 | 1.09 | 210 | 3,040 | 840 | 12,180 | 120 | 4.72 | 761 | 0.51 | MF+M00120-12 | OPF-12 |
| H01166A25* | 25 | -16 | 1" | 33.0 | 1.30 | 35.2 | 1.39 | 210 | 3,040 | 840 | 12,180 | 150 | 5.91 | 1,172 | 0.79 | MF+M00130-16 | OPF-16 |

KEY FEATURES

- Extreme abrasion resistance
- Impact and scratch resistant cover
- Very low bend radius to suit restricted space installations
- Highly robust and compact hose structure compared to rated pressure
- High resistance to environmental agents
- Vacuum resistance according to SAE 100R4 requirements

APPLICATIONS & FLUIDS

- Low and medium 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One wire braid (DN 6-12). Two wire braid (DN 16-25)

COVER

R.O.C.
Synthetic rubber with extreme abrasion and ozone resistance

APPLICABLE SPECS

ISO 18752-C; Exceeds SAE J517 Type 100R17 & ISO 11237-R17

TYPE APPROVALS

MSHA

FOREMASTER/28

OUTSTANDING ABRASION RESISTANCE



HOSES 70

| 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 | Std 1 | Std 2 |
| H01167A06* | 6 | -4 | 1/4" | 11.6 | 0.46 | 13.2 | 0.52 | 280 | 4,060 | 1,120 | 16,240 | 50 | 1.97 | 254 | 0.17 | MF+M00120-04 | OPF-04 |
| H01167A08* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.5 | 0.57 | 280 | 4,060 | 1,120 | 16,240 | 55 | 2.17 | 279 | 0.19 | MF+M00120-05 | OPF-05 |
| H01167A10* | 10 | -6 | 3/8" | 15.4 | 0.61 | 17.0 | 0.67 | 280 | 4,060 | 1,120 | 16,240 | 63 | 2.48 | 374 | 0.25 | MF+M00120-06 | OPF-06 |
| H01167A12* | 12 | -8 | 1/2" | 18.5 | 0.73 | 20.3 | 0.80 | 280 | 4,060 | 1,120 | 16,240 | 80 | 3.15 | 488 | 0.33 | MF+M00120-08 | OPF-08 |
| H01167A16* | 16 | -10 | 5/8" | 22.7 | 0.89 | 24.7 | 0.97 | 280 | 4,060 | 1,120 | 16,240 | 90 | 3.54 | 719 | 0.48 | MF+M00120-10 | OPF-10 |
| H01167A19* | 19 | -12 | 3/4" | 27.1 | 1.07 | 29.3 | 1.15 | 280 | 4,060 | 1,120 | 16,240 | 120 | 4.72 | 1,040 | 0.70 | MF+M00120-12 | OPK-12 |

KEY FEATURES

- Extreme abrasion resistance
- Impact and scratch resistant cover
- Very low bend radius to suit restricted space installations
- Highly robust and compact hose structure compared to rated pressure
- High resistance to environmental agents
- Vacuum resistance according 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile wire braids

COVER

R.O.C.

Synthetic rubber with extreme abrasion and ozone resistance

APPLICABLE SPECS

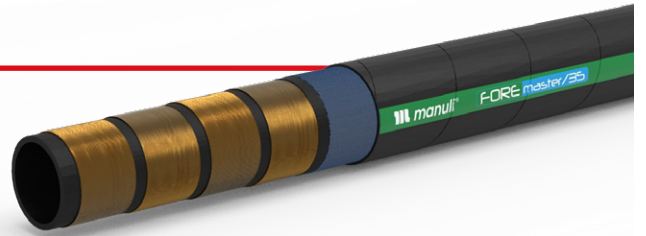
ISO 18752-C; Exceeds SAE J517 Type 100R19 & ISO 11237-R19

TYPE APPROVALS

MSHA

FOREMASTER/35

EXTREME SCRATCHING RESISTANCE



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 | Std 1 | Std 2 |
| H10133010* | 10 | -6 | 3/8" | 15.5 | 0.61 | 17.1 | 0.67 | 350 | 5,070 | 1,400 | 20,300 | 65 | 2.56 | 440 | 0.30 | MF+M00120-06 | |
| H10133012* | 12 | -8 | 1/2" | 18.6 | 0.73 | 20.6 | 0.81 | 350 | 5,070 | 1,400 | 20,300 | 80 | 3.15 | 573 | 0.39 | MF+M00120-08 | |
| H10133019* | 19 | -12 | 3/4" | 27.5 | 1.08 | 31.7 | 1.25 | 350 | 5,070 | 1,400 | 20,300 | 140 | 5.51 | 1,251 | 0.84 | IP+M01500-12 | SP+M05400-12 |
| H10133025* | 25 | -16 | 1" | 34.6 | 1.36 | 38.8 | 1.53 | 350 | 5,070 | 1,400 | 20,300 | 190 | 7.48 | 1,843 | 1.24 | IP+M01500-16 | SP+M05400-16 |
| H10133031* | 31 | -20 | 1.1/4" | 42.1 | 1.66 | 47.1 | 1.85 | 350 | 5,070 | 1,400 | 20,300 | 230 | 9.06 | 2,484 | 1.67 | IP+M01500-20 | |
| H10133038* | 38 | -24 | 1.1/2" | 52.9 | 2.08 | 57.9 | 2.28 | 350 | 5,070 | 1,400 | 20,300 | 300 | 11.81 | 4,268 | 2.87 | IP+M01600-24 | |
| H10133051* | 51 | -32 | 2" | 66.8 | 2.63 | 72.2 | 2.84 | 350 | 5,070 | 1,400 | 20,300 | 360 | 14.17 | 6,278 | 4.22 | IP+M01800-32 | |

KEY FEATURES

- Extremely high abrasion resistance, long life before reinforcement scratching
- Special composite cover layer with textile reinforcement for maximum resistance in harsh environments
- Very low bend radius to suit restricted space installations
- Good flexibility across the whole temperature range
- Easy mounting in any installation
- Highly robust and compact hose structure compared to rated pressure
- High resistance to environmental agents
- 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 abrasion
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

DN 10-12 - R.O.C.

Synthetic rubber with extreme abrasion and ozone resistance

DN 19 and larger - ARMoured

Synthetic rubber composite cover with textile reinforcement, high abrasion and very high scratch resistance

APPLICABLE SPECS

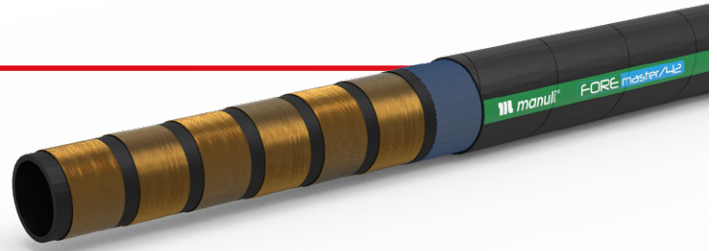
Manuli® Design, ref. ISO 18752-C

TYPE APPROVALS

MSHA; CU-TR

FOREMASTER/42

EXTREME SCRATCHING RESISTANCE



HOSES 72

| 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 | Std 1 | Std 2 |
| H10134006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.51 | 420 | 6,090 | 1,680 | 24,360 | 45 | 1.77 | 284 | 0.19 | | |
| H10134010* | 10 | -6 | 3/8" | 17.6 | 0.69 | 20.0 | 0.78 | 420 | 6,090 | 1,680 | 24,360 | 100 | 3.93 | 684 | 0.46 | MF+M00910-06 | |
| H10134012* | 12 | -8 | 1/2" | 20.3 | 0.79 | 22.7 | 0.89 | 420 | 6,090 | 1,680 | 24,360 | 120 | 4.72 | 797 | 0.54 | MF+M00910-08 | |
| H10134016* | 16 | -10 | 5/8" | 23.9 | 0.94 | 26.4 | 1.03 | 420 | 6,090 | 1,680 | 24,360 | 140 | 5.51 | 982 | 0.66 | MF+M01500-10 | |
| H10134019* | 19 | -12 | 3/4" | 27.7 | 1.09 | 31.9 | 1.26 | 420 | 6,090 | 1,680 | 24,360 | 150 | 5.91 | 1,356 | 0.91 | IP+M01500-12 | |
| H10134025* | 25 | -16 | 1" | 34.8 | 1.37 | 39.0 | 1.54 | 420 | 6,090 | 1,680 | 24,360 | 210 | 8.27 | 2,079 | 1.40 | IP+M01500-16 | |
| H10134031* | 31 | -20 | 1.1/4" | 42.2 | 1.66 | 46.5 | 1.83 | 420 | 6,090 | 1,680 | 24,360 | 260 | 10.24 | 2,474 | 1.66 | IP+M01500-20 | |
| H10134038* | 38 | -24 | 1.1/2" | 53.2 | 2.09 | 58.2 | 2.29 | 420 | 6,090 | 1,680 | 24,360 | 310 | 12.20 | 4,536 | 1.40 | IP+M01600-24 | |
| H10134051* | 51 | -32 | 2" | 68.9 | 2.71 | 73.5 | 2.89 | 420 | 6,090 | 1,680 | 24,360 | 500 | 19.69 | 7,325 | 4.92 | IS+M02700-32 | SPGX+M05500-32GX |

KEY FEATURES

- Extremely high abrasion resistance, long life before reinforcement scratching
- Special composite cover layer with textile reinforcement for maximum resistance in harsh environments
- Very low bend radius to suit restricted space installations
- Good flexibility across the whole temperature range
- Easy mounting in any installation
- Highly robust and compact hose structure compared to rated pressure
- High resistance to environmental agents
- 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 abrasion
- Mineral oils, vegetable oils and synthetic ester based oils (up to 100°C/212°F), glycols and polyglycols, mineral oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals

COVER

DN 6-16 - R.O.C.

Synthetic rubber with extreme abrasion and ozone resistance

DN 19 and larger - ARMoured

Synthetic rubber composite cover with textile reinforcement, high abrasion and very high scratch resistance

APPLICABLE SPECS

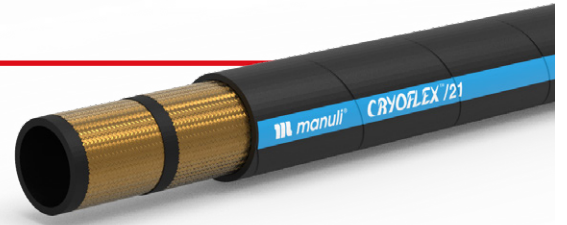
Manuli® Design, ref. ISO 18752-C

TYPE APPROVALS

MSHA; CU-TR

CRYOFLEX/21

EXTREME COLD ENVIRONMENTS



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 | Std 1 | Std 2 |
| H01158016* | 16 | -10 | 5/8" | 22.2 | 0,87 | 24.0 | 0.94 | 210 | 3,040 | 840 | 12,180 | 100 | 3.94 | 609 | 0.41 | MF+M00120-10 | OPF-10 |
| H01158019* | 19 | -12 | 3/4" | 25.6 | 1.01 | 27.7 | 1.09 | 210 | 3,040 | 840 | 12,180 | 120 | 4.72 | 765 | 0.51 | MF+M00120-12 | OPF-12 |
| H01158025* | 25 | -16 | 1" | 33.0 | 1.30 | 35.2 | 1.39 | 210 | 3,040 | 840 | 12,180 | 150 | 5.91 | 1,188 | 0.80 | MF+M00130-16 | OPF-16 |

KEY FEATURES

- Good flexibility at very low temperatures
- Reduced bend radius, according to compact hoses standard requirements
- Easy mounting in any installation
- High impulse resistance according to ISO 18752
- Weight saving vs. traditional hose construction
- No-skive fitting solution available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- Medium pressure hydraulic lines for general hydraulics in extreme cold environment
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

2 high tensile steel braids

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-B Ext.

TYPE APPROVALS

MSHA; CU-TR

CRYOFLEX/35

EXTREME COLD ENVIRONMENTS



HOSES 74

| 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 | Std 1 | Std 2 |
| H01159006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 350 | 5,070 | 1,400 | 20,300 | 45 | 1.77 | 285 | 0.19 | MF+M00120-04 | OPF-04 |
| H01159006* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.7 | 0.58 | 350 | 5,070 | 1,400 | 20,300 | 55 | 2.17 | 320 | 0.22 | MF+M00120-05 | OPF-05 |
| H01159010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 16.8 | 0.66 | 350 | 5,070 | 1,400 | 20,300 | 65 | 2.56 | 390 | 0.26 | MF+M00120-06 | OPF-06 |
| H01159012* | 12 | -8 | 1/2" | 18.6 | 0.73 | 20.4 | 0.80 | 350 | 5,070 | 1,400 | 20,300 | 80 | 3.15 | 553 | 0.37 | MF+M00120-08 | OPF-08 |
| H01159019* | 19 | -12 | 3/4" | 27.5 | 1.08 | 29.9 | 1.18 | 350 | 5,070 | 1,400 | 20,300 | 120 | 4.72 | 1,212 | 0.81 | IP+M01500-12 | SP+M05400-12 |
| H01159025* | 25 | -16 | 1" | 34.6 | 1.36 | 37.0 | 1.46 | 350 | 5,070 | 1,400 | 20,300 | 150 | 5.91 | 1,773 | 1.19 | IP+M01500-16 | SP+M05400-16 |
| H01159031* | 31 | -20 | 1.1/4" | 42.1 | 1.66 | 44.9 | 1.77 | 350 | 5,070 | 1,400 | 20,300 | 230 | 9.06 | 2,335 | 1.57 | IP+M01500-20 | SP+M05400-20 |

KEY FEATURES

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

APPLICATIONS & FLUIDS

- High pressure hydraulic lines for general hydraulics in extreme cold environment
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

2 high tensile steel braids (DN 6-12). Four high tensile steel spirals (DN 19-31)

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

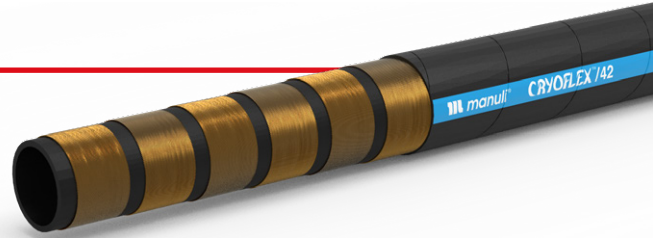
ISO 18752-B Ext.

TYPE APPROVALS

MSHA; CU-TR

CRYOFLEX/42

EXTREME COLD ENVIRONMENTS



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 | Std 1 | Std 2 |
| H10123019* | 19 | -12 | 3/4" | 27.7 | 1.09 | 30.2 | 1.19 | 420 | 6,090 | 1,680 | 24,360 | 150 | 5.91 | 1,281 | 0.86 | IP+M01500-12 | SP+M05400-12 |
| H10123025* | 25 | -16 | 1" | 35.0 | 1.38 | 37.5 | 1.48 | 420 | 6,090 | 1,680 | 24,360 | 210 | 8.27 | 2,004 | 1.35 | IP+M01500-16 | SP+M05400-16 |
| H10123031* | 31 | -20 | 1.1/4" | 46.3 | 1.82 | 49.5 | 1.95 | 420 | 6,090 | 1,680 | 24,360 | 260 | 10.24 | 3,665 | 2.46 | IP+M01600-20 | |
| H10123051* | 51 | -32 | 2" | 68.9 | 2.71 | 72.4 | 2.85 | 420 | 6,090 | 1,680 | 24,360 | 500 | 19.69 | 7,302 | 4.91 | IS+M02700-32 | |

KEY FEATURES

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

APPLICATIONS & FLUIDS

- High pressure hydraulic lines for general hydraulics in extreme cold environment
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (DN 19-25). Six high tensile steel spirals (DN 31-51)

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-B Ext.

TYPE APPROVALS

MSHA; CU-TR

ANACONDA

HEAVY DUTY, LOW BENDING FORCE



HOSES 76

| 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 | Std 1 | Std 2 |
| H10132019* | 19 | -12 | 3/4" | 27.7 | 1.09 | 30.2 | 1.19 | 420 | 6,090 | 1,680 | 24,360 | 150 | 5.91 | 1,288 | 0.87 | IP+M01500-12 | SP+M05400-12 |
| H10132025* | 25 | -16 | 1" | 35.3 | 1.39 | 37.7 | 1.48 | 420 | 6,090 | 1,680 | 24,360 | 210 | 8.27 | 2,012 | 1.35 | IP+M01500-16 | SP+M05400-16 |
| H10132031* | 31 | -20 | 1.1/4" | 42.2 | 1.66 | 45.5 | 1.79 | 420 | 6,090 | 1,680 | 24,360 | 260 | 10.24 | 2,453 | 1.65 | IP+M01500-20 | SP+M05400-20 |
| H10132038* | 38 | -24 | 1.1/2" | 52.5 | 2.07 | 55.5 | 2.19 | 420 | 6,090 | 1,680 | 24,360 | 300 | 11.81 | 4,076 | 2.74 | IP+M01600-24 | |
| H10132A38* † | 38 | -24 | 1.1/2" | 50.4 | 1.98 | 53.4 | 2.10 | 350 | 5,070 | 1,400 | 20,300 | 300 | 11.81 | 3,269 | 2.19 | IP+M01600-24 | |

† Compact hose

KEY FEATURES

- Low bending force to suit difficult undercarriage installations
- Bend radius which exceeds the standard requirements
- Good flexibility across the whole temperature range
- Easy mounting in static configurations
- High impulse resistance according to ISO 18752
- No-skive fitting solution available
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- High pressure hydraulic lines in hydrostatic transmissions
- Applications with installation constraints, short assemblies in static configurations, low bend radii in undercarriage 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four high tensile steel spirals (six high tensile steel spirals DN 38 standard version)

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752 Grade C, exceeds SAE J517 R15, ISO 3862 R15

TYPE APPROVALS

MSHA; CU-TR

REMARKS



- Sizes -12 and -16 are qualified to reduced bend radius with Interlock Plus fitting solution
 -12: MBR = 110mm
 -16: MBR = 150mm

HERCULES/HT

HEAVY DUTY FOR GIANT EQUIPMENT



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 | Std 1 | Std 2 |
| H10125031* | 31 | -20 | 1.1/4" | 47.7 | 1.88 | 50.9 | 2.00 | 420 | 6,090 | 1,680 | 24,360 | 400 | 15.75 | 4,175 | 2.81 | IP+M01850-20 | |
| H10125038* | 38 | -24 | 1.1/2" | 55.2 | 2.17 | 58.7 | 2.31 | 420 | 6,090 | 1,680 | 24,360 | 450 | 17.72 | 5,195 | 3.49 | IS+M02700-24 | |
| H10125051* | 51 | -32 | 2" | 68.9 | 2.71 | 72.4 | 2.85 | 420 | 6,090 | 1,680 | 24,360 | 500 | 19.69 | 7,265 | 4.88 | IS+M02700-32 | |

KEY FEATURES

- Robustness and durability - longer than 1 year on "hump hose" applications
- Bend radius exceeds standard requirements by -30% to -50%
- Good flexibility across the whole temperature range
- Easy mounting in any installation
- High impulse resistance according to ISO 18752
- Isobaric pressure rating for easy selection and product management

APPLICATIONS & FLUIDS

- High pressure power lines for general hydraulics
- Heavy duty power lines
- Hump hoses on giant excavators
- Long durability due to special tube compound
- Applications with long assemblies with self-standing capacity
- 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
135 °C, 275 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six high tensile steel wire spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752-D Ext., exceeds SAE J517 R15

TYPE APPROVALS

MSHA; CU-TR

REMARKS



- Hercules/HT is enhanced by new HSSL heat shrinkable sleeves (optional). These heat shrinkable sleeves protect the ferrule from dirt inclusion and moisture ingress under the ferrule. Sleeves are made with heat shrinkable material, which is self-extinguishing and provides low voltage electrical insulation, provide the best possible protection with high abrasion resistance.

HYDROROPE

OUTSTANDING TENSILE STRENGTH



HOSES 78

| 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 | Std 1 | Std 2 |
| H10136025* | 25 | -16 | 1 | 38.2 | 1.50 | 41.4 | 1.63 | 420 | 6,090 | 1,680 | 24,360 | 400 | 15.51 | 2,910 | 1.95 | IP+M01850-16 | |
| H10136031* | 31 | -20 | 1.1/4" | 46.9 | 1.85 | 50.1 | 1.97 | 420 | 6,090 | 1,680 | 24,360 | 450 | 17.72 | 3,749 | 2.52 | IP+M01600-20 | |
| H10136A38*† | 38 | -24 | 1.1/2" | 53.2 | 2.09 | 56.5 | 2.22 | 350 | 5,076 | 1,400 | 20,305 | 500 | 19.65 | 4,256 | 2.86 | IP+M01600-24 | |
| H10136038* | 38 | -24 | 1.1/2" | 54.7 | 2.15 | 57.3 | 2.26 | 420 | 6,090 | 1,680 | 24,360 | 600 | 23.62 | 4,650 | 3.12 | IS+M02700-24 | |
| H10136051* | 51 | -32 | 2" | 69.2 | 2.72 | 72.4 | 2.85 | 420 | 6,090 | 1,680 | 24,360 | 800 | 31.50 | 6,590 | 4.42 | IS+M02700-32 | |
| H10136063* | 63 | -40 | 2.1/2" | 84.1 | 3.31 | 87.3 | 3.44 | 380 | 5,511 | 1,520 | 22,045 | 900 | 35.43 | 9,405 | 6.31 | IP+M01900-40 | |
| H10136076* | 76 | -48 | 3" | 97.1 | 3.82 | 100.2 | 3.94 | 350 | 5,076 | 1,400 | 20,305 | 1000 | 39.37 | 11,106 | 7.46 | IS+M02700-48 | |

† Compact hose

KEY FEATURES

- Designed to resist pulling force
- High pressure resistance
- Superior abrasion resistance
- High ozone and weather resistance
- Flame resistance to a wide range of specs
- Anti-static and anti-toxic cover

APPLICATIONS & FLUIDS

- Heavy duty power lines in severe environmental conditions
- Specific installations with tough abrasion conditions
- Off-shore applications, underground and open-pit mining, special machines where hose high pulling resistance is required (grabs, 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F

121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Four (DN 25, 31, DN 38 Compact) and six (DN 38, DN 76) high tensile steel spirals + One high tensile steel wire braid

COVER

STRONG - TYPE "SC"

Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

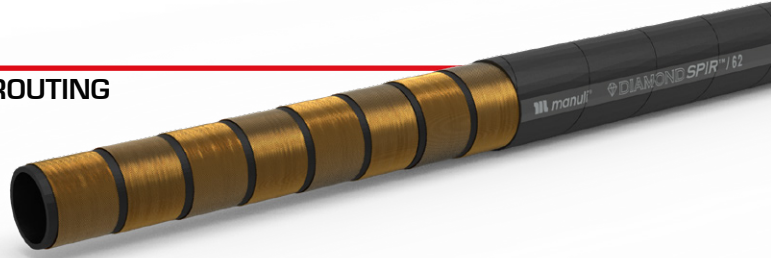
Manuli® Design

TYPE APPROVALS

MSHA; CU-TR;

DIAMONDSPIR/62

VERY HIGH PRESSURE HYDRAULICS & JET GROUTING



| 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 | Std 1 | Std 2 |
| H10118031* | 31 | -20 | 1.1/4" | 51.2 | 2.02 | 54.4 | 2.14 | 621 | 9,005 | 2,484 | 36,018 | 600 | 23.62 | 5,638 | 3.79 | IP+M01900-20 | |
| H10118038* | 38 | -24 | 1.1/2" | 59.3 | 2.33 | 63.2 | 2.49 | 621 | 9,005 | 2,484 | 36,018 | 800 | 31.50 | 7,100 | 4.77 | IS+M02900-24 | |

KEY FEATURES

- Extremely robust structure for liquid concrete high pressure pumping, with safety factor 4:1
- Double-skive reliable fittings, also available in stainless steel
- Approved for very high pressure hydraulics with ISO 6803 fatigue test (200,000 cycles, T=100°C, WP)

APPLICATIONS & FLUIDS

- Liquid concrete, bentonite, for jet grouting (very high pressure)
- Hydraulic oils (heavy duty, high pressure)
- Water-based hydraulic oils, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Multiple high tensile wire spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

ISO 18752 Grade A Ext., EN 16228-6: safety factor 4:1

TYPE APPROVALS

MSHA; CU-TR

GOLDENGUARD/3000

EMERGENCY HYDRAULIC SYSTEMS & BOP



HOSES 80

| 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 | Std 1 | Std 2 |
| H11022019* | 19 | -12 | 3/4" | 26.9 | 1.06 | 32.3 | 1.27 | 207 | 3,000 | 828 | 12,000 | 180 | 7.09 | 1,288 | 0.87 | OPK-12 | |
| H11022025* | 25 | -16 | 1" | 34.1 | 1.34 | 40.1 | 1.58 | 207 | 3,000 | 828 | 12,000 | 230 | 9.06 | 1,876 | 1.26 | OPK-16 | |

KEY FEATURES

- Highly robust hose structure
- Thermal insulation of the hose with a special cover material
- Long lasting resistance of the cover layer
- Cover has 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, defence, 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

High grade NBR oil resistant synthetic 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-C

TYPE APPROVALS

DNV-GL; CU-TR; MSHA; API 16D Fire Test (DNV); LR; CCS; ABS

REMARKS



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

GOLDENGUARD/5000

EMERGENCY HYDRAULIC SYSTEMS & BOP



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 | Std 1 | Std 2 |
| H11020010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 20.7 | 0.81 | 345 | 5,000 | 1,380 | 20,010 | 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 | 5,000 | 1,380 | 20,010 | 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 | 5,000 | 1,380 | 20,010 | 180 | 7.09 | 1,490 | 1.00 | IP+M01500-10 | |
| H11020019* | 19 | -12 | 3/4" | 29.0 | 1.14 | 36.2 | 1.43 | 345 | 5,000 | 1,380 | 20,010 | 240 | 9.45 | 2,024 | 1.36 | IP+M01500-12 | SP+M05400-12 |
| H11020025* | 25 | -16 | 1" | 36.0 | 1.42 | 44.0 | 1.73 | 345 | 5,000 | 1,380 | 20,010 | 300 | 11.81 | 2,742 | 1.84 | IP+M01500-16 | SP+M05400-16 |
| H11020031* | 31 | -20 | 1.1/4" | 47.0 | 1.85 | 55.0 | 2.17 | 345 | 5,000 | 1,380 | 20,010 | 420 | 16.54 | 4,293 | 2.88 | IP+M01600-20 | SP+M05500-20 |
| H11020038* | 28 | -24 | 1.1/2" | 54.6 | 2.15 | 62.6 | 2.46 | 345 | 5,000 | 1,380 | 20,010 | 500 | 19.69 | 5,531 | 3.72 | IP+M01600-24 | SP+M05500-24 |
| H11020051* | 51 | -32 | 2" | 68.4 | 2.69 | 76.4 | 3.01 | 345 | 5,000 | 1,380 | 20,010 | 630 | 24.80 | 7,712 | 5.18 | IP+M01800-32 | SP+M05500-32 |

KEY FEATURES

- Highly robust hose structure
- Thermal insulation of the hose with a special cover material
- Long lasting resistance of the cover layer
- Cover has 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, defence, 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

High grade NBR oil resistant synthetic rubber

REINFORCEMENT

Multiple plies of high tensile steel wire spirals (DN 16-25); 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 & SAE J517-100R13 performance

TYPE APPROVALS

DNV-GL; CU-TR; MSHA; API 16D Fire Test (DNV); LR; CCS; ABS

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 required
 - STD2 fitting solution: No accessories required
- The STD1 fitting solution has been selected for the most demanding applications
- DN 10 & 12: Max. continuous temperature 100 °C for these wire braided references

GOLDENARMOUR

EMERGENCY HYDRAULIC SYSTEMS & BOP



HOSES 82

| TECHNICAL DATA | | | | | | | | | | | | |
|----------------|------------------|-----------|------|--------|----------|-------|-------|--------|------------|--------|---------------|----------------|
| | | | | | | | | | PROOF TEST | | | |
| PART REF. | HOSE TYPE | HOSE SIZE | | | MAX. W.P | | BURST | | TEST | | FITTINGS | ACCESSORIES |
| | | DN | dash | inch | bar | psi | bar | psi | bar | psi | | |
| H01101010* | ROCKMASTER/2PLUS | 10 | -6 | 3/8" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | MF+IM00910-06 | JP45G090280099 |
| H01101012* | ROCKMASTER/2PLUS | 12 | -8 | 1/2" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | MF+IM00910-08 | JP45G090320099 |
| H10044016* | ROCKMASTER/4SH | 16 | -10 | 5/8" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01500-10 | JP45G090400099 |
| H10035019* | ROCKMASTER/13 | 19 | -12 | 3/4" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01500-12 | JP45G090450099 |
| H10035025* | ROCKMASTER/13 | 25 | -16 | 1" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01500-16 | JP45G090500099 |
| H10035032* | ROCKMASTER/13 | 31 | -20 | 1.1/4" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01600-20 | JP45G090650099 |
| H10035040* | ROCKMASTER/13 | 38 | -24 | 1.1/2" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01600-24 | JP45G090750099 |
| H10035051* | ROCKMASTER/13 | 51 | -32 | 2" | 345 | 5,000 | 1,380 | 20,000 | 690 | 10,000 | IP+IM01800-32 | JP45G090900099 |

KEY FEATURES

- Highly robust hose structure
- Thermal insulation of the hose with a stainless steel 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, defence, mining)
- Flexible hose for hydraulic systems of Blow Out Preventer control lines on drilling rigs
- Mineral oils, glycol and polyglycol based oils, mineral oils in aqueous emulsion

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F (DN 10-12); 121 °C, 250 °F DN 16-51

TUBE

High grade NBR oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids (DN 10-12); Multiple plies of high tensile steel spirals (DN 16-51)

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

API 16D Fire Test (pr.10.1.2);
ISO 18752-A (DN 10-12);
ISO 18752-C, ISO 3862, SAE J517 Type 100R13 performance (DN 16-51)

TYPE APPROVALS

DNV-GL; LR; API 16D Fire Test (DNV); ABS; CCS; CU-TR

REMARKS

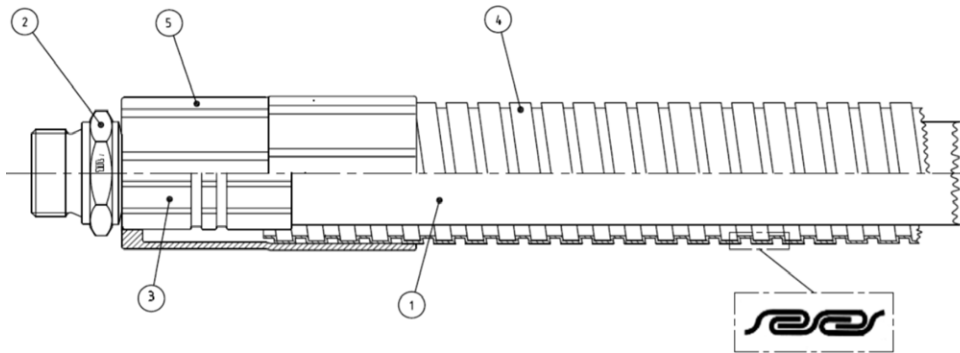


- Refer to Golden Armour assembling instructions and crimp chart for the correct assembly of the hose
- Hose Assembly Branding: The Golden Armour assembly must report at least the following information in the hose brand:
 - inch size - WP 5,000 psi (on the metal sleeve)
 - assembling date - assembler identification (additional tag or on the metal sleeve)

GOLDENARMOUR

EMERGENCY HYDRAULIC SYSTEMS & BOP

GOLDENARMOUR MAKE-UP



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

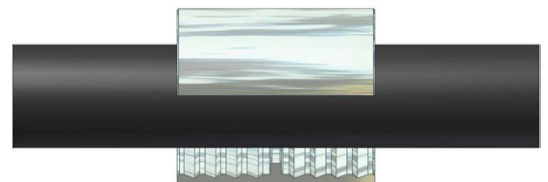
ACCESSORIES TECHNICAL DATA

| ARMOUR PART REF. | TO SUIT HOSE SIZE | | ARMOUR SIZE | | | | MIN. BEND | | WEIGHT | | METAL SLEEVE | | | ARMOUR JOINT | | | |
|------------------|-------------------|-----|-------------|------|--------|------|-----------|-----|--------|-------|--------------|--------------|-------|--------------|------------|-------|-----|
| | | | d | | D | | | | | | PART REF. | D | L | PART REF. | D | L | |
| | | | mm | inch | mm | inch | | | | | | | | | | | mm |
| JP45G090280099 | 10 | -6 | 3/8" | 25 | 1" | 32.0 | 1.26 | 127 | 5.00 | 565 | 0.38 | IO82110-06GA | 40.5 | 60 | IO84210-06 | 40.5 | 65 |
| JP45G090320099 | 12 | -8 | 1/2" | 31 | 1.1/4" | 36.5 | 1.44 | 150 | 5.91 | 703 | 0.47 | IO82110-08GA | 46.8 | 75 | IO84210-08 | 46.8 | 65 |
| JP45G090400099 | 16 | -10 | 5/8" | 38 | 1.1/2" | 44.5 | 1.75 | 180 | 7.09 | 939 | 0.63 | IO82110-10GA | 53.2 | 90 | IO84210-10 | 53.2 | 65 |
| JP45G090450099 | 19 | -12 | 3/4" | 46 | 1.3/4" | 51.0 | 2.01 | 240 | 9.45 | 1,118 | 0.75 | IO82110-12GA | 59.5 | 105 | IO84210-12 | 59.5 | 70 |
| JP45G090500099 | 25 | -16 | 1" | 51 | 2" | 57.5 | 2.26 | 300 | 11.81 | 1,301 | 0.87 | IO82110-16GA | 66.0 | 120 | IO84210-16 | 66.0 | 75 |
| JP45G090650099 | 31 | -20 | 1.1/4" | 63 | 2.1/2" | 70.0 | 2.76 | 420 | 16.54 | 1,636 | 1.10 | IO82110-20GA | 78.6 | 135 | IO84210-20 | 78.6 | 95 |
| JP45G090750099 | 38 | -24 | 1.1/2" | 76 | 3" | 82.5 | 3.27 | 500 | 19.69 | 1,920 | 1.29 | IO82110-24GA | 91.5 | 150 | IO84210-24 | 91.5 | 105 |
| JP45G090900099 | 51 | -32 | 2" | 89 | 3.1/2" | 96.0 | 3.78 | 630 | 24.80 | 2,386 | 1.60 | IO82110-32GA | 106.5 | 165 | IO84210-32 | 106.5 | 115 |

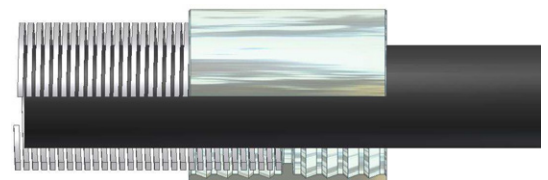
ARMOUR JOINING PROCEDURE

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

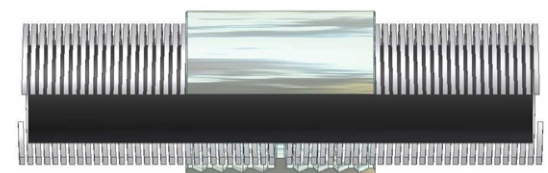
1. Slide the Armour Joint onto the hose.



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.



SAFEMASTER/2SC

RAILWAY - EN 45545-2



HOSES 84

| 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 | Std 1 | Std 2 |
| H01162006* | 6 | -4 | 1/4" | 11.3 | 0.44 | 13.1 | 0.52 | 400 | 5800 | 1850 | 26830 | 45 | 1.77 | 290 | 0.19 | MF+M03300-04 | OPF-04 |
| H01162008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 14.7 | 0.58 | 350 | 5070 | 1700 | 24650 | 55 | 2.17 | 322 | 0.22 | MF+M03300-05 | OPF-05 |
| H01162010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 16.8 | 0.66 | 330 | 4780 | 1500 | 21750 | 65 | 2.56 | 388 | 0.26 | MF+M03300-06 | OPF-06 |
| H01162012* | 12 | -8 | 1/2" | 18.5 | 0.73 | 20.3 | 0.80 | 275 | 3980 | 1220 | 17690 | 80 | 3.15 | 496 | 0.33 | MF+M03300-08 | OPF-08 |
| H01162016* | 16 | -10 | 5/8" | 21.8 | 0.86 | 23.6 | 0.93 | 250 | 3620 | 1050 | 15220 | 90 | 3.54 | 615 | 0.41 | MF+M03400-10 | OPF-10 |
| H01162019* | 19 | -12 | 3/4" | 25.6 | 1.01 | 27.6 | 1.09 | 245 | 3550 | 980 | 14210 | 120 | 4.72 | 788 | 0.53 | MF+M03400-12 | OPF-12 |
| H01162025* | 25 | -16 | 1" | 33.0 | 1.30 | 35.2 | 1.39 | 210 | 3040 | 840 | 12180 | 150 | 5.91 | 1188 | 0.80 | MF+M03400-16 | OPF-16 |

KEY FEATURES

- Compactness and flexibility
- Good abrasion resistance
- High ozone and weather resistance
- Cover has flame retardant properties
- Cover has low density smoke when burning (EN 45545-2)
- Over-standard working pressures

APPLICATIONS & FLUIDS

- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, railway hydraulic applications
- Mineral oils, vegetable and rape seed oils and synthetic ester based oils, glycols and polyglycols, oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

Synthetic rubber with high ozone, weather and heat resistance and flame retardant properties

APPLICABLE SPECS

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

TYPE APPROVALS

EN 45545-2; CU-TR

SAFEMASTER/2SN

RAILWAY - EN 45545-2



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 | Std 1 | Std 2 |
| H01165006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.7 | 0.58 | 400 | 5800 | 1750 | 25380 | 50 | 1.97 | 356 | 0.24 | MF+M03400-04 | OPF-04 |
| H01165008* | 8 | -5 | 5/16" | 14.3 | 0.56 | 16.3 | 0.64 | 350 | 5070 | 1480 | 21460 | 60 | 2.36 | 394 | 0.26 | MF+M03400-05 | OPF-05 |
| H01165010* | 10 | -6 | 3/8" | 16.7 | 0.66 | 18.7 | 0.74 | 350 | 5070 | 1400 | 20300 | 70 | 2.76 | 520 | 0.35 | MF+M03400-06 | OPF-06 |
| H01165012* | 12 | -8 | 1/2" | 19.8 | 0.78 | 21.8 | 0.86 | 350 | 5070 | 1400 | 20300 | 89 | 3.50 | 651 | 0.44 | MF+M03450-08 | OPF-08 |
| H01165016* | 16 | -10 | 5/8" | 23.0 | 0.91 | 25.0 | 0.98 | 250 | 3620 | 1020 | 14790 | 100 | 3.94 | 713 | 0.48 | MF+M03400-10 | OPF-10 |
| H01165019* | 19 | -12 | 3/4" | 27.0 | 1.06 | 29.0 | 1.14 | 215 | 3110 | 900 | 13050 | 130 | 5.12 | 910 | 0.61 | MF+M03400-12 | OPF-12 |
| H01165025* | 25 | -16 | 1" | 34.8 | 1.37 | 36.8 | 1.45 | 175 | 2530 | 670 | 9710 | 160 | 6.30 | 1256 | 0.84 | MF+M03400-16 | OPF-16 |
| H01165031* | 31 | -20 | 1.1/4" | 44.3 | 1.74 | 47.0 | 1.85 | 140 | 2030 | 600 | 8700 | 419 | 16.50 | 1898 | 1.28 | MF+M03400-20 | OPK-20 |
| H01165038* | 38 | -24 | 1.1/2" | 50.7 | 2.00 | 53.4 | 2.10 | 100 | 1450 | 500 | 7250 | 500 | 19.69 | 2227 | 1.50 | MF+M03400-24 | OPK-24 |

KEY FEATURES

- Good abrasion resistance
- High ozone and weather resistance
- Cover has flame retardant properties
- Cover has low density smoke when burning (EN 45545-2)
- Over-standard working pressures

APPLICATIONS & FLUIDS

- Hydraulics: medium-high pressure lines in severe environmental conditions, specific installations with tough abrasion conditions, railway hydraulic applications
- Mineral oils, vegetable and rape seed oils and synthetic ester based oils, glycols and polyglycols, oils in aqueous emulsion, water

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

Synthetic rubber with high ozone, weather and heat resistance and flame retardant properties

APPLICABLE SPECS

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

TYPE APPROVALS

EN 45545-2; CU-TR

T°REX

EXTREME TEMPERATURE



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 | Std 1 | Std 2 |
| H01127031* | 31 | -20 | 1.1/4" | 0.0 | 0.00 | 40.7 | 1.60 | 43 | 620 | 172 | 2,490 | 203 | 7.99 | 925 | 0.62 | MF+M00110-20TX | |

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)

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

160 °C, 320 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

One high tensile steel wire braid

COVER

Synthetic rubber with extremely high heat resistance

APPLICABLE SPECS

Manuli® Design

TYPE APPROVALS

CU-TR

TWINPOWER 4000

EASY INSTALLATION FOR OEMS



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 | Std 1 | Std 2 |
| H01119010* | 10 | -6 | 3/8" | 15.4 | 0.61 | 18.0 | 0.71 | 280 | 4,060 | 1,120 | 16,240 | 65 | 2.56 | 830 | 0.56 | MF+M00120-06 | |
| H01119012* | 12 | -8 | 1/2" | 18.5 | 0.73 | 21.5 | 0.85 | 280 | 4,060 | 1,120 | 16,240 | 80 | 3.15 | 1,100 | 0.74 | MF+M00120-08 | |

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 easiness 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

Weather resistant synthetic rubber

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



HOSES 88

| 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 | Std 1 | Std 2 |
| H01120008* | 8 | -5 | 5/16" | 12.9 | 0.51 | 15.3 | 0.60 | 350 | 5,070 | 1,400 | 20,300 | 55 | 2.17 | 682 | 0.46 | MF+M00120-05 | |
| H01120010* | 10 | -6 | 3/8" | 15.0 | 0.59 | 17.6 | 0.69 | 350 | 5,070 | 1,400 | 20,300 | 65 | 2.56 | 830 | 0.56 | MF+M00120-06 | |
| H01120012* | 12 | -8 | 1/2" | 18.6 | 0.73 | 21.6 | 0.85 | 350 | 5,070 | 1,400 | 20,300 | 80 | 3.15 | 1,190 | 0.80 | MF+M00120-08 | |

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 easiness 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

Two high tensile steel wire braids

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds ISO 11237 2SC/R16; EN 857 2SC; SAE J517 Type 100R16

TYPE APPROVALS

CU-TR; MSHA

TWINPOWER/PLUS

EASY INSTALLATION FOR OEMS



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 | Std 1 | Std 2 |
| H01112A12* | 12 | -8 | 1/2" | 18.5 | 0.73 | 22.5 | 0.89 | 310 | 4,490 | 1,240 | 17,980 | 80 | 3.15 | 1,220 | 0.82 | MF+M00120-08 | |
| H01112016* | 16 | -10 | 5/8" | 22.7 | 0.89 | 26.3 | 1.04 | 280 | 4,060 | 1,120 | 16,240 | 90 | 3.54 | 1,640 | 1.10 | MF+M00120-10 | |

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 easiness 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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

121 °C, 250 °F

TUBE

Synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

STRONG - TYPE "SD"

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

APPLICABLE SPECS

Exceeds ISO 11237 2SC/R16; EN 857 2SC; SAE J517 Type 100R16

TYPE APPROVALS

CU-TR; MSHA

FIREND

FIRE SUPPRESSION SYSTEMS



HOSES

90

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 | Std 1 | Std 2 |
| H01124006* | 6 | -4 | 1/4" | 11.0 | 0.43 | 13.0 | 0.51 | 225 | 3,260 | 900 | 13,050 | 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 | 2,610 | 720 | 10,440 | 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 | 2,320 | 640 | 9,280 | 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 | 1,520 | 420 | 6,090 | 240 | 9.45 | 660 | 0.44 | MF+M03400-12 | OPF-12 |
| H01124025* | 25 | -16 | 1" | 33.1 | 1.30 | 35.7 | 1.41 | 88 | 1,270 | 350 | 5,070 | 300 | 11.81 | 980 | 0.66 | MF+M03400-16 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

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

LUBEMASTER

LUBRICATION LINE



| 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 | Std 1 | Std 2 |
| H01135006* | 6 | -4 | 1/4" | 10.2 | 0.40 | 12.0 | 0.47 | 210 | 3,040 | 840 | 12,180 | 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 | 3,040 | 840 | 12,180 | 65 | 2.56 | 300 | 0.20 | MF+M03300-06 | OPF-06 |

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.

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F
100 °C, 212 °F

TUBE

Synthetic rubber

REINFORCEMENT

One high tensile steel braid

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

Manuli® Design

TYPE APPROVALS

CU-TR

JACKMASTER/70

EXTREME STATIC PRESSURE



HOSES 92

| 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 | Std 1 | Std 2 |
| H01168006* | 6 | -4 | 1/4" | 12.7 | 0.50 | 14.7 | 0.58 | 700 | 10,510 | 1,750 | 25,380 | 100 | 3.94 | 370 | 0.25 | MF+M03400-04 | OPF-04 |
| H01168010* | 10 | -6 | 3/8" | 16.4 | 0.64 | 18.2 | 0.71 | 700 | 10,510 | 1,750 | 25,380 | 127 | 5.00 | 517 | 0.35 | MF+M03400-06 | OPF-06 |

KEY FEATURES

- Robust structure
- ISO 16301 Class 70, Grade 1
- Extreme static pressures in remote locations
- Test certificate available upon request
- Skive and no-skive fittings available

APPLICATIONS & FLUIDS

- Manually operated hydraulic jacking systems
- Mineral oils, vegetable oils, glycol and polyglycol based oils, synthetic ester based oils (up to 100°C/212°F)

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

100 °C, 212 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Two high tensile steel braids

COVER

Weather resistant synthetic rubber

APPLICABLE SPECS

ISO 16301 Class 70, Grade 1

TYPE APPROVALS

CU-TR

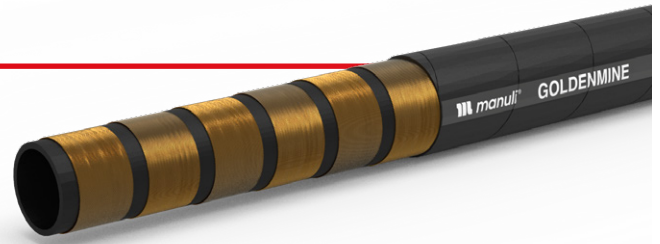
REMARKS



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

GOLDENMINE

CHINA COAL MINE HYDRAULICS



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 | Std 1 | Std 2 |
| H10116063* | 63 | -40 | 2.1/2" | 80.6 | 3.17 | 84.8 | 3.34 | 350 | 5,070 | 1,400 | 20,300 | 800 | 31.50 | 8,105 | 5.45 | IP+M01810-40 | |

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

CONTINUOUS SERVICE TEMPERATURE RANGE

-46 °C, -50 °F
121 °C, 250 °F

TUBE

Oil resistant synthetic rubber

REINFORCEMENT

Six high tensile steel spirals

COVER

STRONG - TYPE "SC"
Synthetic rubber with high abrasion, ozone, weather and heat resistance and an extended operational temperature range

APPLICABLE SPECS

MT/T 98

TYPE APPROVALS

MA; MSHA; CU-TR

REMARKS



- The brand of the hose reports Allowable Working Pressure (AWP) 50.0 MPa (500 bar) , Safety Factor 2.8:1 according to the China Norm MT/T 98



HYDRAULIC 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

Spiralfit (SP) - No-skive insert for wire spiral hoses and large bore hose

Spiralfit GX (SPGX) - No-skive insert for wire spiral hoses and large bore hoses

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 1½"

One-Piece Kompact (OPK) - No-skive, compact and flat-crimp fittings for wire spiral and wire braid high pressure hoses up to 2½"

There are also several 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 / FastFit Disconnectable - 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. In addition, the new FastFit Disconnectable range offers all the benefits of standard FastFit technology, but with the ability to disconnect the plug from the cartridge if required.

Adjustable Flange - A new and innovative product which allows the body of the flange fitting to rotate even after being installed and tightened, making installation simpler and also ensuring that the hose is oriented in its most natural way, reducing the likelihood of premature fatigue failures due to poor hose orientation.

E-Coat 1000 - Over 1,000 hours of corrosion protection

Corrosion of fittings can have severely damaging effects on the life and reliability of hose assemblies. In cases where fittings are becoming corroded at an unacceptable rate, ISO/TS 17165-2:2018 recommends upgrading the fittings to ones with an alternative plating material suitable for the environment in which they will be used.

Manuli’s standard **E-Coat 500** plating is a first-class, long lasting solution which offers up to 500 hours to red rust in standard salt-spray tests, versus the required minimum of 144 hours as per SAE J516 (ISO 9227 method).

But Manuli have upped their game even further and can now offer the new **E-Coat 1000** plating, which offers double the corrosion resistance of standard E-Coat 500 plating with minimal cost increase.

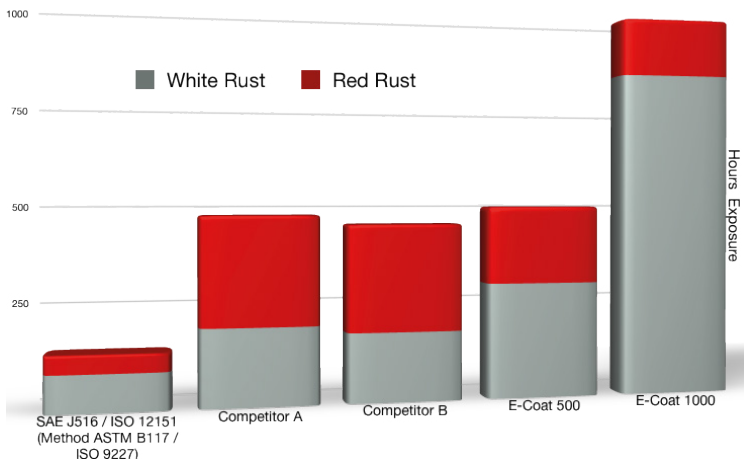
E-Coat 1000 offers:

- High resistance in crimped conditions eg: ferrules and crimped back nuts
- Enhanced performance of corrosion resistance compared to the standard E-Coat 500 plating (over 1,000 hours before red corrosion in standard salt spray test conditions ASTM B117 and ISO 9227*)
- Higher resistance to abrasion and handling than standard plating
- Full compliance with the European Directives REACH 1907/2006/EC, RoHS 2011/65/EC, ELV 2000/53/EC
- E-Coat 1000 is available as an option on all Manuli hydraulic fittings and flat-face quick couplings

E-Coat 1000 plating is the optimum solution for applications in severe environments and for demanding OEM specifications. It also offers even longer durability in standard hydraulic applications.

Best-In-Class Corrosion Resistance - Putting it to the test

Many other fitting manufacturers declare the superb corrosion resistance of their fittings, so we tested E-Coat 1000 against the best of the competition. The results speak for themselves. The best comparable competitor coatings both declare 1,000 hours to red rust, however, they both began to show red corrosion after less than 500 hours, and were seriously corroded by 750 hours. In contrast, the Manuli sample with E-Coat 1000 was barely showing signs of white corrosion after more than 1,000 hours in salt spray conditions. Even crimped fittings with E-Coat 1000 lasted over 750 hours before showing significant signs of corrosion, despite the damage to the plating integrity which occurs during the mechanical deformation process of crimping.

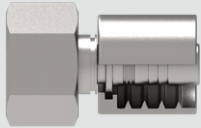
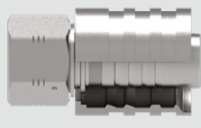
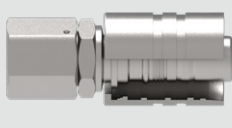
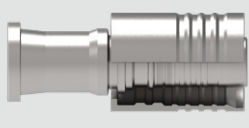
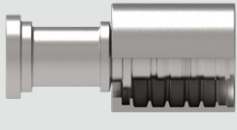
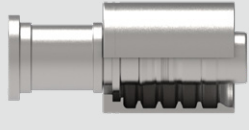
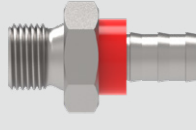


To order items with E-Coat 1000 plating, simply add the suffix “NK” to the part number when placing your orders.

Quantities and box sizes are as per standard fittings.

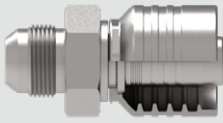
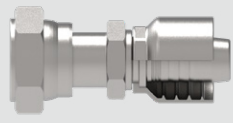
TWO PIECE TECHNOLOGY

OVERVIEW

| | | | |
|--|---|--|--|
| <p>MINIFIT</p>  <p>p107 - p112</p> | <p>MULTIFIT</p>  <p>p113 - p175</p> | <p>INTERLOCK PLUS</p>  <p>p176 - p221</p> | <p>INTERLOCK SUPER</p>  <p>p222 - p225</p> |
| <p>SPIRALFIT</p>  <p>p226 - p247</p> | <p>SPIRALFIT GX</p>  <p>p248 - p249</p> | <p>PUSH-LOCK</p>  <p>p250 - p251</p> | <p>ACCESSORIES</p> <p>p252 - p255</p> |


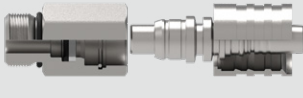

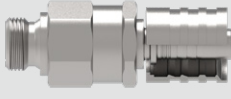
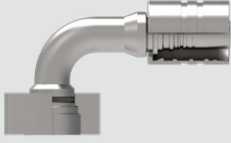
ONE PIECE TECHNOLOGY

OVERVIEW

| | |
|--|--|
| <p>OPK</p>  <p>p256 - p280</p> | <p>OPF</p>  <p>p281 - p307</p> |
|--|--|

SMART FITTINGS

OVERVIEW

| | | |
|--|--|---|
| <p>EASYFIT</p>  <p>p308 - p311</p> | <p>FASTFIT</p>  <p>p312 - p318</p> | <p>FASTFIT DISCONNECTABLE</p>  <p>p319 - p321</p> |
| <p>ROTOFIT</p>  <p>p322 - p332</p> | <p>ADJUSTABLE FLANGE</p>  <p>p333 - p334</p> | |

| 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 | |
| BSP 60° CONE BS5200 / ISO 8434-6 | 1/8"-28 350 | 1/4"-19 500 | | 3/8"-19 460 | 1/2"-14 430 | 5/8"-14 350 | 3/4"-14 350 | 1"-11 350 | 1.1/4"-11 350 | 1.1/2"-11 300 | 2"-11 300 | 2.1/2"-11 140 | 3"-11 105 | | | |
| BSP 60° CONE DOUBLE THRUST-WIRE NUT BS5200 / ISO 8434-6 | | | | | | | 3/4"-14 621 | 1"-11 621 | 1.1/4"-11 621 | 1.1/2"-11 560 | | | | | | |
| JIC 37° CONE ISO 8434-2 / SAE J514 | | 7/16"-20 350 | 1/2"-20 350 | 9/16"-18 350 | 3/4"-16 350 | 7/8"-14 350 | 1.1/16"-12 350 | 1.5/16"-12 280 | 1.5/8"-12 210 | 1.7/8"-12 160 | 2.1/2"-12 125 | | | | | |
| JIC 37° CONE DOUBLE THRUST-WIRE NUT ISO 8434-2 / SAE J514 | | | | | | | 1.1/16"-12 420 | 1.5/16"-12 420 | 1.5/8"-12 420 | 1.7/8"-12 420 | 2.1/2"-12 420 | | | | | |
| ORFS ISO 8434-3 / SAE J1453 | | 9/16"-18 460 | | 11/16"-16 460 | 13/16"-16 420 | 1"-14 420 | 1.3/16"-12 420 | 1.7/16"-12 420 | 1.11/16"-12 420 | 2"-12 350 | | | | | | |
| NPTF MALE SAE J514 / ASME B1.20.3 | 1/8"-27 350 | 1/4"-18 350 | | 3/8"-18 280 | 1/2"-14 245 | | 3/4"-14 210 | 1"-11.5 175 | 1.1/4"-11.5 145 | 1.1/2"-11.5 145 | 2"-11.5 145 | | | | | |
| NPSM FEMALE SAE J514 | 1/8"-27 350 | 1/4"-18 350 | | 3/8"-18 280 | 1/2"-14 245 | | 3/4"-14 210 | 1"-11.5 175 | 1.1/4"-11.5 145 | 1.1/2"-11.5 145 | 2"-11.5 145 | | | | | |
| SAE 45° CONE SAE J512 | | 7/16"-20 350 | 1/2"-20 350 | 5/8"-18 350 | 3/4"-16 310 | 7/8"-14 240 | 1.1/16"-14 240 | 1.3/8"-12 210 | | | | | | | | |
| ISO/SAE CODE 61 FLANGE ISO 6162-1 / SAE J518-1 | | | | | 1/2" 350 | | 3/4" 350 | 1" 350 | 1-1/4" 280 | 1-1/2" 210 | 2" 210 | 2-1/2" 175 | 3" 160 | 3-1/2" 35 | 4" 35 | |
| ISO/SAE CODE 62 FLANGE ISO 6162-2 / SAE J518-2 | | | | | 1/2" 420 | | 3/4" 420 | 1" 420 | 1-1/4" 420 | 1-1/2" 420 | 2" 420 | 2-1/2" 420 | 3" 420 | | | |
| XTRAFANGE/61 ISO 6162-1 / SAE J518-1 PORT COMPATIBLE | | | | | | | | 1" 420 | 1-1/4" 420 | 1-1/2" 420 | 2" 420 | 2.1/2" 420 | | | | |
| XTRAFANGE/62 ISO 6162-2 / SAE J518-2 PORT COMPATIBLE | | | | | | | 3/4" 560 | 1" 560 | 1-1/4" 560 | 1-1/2" 560 | 2" 450 | 2.1/2" 420 | 3" 420 | | | |
| FLANGE/PLUS ISO 6162-2 / SAE J518-2 PORT COMPATIBLE | | | | | | | 3/4" 420 | 1" 420 | 1-1/4" 420 | | | | | | | |
| CAT FLANGE ISO 6162-2 / SAE J518-2 PORT COMPATIBLE | | | | | | | 3/4" 420 | 1" 420 | 1-1/4" 420 | 1-1/2" 420 | 2" 420 | | | | | |
| METRIC CONE 24° L SERIES ISO 8434-1 / DIN 3865 | M12x1.5 415 | M14x1.5 400 | M16x1.5 350 | M18x1.5 330 | M22x1.5 275 | M26x1.5 250 | M30x2 245 | M36x2 245 | M45x2 220 | M52x2 100 | | | | | | |
| METRIC CONE 24° S SERIES ISO 8434-1 / DIN 3865 | M16x1.5 630 | M18x1.5 630 | M20x1.5 630 | M20x1.5 630 | M24x1.5 450 | M30x2 420 | M36x2 420 | M42x2 420 | M52x2 420 | | | | | | | |
| METRIC CONE 60° LL SERIES DIN 20066 | | | | | | | M30x2 63 | M38x1.5 63 | M45x1.5 63 | M52x1.5 63 | M65x2 40 | | | | | |
| METRIC MULTISEAL DIN 20066 | M12x1.5 250 | M14x1.5 250 | M16x1.5 250 | M18x1.5 250 | M22x1.5 250 | M26x1.5 160 | | | | | | | | | | |
| FRENCH METRIC MILLIMETRIC NF E48-064 | | | | | | M27x1.5 420 | M30x1.5 420 | M33x1.5 420 | | | | | | | | |
| FRENCH GAZ MILLIMETRIC NF E48-064 | | | | M20x1.5 630 | M24x1.5 630 | M30x1.5 420 | M36x1.5 420 | M45x1.5 420 | | | | | | | | |
| JIS METRIC FEMALE 60° CONE (KOMATSU) JIS B8363 | | M14x1.5 350 | M16x1.5 350 | M18x1.5 350 | M22x1.5 350 | M24x1.5 280 | M30x1.5 280 | M33x1.5 280 | M36x1.5 175 | M42x2 105 | | | | | | |
| JIS GAS FEMALE 60° CONE (TOYOTA) JIS B8363 | | 1/4"-19 350 | | 3/8"-19 350 | 1/2"-14 350 | | 3/4"-14 280 | 1"-11 280 | 1.1/4"-11 175 | 1.1/2"-11 105 | 2"-11 105 | | | | | |
| SAE MALE O-RING BOSS TYPE SAE J516 / ISO 11926 | | 7/16"-20 420 | | 9/16"-18 420 | 3/4"-16 350 | 7/8"-14 280 | 1.1/6"-12 280 | 1.5/16"-12 210 | 1.5/8"-12 210 | | | | | | | |
| METRIC STANDPIPE LIGHT DUTY DIN 2353 / ISO 8434-1 | 6 mm 250 | 8 mm 250 | 10 mm 250 | 12 mm 250 | 15 mm 250 | 18 mm 160 | 22 mm 160 | 28 mm 100 | 35 mm 100 | 42 mm 100 | | | | | | |
| METRIC STANDPIPE HEAVY DUTY DIN 2353 / ISO 8434-1 | 8 mm 630 | 10 mm 630 | 12 mm 630 | 14 mm 400 | 16 mm 400 | 20 mm 400 | 25 mm 400 | 30 mm 250 | 38 mm 250 | | | | | | | |
| BSP BANJO | | 1/4"-19 210 | 3/8"-19 210 | 3/8"-19 210 | 1/2"-14 210 | 5/8"-14 210 | 3/4"-14 210 | 1"-11 210 | | | | | | | | |
| METRIC BANJO DIN 7642 | | M12x1.5 210 | M14x1.5 210 | M16x1.5 210 | M22x1.5 210 | M22x1.5 210 | M26x1.5 210 | | | | | | | | | |
| WASHCLEANER | | | | M22x1.5 420 | | | | | | | | | | | | |

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| A52014H | 321 | M73H10 | 315 | M21542/M21543 | 158 | M30710 | 176 |
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| A52053H | 315 | M00310/M00321 | 113 | M21612/M21613 | 161 | M31210 | 197 |
| A52192H | 311 | M00820/M00830 | 113 | M21642/M21643 | 162 | M31240 | 197 |
| A52193H | 318 | M00910/M00920/M00930 | 112 | M21692/M21693 | 163 | M31290 | 197 |
| A52194H | 320 | M01500 | 175 | M21713 | 164 | M32410 | 182 |
| A52283H | 316 | M01600 | 175 | M21813 | 165 | M32510 | 180 |
| A52302H | 310 | M01800/M01810/M01850 | 175 | M21893 | 165 | M32810 | 187 |
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| A54363H | 317 | M02610 | 221 | M22090 | 152 | M40514 | 177 |
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| M12H90 | 309 | M20891KR | 123 | M24141 | 168 | M43920 | 203 |
| M13H10 | 313 | M20892/M20893 | 123 | M24191 | 168 | M43930 | 203 |
| M13H40 | 313 | M21012/M21013 | 153 | M24491 LONG DROP | 136 | M43930CT | 204 |
| M13H90 | 313 | M21043 | 154 | M24791KR | 131 | M43940 | 204 |
| M14H10 | 320 | M21093 | 154 | M24792/M24793 | 131 | M43940CT | 205 |
| M22H10 | 309 | M21312/M21313 | 155 | M27411 | 133 | M43960 | 205 |
| M33H10 | 314 | M21342/M21343 | 155 | M27411KR | 134 | M43960CT | 206 |

| | |
|--------------------|-----|
| M43970 | 206 |
| M43970CT | 206 |
| M43990 | 207 |
| M43990CT | 208 |
| M43990CT LONG DROP | 208 |
| M43990 LONG DROP | 207 |
| M44492 LONG DROP | 186 |
| M48410 | 195 |
| M48490 | 195 |
| M48510 | 195 |
| M48540 | 196 |
| M48590 | 196 |
| M49510WL | 209 |
| M70050 | 247 |
| M70510 | 227 |
| M71210 | 240 |
| M72410 | 231 |
| M72510 | 229 |
| M72810 | 233 |
| M73010 | 233 |
| M80812 | 227 |
| M80842 | 228 |
| M80892 | 228 |
| M81612 | 240 |
| M81642/M81643 | 241 |
| M81692/M81693 | 241 |
| M82412 | 231 |
| M82442 | 232 |
| M82492 | 232 |
| M82542 | 230 |
| M82592 | 230 |
| M82712 | 229 |
| M83301...P | 235 |
| M83311 | 234 |
| M83341 | 234 |
| M83391 | 235 |
| M83611 | 236 |
| M83611-GX | 248 |
| M83621 | 236 |
| M83631 | 237 |
| M83641 | 237 |
| M83641-GX | 248 |
| M83661 | 238 |
| M83691 | 238 |
| M83691-GX | 249 |
| M83711 | 242 |
| M83741 | 242 |
| M83791 | 243 |
| M83911 | 243 |
| M83921 | 244 |
| M83931 | 244 |
| M83941 | 245 |
| M83961 | 245 |
| M83971 | 246 |
| M83991 | 246 |
| M83991 LONG DROP | 247 |
| M84492 | 232 |
| M84792 | 231 |
| M88511 | 239 |
| M88541 | 239 |
| M88591 | 239 |
| M89510WL | 247 |
| MB0514 | 222 |
| MB3610 | 222 |

| | |
|--------------|-----|
| MB3640 | 223 |
| MB3690 | 223 |
| MB3910 | 224 |
| MB3940 | 224 |
| MB3990 | 225 |
| MB8510 | 223 |
| MB8590 | 224 |
| M..IP.. | 172 |
| MR10510 | 323 |
| MR11210 | 327 |
| MR11910 | 327 |
| MR12410 | 325 |
| MR12810 | 325 |
| MR20812 | 323 |
| MR20892RT | 324 |
| MR21512 | 327 |
| MR21612 | 328 |
| MR22411 | 325 |
| MR22510 | 324 |
| MR22711 | 324 |
| MR23311FK | 326 |
| MR23341FK | 326 |
| MR23361FK | 326 |
| MR30510 | 328 |
| MR32810 | 329 |
| MR40812 | 328 |
| MR42410 | 329 |
| MR42510 | 329 |
| MR43310 | 330 |
| MR43610 | 330 |
| MR43690 | 330 |
| MR83611 | 331 |
| MR83691 | 331 |
| MS0511KR | 106 |
| MS0513 | 106 |
| MS0541KR | 107 |
| MS0543 | 107 |
| MS0591KR | 108 |
| MS0593 | 107 |
| MS0811HKR | 108 |
| MS0813 | 108 |
| MS0841KR | 109 |
| MS0843 | 109 |
| MS0882F | 110 |
| MS0891KR | 110 |
| MS0893 | 109 |
| MS1513 | 111 |
| MS1593 | 111 |
| MT0710 | 110 |
| O82H10 | 311 |
| O820 | 252 |
| O821 / IO821 | 252 |
| O20310 | 173 |
| O20910 | 173 |
| O80210 | 174 |
| O80810 | 174 |
| O83308 | 253 |
| O83607 | 254 |
| O83609 | 253 |
| O88407 | 254 |
| O88507 | 254 |
| OPF10510 | 281 |
| OPF10710 | 281 |
| OPF11110 | 301 |

| | |
|----------------------|-----|
| OPF11210 | 303 |
| OPF12410 | 292 |
| OPF12510 | 286 |
| OPF12810 | 296 |
| OPF13010 | 294 |
| OPF14110R | 297 |
| OPF14310 | 295 |
| OPF14390 | 295 |
| OPF20512/OPF20513 | 282 |
| OPF20542/OPF20543 | 282 |
| OPF20592/OPF20593 | 283 |
| OPF20612/OPF20613 | 285 |
| OPF20711 | 306 |
| OPF20812/OPF20813 | 283 |
| OPF20842/OPF20843 | 284 |
| OPF20882F | 285 |
| OPF20892/OPF20893 | 284 |
| OPF21312/OPF21313 | 300 |
| OPF21392/OPF21393 | 301 |
| OPF21512/OPF21513 | 302 |
| OPF21542/OPF21543 | 302 |
| OPF21592/OPF21593 | 303 |
| OPF21612/OPF21613 | 304 |
| OPF21642/OPF21643 | 304 |
| OPF21692/OPF21693 | 305 |
| OPF22010 | 300 |
| OPF22411/ OPF22412 | 292 |
| OPF22441/OPF22443 | 293 |
| OPF22491/OPF22493 | 293 |
| OPF22541KR | 288 |
| OPF22542/OPF22543 | 288 |
| OPF22582F | 291 |
| OPF22591KR | 290 |
| OPF22592/OPF22593 | 289 |
| OPF22612 | 296 |
| OPF22711K | 287 |
| OPF22711/OPF22711KR/ | 287 |
| OPF22712 | 286 |
| OPF22812 | 297 |
| OPF23311 | 298 |
| OPF23321 | 298 |
| OPF23331 | 298 |
| OPF23341 | 299 |
| OPF23361 | 299 |
| OPF23371 | 299 |
| OPF23391 | 300 |
| OPF23811 | 306 |
| OPF24011 | 305 |
| OPF24111 | 306 |
| OPF24141 | 307 |
| OPF24191 | 307 |
| OPF24491 | 294 |
| OPF24791KR | 291 |
| OPF24792/OPF24793 | 290 |
| OPK10510 | 256 |
| OPK11110 | 273 |
| OPK11210 | 275 |
| OPK11710 | 277 |
| OPK11810 | 277 |
| OPK12410 | 264 |
| OPK12510 | 259 |
| OPK12810 | 267 |
| OPK13010 | 266 |
| OPK14110R | 267 |

| | |
|---------------------|-----|
| OPK14310 | 266 |
| OPK20512/OPK20513 | 256 |
| OPK20542/OPK20543 | 257 |
| OPK20592/OPK20593 | 257 |
| OPK20812/OPK20813 | 258 |
| OPK20842/OPK20843 | 258 |
| OPK20892/OPK20893 | 259 |
| OPK21512/OPK21513 | 274 |
| OPK21542/OPK21543 | 274 |
| OPK21592/OPK21593 | 275 |
| OPK21612/OPK21613 | 276 |
| OPK21642/OPK21643 | 276 |
| OPK21692/OPK21693 | 277 |
| OPK21813 | 278 |
| OPK22411 | 264 |
| OPK22441/OPK22443 | 265 |
| OPK22491/OPK22493 | 265 |
| OPK22541KR | 261 |
| OPK22542/OPK22543 | 261 |
| OPK22591KR | 262 |
| OPK22592/OPK22593 | 262 |
| OPK22711/OPK22711KR | 260 |
| OPK22712 | 260 |
| OPK22812 | 268 |
| OPK23311 | 268 |
| OPK23321 | 269 |
| OPK23331 | 269 |
| OPK23341 | 270 |
| OPK23361 | 270 |
| OPK23371 | 271 |
| OPK23391 | 271 |
| OPK23611 | 272 |
| OPK23641 | 272 |
| OPK23691 | 273 |
| OPK23911 | 279 |
| OPK23941 | 280 |
| OPK23991 | 280 |
| OPK24011/OPK24012 | 278 |
| OPK24111 | 278 |
| OPK24141 | 279 |
| OPK24191 | 279 |
| OPK24491 | 266 |
| OPK24791KR | 263 |
| OPK24792/OPK24793 | 263 |

MINIFIT

| | | | | | | | | | | | | | | |
|-------------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|--------|--------|-----|
| DN | 5 | 6 | 8 | 10 | 12 | 16 | 19 | 25 | 31 | 38 | 51 | 60 | 63 | 76 |
| 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" |
| Size | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 | -38 | -40 | -48 |

| FERRULES | | | | | | | | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M02400 | | | | | | | | | | | | | | |
| FITTINGS | | | | | | | | | | | | | | |
| BSP | | | | | | | | | | | | | | |
| DIN METRIC 24° CONE LIGHT TYPE | | | | | | | | | | | | | | |

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 (O-RING BOSS) | | | | | | | | | | | | | | | | |
| 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 | | | | | | | | | | | | | | | | |
| SAE (45° CONE) | | | | | | | | | | | | | | | | |

INTERLOCK PLUS

| 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

| | | | | | | | | | | | | | | | | | |
|--------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M01500 | | | | | | | | | | | | | | | | | |
| M01600 | | | | | | | | | | | | | | | | | |
| M01800 / M01810 / M01850 | | | | | | | | | | | | | | | | | |
| M01900 | | | | | | | | | | | | | | | | | |

FITTINGS

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

INTERLOCK PLUS STAINLESS STEEL

| 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

| | | | | | | | | | | | | | | | | | |
|-------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| IM01500 | | | | | | | | | | | | | | | | | |
| IM01600 | | | | | | | | | | | | | | | | | |
| IM01800 / IM01810 | | | | | | | | | | | | | | | | | |
| IM01900 | | | | | | | | | | | | | | | | | |

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 | | | | | | | | | | | | | | | | | |

INTERLOCK SUPER

| 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 | | | | | | | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M02700 | | | | | | | | | | | | | | | | | |
| M02800 | | | | | | | | | | | | | | | | | |

| FITTINGS | | | | | | | | | | | | | | | | | |
|--------------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SAE FLANGE CODE 62 | | | | | | | | | | | | | | | | | |
| XTRAFANGE/62 | | | | | | | | | | | | | | | | | |
| BSP | | | | | | | | | | | | | | | | | |
| ORIGINAL EQUIPMENT CONNECTIONS | | | | | | | | | | | | | | | | | |

SPIRALFIT

| 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 | | | | | | | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M05400 | | | | | | | | | | | | | | | | | |
| M05500 | | | | | | | | | | | | | | | | | |

| 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 HEAVY TYPE | | | | | | | | | | | | | | | | | |
| ORIGINAL EQUIPMENT CONNECTIONS | | | | | | | | | | | | | | | | | |
| XTRAFANGE/62 | | | | | | | | | | | | | | | | | |

SPIRALFIT GX

| 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 | | | | | | | | | | | | | | | | | |
|-----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| M05500-GX | | | | | | | | | | | | | | | | | |

| FITTINGS | | | | | | | | | | | | | | | | | |
|--------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| SAE FLANGE CODE 62 | | | | | | | | | | | | | | | | | |

PUSHLOCK

| 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 |

| FITTINGS | | | | | | | | | | | | | | | | | |
|----------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| BSP | | | | | | | | | | | | | | | | | |

OPF

| 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 |

| 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 | | | | | | | | | | | | |

OPK

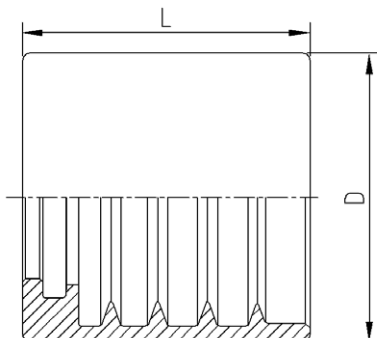
| | | | | | | | | | | | |
|-------------|-------|------|-------|------|------|------|------|-----|--------|--------|-----|
| DN | 5 | 6 | 8 | 10 | 12 | 16 | 19 | 25 | 31 | 38 | 51 |
| Inch | 3/16" | 1/4" | 5/16" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" |
| Size | -03 | -04 | -05 | -06 | -08 | -10 | -12 | -16 | -20 | -24 | -32 |

| 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

M02400

NO-SKIVE FERRULE FOR COMPACT HOSES



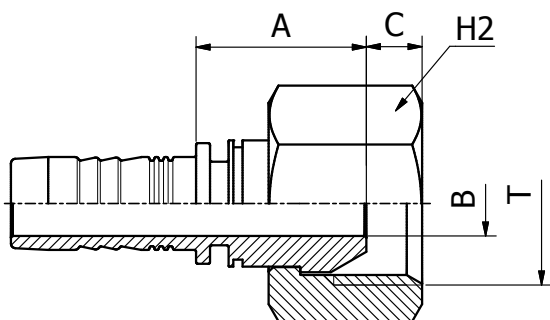
| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|-------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M02400-03 | 5 | - 3 | 3/16" | | | 19.2 | 17.4 | | | | |
| M02400-04 | 6 | - 4 | 1/4" | | | 18.5 | 18.5 | | | | |
| M02400-05 | 8 | - 5 | 5/16" | | | 21.3 | 19.6 | | | | |
| M02400-06 | 10 | - 6 | 3/8" | | | 23.8 | 21.2 | | | | |
| M02400-08 | 12 | - 8 | 1/2" | | | 24.7 | 22.0 | | | | |

FITTINGS 106

BS STANDARD CONNECTIONS

MS0513

BSP
FEMALE 60° CONE
BS5200 / ISO 8434-6

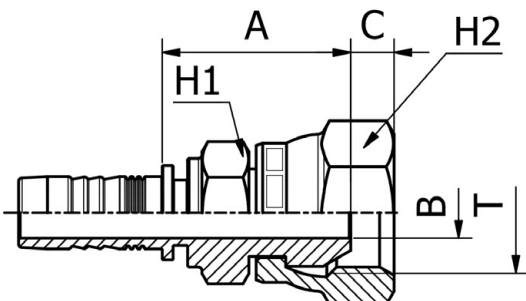


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|-----|------|--|--|--|--|
| | DN | Dash | inch | T | B | A | C | H2 | | | | |
| MS0513-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 15.7 | 5.4 | 19.0 | | | | |
| MS0513-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 18.3 | 6.0 | 22.0 | | | | |

BS STANDARD CONNECTIONS

MS0511KR

BSP FEMALE 60° CONE
BS5200 / ISO 8434-6

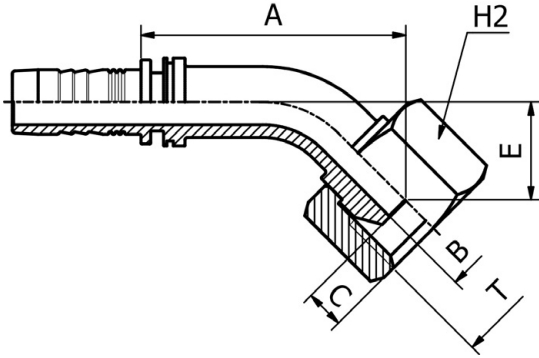


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|-------------------|-----------|------|-------|-----------|---------------|------|-----|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | | |
| MS0511-03-04H12KR | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 23.5 | 5.2 | 12.0 | 19.0 | | | |
| MS0511-04-04H12KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 23.5 | 5.2 | 12.0 | 19.0 | | | |
| MS0511-06-06H17KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 26.0 | 6.0 | 17.0 | 22.0 | | | |
| MS0511-08-08H19KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 32.5 | 6.5 | 19.0 | 27.0 | | | |

BS STANDARD CONNECTIONS

MS0543

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

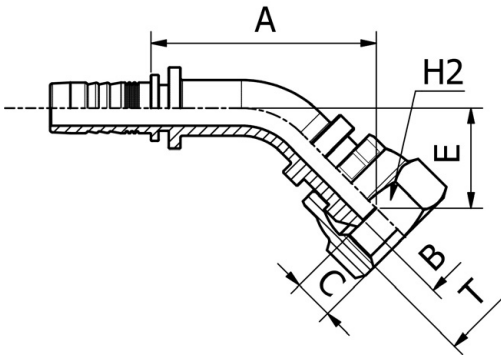


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0543-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 34.7 | 5.4 | 14.7 | 19.0 | | |
| MS0543-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 41.0 | 6.0 | 15.3 | 22.0 | | |

BS STANDARD CONNECTIONS

MS0541KR

BSP
FEMALE 60° CONE
BS5200 / ISO 8434-6

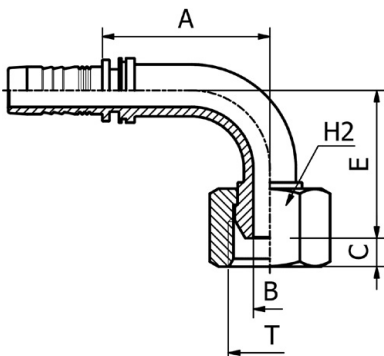


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0541-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 36.5 | 5.2 | 16.6 | 19.0 | | |
| MS0541-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 44.5 | 6.0 | 20.0 | 22.0 | | |

BS STANDARD CONNECTIONS

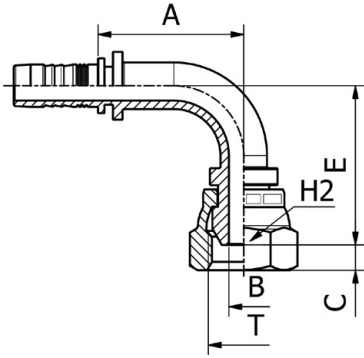
MS0593

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0593-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 28.2 | 5.4 | 29.0 | 19.0 | | |
| MS0593-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 35.3 | 6.0 | 31.5 | 22.0 | | |

BS STANDARD CONNECTIONS



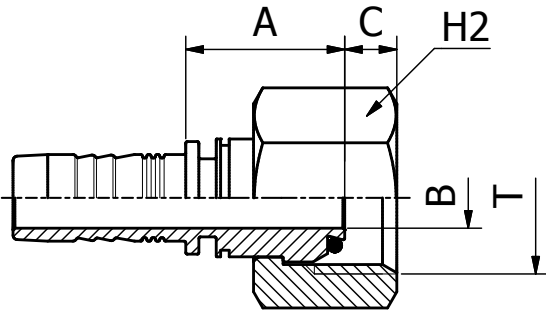
MS0591KR

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| MS0591-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 27.0 | 5.2 | 30.5 | 19.0 | | |
| MS0591-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 34.5 | 6.0 | 37.5 | 22.0 | | |

FITTINGS 108

BS STANDARD CONNECTIONS

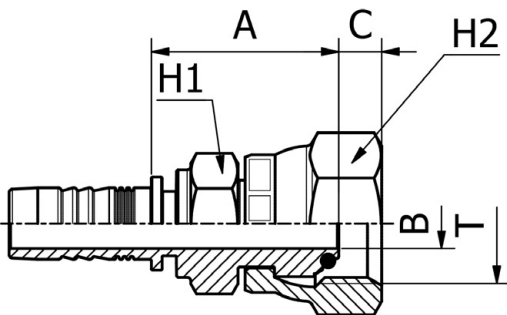


MS0813

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-----|------|----|--|
| | DN | Dash | inch | | T | B | A | C | H2 | |
| MS0813-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 15.5 | 5.4 | 19.0 | | |
| MS0813-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 15.5 | 5.4 | 19.0 | | |
| MS0813-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 18.0 | 6.0 | 22.0 | | |
| MS0813-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 18.5 | 6.0 | 22.0 | | |
| MS0813-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 20.5 | 6.3 | 27.0 | | |

BS STANDARD CONNECTIONS



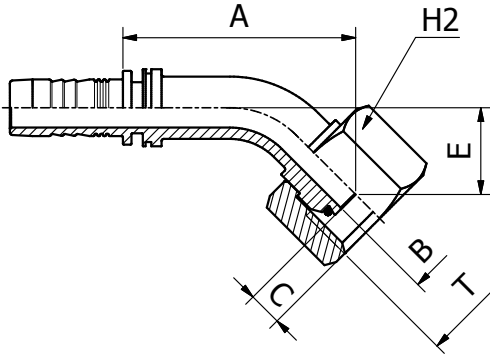
MS0811HKR

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|-------------------|-----------|------|------|-----------|---------------|------|-----|------|------|----|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 |
| MS0811-04-04H12KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 23.5 | 5.2 | 12.0 | 19.0 | |
| MS0811-06-06H17KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 26.0 | 6.0 | 17.0 | 22.0 | |

BS STANDARD CONNECTIONS

MS0843

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

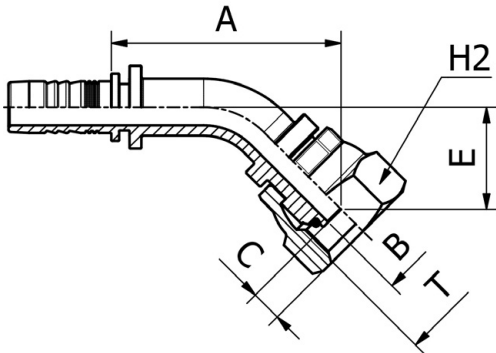


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0843-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 34.7 | 5.4 | 14.7 | 19.0 | | |
| MS0843-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 40.5 | 6.0 | 17.0 | 22.0 | | |
| MS0843-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 41.0 | 6.0 | 15.3 | 22.0 | | |

BS STANDARD CONNECTIONS

MS0841KR

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

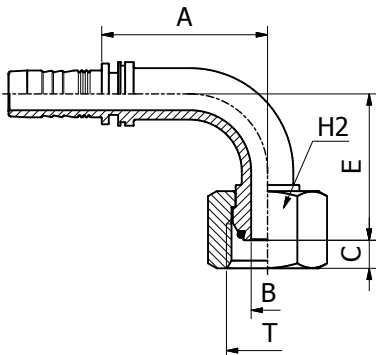


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0841-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 36.5 | 5.2 | 16.5 | 19.0 | | |
| MS0841-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 44.5 | 6.0 | 20.0 | 22.0 | | |

BS STANDARD CONNECTIONS

MS0893

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

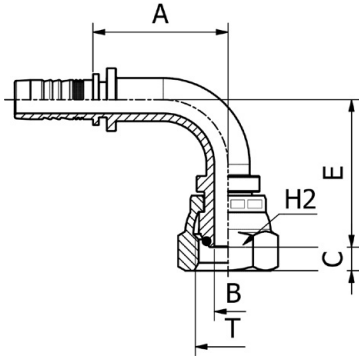


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS0893-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.2 | 28.0 | 5.4 | 29.0 | 19.0 | | |
| MS0893-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 28.0 | 5.4 | 29.0 | 19.0 | | |
| MS0893-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 31.0 | 6.0 | 32.5 | 22.0 | | |
| MS0893-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 35.5 | 6.0 | 31.5 | 22.0 | | |
| MS0893-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 45.0 | 6.3 | 36.5 | 27.0 | | |

BS STANDARD CONNECTIONS

MS0891KR

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

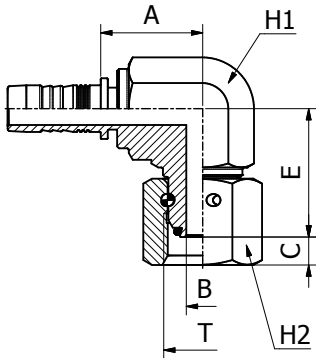


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| MS0891-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 27.0 | 5.2 | 30.5 | 19.0 | | |
| MS0891-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 34.5 | 6.0 | 37.5 | 22.0 | | |

FITTINGS 110

BS STANDARD CONNECTIONS

MS0882F

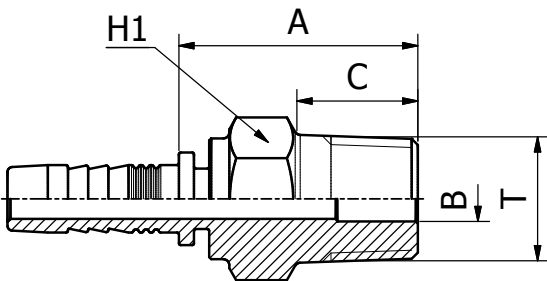


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|---------------|-----------|------|------|-----------|---------------|------|-----|------|----|----|
| | DN | Dash | inch | | T | B | A | C | E | H1 |
| MS0882-04-04F | 6 | - 4 | 1/4" | 1/4" - 19 | 4 | 18,7 | 4,1 | 22 | 14 | 19 |
| MS0882-06-06F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

BS STANDARD CONNECTIONS

MT0710

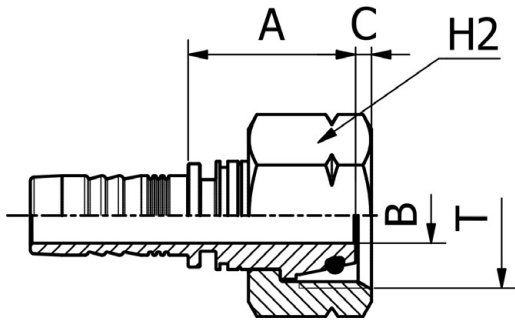
BSP MALE TAPERED



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | H1 |
| MT0710-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.5 | 23.5 | 12.0 | 14.0 | |

DIN STANDARD CONNECTIONS

MS1513



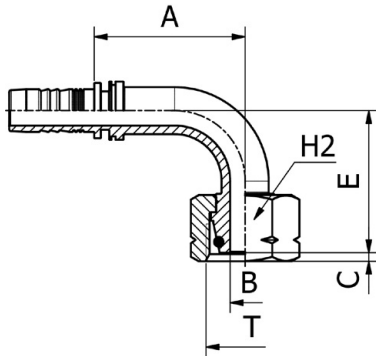
METRIC
O-RING FEMALE 24° CONE LIGHT DUTY
ISO 8434-1 / DIN 3865

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-----|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H2 | | | |
| MS1513-04-14 | 6 | - 4 | 1/4" | M14 X 1.5 | 4.0 | 21.0 | 1.3 | 17.0 | | | |
| MS1513-05-16 | 8 | - 5 | 5/16" | M16 X 1.5 | 6.0 | 21.5 | 1.8 | 19.0 | | | |
| MS1513-05-18 | 8 | - 5 | 5/16" | M18 X 1.5 | 7.0 | 20.9 | 2.0 | 22.0 | | | |
| MS1513-06-18 | 10 | - 6 | 3/8" | M18 X 1.5 | 7.0 | 21.1 | 2.0 | 22.0 | | | |

111 FITTINGS

DIN STANDARD CONNECTIONS

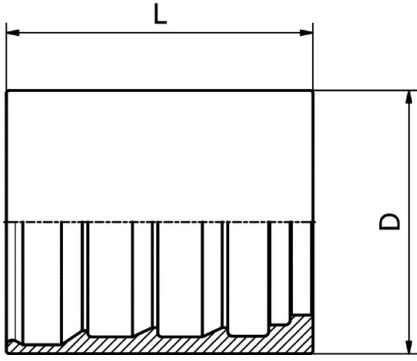
MS1593



90° METRIC
O-RING FEMALE 24° CONE LIGHT DUTY
ISO 8434-1 / DIN 3865

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| MS1593-04-14 | 6 | - 4 | 1/4" | M14 X 1.5 | 4.0 | 28.0 | 1.3 | 31.5 | 17.0 | | |
| MS1593-05-16 | 8 | - 5 | 5/16" | M16 X 1.5 | 6.0 | 31.0 | 1.8 | 32.5 | 19.0 | | |
| MS1593-06-18 | 10 | - 6 | 3/8" | M18 X 1.5 | 7.0 | 35.5 | 2.5 | 33.5 | 22.0 | | |

FERRULE



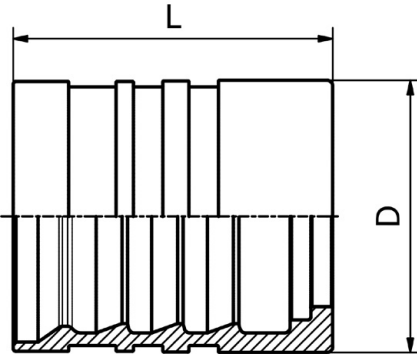
M00110/M00120/M00130

**SKIVE FERRULE
FOR WIRE BRAID HOSES**

FITTINGS
112

| PART. REF. | HOSE BORE | | | PART. REF. | PART. REF. | DIMENSIONS mm | | | | | |
|------------|-----------|------|--------|------------|------------|---------------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M00120-03 | 5 | - 3 | 3/16" | | | 17.0 | 23.9 | | | | |
| M00120-04 | 6 | - 4 | 1/4" | | | 19.5 | 28.0 | | | | |
| M00120-05 | 8 | - 5 | 5/16" | | | 20.0 | 28.6 | | | | |
| M00120-06 | 10 | - 6 | 3/8" | | | 23.0 | 30.0 | | | | |
| M00120-08 | 12 | - 8 | 1/2" | | | 26.7 | 32.0 | | | | |
| M00120-10 | 16 | - 10 | 5/8" | | | 32.0 | 38.0 | | | | |
| M00120-12 | 19 | - 12 | 3/4" | | | 35.8 | 41.7 | | | | |
| M00130-16 | 25 | - 16 | 1" | | | 43.0 | 47.0 | | | | |
| M00110-20 | 31 | - 20 | 1.1/4" | | | 50.5 | 59.0 | | | | |
| M00110-24 | 38 | - 24 | 1.1/2" | | | 57.0 | 70.0 | | | | |
| M00110-32 | 51 | - 32 | 2" | | | 70.0 | 72.0 | | | | |

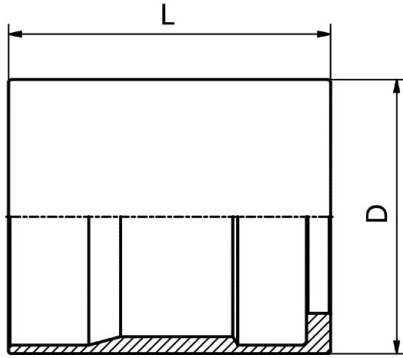
FERRULE



M00910/M00920/M00930

**SKIVE FERRULE
FOR WIRE BRAID
AND SPIRAL HOSES**

| PART. REF. | HOSE BORE | | | PART. REF. | PART. REF. | DIMENSIONS mm | | | | | |
|------------|-----------|------|--------|------------|------------|---------------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M00910-03 | 5 | - 3 | 3/16" | | | 20.6 | 26.0 | | | | |
| M00910-04 | 6 | - 4 | 1/4" | | | 22.0 | 30.0 | | | | |
| M00910-05 | 8 | - 5 | 5/16" | | | 24.0 | 31.0 | | | | |
| M00910-06 | 10 | - 6 | 3/8" | | | 26.0 | 33.0 | | | | |
| M00920-06 | 10 | - 6 | 3/8" | | | 26.7 | 33.0 | | | | |
| M00910-08 | 12 | - 8 | 1/2" | | | 30.0 | 34.0 | | | | |
| M00910-10 | 16 | - 10 | 5/8" | | | 33.0 | 39.0 | | | | |
| M00920-12 | 19 | - 12 | 3/4" | | | 38.0 | 40.0 | | | | |
| M00930-16 | 25 | - 16 | 1" | | | 46.0 | 54.0 | | | | |
| M00920-20 | 31 | - 20 | 1.1/4" | | | 57.0 | 60.0 | | | | |
| M00910-24 | 38 | - 24 | 1.1/2" | | | 65.0 | 70.0 | | | | |
| M00910-32 | 51 | - 32 | 2" | | | 79.0 | 72.0 | | | | |



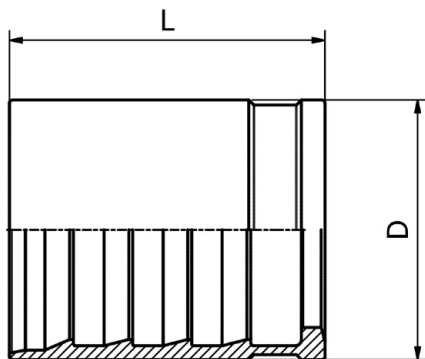
FERRULE

M00310/M00321

**NO-SKIVE FERRULE
FOR TEXTILE BRAID HOSES**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M00310-03 | 5 | - 3 | 3/16" | | | 17.5 | 27.0 | | | | |
| M00310-04 | 6 | - 4 | 1/4" | | | 19.3 | 30.0 | | | | |
| M00310-05 | 8 | - 5 | 5/16" | | | 21.0 | 32.0 | | | | |
| M00310-06 | 10 | - 6 | 3/8" | | | 24.0 | 32.0 | | | | |
| M00310-08 | 12 | - 8 | 1/2" | | | 28.4 | 34.0 | | | | |
| M00310-10 | 16 | - 10 | 5/8" | | | 33.0 | 37.0 | | | | |
| M00321-12 | 19 | - 12 | 3/4" | | | 37.0 | 43.0 | | | | |
| M00310-16 | 25 | - 16 | 1" | | | 43.5 | 51.0 | | | | |
| M00310-20 | 31 | - 20 | 1.1/4" | | | 50.0 | 59.0 | | | | |

113 FITTINGS

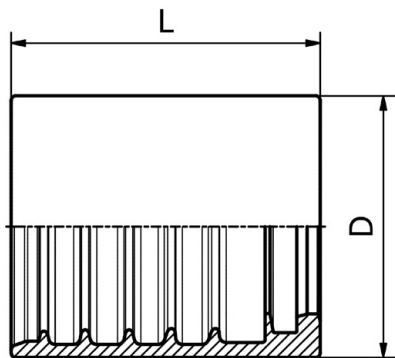


FERRULE

M00820/M00830

**NO-SKIVE FERRULE
FOR COMPACT HOSES**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M00820-03 | 5 | - 3 | 3/16" | | | 14.0 | 26.4 | | | | |
| M00830-04 | 6 | - 4 | 1/4" | | | 18.0 | 29.6 | | | | |
| M00830-05 | 8 | - 5 | 5/16" | | | 19.0 | 31.9 | | | | |
| M00820-06 | 10 | - 6 | 3/8" | | | 22.0 | 32.9 | | | | |
| M00820-08 | 12 | - 8 | 1/2" | | | 26.0 | 33.9 | | | | |
| M00820-10 | 16 | - 10 | 5/8" | | | 29.0 | 35.9 | | | | |
| M00820-12 | 19 | - 12 | 3/4" | | | 33.0 | 41.7 | | | | |
| M00820-16 | 25 | - 16 | 1" | | | 41.0 | 49.7 | | | | |
| M00820-20 | 31 | - 20 | 1.1/4" | | | 48.0 | 57.0 | | | | |
| M00820-24 | 38 | - 24 | 1.1/2" | | | 55.5 | 66.0 | | | | |
| M00820-32 | 51 | - 32 | 2" | | | 68.6 | 70.0 | | | | |



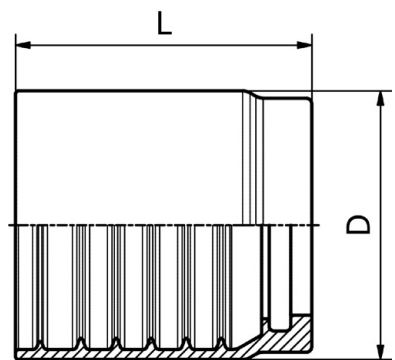
FERRULE

M03300

**NO-SKIVE FERRULE
FOR WIRE BRAID HOSES**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|-------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M03300-03 | 5 | - 3 | 3/16" | | | 19.2 | 22.0 | | | | |
| 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" | | | 25.0 | 30.0 | | | | |
| M03300-08 | 12 | - 8 | 1/2" | | | 28.0 | 33.0 | | | | |

FITTINGS 114



FERRULE

M03400/M03450

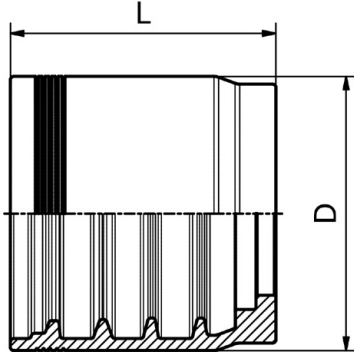
**NO-SKIVE FERRULE
FOR WIRE BRAID HOSES**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M03400-03 | 5 | - 3 | 3/16" | | | 21.0 | 23.0 | | | | |
| M03400-04 | 6 | - 4 | 1/4" | | | 23.0 | 30.1 | | | | |
| M03400-05 | 8 | - 5 | 5/16" | | | 24.0 | 30.0 | | | | |
| M03400-06 | 10 | - 6 | 3/8" | | | 26.0 | 31.1 | | | | |
| M03400-08 | 12 | - 8 | 1/2" | | | 29.0 | 34.0 | | | | |
| M03450-08 | 12 | - 8 | 1/2" | | | 30.3 | 31.0 | | | | |
| M03400-10 | 16 | - 10 | 5/8" | | | 33.0 | 37.0 | | | | |
| M03400-12 | 19 | - 12 | 3/4" | | | 37.0 | 42.0 | | | | |
| M03400-16 | 25 | - 16 | 1" | | | 46.0 | 50.7 | | | | |
| M03400-20 | 31 | - 20 | 1.1/4" | | | 59.0 | 57.2 | | | | |
| M03400-24 | 38 | - 24 | 1.1/2" | | | 67.0 | 64.8 | | | | |
| M03400-32 | 51 | - 32 | 2" | | | 80.0 | 68.3 | | | | |
| M03400-38 | 60 | - 38 | 2.3/8" | | | 82.5 | 69.0 | | | | |
| M03400-40 | 63 | - 40 | 2.1/2" | | | 88.2 | 68.8 | | | | |
| M03400-48 | 76 | - 48 | 3" | | | 103.0 | 75.0 | | | | |
| M03400-56 | 89 | - 56 | 3.1/2" | | | 123.4 | 91.0 | | | | |
| M03400-64 | 102 | - 64 | 4" | | | 131.0 | 93.0 | | | | |

FERRULE

M03500

**NO SKIVE FERRULE
FOR WIRE SPIRAL HOSES**

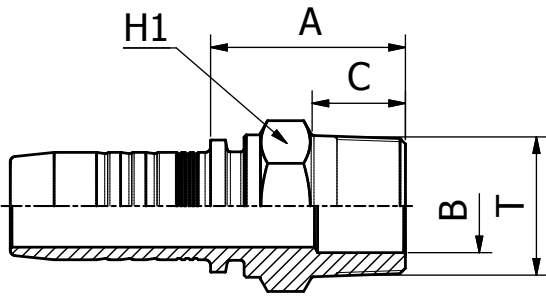


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M03500-06 | 10 | - 6 | 3/8" | | | 29.5 | 30.7 | | | | |
| M03500-08 | 12 | - 8 | 1/2" | | | 33.4 | 32.0 | | | | |
| M03500-10 | 16 | - 10 | 5/8" | | | 37.2 | 34.8 | | | | |
| M03500-12 | 19 | - 12 | 3/4" | | | 41.3 | 40.0 | | | | |
| M03500-16 | 25 | - 16 | 1" | | | 49.1 | 51.0 | | | | |
| M03500-20 | 31 | - 20 | 1.1/4" | | | 59.3 | 54.5 | | | | |

BS STANDARD CONNECTIONS

M10710

BSP MALE TAPERED - ISO 7

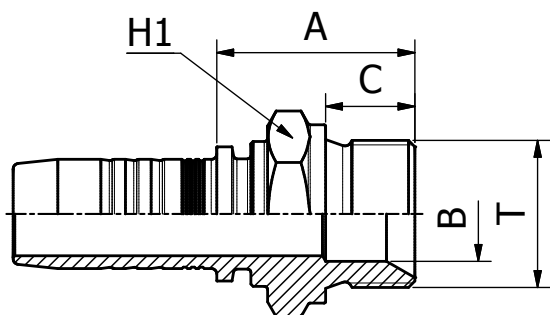


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | |
| M10710-03-02 | 5 | - 3 | 3/16" | 1/8" - 28 | 4.5 | 20.5 | 8.0 | 12.0 | | |
| M10710-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.5 | 24.5 | 12.0 | 14.0 | | |
| M10710-04-02 | 6 | - 4 | 1/4" | 1/8" - 28 | 4.5 | 21.0 | 8.0 | 12.0 | | |
| M10710-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.5 | 25.0 | 12.0 | 14.0 | | |
| M10710-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 26.0 | 12.0 | 19.0 | | |
| M10710-04-08 | 6 | - 4 | 1/4" | 1/2" - 14 | 10.0 | 29.5 | 15.0 | 22.0 | | |
| M10710-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | 5.5 | 25.0 | 12.0 | 14.0 | | |
| M10710-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 26.5 | 12.0 | 19.0 | | |
| M10710-05-08 | 8 | - 5 | 5/16" | 1/2" - 14 | 10.0 | 30.0 | 15.0 | 22.0 | | |
| M10710-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 27.0 | 12.0 | 19.0 | | |
| M10710-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 10.0 | 30.5 | 15.0 | 22.0 | | |
| M10710-08-04 | 12 | - 8 | 1/2" | 1/4" - 19 | 4.5 | 26.0 | 12.0 | 19.0 | | |
| M10710-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 10.0 | 31.0 | 15.0 | 22.0 | | |
| M10710-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | 10.0 | 31.0 | 15.0 | 22.0 | | |
| M10710-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 17.0 | 34.0 | 17.0 | 27.0 | | |
| M10710-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 17.0 | 35.5 | 17.0 | 27.0 | | |
| M10710-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 17.0 | 38.0 | 17.0 | 32.0 | | |
| M10710-16-16 | 25 | - 16 | 1" | 1" - 11 | 22.5 | 42.0 | 21.0 | 36.0 | | |
| M10710-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 28.5 | 47.5 | 23.0 | 46.0 | | |
| M10710-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 50.0 | 23.0 | 50.0 | | |
| M10710-32-32 | 51 | - 32 | 2" | 2" - 11 | 44.0 | 55.5 | 27.0 | 65.0 | | |

115 FITTINGS

BS STANDARD CONNECTIONS

M10510



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

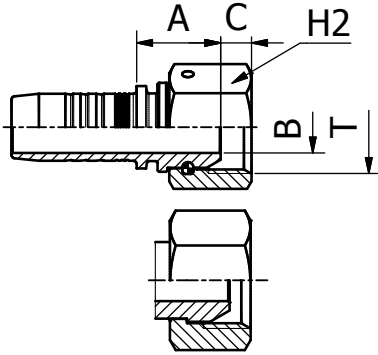
FITTINGS 116

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | | |
| M10510-03-02 | 5 | - 3 | 3/16" | 1/8" - 28 | | 3.5 | 22.5 | 10.0 | 14.0 | | |
| M10510-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | | 5.0 | 25.0 | 11.0 | 19.0 | | |
| M10510-04-02 | 6 | - 4 | 1/4" | 1/8" - 28 | | 3.5 | 22.5 | 10.0 | 14.0 | | |
| M10510-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 5.0 | 25.5 | 11.0 | 19.0 | | |
| M10510-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | | 8.0 | 27.0 | 12.0 | 22.0 | | |
| M10510-04-08 | 6 | - 4 | 1/4" | 1/2" - 14 | | 11.0 | 30.0 | 14.0 | 27.0 | | |
| M10510-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | | 5.0 | 26.0 | 11.0 | 19.0 | | |
| M10510-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | | 8.0 | 27.5 | 12.0 | 22.0 | | |
| M10510-06-04 | 10 | - 6 | 3/8" | 1/4" - 19 | | 5.0 | 26.0 | 11.0 | 19.0 | | |
| M10510-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 8.0 | 28.0 | 12.0 | 22.0 | | |
| M10510-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | | 11.0 | 30.5 | 14.0 | 27.0 | | |
| M10510-08-06 | 12 | - 8 | 1/2" | 3/8" - 19 | | 8.0 | 28.0 | 12.0 | 22.0 | | |
| M10510-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 11.0 | 31.0 | 14.0 | 27.0 | | |
| M10510-08-10 | 12 | - 8 | 1/2" | 5/8" - 14 | | 14.5 | 33.0 | 16.0 | 30.0 | | |
| M10510-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | | 17.0 | 34.0 | 16.0 | 32.0 | | |
| M10510-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | | 14.5 | 33.0 | 16.0 | 30.0 | | |
| M10510-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 17.0 | 35.5 | 16.0 | 32.0 | | |
| M10510-12-08 | 19 | - 12 | 3/4" | 1/2" - 14 | | 11.0 | 32.0 | 14.0 | 27.0 | | |
| M10510-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 17.0 | 35.5 | 16.0 | 32.0 | | |
| M10510-12-16 | 19 | - 12 | 3/4" | 1" - 11 | | 22.5 | 39.5 | 19.0 | 41.0 | | |
| M10510-16-12 | 25 | - 16 | 1" | 3/4" - 14 | | 17.0 | 36.5 | 16.0 | 32.0 | | |
| M10510-16-16 | 25 | - 16 | 1" | 1" - 11 | | 22.5 | 41.0 | 19.0 | 41.0 | | |
| M10510-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | | 28.5 | 45.0 | 20.0 | 50.0 | | |
| M10510-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 28.5 | 46.5 | 20.0 | 50.0 | | |
| M10510-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | | 33.5 | 48.5 | 22.0 | 55.0 | | |
| M10510-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | | 33.5 | 49.5 | 22.0 | 55.0 | | |
| M10510-32-32 | 51 | - 32 | 2" | 2" - 11 | | 46.0 | 54.0 | 25.0 | 70.0 | | |

BS STANDARD CONNECTIONS

M20512/M20513

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



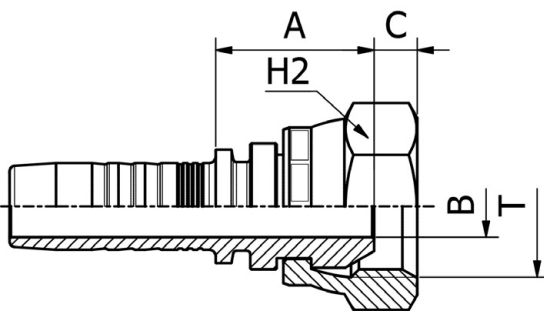
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H2 | | |
| M20512-03-02 | 5 | - 3 | 3/16" | 1/8" - 28 | 3.0 | 16.0 | 4.4 | 14.0 | | | |
| M20512-04-02 | 6 | - 4 | 1/4" | 1/8" - 28 | 3.1 | 16.5 | 4.4 | 14.0 | | | |
| M20512-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | 4.1 | 17.5 | 4.2 | 19.0 | | | |
| M20512-06-04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 18.0 | 4.2 | 19.0 | | | |
| M20512-08-06 | 12 | - 8 | 1/2" | 3/8" - 19 | 7.1 | 21.0 | 6.0 | 22.0 | | | |
| M20512-08-10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 22.0 | 10.2 | 28.0 | | | |
| M20512-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 24.5 | 9.0 | 32.0 | | | |
| M20512-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | 9.8 | 24.0 | 6.5 | 27.0 | | | |
| M20512-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 21.5 | 10.2 | 28.0 | | | |
| M20512-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 23.0 | 9.0 | 32.0 | | | |
| M20512-12-08 | 19 | - 12 | 3/4" | 1/2" - 14 | 9.8 | 25.0 | 6.5 | 27.0 | | | |
| M20512-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 24.5 | 9.0 | 32.0 | | | |
| M20512-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 26.0 | 10.5 | 38.0 | | | |
| M20512-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 25.5 | 9.0 | 32.0 | | | |
| M20512-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 27.5 | 10.5 | 38.0 | | | |
| M20513-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 16.5 | 5.4 | 19.0 | | | |
| M20513-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 17.0 | 5.4 | 19.0 | | | |
| M20513-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 19.0 | 6.0 | 22.0 | | | |
| M20513-04-08 | 6 | - 4 | 1/4" | 1/2" - 14 | 9.5 | 19.5 | 6.3 | 27.0 | | | |
| M20513-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 19.0 | 6.0 | 22.0 | | | |
| M20513-05-08 | 8 | - 5 | 5/16" | 1/2" - 14 | 9.3 | 20.5 | 6.3 | 27.0 | | | |
| M20513-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 19.5 | 6.0 | 22.0 | | | |
| M20513-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 20.0 | 6.3 | 27.0 | | | |
| M20513-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 20.5 | 6.3 | 27.0 | | | |

117 FITTINGS

BS STANDARD CONNECTIONS

M20511KR

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

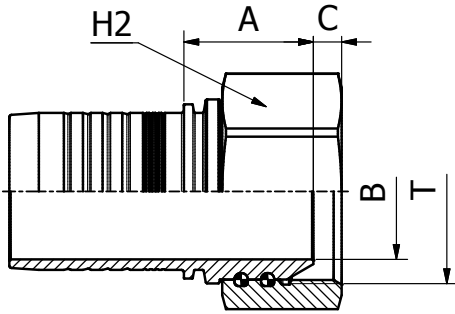


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H2 | | |
| M20511-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 20.0 | 5.2 | 19.0 | | | |
| M20511-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 22.0 | 6.0 | 22.0 | | | |
| M20511-08-08KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 24.0 | 6.5 | 27.0 | | | |

BS STANDARD CONNECTIONS

M20514

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



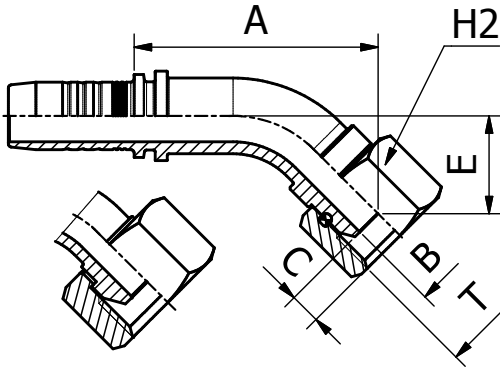
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|------|------|-------|--|--|
| | DN | Dash | inch | | T | B | A | C | H2 | | |
| M20514-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | | 55.4 | 52.5 | 11.5 | 85.0 | | |
| M20514-48-48 | 76 | - 48 | 3" | 3" | | 65.0 | 57.0 | 10.9 | 100.0 | | |

FITTINGS 118

BS STANDARD CONNECTIONS

M20542/M20543

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

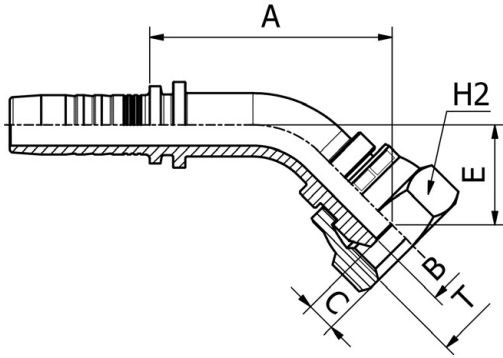


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M20542-03-02 | 5 | - 3 | 3/16" | 1/8" - 28 | | 3.0 | 31.0 | 4.4 | 15.0 | 14.0 |
| M20542-04-02 | 6 | - 4 | 1/4" | 1/8" - 28 | | 3.1 | 35.5 | 4.4 | 14.5 | 14.0 |
| M20542-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | | 4.0 | 35.5 | 4.1 | 16.0 | 19.0 |
| M20542-08-06 | 12 | - 8 | 1/2" | 3/8" - 19 | | 7.1 | 52.0 | 6.0 | 20.0 | 22.0 |
| M20542-08-10 | 12 | - 8 | 1/2" | 5/8" - 14 | | 12.1 | 54.5 | 10.2 | 22.5 | 28.0 |
| M20542-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | | 15.0 | 57.0 | 9.0 | 25.0 | 32.0 |
| M20542-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | | 9.3 | 63.5 | 6.5 | 26.5 | 27.0 |
| M20542-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | | 12.5 | 63.0 | 10.2 | 26.0 | 28.0 |
| M20542-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 64.0 | 9.0 | 27.0 | 32.0 |
| M20542-12-08 | 19 | - 12 | 3/4" | 1/2" - 14 | | 9.3 | 55.5 | 6.5 | 22.5 | 27.0 |
| M20542-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 70.5 | 9.0 | 28.5 | 32.0 |
| M20542-12-16 | 19 | - 12 | 3/4" | 1" - 11 | | 19.8 | 72.5 | 10.5 | 30.0 | 38.0 |
| M20542-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 91.0 | 10.5 | 36.5 | 38.0 |
| M20543-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | | 4.0 | 35.5 | 5.4 | 14.5 | 19.0 |
| M20543-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 36.0 | 5.4 | 15.0 | 19.0 |
| M20543-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | | 7.0 | 37.5 | 6.0 | 16.0 | 22.0 |
| M20543-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | | 7.0 | 38.0 | 6.0 | 13.5 | 22.0 |
| M20543-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 42.0 | 6.0 | 15.5 | 22.0 |
| M20543-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | | 9.3 | 42.5 | 6.3 | 16.0 | 27.0 |
| M20543-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 49.5 | 6.3 | 17.0 | 27.0 |

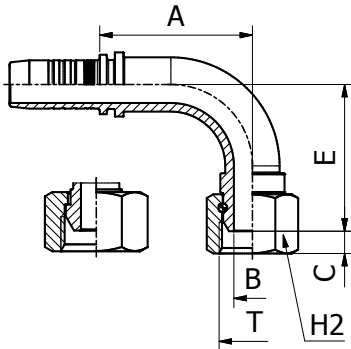
BS STANDARD CONNECTIONS

M20541KR

45° BSP 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 | | |
| M20541-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.2 | 38.0 | 5.2 | 16.6 | 19.0 | | |
| M20541-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 45.5 | 6.0 | 20.0 | 22.0 | | |
| M20541-08-08KR | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 54.0 | 6.5 | 22.0 | 27.0 | | |



BS STANDARD CONNECTIONS

M20592/M20593

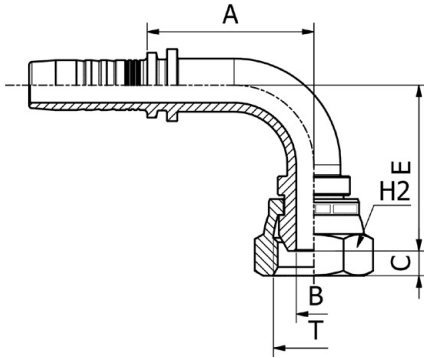
90° BSP FEMALE SWEPT ELBOW
60° CONE - BS5200 / ISO 12151-6

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | | |
| M20592-03-02 | 5 | - 3 | 3/16" | 1/8" - 28 | | 3.0 | 21.5 | 4.4 | 26.0 | 14.0 | | |
| M20592-04-02 | 6 | - 4 | 1/4" | 1/8" - 28 | | 3.1 | 28.5 | 4.4 | 27.0 | 14.0 | | |
| M20592-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | | 4.0 | 26.5 | 4.1 | 29.5 | 19.0 | | |
| M20592-06-04 | 10 | - 6 | 3/8" | 1/4" - 19 | | 4.0 | 27.0 | 4.1 | 29.5 | 19.0 | | |
| M20592-08-06 | 12 | - 8 | 1/2" | 3/8" - 19 | | 7.1 | 45.0 | 6.0 | 41.0 | 22.0 | | |
| M20592-08-10 | 12 | - 8 | 1/2" | 5/8" - 14 | | 12.1 | 44.0 | 10.2 | 44.0 | 28.0 | | |
| M20592-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | | 15.0 | 44.0 | 9.0 | 45.5 | 32.0 | | |
| M20592-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | | 9.3 | 53.5 | 6.5 | 54.5 | 27.0 | | |
| M20592-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | | 12.5 | 53.5 | 10.2 | 53.5 | 28.0 | | |
| M20592-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 53.5 | 9.0 | 55.0 | 32.0 | | |
| M20592-12-08 | 19 | - 12 | 3/4" | 1/2" - 14 | | 9.3 | 45.5 | 6.5 | 44.0 | 27.0 | | |
| M20592-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 61.5 | 9.0 | 59.5 | 32.0 | | |
| M20592-12-16 | 19 | - 12 | 3/4" | 1" - 11 | | 19.8 | 61.5 | 10.5 | 62.0 | 38.0 | | |
| M20592-16-12 | 25 | - 16 | 1" | 3/4" - 14 | | 15.0 | 64.5 | 9.0 | 59.5 | 32.0 | | |
| M20592-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 79.5 | 10.5 | 76.0 | 38.0 | | |
| M20593-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | | 4.0 | 29.0 | 5.4 | 29.0 | 19.0 | | |
| M20593-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 29.5 | 5.4 | 29.0 | 19.0 | | |
| M20593-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | | 7.0 | 29.5 | 6.0 | 31.0 | 22.0 | | |
| M20593-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | | 7.0 | 32.0 | 6.0 | 27.5 | 22.0 | | |
| M20593-05-08 | 8 | - 5 | 5/16" | 1/2" - 14 | | 9.3 | 36.5 | 6.3 | 32.0 | 27.0 | | |
| M20593-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 36.5 | 6.0 | 31.5 | 22.0 | | |
| M20593-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | | 9.3 | 36.5 | 6.3 | 32.0 | 27.0 | | |
| M20593-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 45.0 | 6.3 | 36.5 | 27.0 | | |

BS STANDARD CONNECTIONS

M20591KR

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



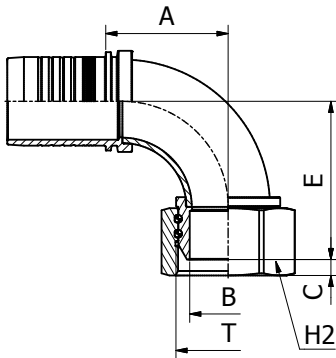
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M20591-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 28.5 | 5.2 | 30.5 | 19.0 | | |
| M20591-04-06KR | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 28.5 | 6.0 | 32.0 | 22.0 | | |
| M20591-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 35.5 | 6.0 | 37.5 | 22.0 | | |
| M20591-06-08KR | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 35.5 | 6.5 | 39.0 | 27.0 | | |
| M20591-08-06KR | 12 | - 8 | 1/2" | 3/8" - 19 | 7.0 | 44.0 | 6.0 | 42.0 | 22.0 | | |
| M20591-08-08KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 44.0 | 6.5 | 43.5 | 27.0 | | |

FITTINGS 120

BS STANDARD CONNECTIONS

M20594

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

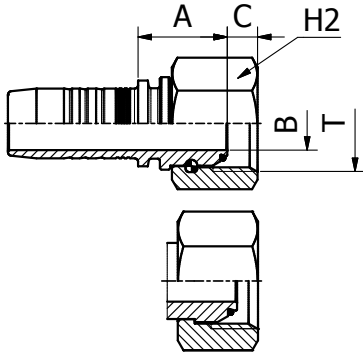


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|-------|-------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M20594-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | 55.4 | 88.0 | 11.5 | 114.0 | 85.0 | | |
| M20594-48-48 | 76 | - 48 | 3" | 3" | 65.0 | 123.0 | 10.9 | 135.0 | 100.0 | | |

BS STANDARD CONNECTIONS

M20812/M20813

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



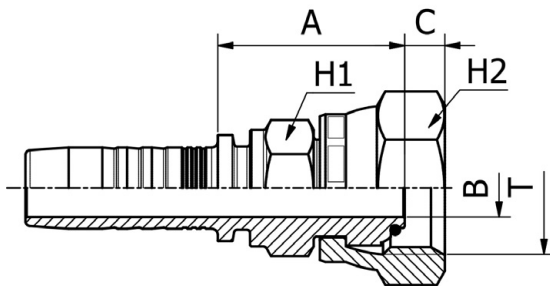
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H2 | | |
| M20812-06-04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 18.0 | 4.1 | 19.0 | | |
| M20812-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 22.0 | 9.7 | 28.0 | | |
| M20812-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 25.0 | 8.5 | 32.0 | | |
| M20812-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 26.0 | 8.5 | 32.0 | | |
| M20812-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 27.5 | 10.6 | 38.0 | | |
| M20812-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 31.0 | 10.5 | 50.0 | | |
| M20812-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.8 | 29.0 | 10.5 | 38.0 | | |
| M20812-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 31.5 | 10.5 | 50.0 | | |
| M20812-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 29.5 | 12.5 | 60.0 | | |
| M20812-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" - 11 | 26.0 | 31.5 | 10.5 | 50.0 | | |
| M20812-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 30.5 | 12.5 | 60.0 | | |
| M20812-24-32 | 38 | - 24 | 1.1/2" | 2" - 11 | 42.1 | 30.0 | 16.1 | 70.0 | | |
| M20812-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 32.0 | 16.1 | 70.0 | | |
| M20813-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 16.5 | 5.4 | 19.0 | | |
| M20813-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 17.0 | 5.4 | 19.0 | | |
| M20813-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 19.0 | 6.0 | 22.0 | | |
| M20813-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 19.5 | 6.0 | 22.0 | | |
| M20813-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 21.0 | 6.3 | 27.0 | | |
| M20813-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 20.5 | 6.3 | 27.0 | | |

121 FITTINGS

BS STANDARD CONNECTIONS

M20811HKR

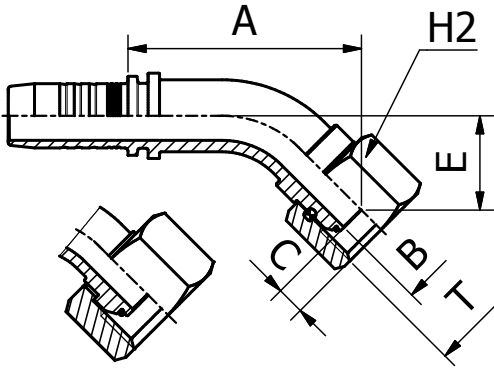
BSP O-RING FEMALE 60° CONE
BS5200 / ISO 12151-6



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|-------------------|-----------|------|------|-----------|---------------|------|-----|------|------|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | |
| M20811-04-04H12KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 25.0 | 5.2 | 12.0 | 19.0 | |
| M20811-04-06H17KR | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 27.0 | 6.0 | 17.0 | 22.0 | |
| M20811-06-04H17KR | 10 | - 6 | 3/8" | 1/4" - 19 | 4.0 | 26.0 | 5.2 | 17.0 | 19.0 | |
| M20811-06-06H17KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 27.5 | 6.0 | 17.0 | 22.0 | |
| M20811-06-08H19KR | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 29.5 | 6.5 | 19.0 | 27.0 | |
| M20811-08-06H19KR | 12 | - 8 | 1/2" | 3/8" - 19 | 7.0 | 29.5 | 6.0 | 19.0 | 22.0 | |
| M20811-08-08H19KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 30.0 | 5.5 | 19.0 | 27.0 | |

BS STANDARD CONNECTIONS

M20842/M20843

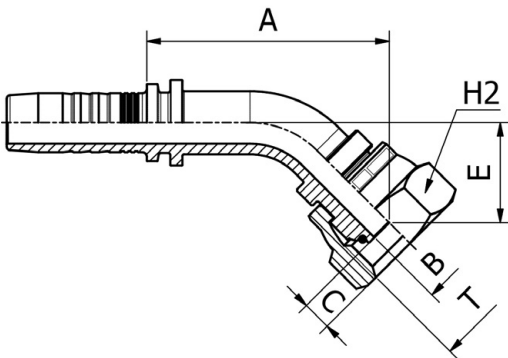


45° BSP O-RING FEMALE SWEPT ELBOW 60° CONE
BS5200 / ISO 12151-6

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|-------------|---------------|-------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M20842-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 63.5 | 9.7 | 27.5 | 28.0 | |
| M20842-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 71.0 | 8.5 | 29.0 | 32.0 | |
| M20842-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 79.5 | 8.5 | 29.0 | 32.0 | |
| M20842-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 90.5 | 10.6 | 35.5 | 38.0 | |
| M20842-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 93.0 | 10.5 | 38.0 | 50.0 | |
| M20842-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 101.5 | 10.5 | 39.0 | 50.0 | |
| M20842-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 118.5 | 12.5 | 40.5 | 60.0 | |
| M20842-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" - 11 | 26.0 | 106.0 | 10.5 | 42.0 | 50.0 | |
| M20842-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 118.0 | 12.5 | 45.0 | 60.0 | |
| M20842-24-32 | 38 | - 24 | 1.1/2" | 2" - 11 | 42.1 | 117.5 | 16.1 | 44.5 | 70.0 | |
| M20842-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 134.0 | 16.1 | 47.0 | 70.0 | |
| M20843-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 36.0 | 5.4 | 14.5 | 19.0 | |
| M20843-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 42.0 | 6.0 | 15.5 | 22.0 | |
| M20843-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 49.5 | 6.3 | 17.0 | 27.0 | |

BS STANDARD CONNECTIONS

M20841KR



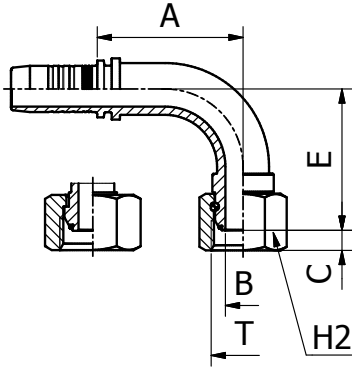
45° BSP O-RING FEMALE 60° CONE
BS5200 / ISO 12151-6

| 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 | 38.0 | 5.2 | 16.6 | 19.0 | |
| M20841-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 45.5 | 6.0 | 16.5 | 22.0 | |
| M20841-08-08KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 54.0 | 6.5 | 22.0 | 27.0 | |

BS STANDARD CONNECTIONS

M20892/M20893

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



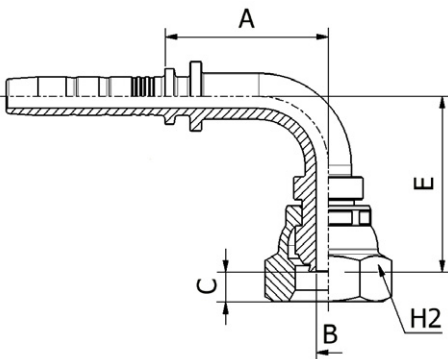
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|-------------|---------------|-------|------|-------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M20892-06-04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 35.5 | 4.1 | 33.0 | 19.0 | |
| M20892-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 53.0 | 9.7 | 55.0 | 28.0 | |
| M20892-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.5 | 8.5 | 60.0 | 32.0 | |
| M20892-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 61.5 | 10.6 | 62.0 | 38.0 | |
| M20892-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 79.5 | 8.5 | 60.0 | 32.0 | |
| M20892-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 79.5 | 10.6 | 76.0 | 38.0 | |
| M20892-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 79.5 | 10.5 | 78.5 | 50.0 | |
| M20892-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.8 | 79.5 | 10.6 | 76.0 | 38.0 | |
| M20892-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 90.5 | 10.5 | 83.5 | 50.0 | |
| M20892-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 90.5 | 12.5 | 84.5 | 60.0 | |
| M20892-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" - 11 | 26.0 | 95.0 | 10.5 | 90.5 | 50.0 | |
| M20892-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 108.0 | 12.5 | 98.5 | 60.0 | |
| M20892-24-32 | 38 | - 24 | 1.1/2" | 2" - 11 | 42.1 | 108.0 | 16.1 | 98.0 | 70.0 | |
| M20892-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 131.0 | 16.1 | 110.5 | 70.0 | |
| M20893-03-04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 29.0 | 5.4 | 29.0 | 19.0 | |
| M20893-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 29.5 | 5.4 | 29.0 | 19.0 | |
| M20893-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 36.5 | 6.0 | 31.5 | 22.0 | |
| M20893-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 45.0 | 6.3 | 36.5 | 27.0 | |

123 FITTINGS

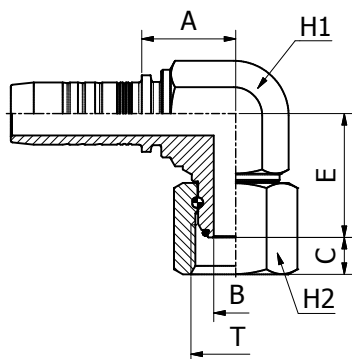
BS STANDARD CONNECTIONS

M20891KR

90° 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 |
| M20891-04-04KR | 6 | - 4 | 1/4" | 1/4" - 19 | 4.2 | 28.5 | 5.2 | 30.5 | 19.0 | |
| M20891-04-06KR | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 28.5 | 6.0 | 32.0 | 22.0 | |
| M20891-06-04KR | 10 | - 6 | 3/8" | 1/4" - 19 | 4.0 | 37.5 | 5.2 | 36.0 | 19.0 | |
| M20891-06-06KR | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 35.5 | 6.0 | 37.5 | 22.0 | |
| M20891-06-08KR | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 35.5 | 6.5 | 39.0 | 27.0 | |
| M20891-08-06KR | 12 | - 8 | 1/2" | 3/8" - 19 | 7.0 | 44.0 | 6.0 | 42.0 | 22.0 | |
| M20891-08-08KR | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 44.0 | 5.5 | 43.5 | 22.0 | |



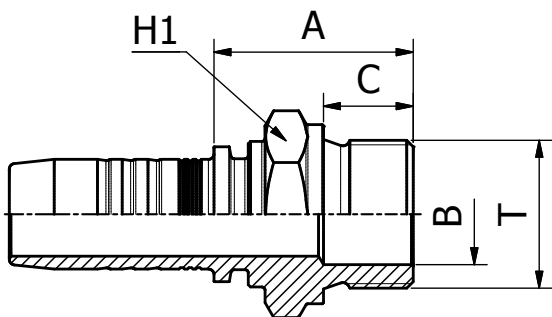
BS STANDARD CONNECTIONS

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 | 4.0 | 20.0 | 4.1 | 22.0 | 14.0 | 19.0 | |
| M20882-06-06F | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 23.0 | 6.0 | 27.5 | 19.0 | 22.0 | |
| M20882-08-08F | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 25.0 | 6.5 | 31.0 | 22.0 | 27.0 | |
| M20882-10-10F | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 24.5 | 9.7 | 32.5 | 24.0 | 28.0 | |
| M20882-12-12F | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 37.5 | 8.5 | 36.0 | 27.0 | 32.0 | |
| M20882-16-16F | 25 | - 16 | 1" | 1" - 11 | 20.0 | 52.0 | 10.6 | 44.0 | 36.0 | 38.0 | |

FITTINGS 124



BS STANDARD CONNECTIONS

M10610

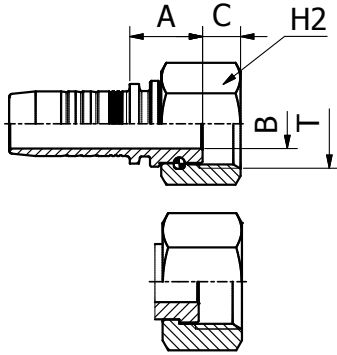
BSP MALE FLAT SEAT

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | |
| M10610-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 6.0 | 25.5 | 11.0 | 19.0 | | |
| M10610-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 9.5 | 28.0 | 12.0 | 22.0 | | |
| M10610-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 13.0 | 30.5 | 14.0 | 27.0 | | |
| M10610-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 13.0 | 31.0 | 14.0 | 27.0 | | |
| M10610-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | 13.0 | 31.0 | 14.0 | 27.0 | | |
| M10610-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 18.0 | 35.5 | 16.0 | 32.0 | | |

BS STANDARD CONNECTIONS

M20612/M20613

BSP FEMALE FLAT SEAT

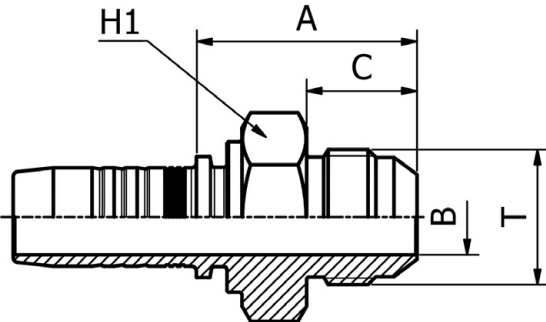


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|
| | DN | Dash | inch | T | B | A | C | H2 |
| M20612-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 21.0 | 11.5 | 32.0 |
| M20612-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 20.5 | 11.5 | 32.0 |
| M20612-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 22.0 | 11.5 | 32.0 |
| M20612-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 23.5 | 13.0 | 38.0 |
| M20612-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 25.0 | 13.0 | 38.0 |
| M20612-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 26.0 | 15.0 | 50.0 |
| M20613-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 14.5 | 7.9 | 19.0 |
| M20613-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 16.0 | 9.0 | 22.0 |
| M20613-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 16.5 | 9.0 | 22.0 |
| M20613-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 17.5 | 9.8 | 27.0 |
| M20613-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 18.0 | 9.8 | 27.0 |

SAE STANDARD CONNECTIONS

M12510

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

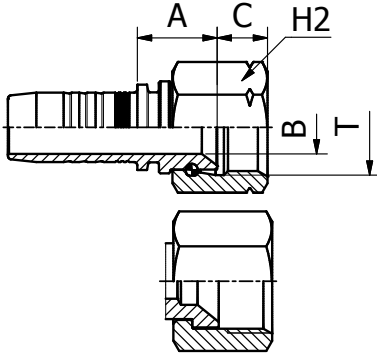


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|
| | DN | Dash | inch | T | B | A | C | H1 |
| M12510-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 28.0 | 14.0 | 12.0 |
| M12510-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | 5.5 | 29.0 | 14.0 | 14.0 |
| M12510-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 29.0 | 14.0 | 17.0 |
| M12510-05-04 | 8 | - 5 | 5/16" | 7/16" - 20 | 4.0 | 29.0 | 14.0 | 14.0 |
| M12510-05-05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 29.0 | 14.0 | 14.0 |
| M12510-05-06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 29.0 | 14.0 | 17.0 |
| M12510-06-05 | 10 | - 6 | 3/8" | 1/2" - 20 | 5.5 | 29.5 | 14.0 | 17.0 |
| M12510-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 29.5 | 14.0 | 17.0 |
| M12510-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 34.0 | 16.5 | 19.0 |
| M12510-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | 12.5 | 38.5 | 19.5 | 24.0 |
| M12510-08-06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 32.0 | 14.0 | 19.0 |
| M12510-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 34.5 | 16.5 | 19.0 |
| M12510-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 12.5 | 39.0 | 19.5 | 24.0 |
| M12510-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.0 | 43.0 | 22.0 | 27.0 |
| M12510-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 39.0 | 19.5 | 24.0 |
| M12510-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.0 | 42.5 | 22.0 | 27.0 |
| M12510-12-10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 41.5 | 19.5 | 27.0 |
| M12510-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 44.0 | 22.0 | 27.0 |
| M12510-12-14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 44.5 | 22.5 | 32.0 |
| M12510-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 47.0 | 23.0 | 34.0 |
| M12510-16-12 | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 45.0 | 22.0 | 32.0 |
| M12510-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 48.0 | 23.0 | 34.0 |
| M12510-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 53.0 | 24.3 | 42.0 |
| M12510-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 53.5 | 24.3 | 42.0 |
| M12510-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 60.5 | 27.5 | 50.0 |
| M12510-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 60.5 | 27.5 | 50.0 |
| M12510-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 72.0 | 34.0 | 65.0 |

SAE STANDARD CONNECTIONS

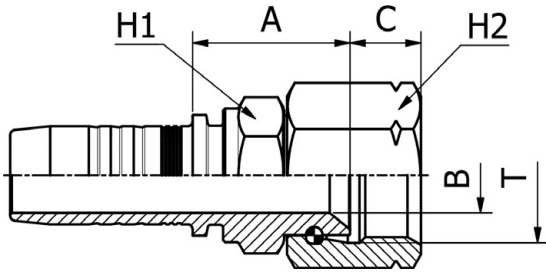
M22512/M22513

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H2 | | | |
| M22512-03-05 | 5 | - 3 | 3/16" | 1/2" - 20 | 4.0 | 15.5 | 9.1 | 17.0 | | | |
| M22512-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 15.5 | 8.7 | 17.0 | | | |
| M22512-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 16.0 | 9.1 | 17.0 | | | |
| M22512-05-04 | 8 | - 5 | 5/16" | 7/16" - 20 | 4.0 | 15.5 | 8.7 | 17.0 | | | |
| M22512-05-05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 16.0 | 9.1 | 17.0 | | | |
| M22512-05-06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 15.5 | 9.2 | 19.0 | | | |
| M22512-06-05 | 10 | - 6 | 3/8" | 1/2" - 20 | 5.5 | 16.5 | 9.1 | 17.0 | | | |
| M22512-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 16.0 | 9.2 | 19.0 | | | |
| M22512-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 20.0 | 10.2 | 22.0 | | | |
| M22512-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 20.0 | 12.3 | 27.0 | | | |
| M22512-12-08 | 19 | - 12 | 3/4" | 3/4" - 16 | 9.3 | 21.5 | 10.2 | 22.0 | | | |
| M22512-12-10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 21.5 | 12.3 | 27.0 | | | |
| M22512-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 22.5 | 14.2 | 32.0 | | | |
| M22512-12-14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 23.0 | 14.3 | 36.0 | | | |
| M22512-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 23.0 | 15.0 | 38.0 | | | |
| M22512-16-12 | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 23.5 | 14.2 | 32.0 | | | |
| M22512-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 24.0 | 15.0 | 38.0 | | | |
| M22512-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 30.0 | 16.2 | 50.0 | | | |
| M22512-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 30.0 | 16.2 | 50.0 | | | |
| M22512-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 35.0 | 18.8 | 60.0 | | | |
| M22512-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 35.0 | 18.8 | 60.0 | | | |
| M22512-32-24 | 51 | - 32 | 2" | 1.7/8" - 12 | 32.0 | 37.0 | 18.8 | 60.0 | | | |
| M22512-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 44.0 | 35.5 | 24.0 | 75.0 | | | |
| M22513-03-04 | 5 | - 3 | 3/16" | 7/16" - 20 | 3.0 | 15.0 | 8.0 | 15.0 | | | |
| M22513-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 16.5 | 9.8 | 19.0 | | | |
| M22513-05-08 | 8 | - 5 | 5/16" | 3/4" - 16 | 5.5 | 17.0 | 10.1 | 22.0 | | | |
| M22513-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 17.5 | 10.1 | 22.0 | | | |
| M22513-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 18.0 | 12.4 | 27.0 | | | |
| M22513-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 18.5 | 12.4 | 27.0 | | | |
| M22513-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 22.0 | 14.1 | 32.0 | | | |
| M22513-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 21.5 | 14.1 | 32.0 | | | |

M22712



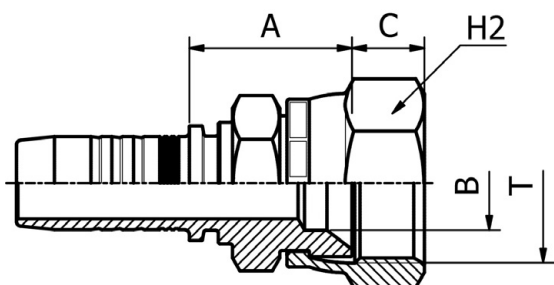
**JIC FEMALE 37° CONE SEAT DOUBLE HEXAGON
SAE J516 / ISO 12151-5 (THRUST-WIRE NUT)**

| PART. REF. | HOSE BORE | | | Thread | T | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------------|---|---------------|------|------|------|------|--|
| | DN | Dash | inch | | | B | A | C | H1 | H2 | |
| M22712-03-04 | 5 | - 3 | 3/16" | 7/16" - 20 | | 4.0 | 20.5 | 8.7 | 12.0 | 17.0 | |
| M22712-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | | 4.0 | 21.0 | 8.7 | 12.0 | 17.0 | |
| M22712-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | | 4.0 | 21.5 | 9.1 | 12.0 | 17.0 | |
| M22712-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | | 7.0 | 24.0 | 9.2 | 14.0 | 19.0 | |
| M22712-05-05 | 8 | - 5 | 5/16" | 1/2" - 20 | | 5.5 | 21.5 | 9.1 | 14.0 | 17.0 | |
| M22712-05-06 | 8 | - 5 | 5/16" | 9/16" - 18 | | 7.0 | 24.0 | 9.2 | 14.0 | 19.0 | |
| M22712-05-08 | 8 | - 5 | 5/16" | 3/4" - 16 | | 9.3 | 26.0 | 10.2 | 19.0 | 22.0 | |
| M22712-06-04 | 10 | - 6 | 3/8" | 7/16" - 20 | | 4.0 | 24.5 | 8.7 | 17.0 | 17.0 | |
| M22712-06-05 | 10 | - 6 | 3/8" | 1/2" - 20 | | 5.5 | 25.0 | 9.1 | 17.0 | 17.0 | |
| M22712-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | | 7.0 | 24.5 | 9.2 | 17.0 | 19.0 | |
| M22712-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | | 9.3 | 27.0 | 10.2 | 19.0 | 22.0 | |
| M22712-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | | 12.5 | 28.0 | 12.3 | 22.0 | 27.0 | |
| M22712-08-06 | 12 | - 8 | 1/2" | 9/16" - 18 | | 7.0 | 24.5 | 9.2 | 19.0 | 19.0 | |
| M22712-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | | 9.3 | 27.5 | 10.2 | 19.0 | 22.0 | |
| M22712-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | | 12.5 | 28.5 | 12.3 | 22.0 | 27.0 | |
| M22712-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | | 14.0 | 30.0 | 14.2 | 27.0 | 32.0 | |
| M22712-10-08 | 16 | - 10 | 5/8" | 3/4" - 16 | | 9.3 | 28.5 | 10.2 | 22.0 | 22.0 | |
| M22712-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | | 12.5 | 28.5 | 12.3 | 22.0 | 27.0 | |
| M22712-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | | 15.0 | 30.0 | 14.2 | 27.0 | 32.0 | |
| M22712-12-08 | 19 | - 12 | 3/4" | 3/4" - 16 | | 9.3 | 30.0 | 10.2 | 27.0 | 22.0 | |
| M22712-12-10 | 19 | - 12 | 3/4" | 7/8" - 14 | | 12.5 | 30.0 | 12.3 | 27.0 | 27.0 | |
| M22712-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | | 15.0 | 31.5 | 14.2 | 27.0 | 32.0 | |
| M22712-12-14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | | 15.0 | 33.0 | 14.3 | 30.0 | 36.0 | |
| M22712-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | | 19.8 | 32.5 | 15.0 | 32.0 | 38.0 | |
| M22712-16-12 | 25 | - 16 | 1" | 1.1/16" - 12 | | 12.5 | 34.0 | 14.2 | 32.0 | 32.0 | |
| M22712-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | | 19.8 | 34.5 | 15.0 | 32.0 | 38.0 | |
| M22712-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | | 26.0 | 43.0 | 16.2 | 41.0 | 50.0 | |
| M22712-20-16 | 31 | - 20 | 1.1/4" | 1.5/16" - 12 | | 19.8 | 36.0 | 15.0 | 38.0 | 38.0 | |
| M22712-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | | 26.0 | 43.5 | 16.2 | 41.0 | 50.0 | |
| M22712-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | | 32.0 | 51.0 | 18.8 | 50.0 | 60.0 | |
| M22712-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | | 44.0 | 51.5 | 24.0 | 65.0 | 75.0 | |

SAE STANDARD CONNECTIONS

M22711/M22711KR

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

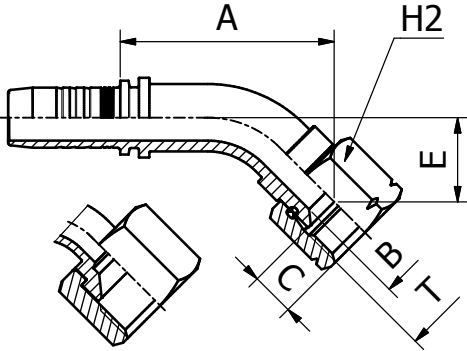


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|----------------|-----------|------|--------|--------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | | |
| M22711-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | | 19.8 | 34.5 | 15.3 | 32.0 | 38.0 | | |
| M22711-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | | 19.8 | 35.5 | 15.3 | 32.0 | 38.0 | | |
| M22711-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | | 26.0 | 42.0 | 16.1 | 41.0 | 50.0 | | |
| M22711-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | | 32.0 | 46.5 | 18.6 | 50.0 | 60.0 | | |
| M22711-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | | 42.0 | 50.5 | 23.5 | 65.0 | 75.0 | | |
| M22711-04-04KR | 6 | - 4 | 1/4" | 7/16" - 20 | | 4.0 | 20.5 | 8.9 | 12.0 | 15.0 | | |
| M22711-04-05KR | 6 | - 4 | 1/4" | 1/2" - 20 | | 4.0 | 21.0 | 9.4 | 14.0 | 17.0 | | |
| M22711-04-06KR | 6 | - 4 | 1/4" | 9/16" - 18 | | 7.0 | 21.5 | 9.5 | 14.0 | 17.0 | | |
| M22711-06-04KR | 10 | - 6 | 3/8" | 7/16" - 20 | | 4.0 | 21.5 | 8.9 | 17.0 | 15.0 | | |
| M22711-06-05KR | 10 | - 6 | 3/8" | 1/2" - 20 | | 4.0 | 22.0 | 9.4 | 17.0 | 17.0 | | |
| M22711-06-06KR | 10 | - 6 | 3/8" | 9/16" - 18 | | 7.0 | 22.0 | 9.5 | 17.0 | 17.0 | | |
| M22711-06-08KR | 10 | - 6 | 3/8" | 3/4" - 16 | | 9.3 | 26.5 | 10.7 | 19.0 | 22.0 | | |
| M22711-08-08KR | 12 | - 8 | 1/2" | 3/4" - 16 | | 9.3 | 27.0 | 10.7 | 19.0 | 22.0 | | |
| M22711-08-10KR | 12 | - 8 | 1/2" | 7/8" - 14 | | 9.3 | 29.5 | 12.5 | 22.0 | 25.0 | | |
| M22711-08-12KR | 12 | - 8 | 1/2" | 1.1/16" - 12 | | 15.0 | 28.5 | 14.1 | 27.0 | 32.0 | | |
| M22711-10-08KR | 16 | - 10 | 5/8" | 3/4" - 16 | | 9.3 | 28.5 | 10.7 | 22.0 | 22.0 | | |
| M22711-10-10KR | 16 | - 10 | 5/8" | 7/8" - 14 | | 12.5 | 29.5 | 12.5 | 22.0 | 25.0 | | |
| M22711-10-12KR | 16 | - 10 | 5/8" | 1.1/16" - 12 | | 15.0 | 29.0 | 14.1 | 27.0 | 32.0 | | |
| M22711-12-08KR | 19 | - 12 | 3/4" | 3/4" - 16 | | 9.3 | 29.5 | 10.7 | 27.0 | 22.0 | | |
| M22711-12-10KR | 19 | - 12 | 3/4" | 7/8" - 14 | | 12.5 | 30.5 | 12.5 | 27.0 | 25.0 | | |
| M22711-12-12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | | 15.0 | 30.0 | 14.1 | 27.0 | 32.0 | | |
| M22711-16-12KR | 25 | - 16 | 1" | 1.1/16" - 12 | | 15.0 | 32.5 | 14.1 | 32.0 | 32.0 | | |

SAE STANDARD CONNECTIONS

M22542/M22543

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



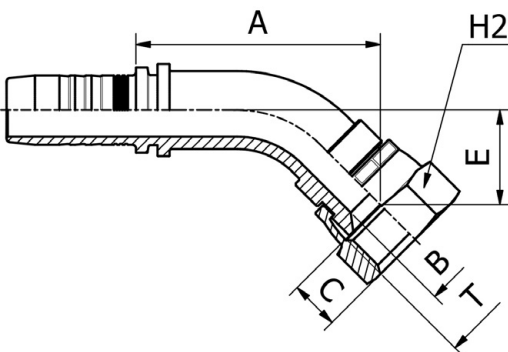
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|-------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M22542-03-04 | 5 | - 3 | 3/16" | 7/16" - 20 | | 4.0 | 35.0 | 8.7 | 14.5 | 17.0 |
| M22542-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | | 4.0 | 35.5 | 8.7 | 14.5 | 17.0 |
| M22542-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | | 4.0 | 35.5 | 9.1 | 14.5 | 17.0 |
| M22542-05-05 | 8 | - 5 | 5/16" | 1/2" - 20 | | 5.5 | 37.5 | 9.1 | 14.0 | 17.0 |
| M22542-05-06 | 8 | - 5 | 5/16" | 9/16" - 18 | | 7.0 | 38.0 | 9.2 | 14.5 | 19.0 |
| M22542-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | | 7.0 | 42.0 | 9.2 | 16.5 | 19.0 |
| M22542-08-06 | 12 | - 8 | 1/2" | 9/16" - 18 | | 7.0 | 43.0 | 9.2 | 16.5 | 19.0 |
| M22542-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | | 9.3 | 52.0 | 10.2 | 20.0 | 22.0 |
| M22542-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | | 12.5 | 62.0 | 12.3 | 25.5 | 27.0 |
| M22542-12-08 | 19 | - 12 | 3/4" | 3/4" - 16 | | 9.3 | 53.5 | 10.2 | 20.0 | 22.0 |
| M22542-12-10 | 19 | - 12 | 3/4" | 7/8" - 14 | | 12.5 | 63.5 | 12.3 | 25.0 | 27.0 |
| M22542-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | | 15.0 | 70.0 | 14.2 | 27.5 | 32.0 |
| M22542-12-14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | | 15.0 | 69.5 | 14.3 | 27.5 | 36.0 |
| M22542-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | | 19.8 | 70.0 | 15.0 | 27.5 | 38.0 |
| M22542-16-12 | 25 | - 16 | 1" | 1.1/16" - 12 | | 15.0 | 72.5 | 14.2 | 27.5 | 32.0 |
| M22542-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | | 19.8 | 84.0 | 15.0 | 32.0 | 38.0 |
| M22542-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | | 26.0 | 90.0 | 16.2 | 36.0 | 50.0 |
| M22542-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | | 26.0 | 103.5 | 16.2 | 41.5 | 50.0 |
| M22542-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | | 32.0 | 106.5 | 18.8 | 44.5 | 60.0 |
| M22542-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | | 32.0 | 119.0 | 18.8 | 46.5 | 60.0 |
| M22542-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | | 44.0 | 163.0 | 24.0 | 68.0 | 75.0 |
| M22543-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | | 4.0 | 35.5 | 9.8 | 14.0 | 19.0 |
| M22543-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | | 7.0 | 41.0 | 10.1 | 14.0 | 22.0 |
| M22543-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | | 9.3 | 42.5 | 12.4 | 15.5 | 27.0 |
| M22543-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | | 9.3 | 49.5 | 12.4 | 17.0 | 27.0 |
| M22543-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | | 12.5 | 49.5 | 14.1 | 17.0 | 32.0 |
| M22543-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | | 12.5 | 60.0 | 14.1 | 24.0 | 32.0 |

129 FITTINGS

SAE STANDARD CONNECTIONS

M22541KR

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

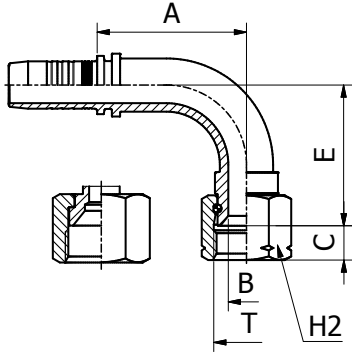


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------------|---------------|------|------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M22541-04-04KR | 6 | - 4 | 1/4" | 7/16" - 20 | | 4.2 | 34.5 | 8.9 | 13.5 | 15.0 |
| M22541-04-05KR | 6 | - 4 | 1/4" | 1/2" - 20 | | 4.0 | 35.0 | 9.4 | 14.0 | 17.0 |
| M22541-06-06KR | 10 | - 6 | 3/8" | 9/16" - 18 | | 7.0 | 42.0 | 9.5 | 16.0 | 17.0 |
| M22541-08-08KR | 12 | - 8 | 1/2" | 3/4" - 16 | | 9.3 | 52.0 | 10.7 | 20.0 | 22.0 |
| M22541-10-10KR | 16 | - 10 | 5/8" | 7/8" - 14 | | 12.5 | 61.0 | 12.5 | 22.5 | 25.0 |
| M22541-12-12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | | 15.0 | 69.0 | 14.1 | 26.5 | 32.0 |

SAE STANDARD CONNECTIONS

M22592/M22593

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



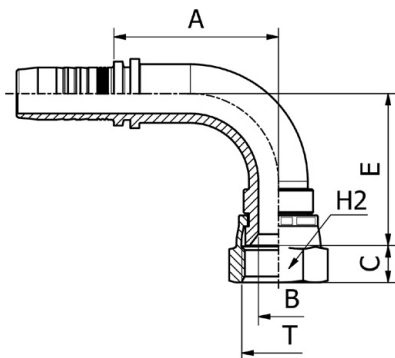
FITTINGS 130

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------------|---------------|-------|------|-------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M22592-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 28.5 | 8.7 | 27.0 | 17.0 | |
| M22592-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 28.5 | 9.1 | 27.5 | 17.0 | |
| M22592-05-05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 31.0 | 9.1 | 28.0 | 17.0 | |
| M22592-05-06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 31.0 | 9.2 | 28.5 | 19.0 | |
| M22592-06-05 | 10 | - 6 | 3/8" | 1/2" - 20 | 5.5 | 30.0 | 9.1 | 26.5 | 17.0 | |
| M22592-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 35.5 | 9.2 | 32.5 | 19.0 | |
| M22592-08-06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 37.0 | 9.2 | 33.0 | 19.0 | |
| M22592-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 44.0 | 10.2 | 41.0 | 22.0 | |
| M22592-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 53.5 | 12.3 | 52.5 | 27.0 | |
| M22592-12-10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 55.0 | 12.3 | 52.5 | 27.0 | |
| M22592-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 62.0 | 14.2 | 58.0 | 32.0 | |
| M22592-12-14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 63.0 | 14.3 | 58.0 | 36.0 | |
| M22592-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 63.0 | 15.0 | 57.5 | 38.0 | |
| M22592-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 77.0 | 15.0 | 68.5 | 38.0 | |
| M22592-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 77.5 | 16.2 | 74.5 | 50.0 | |
| M22592-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 90.5 | 16.2 | 86.5 | 50.0 | |
| M22592-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 90.5 | 18.8 | 90.5 | 60.0 | |
| M22592-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 108.0 | 18.8 | 100.5 | 60.0 | |
| M22592-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 44.0 | 142.0 | 24.0 | 137.0 | 75.0 | |
| M22593-03-04 | 5 | - 3 | 3/16" | 7/16" - 20 | 3.0 | 26.0 | 8.5 | 23.5 | 15.0 | |
| M22593-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 29.5 | 9.8 | 28.0 | 19.0 | |
| M22593-04-08 | 6 | - 4 | 1/4" | 3/4" - 16 | 7.0 | 29.5 | 10.0 | 30.5 | 22.0 | |
| M22593-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 36.5 | 10.1 | 29.5 | 22.0 | |
| M22593-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 36.5 | 12.4 | 31.5 | 27.0 | |
| M22593-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 45.0 | 12.4 | 36.0 | 27.0 | |
| M22593-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 45.0 | 14.1 | 36.0 | 32.0 | |
| M22593-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 51.5 | 14.1 | 50.0 | 32.0 | |

SAE STANDARD CONNECTIONS

M22591KR

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

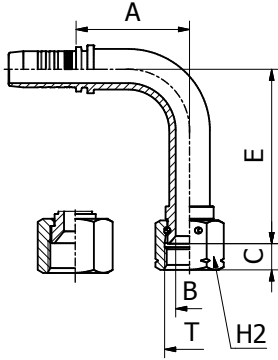


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------------|---------------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M22591-04-04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.2 | 28.5 | 8.9 | 26.0 | 15.0 | |
| M22591-04-05KR | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 28.5 | 9.4 | 26.5 | 17.0 | |
| M22591-06-06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 35.5 | 9.5 | 32.0 | 17.0 | |
| M22591-08-08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 44.0 | 10.7 | 40.5 | 22.0 | |
| M22591-10-10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 53.5 | 12.5 | 47.0 | 25.0 | |
| M22591-12-12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 62.0 | 14.1 | 57.0 | 32.0 | |
| M22591-16-12KR | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 62.0 | 14.1 | 57.0 | 32.0 | |

SAE STANDARD CONNECTIONS

M24792/M24793

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



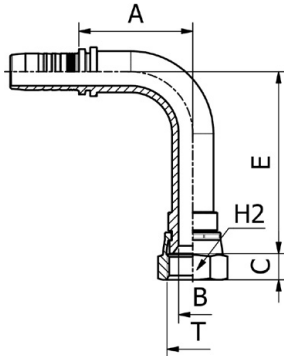
| PART. REF. | HOSE BORE | | | Thread | T | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------------|------|---------------|------|-------|------|----|--|
| | DN | Dash | inch | | | B | A | C | E | H2 | |
| M24792-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 28.5 | 8.7 | 45.0 | 17.0 | | |
| M24792-04-05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 28.5 | 9.1 | 45.0 | 17.0 | | |
| M24792-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 35.5 | 9.2 | 55.0 | 19.0 | | |
| M24792-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 44.0 | 10.2 | 61.0 | 22.0 | | |
| M24792-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 53.5 | 12.3 | 65.5 | 27.0 | | |
| M24792-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 62.0 | 14.2 | 94.5 | 32.0 | | |
| M24792-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 77.5 | 15.0 | 110.0 | 38.0 | | |
| M24792-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 90.5 | 16.2 | 129.0 | 50.0 | | |
| M24793-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 29.5 | 9.8 | 55.5 | 19.0 | | |
| M24793-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 36.5 | 10.1 | 61.5 | 22.0 | | |
| M24793-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 45.0 | 12.4 | 65.0 | 27.0 | | |

131 FITTINGS

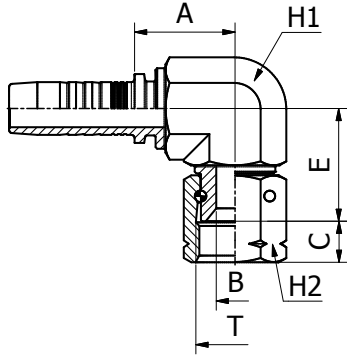
SAE STANDARD CONNECTIONS

M24791KR

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



| PART. REF. | HOSE BORE | | | Thread | T | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------------|------|---------------|------|------|------|----|--|
| | DN | Dash | inch | | | B | A | C | E | H2 | |
| M24791-04-04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.2 | 28.5 | 8.9 | 45.0 | 15.0 | | |
| M24791-06-06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 35.5 | 9.5 | 55.0 | 17.0 | | |
| M24791-08-08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 44.0 | 10.7 | 64.0 | 22.0 | | |
| M24791-10-10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 53.5 | 12.5 | 70.0 | 25.0 | | |
| M24791-12-12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 62.0 | 14.1 | 96.0 | 32.0 | | |



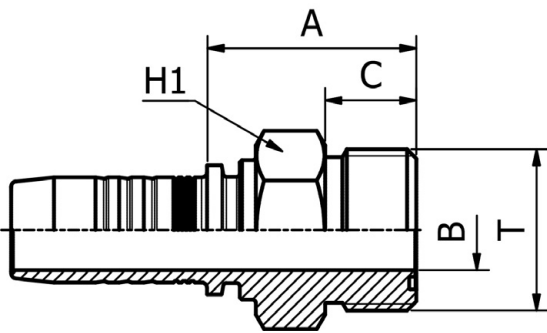
SAE STANDARD CONNECTIONS

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 | 4.0 | 20.0 | 8.7 | 20.5 | 14.0 | 17.0 | |
| M22582-04-06F | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 20.0 | 9.2 | 21.5 | 14.0 | 19.0 | |
| M22582-06-06F | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 23.0 | 9.2 | 24.0 | 19.0 | 19.0 | |
| M22582-06-08F | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 26.5 | 10.2 | 28.0 | 22.0 | 22.0 | |
| M22582-08-08F | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 25.0 | 10.2 | 28.0 | 22.0 | 22.0 | |
| M22582-08-10F | 12 | - 8 | 1/2" | 7/8" - 14 | 12.5 | 25.0 | 12.3 | 29.0 | 22.0 | 27.0 | |
| M22582-12-12F | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 37.5 | 14.2 | 33.0 | 27.0 | 32.0 | |
| M22582-16-16F | 25 | - 16 | 1" | 1.5/16" - 12 | 20.0 | 52.0 | 15.0 | 40.0 | 36.0 | 38.0 | |



SAE STANDARD CONNECTIONS

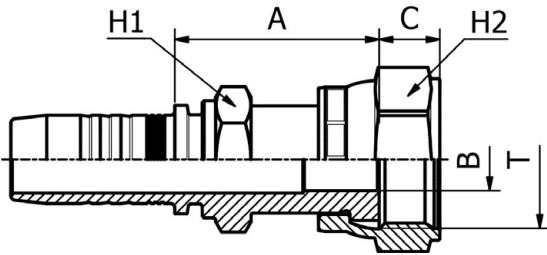
M12410

**ORFS MALE
SAE J516 / ISO 12151-1**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | | |
| M12410-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 24.0 | 9.8 | 16.0 | | | |
| M12410-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 6.7 | 26.5 | 11.2 | 19.0 | | | |
| M12410-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 6.7 | 27.0 | 11.2 | 19.0 | | | |
| M12410-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.7 | 27.5 | 11.2 | 19.0 | | | |
| M12410-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 30.0 | 12.8 | 22.0 | | | |
| M12410-08-06 | 12 | - 8 | 1/2" | 11/16" - 16 | 6.7 | 29.0 | 11.2 | 22.0 | | | |
| M12410-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 30.5 | 12.8 | 22.0 | | | |
| M12410-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 12.5 | 35.0 | 15.5 | 27.0 | | | |
| M12410-08-12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 15.0 | 37.5 | 17.0 | 32.0 | | | |
| M12410-10-08 | 16 | - 10 | 5/8" | 13/16" - 16 | 9.3 | 30.5 | 12.8 | 22.0 | | | |
| M12410-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 12.5 | 34.5 | 15.5 | 27.0 | | | |
| M12410-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 15.0 | 37.5 | 17.0 | 32.0 | | | |
| M12410-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 39.0 | 17.0 | 32.0 | | | |
| M12410-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 40.5 | 17.5 | 38.0 | | | |
| M12410-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 42.0 | 17.5 | 38.0 | | | |
| M12410-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 44.0 | 17.5 | 46.0 | | | |
| M12410-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 46.5 | 17.5 | 46.0 | | | |
| M12410-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 48.5 | 17.5 | 55.0 | | | |

SAE STANDARD CONNECTIONS

M22411

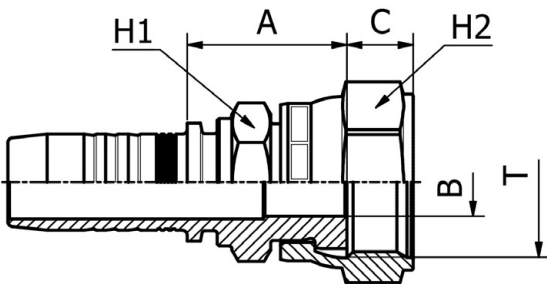


**ORFS FEMALE
SAE J516 / ISO 12151-1 PULLBACK TYPE
(CRIMPED BACK-NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M22411-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 27.5 | 8.0 | 13.0 | 19.0 | | |
| M22411-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 30.0 | 9.5 | 16.0 | 22.0 | | |
| M22411-04-08 | 6 | - 4 | 1/4" | 13/16" - 16 | 9.3 | 35.5 | 11.0 | 19.0 | 24.0 | | |
| M22411-05-04 | 8 | - 5 | 5/16" | 9/16" - 18 | 4.0 | 28.5 | 8.0 | 16.0 | 19.0 | | |
| M22411-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 30.5 | 9.5 | 16.0 | 22.0 | | |
| M22411-06-04 | 10 | - 6 | 3/8" | 9/16" - 18 | 4.0 | 29.0 | 8.0 | 16.0 | 19.0 | | |
| M22411-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 7.0 | 31.0 | 9.5 | 16.0 | 22.0 | | |
| M22411-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 36.5 | 11.0 | 19.0 | 24.0 | | |
| M22411-08-06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 32.0 | 9.5 | 19.0 | 22.0 | | |
| M22411-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 37.0 | 11.0 | 19.0 | 24.0 | | |
| M22411-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 39.0 | 13.5 | 24.0 | 30.0 | | |
| M22411-08-12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 44.0 | 14.5 | 28.0 | 36.0 | | |
| M22411-10-08 | 16 | - 10 | 5/8" | 13/16" - 16 | 9.3 | 37.0 | 11.0 | 24.0 | 24.0 | | |
| M22411-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 39.0 | 13.5 | 24.0 | 30.0 | | |
| M22411-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 44.0 | 14.5 | 28.0 | 36.0 | | |
| M22411-12-10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 41.5 | 13.5 | 28.0 | 30.0 | | |
| M22411-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 45.5 | 14.5 | 28.0 | 36.0 | | |
| M22411-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 48.5 | 15.0 | 36.0 | 41.0 | | |
| M22411-16-12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 48.0 | 13.5 | 36.0 | 36.0 | | |
| M22411-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 49.5 | 15.0 | 36.0 | 41.0 | | |
| M22411-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 52.0 | 13.6 | 41.0 | 50.0 | | |
| M22411-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 52.0 | 14.8 | 41.0 | 50.0 | | |
| M22411-20-24 | 31 | - 20 | 1.1/4" | 2" - 12 | 32.0 | 56.5 | 14.2 | 50.0 | 60.0 | | |
| M22411-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 56.5 | 14.2 | 50.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

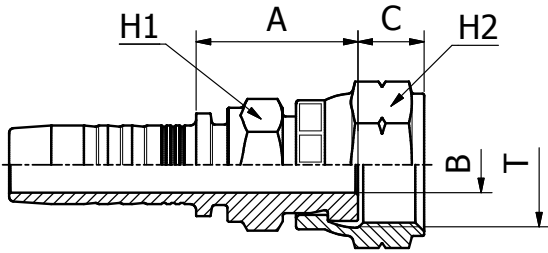
M27411



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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M27411-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 20.5 | 8.0 | 13.0 | 19.0 | | |
| M27411-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 22.0 | 9.5 | 16.0 | 22.0 | | |
| M27411-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 25.5 | 9.5 | 16.0 | 22.0 | | |
| M27411-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 7.0 | 26.0 | 9.5 | 16.0 | 22.0 | | |
| M27411-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 26.5 | 11.0 | 19.0 | 24.0 | | |
| M27411-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 26.5 | 11.0 | 19.0 | 24.0 | | |
| M27411-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 27.5 | 12.5 | 24.0 | 30.0 | | |
| M27411-08-12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 31.0 | 13.5 | 28.0 | 36.0 | | |
| M27411-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 28.0 | 12.5 | 24.0 | 30.0 | | |
| M27411-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 31.0 | 13.5 | 28.0 | 36.0 | | |
| M27411-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 32.5 | 13.5 | 28.0 | 36.0 | | |
| M27411-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 36.5 | 13.5 | 36.0 | 41.0 | | |

SAE STANDARD CONNECTIONS

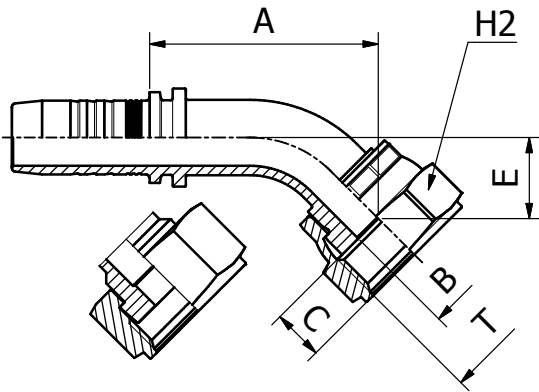


M27411KR

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-------------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | |
| M27411-04-04KR | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 20.5 | 8.0 | 14.0 | 17.0 | | |
| M27411-06-06KR | 10 | - 6 | 3/8" | 11/16" - 16 | 7.0 | 23.0 | 9.5 | 17.0 | 22.0 | | |
| M27411-08-08KR | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 27.0 | 11.0 | 19.0 | 24.0 | | |

FITTINGS 134



SAE STANDARD CONNECTIONS

M22441/M22443

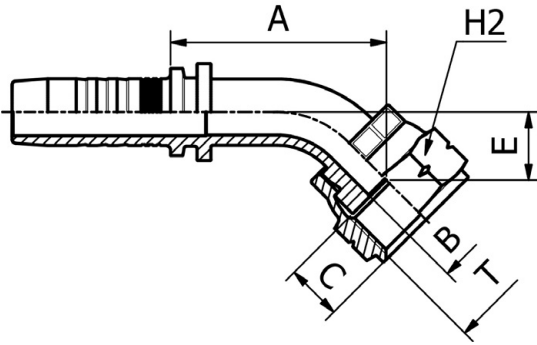
**45° ORFS FEMALE SWEPT ELBOW
SAE J516 / ISO 12151-1**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M22441-08-06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 32.5 | 9.5 | 11.0 | 22.0 | |
| M22441-12-10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 51.0 | 12.5 | 16.5 | 30.0 | |
| M22441-16-12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 66.0 | 13.5 | 21.5 | 36.0 | |
| M22443-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 31.0 | 8.2 | 10.5 | 17.0 | |
| M22443-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 31.0 | 9.5 | 10.5 | 22.0 | |
| M22443-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 34.0 | 9.5 | 10.5 | 22.0 | |
| M22443-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 32.5 | 9.5 | 11.0 | 22.0 | |
| M22443-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 34.0 | 11.0 | 12.5 | 24.0 | |
| M22443-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 42.0 | 11.0 | 13.0 | 24.0 | |
| M22443-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 42.0 | 13.5 | 13.5 | 30.0 | |
| M22443-08-12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 46.5 | 14.5 | 18.5 | 36.0 | |
| M22443-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 49.0 | 13.5 | 16.0 | 30.0 | |
| M22443-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 51.5 | 14.5 | 18.5 | 36.0 | |
| M22443-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 60.5 | 14.5 | 21.5 | 36.0 | |
| M22443-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 60.0 | 14.8 | 21.0 | 41.0 | |
| M22443-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 72.0 | 14.8 | 23.5 | 41.0 | |
| M22443-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 74.0 | 14.8 | 25.0 | 50.0 | |
| M22443-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 82.0 | 14.8 | 27.0 | 50.0 | |
| M22443-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 98.0 | 14.8 | 31.5 | 60.0 | |

SAE STANDARD CONNECTIONS

M22441KR

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

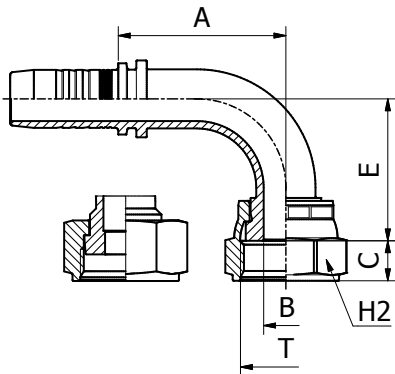


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M22441-04-04KR | 6 | - 4 | 1/4" | 9/16" - 18 | 4.2 | 30.0 | 8.0 | 10.5 | 17.0 | | |
| M22441-06-06KR | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 31.5 | 9.5 | 11.0 | 22.0 | | |
| M22441-08-08KR | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 42.5 | 11.0 | 13.5 | 24.0 | | |

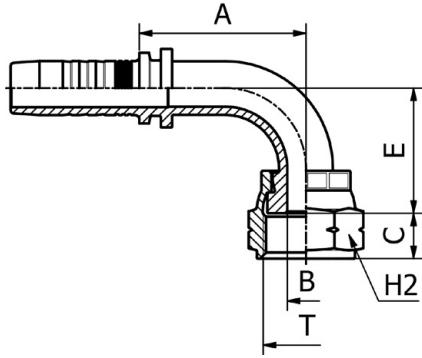
SAE STANDARD CONNECTIONS

M22491/M22493

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|---------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M22491-10-10032 | 16 | - 10 | 5/8" | 1" - 14 | 11.0 | 42.0 | 7.5 | 32.0 | 30.0 | | |
| M22491-06-04 | 10 | - 6 | 3/8" | 9/16" - 18 | 4.0 | 28.0 | 8.0 | 23.0 | 19.0 | | |
| M22491-08-06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 30.0 | 9.5 | 24.5 | 22.0 | | |
| M22491-10-08 | 16 | - 10 | 5/8" | 13/16" - 16 | 9.3 | 41.0 | 11.0 | 34.0 | 24.0 | | |
| M22491-12-10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 49.0 | 12.5 | 38.5 | 30.0 | | |
| M22491-16-12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 57.5 | 13.5 | 48.0 | 36.0 | | |
| M22493-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 27.5 | 8.2 | 22.0 | 17.0 | | |
| M22493-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 27.5 | 9.5 | 22.0 | 22.0 | | |
| M22493-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 32.0 | 9.5 | 23.0 | 22.0 | | |
| M22493-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 30.0 | 9.5 | 24.0 | 22.0 | | |
| M22493-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 30.0 | 11.0 | 26.5 | 24.0 | | |
| M22493-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 40.5 | 11.0 | 30.0 | 24.0 | | |
| M22493-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 40.0 | 13.5 | 30.5 | 30.0 | | |
| M22493-08-12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 39.5 | 14.5 | 37.5 | 36.0 | | |
| M22493-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 48.0 | 13.5 | 37.5 | 30.0 | | |
| M22493-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 48.0 | 14.5 | 41.0 | 36.0 | | |
| M22493-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 56.5 | 14.5 | 48.0 | 36.0 | | |
| M22493-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 56.5 | 14.8 | 47.5 | 41.0 | | |
| M22493-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 71.5 | 14.8 | 56.0 | 41.0 | | |
| M22493-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 71.5 | 14.8 | 58.5 | 50.0 | | |
| M22493-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 83.0 | 14.8 | 66.0 | 50.0 | | |
| M22493-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 102.0 | 14.8 | 79.5 | 60.0 | | |



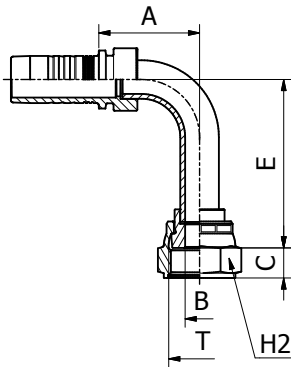
SAE STANDARD CONNECTIONS

M22491KR

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

FITTINGS 136

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M22491-04-04KR | 6 | - 4 | 1/4" | 9/16" - 18 | 4.2 | 26.5 | 8.0 | 22.0 | 17.0 | | |
| M22491-04-06KR | 6 | - 4 | 1/4" | 11/16" - 16 | 6.0 | 26.3 | 9.5 | 22.0 | 22.0 | | |
| M22491-06-06KR | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 29.0 | 9.5 | 24.0 | 22.0 | | |
| M22491-06-08KR | 10 | - 6 | 3/8" | 13/16" - 16 | 9.0 | 35.5 | 11.0 | 28.5 | 24.0 | | |
| M22491-08-08KR | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 40.5 | 11.0 | 30.5 | 24.0 | | |



SAE STANDARD CONNECTIONS

M24491 LONG DROP

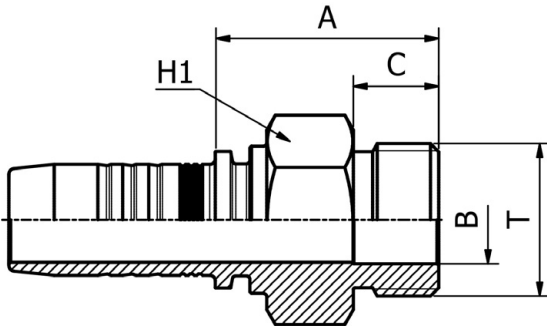
90° ORFS FEMALE LONG DROP ELBOW
SAE J516 / ISO 12151-1
(CRIMPED-BACK NUT)

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M24491-04-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.4 | 25.0 | 8.0 | 46.0 | 17.0 | | |
| M24491-04-06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 26.5 | 9.5 | 53.5 | 22.0 | | |
| M24491-05-06 | 8 | - 5 | 5/16" | 11/16" - 16 | 6.7 | 31.5 | 9.5 | 54.0 | 22.0 | | |
| M24491-06-06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.7 | 32.0 | 9.5 | 54.0 | 22.0 | | |
| M24491-06-08 | 10 | - 6 | 3/8" | 13/16" - 16 | 6.7 | 32.0 | 11.0 | 54.0 | 24.0 | | |
| M24491-08-08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.6 | 37.0 | 11.0 | 64.0 | 24.0 | | |
| M24491-08-10 | 12 | - 8 | 1/2" | 1" - 14 | 9.6 | 37.0 | 12.5 | 64.5 | 30.0 | | |
| M24491-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 12.0 | 41.0 | 13.0 | 70.0 | 30.0 | | |
| M24491-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 12.7 | 41.0 | 13.5 | 73.0 | 36.0 | | |
| M24491-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 58.5 | 13.5 | 96.0 | 36.0 | | |
| M24491-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 71.5 | 13.5 | 114.0 | 41.0 | | |
| M24491-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 82.5 | 13.6 | 129.0 | 50.0 | | |

SAE STANDARD CONNECTIONS

M13010

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

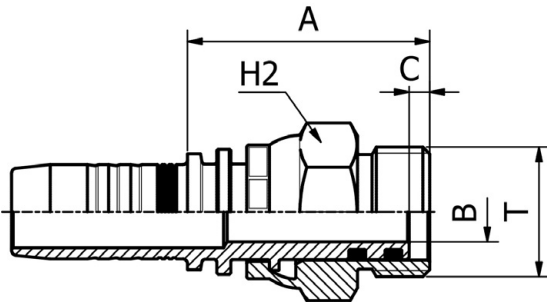


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | H1 | |
| M13010-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.4 | 24.0 | 9.1 | 14.0 | |
| M13010-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.5 | 24.5 | 9.9 | 17.0 | |
| M13010-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.5 | 25.5 | 9.9 | 17.0 | |
| M13010-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.9 | 28.5 | 11.1 | 22.0 | |
| M13010-06-10 | 10 | - 6 | 3/8" | 7/8" - 14 | 12.3 | 31.5 | 12.7 | 25.0 | |
| M13010-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.9 | 29.0 | 11.1 | 22.0 | |
| M13010-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 12.3 | 32.0 | 12.7 | 25.0 | |
| M13010-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.5 | 38.5 | 15.1 | 32.0 | |
| M13010-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 32.0 | 12.7 | 25.0 | |
| M13010-10-12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.5 | 37.5 | 15.1 | 32.0 | |
| M13010-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.5 | 39.5 | 15.1 | 32.0 | |
| M13010-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 21.5 | 40.0 | 15.1 | 38.0 | |
| M13010-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.5 | 41.0 | 15.1 | 38.0 | |
| M13010-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 27.5 | 43.5 | 15.1 | 46.0 | |

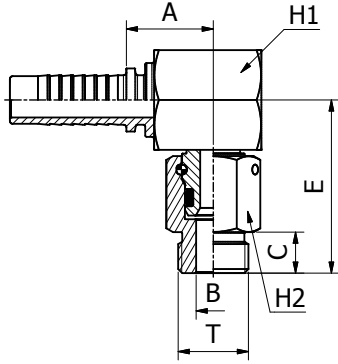
SAE STANDARD CONNECTIONS

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 | 4.0 | 43.0 | 9.1 | 17.0 | |
| M14310-04-06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 44.0 | 9.9 | 22.0 | |
| M14310-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 48.0 | 9.9 | 22.0 | |
| M14310-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 47.0 | 11.1 | 22.0 | |
| M14310-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 53.0 | 11.1 | 27.0 | |
| M14310-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 41.5 | 13.0 | 27.0 | |
| M14310-08-12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 49.5 | 15.0 | 32.0 | |
| M14310-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 9.3 | 41.5 | 13.0 | 27.0 | |
| M14310-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 12.5 | 50.5 | 15.0 | 32.0 | |

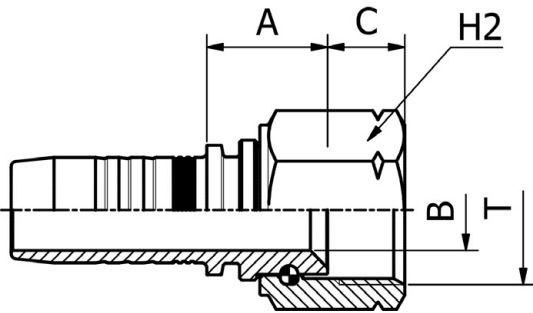


SAE STANDARD CONNECTIONS

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 | 20.0 | 9.9 | 40.0 | 22.0 | 17.0 | |
| M14390-06-08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 20.0 | 11.1 | 44.5 | 22.0 | 22.0 | |
| M14390-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 23.5 | 11.1 | 47.0 | 27.0 | 22.0 | |
| M14390-08-10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.8 | 23.5 | 13.0 | 47.0 | 27.0 | 27.0 | |
| M14390-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 9.8 | 23.5 | 13.0 | 47.0 | 27.0 | 27.0 | |
| M14390-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 13.0 | 28.0 | 15.0 | 58.5 | 34.0 | 32.0 | |

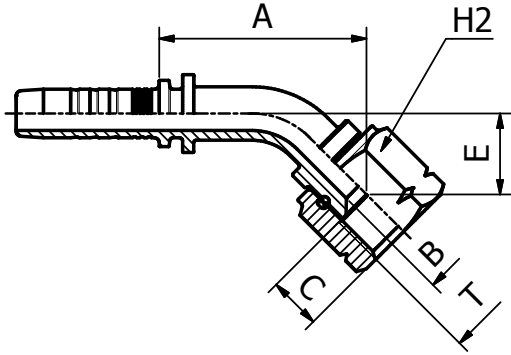


SAE STANDARD CONNECTIONS

M22612

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|--------------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H2 | | |
| M22612-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 15.5 | 8.7 | 17.0 | | | |
| M22612-05-06 | 8 | - 5 | 5/16" | 5/8" - 18 | 7.0 | 16.0 | 10.8 | 22.0 | | | |
| M22612-06-06 | 10 | - 6 | 3/8" | 5/8" - 18 | 7.0 | 16.5 | 10.8 | 22.0 | | | |
| M22612-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 14 | 15.0 | 22.5 | 14.4 | 32.0 | | | |

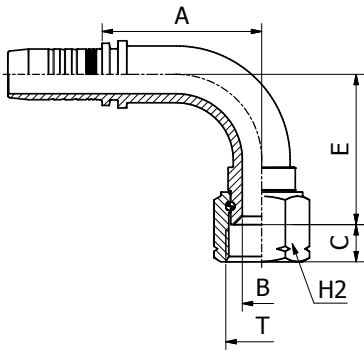


SAE STANDARD CONNECTIONS

M22642

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M22642-06-06 | 10 | - 6 | 3/8" | 5/8" - 18 | 7.0 | 42.5 | 10.8 | 16.5 | 22.0 | | |



SAE STANDARD CONNECTIONS

M22692

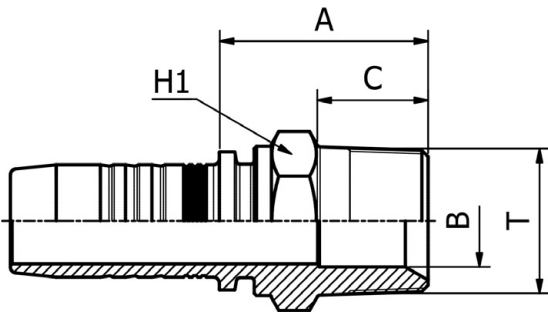
**90° SAE FEMALE SWEPT ELBOW 45° CONE SEAT
SAE J516/J512
(THRUST-WIRE NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|--------------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M22692-04-04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 28.5 | 8.7 | 27.0 | 17.0 | | |
| M22692-06-06 | 10 | - 6 | 3/8" | 5/8" - 18 | 7.0 | 35.5 | 10.8 | 33.0 | 22.0 | | |
| M22692-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 14 | 15.0 | 62.0 | 14.4 | 58.0 | 32.0 | | |

SAE STANDARD CONNECTIONS

M12810

NPTF MALE 60° CONE SEAT
SAE J516/J514

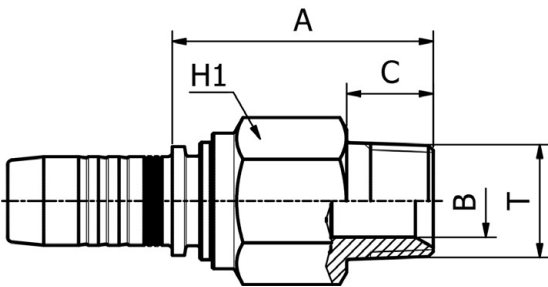


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|-------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M12810-03-02 | 5 | - 3 | 3/16" | 1/8" - 27 | 3.0 | 23.5 | 10.0 | 12.0 | | | |
| M12810-03-04 | 5 | - 3 | 3/16" | 1/4" - 18 | 5.5 | 29.0 | 14.5 | 14.0 | | | |
| M12810-04-02 | 6 | - 4 | 1/4" | 1/8" - 27 | 4.0 | 24.0 | 10.0 | 12.0 | | | |
| M12810-04-04 | 6 | - 4 | 1/4" | 1/4" - 18 | 5.5 | 29.0 | 14.5 | 14.0 | | | |
| M12810-04-06 | 6 | - 4 | 1/4" | 3/8" - 18 | 9.3 | 27.5 | 14.5 | 19.0 | | | |
| M12810-04-08 | 6 | - 4 | 1/4" | 1/2" - 14 | 9.3 | 33.5 | 19.2 | 24.0 | | | |
| M12810-05-04 | 8 | - 5 | 5/16" | 1/4" - 18 | 5.5 | 29.5 | 14.5 | 14.0 | | | |
| M12810-05-06 | 8 | - 5 | 5/16" | 3/8" - 18 | 9.3 | 32.0 | 14.5 | 19.0 | | | |
| M12810-06-04 | 10 | - 6 | 3/8" | 1/4" - 18 | 5.5 | 30.0 | 14.5 | 14.0 | | | |
| M12810-06-06 | 10 | - 6 | 3/8" | 3/8" - 18 | 9.3 | 28.5 | 14.5 | 19.0 | | | |
| M12810-06-08 | 10 | - 6 | 3/8" | 1/2" - 14 | 12.5 | 34.5 | 19.2 | 24.0 | | | |
| M12810-08-06 | 12 | - 8 | 1/2" | 3/8" - 18 | 9.3 | 29.0 | 14.5 | 19.0 | | | |
| M12810-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 12.5 | 35.0 | 19.2 | 24.0 | | | |
| M12810-08-12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.5 | 35.5 | 19.2 | 27.0 | | | |
| M12810-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | 12.5 | 38.5 | 19.2 | 24.0 | | | |
| M12810-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 16.0 | 40.0 | 19.2 | 27.0 | | | |
| M12810-12-08 | 19 | - 12 | 3/4" | 1/2" - 14 | 12.5 | 36.5 | 19.2 | 27.0 | | | |
| M12810-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 36.5 | 19.2 | 27.0 | | | |
| M12810-12-16 | 19 | - 12 | 3/4" | 1" - 11.5 | 19.8 | 46.0 | 24.2 | 36.0 | | | |
| M12810-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.5 | 39.0 | 19.2 | 32.0 | | | |
| M12810-16-16 | 25 | - 16 | 1" | 1" - 11.5 | 19.8 | 44.0 | 24.2 | 36.0 | | | |
| M12810-16-20 | 25 | - 16 | 1" | 1.1/4" - 11.5 | 26.0 | 56.5 | 25.0 | 46.0 | | | |
| M12810-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11.5 | 26.0 | 56.5 | 25.0 | 46.0 | | | |
| M12810-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11.5 | 32.0 | 57.5 | 26.0 | 50.0 | | | |
| M12810-32-32 | 51 | - 32 | 2" | 2" - 11.5 | 45.0 | 64.5 | 26.5 | 65.0 | | | |
| M12810-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" - 8 | 55.4 | 78.0 | 39.9 | 80.0 | | | |
| M12810-48-48 | 76 | - 48 | 3" | 3" - 8 | 68.9 | 86.0 | 41.5 | 100.0 | | | |

SAE STANDARD CONNECTIONS

M14110R

NPTF SWIVEL MALE 60° CONE SEAT
SAE J516/J514

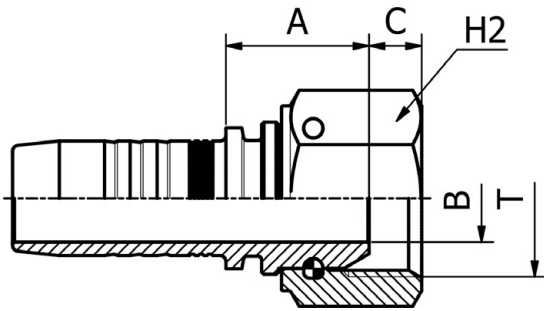


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|------|-----------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M14110-04-02R | 6 | - 4 | 1/4" | 1/8" - 27 | 3.0 | 42.0 | 10.0 | 17.0 | | | |
| M14110-04-04R | 6 | - 4 | 1/4" | 1/4" - 18 | 4.0 | 46.5 | 14.5 | 17.0 | | | |
| M14110-04-06R | 6 | - 4 | 1/4" | 3/8" - 18 | 7.0 | 46.5 | 14.5 | 19.0 | | | |
| M14110-06-04R | 10 | - 6 | 3/8" | 1/4" - 18 | 4.0 | 50.5 | 14.5 | 22.0 | | | |
| M14110-06-06R | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 50.5 | 14.5 | 22.0 | | | |
| M14110-06-08R | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 55.0 | 19.2 | 24.0 | | | |
| M14110-08-06R | 12 | - 8 | 1/2" | 3/8" - 18 | 7.0 | 54.5 | 14.5 | 27.0 | | | |
| M14110-08-08R | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 59.0 | 19.2 | 27.0 | | | |
| M14110-12-12R | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 58.0 | 19.2 | 32.0 | | | |
| M14110-16-16R | 25 | - 16 | 1" | 1" - 11.5 | 19.8 | 66.0 | 24.2 | 38.0 | | | |

SAE STANDARD CONNECTIONS

M22812

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

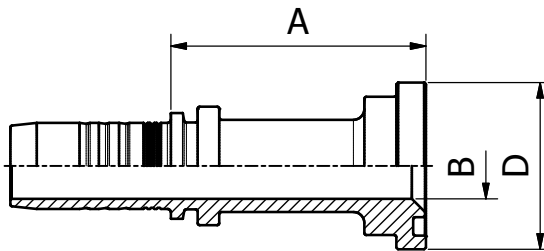


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H2 | | | |
| M22812-04-04 | 6 | - 4 | 1/4" | 1/4" - 18 | 4.0 | 17.5 | 4.2 | 19.0 | | | |
| M22812-06-04 | 10 | - 6 | 3/8" | 1/4" - 18 | 4.1 | 18.0 | 4.2 | 19.0 | | | |
| M22812-06-06 | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 21.0 | 6.0 | 22.0 | | | |
| M22812-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 23.0 | 6.5 | 27.0 | | | |
| M22812-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 24.5 | 9.0 | 32.0 | | | |
| M22812-16-16 | 25 | - 16 | 1" | 1" - 11.5 | 19.8 | 27.5 | 10.5 | 38.0 | | | |

SAE STANDARD CONNECTIONS

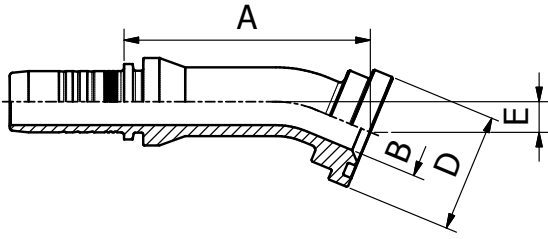
M23311

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



| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|-------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | | | |
| M23311-08-08 | 12 | -8 | 1/2" | 1/2" | 9.3 | 51.0 | 30.3 | | | |
| M23311-08-12 | 12 | -8 | 1/2" | 3/4" | 15.1 | 58.0 | 38.0 | | | |
| M23311-10-08 | 16 | -10 | 5/8" | 1/2" | 9.3 | 51.0 | 30.3 | | | |
| M23311-10-12 | 16 | -10 | 5/8" | 3/4" | 15.0 | 65.5 | 38.0 | | | |
| M23311-10-24 | 16 | -10 | 5/8" | 1.1/2" | 32.0 | 69.5 | 60.5 | | | |
| M23311-12-12 | 19 | -12 | 3/4" | 3/4" | 15.0 | 58.0 | 38.0 | | | |
| M23311-12-16 | 19 | -12 | 3/4" | 1" | 20.0 | 58.0 | 44.6 | | | |
| M23311-12-20 | 19 | -12 | 3/4" | 1.1/4" | 26.0 | 69.5 | 51.0 | | | |
| M23311-16-12 | 25 | -16 | 1" | 3/4" | 15.0 | 60.5 | 38.0 | | | |
| M23311-16-16 | 25 | -16 | 1" | 1" | 19.8 | 64.5 | 44.6 | | | |
| M23311-16-20 | 25 | -16 | 1" | 1.1/4" | 26.0 | 70.5 | 51.0 | | | |
| M23311-20-12 | 31 | -20 | 1.1/4" | 3/4" | 15.0 | 61.0 | 38.0 | | | |
| 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" | 26.0 | 70.5 | 51.0 | | | |
| M23311-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | 32.0 | 72.5 | 60.5 | | | |
| M23311-20-32 | 31 | -20 | 1.1/4" | 2" | 42.0 | 75.5 | 71.6 | | | |
| M23311-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 75.5 | 60.5 | | | |
| M23311-24-32 | 38 | -24 | 1.1/2" | 2" | 42.0 | 75.5 | 71.6 | | | |
| M23311-32-32 | 51 | -32 | 2" | 2" | 42.0 | 79.0 | 71.6 | | | |
| M23311-32-40 | 51 | -32 | 2" | 2.1/2" | 56.0 | 81.0 | 84.3 | | | |
| M23311-38-40 | 60 | -38 | 2.3/8" | 2.1/2" | 50.5 | 84.0 | 84.3 | | | |
| M23311-40-32 | 63 | -40 | 2.1/2" | 2" | 42.0 | 78.5 | 71.6 | | | |
| M23311-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | 55.4 | 84.0 | 84.3 | | | |
| M23311-40-48 | 63 | -40 | 2.1/2" | 3" | 68.9 | 79.0 | 101.6 | | | |
| M23311-40-56 | 63 | -40 | 2.1/2" | 3.1/2" | 79.0 | 90.5 | 114.3 | | | |
| M23311-40-64 | 63 | -40 | 2.1/2" | 4" | 90.0 | 96.5 | 127.0 | | | |
| M23311-48-48 | 76 | -48 | 3" | 3" | 68.9 | 85.5 | 101.6 | | | |
| M23311-56-56 | 89 | -56 | 3.1/2" | 3.1/2" | 79.0 | 94.5 | 114.3 | | | |
| M23311-64-64 | 102 | -64 | 4" | 4" | 90.0 | 100.5 | 127.0 | | | |

SAE STANDARD CONNECTIONS



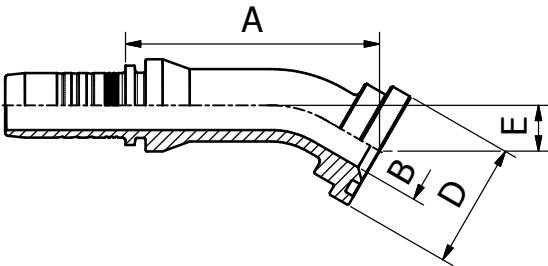
M23321

22.5° ISO/SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23321-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 64.0 | 30.3 | 8.0 | | | |
| M23321-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 74.5 | 38.0 | 10.0 | | | |
| M23321-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 74.5 | 44.6 | 10.0 | | | |
| M23321-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 89.0 | 44.6 | 11.5 | | | |
| M23321-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 88.5 | 51.0 | 11.5 | | | |
| M23321-16-24 | 25 | -16 | 1" | 1.1/2" | | 32.0 | 88.5 | 60.5 | 12.0 | | | |
| M23321-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 100.0 | 51.0 | 12.0 | | | |
| M23321-20-20018 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 99.0 | 51.0 | 18.0 | | | |
| M23321-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 102.0 | 60.5 | 13.0 | | | |
| M23321-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 116.5 | 60.5 | 14.0 | | | |
| M23321-24-24023 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 115.0 | 60.5 | 23.0 | | | |
| M23321-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 116.5 | 71.6 | 14.0 | | | |
| M23321-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 134.5 | 71.6 | 15.0 | | | |
| M23321-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 80.0 | 84.3 | 16.5 | | | |
| M23321-40-40A150 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 151.0 | 84.3 | 17.5 | | | |
| M23321-40-48 | 63 | -40 | 2.1/2" | 3" | | 61.0 | 107.5 | 101.6 | 20.5 | | | |
| M23321-48-48 | 76 | -48 | 3" | 3" | | 61.0 | 111.0 | 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

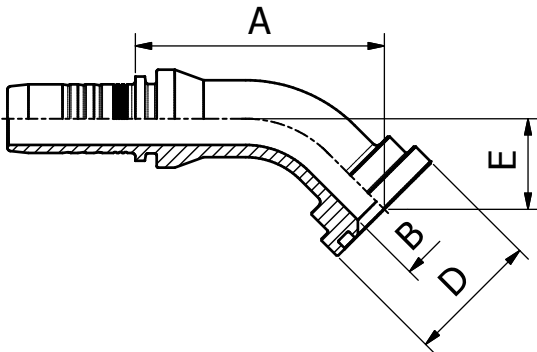
30° ISO/SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23331-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 62.5 | 30.3 | 11.0 | | | |
| M23331-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 63.5 | 38.0 | 11.5 | | | |
| M23331-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 73.0 | 38.0 | 14.0 | | | |
| M23331-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 73.0 | 44.6 | 14.0 | | | |
| M23331-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 87.0 | 44.6 | 16.5 | | | |
| M23331-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 87.0 | 51.0 | 16.5 | | | |
| M23331-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 98.0 | 51.0 | 17.5 | | | |
| M23331-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 100.0 | 60.5 | 18.5 | | | |
| M23331-20-24044 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 131.5 | 60.5 | 44.0 | | | |
| M23331-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 114.5 | 60.5 | 20.0 | | | |
| M23331-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 114.5 | 71.6 | 20.0 | | | |
| M23331-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 132.0 | 71.6 | 22.0 | | | |
| M23331-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 87.5 | 84.3 | 24.0 | | | |
| M23331-40-40A150 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 149.0 | 84.3 | 26.0 | | | |
| M23331-40-48 | 63 | -40 | 2.1/2" | 3" | | 52.0 | 85.0 | 101.6 | 24.5 | | | |
| M23331-48-48 | 76 | -48 | 3" | 3" | | 61.0 | 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

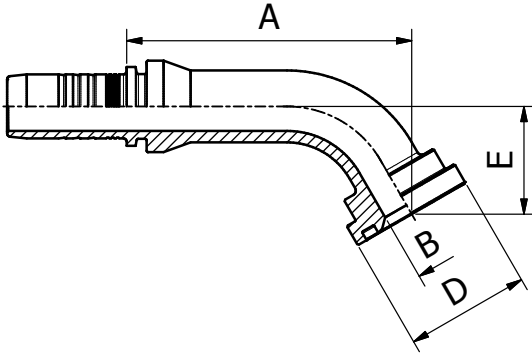
M23341

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



| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23341-06-08 | 10 | -6 | 3/8" | 1/2" | | 9.3 | 52.5 | 30.0 | 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" | | 15.0 | 59.5 | 38.0 | 19.0 | | | |
| M23341-08-16 | 12 | -8 | 1/2" | 1" | | 19.8 | 59.5 | 44.6 | 19.0 | | | |
| M23341-10-12 | 16 | -10 | 5/8" | 3/4" | | 15.0 | 61.0 | 38.0 | 22.0 | | | |
| M23341-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 71.0 | 38.0 | 26.0 | | | |
| M23341-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 68.5 | 44.6 | 23.0 | | | |
| M23341-16-12 | 25 | -16 | 1" | 3/4" | | 15.0 | 74.5 | 38.0 | 23.0 | | | |
| M23341-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 81.5 | 44.6 | 27.5 | | | |
| M23341-16-16032 | 25 | -16 | 1" | 1" | | 19.8 | 86.0 | 44.5 | 32.0 | | | |
| M23341-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 81.5 | 51.0 | 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" | | 26.0 | 92.0 | 51.0 | 29.5 | | | |
| M23341-20-20038 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 100.5 | 50.9 | 38.0 | | | |
| M23341-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 93.5 | 60.5 | 31.0 | | | |
| M23341-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 107.5 | 60.5 | 34.5 | | | |
| M23341-24-24044 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 117.0 | 60.5 | 44.0 | | | |
| M23341-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 107.5 | 71.6 | 34.5 | | | |
| M23341-32-20 | 51 | -32 | 2" | 1.1/4" | | 26.0 | 128.5 | 51.0 | 32.0 | | | |
| M23341-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 124.0 | 71.6 | 39.0 | | | |
| M23341-32-32056 | 51 | -32 | 2" | 2" | | 42.0 | 141.0 | 71.5 | 56.0 | | | |
| M23341-32-40 | 51 | -32 | 2" | 2.1/2" | | 56.0 | 136.5 | 84.3 | 49.5 | | | |
| M23341-40-32 | 63 | -40 | 2.1/2" | 2" | | 42.0 | 152.0 | 71.6 | 48.5 | | | |
| M23341-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 95.0 | 84.3 | 48.5 | | | |
| M23341-40-40A140 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 141.0 | 84.3 | 46.0 | | | |
| M23341-40-48 | 63 | -40 | 2.1/2" | 3" | | 61.0 | 117.5 | 101.6 | 53.5 | | | |
| M23341-48-48 | 76 | -48 | 3" | 3" | | 58.0 | 125.5 | 101.6 | 53.5 | | | |
| M23341-56-56 | 89 | -56 | 3.1/2" | 3.1/2" | | 79.0 | 139.0 | 114.3 | 68.0 | | | |
| M23341-56-64 | 89 | -56 | 3.1/2" | 4" | | 79.0 | 124.5 | 127.0 | 53.5 | | | |
| M23341-64-64 | 102 | -64 | 4" | 4" | | 90.0 | 132.0 | 127.0 | 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

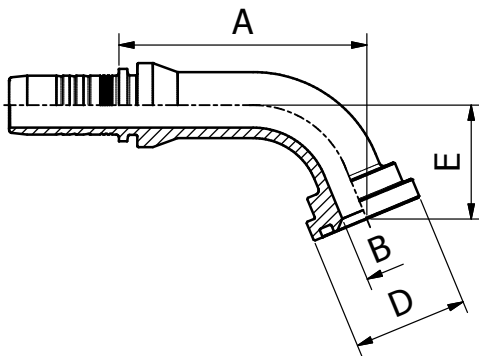
M23361

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

FITTINGS 144

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23361-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 71.5 | 30.3 | 26.0 | | | |
| M23361-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 72.0 | 38.0 | 26.5 | | | |
| M23361-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 87.0 | 38.0 | 33.0 | | | |
| M23361-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 87.0 | 44.6 | 33.0 | | | |
| M23361-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 104.0 | 44.6 | 39.0 | | | |
| M23361-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 104.0 | 51.0 | 39.0 | | | |
| M23361-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 120.0 | 51.0 | 43.0 | | | |
| M23361-20-20065 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 107.5 | 51.0 | 65.0 | | | |
| M23361-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 121.0 | 60.5 | 44.5 | | | |
| M23361-24-20 | 38 | -24 | 1.1/2" | 1.1/4" | | 26.0 | 136.5 | 51.0 | 46.5 | | | |
| M23361-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 143.5 | 60.5 | 50.5 | | | |
| M23361-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 143.5 | 71.6 | 51.0 | | | |
| M23361-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 129.0 | 71.6 | 58.0 | | | |
| M23361-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 94.5 | 84.3 | 67.0 | | | |
| M23361-40-40A200 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 196.6 | 84.3 | 68.5 | | | |
| M23361-40-48 | 63 | -40 | 2.1/2" | 3" | | 52.0 | 87.5 | 101.6 | 54.5 | | | |
| M23361-48-48 | 76 | -48 | 3" | 3" | | 61.0 | 128.5 | 101.6 | 79.0 | | | |

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

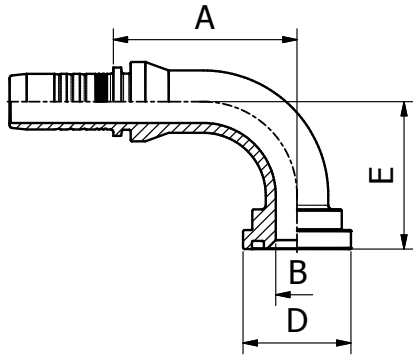
| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23371-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 68.0 | 30.3 | 29.5 | | | |
| M23371-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 68.5 | 38.0 | 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" | | 15.0 | 82.0 | 38.0 | 38.0 | | | |
| M23371-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 82.0 | 44.6 | 38.0 | | | |
| M23371-12-20 | 19 | -12 | 3/4" | 1.1/4" | | 26.0 | 82.0 | 51.0 | 38.0 | | | |
| M23371-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 98.5 | 44.6 | 45.0 | | | |
| M23371-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 98.5 | 51.0 | 45.0 | | | |
| M23371-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 114.0 | 51.0 | 50.0 | | | |
| M23371-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 115.0 | 60.5 | 52.0 | | | |
| M23371-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 136.5 | 60.5 | 59.0 | | | |
| M23371-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 136.5 | 71.6 | 59.0 | | | |
| M23371-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 162.0 | 71.6 | 68.5 | | | |
| M23371-32-32085 | 51 | -32 | 2" | 2" | | 42.0 | 150.5 | 71.6 | 85.0 | | | |
| M23371-32-40 | 51 | -32 | 2" | 2.1/2" | | 56.0 | 171.5 | 84.3 | 83.5 | | | |
| M23371-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 95.0 | 84.3 | 78.0 | | | |
| M23371-40-40A190 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 188.0 | 84.3 | 81.0 | | | |
| M23371-40-48 | 63 | -40 | 2.1/2" | 3" | | 52.0 | 90.5 | 101.6 | 64.5 | | | |

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

SAE STANDARD CONNECTIONS

M23391

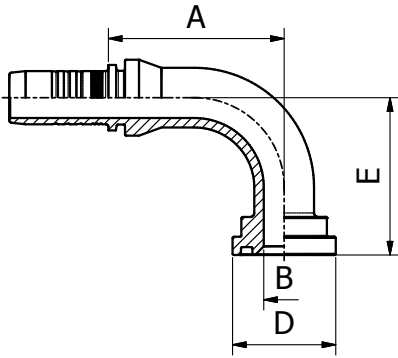
90° ISO/SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3



| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|-------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | |
| M23391-06-08 | 10 | -6 | 3/8" | 1/2" | | 9.3 | 44.5 | 30.0 | 34.5 | | |
| M23391-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 54.5 | 30.3 | 40.0 | | |
| M23391-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 54.5 | 38.0 | 41.0 | | |
| M23391-08-16 | 12 | -8 | 1/2" | 1" | | 19.8 | 54.5 | 44.6 | 66.0 | | |
| M23391-10-08 | 16 | -10 | 5/8" | 1/2" | | 9.3 | 56.0 | 30.3 | 46.5 | | |
| M23391-10-12 | 16 | -10 | 5/8" | 3/4" | | 15.0 | 56.0 | 38.0 | 47.5 | | |
| M23391-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 64.5 | 38.0 | 52.0 | | |
| M23391-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 64.5 | 44.6 | 52.0 | | |
| M23391-12-20 | 19 | -12 | 3/4" | 1.1/4" | | 26.0 | 64.5 | 51.0 | 52.0 | | |
| M23391-16-12 | 25 | -16 | 1" | 3/4" | | 15.0 | 71.0 | 38.0 | 52.0 | | |
| M23391-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 77.5 | 44.6 | 62.0 | | |
| M23391-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 77.5 | 51.0 | 62.0 | | |
| M23391-16-24 | 25 | -16 | 1" | 1.1/2" | | 32.0 | 77.0 | 60.5 | 64.0 | | |
| M23391-20-16 | 31 | -20 | 1.1/4" | 1" | | 19.8 | 80.0 | 44.6 | 66.0 | | |
| M23391-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 70.0 | | |
| M23391-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 90.5 | 60.5 | 72.0 | | |
| M23391-20-32 | 31 | -20 | 1.1/4" | 2" | | 42.0 | 93.5 | 71.6 | 76.0 | | |
| M23391-24-20 | 38 | -24 | 1.1/2" | 1.1/4" | | 26.0 | 104.5 | 51.0 | 75.0 | | |
| M23391-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 108.0 | 60.5 | 84.0 | | |
| M23391-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 108.0 | 71.6 | 84.0 | | |
| M23391-32-24 | 51 | -32 | 2" | 1.1/2" | | 32.0 | 136.0 | 60.5 | 89.0 | | |
| M23391-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 129.0 | 71.6 | 99.0 | | |
| M23391-32-40 | 51 | -32 | 2" | 2.1/2" | | 56.0 | 132.5 | 84.3 | 116.0 | | |
| M23391-40-32 | 63 | -40 | 2.1/2" | 2" | | 42.0 | 149.5 | 71.6 | 114.0 | | |
| M23391-40-40 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 88.0 | 84.3 | 119.0 | | |
| M23391-40-40A150 | 63 | -40 | 2.1/2" | 2.1/2" | | 52.0 | 150.5 | 84.3 | 117.0 | | |
| M23391-40-48 | 63 | -40 | 2.1/2" | 3" | | 61.0 | 120.0 | 101.6 | 140.0 | | |
| M23391-48-48 | 76 | -48 | 3" | 3" | | 58.0 | 123.0 | 101.6 | 140.0 | | |
| M23391-48-56 | 76 | -48 | 3" | 3.1/2" | | 61.0 | 123.0 | 114.3 | 115.0 | | |
| M23391-56-56 | 89 | -56 | 3.1/2" | 3.1/2" | | 79.0 | 134.5 | 114.3 | 160.0 | | |
| M23391-64-64 | 102 | -64 | 4" | 4" | | 90.0 | 153.5 | 127.0 | 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

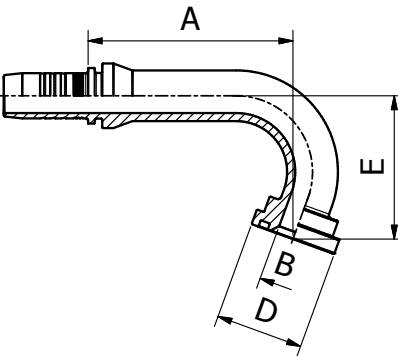


M23391 LONG DROP

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

FITTINGS 146

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|--|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23391-06-08041 | 10 | -6 | 3/8" | 1/2" | | 9.3 | 44.5 | 30.0 | 41.0 | | | |
| M23391-12-12058 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 64.5 | 38.0 | 58.0 | | | |
| M23391-16-16070 | 25 | -16 | 1" | 1" | | 19.8 | 77.5 | 44.5 | 70.0 | | | |
| M23391-16-20117 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 77.5 | 51.0 | 117.0 | | | |
| M23391-16-24107 | 25 | -16 | 1" | 1.1/2" | | 32.0 | 77.0 | 60.5 | 107.0 | | | |
| M23391-20-20091 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 91.0 | | | |
| M23391-20-20100 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 100.0 | | | |
| M23391-20-20112 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 112.0 | | | |
| M23391-20-20130 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 130.0 | | | |
| M23391-20-20168 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 51.0 | 168.0 | | | |
| M23391-20-24118 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 90.5 | 60.5 | 118.0 | | | |
| M23391-20-24130 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 90.5 | 60.5 | 130.0 | | | |
| M23391-24-24104 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 108.0 | 60.5 | 104.0 | | | |
| M23391-24-24148 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 108.0 | 60.5 | 148.0 | | | |
| M23391-24-24172 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 108.0 | 60.5 | 172.0 | | | |
| M23391-24-32115 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 108.0 | 71.6 | 115.0 | | | |
| M23391-24-32172 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 108.0 | 71.6 | 172.0 | | | |
| M23391-32-32138 | 51 | -32 | 2" | 2" | | 42.0 | 129.0 | 71.5 | 138.0 | | | |
| M23391-32-32203 | 51 | -32 | 2" | 2" | | 42.0 | 129.0 | 71.6 | 203.0 | | | |

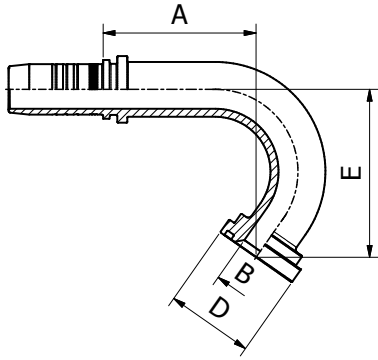


SAE STANDARD CONNECTIONS

M23301P

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

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|--------|--------|--|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23301-08-12P | 12 | -8 | 1/2" | 3/4" | | 15.0 | 53.0 | 38.0 | 48.0 | | | |
| M23301-12-12P | 19 | -12 | 3/4" | 3/4" | | 15.0 | 89.0 | 38.0 | 62.0 | | | |
| M23301-12-16P | 19 | -12 | 3/4" | 1" | | 20.0 | 89.0 | 44.6 | 62.0 | | | |
| M23301-16-16P | 25 | -16 | 1" | 1" | | 19.8 | 88.5 | 44.6 | 79.0 | | | |
| M23301-16-20133P | 25 | -16 | 1" | 1.1/4" | | 26.0 | 69.0 | 51.0 | 133.0 | | | |
| M23301-20-20P | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 102.0 | 51.0 | 91.0 | | | |
| M23301-20-24P | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 96.5 | 60.5 | 93.0 | | | |
| M23301-24-24119P | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 105.5 | 60.5 | 119.0 | | | |
| M23301-32-32P | 51 | -32 | 2" | 2" | | 42.0 | 142.0 | 71.6 | 123.0 | | | |

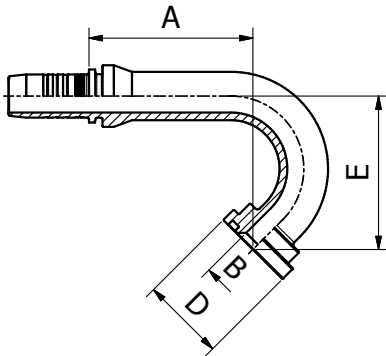


SAE STANDARD CONNECTIONS

M23301S

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

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------|--|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23301-32-32151S | 51 | -32 | 2" | 2" | | 42.0 | 118.5 | 71.6 | 151.0 | | | |



SAE STANDARD CONNECTIONS

M23301T

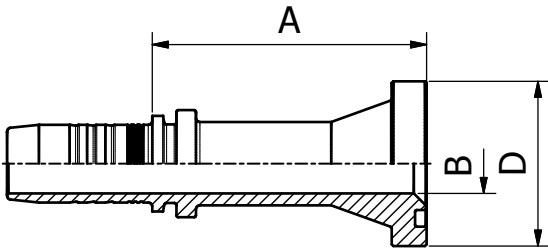
135° ISO/SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|------|--------|--|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23301-12-12T | 19 | -12 | 3/4" | 3/4" | | 15.0 | 74.5 | 38.0 | 70.0 | | | |
| M23301-12-16T | 19 | -12 | 3/4" | 1" | | 20.0 | 74.5 | 44.6 | 70.0 | | | |
| M23301-16-16T | 25 | -16 | 1" | 1" | | 19.8 | 70.0 | 44.6 | 88.5 | | | |

SAE STANDARD CONNECTIONS

M23611

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



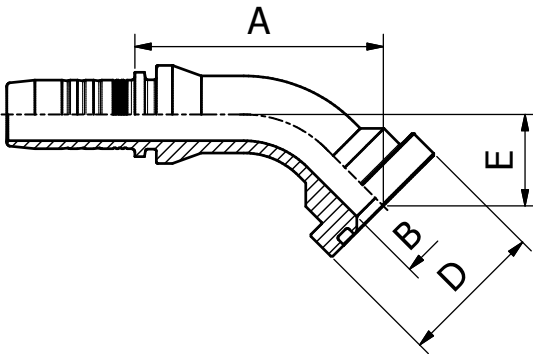
| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|--|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | | | | |
| M23611-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 52.0 | 31.8 | | | | |
| M23611-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 68.5 | 41.5 | | | | |
| M23611-10-08 | 16 | -10 | 5/8" | 1/2" | | 9.3 | 52.0 | 31.8 | | | | |
| M23611-10-12 | 16 | -10 | 5/8" | 3/4" | | 15.0 | 70.0 | 41.5 | | | | |
| M23611-10-16 | 16 | -10 | 5/8" | 1" | | 20.0 | 80.0 | 47.7 | | | | |
| M23611-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 69.0 | 41.5 | | | | |
| M23611-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 81.0 | 47.7 | | | | |
| M23611-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 82.5 | 47.7 | | | | |
| M23611-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 90.0 | 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" | | 26.0 | 84.5 | 54.2 | | | | |
| M23611-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 90.5 | 63.7 | | | | |
| M23611-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 92.5 | 63.6 | | | | |
| M23611-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 109.0 | 79.5 | | | | |

FITTINGS 148

SAE STANDARD CONNECTIONS

M23641

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

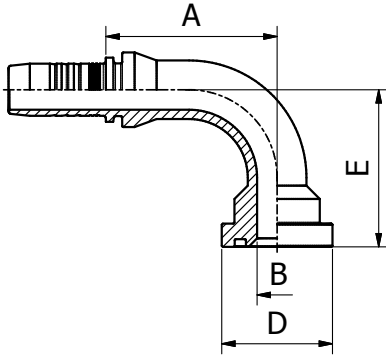


| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|--|---------------|-------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M23641-08-08 | 12 | -8 | 1/2" | 1/2" | | 9.3 | 59.0 | 31.7 | 19.0 | | | |
| M23641-08-12 | 12 | -8 | 1/2" | 3/4" | | 15.0 | 68.0 | 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" | | 15.0 | 67.5 | 41.5 | 31.0 | | | |
| M23641-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 72.5 | 41.5 | 28.0 | | | |
| M23641-12-16 | 19 | -12 | 3/4" | 1" | | 20.0 | 77.0 | 47.7 | 32.5 | | | |
| M23641-16-12 | 25 | -16 | 1" | 3/4" | | 15.0 | 80.0 | 41.5 | 30.0 | | | |
| M23641-16-16 | 25 | -16 | 1" | 1" | | 19.8 | 83.5 | 47.7 | 32.5 | | | |
| M23641-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 88.5 | 54.2 | 37.5 | | | |
| M23641-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 95.0 | 54.2 | 37.5 | | | |
| M23641-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | | 32.0 | 102.5 | 63.7 | 45.0 | | | |
| M23641-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 118.0 | 63.7 | 44.0 | | | |
| M23641-24-32 | 38 | -24 | 1.1/2" | 2" | | 42.0 | 129.0 | 79.6 | 55.5 | | | |
| M23641-32-32 | 51 | -32 | 2" | 2" | | 42.0 | 151.5 | 79.6 | 60.5 | | | |
| M23641-32-32056 | 51 | -32 | 2" | 2" | | 42.0 | 147.5 | 79.6 | 56.5 | | | |

SAE STANDARD CONNECTIONS

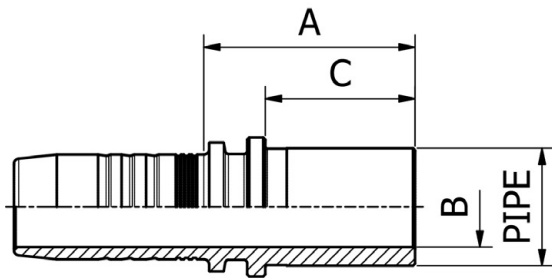
M23691

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



| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | |
|-----------------|-----------|------|--------|--------|------|---------------|------|-------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | |
| M23691-08-08 | 12 | -8 | 1/2" | 1/2" | 9.3 | 54.5 | 31.8 | 45.0 | | | |
| M23691-08-08040 | 12 | -8 | 1/2" | 1/2" | 9.3 | 54.5 | 31.7 | 41.0 | | | |
| M23691-08-12 | 12 | -8 | 1/2" | 3/4" | 15.0 | 54.5 | 41.5 | 53.0 | | | |
| M23691-10-08 | 16 | -10 | 5/8" | 1/2" | 9.3 | 57.5 | 31.8 | 45.0 | | | |
| M23691-10-12 | 16 | -10 | 5/8" | 3/4" | 15.0 | 53.5 | 41.5 | 60.5 | | | |
| M23691-10-16 | 16 | -10 | 5/8" | 1" | 19.8 | 56.0 | 47.7 | 64.0 | | | |
| M23691-12-08 | 19 | -12 | 3/4" | 1/2" | 9.3 | 60.6 | 31.8 | 57.5 | | | |
| M23691-12-12 | 19 | -12 | 3/4" | 3/4" | 15.0 | 64.0 | 41.5 | 59.0 | | | |
| M23691-12-16 | 19 | -12 | 3/4" | 1" | 20.0 | 64.5 | 47.7 | 65.0 | | | |
| M23691-16-12 | 25 | -16 | 1" | 3/4" | 15.0 | 74.5 | 41.5 | 67.0 | | | |
| M23691-16-16 | 25 | -16 | 1" | 1" | 19.8 | 73.5 | 47.7 | 68.0 | | | |
| M23691-16-20 | 25 | -16 | 1" | 1.1/4" | 26.0 | 73.5 | 54.2 | 75.0 | | | |
| M23691-20-16 | 31 | -20 | 1.1/4" | 1" | 19.8 | 82.5 | 47.7 | 68.0 | | | |
| M23691-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 85.5 | 54.2 | 81.0 | | | |
| M23691-20-20090 | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 85.5 | 54.1 | 90.0 | | | |
| M23691-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | 32.0 | 85.5 | 63.7 | 91.5 | | | |
| M23691-24-20 | 38 | -24 | 1.1/2" | 1.1/4" | 26.0 | 105.0 | 54.2 | 91.0 | | | |
| M23691-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 106.0 | 63.7 | 94.5 | | | |
| M23691-24-24104 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 106.0 | 63.7 | 104.0 | | | |
| M23691-24-32 | 38 | -24 | 1.1/2" | 2" | 42.0 | 106.0 | 79.6 | 110.5 | | | |
| M23691-32-32 | 51 | -32 | 2" | 2" | 42.0 | 138.0 | 79.6 | 132.0 | | | |
| M23691-32-32138 | 51 | -32 | 2" | 2" | 42.0 | 138.0 | 79.6 | 138.0 | | | |

DIN STANDARD CONNECTIONS



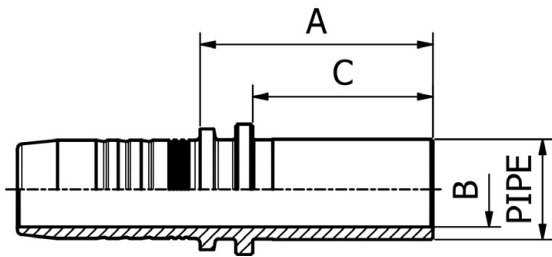
M22010

METRIC STANDPIPE LIGHT DUTY
DIN 2353 / ISO 8434-1

FITTINGS 150

| PART. REF. | HOSE BORE | | | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | | mm | B | A | C | | | |
| M22010-03-04 | 5 | - 3 | 3/16" | 4.0 | | 2.0 | 29.5 | 22.0 | | | |
| M22010-03-06 | 5 | - 3 | 3/16" | 6.0 | | 3.0 | 29.5 | 22.0 | | | |
| M22010-04-06 | 6 | - 4 | 1/4" | 6.0 | | 3.0 | 30.0 | 22.0 | | | |
| M22010-05-08 | 8 | - 5 | 5/16" | 8.0 | | 5.5 | 30.0 | 22.0 | | | |
| M22010-05-10 | 8 | - 5 | 5/16" | 10.0 | | 7.0 | 31.0 | 23.0 | | | |
| M22010-06-10 | 10 | - 6 | 3/8" | 10.0 | | 7.0 | 31.5 | 23.0 | | | |
| M22010-06-12 | 10 | - 6 | 3/8" | 12.0 | | 8.0 | 31.5 | 23.0 | | | |
| M22010-06-15 | 10 | - 6 | 3/8" | 15.0 | | 10.5 | 33.5 | 25.0 | | | |
| M22010-08-12 | 12 | - 8 | 1/2" | 12.0 | | 8.0 | 32.0 | 23.0 | | | |
| M22010-08-15 | 12 | - 8 | 1/2" | 15.0 | | 10.5 | 34.0 | 25.0 | | | |
| M22010-08-18 | 12 | - 8 | 1/2" | 18.0 | | 12.5 | 35.0 | 26.0 | | | |
| M22010-10-18 | 16 | - 10 | 5/8" | 18.0 | | 12.5 | 35.0 | 26.0 | | | |
| M22010-10-22 | 16 | - 10 | 5/8" | 22.0 | | 15.0 | 37.0 | 28.0 | | | |
| M22010-12-18 | 19 | - 12 | 3/4" | 18.0 | | 12.5 | 36.5 | 26.0 | | | |
| M22010-12-22 | 19 | - 12 | 3/4" | 22.0 | | 15.0 | 38.5 | 28.0 | | | |
| M22010-16-28 | 25 | - 16 | 1" | 28.0 | | 19.8 | 41.5 | 30.0 | | | |
| M22010-20-35 | 31 | - 20 | 1.1/4" | 35.0 | | 26.0 | 48.5 | 36.0 | | | |
| M22010-24-42 | 38 | - 24 | 1.1/2" | 42.0 | | 32.0 | 52.5 | 40.0 | | | |

DIN STANDARD CONNECTIONS



M22110

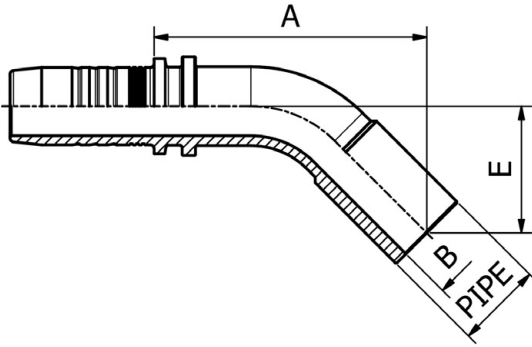
METRIC STANDPIPE HEAVY DUTY
DIN 2353 / ISO 8434-1

| PART. REF. | HOSE BORE | | | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | | mm | B | A | C | | | |
| M22110-03-08 | 5 | - 3 | 3/16" | 8.0 | | 3.0 | 31.0 | 24.0 | | | |
| M22110-03-10 | 5 | - 3 | 3/16" | 10.0 | | 3.0 | 29.5 | 22.0 | | | |
| M22110-04-08 | 6 | - 4 | 1/4" | 8.0 | | 4.0 | 32.0 | 24.0 | | | |
| M22110-04-10 | 6 | - 4 | 1/4" | 10.0 | | 4.0 | 34.0 | 26.0 | | | |
| M22110-04-12 | 6 | - 4 | 1/4" | 12.0 | | 7.0 | 34.0 | 26.0 | | | |
| M22110-05-12 | 8 | - 5 | 5/16" | 12.0 | | 7.0 | 34.0 | 26.0 | | | |
| M22110-06-14 | 10 | - 6 | 3/8" | 14.0 | | 8.0 | 37.5 | 29.0 | | | |
| M22110-08-14 | 12 | - 8 | 1/2" | 14.0 | | 9.3 | 38.0 | 29.0 | | | |
| M22110-08-16 | 12 | - 8 | 1/2" | 16.0 | | 10.5 | 39.0 | 30.0 | | | |
| M22110-10-20 | 16 | - 10 | 5/8" | 20.0 | | 12.5 | 45.0 | 36.0 | | | |
| M22110-12-20 | 19 | - 12 | 3/4" | 20.0 | | 15.0 | 46.5 | 36.0 | | | |
| M22110-12-25 | 19 | - 12 | 3/4" | 25.0 | | 15.0 | 50.5 | 40.0 | | | |
| M22110-16-25 | 25 | - 16 | 1" | 25.0 | | 15.0 | 51.5 | 40.0 | | | |
| M22110-16-30 | 25 | - 16 | 1" | 30.0 | | 19.8 | 55.5 | 44.0 | | | |
| M22110-16-38 | 25 | - 16 | 1" | 38.0 | | 26.0 | 61.5 | 50.0 | | | |
| M22110-20-30 | 31 | - 20 | 1.1/4" | 30.0 | | 20.5 | 56.5 | 44.0 | | | |
| M22110-20-38 | 31 | - 20 | 1.1/4" | 38.0 | | 26.0 | 62.5 | 50.0 | | | |
| M22110-24-38 | 38 | - 24 | 1.1/2" | 38.0 | | 26.0 | 62.5 | 50.0 | | | |

DIN STANDARD CONNECTIONS

M22040

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

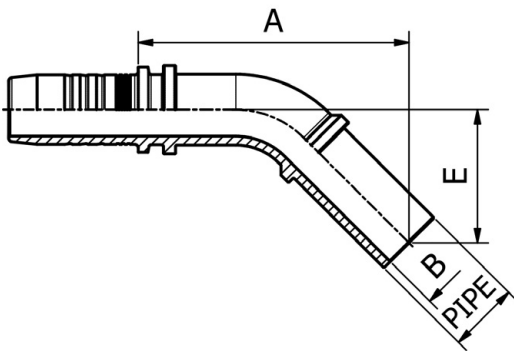


| PART. REF. | HOSE BORE | | | Pipe | mm | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|-------|------|----|---------------|------|------|--|--|--|--|--|
| | DN | Dash | inch | | | B | A | E | | | | | |
| M22040-03-06 | 5 | - 3 | 3/16" | 6.0 | | 3.0 | 37.5 | 20.5 | | | | | |
| M22040-04-06 | 6 | - 4 | 1/4" | 6.0 | | 3.0 | 38.0 | 20.5 | | | | | |
| M22040-05-10 | 8 | - 5 | 5/16" | 10.0 | | 7.0 | 44.5 | 22.5 | | | | | |
| M22040-06-10 | 10 | - 6 | 3/8" | 10.0 | | 7.0 | 47.5 | 23.0 | | | | | |
| M22040-06-12 | 10 | - 6 | 3/8" | 12.0 | | 8.0 | 49.5 | 25.0 | | | | | |
| M22040-08-15 | 12 | - 8 | 1/2" | 15.0 | | 10.5 | 58.0 | 28.0 | | | | | |
| M22040-10-18 | 16 | - 10 | 5/8" | 18.0 | | 12.5 | 63.5 | 30.5 | | | | | |
| M22040-12-22 | 19 | - 12 | 3/4" | 22.0 | | 15.0 | 69.0 | 32.0 | | | | | |
| M22040-16-28 | 25 | - 16 | 1" | 28.0 | | 19.8 | 81.5 | 37.0 | | | | | |

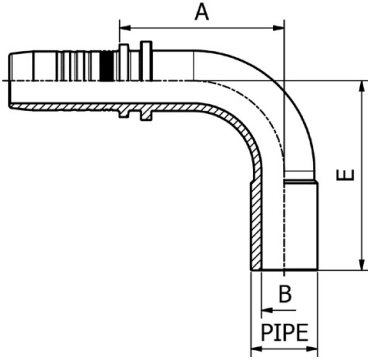
DIN STANDARD CONNECTIONS

M22140

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



| PART. REF. | HOSE BORE | | | Pipe | mm | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|------|------|----|---------------|------|------|--|--|--|--|--|
| | DN | Dash | inch | | | B | A | E | | | | | |
| M22140-04-08 | 6 | - 4 | 1/4" | 8.0 | | 4.0 | 42.0 | 22.0 | | | | | |
| M22140-04-10 | 6 | - 4 | 1/4" | 10.0 | | 6.0 | 44.0 | 24.0 | | | | | |
| M22140-06-14 | 10 | - 6 | 3/8" | 14.0 | | 9.3 | 54.5 | 29.0 | | | | | |
| M22140-08-16 | 12 | - 8 | 1/2" | 16.0 | | 10.5 | 61.0 | 30.0 | | | | | |
| M22140-10-20 | 16 | - 10 | 5/8" | 20.0 | | 12.5 | 69.0 | 36.0 | | | | | |
| M22140-12-25 | 19 | - 12 | 3/4" | 25.0 | | 15.0 | 80.5 | 40.5 | | | | | |
| M22140-16-25 | 25 | - 16 | 1" | 25.0 | | 15.0 | 82.0 | 41.0 | | | | | |



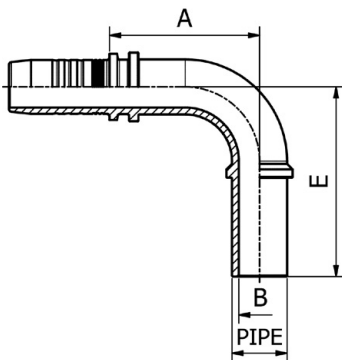
DIN STANDARD CONNECTIONS

M22090

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

FITTINGS 152

| PART. REF. | HOSE BORE | | | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|------|---------------|------|------|---|--|--|--|
| | DN | Dash | inch | | mm | B | A | E | | | |
| M22090-03-06 | 5 | - 3 | 3/16" | 6.0 | 3.0 | 22.5 | 34.0 | | | | |
| M22090-04-06 | 6 | - 4 | 1/4" | 6.0 | 3.0 | 23.0 | 34.0 | | | | |
| M22090-05-10 | 8 | - 5 | 5/16" | 10.0 | 7.0 | 29.5 | 40.0 | | | | |
| M22090-06-10 | 10 | - 6 | 3/8" | 10.0 | 7.0 | 33.0 | 42.5 | | | | |
| M22090-06-12 | 10 | - 6 | 3/8" | 12.0 | 8.0 | 34.0 | 45.0 | | | | |
| M22090-08-12 | 12 | - 8 | 1/2" | 12.0 | 8.0 | 34.5 | 45.0 | | | | |
| M22090-08-15 | 12 | - 8 | 1/2" | 15.0 | 10.5 | 42.0 | 52.0 | | | | |
| M22090-08-18 | 12 | - 8 | 1/2" | 18.0 | 12.5 | 42.0 | 55.0 | | | | |
| M22090-10-18 | 16 | - 10 | 5/8" | 18.0 | 12.5 | 49.0 | 59.0 | | | | |
| M22090-10-22 | 16 | - 10 | 5/8" | 22.0 | 15.0 | 53.5 | 63.0 | | | | |
| M22090-12-22 | 19 | - 12 | 3/4" | 22.0 | 15.0 | 54.5 | 63.0 | | | | |
| M22090-16-28 | 25 | - 16 | 1" | 28.0 | 19.8 | 67.5 | 75.0 | | | | |
| M22090-20-35 | 31 | - 20 | 1.1/4" | 35.0 | 26.0 | 80.5 | 94.0 | | | | |



DIN STANDARD CONNECTIONS

M22190

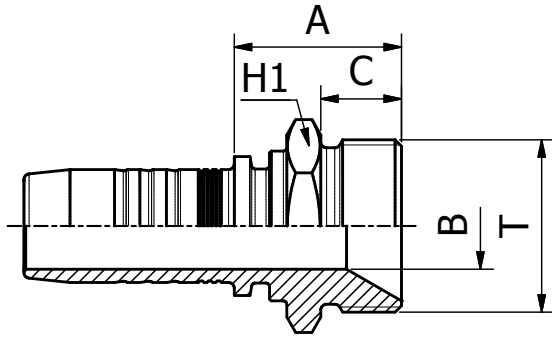
**90° METRIC STANDPIPE HEAVY DUTY
DIN 2353 / ISO 8434-1**

| PART. REF. | HOSE BORE | | | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|------|---------------|------|------|---|--|--|--|
| | DN | Dash | inch | | mm | B | A | E | | | |
| M22190-04-08 | 6 | - 4 | 1/4" | 8.0 | 4.0 | 27.0 | 38.0 | | | | |
| M22190-04-10 | 6 | - 4 | 1/4" | 10.0 | 6.0 | 27.0 | 41.0 | | | | |
| M22190-04-12 | 6 | - 4 | 1/4" | 12.0 | 7.0 | 27.0 | 44.0 | | | | |
| M22190-05-12 | 8 | - 5 | 5/16" | 12.0 | 7.0 | 30.5 | 44.0 | | | | |
| M22190-06-14 | 10 | - 6 | 3/8" | 14.0 | 9.3 | 35.0 | 51.0 | | | | |
| M22190-08-14 | 12 | - 8 | 1/2" | 14.0 | 9.3 | 42.0 | 53.5 | | | | |
| M22190-08-16 | 12 | - 8 | 1/2" | 16.0 | 10.5 | 43.0 | 55.0 | | | | |
| M22190-10-20 | 16 | - 10 | 5/8" | 20.0 | 12.5 | 49.0 | 66.5 | | | | |
| M22190-12-20 | 19 | - 12 | 3/4" | 20.0 | 15.0 | 54.5 | 69.0 | | | | |
| M22190-12-25 | 19 | - 12 | 3/4" | 25.0 | 15.0 | 57.5 | 75.0 | | | | |
| M22190-16-25 | 25 | - 16 | 1" | 25.0 | 15.0 | 61.5 | 76.5 | | | | |
| M22190-16-30 | 25 | - 16 | 1" | 30.0 | 19.8 | 69.5 | 87.0 | | | | |

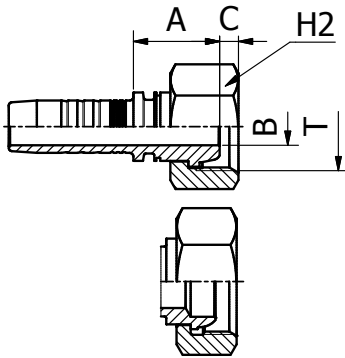
DIN STANDARD CONNECTIONS

M11010

METRIC MALE 60° CONE SEAT
SUPER LIGHT - DIN 3863



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | | |
| M11010-04-12 | 6 | - 4 | 1/4" | M12 X 1.5 | 4.0 | 19.5 | 8.0 | 14.0 | | | |
| M11010-04-16 | 6 | - 4 | 1/4" | M16 X 1.5 | 4.0 | 23.5 | 11.0 | 19.0 | | | |
| M11010-05-16 | 8 | - 5 | 5/16" | M16 X 1.5 | 5.5 | 23.5 | 11.0 | 19.0 | | | |
| M11010-10-26 | 16 | - 10 | 5/8" | M26 X 1.5 | 12.5 | 25.5 | 12.0 | 27.0 | | | |



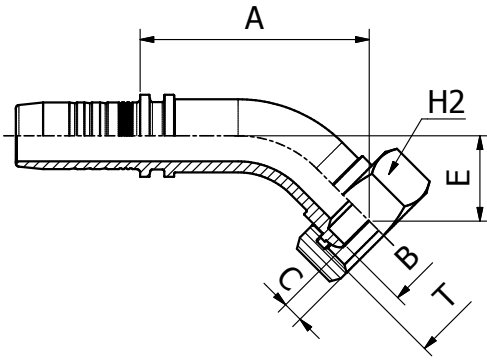
DIN STANDARD CONNECTIONS

M21012/M21013

METRIC FEMALE 60° CONE
DIN 20078/3863

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-----------|---------------|------|-----|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H2 | | |
| M21012-03-10 | 5 | -3 | 3/16" | M10 X1 | 3.0 | 18.5 | 1.8 | 14.0 | | | |
| M21012-04-12 | 6 | -4 | 1/4" | M12 X 1.5 | 4.0 | 19.5 | 3.9 | 17.0 | | | |
| M21012-06-14 | 10 | -6 | 3/8" | M14 X 1.5 | 6.0 | 19.5 | 3.9 | 17.0 | | | |
| M21012-06-16 | 10 | -6 | 3/8" | M16 X 1.5 | 8.0 | 21.5 | 3.8 | 19.0 | | | |
| M21013-06-18 | 10 | -6 | 3/8" | M18 X 1.5 | 10.0 | 19.5 | 4.5 | 22.0 | | | |
| M21013-10-26 | 16 | -10 | 5/8" | M26 X 1.5 | 12.5 | 22.0 | 2.0 | 32.0 | | | |
| M21013-10-30 | 16 | -10 | 5/8" | M30 X 1.5 | 20.0 | 20.0 | 6.0 | 36.0 | | | |
| M21013-12-30 | 19 | -12 | 3/4" | M30 X 1.5 | 20.0 | 21.0 | 6.0 | 36.0 | | | |
| M21013-16-38 | 25 | -16 | 1" | M38 X 1.5 | 26.0 | 23.0 | 7.5 | 46.0 | | | |
| M21013-20-45 | 31 | -20 | 1.1/4" | M45 X 1.5 | 33.0 | 23.5 | 8.0 | 50.0 | | | |
| M21013-24-52 | 38 | -24 | 1.1/2" | M52 X 1.5 | 40.0 | 25.0 | 8.0 | 60.0 | | | |
| M21013-32-65 | 51 | -32 | 2" | M65 X 2 | 42.0 | 35.0 | 5.2 | 75.0 | | | |

DIN STANDARD CONNECTIONS



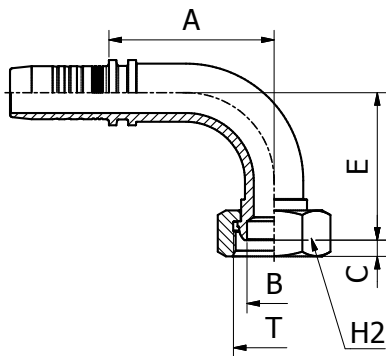
M21043

**45° METRIC FEMALE SWEPT ELBOW 60° CONE
DIN 20078/3863**

FITTINGS

154

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|-----|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M21043-12-30 | 19 | - 12 | 3/4" | M30 X 1.5 | 20.0 | 67.5 | 7.0 | 25.0 | 36.0 | | |
| M21043-16-38 | 25 | - 16 | 1" | M38 X 1.5 | 26.0 | 81.0 | 7.5 | 28.0 | 46.0 | | |



DIN STANDARD CONNECTIONS

M21093

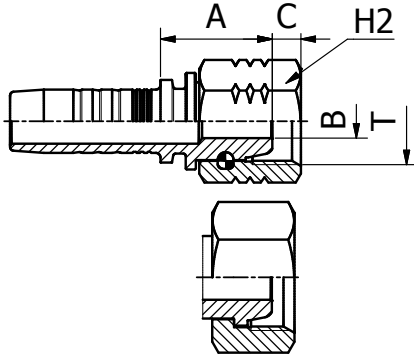
**90° METRIC FEMALE SWEPT ELBOW 60° CONE
DIN 20078/3863**

| 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 | 20.0 | 61.0 | 6.0 | 54.5 | 36.0 | | |
| M21093-16-38 | 25 | - 16 | 1" | M 38X1.5 | 26.0 | 76.5 | 7.5 | 63.0 | 46.0 | | |
| M21093-20-45 | 31 | - 20 | 1.1/4" | M 45X1.5 | 33.0 | 92.0 | 8.0 | 81.0 | 50.0 | | |

DIN STANDARD CONNECTIONS

M21312/M21313

METRIC FEMALE MULTISEAL
DIN 20078/3868



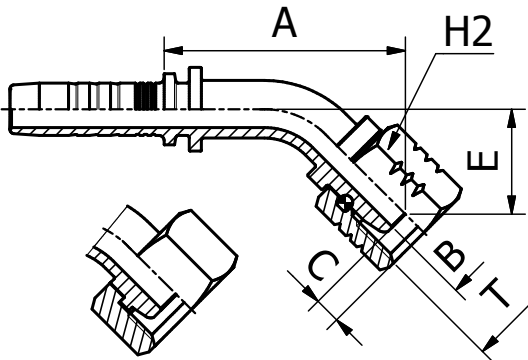
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|----------|------|---------------|------|-----|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | H2 | | |
| M21312-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 4.0 | 19.5 | 4.0 | 17.0 | | |
| M21312-06-14 | 10 | - 6 | 3/8" | M 14X1.5 | 8.0 | 4.0 | 19.5 | 3.9 | 17.0 | | |
| M21312-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 7.0 | 21.5 | 5.0 | 19.0 | | |
| M21312-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 12.0 | 7.0 | 23.0 | 5.9 | 22.0 | | |
| M21312-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 15.0 | 9.3 | 23.5 | 5.5 | 27.0 | | |
| M21313-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 18.5 | 3.2 | 14.0 | | |
| M21313-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 19.5 | 3.0 | 17.0 | | |
| M21313-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 4.0 | 19.5 | 4.0 | 19.0 | | |
| M21313-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 5.5 | 19.5 | 4.0 | 19.0 | | |
| M21313-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 5.5 | 19.5 | 4.0 | 22.0 | | |
| M21313-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 20.0 | 4.0 | 22.0 | | |
| M21313-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 7.0 | 21.0 | 4.7 | 27.0 | | |
| M21313-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 21.5 | 4.7 | 27.0 | | |
| M21313-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 22.0 | 5.0 | 32.0 | | |

155 FITTINGS

DIN STANDARD CONNECTIONS

M21342/M21343

45° METRIC FEMALE SWEPT ELBOW MULTISEAL
DIN 20078/3868

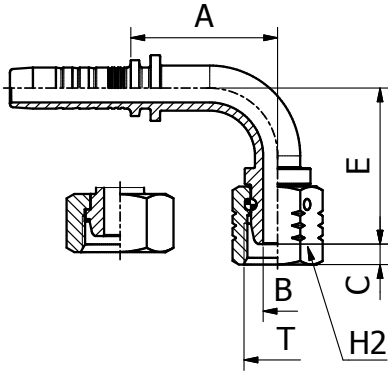


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|----------|------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M21342-05-14 | 8 | - 5 | 5/16" | M 14X1.5 | 8.0 | 4.0 | 40.0 | 3.9 | 19.5 | 17.0 | | |
| M21342-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 7.0 | 46.0 | 5.0 | 20.0 | 19.0 | | |
| M21343-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 36.5 | 3.0 | 15.0 | 17.0 | | |
| M21343-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 4.0 | 36.5 | 4.0 | 15.0 | 19.0 | | |
| M21343-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 5.5 | 39.0 | 4.0 | 15.0 | 19.0 | | |
| M21343-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 42.0 | 4.0 | 15.5 | 22.0 | | |
| M21343-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 7.0 | 42.5 | 4.7 | 15.5 | 27.0 | | |
| M21343-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 49.5 | 4.7 | 17.0 | 27.0 | | |
| M21343-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 60.0 | 5.0 | 24.0 | 32.0 | | |

DIN STANDARD CONNECTIONS

M21392/M21393

90° METRIC FEMALE SWEPT ELBOW MULTISEAL
DIN 20078/3868

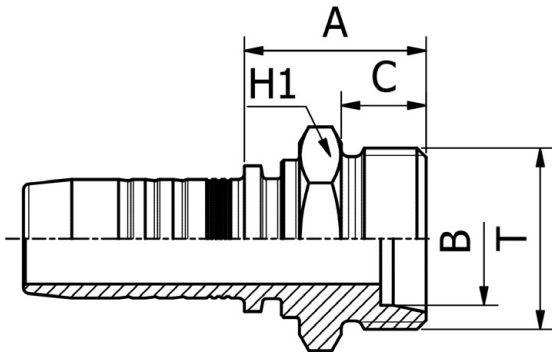


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | |
|--------------|-----------|------|-------|----------|------|---------------|------|-----|------|------|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 |
| M21392-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 4.0 | 28.0 | 4.0 | 30.5 | 17.0 |
| M21392-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 7.0 | 35.5 | 5.0 | 38.0 | 19.0 |
| M21392-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 18.0 | 15.0 | 61.5 | 2.3 | 63.0 | 32.0 |
| M21393-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 26.0 | 3.2 | 27.0 | 14.0 |
| M21393-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 29.5 | 3.0 | 29.5 | 17.0 |
| M21393-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 4.0 | 29.5 | 4.0 | 29.5 | 19.0 |
| M21393-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 5.5 | 32.0 | 4.0 | 29.0 | 19.0 |
| M21393-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 7.0 | 32.0 | 4.0 | 30.5 | 22.0 |
| M21393-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 36.5 | 4.0 | 31.5 | 22.0 |
| M21393-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 7.0 | 36.5 | 4.7 | 32.0 | 27.0 |
| M21393-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 45.0 | 4.7 | 36.5 | 27.0 |
| M21393-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 51.5 | 5.0 | 50.0 | 32.0 |

DIN STANDARD CONNECTIONS

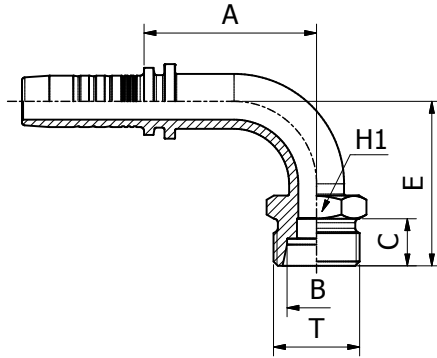
M11110

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|------|------|--|
| | DN | Dash | inch | T | mm | B | A | C | H1 | |
| M11110-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 21.0 | 10.0 | 14.0 | |
| M11110-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 4.0 | 21.5 | 10.0 | 14.0 | |
| M11110-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 21.5 | 10.0 | 14.0 | |
| M11110-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 7.0 | 23.5 | 11.0 | 17.0 | |
| M11110-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 12.0 | 9.0 | 23.5 | 11.0 | 19.0 | |
| M11110-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 7.0 | 24.0 | 11.0 | 17.0 | |
| M11110-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 9.0 | 24.0 | 11.0 | 19.0 | |
| M11110-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 7.0 | 24.0 | 11.0 | 17.0 | |
| M11110-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 9.0 | 24.5 | 11.0 | 19.0 | |
| M11110-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 10.0 | 25.5 | 12.0 | 22.0 | |
| M11110-06-26 | 10 | - 6 | 3/8" | M 26X1.5 | 18.0 | 12.5 | 26.5 | 12.0 | 27.0 | |
| M11110-08-16 | 12 | - 8 | 1/2" | M 16X1.5 | 10.0 | 7.0 | 24.5 | 11.0 | 22.0 | |
| M11110-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 12.0 | 9.3 | 24.5 | 11.0 | 22.0 | |
| M11110-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 10.0 | 25.5 | 12.0 | 22.0 | |
| M11110-08-26 | 12 | - 8 | 1/2" | M 26X1.5 | 18.0 | 12.5 | 26.5 | 12.0 | 27.0 | |
| M11110-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 15.0 | 10.0 | 25.5 | 12.0 | 22.0 | |
| M11110-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 26.5 | 12.0 | 27.0 | |
| M11110-10-30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 28.5 | 14.0 | 30.0 | |
| M11110-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 18.0 | 15.0 | 28.0 | 12.0 | 27.0 | |
| M11110-12-30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 30.0 | 14.0 | 30.0 | |
| M11110-12-36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 19.8 | 31.0 | 14.0 | 36.0 | |
| M11110-16-36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 32.5 | 14.0 | 36.0 | |
| M11110-20-45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 40.5 | 16.0 | 46.0 | |
| M11110-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 43.0 | 16.0 | 55.0 | |

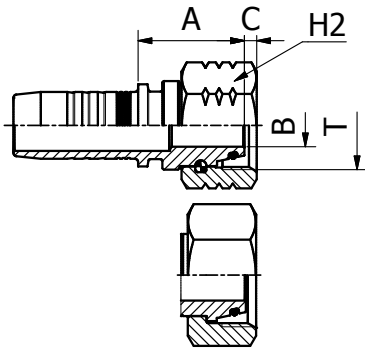
DIN STANDARD CONNECTIONS



M11190

**90° METRIC MALE 24° CONE SEAT LIGHT DUTY
DIN 20066 / ISO 12151-2**

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|----------|------|---------------|------|------|------|------|---|----|
| | DN | Dash | inch | | | T | mm | B | A | C | E | H1 |
| M11190-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 27.0 | 10.0 | 33.0 | 14.0 | | |
| M11190-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 9.0 | 32.0 | 11.0 | 35.5 | 19.0 | | |



DIN STANDARD CONNECTIONS

M21512/M21513

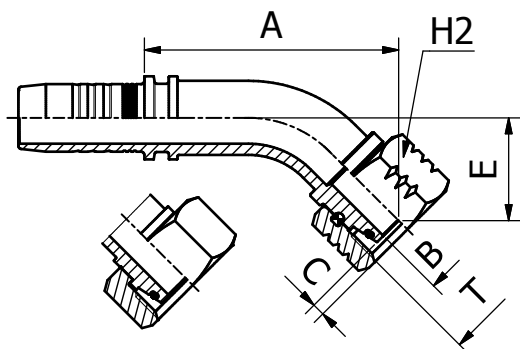
**METRIC O-RING FEMALE
24° CONE LIGHT DUTY
DIN 20066 / ISO 12151-2**

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|------|---|----|--|
| | DN | Dash | inch | | | T | mm | B | A | C | H2 | |
| M21512-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 3.0 | 21.0 | 2.2 | 17.0 | | | |
| M21512-05-14 | 8 | - 5 | 5/16" | M 14X1.5 | 8.0 | 4.0 | 20.0 | 2.9 | 17.0 | | | |
| M21512-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 6.0 | 23.0 | 3.0 | 19.0 | | | |
| M21512-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 12.0 | 7.0 | 29.0 | 2.9 | 22.0 | | | |
| M21512-10-18 | 16 | - 10 | 5/8" | M 18X1.5 | 12.0 | 7.0 | 29.0 | 2.9 | 22.0 | | | |
| M21512-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 15.0 | 9.5 | 26.5 | 2.4 | 27.0 | | | |
| M21512-12-22 | 19 | - 12 | 3/4" | M 22X1.5 | 15.0 | 9.5 | 31.0 | 2.4 | 27.0 | | | |
| M21512-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 18.0 | 12.5 | 31.0 | 2.3 | 32.0 | | | |
| M21512-16-30 | 25 | - 16 | 1" | M 30X2 | 22.0 | 15.0 | 34.0 | 4.2 | 36.0 | | | |
| M21512-20-36 | 31 | - 20 | 1.1/4" | M 36X2 | 28.0 | 19.8 | 35.5 | 5.0 | 41.0 | | | |
| M21512-24-45 | 38 | - 24 | 1.1/2" | M 45X2 | 35.0 | 26.0 | 42.5 | 5.8 | 50.0 | | | |
| M21512-32-52 | 51 | - 32 | 2" | M 52X2 | 42.0 | 32.0 | 50.5 | 5.6 | 60.0 | | | |
| M21513-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 22.0 | 0.7 | 14.0 | | | |
| M21513-03-14 | 5 | - 3 | 3/16" | M 14X1.5 | 8.0 | 4.0 | 24.5 | 1.3 | 17.0 | | | |
| M21513-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 22.0 | 1.3 | 17.0 | | | |
| M21513-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 6.0 | 22.5 | 1.8 | 19.0 | | | |
| M21513-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 12.0 | 7.0 | 22.0 | 2.0 | 22.0 | | | |
| M21513-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 6.0 | 22.5 | 1.8 | 19.0 | | | |
| M21513-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 7.0 | 22.0 | 2.0 | 22.0 | | | |
| M21513-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 22.5 | 2.0 | 22.0 | | | |
| M21513-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 9.3 | 25.0 | 1.5 | 27.0 | | | |
| M21513-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 25.5 | 1.5 | 27.0 | | | |
| M21513-08-26 | 12 | - 8 | 1/2" | M 26X1.5 | 18.0 | 12.5 | 26.0 | 2.0 | 32.0 | | | |
| M21513-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 26.0 | 2.0 | 32.0 | | | |
| M21513-10-30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 34.0 | 3.0 | 36.0 | | | |
| M21513-10-36 | 16 | - 10 | 5/8" | M 36X2 | 28.0 | 20.0 | 30.5 | 3.7 | 41.0 | | | |
| M21513-12-30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 28.0 | 3.0 | 36.0 | | | |
| M21513-12-36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 20.0 | 28.5 | 3.7 | 41.0 | | | |
| M21513-16-36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 29.5 | 3.7 | 41.0 | | | |
| M21513-16-45 | 25 | - 16 | 1" | M 45X2 | 35.0 | 26.0 | 39.0 | 4.0 | 50.0 | | | |
| M21513-20-45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 33.0 | 4.0 | 50.0 | | | |
| M21513-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 42.0 | 32.0 | 32.5 | 4.5 | 60.0 | | | |
| M21513-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 33.0 | 4.5 | 60.0 | | | |

DIN STANDARD CONNECTIONS

M21542/M21543

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

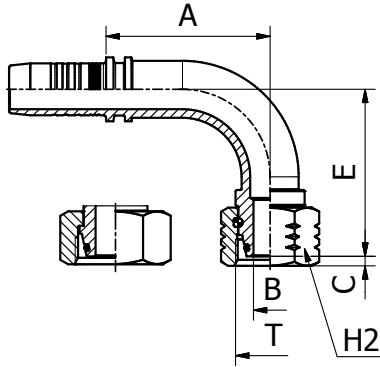


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M21542-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 3.0 | 39.0 | 2.2 | 18.0 | 17.0 | | |
| M21542-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 6.0 | 47.5 | 3.0 | 21.5 | 19.0 | | |
| M21542-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 12.0 | 7.0 | 56.5 | 2.9 | 25.0 | 22.0 | | |
| M21542-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 15.0 | 9.3 | 65.5 | 3.0 | 29.0 | 27.0 | | |
| M21542-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 18.0 | 12.5 | 73.0 | 2.3 | 31.0 | 32.0 | | |
| M21542-20-36 | 31 | - 20 | 1.1/4" | M 36X2 | 28.0 | 19.8 | 107.5 | 5.0 | 44.0 | 41.0 | | |
| M21542-24-36 | 38 | - 24 | 1.1/2" | M 36X2 | 28.0 | 19.8 | 113.0 | 5.0 | 34.5 | 41.0 | | |
| M21543-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 35.0 | 0.7 | 16.0 | 14.0 | | |
| M21543-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 38.0 | 1.3 | 16.5 | 17.0 | | |
| M21543-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 6.0 | 38.0 | 1.8 | 17.0 | 19.0 | | |
| M21543-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 12.0 | 7.0 | 38.5 | 2.0 | 17.5 | 22.0 | | |
| M21543-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 6.0 | 41.5 | 1.8 | 17.5 | 19.0 | | |
| M21543-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 7.0 | 41.5 | 2.0 | 17.0 | 22.0 | | |
| M21543-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 43.5 | 2.0 | 16.5 | 22.0 | | |
| M21543-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 9.3 | 45.0 | 1.5 | 18.0 | 27.0 | | |
| M21543-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 52.0 | 1.5 | 19.0 | 27.0 | | |
| M21543-08-26 | 12 | - 8 | 1/2" | M 26X1.5 | 18.0 | 12.5 | 52.5 | 2.0 | 19.5 | 32.0 | | |
| M21543-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 62.0 | 2.0 | 26.5 | 32.0 | | |
| M21543-12-30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 71.0 | 3.0 | 28.5 | 36.0 | | |
| M21543-12-36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 19.8 | 72.0 | 3.7 | 30.0 | 41.0 | | |
| M21543-16-36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 85.0 | 3.7 | 32.0 | 41.0 | | |
| M21543-20-45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 100.0 | 4.0 | 36.0 | 50.0 | | |
| M21543-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 42.0 | 32.0 | 100.0 | 4.5 | 42.0 | 60.0 | | |
| M21543-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 117.0 | 4.5 | 44.5 | 60.0 | | |

DIN STANDARD CONNECTIONS

M21592/M21593

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

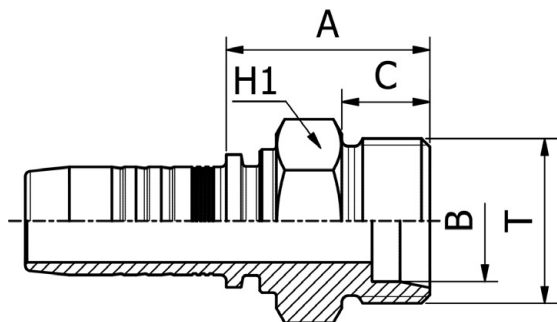


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|-------|-----|-------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M21592-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 6.0 | 3.0 | 28.5 | 2.2 | 32.5 | 17.0 | | |
| M21592-05-14 | 8 | - 5 | 5/16" | M 14X1.5 | 8.0 | 4.0 | 31.0 | 2.9 | 33.0 | 17.0 | | |
| M21592-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 10.0 | 6.0 | 35.5 | 3.0 | 40.0 | 19.0 | | |
| M21592-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 12.0 | 7.0 | 44.0 | 2.9 | 48.0 | 22.0 | | |
| M21592-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 15.0 | 9.3 | 53.5 | 3.0 | 57.5 | 27.0 | | |
| M21592-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 18.0 | 12.5 | 61.5 | 2.3 | 63.0 | 32.0 | | |
| M21592-16-30 | 25 | - 16 | 1" | M 30X2 | 22.0 | 15.0 | 79.5 | 4.2 | 80.5 | 36.0 | | |
| M21592-20-36 | 31 | - 20 | 1.1/4" | M 36X2 | 28.0 | 19.8 | 93.5 | 5.0 | 92.0 | 41.0 | | |
| M21592-24-36 | 38 | - 24 | 1.1/2" | M 36X2 | 28.0 | 19.8 | 97.0 | 5.0 | 68.0 | 41.0 | | |
| M21592-32-52 | 51 | - 32 | 2" | M 52X2 | 42.0 | 32.0 | 131.0 | 5.6 | 119.0 | 60.0 | | |
| M21593-03-12 | 5 | - 3 | 3/16" | M 12X1.5 | 6.0 | 3.0 | 26.0 | 0.7 | 30.0 | 14.0 | | |
| M21593-03-14 | 5 | - 3 | 3/16" | M 14X1.5 | 8.0 | 4.0 | 29.0 | 1.3 | 31.5 | 17.0 | | |
| M21593-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 8.0 | 4.0 | 29.5 | 1.3 | 31.5 | 17.0 | | |
| M21593-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 10.0 | 6.0 | 29.5 | 1.8 | 32.0 | 19.0 | | |
| M21593-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 12.0 | 7.0 | 29.5 | 2.0 | 33.0 | 22.0 | | |
| M21593-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 10.0 | 6.0 | 32.0 | 1.8 | 32.5 | 19.0 | | |
| M21593-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 12.0 | 7.0 | 32.0 | 2.0 | 32.5 | 22.0 | | |
| M21593-05-22 | 8 | - 5 | 5/16" | M 22X1.5 | 15.0 | 9.3 | 36.0 | 1.5 | 35.0 | 27.0 | | |
| M21593-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 12.0 | 7.0 | 36.5 | 2.0 | 33.5 | 22.0 | | |
| M21593-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 15.0 | 9.3 | 36.5 | 1.5 | 35.0 | 27.0 | | |
| M21593-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 15.0 | 9.3 | 45.0 | 1.5 | 39.5 | 27.0 | | |
| M21593-08-26 | 12 | - 8 | 1/2" | M 26X1.5 | 18.0 | 12.5 | 45.0 | 2.0 | 40.0 | 32.0 | | |
| M21593-10-26 | 16 | - 10 | 5/8" | M 26X1.5 | 18.0 | 12.5 | 51.5 | 2.0 | 53.0 | 32.0 | | |
| M21593-10-30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 51.5 | 3.0 | 54.0 | 36.0 | | |
| M21593-12-30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 61.5 | 3.0 | 59.5 | 36.0 | | |
| M21593-12-36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 19.8 | 61.5 | 3.7 | 61.0 | 41.0 | | |
| M21593-16-36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 76.5 | 3.7 | 69.5 | 41.0 | | |
| M21593-16-45 | 25 | - 16 | 1" | M 45X2 | 35.0 | 26.0 | 79.0 | 4.0 | 72.0 | 50.0 | | |
| M21593-20-45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 93.5 | 4.0 | 81.0 | 50.0 | | |
| M21593-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 107.5 | 4.5 | 98.0 | 60.0 | | |

DIN STANDARD CONNECTIONS

M11210

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



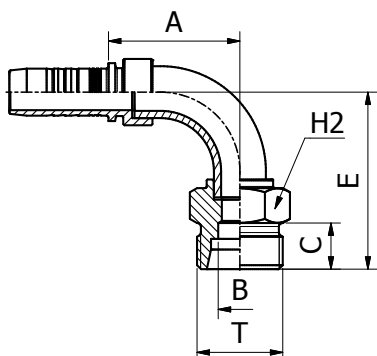
FITTINGS 160

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|------|------|----|--|
| | DN | Dash | inch | | | T | B | A | C | H1 | |
| M11210-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 8.0 | 5.5 | 25.5 | 12.0 | 17.0 | | |
| M11210-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 10.0 | 6.0 | 26.5 | 12.0 | 19.0 | | |
| M11210-04-20 | 6 | - 4 | 1/4" | M 20X1.5 | 12.0 | 7.0 | 29.0 | 12.0 | 22.0 | | |
| M11210-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 8.0 | 5.5 | 26.0 | 12.0 | 17.0 | | |
| M11210-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 10.0 | 7.0 | 26.5 | 12.0 | 19.0 | | |
| M11210-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 12.0 | 7.0 | 29.0 | 12.0 | 22.0 | | |
| M11210-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 10.0 | 7.0 | 27.0 | 12.0 | 19.0 | | |
| M11210-06-20 | 10 | - 6 | 3/8" | M 20X1.5 | 12.0 | 7.0 | 29.0 | 12.0 | 22.0 | | |
| M11210-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 14.0 | 8.0 | 31.0 | 14.0 | 22.0 | | |
| M11210-08-20 | 12 | - 8 | 1/2" | M 20X1.5 | 12.0 | 9.3 | 29.5 | 12.0 | 22.0 | | |
| M11210-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 14.0 | 9.3 | 31.5 | 14.0 | 22.0 | | |
| M11210-08-24 | 12 | - 8 | 1/2" | M 24X1.5 | 16.0 | 9.3 | 31.5 | 14.0 | 24.0 | | |
| M11210-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 15.0 | 35.5 | 16.0 | 30.0 | | |
| M11210-10-36 | 16 | - 10 | 5/8" | M 36X2 | 25.0 | 19.8 | 40.0 | 18.0 | 36.0 | | |
| M11210-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 15.0 | 37.0 | 16.0 | 30.0 | | |
| M11210-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 19.8 | 41.0 | 18.0 | 36.0 | | |
| M11210-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 19.8 | 42.5 | 18.0 | 36.0 | | |
| M11210-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 25.0 | 44.5 | 20.0 | 46.0 | | |
| M11210-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 30.0 | 51.0 | 22.0 | 55.0 | | |

DIN STANDARD CONNECTIONS

M11290

**90° METRIC MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2**

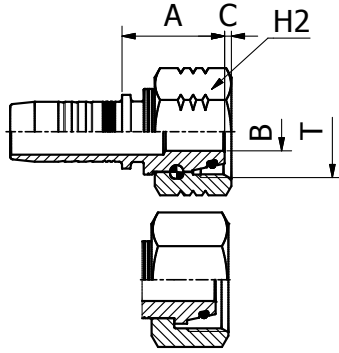


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|----------|------|---------------|------|------|------|------|----|
| | DN | Dash | inch | | | T | B | A | C | E | H1 |
| M11290-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 12.0 | 7.0 | 29.0 | 12.0 | 36.5 | 22.0 | |
| M11290-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 15.0 | 45.5 | 16.0 | 61.5 | 30.0 | |

DIN STANDARD CONNECTIONS

M21612/M21613

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

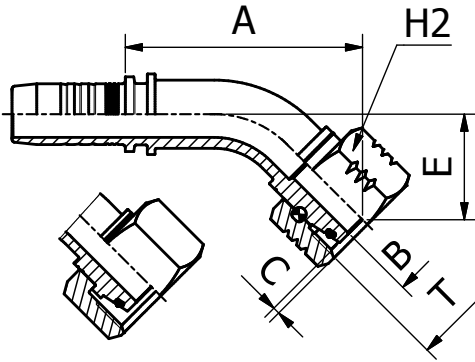


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|------|--|--|--|
| | DN | Dash | inch | T | mm | B | A | C | H2 | | | |
| M21612-08-20 | 12 | - 8 | 1/2" | M 20X1.5 | 12.0 | 7.0 | 29.0 | 2.5 | 24.0 | | | |
| M21612-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 14.0 | 7.0 | 27.0 | 2.5 | 27.0 | | | |
| M21612-10-24 | 16 | - 10 | 5/8" | M 24X1.5 | 16.0 | 9.3 | 29.5 | 4.0 | 30.0 | | | |
| M21612-12-24 | 19 | - 12 | 3/4" | M 24X1.5 | 16.0 | 9.3 | 30.5 | 4.0 | 30.0 | | | |
| M21612-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 33.5 | 2.2 | 36.0 | | | |
| M21612-16-30 | 25 | - 16 | 1" | M 30X2 | 20.0 | 12.5 | 34.5 | 2.2 | 36.0 | | | |
| M21612-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 35.5 | 1.7 | 41.0 | | | |
| M21613-03-14 | 5 | - 3 | 3/16" | M 14X1.5 | 6.0 | 2.5 | 25.5 | 3.5 | 17.0 | | | |
| M21613-03-16 | 5 | - 3 | 3/16" | M 16X1.5 | 8.0 | 3.0 | 21.5 | 3.4 | 19.0 | | | |
| M21613-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 6.0 | 3.0 | 23.5 | 1.9 | 17.0 | | | |
| M21613-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 8.0 | 4.0 | 22.0 | 3.4 | 19.0 | | | |
| M21613-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 10.0 | 4.0 | 28.0 | 2.5 | 22.0 | | | |
| M21613-04-20 | 6 | - 4 | 1/4" | M 20X1.5 | 12.0 | 7.0 | 26.0 | 2.0 | 24.0 | | | |
| M21613-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 10.0 | 5.5 | 28.0 | 2.5 | 22.0 | | | |
| M21613-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 12.0 | 5.5 | 25.0 | 2.0 | 24.0 | | | |
| M21613-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 10.0 | 7.0 | 28.5 | 2.5 | 22.0 | | | |
| M21613-06-20 | 10 | - 6 | 3/8" | M 20X1.5 | 12.0 | 7.0 | 25.5 | 2.0 | 24.0 | | | |
| M21613-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 14.0 | 7.0 | 32.5 | 3.0 | 27.0 | | | |
| M21613-06-24 | 10 | - 6 | 3/8" | M 24X1.5 | 16.0 | 7.0 | 32.0 | 4.0 | 30.0 | | | |
| M21613-08-24 | 12 | - 8 | 1/2" | M 24X1.5 | 16.0 | 9.3 | 26.5 | 4.0 | 30.0 | | | |
| M21613-08-30 | 12 | - 8 | 1/2" | M 30X2 | 20.0 | 12.5 | 37.0 | 3.5 | 36.0 | | | |
| M21613-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 30.5 | 3.5 | 36.0 | | | |
| M21613-10-36 | 16 | - 10 | 5/8" | M 36X2 | 25.0 | 15.0 | 40.0 | 4.5 | 41.0 | | | |
| M21613-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 34.0 | 4.5 | 41.0 | | | |
| M21613-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 35.5 | 6.3 | 50.0 | | | |
| M21613-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 37.5 | 8.0 | 60.0 | | | |
| M21613-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 26.0 | 49.5 | 8.0 | 60.0 | | | |

DIN STANDARD CONNECTIONS

M21642/M21643

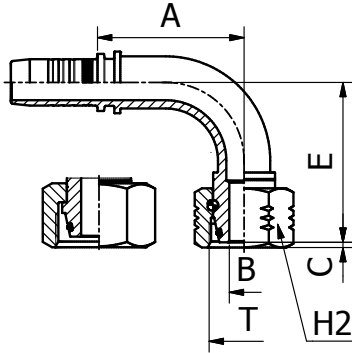
**45° METRIC O-RING FEMALE SWEPT ELBOW
24° CONE HEAVY DUTY
DIN 20066 / ISO 12151-2**



FITTINGS 162

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|-------|-----|------|------|---|----|
| | DN | Dash | inch | | | T | mm | B | A | C | E | H2 |
| M21642-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 10.0 | 4.0 | 49.0 | 3.9 | 23.0 | 22.0 | | |
| M21642-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 14.0 | 7.0 | 57.5 | 2.5 | 25.5 | 27.0 | | |
| M21642-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 76.5 | 2.2 | 34.0 | 36.0 | | |
| M21642-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 98.0 | 1.7 | 43.5 | 41.0 | | |
| M21642-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 24.7 | 111.0 | 8.8 | 48.0 | 60.0 | | |
| M21643-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 6.0 | 3.0 | 38.5 | 1.9 | 17.5 | 17.0 | | |
| M21643-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 8.0 | 4.0 | 36.5 | 3.4 | 15.0 | 19.0 | | |
| M21643-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 10.0 | 4.0 | 37.5 | 2.5 | 16.5 | 22.0 | | |
| M21643-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 10.0 | 4.0 | 42.5 | 2.5 | 18.0 | 22.0 | | |
| M21643-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 12.0 | 5.5 | 42.0 | 2.0 | 18.5 | 24.0 | | |
| M21643-06-20 | 10 | - 6 | 3/8" | M 20X1.5 | 12.0 | 7.0 | 45.0 | 2.5 | 18.0 | 24.0 | | |
| M21643-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 14.0 | 7.0 | 45.5 | 3.0 | 18.5 | 27.0 | | |
| M21643-08-24 | 12 | - 8 | 1/2" | M 24X1.5 | 16.0 | 9.3 | 52.5 | 4.0 | 20.0 | 30.0 | | |
| M21643-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 65.5 | 3.5 | 29.5 | 36.0 | | |
| M21643-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 75.0 | 4.5 | 32.5 | 41.0 | | |
| M21643-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 90.0 | 6.3 | 35.5 | 50.0 | | |
| M21643-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 103.0 | 8.0 | 39.5 | 60.0 | | |

DIN STANDARD CONNECTIONS

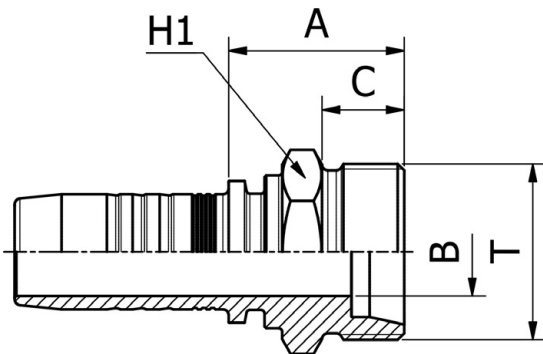


M21692/M21693

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|------|------|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | |
| M21692-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 10.0 | 4.0 | 35.5 | 3.9 | 42.5 | 22.0 | |
| M21692-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 14.0 | 7.0 | 44.0 | 2.5 | 48.5 | 27.0 | |
| M21692-10-24 | 16 | - 10 | 5/8" | M 24X1.5 | 16.0 | 9.3 | 53.5 | 4.0 | 58.5 | 30.0 | |
| M21692-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 61.5 | 2.2 | 67.5 | 36.0 | |
| M21692-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 79.5 | 1.7 | 86.0 | 41.0 | |
| M21692-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 24.7 | 91.5 | 8.8 | 95.5 | 60.0 | |
| M21693-03-14 | 5 | - 3 | 3/16" | M 14X1.5 | 6.0 | 3.0 | 26.0 | 3.5 | 30.0 | 17.0 | |
| M21693-03-16 | 5 | - 3 | 3/16" | M 16X1.5 | 8.0 | 3.0 | 26.0 | 3.4 | 29.5 | 19.0 | |
| M21693-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 6.0 | 3.0 | 29.5 | 1.9 | 32.5 | 17.0 | |
| M21693-04-16 | 6 | - 4 | 1/4" | M 16X1.5 | 8.0 | 4.0 | 29.5 | 3.4 | 29.5 | 19.0 | |
| M21693-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 10.0 | 4.0 | 29.5 | 2.5 | 31.0 | 22.0 | |
| M21693-04-20 | 6 | - 4 | 1/4" | M 20X1.5 | 12.0 | 5.5 | 29.5 | 2.0 | 34.5 | 24.0 | |
| M21693-05-18 | 8 | - 5 | 5/16" | M 18X1.5 | 10.0 | 4.0 | 32.0 | 2.5 | 33.5 | 22.0 | |
| M21693-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 12.0 | 5.5 | 32.0 | 2.0 | 34.0 | 24.0 | |
| M21693-06-20 | 10 | - 6 | 3/8" | M 20X1.5 | 12.0 | 7.0 | 36.5 | 2.0 | 35.0 | 24.0 | |
| M21693-06-22 | 10 | - 6 | 3/8" | M 22X1.5 | 14.0 | 7.0 | 36.5 | 3.0 | 37.0 | 27.0 | |
| M21693-06-24 | 10 | - 6 | 3/8" | M 24X1.5 | 16.0 | 9.3 | 36.5 | 4.0 | 36.0 | 30.0 | |
| M21693-08-24 | 12 | - 8 | 1/2" | M 24X1.5 | 16.0 | 9.3 | 45.0 | 4.0 | 40.5 | 30.0 | |
| M21693-08-30 | 12 | - 8 | 1/2" | M 30X2 | 20.0 | 12.5 | 45.0 | 3.5 | 44.5 | 36.0 | |
| M21693-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 51.5 | 3.5 | 57.5 | 36.0 | |
| M21693-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 61.5 | 4.5 | 64.5 | 41.0 | |
| M21693-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 79.0 | 6.3 | 74.5 | 50.0 | |
| M21693-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 93.5 | 8.0 | 85.5 | 60.0 | |

163 FITTINGS



NF STANDARD CONNECTIONS

M11710

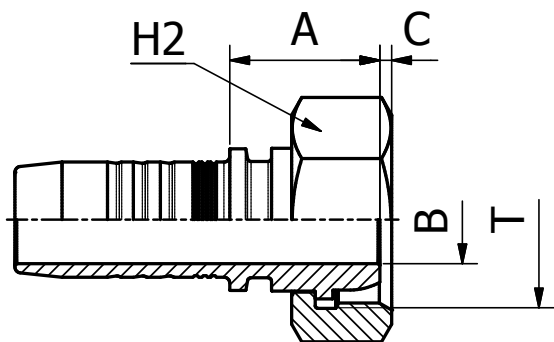
**FRENCH METRIC MALE
24° CONE SEAT MILLIMETRIC TYPE**

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | |
|----------------|-----------|------|------|----------|------|---------------|------|------|------|
| | DN | Dash | inch | T | mm | B | A | C | H1 |
| M11710-10-2718 | 16 | - 10 | 5/8" | M 27X1.5 | 18.0 | 12.5 | 28.5 | 14.0 | 28.0 |
| M11710-10-2720 | 16 | - 10 | 5/8" | M 27X1.5 | 20.0 | 12.5 | 28.5 | 14.0 | 28.0 |
| M11710-12-30 | 19 | - 12 | 3/4" | M 30X1.5 | 22.0 | 15.0 | 30.0 | 14.0 | 30.0 |
| M11710-12-33 | 19 | - 12 | 3/4" | M 33X1.5 | 25.0 | 15.0 | 31.0 | 14.0 | 34.0 |

NF STANDARD CONNECTIONS

M21713

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



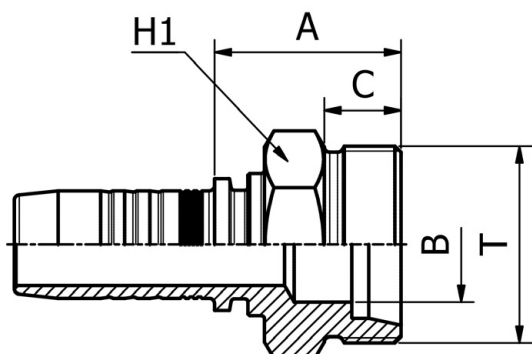
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|----------|------|---------------|------|-----|------|----|--|--|
| | DN | Dash | inch | | | T | B | A | C | H2 | | |
| M21713-10-2718 | 16 | -10 | 5/8" | M 27X1.5 | 18 | 12.5 | 21.5 | 5.0 | 32.0 | | | |
| M21713-10-2720 | 16 | -10 | 5/8" | M 27X1.5 | 20 | 12.5 | 21.5 | 5.0 | 32.0 | | | |
| M21713-12-30 | 19 | -12 | 3/4" | M 30X1.5 | 22 | 15.0 | 25.5 | 2.0 | 36.0 | | | |
| M21713-12-33 | 19 | -12 | 3/4" | M 33X1.5 | 25 | 15.0 | 25.5 | 2.0 | 38.0 | | | |
| M21713-16-36 | 25 | -16 | 1" | M 36X1.5 | 28 | 19.8 | 28.0 | 4.7 | 41.0 | | | |
| M21713-16-39 | 25 | -16 | 1" | M 39X1.5 | 30 | 19.8 | 28.5 | 4.2 | 46.0 | | | |

FITTINGS 164

NF STANDARD CONNECTIONS

M11810

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

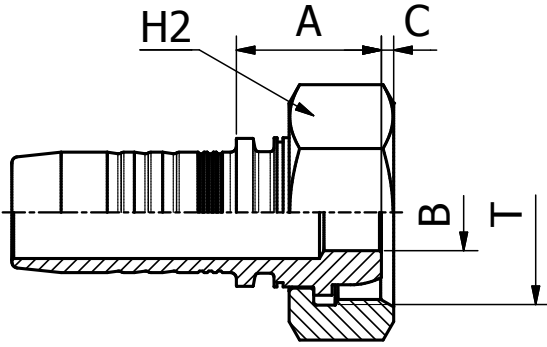


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|----------|-------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | | T | B | A | C | H1 | | |
| M11810-05-20 | 8 | - 5 | 5/16" | M 20X1.5 | 13.25 | 8.0 | 27.0 | 12.0 | 22.0 | | | |
| M11810-06-20 | 10 | - 6 | 3/8" | M 20X1.5 | 13.25 | 8.0 | 27.5 | 12.0 | 22.0 | | | |
| M11810-06-24 | 10 | - 6 | 3/8" | M 24X1.5 | 16.75 | 12.0 | 28.0 | 12.0 | 24.0 | | | |
| M11810-08-24 | 12 | - 8 | 1/2" | M 24X1.5 | 16.75 | 12.0 | 28.5 | 12.0 | 24.0 | | | |
| M11810-10-30 | 16 | - 10 | 5/8" | M 30X1.5 | 21.25 | 15.0 | 31.5 | 14.0 | 30.0 | | | |
| M11810-12-36 | 19 | - 12 | 3/4" | M 36X1.5 | 26.75 | 21.0 | 34.0 | 14.0 | 36.0 | | | |
| M11810-16-45 | 25 | - 16 | 1" | M 45X1.5 | 33.5 | 26.0 | 39.5 | 16.0 | 46.0 | | | |

NF STANDARD CONNECTIONS

M21813

FRENCH METRIC FEMALE
GAZ TYPE (SLIP-ON NUT)



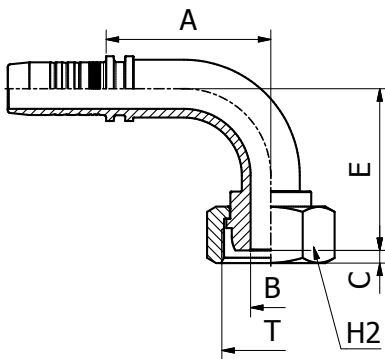
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|----------|-------|---------------|------|-----|------|--|--|--|
| | DN | Dash | inch | T | mm | B | A | C | H2 | | | |
| M21813-04-20 | 6 | -4 | 1/4" | M 20X1.5 | 13.25 | 7.0 | 22.0 | 4.0 | 24.0 | | | |
| M21813-05-20 | 8 | -5 | 5/16" | M 20X1.5 | 13.25 | 7.0 | 22.0 | 4.0 | 24.0 | | | |
| M21813-06-20 | 10 | -6 | 3/8" | M 20X1.5 | 13.25 | 7.0 | 22.5 | 4.0 | 24.0 | | | |
| M21813-06-24 | 10 | -6 | 3/8" | M 24X1.5 | 16.75 | 9.3 | 25.5 | 3.5 | 30.0 | | | |
| M21813-08-24 | 12 | -8 | 1/2" | M 24X1.5 | 16.75 | 9.3 | 26.0 | 3.5 | 30.0 | | | |
| M21813-08-30 | 12 | -8 | 1/2" | M 30X1.5 | 21.25 | 12.5 | 23.5 | 2.0 | 36.0 | | | |
| M21813-10-30 | 16 | -10 | 5/8" | M 30X1.5 | 21.25 | 12.5 | 23.5 | 2.0 | 36.0 | | | |
| M21813-12-36 | 19 | -12 | 3/4" | M 36X1.5 | 26.75 | 15.0 | 27.0 | 4.7 | 41.0 | | | |
| M21813-16-45 | 25 | -16 | 1" | M 45X1.5 | 33.5 | 19.8 | 27.0 | 4.5 | 50.0 | | | |

165 FITTINGS

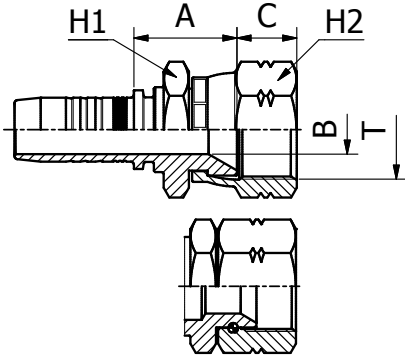
NF STANDARD CONNECTIONS

M21893

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|----------|-------|---------------|------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M21893-05-20 | 8 | -5 | 5/16" | M 20X1.5 | 13.25 | 7.0 | 32.0 | 4.0 | 29.5 | 24.0 | | |
| M21893-06-20 | 10 | -6 | 3/8" | M 20X1.5 | 13.25 | 7.0 | 36.5 | 4.0 | 33.5 | 24.0 | | |
| M21893-08-24 | 12 | -8 | 1/2" | M 24X1.5 | 16.75 | 12.0 | 45.0 | 3.5 | 41.0 | 30.0 | | |
| M21893-10-30 | 16 | -10 | 5/8" | M 30X1.5 | 21.25 | 12.5 | 51.5 | 2.0 | 53.5 | 36.0 | | |
| M21893-12-36 | 19 | -12 | 3/4" | M 36X1.5 | 26.75 | 15.0 | 61.5 | 4.7 | 60.0 | 41.0 | | |



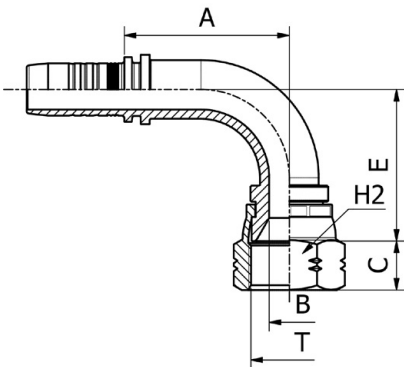
JIS STANDARD CONNECTIONS

M24011/M24012

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

FITTINGS 166

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | |
| M24011-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 4.0 | 23.0 | 10.5 | 19.0 | 19.0 | | |
| M24011-04-18 | 6 | - 4 | 1/4" | M 18X1.5 | 7.0 | 22.5 | 11.5 | 24.0 | 24.0 | | |
| M24011-05-16 | 8 | - 5 | 5/16" | M 16X1.5 | 5.5 | 22.5 | 9.3 | 21.0 | 21.0 | | |
| M24011-06-14 | 10 | - 6 | 3/8" | M 14X1.5 | 4.0 | 23.5 | 10.5 | 19.0 | 19.0 | | |
| M24011-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 7.0 | 23.5 | 11.5 | 24.0 | 24.0 | | |
| M24011-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 9.3 | 25.0 | 13.0 | 27.0 | 27.0 | | |
| M24011-10-24 | 16 | - 10 | 5/8" | M 24X1.5 | 12.5 | 26.5 | 15.1 | 32.0 | 32.0 | | |
| M24011-12-30 | 19 | - 12 | 3/4" | M 30X1.5 | 15.0 | 31.5 | 18.3 | 36.0 | 36.0 | | |
| M24011-16-33 | 25 | - 16 | 1" | M 33X1.5 | 19.8 | 33.5 | 21.3 | 41.0 | 41.0 | | |
| M24011-20-36 | 31 | - 20 | 1.1/4" | M 36X1.5 | 19.8 | 41.0 | 20.0 | 46.0 | 46.0 | | |
| M24012-24-42 | 38 | - 24 | 1.1/2" | M 42X1.5 | 26.0 | 44.0 | 18.8 | 55.0 | 55.0 | | |



JIS STANDARD CONNECTIONS

M24091

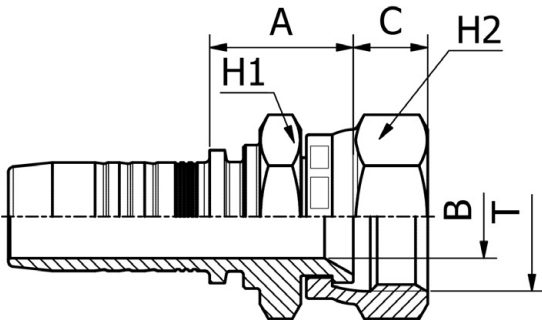
90° JIS METRIC FEMALE 60° CONE SEAT

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|----------|---------------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M24091-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 4.0 | 29.0 | 10.5 | 28.5 | 19.0 | |
| M24091-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 7.0 | 35.5 | 11.5 | 34.0 | 24.0 | |
| M24091-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 9.3 | 44.0 | 13.0 | 40.0 | 27.0 | |
| M24091-10-24 | 16 | - 10 | 5/8" | M 24X1.5 | 12.5 | 53.5 | 15.2 | 47.0 | 32.0 | |
| M24091-12-30 | 19 | - 12 | 3/4" | M 30X1.5 | 15.0 | 61.5 | 18.3 | 56.5 | 36.0 | |

JIS STANDARD CONNECTIONS

M23811

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



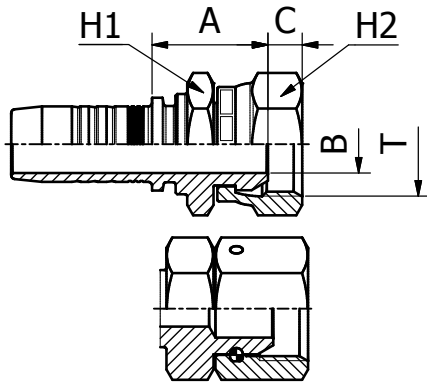
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | | |
| M23811-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 18.5 | 8.3 | 19.0 | 19.0 | | |
| M23811-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 23.0 | 10.0 | 22.0 | 22.0 | | |
| M23811-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 22.0 | 11.5 | 27.0 | 27.0 | | |
| M23811-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 26.0 | 13.5 | 32.0 | 32.0 | | |
| M23811-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 30.5 | 14.5 | 38.0 | 38.0 | | |

167 FITTINGS

JIS STANDARD CONNECTIONS

M20711/M20712

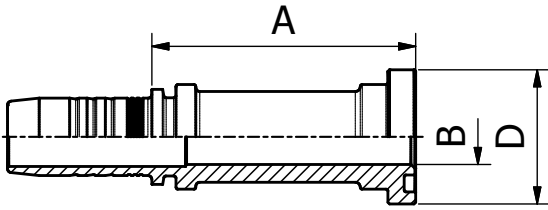
JIS BSP FEMALE 60° CONE
(NISSAN) - JIS B 8363



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | | |
| M20711-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 22.5 | 4.5 | 19.0 | 19.0 | | |
| M20711-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 24.5 | 6.4 | 22.0 | 22.0 | | |
| M20711-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 26.5 | 6.7 | 27.0 | 27.0 | | |
| M20711-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 30.0 | 8.9 | 32.0 | 32.0 | | |
| M20712-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | | 9.3 | 29.0 | 6.5 | 27.0 | 27.0 | | |
| M20712-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 30.5 | 9.0 | 32.0 | 32.0 | | |
| M20712-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 35.5 | 10.5 | 38.0 | 38.0 | | |
| M20712-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 26.0 | 44.5 | 12.5 | 50.0 | 50.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M24111



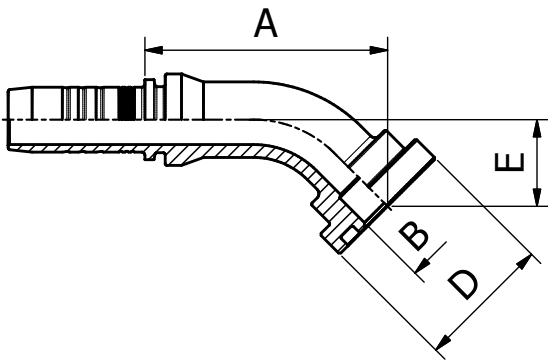
STRAIGHT KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|--------|---------------|------|------|---|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | | | |
| M24111-08-10 | 12 | -8 | 1/2" | 5/8" | 14.0 | 66.0 | 34.0 | | | | |
| M24111-10-10 | 16 | -10 | 5/8" | 5/8" | 14.0 | 65.5 | 34.0 | | | | |
| M24111-12-10 | 19 | -12 | 3/4" | 5/8" | 14.0 | 66.5 | 34.0 | | | | |

FITTINGS 168

ORIGINAL EQUIPMENT CONNECTIONS

M24141

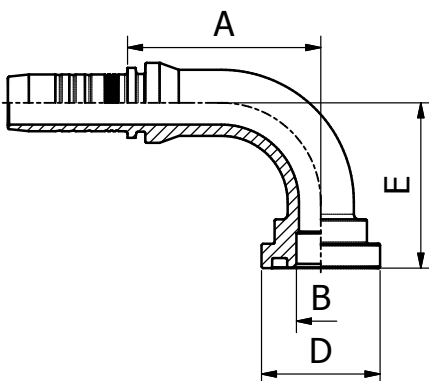


45° KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|--------|---------------|------|------|------|----|----|
| | DN | Dash | inch | | inch | B | A | C | H1 | H2 |
| M24141-10-10 | 16 | -10 | 5/8" | 5/8" | 14.0 | 61.0 | 34.0 | 22.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M24191



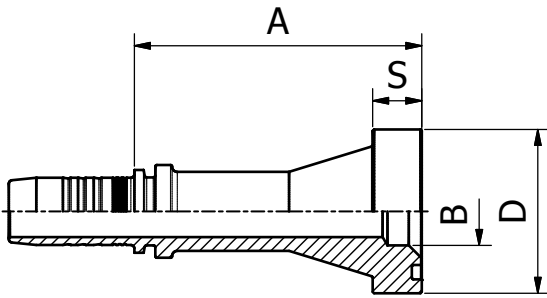
90° KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|--------|---------------|------|------|------|----|----|
| | DN | Dash | inch | | inch | B | A | C | H1 | H2 |
| M24191-10-10 | 16 | -10 | 5/8" | 5/8" | 14.0 | 56.0 | 34.0 | 47.5 | | |
| M24191-12-10 | 19 | -12 | 3/4" | 5/8" | 14.0 | 56.0 | 34.0 | 47.5 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M23911

STRAIGHT SUPERCAT FLANGE

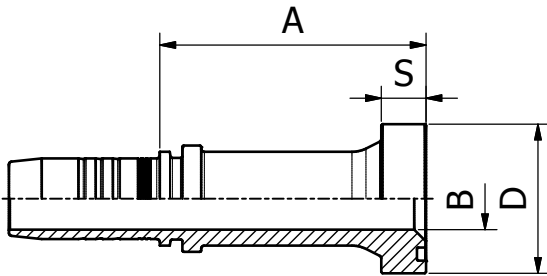


| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | | | inch | B | A | D | | | |
| M23911-12-12 | 19 | -12 | 3/4" | 3/4" | | 15.0 | 74.5 | 41.5 | 14.3 | | | |
| 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 | 87.0 | 47.7 | 14.3 | | | |
| M23911-16-20 | 25 | -16 | 1" | 1.1/4" | | 26.0 | 92.5 | 54.0 | 14.3 | | | |
| M23911-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 86.0 | 54.0 | 14.3 | | | |
| M23911-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 94.0 | 63.6 | 14.3 | | | |

ORIGINAL EQUIPMENT CONNECTIONS

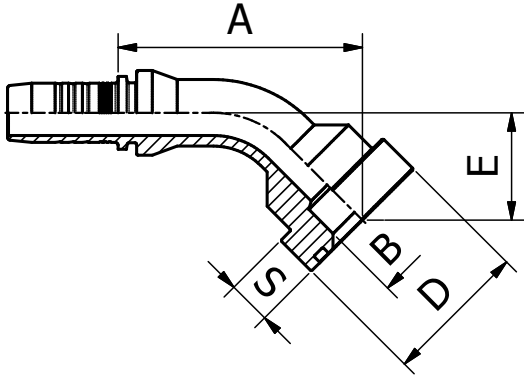
M23911CT

STRAIGHT REALCAT FLANGE



| PART. REF. | HOSE BORE | | | FLANGE | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | | | inch | B | A | D | | | |
| M23911-16-16CT | 25 | -16 | 1" | 1" | | 19.8 | 85.0 | 47.7 | 14.3 | | | |
| M23911-20-20CT | 31 | -20 | 1.1/4" | 1.1/4" | | 26.0 | 88.5 | 54.0 | 14.3 | | | |
| M23911-24-24CT | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 93.0 | 63.6 | 14.3 | | | |

ORIGINAL EQUIPMENT CONNECTIONS



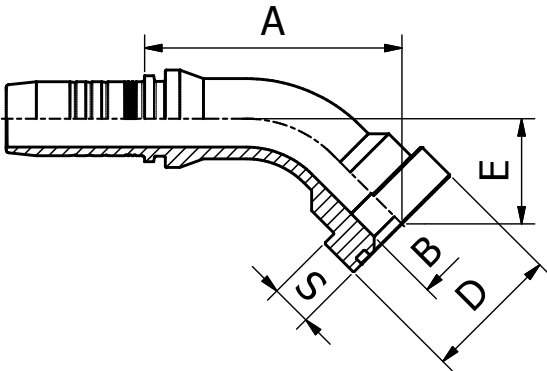
M23941

45° SUPERCAT FLANGE

FITTINGS 170

| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M23941-12-12 | 19 | -12 | 3/4" | 3/4" | 15.0 | 77.0 | 41.5 | 32.0 | 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" | 26.0 | 92.5 | 54.0 | 40.5 | 14.3 | | |
| M23941-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 99.0 | 54.0 | 41.5 | 14.3 | | |
| M23941-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 119.0 | 63.6 | 45.5 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS



M23941CT

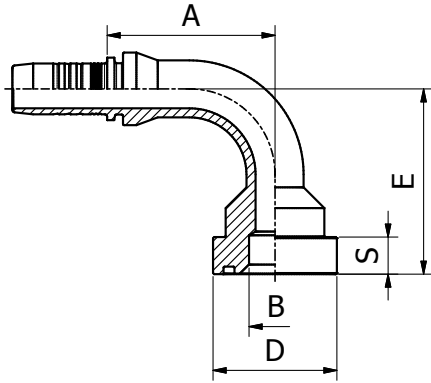
45° REALCAT FLANGE

| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS 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" | 26.0 | 93.0 | 54.0 | 40.5 | 14.3 | | |
| M23941-20-20CT | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 99.0 | 54.0 | 41.5 | 14.3 | | |
| M23941-24-24CT | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 119.0 | 63.7 | 45.0 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M23991

90° SUPERCAT FLANGE



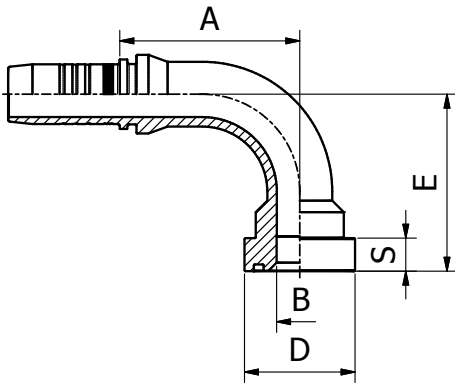
| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M23991-12-12 | 19 | -12 | 3/4" | 3/4" | 15.0 | 64.5 | 41.5 | 64.5 | 14.3 | | |
| 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" | 26.0 | 75.5 | 54.0 | 80.5 | 14.3 | | |
| M23991-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 85.5 | 54.0 | 87.0 | 14.3 | | |
| M23991-20-24 | 31 | -20 | 1.1/4" | 1.1/2" | 32.0 | 85.5 | 63.7 | 93.0 | 14.3 | | |

171 FITTINGS

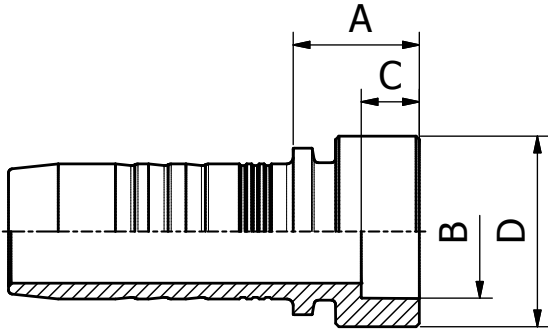
ORIGINAL EQUIPMENT CONNECTIONS

M23991CT

90° REALCAT FLANGE



| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS 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" | 26.0 | 75.5 | 54.0 | 80.5 | 14.3 | | |
| M23991-20-20CT | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 85.5 | 54.0 | 87.0 | 14.3 | | |
| M23991-24-24CT | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 106.0 | 63.7 | 96.0 | 14.3 | | |



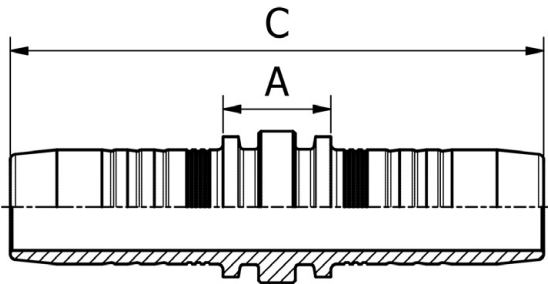
TAIL

M..IP..

WELDING TAIL

FITTINGS 172

| PART. REF. | HOSE BORE | | | PART. REF. | PART. REF. | DIMENSIONS mm | | | | | | |
|------------|-----------|------|--------|------------|------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | | | B | A | C | D | | | |
| M03IP06 | 5 | - 3 | 3/16" | | | 6.0 | 11.5 | 5.0 | 10.0 | | | |
| M04IP08 | 6 | - 4 | 1/4" | | | 8.0 | 13.0 | 5.0 | 12.0 | | | |
| M05IP10 | 8 | - 5 | 5/16" | | | 10.0 | 13.5 | 6.0 | 14.0 | | | |
| M06IP12 | 10 | - 6 | 3/8" | | | 12.0 | 13.5 | 6.0 | 16.0 | | | |
| M06IP14 | 10 | - 6 | 3/8" | | | 14.0 | 13.5 | 6.0 | 18.0 | | | |
| M08IP15 | 12 | - 8 | 1/2" | | | 15.0 | 14.0 | 6.0 | 20.0 | | | |
| M08IP16 | 12 | - 8 | 1/2" | | | 16.0 | 14.0 | 6.0 | 20.0 | | | |
| M10IP18 | 16 | - 10 | 5/8" | | | 18.0 | 15.0 | 7.0 | 23.0 | | | |
| M12IP22 | 19 | - 12 | 3/4" | | | 22.0 | 16.0 | 7.0 | 26.0 | | | |
| M16IP28 | 25 | - 16 | 1" | | | 28.0 | 18.5 | 8.0 | 34.0 | | | |
| M20IP35 | 31 | - 20 | 1.1/4" | | | 35.0 | 20.5 | 9.0 | 40.0 | | | |
| M24IP40 | 38 | - 24 | 1.1/2" | | | 40.0 | 21.5 | 9.0 | 50.0 | | | |
| M32IP50 | 51 | - 32 | 2" | | | 50.0 | 23.0 | 10.0 | 60.0 | | | |
| M40IP60 | 63 | - 40 | 2.1/2" | | | 61.0 | 19.0 | 7.0 | 73.0 | | | |
| M48IP70 | 76 | - 48 | 3" | | | 70.0 | 38.0 | 10.0 | 89.0 | | | |



DOUBLE CONNECTOR

M10050

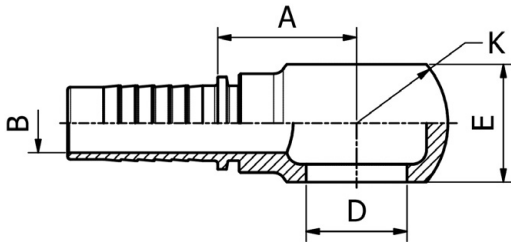
DOUBLE CONNECTOR

| PART. REF. | HOSE BORE | | | PART. REF. | PART. REF. | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|------------|------------|---------------|------|-------|--|--|--|--|
| | DN | Dash | inch | | | B | A | C | | | | |
| M10050-03-03 | 5 | - 3 | 3/16" | | | 3.0 | 15.5 | 58.2 | | | | |
| M10050-04-04 | 6 | - 4 | 1/4" | | | 4.0 | 14.0 | 69.0 | | | | |
| M10050-05-05 | 8 | - 5 | 5/16" | | | 5.5 | 14.0 | 70.0 | | | | |
| M10050-06-06 | 10 | - 6 | 3/8" | | | 7.0 | 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 | 84.0 | | | | |
| M10050-12-12 | 19 | - 12 | 3/4" | | | 15.0 | 18.5 | 91.5 | | | | |
| M10050-16-16 | 25 | - 16 | 1" | | | 19.8 | 22.5 | 119.0 | | | | |
| M10050-20-20 | 31 | - 20 | 1.1/4" | | | 26.0 | 23.0 | 128.1 | | | | |
| M10050-24-24 | 38 | - 24 | 1.1/2" | | | 32.0 | 23.5 | 147.5 | | | | |

BANJO CONNECTIONS

O20310

BSP BANJO



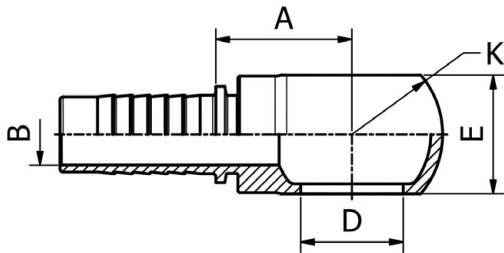
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|-----------|---------------|------|-------|------|------|--|--|
| | DN | Dash | inch | T | B | A | D | E | K | | |
| O20310-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.4 | 22.0 | 13.25 | 15.0 | 24.0 | | |
| O20310-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 4.4 | 23.5 | 16.7 | 18.0 | 28.0 | | |
| O20310-05-04 | 8 | - 5 | 5/16" | 1/4" - 19 | 5.0 | 23.0 | 13.2 | 14.0 | 24.0 | | |
| O20310-05-06 | 8 | - 5 | 5/16" | 3/8" - 19 | 5.6 | 23.0 | 16.7 | 20.0 | 29.0 | | |
| O20310-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 24.5 | 16.7 | 20.0 | 29.0 | | |
| O20310-06-08 | 10 | - 6 | 3/8" | 1/2" - 19 | 7.1 | 27.0 | 21.0 | 25.0 | 38.0 | | |
| O20310-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.8 | 27.5 | 21.0 | 25.0 | 38.0 | | |
| O20310-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.7 | 29.5 | 23.0 | 27.0 | 40.0 | | |
| O20310-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.5 | 36.5 | 26.5 | 31.0 | 48.0 | | |
| O20310-16-16 | 25 | - 16 | 1" | 1" - 11 | 20.5 | 40.5 | 33.3 | 42.0 | 60.0 | | |

173 FITTINGS

BANJO CONNECTIONS

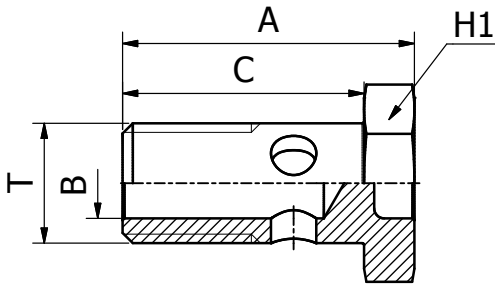
O20910

METRIC BANJO
DIN 7642



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|-------|----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | D | E | K | | |
| O20910-04-12 | 6 | - 4 | 1/4" | M 12X1.5 | 4.4 | 22.5 | 12.0 | 12.0 | 20.0 | | |
| O20910-04-14 | 6 | - 4 | 1/4" | M 14X1.5 | 4.4 | 23.5 | 14.0 | 14.0 | 24.0 | | |
| O20910-05-14 | 8 | - 5 | 5/16" | M 14X1.5 | 5.6 | 23.5 | 14.0 | 14.0 | 24.0 | | |
| O20910-06-14 | 10 | - 6 | 3/8" | M 14X1.5 | 7.1 | 25.0 | 14.0 | 14.0 | 24.0 | | |
| O20910-06-16 | 10 | - 6 | 3/8" | M 16X1.5 | 7.1 | 25.0 | 16.0 | 16.0 | 28.0 | | |
| O20910-06-18 | 10 | - 6 | 3/8" | M 18X1.5 | 7.1 | 27.0 | 18.0 | 20.0 | 32.0 | | |
| O20910-08-18 | 12 | - 8 | 1/2" | M 18X1.5 | 9.8 | 28.0 | 18.0 | 20.0 | 32.0 | | |
| O20910-08-22 | 12 | - 8 | 1/2" | M 22X1.5 | 9.8 | 31.0 | 22.0 | 25.0 | 39.0 | | |
| O20910-10-22 | 16 | - 10 | 5/8" | M 22X1.5 | 12.7 | 31.0 | 22.0 | 25.0 | 39.0 | | |
| O20910-12-26 | 19 | - 12 | 3/4" | M 26X1.5 | 15.5 | 34.5 | 26.0 | 30.0 | 46.0 | | |

BOLT



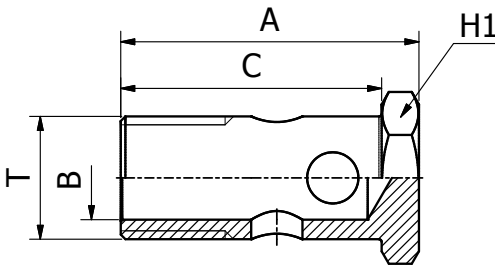
080810

METRIC BOLT - DIN 7643

FITTINGS 174

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|----------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | | |
| O80810-12 | | | | M 12X1.5 | 7.0 | 29.0 | 24.0 | 17.0 | | | |
| O80810-14 | | | | M 14X1.5 | 9.0 | 31.0 | 26.0 | 19.0 | | | |
| O80810-16 | | | | M 16X1.5 | 11.0 | 33.0 | 28.0 | 22.0 | | | |
| O80810-18 | | | | M 18X1.5 | 13.0 | 37.0 | 32.0 | 24.0 | | | |
| O80810-22 | | | | M 22X1.5 | 16.0 | 45.0 | 39.0 | 27.0 | | | |
| O80810-26 | | | | M 26X1.5 | 20.0 | 51.0 | 45.0 | 32.0 | | | |

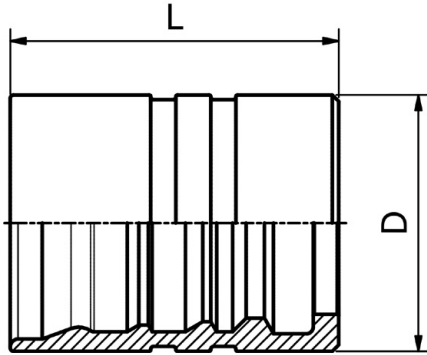
BOLT



080210

BSP BOLT

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|-----------|---------------|------|------|------|----|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | | |
| O80210-04 | | | | 1/4" - 19 | 6.0 | 34.5 | 28.5 | 17.0 | | | |
| O80210-06 | | | | 3/8" - 19 | 9.0 | 45.5 | 38.5 | 22.0 | | | |
| O80210-08 | | | | 1/2" - 14 | 13.0 | 52.0 | 44.0 | 27.0 | | | |
| O80210-10 | | | | 5/8" - 14 | 15.0 | 56.5 | 48.5 | 30.0 | | | |
| O80210-12 | | | | 3/4" - 14 | 18.0 | 64.0 | 54.0 | 32.0 | | | |
| O80210-16 | | | | 1" - 11 | 24.0 | 77.5 | 68.5 | 41.0 | | | |



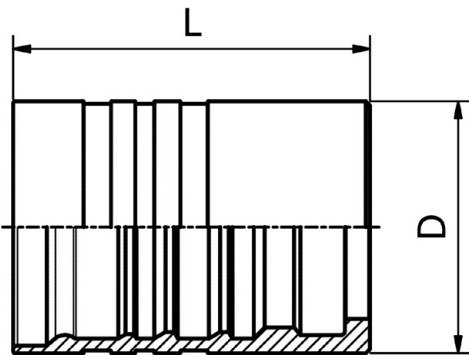
FERRULE

M01500

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

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M01500-10 | 16 | - 10 | 5/8" | | | 35.0 | 40.9 | | | | |
| M01500-12 | 19 | - 12 | 3/4" | | | 40.0 | 51.4 | | | | |
| M01500-16 | 25 | - 16 | 1" | | | 48.0 | 64.5 | | | | |
| M01500-20 | 31 | - 20 | 1.1/4" | | | 57.0 | 84.0 | | | | |
| M01500-24 | 38 | - 24 | 1.1/2" | | | 64.3 | 94.0 | | | | |
| M01500-32 | 51 | - 32 | 2" | | | 83.5 | 107.0 | | | | |
| M01500-40 | 63 | - 40 | 2.1/2" | | | 100.0 | 135.0 | | | | |
| M01500-48 | 76 | - 48 | 3" | | | 107.0 | 125.0 | | | | |

175 FITTINGS

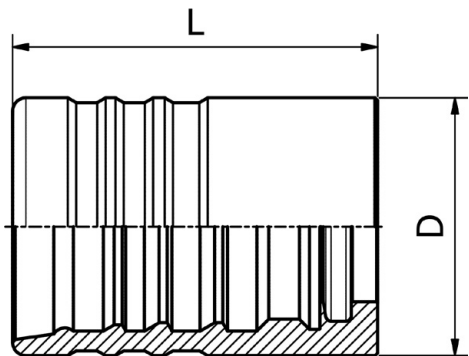


FERRULE

M01600

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

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M01600-20 | 31 | - 20 | 1.1/4" | | | 60.0 | 85.0 | | | | |
| M01600-24 | 38 | - 24 | 1.1/2" | | | 69.0 | 96.0 | | | | |



FERRULE

M01800/M01810/M01850

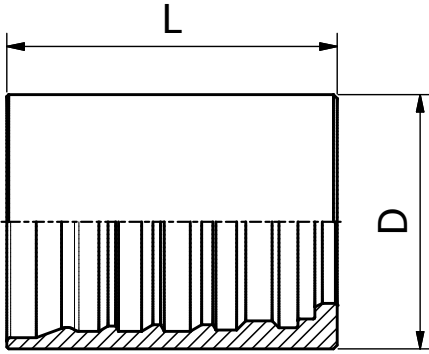
DOUBLE SKIVE FERRULE FOR EXTRA DUTY SPIRAL HOSES (6 PLY)

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M01850-12 | 19 | -12 | 3/4" | | | 45.1 | 51.4 | | | | |
| M01850-16 | 25 | -16 | 1" | | | 53.5 | 64.5 | | | | |
| M01850-20 | 31 | - 20 | 1.1/4" | | | 65.0 | 88.2 | | | | |
| M01800-32 | 51 | - 32 | 2" | | | 86.5 | 108.0 | | | | |
| M01810-40 | 63 | - 40 | 2.1/2" | | | 103.0 | 135.0 | | | | |
| M01810-48 | 76 | - 48 | 3" | | | 113.5 | 125.0 | | | | |

FERRULE

M01900

DOUBLE SKIVE FERRULE



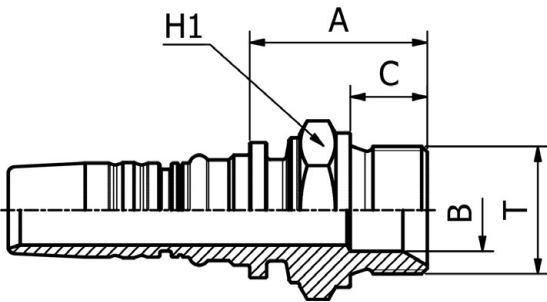
| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-----|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M01900-20 | 31 | -20 | 1.1/4" | | | 68 | 88,2 | | | | |
| M01900-40 | 63 | -40 | 2.1/2" | | | 109 | 135 | | | | |

FITTINGS 176

BS STANDARD CONNECTIONS

M30510

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

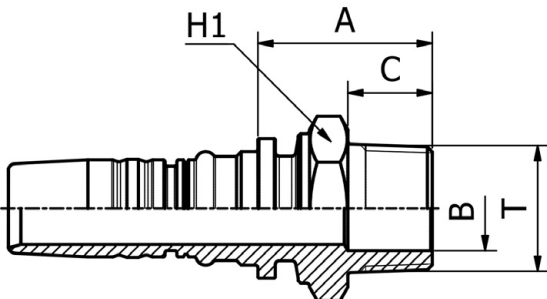


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M30510-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 17.0 | 37.0 | 16.0 | 32.0 | | | |
| M30510-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 22.5 | 43.0 | 19.0 | 41.0 | | | |
| M30510-16-16 | 25 | - 16 | 1" | 1" - 11 | 22.5 | 43.0 | 19.0 | 41.0 | | | |
| M30510-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 28.5 | 48.0 | 20.0 | 50.0 | | | |
| M30510-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 28.5 | 50.5 | 20.0 | 50.0 | | | |
| M30510-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 33.5 | 54.5 | 22.0 | 55.0 | | | |
| M30510-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 58.0 | 25.0 | 70.0 | | | |

BS STANDARD CONNECTIONS

M30710

BSP
MALE TAPERED)

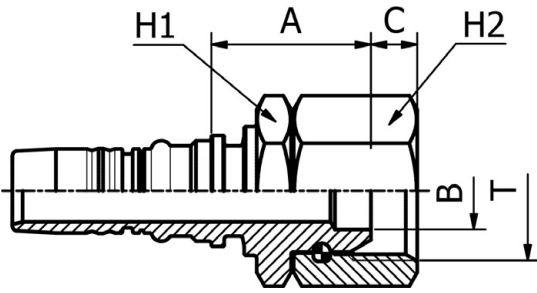


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M30710-12-12 | 19 | - 12 | 3/4" | 3/4" BSPT | 17.0 | 35.0 | 17.0 | 32.0 | | | |
| M30710-16-16 | 25 | - 16 | 1" | 1" BSPT | 22.5 | 41.5 | 21.0 | 41.0 | | | |
| M30710-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" BSPT | 28.5 | 82.0 | 23.0 | 46.0 | | | |
| M30710-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 33.5 | 52.0 | 23.0 | 55.0 | | | |
| M30710-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 56.1 | 27.0 | 70.0 | | | |

BS STANDARD CONNECTIONS

M40512

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

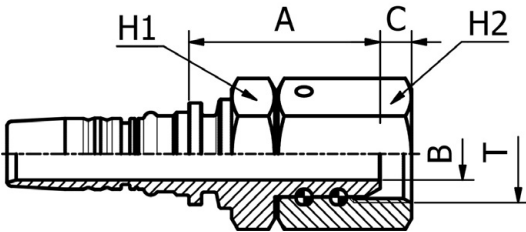


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|------|-----------|---------------|------|------|-----|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | | |
| M40512-10-12H32 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 31.0 | 9.0 | 32.0 | 32.0 | | |

BS STANDARD CONNECTIONS

M40514

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

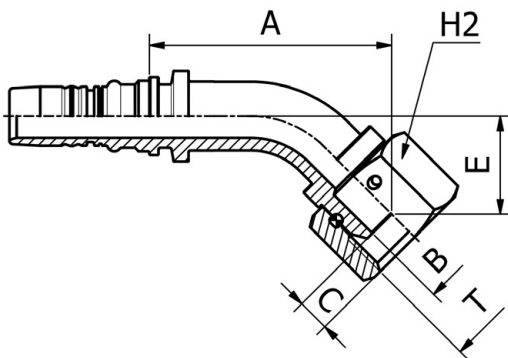


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 | | |
| M40514-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 14.5 | 53.0 | 8.7 | 36.0 | 36.0 | | |
| M40514-16-16 | 25 | - 16 | 1" | 1" - 11 | | 18.0 | 58.0 | 11.1 | 41.0 | 41.0 | | |
| M40514-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 23.0 | 75.0 | 10.1 | 50.0 | 55.0 | | |
| M40514-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | | 27.0 | 76.0 | 12.5 | 55.0 | 60.0 | | |

BS STANDARD CONNECTIONS

M40542

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

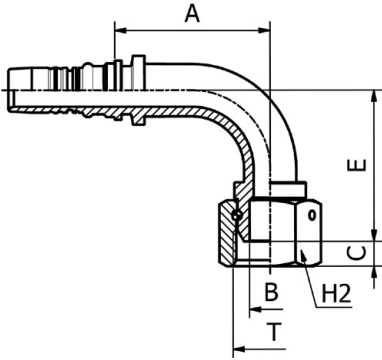


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|-----|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | | |
| M40542-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 67.0 | 9.0 | 27.0 | 32.0 | | |

BS STANDARD CONNECTIONS

M40592

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



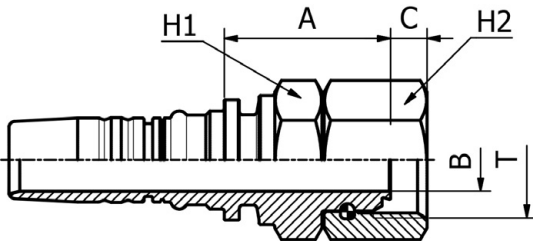
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|-----|------|------|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| M40592-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 56.5 | 9.0 | 55.0 | 32.0 |

FITTINGS 178

BS STANDARD CONNECTIONS

M40812

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

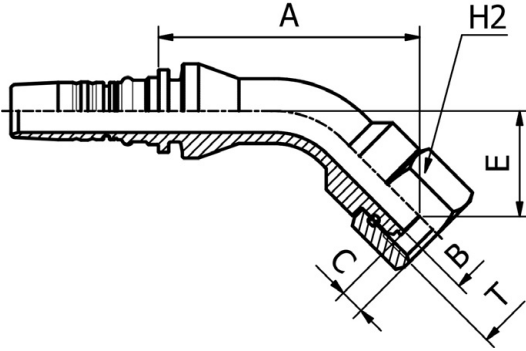


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | H1 | H2 |
| M40812-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 14.5 | 39.0 | 8.5 | 32.0 | 32.0 |
| M40812-12-16 | 19 | - 12 | 3/4" | 1" - 11 | | 19.0 | 36.5 | 10.6 | 32.0 | 41.0 |
| M40812-16-12 | 25 | - 16 | 1" | 3/4" - 14 | | 15.0 | 35.0 | 8.5 | 41.0 | 32.0 |
| M40812-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.5 | 44.5 | 10.6 | 41.0 | 41.0 |
| M40812-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | | 26.1 | 41.0 | 10.5 | 41.0 | 50.0 |
| M40812-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | | 19.0 | 44.5 | 10.6 | 50.0 | 41.0 |
| M40812-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 26.1 | 52.5 | 10.5 | 50.0 | 50.0 |
| M40812-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | | 32.1 | 46.0 | 12.5 | 50.0 | 60.0 |
| M40812-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" - 11 | | 26.1 | 48.5 | 10.5 | 60.0 | 50.0 |
| M40812-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | | 32.1 | 51.5 | 12.5 | 60.0 | 60.0 |
| M40812-32-32 | 51 | - 32 | 2" | 2" - 11 | | 42.0 | 51.5 | 16.1 | 70.0 | 70.0 |

BS STANDARD CONNECTIONS

M40842

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

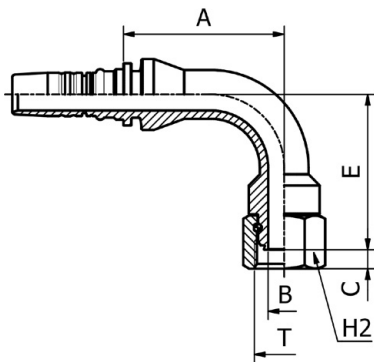


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M40842-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 14.5 | 88.0 | 8.5 | 35.0 | 32.0 | | |
| M40842-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.0 | 89.5 | 10.6 | 36.5 | 41.0 | | |
| M40842-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 105.5 | 8.5 | 36.0 | 32.0 | | |
| M40842-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 97.0 | 10.6 | 40.0 | 41.0 | | |
| M40842-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 108.5 | 10.5 | 38.0 | 50.0 | | |
| M40842-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.0 | 118.0 | 10.6 | 47.5 | 41.0 | | |
| M40842-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.1 | 120.0 | 10.5 | 49.5 | 50.0 | | |
| M40842-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 114.5 | 12.5 | 40.0 | 60.0 | | |
| M40842-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.1 | 126.5 | 12.5 | 50.0 | 60.0 | | |
| M40842-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 162.5 | 16.1 | 66.5 | 70.0 | | |

BS STANDARD CONNECTIONS

M40892

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

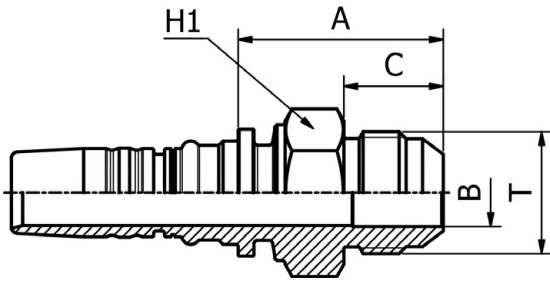


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M40892-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 14.5 | 72.5 | 8.5 | 70.0 | 32.0 | | |
| M40892-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.0 | 72.5 | 10.6 | 71.0 | 41.0 | | |
| M40892-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 82.0 | 10.6 | 80.5 | 41.0 | | |
| M40892-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 95.0 | 10.5 | 78.5 | 50.0 | | |
| M40892-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.1 | 98.5 | 10.5 | 98.0 | 50.0 | | |
| M40892-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 98.5 | 12.5 | 84.5 | 60.0 | | |
| M40892-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.1 | 111.5 | 12.5 | 109.0 | 60.0 | | |
| M40892-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 143.0 | 16.1 | 140.5 | 70.0 | | |

SAE STANDARD CONNECTIONS

M32510

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

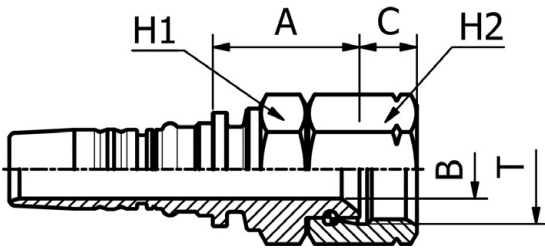


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M32510-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.0 | 41.0 | 19.5 | 27.0 | | | |
| M32510-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 45.5 | 22.0 | 32.0 | | | |
| M32510-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 20.0 | 50.5 | 23.0 | 38.0 | | | |
| M32510-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 57.0 | 24.3 | 42.0 | | | |
| M32510-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 66.0 | 24.3 | 46.0 | | | |
| M32510-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 64.0 | 27.5 | 50.0 | | | |
| M32510-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 81.0 | 34.0 | 70.0 | | | |

SAE STANDARD CONNECTIONS

M42512

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

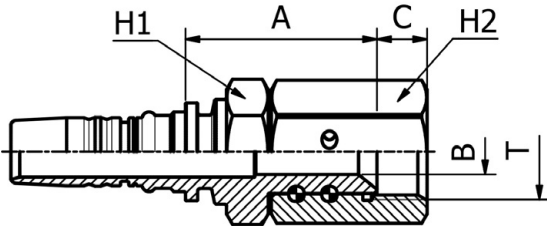


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M42512-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 36.0 | 14.2 | 32.0 | 32.0 | | |
| M42512-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 21.7 | 32.5 | 15.2 | 41.0 | 41.0 | | |
| M42512-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 40.5 | 15.2 | 41.0 | 41.0 | | |
| M42512-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.1 | 44.0 | 16.2 | 50.0 | 50.0 | | |
| M42512-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 51.5 | 16.2 | 50.0 | 50.0 | | |
| M42512-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 30.5 | 51.0 | 18.8 | 55.0 | 60.0 | | |
| M42512-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 31.0 | 54.5 | 18.8 | 55.0 | 60.0 | | |
| M42512-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 54.0 | 24.0 | 70.0 | 75.0 | | |

SAE STANDARD CONNECTIONS

M42714

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

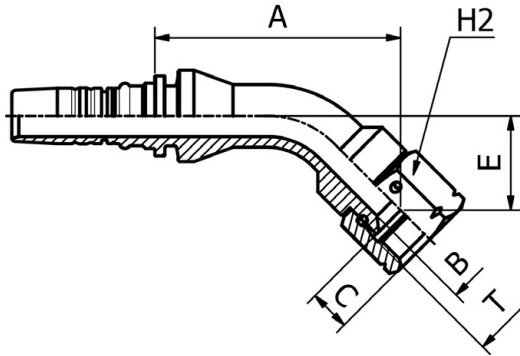


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M42714-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 13.0 | 55.0 | 14.4 | 36.0 | 36.0 | | |
| M42714-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 18.0 | 60.5 | 15.1 | 41.0 | 41.0 | | |
| M42714-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 23.0 | 71.0 | 15.9 | 50.0 | 55.0 | | |
| M42714-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 27.0 | 71.0 | 18.6 | 55.0 | 60.0 | | |
| M42714-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 37.0 | 77.5 | 23.8 | 70.0 | 75.0 | | |

SAE STANDARD CONNECTIONS

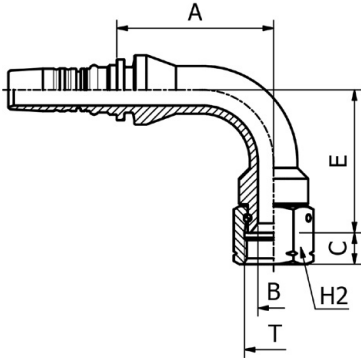
M42542

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 | 15.0 | 86.0 | 14.2 | 33.0 | 32.0 | | |
| M42542-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 95.0 | 15.2 | 37.0 | 41.0 | | |
| M42542-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.1 | 102.5 | 16.2 | 36.5 | 50.0 | | |
| M42542-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 115.5 | 16.2 | 45.0 | 50.0 | | |
| M42542-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 126.5 | 18.8 | 50.0 | 60.0 | | |
| M42542-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 161.5 | 24.0 | 63.5 | 75.0 | | |

SAE STANDARD CONNECTIONS



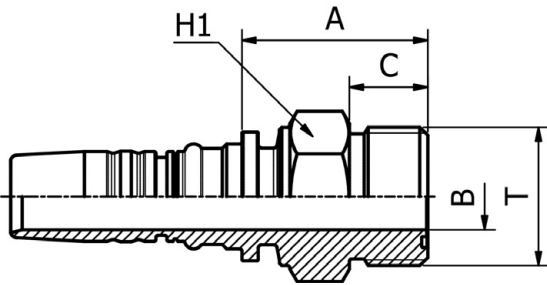
M42592

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42592-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 72.5 | 14.2 | 66.0 | 32.0 | | |
| M42592-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 21.7 | 72.5 | 15.2 | 71.5 | 41.0 | | |
| M42592-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 82.5 | 15.2 | 77.5 | 41.0 | | |
| M42592-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.1 | 90.5 | 16.2 | 76.5 | 50.0 | | |
| M42592-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 98.5 | 16.2 | 92.0 | 50.0 | | |
| M42592-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.1 | 101.5 | 18.8 | 108.0 | 60.0 | | |
| M42592-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 111.5 | 18.8 | 106.0 | 60.0 | | |
| M42592-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 144.5 | 24.0 | 137.0 | 75.0 | | |

FITTINGS 182

SAE STANDARD CONNECTIONS



M32410

ORFS
 MALE
 SAE J516 / ISO 12151-1

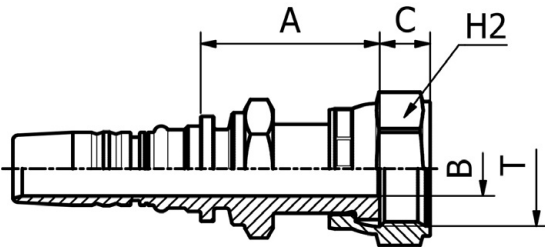
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M32410-10-08 | 16 | - 10 | 5/8" | 13/16" - 16 | 9.3 | 33.0 | 12.8 | 27.0 | | | |
| M32410-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 12.0 | 36.0 | 15.5 | 27.0 | | | |
| M32410-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 15.0 | 39.0 | 17.0 | 32.0 | | | |
| M32410-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 40.5 | 17.0 | 32.0 | | | |
| M32410-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 42.5 | 17.5 | 38.0 | | | |
| M32410-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 45.0 | 17.5 | 41.0 | | | |
| M32410-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 25.0 | 48.0 | 17.5 | 46.0 | | | |
| M32410-20-16 | 31 | - 20 | 1.1/4" | 1.7/16" - 12 | 19.5 | 47.0 | 17.5 | 50.0 | | | |
| M32410-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 50.5 | 17.5 | 46.0 | | | |
| M32410-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 53.0 | 17.5 | 55.0 | | | |
| M32410-32-24 | 51 | - 32 | 2" | 2" - 12 | 31.0 | 53.0 | 17.5 | 70.0 | | | |

SAE STANDARD CONNECTIONS

M42411

ORFS
FEMALE

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



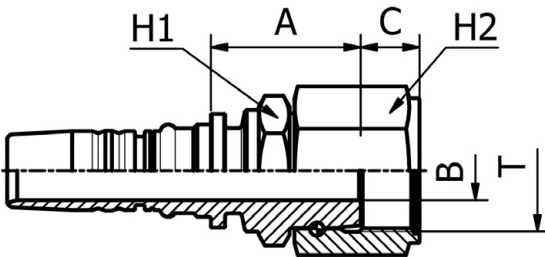
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M42411-10-10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 40.5 | 12.5 | 24.0 | 30.0 | | |
| M42411-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 48.0 | 13.5 | 32.0 | 36.0 | | |
| M42411-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.0 | 50.0 | 13.5 | 36.0 | 41.0 | | |
| M42411-16-12 | 25 | - 16 | 1" | 1.3/16" - 12 | 14.3 | 50.0 | 13.5 | 41.0 | 36.0 | | |
| M42411-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 51.5 | 13.5 | 41.0 | 41.0 | | |
| M42411-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 51.5 | 13.6 | 41.0 | 50.0 | | |
| M42411-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 58.0 | 13.6 | 50.0 | 50.0 | | |
| M42411-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 60.5 | 14.2 | 60.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

M42412

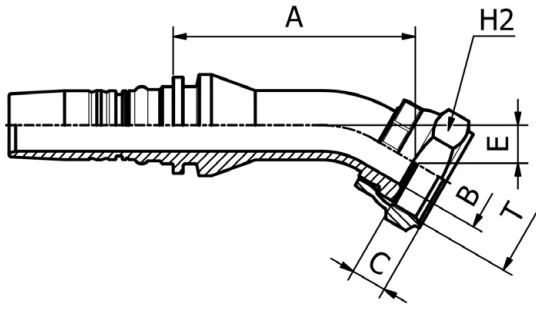
ORFS
FEMALE

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M42412-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 37.0 | 14.1 | 32.0 | 36.0 | | |
| M42412-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 41.0 | 15.0 | 41.0 | 46.0 | | |
| M42412-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 42.0 | 15.0 | 41.0 | 46.0 | | |
| M42412-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 50.0 | 15.1 | 46.0 | 55.0 | | |
| M42412-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 52.0 | 15.1 | 50.0 | 55.0 | | |
| M42412-20-24 | 31 | - 20 | 1.1/4" | 2" - 12 | 31.0 | 53.0 | 15.0 | 55.0 | 60.0 | | |
| M42412-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 55.0 | 15.0 | 60.0 | 60.0 | | |

SAE STANDARD CONNECTIONS



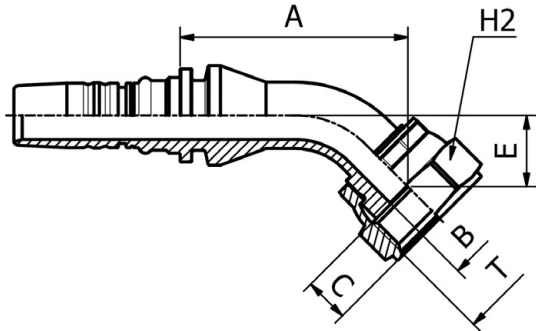
M42431

**30° ORFS
FEMALE SWEPT ELBOW
SAE J516 / ISO 12151-1
(CRIMPED BACK-NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|----------------------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M42431-16-16 | 25 | - 16 | 1" | 1.7/16", 25.4 MM, 1" | 19.5 | 91.0 | 10.3 | 14.0 | 41.0 | | |

FITTINGS 184

SAE STANDARD CONNECTIONS

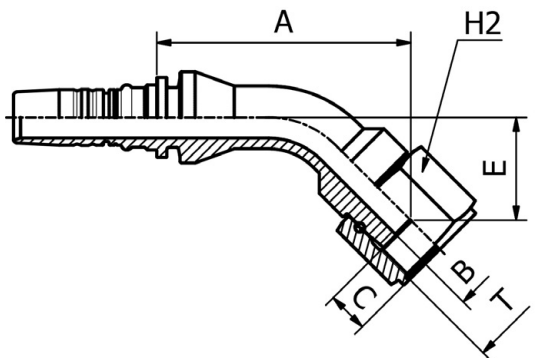


M42441

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M42441-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 14.3 | 56.0 | 13.5 | 21.5 | 36.0 | | |
| M42441-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 69.0 | 13.5 | 21.5 | 36.0 | | |
| M42441-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.0 | 77.5 | 13.5 | 25.0 | 41.0 | | |
| M42441-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 86.0 | 13.5 | 24.0 | 41.0 | | |
| M42441-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 97.0 | 13.6 | 27.0 | 50.0 | | |
| M42441-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 112.0 | 14.2 | 31.5 | 60.0 | | |

SAE STANDARD CONNECTIONS

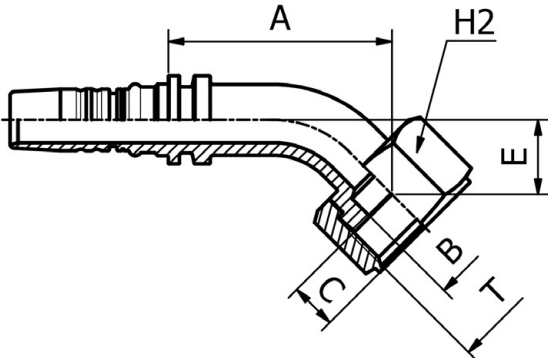


M42442

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M42442-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 89.0 | 14.0 | 36.0 | 36.0 | | |
| M42442-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 100.0 | 15.0 | 42.5 | 46.0 | | |
| M42442-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 119.5 | 15.1 | 49.5 | 55.0 | | |
| M42442-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 128.5 | 15.0 | 52.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

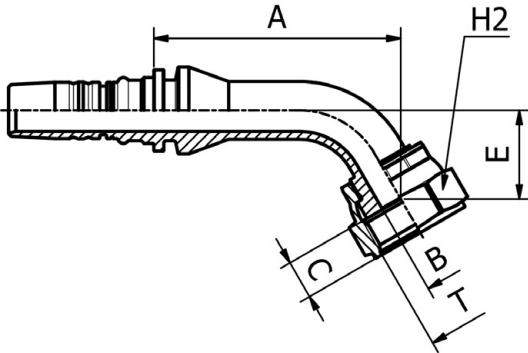


M42443

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42443-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 71.0 | 14.8 | 23.5 | 41.0 | | |
| M42443-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 81.0 | 14.8 | 24.0 | 50.0 | | |
| M42443-20-24 | 31 | - 20 | 1.1/4" | 2" - 12 | 32.0 | 99.0 | 14.8 | 29.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

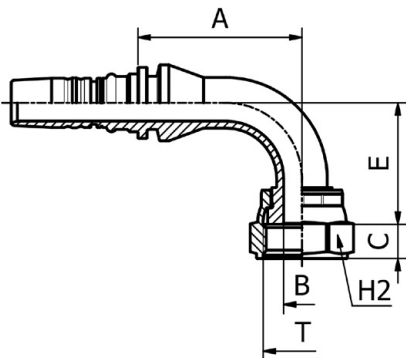


M42461

**60° ORFS
FEMALE SWEPT ELBOW
SAE J516 / ISO 12151-1
(CRIMPED BACK-NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42461-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 85.5 | 13.5 | 30.5 | 36.0 | | |

SAE STANDARD CONNECTIONS



M42491

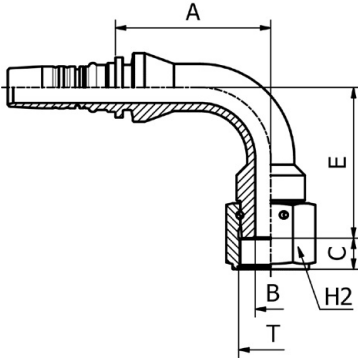
**90° ORFS
FEMALE SWEPT ELBOW
SAE J516 / ISO 12151-1
(CRIMPED BACK-NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|---------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42491-10-12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 14.3 | 51.0 | 13.5 | 47.0 | 36.0 | | |
| M42491-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 65.0 | 13.5 | 48.0 | 36.0 | | |
| M42491-12-12109 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 65.0 | 13.5 | 109.0 | 36.0 | | |
| M42491-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.0 | 70.0 | 13.5 | 53.0 | 41.0 | | |
| M42491-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 85.0 | 13.5 | 57.0 | 41.0 | | |
| M42491-16-16128 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 85.0 | 13.5 | 128.0 | 41.0 | | |
| M42491-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 24.0 | 84.5 | 13.6 | 61.0 | 50.0 | | |
| M42491-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 98.5 | 13.6 | 66.0 | 50.0 | | |
| M42491-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 116.0 | 14.2 | 79.5 | 60.0 | | |

SAE STANDARD CONNECTIONS

M42492

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



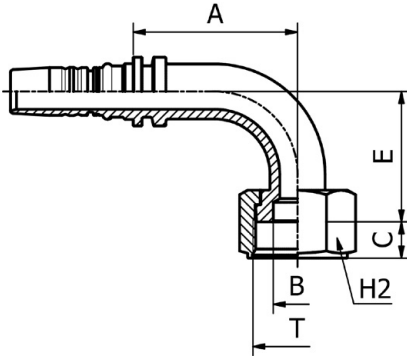
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42492-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 72.5 | 14.1 | 70.5 | 36.0 | | |
| M42492-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 82.5 | 15.0 | 84.5 | 46.0 | | |
| M42492-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 98.5 | 15.1 | 98.0 | 55.0 | | |
| M42492-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 111.5 | 15.0 | 109.0 | 60.0 | | |

FITTINGS 186

SAE STANDARD CONNECTIONS

M42493

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

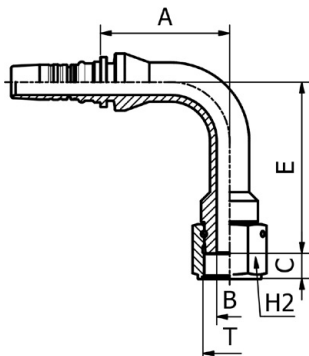


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M42493-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 67.0 | 14.8 | 53.0 | 41.0 | | |
| M42493-16-20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 81.5 | 14.8 | 58.5 | 50.0 | | |
| M42493-20-24 | 31 | - 20 | 1.1/4" | 2" - 12 | 32.0 | 100.0 | 14.8 | 70.5 | 60.0 | | |

SAE STANDARD CONNECTIONS

M44492 LONG DROP

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

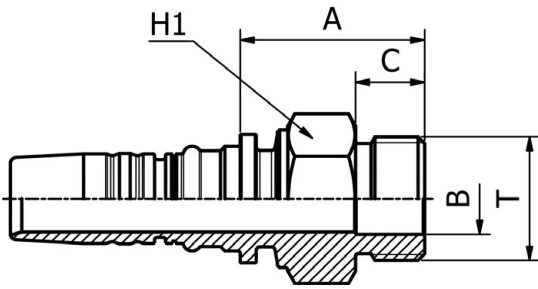


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M44492-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 72.5 | 14.1 | 96.0 | 36.0 | | |
| M44492-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 98.5 | 15.1 | 129.0 | 55.0 | | |

SAE STANDARD CONNECTIONS

M33010

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

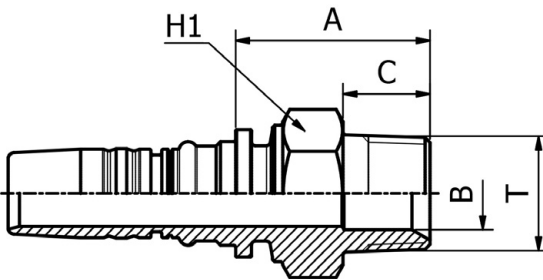


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M33010-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.5 | 42.0 | 15.1 | 32.0 | | | |
| M33010-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.5 | 43.5 | 15.1 | 38.0 | | | |
| M33010-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 27.5 | 47.5 | 15.1 | 46.0 | | | |

SAE STANDARD CONNECTIONS

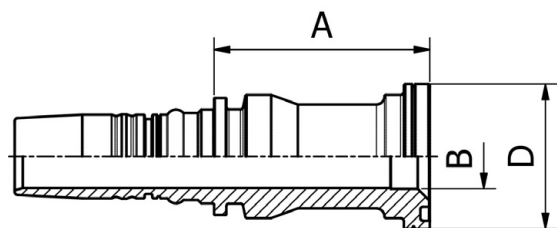
M32810

NPTF
MALE 60° CONE SEAT
SAE J516/J514



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M32810-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 16.0 | 40.7 | 19.2 | 27.0 | | | |
| M32810-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 42.9 | 19.2 | 32.0 | | | |
| M32810-16-16 | 25 | - 16 | 1" | 1" - 11,5 | 19.5 | 50.5 | 24.2 | 38.0 | | | |
| M32810-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11,5 | 26.1 | 61.0 | 25.0 | 46.0 | | | |
| M32810-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11,5 | 32.1 | 62.5 | 26.0 | 50.0 | | | |
| M32810-24-32 | 38 | - 24 | 1.1/2" | 2" - 11,5 | 42.0 | 67.0 | 26.5 | 70.0 | | | |
| M32810-32-32 | 51 | - 32 | 2" | 2" - 11,5 | 42.0 | 67.0 | 26.5 | 70.0 | | | |
| M32810-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" - 8 | 51.5 | 94.5 | 43.0 | 80.0 | | | |
| M32810-48-48 | 76 | - 48 | 3" | 3" - 8 | 62.5 | 123.5 | 51.5 | 100.0 | | | |

SAE STANDARD CONNECTIONS



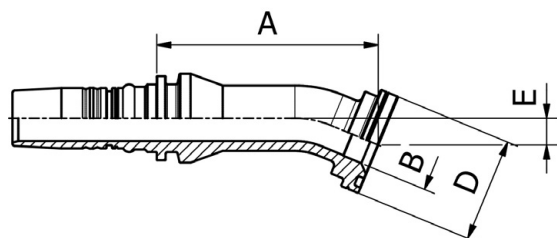
M43310

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|-------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | | | | |
| M43310-10-16 | 16 | - 10 | 5/8" | 1" | 20.0 | 64.0 | 44.6 | | | | |
| M43310-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 60.0 | 38.0 | | | | |
| M43310-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 65.5 | 44.6 | | | | |
| M43310-16-12 | 25 | - 16 | 1" | 3/4" | 16.0 | 67.0 | 38.0 | | | | |
| M43310-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 66.5 | 44.6 | | | | |
| M43310-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 73.0 | 51.0 | | | | |
| M43310-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 75.0 | 51.0 | | | | |
| M43310-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.1 | 80.0 | 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" | 42.0 | 88.5 | 71.6 | | | | |
| M43310-32-24 | 38 | - 24 | 1.1/2" | 2" | 32.1 | 104.0 | 60.5 | | | | |
| M43310-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 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 | 101.0 | 101.6 | | | | |

FITTINGS 188

SAE STANDARD CONNECTIONS



M43320

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

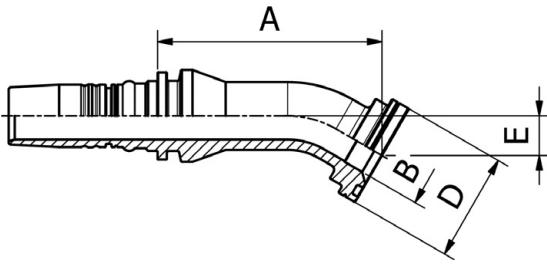
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|--------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | |
| M43320-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 94.5 | 44.6 | 11.5 | | | |

SAE STANDARD CONNECTIONS

M43330

30° ISO / SAE
CODE 61 FLANGE

SAE J516 / ISO 12151-3



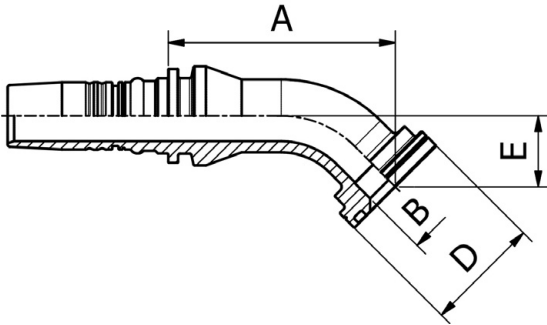
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | | |
| M43330-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 93.0 | 44.6 | 16.5 | | | | |
| M43330-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 106.5 | 51.0 | 17.5 | | | | |
| M43330-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 118.0 | 60.5 | 20.0 | | | | |
| M43330-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 137.0 | 71.6 | 22.0 | | | | |

SAE STANDARD CONNECTIONS

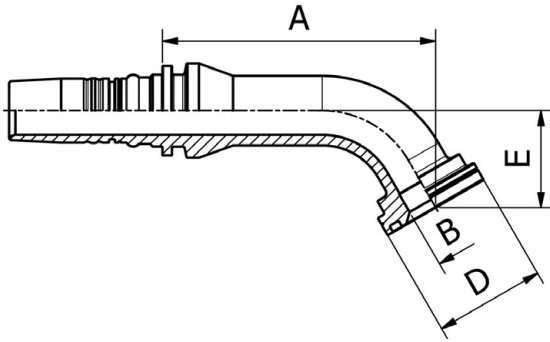
M43340

45° ISO / SAE
CODE 61 FLANGE

SAE J516 / ISO 12151-3



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|-------|------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | | |
| M43340-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 75.5 | 38.0 | 26.0 | | | | |
| M43340-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 76.0 | 44.6 | 23.0 | | | | |
| M43340-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 87.0 | 44.6 | 27.5 | | | | |
| M43340-16-16032 | 25 | - 16 | 1" | 1" | 20.0 | 92.0 | 44.5 | 32.0 | | | | |
| M43340-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 87.5 | 51.0 | 27.5 | | | | |
| M43340-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 100.5 | 51.0 | 29.5 | | | | |
| M43340-20-20038 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 109.0 | 50.9 | 38.0 | | | | |
| M43340-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.1 | 101.5 | 60.5 | 31.0 | | | | |
| M43340-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 111.0 | 60.5 | 34.5 | | | | |
| M43340-24-24044 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 120.0 | 60.5 | 44.0 | | | | |
| M43340-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 113.0 | 71.6 | 34.5 | | | | |
| M43340-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 128.5 | 71.6 | 39.0 | | | | |
| M43340-32-32056 | 51 | - 32 | 2" | 2" | 42.0 | 146.0 | 71.6 | 56.0 | | | | |
| M43340-48-48 | 76 | - 48 | 3" | 3" | 59.0 | 147.5 | 101.6 | 53.0 | | | | |



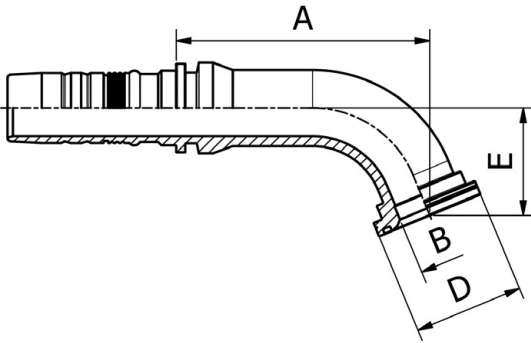
SAE STANDARD CONNECTIONS

M43360

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M43360-16-16 | 25 | - 16 | 1" | 1" | | 20.0 | 110.0 | 44.6 | 39.0 | | | |
| M43360-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.1 | 219.0 | 60.6 | 45.0 | | | |
| M43360-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.1 | 147.0 | 60.5 | 51.0 | | | |
| M43360-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 147.0 | 71.6 | 51.0 | | | |
| M43360-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 175.0 | 71.6 | 58.5 | | | |

FITTINGS 190



SAE STANDARD CONNECTIONS

M43370

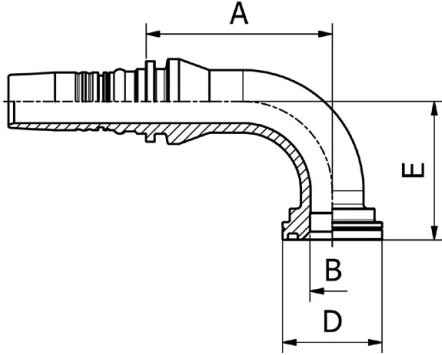
67.5° ISO / SAE
 FLANGE 3000 PSI
 SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M43370-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.1 | 139.5 | 60.5 | 59.0 | | | |
| M43370-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 130.0 | 71.6 | 59.0 | | | |
| M43370-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 167.0 | 71.5 | 68.5 | | | |

SAE STANDARD CONNECTIONS

M43390

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

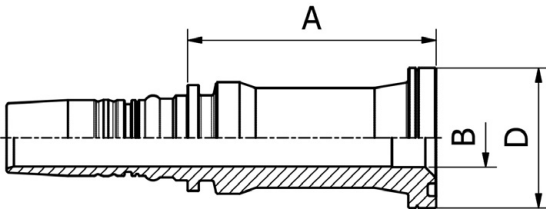


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|--|---------------|-------|-------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M43390-10-16 | 16 | - 10 | 5/8" | 1" | | 20.0 | 71.0 | 44.6 | 52.0 | | | |
| M43390-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 72.0 | 38.0 | 52.0 | | | |
| M43390-12-12058 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 72.0 | 38.0 | 58.0 | | | |
| M43390-12-16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 72.5 | 44.6 | 52.0 | | | |
| M43390-16-16 | 25 | - 16 | 1" | 1" | | 20.0 | 83.5 | 44.6 | 62.0 | | | |
| M43390-16-16070 | 25 | - 16 | 1" | 1" | | 20.0 | 83.5 | 44.5 | 70.0 | | | |
| M43390-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 83.5 | 51.0 | 62.0 | | | |
| M43390-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.1 | 99.0 | 51.0 | 70.0 | | | |
| M43390-20-20090 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.1 | 99.0 | 50.9 | 90.0 | | | |
| M43390-20-16 | 31 | - 20 | 1.1/4" | 1" | | 19.8 | 96.5 | 44.6 | 66.0 | | | |
| M43390-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.1 | 98.5 | 60.5 | 72.0 | | | |
| M43390-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.1 | 111.5 | 60.5 | 84.0 | | | |
| M43390-24-24104 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.1 | 111.5 | 60.5 | 104.0 | | | |
| M43390-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 111.5 | 71.6 | 84.0 | | | |
| M43390-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 133.5 | 71.6 | 99.0 | | | |
| M43390-32-32138 | 51 | - 32 | 2" | 2" | | 42.0 | 133.5 | 71.5 | 138.0 | | | |
| M43390-48-48 | 76 | - 48 | 3" | 3" | | 59.0 | 145.0 | 101.6 | 140.0 | | | |

SAE STANDARD CONNECTIONS

M43610

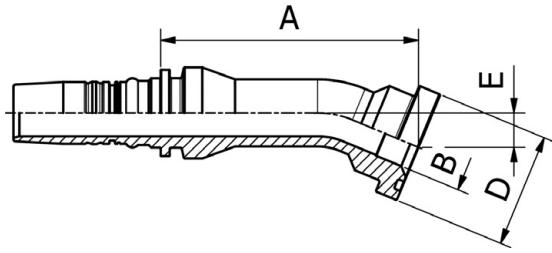
ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3



| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|-------|--|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | | | | |
| M43610-10-12 | 16 | - 10 | 5/8" | 3/4" | | 16.0 | 65.0 | 41.5 | | | | |
| M43610-10-16 | 16 | - 10 | 5/8" | 1" | | 20.0 | 81.5 | 47.7 | | | | |
| M43610-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 71.5 | 41.4 | | | | |
| M43610-12-16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 83.5 | 47.7 | | | | |
| M43610-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 80.5 | 41.4 | | | | |
| M43610-16-16 | 25 | - 16 | 1" | 1" | | 20.0 | 84.5 | 47.7 | | | | |
| M43610-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 89.0 | 54.2 | | | | |
| M43610-20-16 | 31 | - 20 | 1.1/4" | 1" | | 20.0 | 87.0 | 47.7 | | | | |
| M43610-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.1 | 91.0 | 54.2 | | | | |
| M43610-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.1 | 97.0 | 63.7 | | | | |
| M43610-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | | 26.0 | 101.0 | 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" | | 42.0 | 113.0 | 79.6 | | | | |
| M43610-32-24 | 51 | - 32 | 2" | 1.1/2" | | 32.1 | 117.0 | 63.7 | | | | |
| M43610-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 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 | 167.0 | 131.9 | | | | |

191 FITTINGS

SAE STANDARD CONNECTIONS



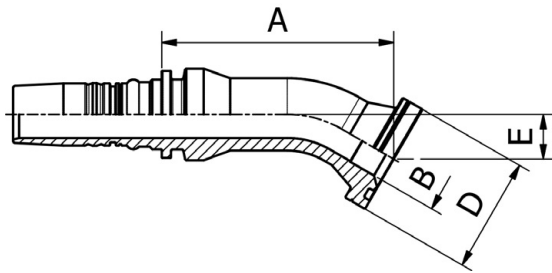
M43620

22.5° ISO / SAE
FLANGE 6000 PSI
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | |
| M43620-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 89.0 | 41.3 | 12.5 | | | | |
| M43620-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 100.5 | 47.7 | 14.5 | | | | |
| M43620-16-16023 | 25 | - 16 | 1" | 1" | 20.0 | 106.5 | 47.7 | 23.0 | | | | |
| M43620-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 118.3 | 54.1 | 16.5 | | | | |
| M43620-20-20030 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 132.5 | 54.2 | 30.0 | | | | |
| M43620-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 136.5 | 63.7 | 19.0 | | | | |
| M43620-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 171.0 | 79.6 | 26.0 | | | | |

FITTINGS 192

SAE STANDARD CONNECTIONS

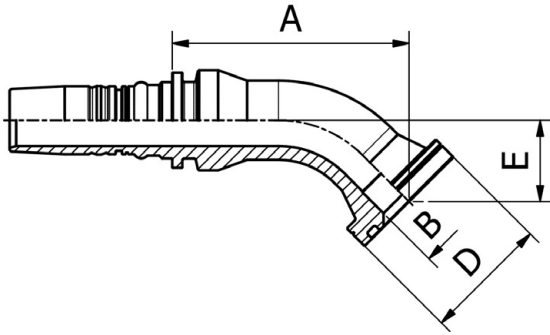


M43630

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | |
| M43630-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 87.0 | 41.4 | 17.5 | | | | |
| M43630-16-12 | 25 | - 16 | 1" | 3/4" | 16.0 | 93.0 | 41.4 | 17.0 | | | | |
| M43630-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 96.0 | 47.7 | 18.5 | | | | |
| M43630-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 116.0 | 54.2 | 22.5 | | | | |
| M43630-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 128.7 | 63.7 | 28.0 | | | | |
| M43630-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 164.0 | 79.6 | 35.5 | | | | |

SAE STANDARD CONNECTIONS



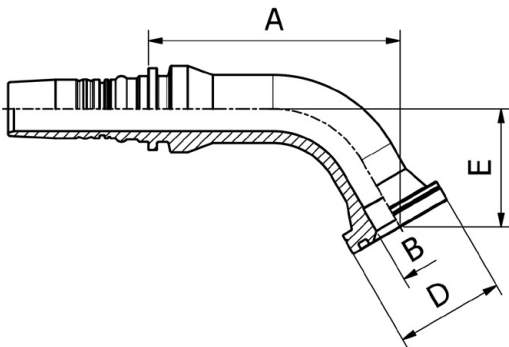
M43640

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | |
| M43640-10-12 | 16 | - 10 | 5/8" | 3/4" | 16.0 | 71.0 | 41.4 | 31.0 | | |
| M43640-10-16 | 16 | - 10 | 5/8" | 1" | 20.0 | 83.5 | 47.7 | 32.5 | | |
| M43640-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 79.0 | 41.4 | 26.0 | | |
| M43640-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 85.5 | 47.7 | 32.5 | | |
| M43640-16-12 | 25 | - 16 | 1" | 3/4" | 16.0 | 87.0 | 41.4 | 28.0 | | |
| M43640-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 90.0 | 47.7 | 31.0 | | |
| M43640-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 93.0 | 54.2 | 34.5 | | |
| M43640-20-16 | 31 | - 20 | 1.1/4" | 1" | 25.0 | 106.5 | 47.7 | 33.5 | | |
| M43640-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 108.0 | 54.2 | 37.5 | | |
| M43640-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.1 | 116.0 | 63.7 | 42.5 | | |
| M43640-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | 26.0 | 115.0 | 54.2 | 41.5 | | |
| M43640-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 125.0 | 63.7 | 44.0 | | |
| M43640-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 134.0 | 79.6 | 55.5 | | |
| M43640-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 152.0 | 79.6 | 58.5 | | |
| M43640-32-32056 | 51 | - 32 | 2" | 2" | 42.0 | 149.5 | 79.6 | 56.0 | | |

193 FITTINGS

SAE STANDARD CONNECTIONS



M43660

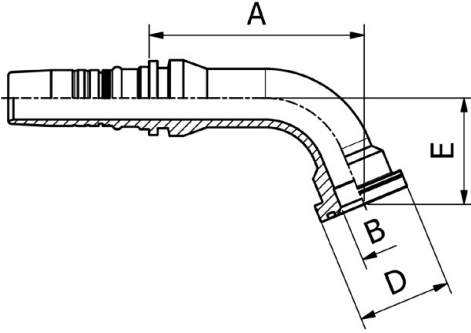
60° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | |
| M43660-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 98.5 | 41.4 | 39.0 | | |
| M43660-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 101.0 | 47.7 | 44.0 | | |
| M43660-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 111.0 | 47.7 | 52.0 | | |
| M43660-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 133.0 | 54.2 | 58.0 | | |
| M43660-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.1 | 137.0 | 63.7 | 65.0 | | |
| M43660-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 155.0 | 63.7 | 59.0 | | |
| M43660-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 199.5 | 79.6 | 83.5 | | |

SAE STANDARD CONNECTIONS

M43670

67.5° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3



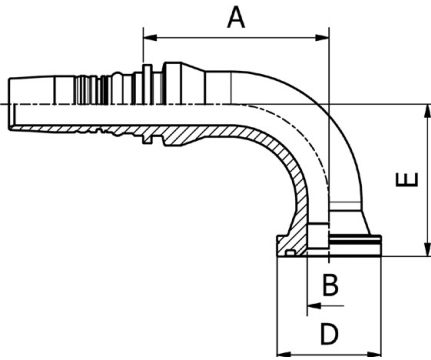
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | | |
| M43670-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 105.0 | 54.1 | 58.5 | | | | |
| M43670-20-16T34 | 31 | - 20 | 1.1/4" | 1" | 26.0 | 125.3 | 47.7 | 58.2 | | | | |
| M43670-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 125.5 | 54.2 | 62.0 | | | | |
| M43670-24-16 | 38 | - 24 | 1.1/2" | 1" | 19.0 | 125.5 | 47.7 | 51.0 | | | | |
| M43670-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | 26.0 | 142.5 | 54.1 | 54.1 | | | | |
| M43670-24-20T40 | 38 | - 24 | 1.1/2" | 1.1/4" | 31.0 | 145.0 | 54.2 | 71.0 | | | | |

FITTINGS 194

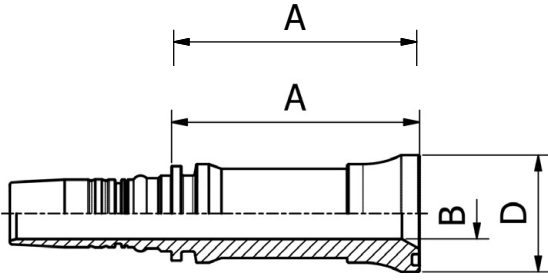
SAE STANDARD CONNECTIONS

M43690

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



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|-------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | | |
| M43690-10-12 | 16 | - 10 | 5/8" | 3/4" | 16.0 | 56.5 | 41.4 | 60.5 | | | | |
| M43690-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 72.5 | 41.4 | 59.0 | | | | |
| M43690-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 72.5 | 47.7 | 65.0 | | | | |
| M43690-16-12 | 25 | - 16 | 1" | 3/4" | 16.0 | 81.5 | 41.4 | 62.0 | | | | |
| M43690-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 85.5 | 47.7 | 70.0 | | | | |
| M43690-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 85.0 | 54.2 | 75.0 | | | | |
| M43690-20-16 | 31 | - 20 | 1.1/4" | 1" | 25.0 | 105.0 | 47.7 | 79.0 | | | | |
| M43690-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 102.0 | 54.2 | 82.0 | | | | |
| M43690-20-20090 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 102.0 | 54.2 | 90.0 | | | | |
| M43690-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.1 | 105.0 | 63.7 | 92.0 | | | | |
| M43690-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | 26.0 | 110.0 | 54.2 | 90.0 | | | | |
| M43690-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 114.5 | 63.7 | 96.0 | | | | |
| M43690-24-24104 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 114.5 | 63.7 | 104.0 | | | | |
| M43690-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 114.5 | 79.6 | 109.0 | | | | |
| M43690-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 142.5 | 79.6 | 132.0 | | | | |
| M43690-32-32138 | 51 | - 32 | 2" | 2" | 42.0 | 140.5 | 79.6 | 142.5 | | | | |

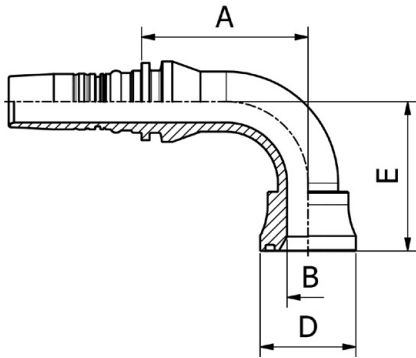


XTRAFRANGE

M48410

XTRAFRANGE/61
(ISO 6162-1/SAE J518 CODE 61
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS 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" | 25.0 | 103.5 | 50.5 | | | | | | |
| M48410-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 116.0 | 60.5 | | | | | | |
| M48410-32-32 | 51 | - 32 | 2" | 2" | 41.0 | 101.0 | 71.6 | | | | | | |
| M48410-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | 51.5 | 103.0 | 84.4 | | | | | | |



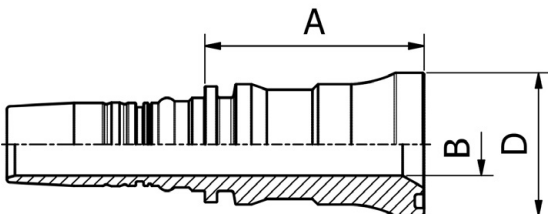
XTRAFRANGE

M48490

90° XTRAFRANGE/61
(ISO 6162-1/SAE J518 CODE 61
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS 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" | 25.0 | 107.0 | 50.5 | 90.0 | | | | | |
| M48490-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 112.0 | 60.5 | 104.0 | | | | | |
| M48490-32-32 | 51 | - 32 | 2" | 2" | 41.0 | 145.0 | 71.6 | 138.0 | | | | | |

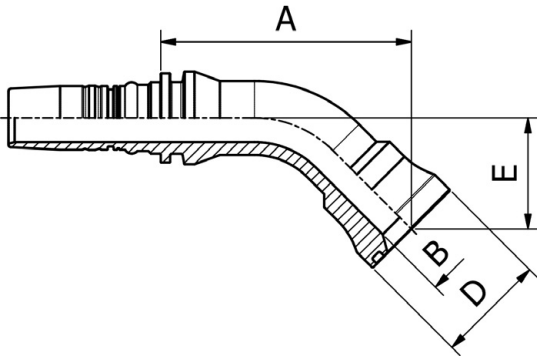
XTRAFRANGE



M48510

XTRAFRANGE/62
(SAE J518 CODE 62 - ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|---|--|--|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | | | | | |
| M48510-12-12 | 19 | - 12 | 3/4" | 3/4" | 14.5 | 64.0 | 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" | 25.0 | 88.0 | 54.4 | | | | | | |
| M48510-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 102.0 | 63.7 | | | | | | |
| M48510-32-32 | 51 | - 32 | 2" | 2" | 41.0 | 128.5 | 79.6 | | | | | | |
| M48510-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | 51.5 | 148.5 | 99.2 | | | | | | |

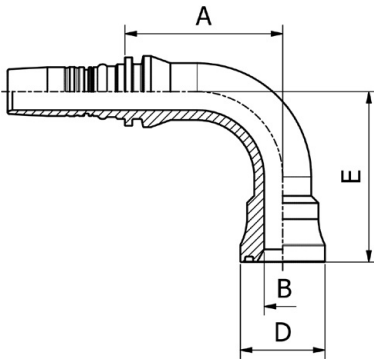


XTRAFRANGE

M48540

45° XTRAFRANGE/62
(SAE J518 CODE 62 - ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| M48540-12-12 | 19 | - 12 | 3/4" | 3/4" | 14.5 | 92.5 | 41.4 | 38.0 | | | |
| M48540-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 101.5 | 47.7 | 45.0 | | | |
| M48540-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 138.0 | 54.4 | 62.5 | | | |
| M48540-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 155.0 | 63.7 | 71.5 | | | |
| M48540-32-32 | 51 | - 32 | 2" | 2" | 39.0 | 193.5 | 79.6 | 92.5 | | | |

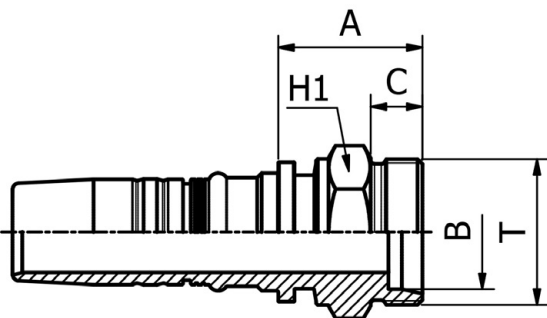


XTRAFRANGE

M48590

90° XTRAFRANGE/62
(SAE J518 CODE 62 - ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|-------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| M48590-12-12 | 19 | - 12 | 3/4" | 3/4" | 14.5 | 75.5 | 41.4 | 75.0 | | | |
| M48590-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 83.5 | 47.7 | 90.0 | | | |
| M48590-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 107.0 | 54.4 | 120.0 | | | |
| M48590-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 122.0 | 63.7 | 140.0 | | | |
| M48590-32-32 | 51 | - 32 | 2" | 2" | 39.0 | 147.5 | 79.6 | 178.0 | | | |



DIN STANDARD CONNECTIONS

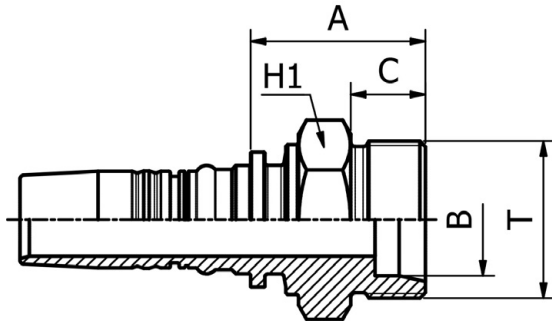
M31110

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|------|------|------|---|----|--|
| | DN | Dash | inch | | | T | mm | B | A | C | H1 | |
| M31110-20-45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 35.3 | 44.5 | 16.0 | 46.0 | | | |

DIN STANDARD CONNECTIONS

M31210

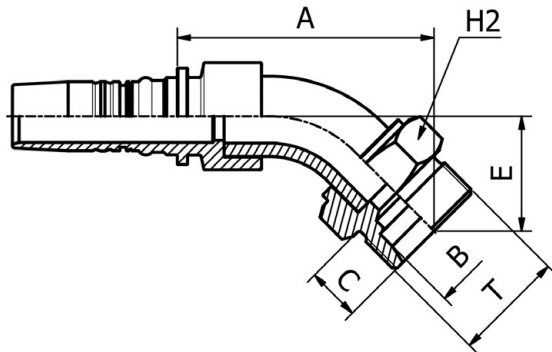


METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|------|------|------|----|--|
| | DN | Dash | inch | | | T | B | A | C | H1 | |
| M31210-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 37.0 | 16.0 | 30.0 | | |
| M31210-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 14.5 | 38.5 | 16.0 | 32.0 | | |
| M31210-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 43.5 | 18.0 | 36.0 | | |
| M31210-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 19.5 | 45.0 | 18.0 | 36.0 | | |
| M31210-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 47.0 | 20.0 | 46.0 | | |
| M31210-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 55.0 | 22.0 | 55.0 | | |
| M31210-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 31.0 | 55.5 | 22.0 | 55.0 | | |

DIN STANDARD CONNECTIONS

M31240



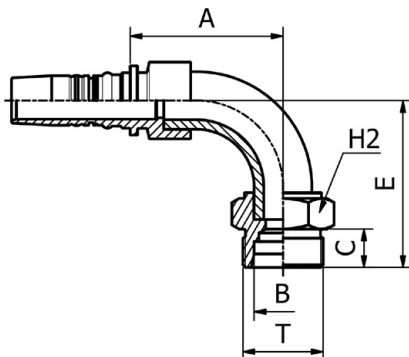
45° METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|-------|------|------|------|----|
| | DN | Dash | inch | | | T | B | A | C | E | H2 |
| M31240-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 25.0 | 96.0 | 20.0 | 43.0 | 46.0 | |
| M31240-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 110.0 | 22.0 | 49.5 | 55.0 | |

*All items are made from brazing

DIN STANDARD CONNECTIONS

M31290



90° METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2

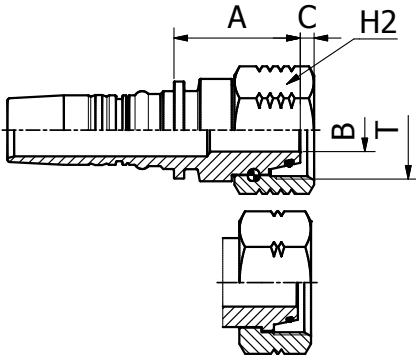
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|------|------|-------|------|----|
| | DN | Dash | inch | | | T | B | A | C | E | H2 |
| M31290-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 15.0 | 64.5 | 29.0 | 64.0 | 32.0 | |
| M31290-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 20.0 | 79.5 | 20.0 | 87.0 | 46.0 | |
| M31290-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 96.0 | 22.0 | 105.0 | 55.0 | |

*All items are made from brazing

DIN STANDARD CONNECTIONS

M41612/M41613

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

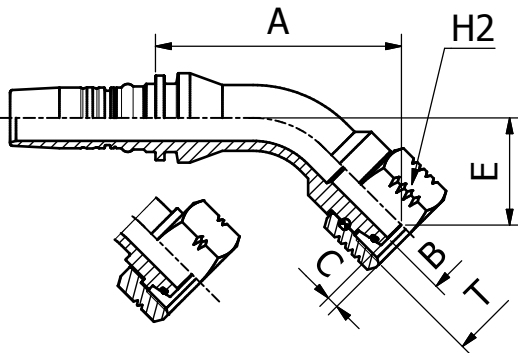


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|----------|------|---------------|------|-----|------|---|----|--|
| | DN | Dash | inch | | | T | mm | B | A | C | H2 | |
| M41612-10-24 | 16 | - 10 | 5/8" | M 24X1,5 | 16.0 | 9.3 | 31.0 | 4.0 | 30.0 | | | |
| M41613-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 37.0 | 3.5 | 36.0 | | | |
| M41612-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 44.0 | 3.2 | 36.0 | | | |
| M41613-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 42.0 | 3.4 | 41.0 | | | |
| M41613-12-42 | 19 | - 12 | 3/4" | M 42X2 | 30.0 | 19.0 | 36.0 | 6.3 | 50.0 | | | |
| M41612-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 16.0 | 47.0 | 4.1 | 41.0 | | | |
| M41613-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 46.5 | 5.3 | 50.0 | | | |
| M41613-16-52 | 25 | - 16 | 1" | M 52X2 | 38.0 | 26.1 | 49.5 | 8.0 | 60.0 | | | |
| M41612-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.0 | 47.5 | 6.0 | 50.0 | | | |
| M41613-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 41.5 | 8.0 | 60.0 | | | |
| M41612-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 29.0 | 52.5 | 8.8 | 60.0 | | | |

DIN STANDARD CONNECTIONS

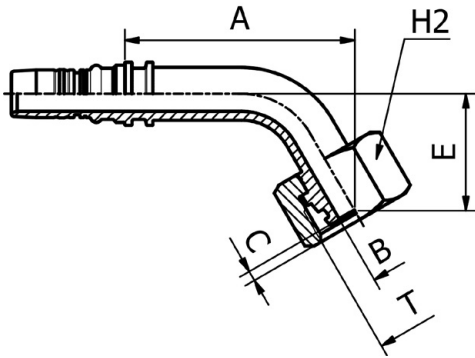
M41642/M41643

**45° METRIC
O-RING FEMALE SWEEP ELBOW 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 | E | H2 |
| M41643-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 66.5 | 3.5 | 29.5 | 36.0 | | |
| M41642-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 79.0 | 3.2 | 35.0 | 36.0 | | |
| M41643-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 81.0 | 3.4 | 33.5 | 41.0 | | |
| M41642-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 16.0 | 103.0 | 4.1 | 45.5 | 41.0 | | |
| M41643-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 93.0 | 5.3 | 36.0 | 50.0 | | |
| M41642-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.1 | 116.5 | 6.0 | 44.5 | 50.0 | | |
| M41643-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 110.0 | 8.0 | 40.0 | 60.0 | | |
| M41642-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 29.0 | 128.0 | 8.8 | 51.5 | 60.0 | | |

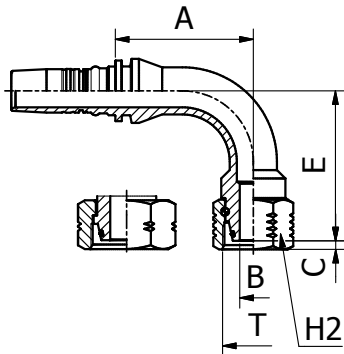
DIN STANDARD CONNECTIONS



M41663

**60° METRIC
O-RING FEMALE SWEPT ELBOW 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 | E | H2 | | |
| M41663-10-30 | 16 | - 10 | 5/8" | M30X2 | 20.0 | 12.0 | 78.4 | 3.5 | 40.0 | 36 | | |



DIN STANDARD CONNECTIONS

M41692/M41693

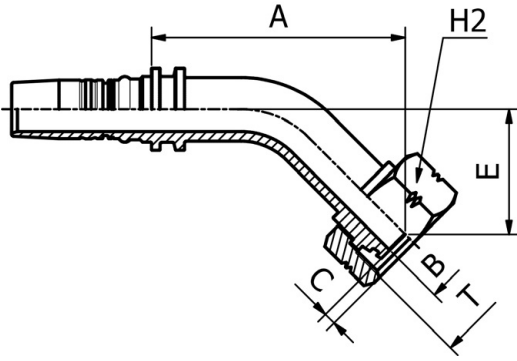
**90° METRIC
O-RING FEMALE SWEPT ELBOW 24° CONE
HEAVY DUTY
DIN 20066 / ISO 12151-2**

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M41693-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 52.5 | 3.5 | 57.5 | 36.0 | | |
| M41692-12-30 | 19 | - 12 | 3/4" | M 30X2 | 25.0 | 12.5 | 64.0 | 3.2 | 68.5 | 36.0 | | |
| M41693-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 67.0 | 3.4 | 67.5 | 41.0 | | |
| M41692-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 16.0 | 81.5 | 4.1 | 89.0 | 41.0 | | |
| M41693-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 81.5 | 5.3 | 75.5 | 50.0 | | |
| M41692-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.1 | 103.5 | 6.0 | 90.0 | 50.0 | | |
| M41693-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 100.0 | 8.0 | 86.5 | 60.0 | | |

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)



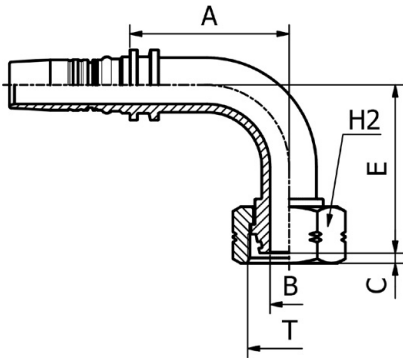
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|-------|-----|------|------|---|----|
| | DN | Dash | inch | | | T | mm | B | A | C | E | H2 |
| M41243-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 77.5 | 3.5 | 35.0 | 36.0 | | |
| M41243-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 101.0 | 3.4 | 45.0 | 41.0 | | |
| M41243-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 112.0 | 5.3 | 55.0 | 50.0 | | |
| M41243-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 133.0 | 8.0 | 63.0 | 60.0 | | |

FITTINGS 200

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)

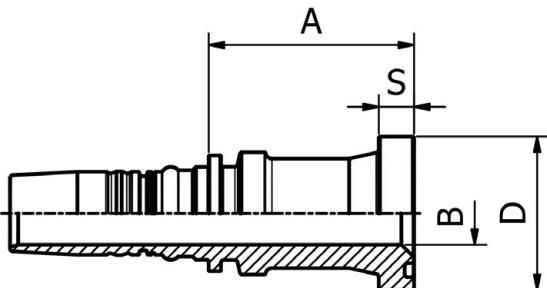


| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|-------|-----|------|------|---|----|
| | DN | Dash | inch | | | T | mm | B | A | C | E | H2 |
| M41293-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 53.0 | 3.5 | 60.0 | 36.0 | | |
| M41293-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 67.0 | 3.4 | 67.5 | 41.0 | | |
| M41293-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 81.5 | 5.3 | 86.0 | 50.0 | | |
| M41293-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 100.0 | 8.0 | 92.0 | 60.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43710

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

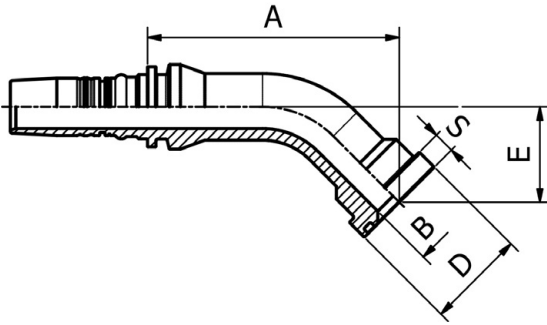


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | S | |
| M43710-10-12 | 16 | - 10 | 5/8" | 3/4" | 16.0 | 51.5 | 41.5 | 9.0 | | |
| M43710-12-12 | 19 | - 12 | 3/4" | 3/4" | 14.5 | 71.5 | 41.4 | 10.0 | | |
| M43710-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 64.0 | 47.7 | 11.0 | | |
| M43710-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 81.0 | 54.2 | 12.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43740

45° FLANGE PLUS
(SAE J518 CODE 62 - ISO 6162-2
PORT COMPATIBLE)

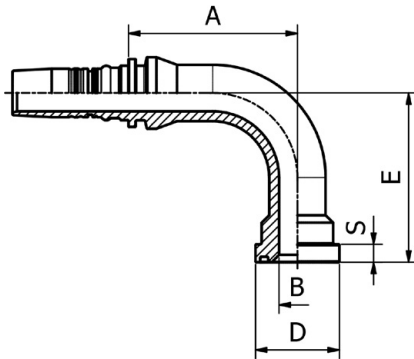


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | | inch | B | A | D | E | S | |
| M43740-10-12 | 16 | - 10 | 5/8" | 3/4" | | 16.0 | 72.5 | 41.4 | 31.0 | 9.0 | | |
| M43740-12-12 | 19 | - 12 | 3/4" | 3/4" | | 14.5 | 113.0 | 41.4 | 40.0 | 10.0 | | |
| M43740-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 113.5 | 47.7 | 43.0 | 11.0 | | |
| M43740-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 133.5 | 54.2 | 50.0 | 12.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43790

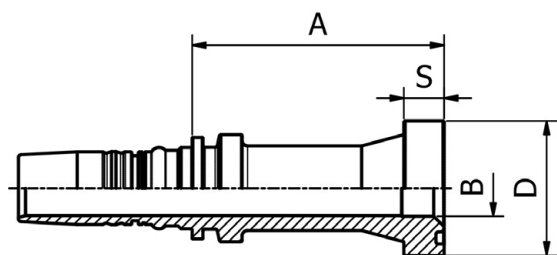
90° FLANGE PLUS
(SAE J518 CODE 62 - ISO 6162-2
PORT COMPATIBLE)



| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|-------|------|---|--|
| | DN | Dash | inch | | | inch | B | A | D | E | S | |
| M43790-10-12 | 16 | - 10 | 5/8" | 3/4" | | 16.0 | 61.5 | 41.4 | 60.5 | 9.0 | | |
| M43790-12-12 | 19 | - 12 | 3/4" | 3/4" | | 14.5 | 93.0 | 41.4 | 75.0 | 10.0 | | |
| M43790-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 90.0 | 47.7 | 90.0 | 11.0 | | |
| M43790-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 115.0 | 54.2 | 110.0 | 12.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43910



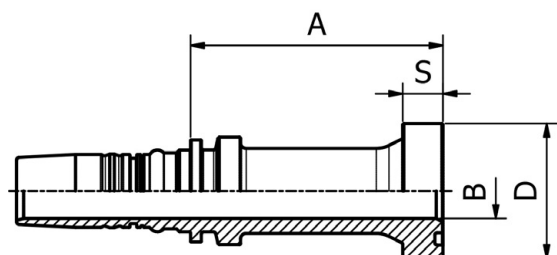
STRAIGHT SUPERCAT SERIES FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|--|
| | DN | Dash | inch | | B | A | D | S | |
| M43910-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 77.0 | 41.5 | 14.3 | |
| M43910-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 88.5 | 47.7 | 14.3 | |
| M43910-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 89.5 | 47.7 | 14.3 | |
| M43910-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 93.5 | 54.0 | 14.3 | |
| M43910-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 95.0 | 54.0 | 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 | 99.0 | 63.6 | 14.3 | |
| M43910-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 115.0 | 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" | 42.0 | 114.5 | 79.3 | 14.3 | |

FITTINGS 202

ORIGINAL EQUIPMENT CONNECTIONS

M43910CT



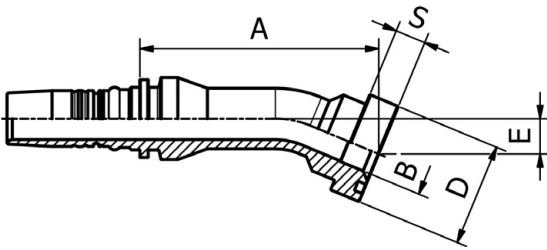
STRAIGHT REALCAT FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | |
|----------------|-----------|------|--------|--------|---------------|------|------|------|--|
| | DN | Dash | 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" | 25.0 | 95.0 | 54.0 | 14.3 | |
| M43910-20-24CT | 31 | - 20 | 1.1/4" | 1.1/2" | 31.0 | 98.0 | 63.6 | 14.3 | |
| M43910-24-24CT | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 99.0 | 63.6 | 14.3 | |

ORIGINAL EQUIPMENT CONNECTIONS

M43920

22,5° SUPERCAT SERIES FLANGE

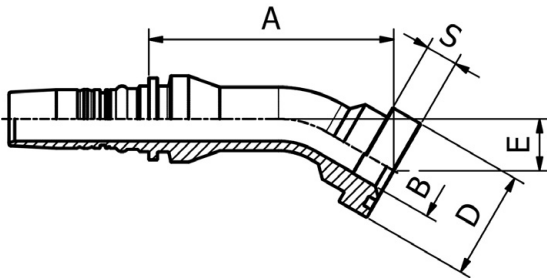


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43920-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 94.0 | 41.5 | 14.5 | 14.3 | | |
| M43920-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 101.5 | 47.7 | 16.5 | 14.3 | | |
| M43920-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 110.5 | 47.7 | 16.5 | 14.3 | | |
| M43920-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 115.5 | 54.0 | 19.0 | 14.3 | | |
| M43920-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 122.0 | 54.0 | 18.0 | 14.3 | | |
| M43920-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 139.0 | 63.7 | 23.0 | 14.3 | | |
| M43920-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 138.0 | 63.7 | 20.0 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43930

30° SUPERCAT SERIES FLANGE

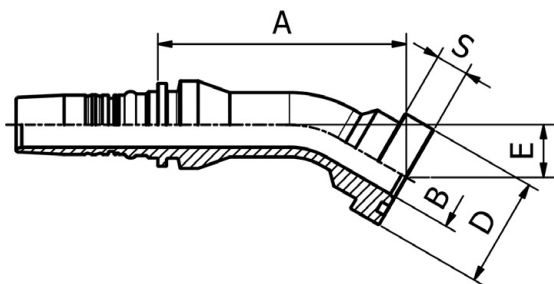


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43930-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 92.0 | 41.5 | 20.0 | 14.3 | | |
| M43930-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 99.0 | 47.7 | 22.5 | 14.3 | | |
| M43930-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 108.0 | 47.7 | 23.0 | 14.3 | | |
| M43930-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 112.5 | 54.0 | 26.0 | 14.3 | | |
| M43930-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 119.5 | 54.0 | 25.0 | 14.3 | | |
| M43930-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 135.5 | 63.7 | 32.0 | 14.3 | | |
| M43930-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 135.0 | 63.7 | 28.0 | 14.3 | | |
| M43930-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 151.5 | 79.3 | 36.0 | 14.3 | | |
| M43930-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 171.5 | 79.3 | 37.5 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43930CT

30° REALCAT SERIES FLANGE



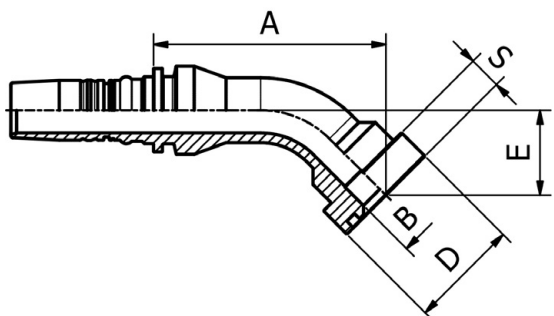
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43930-12-12CT | 19 | - 12 | 3/4" | 3/4" | 14.5 | 92.0 | 41.5 | 20.0 | 14.3 | | |
| M43930-16-16CT | 25 | - 16 | 1" | 1" | 19.5 | 108.0 | 47.7 | 23.0 | 14.3 | | |
| M43930-20-20CT | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 119.5 | 54.0 | 25.0 | 14.3 | | |
| M43930-24-24CT | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 135.0 | 63.7 | 28.0 | 14.3 | | |

FITTINGS 204

ORIGINAL EQUIPMENT CONNECTIONS

M43940

45° SUPERCAT SERIES FLANGE

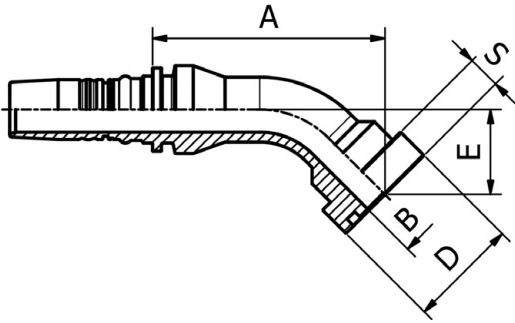


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43940-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 85.0 | 41.5 | 32.0 | 14.3 | | |
| M43940-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 91.5 | 47.7 | 35.5 | 14.3 | | |
| M43940-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 100.5 | 47.7 | 36.5 | 14.3 | | |
| M43940-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 103.5 | 54.0 | 40.5 | 14.3 | | |
| M43940-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 110.5 | 54.0 | 40.5 | 14.3 | | |
| M43940-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 124.5 | 63.7 | 50.5 | 14.3 | | |
| M43940-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 125.5 | 63.7 | 45.5 | 14.3 | | |
| M43940-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 139.5 | 79.3 | 56.5 | 14.3 | | |
| M43940-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 158.5 | 79.3 | 61.5 | 14.3 | | |

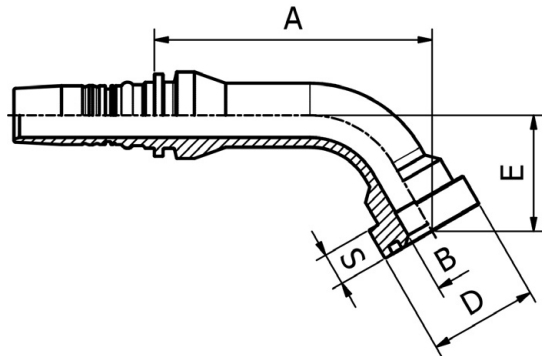
ORIGINAL EQUIPMENT CONNECTIONS

M43940CT

45° REALCAT FLANGE



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS 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" | 25.0 | 103.5 | 54.0 | 40.5 | 14.3 | | |
| M43940-20-24CT | 31 | - 20 | 1.1/4" | 1.1/2" | 31.0 | 124.5 | 63.7 | 50.5 | 14.3 | | |
| M43940-20-20CT | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 110.5 | 54.0 | 40.5 | 14.3 | | |
| M43940-24-24CT | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 125.5 | 63.7 | 45.0 | 14.3 | | |



ORIGINAL EQUIPMENT CONNECTIONS

M43960

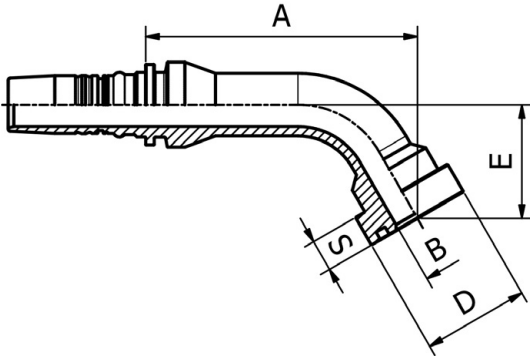
60° SUPERCAT SERIES FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M43960-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 106.0 | 47.7 | 48.0 | 14.3 | | |
| M43960-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 101.0 | 41.5 | 44.0 | 14.3 | | |
| M43960-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 122.0 | 47.7 | 51.0 | 14.3 | | |
| M43960-16-16055 | 25 | - 16 | 1" | 1" | 20.0 | 102.5 | 47.7 | 55.0 | 14.3 | | |
| M43960-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 122.0 | 54.0 | 55.0 | 14.3 | | |
| M43960-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 136.0 | 54.0 | 56.0 | 14.3 | | |
| M43960-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 149.0 | 63.7 | 69.0 | 14.3 | | |
| M43960-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 154.5 | 63.7 | 63.0 | 14.3 | | |
| M43960-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 202.0 | 79.3 | 86.5 | 14.3 | | |
| M43960-32-32150 | 51 | - 32 | 2" | 2" | 42.0 | 196.5 | 79.3 | 150.0 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43960CT

60° REALCAT SERIES FLANGE



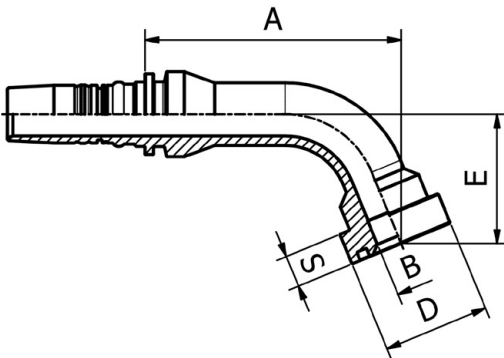
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M43960-16-16CT | 25 | - 16 | 1" | 1" | 19.5 | 122.0 | 47.7 | 51.0 | 14.3 | | |
| M43960-16-20CT | 25 | - 16 | 1" | 1.1/4" | 25.0 | 122.0 | 54.0 | 55.0 | 14.3 | | |
| M43960-24-24CT | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 154.5 | 63.7 | 63.5 | 14.3 | | |

FITTINGS 206

ORIGINAL EQUIPMENT CONNECTIONS

M43970

67,5° SUPERCAT SERIES FLANGE

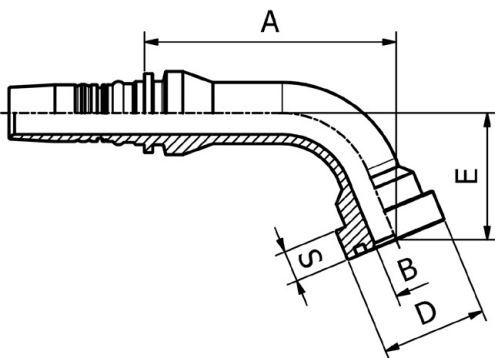


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M43970-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 95.0 | 41.5 | 49.5 | 14.3 | | |
| M43970-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 99.5 | 47.7 | 54.0 | 14.3 | | |
| M43970-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 115.0 | 47.7 | 58.0 | 14.3 | | |
| M43970-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 114.5 | 54.0 | 62.0 | 14.3 | | |
| M43970-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 128.0 | 54.0 | 64.0 | 14.3 | | |
| M43970-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 139.5 | 63.7 | 78.0 | 14.3 | | |
| M43970-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 146.0 | 63.7 | 72.0 | 14.3 | | |
| M43970-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 189.5 | 79.3 | 99.0 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43970CT

67,5° REALCAT SERIES FLANGE

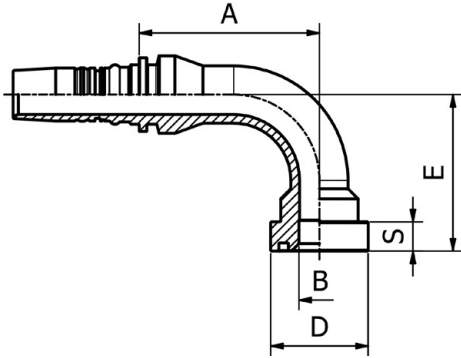


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | S | | |
| M43970-16-16CT | 25 | - 16 | 1" | 1" | 19.5 | 115.0 | 47.7 | 58.0 | 14.3 | | |
| M43970-16-20CT | 25 | - 16 | 1" | 1.1/4" | 25.0 | 114.5 | 64.0 | 62.0 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M43990

90° SUPERCAT SERIES FLANGE



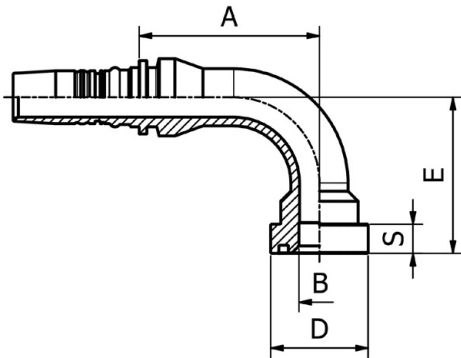
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | S |
| M43990-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 72.5 | 41.5 | 64.5 | 14.3 | |
| M43990-12-16 | 19 | - 12 | 3/4" | 1" | 20.0 | 75.0 | 47.7 | 69.5 | 14.3 | |
| M43990-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 88.5 | 47.7 | 76.5 | 14.3 | |
| M43990-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 86.5 | 54.0 | 80.5 | 14.3 | |
| M43990-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 98.5 | 54.0 | 85.0 | 14.3 | |
| M43990-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 104.0 | 63.7 | 101.0 | 14.3 | |
| M43990-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 112.5 | 63.7 | 96.0 | 14.3 | |
| M43990-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 115.0 | 79.3 | 112.0 | 14.3 | |
| M43990-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 144.0 | 79.3 | 133.5 | 14.3 | |

207 FITTINGS

ORIGINAL EQUIPMENT CONNECTIONS

M43990 LONG DROP

90° LONG DROP SUPERCAT SERIES FLANGE

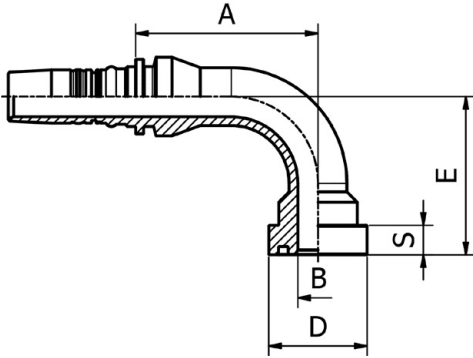


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | S |
| M43990-16-16150 | 25 | - 16 | 1" | 1" | 20.0 | 88.5 | 47.7 | 150.0 | 14.3 | |
| M43990-16-16132 | 25 | - 16 | 1" | 1" | 20.0 | 88.5 | 47.7 | 132.0 | 14.3 | |
| M43990-16-20150 | 25 | - 16 | 1" | 1.1/4" | 26.1 | 88.5 | 54.0 | 150.0 | 14.3 | |
| M43990-20-24135 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 98.5 | 63.7 | 135.0 | 14.3 | |
| M43990-20-20150 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 98.5 | 54.0 | 150.0 | 14.3 | |
| M43990-20-20092 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 98.5 | 54.0 | 92.0 | 14.3 | |
| M43990-24-24106 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 112.5 | 63.7 | 106.0 | 14.3 | |

ORIGINAL EQUIPMENT CONNECTIONS

M43990CT

90° REALCAT FLANGE



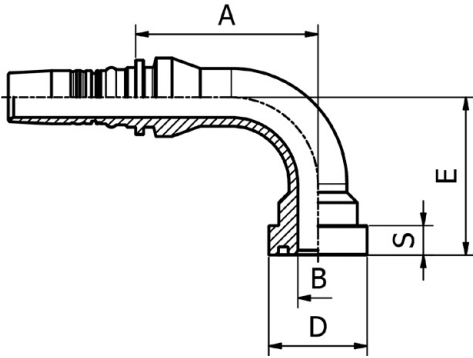
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43990-16-16CT | 25 | - 16 | 1" | 1" | 19.5 | 88.5 | 47.7 | 76.5 | 14.3 | | |
| M43990-16-20CT | 25 | - 16 | 1" | 1.1/4" | 25.0 | 86.5 | 54.0 | 80.5 | 14.3 | | |
| M43990-20-20CT | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 98.5 | 54.0 | 85.0 | 14.3 | | |
| M43990-24-24CT | 38 | - 24 | 1.1/2" | 1.1/2" | 31.0 | 112.5 | 63.7 | 96.0 | 14.3 | | |

FITTINGS 208

ORIGINAL EQUIPMENT CONNECTIONS

M43990CT LONG DROP

90° LONG DROP REALCAT FLANGE

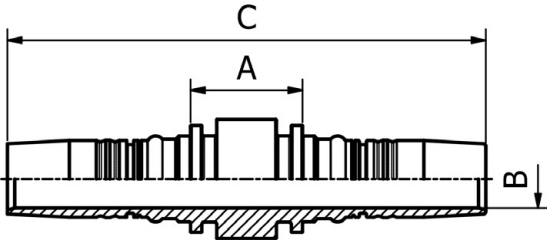


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|-------------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M43990-16-16132CT | 25 | - 16 | 1" | 1" | 19.5 | 88.5 | 47.7 | 132.0 | 14.3 | | |
| M43990-20-20150CT | 25 | - 16 | 1" | 1.1/4" | 25.0 | 98.5 | 54.0 | 150.0 | 14.3 | | |
| M43990-24-24106CT | 31 | - 20 | 1.1/4" | 1.1/2" | 31.0 | 112.5 | 63.7 | 106.0 | 14.3 | | |

DOUBLE CONNECTOR

M30050

DOUBLE CONNECTOR

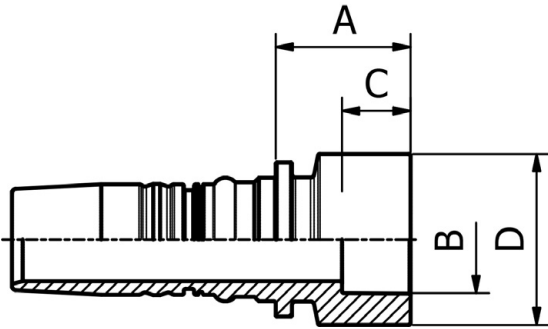


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|---------------|------|-------|--|--|--|
| | DN | Dash | inch | B | A | C | | | |
| M30050-20-20 | 31 | - 20 | 1.1/4" | 25.0 | 42.0 | 206.0 | | | |
| M30050-24-24 | 38 | - 24 | 1.1/2" | 31.0 | 43.1 | 229.1 | | | |
| M30050-32-32 | 51 | - 32 | 2" | 41.0 | 43.0 | 244.7 | | | |

TAIL

M49510WL

WELDING TAIL

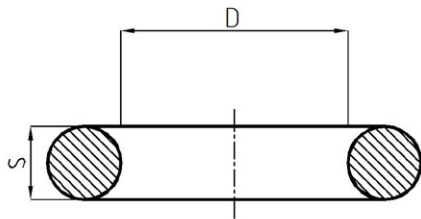


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | | |
|----------------|-----------|------|--------|---------------|--|------|------|------|------|--|--|--|
| | DN | Dash | inch | | | B | A | C | D | | | |
| M49510-10-18WL | 16 | - 10 | 5/8" | | | 18.1 | 20.5 | 10.0 | 26.0 | | | |
| M49510-12-22WL | 19 | - 12 | 3/4" | | | 22.1 | 27.5 | 12.0 | 34.0 | | | |
| M49510-16-28WL | 25 | - 16 | 1" | | | 28.1 | 31.5 | 14.0 | 40.0 | | | |
| M49510-20-35WL | 31 | - 20 | 1.1/4" | | | 35.1 | 33.0 | 14.0 | 49.0 | | | |

209 FITTINGS

O-RING

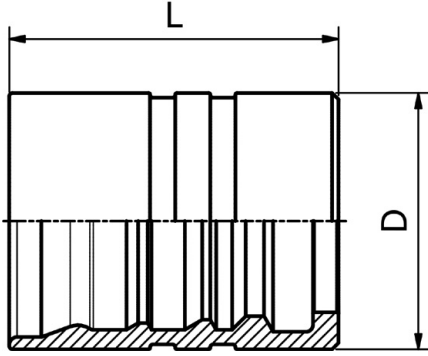
JO29



OPTIONAL INTERLOCK PLUS O-RING

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|------|--|--|--|--|--|
| | DN | Dash | inch | | | D | S | | | | | |
| JO29161218 | 16 | - 10 | 5/8" | | | 12.42 | 1.78 | | | | | |
| JO29191618 | 19 | - 12 | 3/4" | | | 15.6 | 1.78 | | | | | |
| JO29262218 | 25 | - 16 | 1" | | | 21.95 | 1.78 | | | | | |
| JO29322818 | 31 | - 20 | 1.1/4" | | | 28.3 | 1.78 | | | | | |
| JO29383518 | 38 | - 24 | 1.1/2" | | | 34.65 | 1.78 | | | | | |
| JO29514718 | 51 | - 32 | 2" | | | 47.35 | 1.78 | | | | | |
| JO29605718 | 63 | - 40 | 2.1/2" | | | 56.87 | 1.78 | | | | | |
| JO29737018 | 76 | - 48 | 3" | | | 69.57 | 1.78 | | | | | |

FERRULE



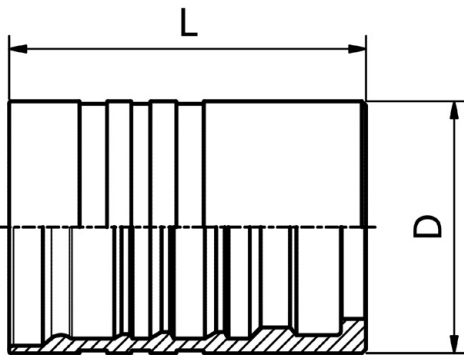
IM01500

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

FITTINGS 210

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IM01500-10 | 16 | - 10 | 5/8" | | | 35.0 | 40.9 | | | | |
| IM01500-12 | 19 | - 12 | 3/4" | | | 40.0 | 51.4 | | | | |
| IM01500-16 | 25 | - 16 | 1" | | | 48.0 | 64.5 | | | | |
| IM01500-20 | 31 | - 20 | 1.1/4" | | | 57.0 | 84.0 | | | | |
| IM01500-24 | 38 | - 24 | 1.1/2" | | | 64.3 | 94.0 | | | | |
| IM01500-32 | 51 | - 32 | 2" | | | 83.5 | 107.0 | | | | |
| IM01500-40 | 63 | - 40 | 2.1/2" | | | 100.0 | 135.0 | | | | |
| IM01500-48 | 76 | - 48 | 3" | | | 107.0 | 125.0 | | | | |

FERRULE

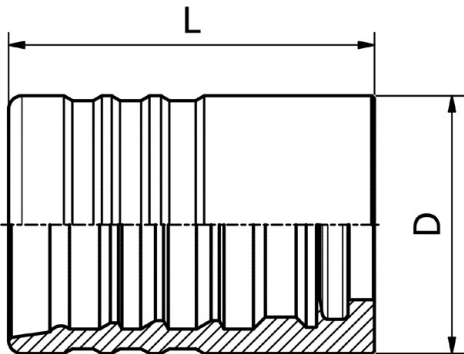


IM01600

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

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IM01600-20 | 31 | - 20 | 1.1/4" | | | 60.0 | 85.0 | | | | |
| IM01600-24 | 38 | - 24 | 1.1/2" | | | 69.0 | 96.0 | | | | |

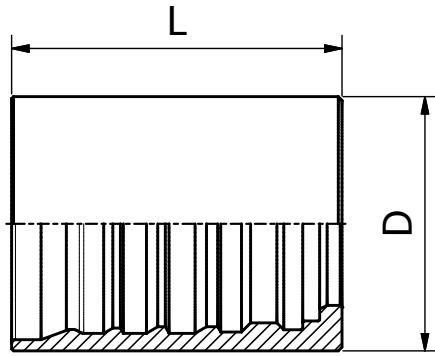
FERRULE



IM01800/IM01810

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

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IM01800-32 | 51 | - 32 | 2" | | | 86.5 | 108.0 | | | | |
| IM01810-40 | 63 | - 40 | 2.1/2" | | | 103.0 | 135.0 | | | | |
| IM01810-48 | 76 | - 48 | 3" | | | 113.5 | 125.0 | | | | |



FERRULE

IM01900

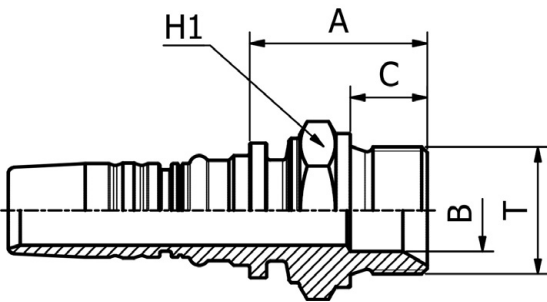
DOUBLE SKIVE FERRULE

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|----|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IM01900-20 | 31 | -20 | 1.1/4" | | | 68 | 88,2 | | | | |

BS STANDARD CONNECTIONS

IM30510

BSP
MALE PARALLEL 60° CONE SEAT
BS5200 / ISO 8434-6
(STAINLESS STEEL)

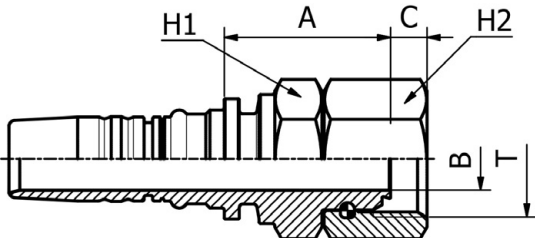


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|---------------|-----------|------|--------|-------------|---------------|------|------|------|------|--|--|--|
| | DN | Dash | inch | T | | B | A | C | H1 | | | |
| IM30510-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 17.0 | 37.0 | 16.0 | 32.0 | | | |
| IM30510-16-16 | 25 | - 16 | 1" | 1" - 11 | | 22.5 | 43.0 | 19.0 | 41.0 | | | |
| IM30510-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 28.5 | 50.5 | 20.0 | 50.0 | | | |
| IM30510-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | | 33.5 | 54.5 | 22.0 | 55.0 | | | |
| IM30510-32-32 | 51 | - 32 | 2" | 2" - 11 | | 42.0 | 58.0 | 25.0 | 70.0 | | | |

BS STANDARD CONNECTIONS

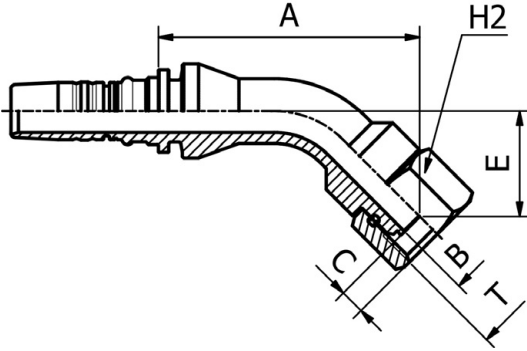
IM40812

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|---------------|-----------|------|--------|-------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | T | | B | A | C | H1 | H2 | | |
| IM40812-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 14.5 | 39.0 | 8.5 | 32.0 | 32.0 | | |
| IM40812-16-16 | 25 | - 16 | 1" | 1" - 11 | | 19.5 | 44.5 | 10.6 | 41.0 | 41.0 | | |
| IM40812-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | | 26.1 | 52.5 | 10.5 | 50.0 | 50.0 | | |
| IM40812-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | | 32.1 | 51.5 | 12.5 | 60.0 | 60.0 | | |
| IM40812-32-32 | 51 | - 32 | 2" | 2" - 11 | | 42.0 | 51.5 | 16.1 | 70.0 | 70.0 | | |

BS STANDARD CONNECTIONS

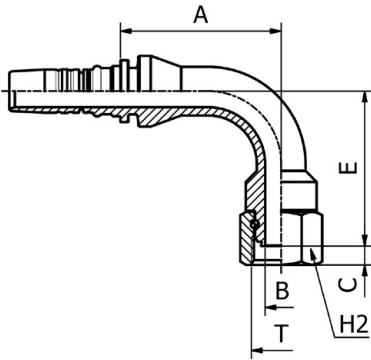


IM40842

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|---------------|-----------|------|--------|-------------|---------------|-------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | H2 |
| IM40842-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 14.5 | 88.0 | 8.5 | 35.0 | 32.0 | |
| IM40842-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 97.0 | 10.6 | 40.0 | 41.0 | |
| IM40842-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.1 | 120.0 | 10.5 | 49.5 | 50.0 | |
| IM40842-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.1 | 126.5 | 12.5 | 50.0 | 60.0 | |
| IM40842-32-32 | 51 | - 32 | 2" | 2" - 11,5 | 42.0 | 162.5 | 16.1 | 66.5 | 70.0 | |

FITTINGS 212



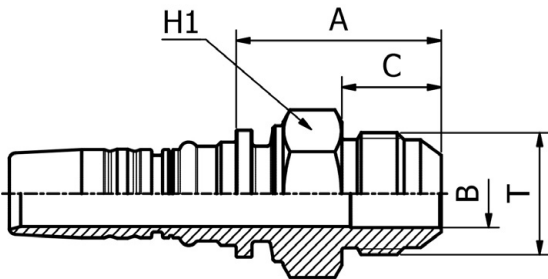
BS STANDARD CONNECTIONS

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 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 | 70.0 | 32.0 | |
| IM40892-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 82.0 | 10.6 | 80.5 | 41.0 | |
| IM40892-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.1 | 98.5 | 10.5 | 98.0 | 50.0 | |
| IM40892-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.1 | 111.5 | 12.5 | 109.0 | 60.0 | |
| IM40892-32-32 | 51 | - 32 | 2" | 2" - 11,5 | 42.0 | 143.0 | 16.1 | 140.5 | 70.0 | |

SAE STANDARD CONNECTIONS



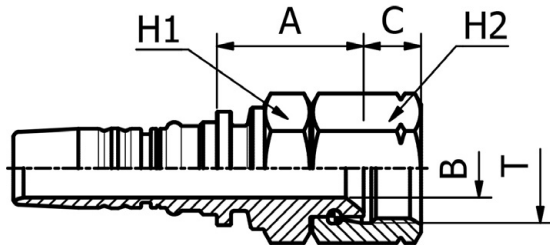
IM32510

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | |
|---------------|-----------|------|--------|--------------|---------------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | H1 |
| IM32510-10-10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.0 | 41.0 | 19.5 | 27.0 | |
| IM32510-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 45.5 | 22.0 | 32.0 | |
| IM32510-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 20.0 | 50.5 | 23.0 | 38.0 | |
| IM32510-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 66.0 | 24.3 | 46.0 | |
| IM32510-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 64.0 | 27.5 | 50.0 | |
| IM32510-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 81.0 | 34.0 | 70.0 | |

SAE STANDARD CONNECTIONS

IM42512



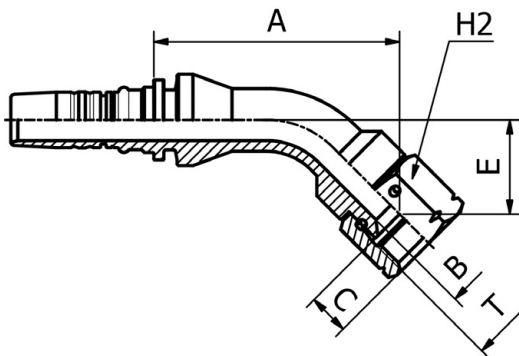
JIC
 FEMALE 37° CONE SEAT
 SAE J516 / ISO 12151-5
 (THRUST-WIRE NUT) STAINLESS STEEL

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| IM42512-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 36.0 | 16.0 | 32.0 | 32.0 | | |
| IM42512-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 40.5 | 15.2 | 41.0 | 41.0 | | |
| IM42512-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 51.5 | 16.2 | 50.0 | 50.0 | | |
| IM42512-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 31.0 | 54.5 | 18.8 | 55.0 | 60.0 | | |
| IM42512-32-32 | 51 | - 32 | 2" | 2.1/2" - 8 | 42.0 | 54.0 | 24.0 | 70.0 | 75.0 | | |

213 FITTINGS

SAE STANDARD CONNECTIONS

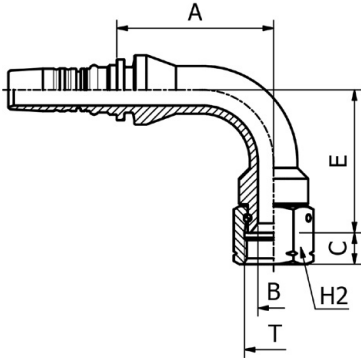
IM42542



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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| IM42542-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 86.0 | 16.0 | 33.0 | 32.0 | | |
| IM42542-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 95.0 | 15.2 | 37.0 | 41.0 | | |
| IM42542-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 115.5 | 16.2 | 45.0 | 50.0 | | |
| IM42542-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 126.5 | 18.8 | 50.0 | 60.0 | | |

SAE STANDARD CONNECTIONS



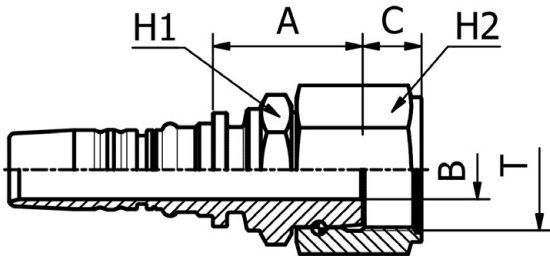
IM42592

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| IM42592-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 72.5 | 16.0 | 66.0 | 32.0 | | |
| IM42592-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 21.7 | 72.5 | 15.2 | 71.5 | 41.0 | | |
| IM42592-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.7 | 82.5 | 15.2 | 77.5 | 41.0 | | |
| IM42592-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 98.5 | 16.2 | 92.0 | 50.0 | | |
| IM42592-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 111.5 | 18.8 | 106.0 | 60.0 | | |
| IM42592-32-32 | 51 | - 32 | 2" | 2.1/2" - 8 | 42.0 | 144.5 | 24.0 | 137.0 | 75.0 | | |

FITTINGS 214

SAE STANDARD CONNECTIONS

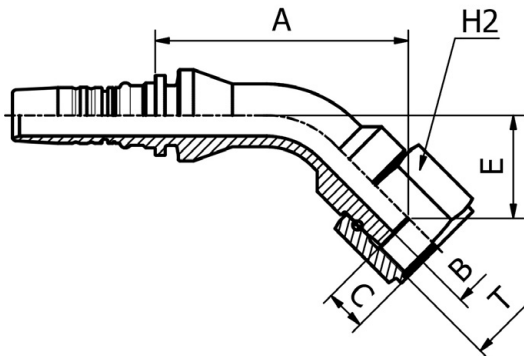


IM42412

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | H1 | H2 | | | |
| IM42412-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 37.0 | 32.0 | 36.0 | | | |
| IM42412-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 42.0 | 15.0 | 41.0 | 46.0 | | |
| IM42412-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 52.0 | 15.1 | 50.0 | 55.0 | | |
| IM42412-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 55.0 | 15.0 | 60.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

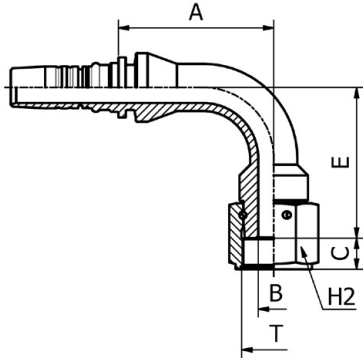


IM42442

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|---------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| IM42442-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 89.0 | 13.9 | 36.0 | 36.0 | | |
| IM42442-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 100.0 | 15.0 | 42.5 | 46.0 | | |
| IM42442-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 119.5 | 15.1 | 49.5 | 55.0 | | |
| IM42442-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 128.5 | 15.0 | 52.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

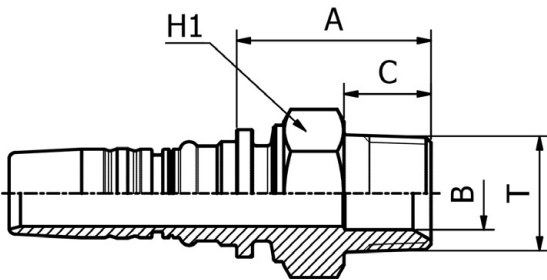


IM42492

**90° ORFS
FEMALE SWEEP ELBOW
SAE J516 / ISO 12151-1 HEAVY TYPE
(THRUST-WIRE-NUT) STAINLESS STEEL**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 36.0 | | |
| IM42492-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 82.5 | 15.0 | 84.5 | 46.0 | | |
| IM42492-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 98.5 | 15.1 | 98.0 | 55.0 | | |
| IM42492-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 31.0 | 111.5 | 15.0 | 109.0 | 60.0 | | |

SAE STANDARD CONNECTIONS

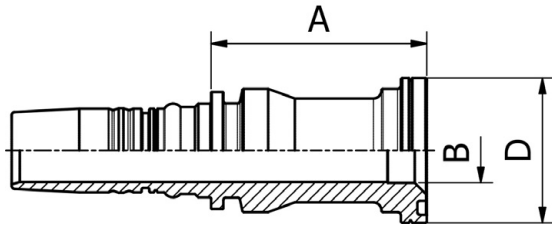


IM32810

**NPTF
MALE 60° CONE SEAT
SAE J516/J514
(STAINLESS STEEL)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|---------------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| IM32810-10-08 | 16 | - 10 | 5/8" | 1/2" - 14 | 12.0 | 39.5 | 19.2 | 24.0 | | | |
| IM32810-10-12 | 16 | - 10 | 5/8" | 3/4" - 14 | 16.0 | 40.5 | 19.2 | 27.0 | | | |
| IM32810-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 43.0 | 19.2 | 32.0 | | | |
| IM32810-16-16 | 25 | - 16 | 1" | 1" - 11,5 | 19.5 | 50.5 | 24.2 | 38.0 | | | |
| IM32810-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11,5 | 26.1 | 61.0 | 25.0 | 46.0 | | | |
| IM32810-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11,5 | 32.1 | 62.5 | 26.0 | 50.0 | | | |
| IM32810-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 67.0 | 26.5 | 70.0 | | | |
| IM32810-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" - 8 | 51.5 | 94.5 | 43.0 | 80.0 | | | |
| IM32810-48-48 | 76 | - 48 | 3" | 3" - 8 | 62.5 | 123.5 | 51.5 | 100.0 | | | |

SAE STANDARD CONNECTIONS

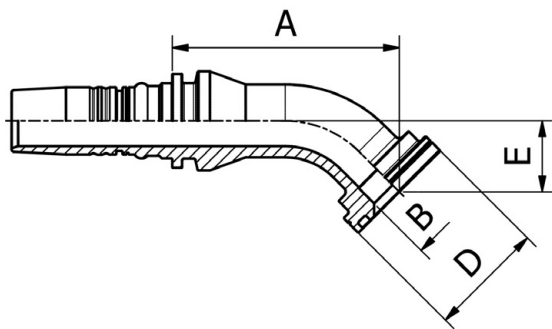


IM43310

ISO / SAE
CODE 61 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|------|------|---|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | | | |
| IM43310-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 60.0 | 38.0 | | | | |
| IM43310-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 66.5 | 44.6 | | | | |
| IM43310-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 75.0 | 51.0 | | | | |
| IM43310-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 80.5 | 60.5 | | | | |
| IM43310-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 83.0 | 71.6 | | | | |

FITTINGS 216



SAE STANDARD CONNECTIONS

IM43340

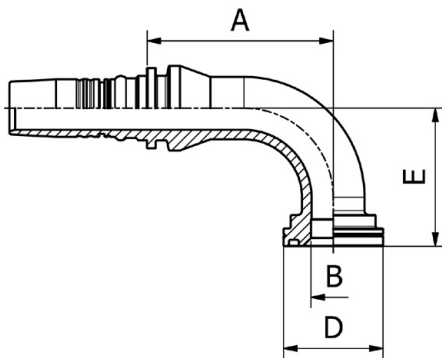
45° ISO / SAE
CODE 61 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| IM43340-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 75.5 | 38.0 | 23.0 | | | |
| IM43340-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 87.0 | 44.6 | 27.3 | | | |
| IM43340-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 100.5 | 51.0 | 29.5 | | | |
| IM43340-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 111.0 | 60.5 | 34.5 | | | |
| IM43340-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 128.5 | 71.6 | 39.0 | | | |

SAE STANDARD CONNECTIONS

IM43390

90° ISO / SAE
CODE 61 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)

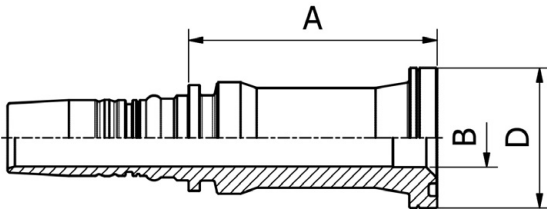


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| IM43390-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 72.0 | 38.0 | 52.0 | | | |
| IM43390-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 83.5 | 44.6 | 62.0 | | | |
| IM43390-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 99.0 | 51.0 | 70.0 | | | |
| IM43390-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 111.5 | 60.5 | 84.0 | | | |
| IM43390-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 133.5 | 71.6 | 99.0 | | | |

SAE STANDARD CONNECTIONS

IM43610

ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)



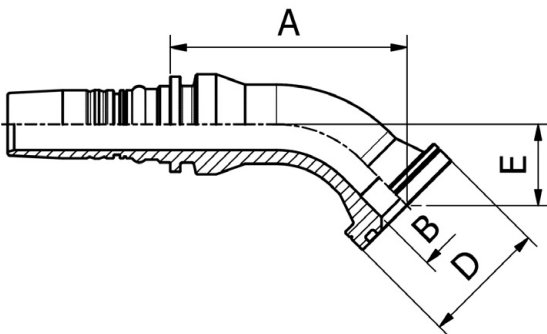
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|---------------|-----------|------|--------|--------|---------------|------|-------|-------|--|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | | | | |
| IM43610-10-12 | 16 | - 10 | 5/8" | 3/4" | | 16.0 | 65.0 | 41.5 | | | | |
| IM43610-10-16 | 16 | - 10 | 5/8" | 1" | | 20.0 | 81.5 | 47.7 | | | | |
| IM43610-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 71.5 | 41.4 | | | | |
| IM43610-12-16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 83.5 | 47.7 | | | | |
| IM43610-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 80.3 | 41.4 | | | | |
| IM43610-16-16 | 25 | - 16 | 1" | 1" | | 20.0 | 84.5 | 47.7 | | | | |
| IM43610-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 89.0 | 54.2 | | | | |
| IM43610-20-16 | 31 | - 20 | 1.1/4" | 1" | | 20.0 | 87.0 | 47.7 | | | | |
| IM43610-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.1 | 91.0 | 54.2 | | | | |
| IM43610-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.1 | 97.0 | 63.7 | | | | |
| IM43610-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | | 26.0 | 101.0 | 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" | | 42.0 | 113.0 | 79.6 | | | | |
| IM43610-32-24 | 51 | - 32 | 2" | 1.1/2" | | 32.1 | 117.0 | 63.7 | | | | |
| IM43610-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 113.0 | 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 | 167.0 | 131.9 | | | | |

217 FITTINGS

SAE STANDARD CONNECTIONS

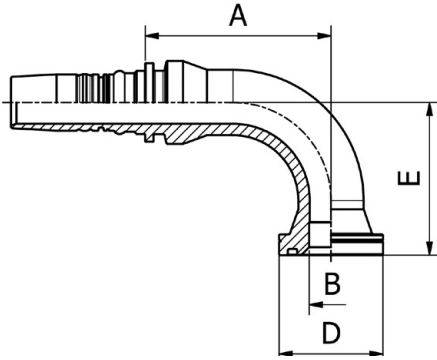
IM43640

45° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|---------------|-----------|------|--------|--------|---------------|------|-------|------|------|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | |
| IM43640-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 81.0 | 41.4 | 28.0 | | | |
| IM43640-16-16 | 25 | - 16 | 1" | 1" | | 20.0 | 91.5 | 47.7 | 32.5 | | | |
| IM43640-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 108.0 | 54.2 | 37.5 | | | |
| IM43640-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 124.5 | 63.7 | 44.0 | | | |
| IM43640-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 154.0 | 79.6 | 60.5 | | | |

SAE STANDARD CONNECTIONS



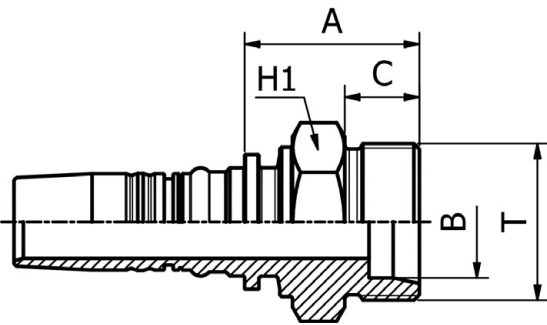
IM43690

90° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | |
| IM43690-10-12 | 16 | - 10 | 5/8" | 3/4" | 16.0 | 57.5 | 41.4 | 60.5 | | | |
| IM43690-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 72.4 | 41.4 | 59.0 | | | |
| IM43690-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 81.0 | 47.7 | 68.0 | | | |
| IM43690-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 98.5 | 54.2 | 81.0 | | | |
| IM43690-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 112.5 | 63.7 | 94.5 | | | |
| IM43690-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 140.5 | 79.6 | 132.0 | | | |

FITTINGS 218

DIN STANDARD CONNECTIONS

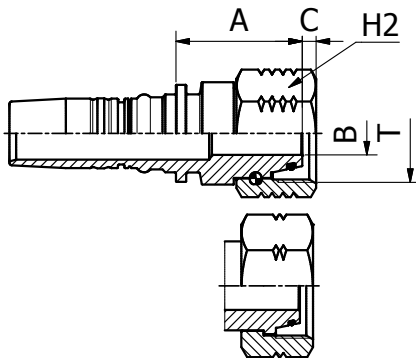


IM31210

METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2
(STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | mm | B | A | C | H1 | | | |
| IM31210-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 37.0 | 16.0 | 30.0 | | | |
| IM31210-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 43.5 | 18.0 | 36.0 | | | |
| IM31210-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 46.8 | 20.0 | 46.0 | | | |
| IM31210-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 55.0 | 22.0 | 55.0 | | | |

DIN STANDARD CONNECTIONS

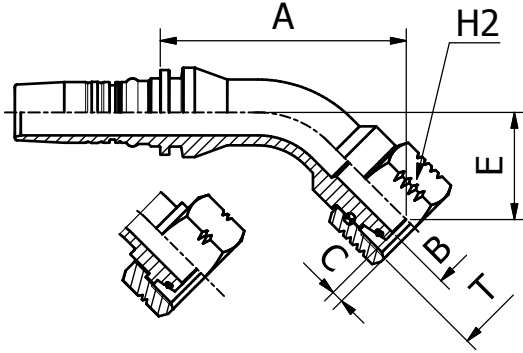


IM41612/IM41613

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|------|---------------|------|-----|------|--|--|--|
| | DN | Dash | inch | T | mm | B | A | C | H2 | | | |
| IM41613-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 37.0 | 3.5 | 36.0 | | | |
| IM41613-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 42.0 | 3.4 | 41.0 | | | |
| IM41613-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 46.5 | 5.3 | 50.0 | | | |
| IM41613-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 41.5 | 8.0 | 60.0 | | | |

DIN STANDARD CONNECTIONS

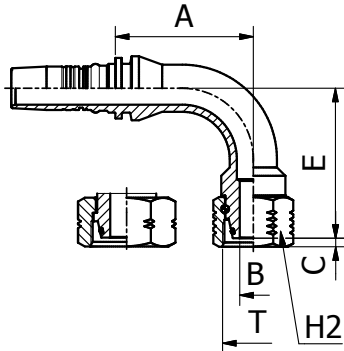


IM41642/IM41643

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 mm | | | | | | |
|---------------|-----------|------|--------|--------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| IM41643-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 66.5 | 3.5 | 29.5 | 36.0 | | |
| IM41643-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 81.0 | 3.4 | 33.5 | 41.0 | | |
| IM41643-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 93.0 | 5.3 | 36.0 | 50.0 | | |
| IM41643-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 110.0 | 8.0 | 40.0 | 60.0 | | |

DIN STANDARD CONNECTIONS

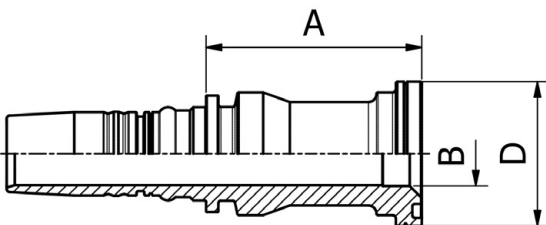


IM41692/IM41693

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 mm | | | | | | |
|---------------|-----------|------|--------|--------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| IM41693-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 52.5 | 3.5 | 57.5 | 36.0 | | |
| IM41693-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 67.0 | 3.4 | 67.5 | 41.0 | | |
| IM41693-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 81.5 | 5.3 | 75.5 | 50.0 | | |
| IM41692-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.1 | 103.5 | 6.1 | 90.0 | 50.0 | | |
| IM41693-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 100.0 | 8.0 | 86.5 | 60.0 | | |

SAE STANDARD CONNECTIONS

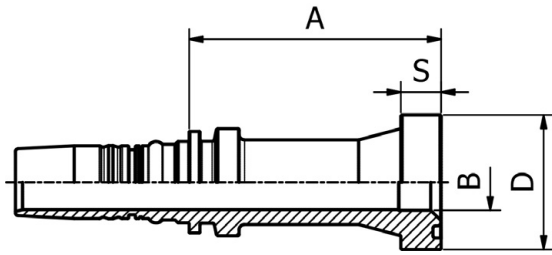


IM43310

ISO / SAE
CODE 61 FLANGE
SAE J516 / ISO 12151-3
(STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|------|------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | | | | |
| IM43310-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 60.0 | 38.0 | | | | |
| IM43310-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 66.5 | 44.6 | | | | |
| IM43310-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 75.0 | 51.0 | | | | |
| IM43310-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 80.5 | 60.5 | | | | |
| IM43310-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 83.0 | 71.6 | | | | |

ORIGINAL EQUIPMENT CONNECTIONS

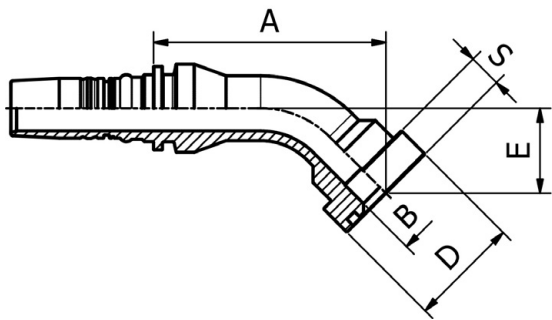


IM43910

STRAIGHT SUPERCAT SERIES FLANGE (STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | S | | |
| IM43910-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 77.0 | 41.5 | 14.3 | | | |
| IM43910-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 89.5 | 47.7 | 14.3 | | | |
| IM43910-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 95.0 | 54.0 | 14.3 | | | |
| IM43910-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.1 | 99.0 | 63.6 | 14.3 | | | |
| IM43910-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 114.0 | 79.3 | 14.3 | | | |

FITTINGS 220

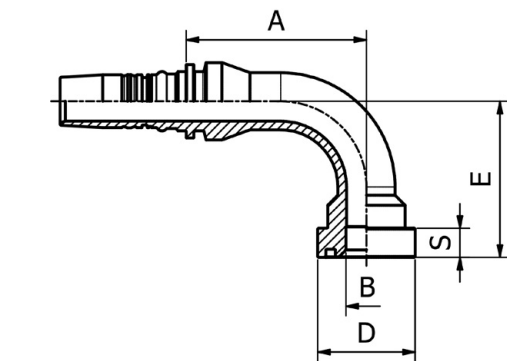


ORIGINAL EQUIPMENT CONNECTIONS

IM43940

45° SUPERCAT SERIES FLANGE (STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| IM43940-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 85.0 | 41.5 | 32.0 | 14.3 | | |
| IM43940-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 100.5 | 47.7 | 36.5 | 14.3 | | |
| IM43940-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 110.5 | 54.0 | 40.5 | 14.3 | | |
| IM43940-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 125.5 | 63.7 | 45.5 | 14.3 | | |
| IM43940-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 158.5 | 79.3 | 61.5 | 14.3 | | |

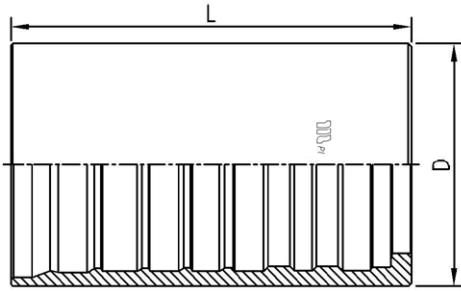


ORIGINAL EQUIPMENT CONNECTIONS

IM43990

90° SUPERCAT SERIES FLANGE (STAINLESS STEEL)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| IM43990-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 72.5 | 41.5 | 64.5 | 14.3 | | |
| IM43990-16-16 | 25 | - 16 | 1" | 1" | 20.0 | 88.5 | 47.7 | 76.5 | 14.3 | | |
| IM43990-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 98.5 | 54.0 | 85.0 | 14.3 | | |
| IM43990-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 112.5 | 63.7 | 96.0 | 14.3 | | |
| IM43990-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 144.0 | 79.3 | 133.5 | 14.3 | | |



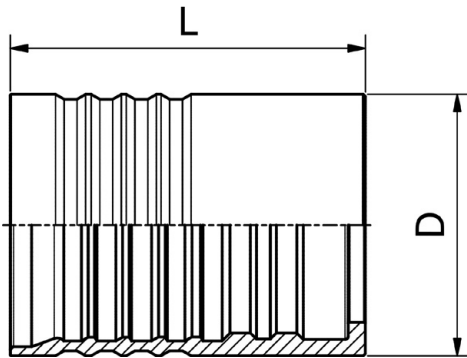
FERRULE

M02610

**DOUBLE SKIVE FERRULE
FOR HEAVY DUTY SPIRAL HOSES (8 PLY)**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M02610-56 | 89 | -56 | 3.1/2" | | | 143.2 | 236.7 | | | | |

221 FITTINGS

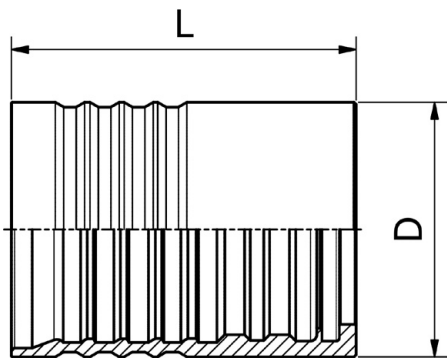


FERRULE

M02700

**DOUBLE SKIVE FERRULE
EXD.8WS**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M02700-24 | 38 | - 24 | 1.1/2" | | | 74.0 | 104.2 | | | | |
| M02700-32 | 51 | - 32 | 2" | | | 89.0 | 122.0 | | | | |
| M02700-48 | 76 | - 48 | 3" | | | 122.0 | 165.0 | | | | |

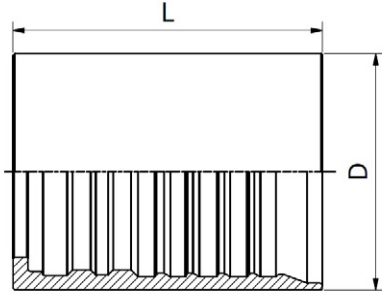


FERRULE

M02800

**DOUBLE SKIVE FERRULE
FOR HEAVY DUTY SPIRAL HOSES (8 PLY)**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M02800-48 | 76 | - 48 | 3" | | | 122.0 | 165.0 | | | | |



FERRULE

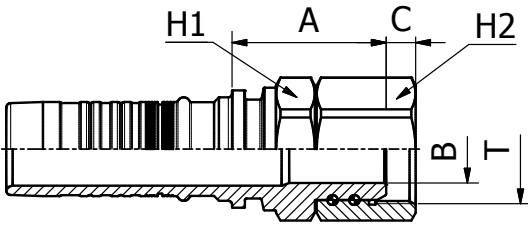
M02900

**DOUBLE SKIVE FERRULE
FOR HEAVY DUTY SPIRAL HOSES**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M02900-24 | 38 | - 24 | 1.1/2" | | | 82.0 | 104.2 | | | | |

FITTINGS 222

BS STANDARD CONNECTIONS

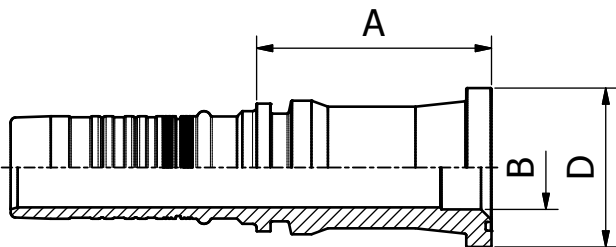


MB0514

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|----|------|----|----|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| MB0514-24-24 | 38 | -24 | 1.1/2" | 1.1/2" - 11 | 27 | 86 | 12,5 | 55 | 60 | | |
| MB0514-32-32 | 51 | -32 | 2" | 2" - 11 | 37 | 84 | 16,1 | 70 | 70 | | |

SAE STANDARD CONNECTIONS



MB3610

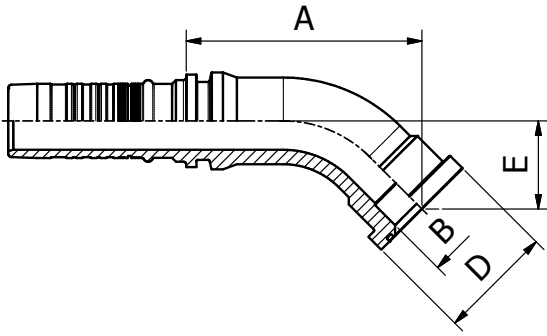
**ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3**

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|-------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | | | | |
| MB3610-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32,1 | 102,5 | 63,7 | | | | |
| MB3610-32-32 | 51 | -32 | 2" | 2" | 42 | 117,5 | 79,6 | | | | |
| MB3610-48-48 | 76 | -48 | 3" | 3" | 62,5 | 169 | 131,9 | | | | |

SAE STANDARD CONNECTIONS

MB3640

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

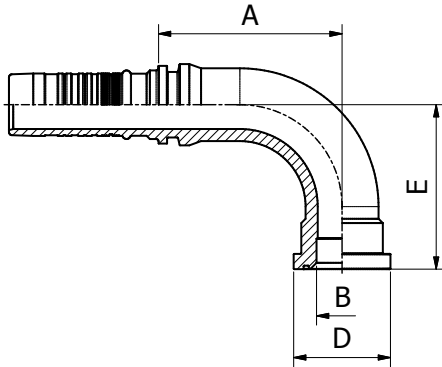


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|----|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| MB3640-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32,1 | 126,5 | 63,7 | 46 | | | |
| MB3640-32-32 | 51 | -32 | 2" | 2" | 42 | 163 | 79,6 | 61 | | | |

SAE STANDARD CONNECTIONS

MB3690

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

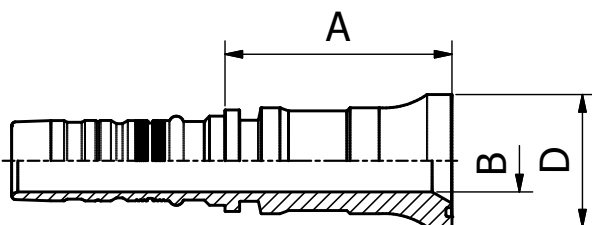


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-----|------|-------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | |
| MB3690-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32,1 | 119 | 63,7 | 104 | | | |
| MB3690-32-32 | 51 | -32 | 2" | 2" | 42 | 151 | 79,6 | 135,5 | | | |

XTRAFRANGE

MB8510

XTRAFRANGE/62
(SAE J518 CODE 62 ISO 6162-2
PORT COMPATIBLE)

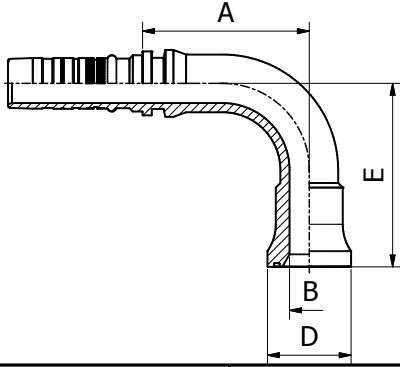


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-----|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | | |
| MB8510-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 30 | 109 | 63,7 | | | |
| MB8510-32-32 | 51 | -32 | 2" | 2" | 40 | 123 | 79,6 | | | |
| MB8510-48-48 | 76 | -48 | 3" | 3" | 62,5 | 152 | 128 | | | |

XTRAFRANGE

MB8590

90° XTRAFRANGE/62
(SAE J518 CODE 62 ISO 6162-2
PORT COMPATIBLE)



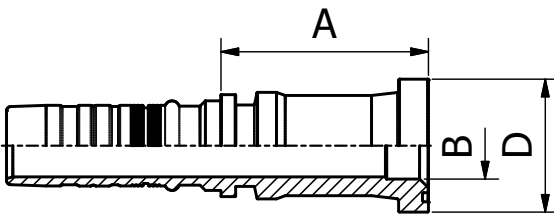
| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-----|------|-----|---|--|
| | DN | Dash | inch | | | inch | B | A | D | E | |
| MB8590-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 30 | 127 | 63,7 | 140 | | |
| MB8590-32-32 | 51 | -32 | 2" | 2" | | 39 | 152 | 79,6 | 178 | | |

FITTINGS
224

ORIGINAL EQUIPMENT CONNECTIONS

MB3910

STRAIGHT SUPERCAT FLANGE

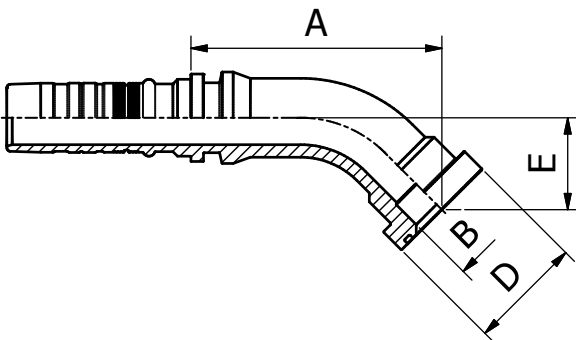


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|------|------|------|---|--|
| | DN | Dash | inch | | | inch | B | A | D | S | |
| MB3910-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 99.0 | 63.7 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

MB3940

45° SUPERCAT FLANGE

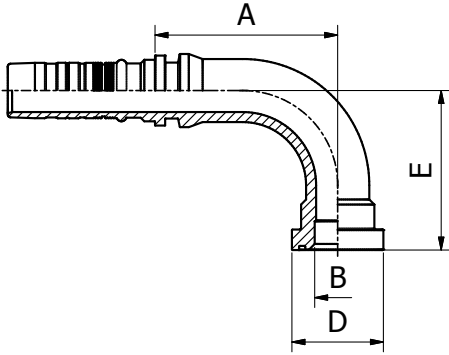


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|------|------|---|
| | DN | Dash | inch | | | inch | B | A | D | E | S |
| MB3940-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | | 32.0 | 140.0 | 63.7 | 51.5 | 14.3 | |

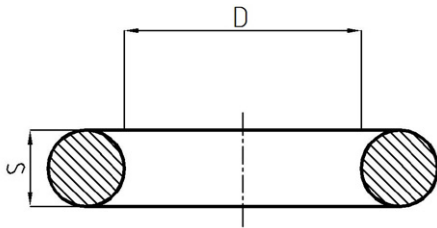
ORIGINAL EQUIPMENT CONNECTIONS

MB3990

90° SUPERCAT FLANGE



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| MB3990-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 127.0 | 63.7 | 111.0 | 14.3 | | |



O-RING

JO29

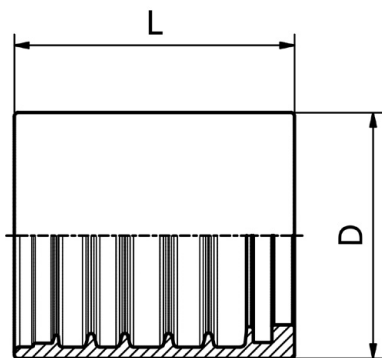
INTERLOCK SUPER O-RING

| PART. REF. | HOSE BORE | | | DIMENSIONS 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 | | | | | | |

FERRULE

M05400

**NO-SKIVE FERRULE
FOR HEAVY DUTY SPIRAL HOSES (4 PLY)**



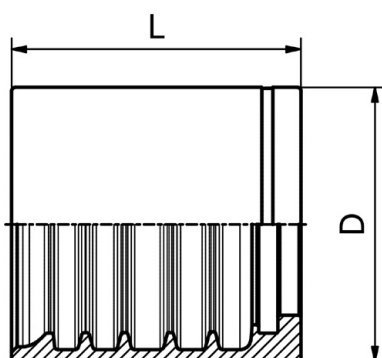
| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M05400-10 | 16 | - 10 | 5/8" | | | 40.0 | 44.3 | | | | |
| M05400-12 | 19 | - 12 | 3/4" | | | 43.8 | 53.3 | | | | |
| M05400-16 | 25 | - 16 | 1" | | | 52.0 | 64.3 | | | | |
| M05400-20 | 31 | - 20 | 1.1/4" | | | 59.3 | 72.0 | | | | |
| M05400-24 | 38 | - 24 | 1.1/2" | | | 68.5 | 78.0 | | | | |
| M05400-32 | 51 | - 32 | 2" | | | 84.6 | 97.1 | | | | |
| M05400-40 | 63 | - 40 | 2.1/2" | | | 97.0 | 116.0 | | | | |
| M05400-48 | 76 | - 48 | 3" | | | 109.8 | 124.0 | | | | |
| M05400-56 | 89 | - 56 | 3.1/2" | | | 127.7 | 123.5 | | | | |
| M05400-64 | 102 | - 64 | 4" | | | 145.0 | 126.5 | | | | |

FITTINGS 226

FERRULE

M05500

**NO-SKIVE FERRULE
FOR HEAVY DUTY SPIRAL HOSES (4-6 PLY)**

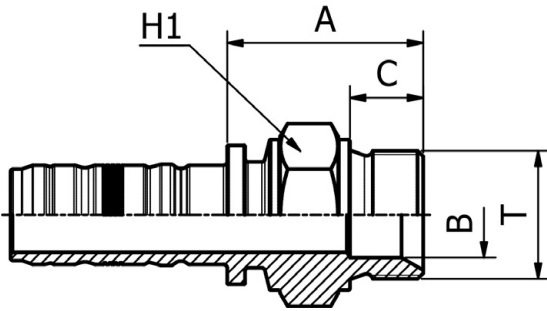


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M05500-24 | 38 | - 24 | 1.1/2" | | | 75.0 | 79.0 | | | | |
| M05500-20 | 31 | - 20 | 1.1/4" | | | 66.0 | 70.0 | | | | |
| M05500-32 | 51 | - 32 | 2" | | | 90.0 | 98.1 | | | | |

BS STANDARD CONNECTIONS

M70510

**BSP
MALE PARALLEL 60° CONE SEAT
BS5200 / ISO 12151-6**

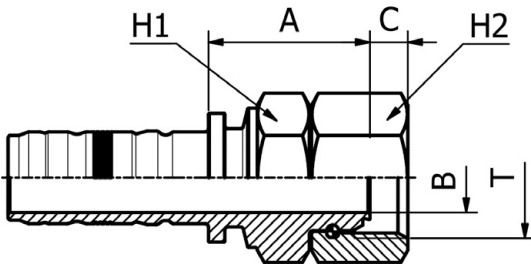


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|-------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M70510-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.8 | 43.5 | 16.0 | 32.0 | | | |
| M70510-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 22.2 | 49.5 | 19.0 | 41.0 | | | |
| M70510-16-16 | 25 | - 16 | 1" | 1" - 11 | 22.2 | 51.0 | 19.0 | 41.0 | | | |
| M70510-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 28.5 | 56.0 | 20.0 | 50.0 | | | |
| M70510-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 28.5 | 56.5 | 20.0 | 50.0 | | | |
| M70510-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 33.5 | 60.5 | 22.0 | 55.0 | | | |
| M70510-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 64.0 | 25.0 | 70.0 | | | |

BS STANDARD CONNECTIONS

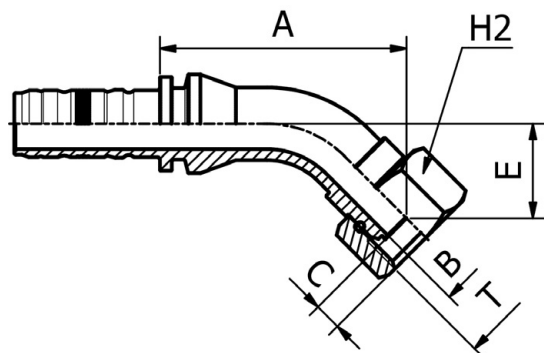
M80812

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 32.0 | 32.0 | | |
| M80812-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.5 | 44.0 | 10.6 | 41.0 | 41.0 | | |
| M80812-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 44.5 | 8.5 | 41.0 | 32.0 | | |
| M80812-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 45.5 | 10.6 | 41.0 | 41.0 | | |
| M80812-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 50.5 | 10.5 | 50.0 | 50.0 | | |
| M80812-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.0 | 48.0 | 10.6 | 50.0 | 41.0 | | |
| M80812-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.1 | 50.5 | 10.5 | 50.0 | 50.0 | | |
| M80812-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 50.0 | 12.5 | 50.0 | 60.0 | | |
| M80812-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.1 | 52.0 | 12.5 | 60.0 | 60.0 | | |
| M80812-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" - 11 | 26.1 | 52.0 | 10.5 | 55.0 | 50.0 | | |
| M80812-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 53.5 | 16.1 | 70.0 | 70.0 | | |

BS STANDARD CONNECTIONS



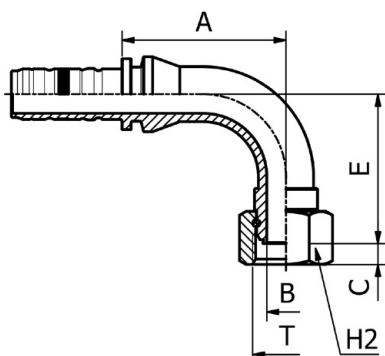
M80842

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 | 29.0 | 32.0 | | |
| M80842-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.5 | 84.0 | 10.6 | 30.0 | 41.0 | | |
| M80842-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 106.5 | 8.5 | 36.0 | 32.0 | | |
| M80842-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 95.0 | 10.6 | 36.5 | 41.0 | | |
| M80842-16-16028 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 84.0 | 10.6 | 28.0 | 41.0 | | |
| M80842-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 109.5 | 10.5 | 38.0 | 50.0 | | |
| M80842-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.5 | 102.0 | 10.6 | 36.5 | 41.0 | | |
| M80842-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 99.0 | 10.5 | 39.0 | 50.0 | | |
| M80842-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.0 | 114.0 | 12.5 | 54.0 | 60.0 | | |
| M80842-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 122.5 | 12.5 | 45.0 | 60.0 | | |
| M80842-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 155.0 | 16.1 | 66.0 | 70.0 | | |

FITTINGS 228

BS STANDARD CONNECTIONS



M80892

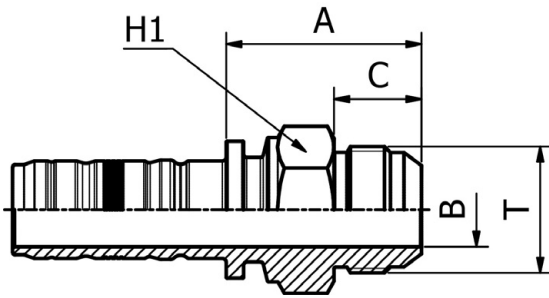
90° BSP
O-RING FEMALE SWEPT ELBOW 60° CONE
BS5200 / ISO 12151-6

| 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 | 60.0 | 32.0 | | |
| M80892-12-12050 | 19 | - 12 | 3/4" | 3/4" - 14 | 14.5 | 67.5 | 8.5 | 50.0 | 32.0 | | |
| M80892-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.5 | 73.5 | 10.6 | 62.0 | 41.0 | | |
| M80892-16-12 | 25 | - 16 | 1" | 3/4" - 14 | 15.0 | 90.0 | 8.5 | 70.0 | 32.0 | | |
| M80892-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 83.0 | 10.6 | 76.0 | 41.0 | | |
| M80892-16-16058 | 25 | - 16 | 1" | 1" - 11 | 19.5 | 74.5 | 10.6 | 58.5 | 41.0 | | |
| M80892-16-20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 96.0 | 10.5 | 78.5 | 50.0 | | |
| M80892-20-16 | 31 | - 20 | 1.1/4" | 1" - 11 | 19.5 | 90.0 | 10.6 | 76.0 | 41.0 | | |
| M80892-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 88.0 | 10.5 | 83.5 | 50.0 | | |
| M80892-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.0 | 88.0 | 12.5 | 92.0 | 60.0 | | |
| M80892-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 103.0 | 12.5 | 98.5 | 60.0 | | |
| M80892-32-32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 135.9 | 16.1 | 140.5 | 70.0 | | |

SAE STANDARD CONNECTIONS

M72510

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

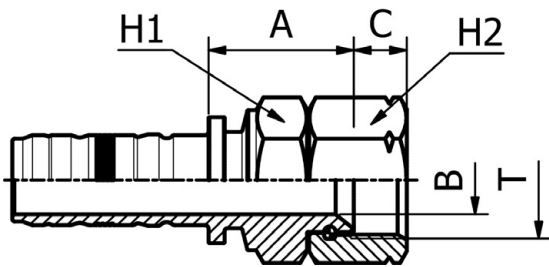


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M72510-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 14.5 | 44.5 | 22.0 | 30.0 | | | |
| M72510-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.5 | 51.5 | 23.0 | 38.0 | | | |
| M72510-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 56.0 | 24.3 | 46.0 | | | |
| M72510-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 60.0 | 27.5 | 50.0 | | | |
| M72510-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 75.5 | 34.0 | 65.0 | | | |

SAE STANDARD CONNECTIONS

M82712

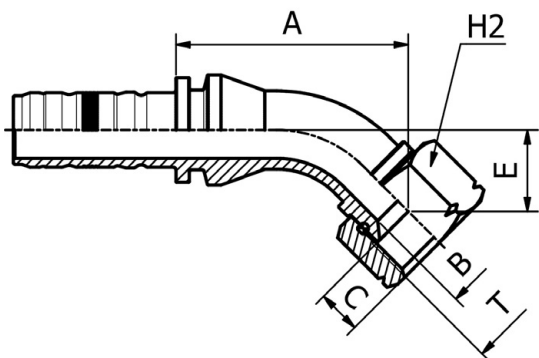
JIC
FEMALE 37° CONE SEAT DOUBLE HEXAGON
 SAE J516 / ISO 12151-5
 (THRUST-WIRE NUT)



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 32.0 | 32.0 | | |
| M82712-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.5 | 36.5 | 15.2 | 32.0 | 41.0 | | |
| M82712-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.5 | 41.5 | 15.2 | 41.0 | 41.0 | | |
| M82712-16-20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.1 | 46.5 | 16.2 | 41.0 | 50.0 | | |
| M82712-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.1 | 51.5 | 16.2 | 50.0 | 50.0 | | |
| M82712-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 54.5 | 18.8 | 55.0 | 60.0 | | |
| M82712-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 54.5 | 18.8 | 55.0 | 60.0 | | |
| M82712-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 56.0 | 24.0 | 65.0 | 75.0 | | |

SAE STANDARD CONNECTIONS

M82542



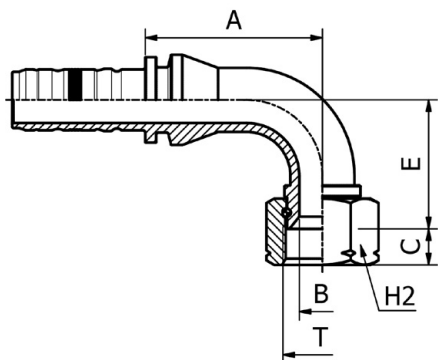
45° JIC
FEMALE SWEPT ELBOW 37° CONE SEAT
SAE J516 / ISO 12151-5

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M82542-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 14.5 | 75.0 | 14.2 | 22.5 | 32.0 | | |
| M82542-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.5 | 81.5 | 15.2 | 26.0 | 41.0 | | |
| M82542-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 101.0 | 16.2 | 41.5 | 50.0 | | |
| M82542-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 121.5 | 18.8 | 48.5 | 60.0 | | |
| M82542-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 162.0 | 24.0 | 63.5 | 75.0 | | |

FITTINGS 230

SAE STANDARD CONNECTIONS

M82592



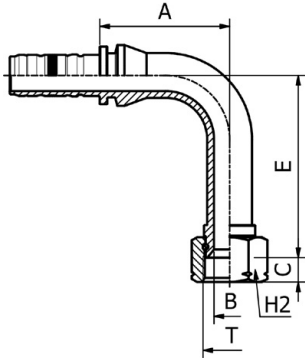
90° JIC
FEMALE SWEPT ELBOW 37° CONE SEAT
SAE J516 / ISO 12151-5

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M82592-12-16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 73.5 | 15.2 | 57.5 | 41.0 | | |
| M82592-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 14.5 | 67.5 | 14.2 | 47.5 | 32.0 | | |
| M82592-16-12 | 25 | - 16 | 1" | 1.1/16" - 12 | 14.5 | 76.5 | 14.2 | 47.5 | 32.0 | | |
| M82592-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.5 | 74.5 | 15.2 | 55.5 | 41.0 | | |
| M82592-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 88.0 | 16.2 | 86.5 | 50.0 | | |
| M82592-20-24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 88.0 | 18.8 | 90.5 | 60.0 | | |
| M82592-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 105.0 | 18.8 | 101.0 | 60.0 | | |
| M82592-32-32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 145.0 | 24.0 | 139.0 | 75.0 | | |

SAE STANDARD CONNECTIONS

M84792

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

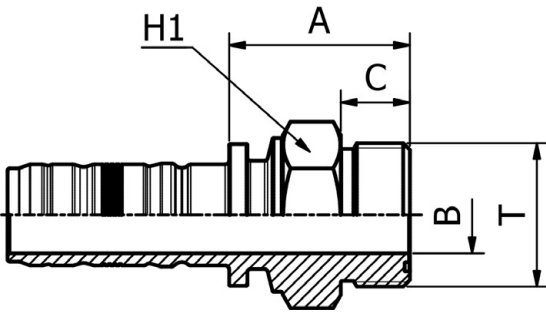


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|-------|------|-------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| M84792-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 14.5 | 73.5 | 14.2 | 94.5 | 32.0 | | |
| M84792-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.5 | 81.0 | 15.2 | 114.0 | 41.0 | | |
| M84792-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 88.0 | 16.2 | 129.0 | 50.0 | | |
| M84792-24-24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.1 | 105.0 | 18.8 | 141.0 | 60.0 | | |
| M84792-32-32 | 38 | - 24 | 1.1/2" | 2.1/2" - 12 | 42.0 | 145.0 | 24.0 | 222.0 | 75.0 | | |

SAE STANDARD CONNECTIONS

M72410

ORFS
MALE
SAE J516 / ISO 12151-1

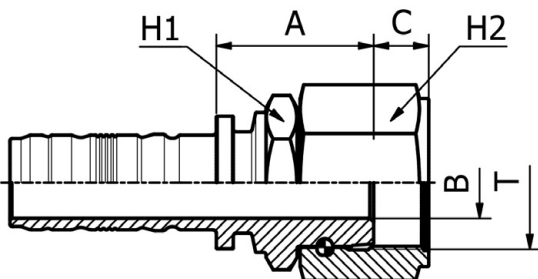


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | |
| M72410-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 41.0 | 17.0 | 32.0 | | |
| M72410-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 46.0 | 17.5 | 41.0 | | |
| M72410-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 50.5 | 17.5 | 46.0 | | |
| M72410-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 53.0 | 17.5 | 55.0 | | |

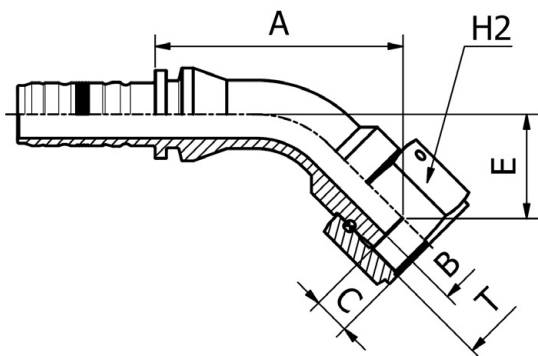
SAE STANDARD CONNECTIONS

M82412

ORFS
FEMALE
SAE J516/ISO 12151.1



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | H2 | | |
| M82412-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 38.0 | 14.1 | 32.0 | 36.0 | | |
| M82412-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.5 | 42.0 | 15.0 | 41.0 | 46.0 | | |
| M82412-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 43.0 | 15.0 | 41.0 | 46.0 | | |
| M82412-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 52.5 | 15.1 | 50.0 | 55.0 | | |
| M82412-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 30.5 | 55.0 | 15.0 | 60.0 | 60.0 | | |



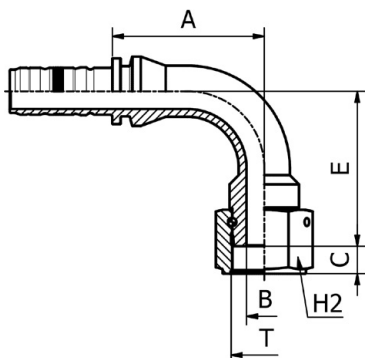
SAE STANDARD CONNECTIONS

M82442

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | E | H2 | |
| M82442-12-12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 14.5 | 90.0 | 14.1 | 36.0 | 36.0 | | |
| M82442-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.5 | 90.5 | 15.0 | 36.5 | 46.0 | | |
| M82442-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 101.0 | 15.0 | 42.5 | 46.0 | | |
| M82442-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 120.0 | 15.1 | 49.5 | 55.0 | | |
| M82442-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 123.5 | 15.0 | 50.5 | 60.0 | | |

FITTINGS 232

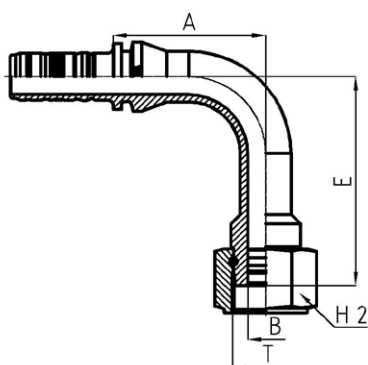


SAE STANDARD CONNECTIONS

M82492

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 36.0 | | |
| M82492-12-16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.5 | 86.0 | 15.0 | 71.0 | 46.0 | | |
| M82492-16-12 | 25 | - 16 | 1" | 1.3/16" - 12 | 14.5 | 89.5 | 14.1 | 70.5 | 36.0 | | |
| M82492-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 83.0 | 15.0 | 84.5 | 46.0 | | |
| M82492-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 99.0 | 15.1 | 98.0 | 55.0 | | |
| M82492-24-24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 105.0 | 15.0 | 104.0 | 60.0 | | |



SAE STANDARD CONNECTIONS

M84492

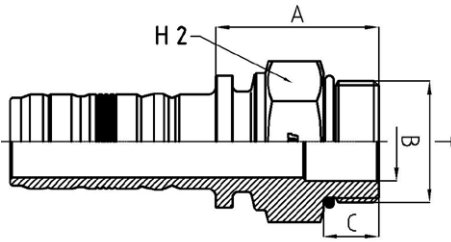
90° ORFS
FEMALE LONG DROP ELBOW
SAE J516 / ISO 12151-1
(THURST- WIRE NUT)

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 96.0 | 36.0 | | |
| M84492-16-16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.5 | 83.0 | 15.0 | 114.0 | 46.0 | | |
| M84492-20-20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 25.0 | 99.0 | 15.1 | 129.0 | 55.0 | | |

SAE STANDARD CONNECTIONS

M73010

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

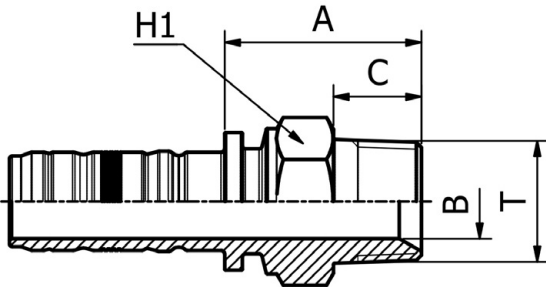


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M73010-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.5 | 42.5 | 15.1 | 32.0 | | | |
| M73010-16-16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.5 | 44.5 | 15.1 | 38.0 | | | |
| M73010-20-20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 27.5 | 47.5 | 15.1 | 46.0 | | | |

SAE STANDARD CONNECTIONS

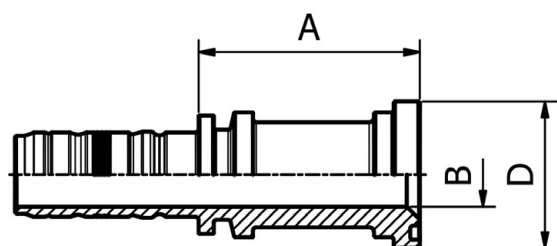
M72810

NPTF
MALE 60° CONE SEAT
SAE J516/J514



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | T | B | A | C | H1 | | | |
| M72810-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 41.5 | 19.2 | 30.0 | | | |
| M72810-16-16 | 25 | - 16 | 1" | 1" - 11,5 | 19.5 | 52.0 | 24.2 | 38.0 | | | |
| M72810-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11,5 | 25.0 | 61.5 | 25.0 | 46.0 | | | |
| M72810-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11,5 | 30.5 | 60.5 | 26.0 | 50.0 | | | |
| M72810-32-32 | 51 | - 32 | 2" | 2" - 11,5 | 41.0 | 67.5 | 26.5 | 65.0 | | | |
| M72810-48-48 | 76 | - 48 | 3" | 3" - 8 | 62.5 | 121.5 | 51.5 | 100.0 | | | |

SAE STANDARD CONNECTIONS

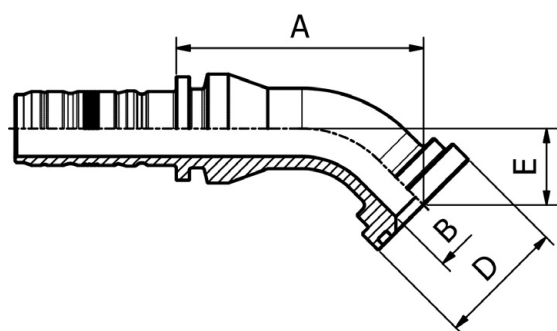


M83311

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 | 38.0 | | | | |
| 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 | 38.0 | | | | |
| M83311-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 67.5 | 44.6 | | | | |
| M83311-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 53.5 | 51.0 | | | | |
| M83311-20-16 | 31 | - 20 | 1.1/4" | 1" | | 19.5 | 69.0 | 44.6 | | | | |
| M83311-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 75.0 | 51.0 | | | | |
| M83311-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 60.0 | 60.5 | | | | |
| M83311-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 78.5 | 60.5 | | | | |
| M83311-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 60.5 | 71.6 | | | | |
| M83311-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 82.5 | 71.6 | | | | |
| M83311-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | | 51.5 | 93.0 | 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" | | 76.0 | 98.5 | 114.3 | | | | |
| M83311-64-64 | 102 | - 64 | 4" | 4" | | 89.0 | 105.0 | 127.0 | | | | |

FITTINGS 234



SAE STANDARD CONNECTIONS

M83341

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

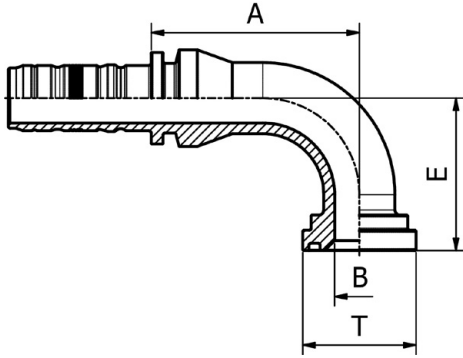
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|-------|------|--|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | | |
| M83341-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 78.0 | 38.0 | 24.5 | | | | |
| M83341-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 78.0 | 44.6 | 24.5 | | | | |
| M83341-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 90.5 | 38.0 | 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" | | 26.0 | 92.0 | 51.0 | 32.0 | | | | |
| 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" | | 26.0 | 87.5 | 51.0 | 29.0 | | | | |
| M83341-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 88.5 | 60.5 | 30.0 | | | | |
| M83341-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 102.5 | 60.5 | 38.0 | | | | |
| M83341-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 102.5 | 71.6 | 38.0 | | | | |
| M83341-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 143.5 | 71.6 | 52.0 | | | | |
| M83341-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | | 49.2 | 131.0 | 84.3 | 44.5 | | | | |
| M83341-48-48 | 76 | - 48 | 3" | 3" | | 59.0 | 147.0 | 101.6 | 53.0 | | | | |

SAE STANDARD CONNECTIONS

M83391

90° ISO / SAE
CODE 61 FLANGE

SAE J516 / ISO 12151-3



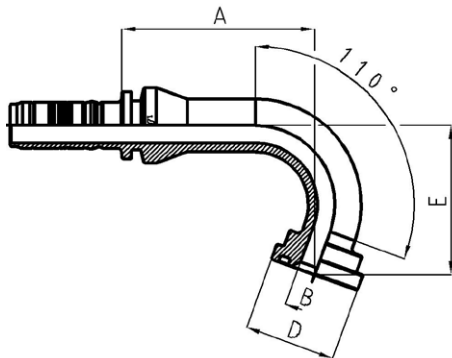
| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|--|---------------|-------|-------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M83391-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 72.5 | 38.0 | 58.0 | | | |
| M83391-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 72.5 | 44.6 | 70.0 | | | |
| M83391-12-16054 | 19 | - 12 | 3/4" | 1" | | 19.5 | 72.5 | 44.6 | 54.0 | | | |
| M83391-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 85.0 | 38.0 | 58.0 | | | |
| M83391-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 82.0 | 44.6 | 60.0 | | | |
| M83391-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 82.0 | 51.0 | 68.0 | | | |
| M83391-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 85.0 | 60.5 | 69.0 | | | |
| M83391-20-16 | 31 | - 20 | 1.1/4" | 1" | | 19.5 | 86.0 | 44.6 | 60.0 | | | |
| M83391-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 85.0 | 51.0 | 67.0 | | | |
| M83391-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 96.5 | 60.5 | 81.0 | | | |
| M83391-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 101.5 | 71.6 | 84.0 | | | |
| M83391-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 135.5 | 71.6 | 120.0 | | | |
| M83391-40-40 | 63 | - 40 | 2.1/2" | 2.1/2" | | 49.2 | 128.0 | 84.3 | 118.0 | | | |
| M83391-48-48 | 76 | - 48 | 3" | 3" | | 59.0 | 144.5 | 101.6 | 140.0 | | | |
| M83391-56-56 | 89 | - 56 | 3.1/2" | 3.1/2" | | 73.7 | 164.0 | 114.3 | 160.0 | | | |

235 FITTINGS

SAE STANDARD CONNECTIONS

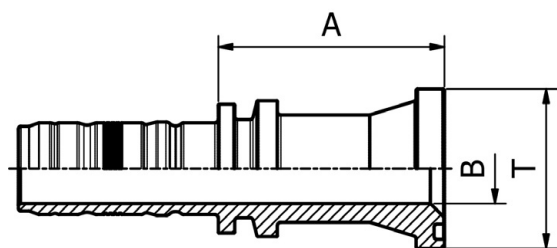
M83301...P

110° ISO / SAE
CODE 61 FLANGE



| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|--------|--------|--|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M83301-12-12P | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 80.0 | 38.0 | 62.0 | | | |
| M83301-16-16P | 25 | - 16 | 1" | 1" | | 19.5 | 91.5 | 44.6 | 79.0 | | | |
| M83301-20-20P | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 121.5 | 51.0 | 91.0 | | | |
| M83301-24-24P | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 124.8 | 60.5 | 109.0 | | | |
| M83301-32-32P | 51 | - 32 | 2" | 2" | | 42.0 | 146.5 | 71.6 | 140.0 | | | |

SAE STANDARD CONNECTIONS



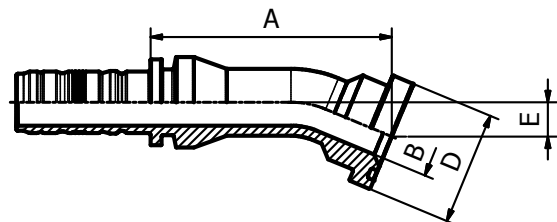
M83611

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|------|--|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | | | | | |
| M83611-10-12 | 16 | - 10 | 5/8" | 3/4" | 16.0 | 52.5 | 41.1 | | | | | |
| 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" | 16.0 | 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" | 26.0 | 70.0 | 54.2 | | | | | |
| M83611-20-16 | 31 | - 20 | 1.1/4" | 1" | 19.5 | 62.0 | 47.7 | | | | | |
| M83611-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 66.0 | 54.2 | | | | | |
| M83611-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 74.5 | 63.7 | | | | | |
| M83611-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 74.5 | 63.7 | | | | | |
| M83611-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 88.5 | 79.6 | | | | | |
| M83611-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | 26.0 | 66.5 | 54.2 | | | | | |
| M83611-32-24 | 51 | - 32 | 2" | 1.1/2" | 32.0 | 91.5 | 63.7 | | | | | |

FITTINGS 236

SAE STANDARD CONNECTIONS



M83621

22.5° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3

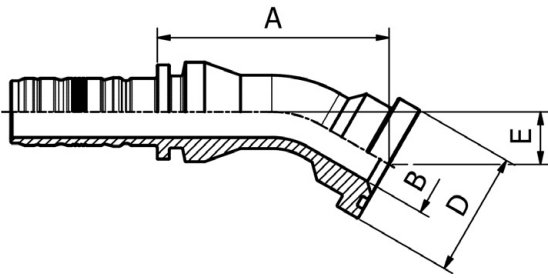
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|--|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | | |
| M83621-12-12 | 19 | -12 | 3/4" | 3/4" | 16.0 | 89.5 | 41.4 | 12.0 | | | | |
| M83621-16-16 | 25 | -16 | 1" | 1" | 19.5 | 101.0 | 47.7 | 14.5 | | | | |
| M83621-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 26.0 | 107.0 | 54.2 | 17.0 | | | | |
| M83621-24-24 | 38 | -24 | 1.1/2" | 1.1/2" | 32.0 | 122.0 | 63.7 | 19.5 | | | | |
| M83621-32-32 | 51 | -32 | 2" | 2" | 42.0 | 164.0 | 79.5 | 25.0 | | | | |

SAE STANDARD CONNECTIONS

M83631

30° ISO / SAE
CODE 62 FLANGE

SAE J516 / ISO 12151-3



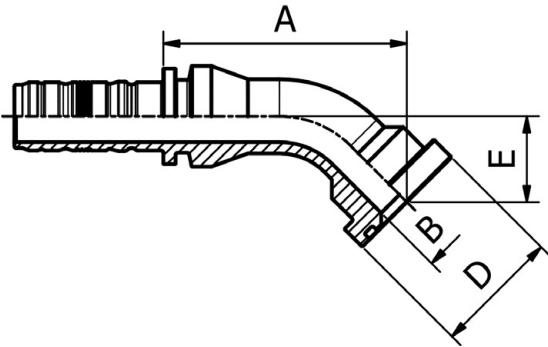
| PART. REF. | HOSE BORE | | | Flange | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | | inch | B | A | D | E | | |
| M83631-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 78.5 | 41.4 | 17.5 | | | |
| M83631-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 89.0 | 47.7 | 20.0 | | | |
| M83631-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 90.5 | 54.2 | 22.5 | | | |
| M83631-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 104.5 | 63.7 | 27.0 | | | |

SAE STANDARD CONNECTIONS

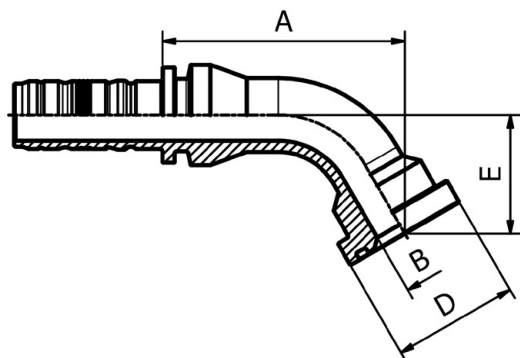
M83641

45° ISO / SAE
CODE 62 FLANGE

SAE J516 / ISO 12151-3



| PART. REF. | HOSE BORE | | | Flange | Flange | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | | inch | B | A | D | E | | |
| M83641-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 81.5 | 41.4 | 28.0 | | | |
| M83641-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 85.5 | 47.7 | 32.5 | | | |
| M83641-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 87.5 | 41.4 | 28.0 | | | |
| M83641-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 92.0 | 47.7 | 32.5 | | | |
| M83641-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 97.0 | 54.2 | 37.0 | | | |
| 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" | | 26.0 | 96.5 | 54.2 | 38.0 | | | |
| M83641-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 104.5 | 63.7 | 44.5 | | | |
| M83641-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | | 26.0 | 110.5 | 54.2 | 38.0 | | | |
| M83641-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 109.5 | 63.7 | 44.0 | | | |
| M83641-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 121.5 | 79.6 | 56.0 | | | |
| M83641-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 148.0 | 79.6 | 59.0 | | | |



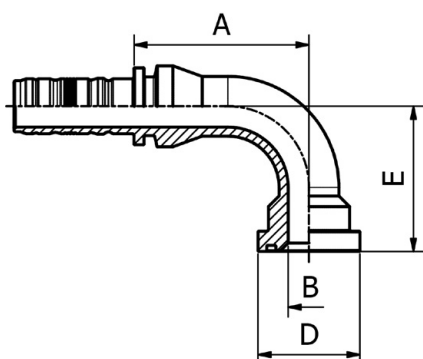
SAE STANDARD CONNECTIONS

M83661

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|--|---------------|-------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M83661-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 81.0 | 41.4 | 39.0 | | | |
| M83661-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 84.0 | 47.7 | 44.0 | | | |
| M83661-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 92.0 | 47.7 | 45.0 | | | |
| M83661-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 97.5 | 54.2 | 55.0 | | | |
| M83661-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 101.5 | 63.7 | 62.0 | | | |
| M83661-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 110.5 | 63.7 | 61.5 | | | |
| M83661-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 151.0 | 79.6 | 85.0 | | | |

FITTINGS 238



SAE STANDARD CONNECTIONS

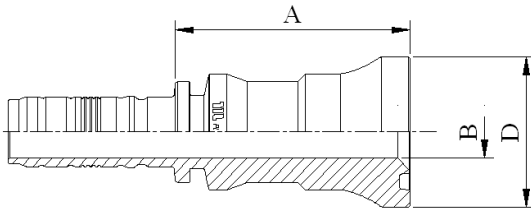
M83691

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|--|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | | |
| M83691-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 72.5 | 41.4 | 59.0 | | | |
| M83691-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 72.6 | 47.7 | 65.0 | | | |
| M83691-16-12 | 25 | - 16 | 1" | 3/4" | | 16.0 | 82.0 | 41.4 | 62.0 | | | |
| M83691-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 82.0 | 47.7 | 68.0 | | | |
| M83691-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 82.0 | 54.2 | 90.0 | | | |
| M83691-16-20075 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 82.0 | 54.2 | 75.0 | | | |
| M83691-20-16 | 31 | - 20 | 1.1/4" | 1" | | 19.5 | 86.0 | 47.7 | 68.0 | | | |
| M83691-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 85.0 | 54.2 | 90.0 | | | |
| M83691-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 85.0 | 63.7 | 104.0 | | | |
| M83691-24-20 | 38 | - 24 | 1.1/2" | 1.1/4" | | 26.0 | 99.0 | 54.2 | 90.0 | | | |
| M83691-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 98.0 | 63.7 | 104.0 | | | |
| M83691-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 98.0 | 79.6 | 138.0 | | | |
| M83691-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 136.0 | 79.6 | 138.0 | | | |

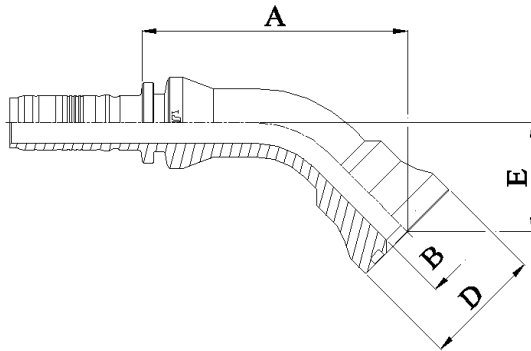
XTRAFRANGE

M88511



XTRAFRANGE/62
(SAE J518 -2/ ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS 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 | 69.0 | 47.7 | | | | |
| M88511-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 88.0 | 54.4 | | | | |
| M88511-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 30.5 | 102.0 | 63.7 | | | | |
| M88511-32-32 | 51 | - 32 | 2" | 2" | | 41.0 | 129.5 | 79.6 | | | | |

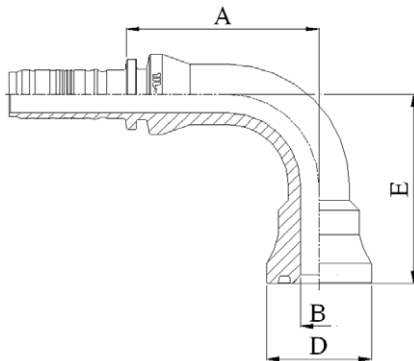


XTRAFRANGE

M88541

45° XTRAFRANGE/62
(SAE J518 -2/ ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|------|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | |
| M88541-12-12 | 19 | - 12 | 3/4" | 3/4" | | 14.5 | 93.5 | 41.4 | 38.0 | | | |
| M88541-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 103.5 | 47.7 | 45.0 | | | |
| M88541-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 138.0 | 54.4 | 62.5 | | | |
| M88541-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 30.5 | 155.0 | 63.7 | 71.5 | | | |
| M88541-32-32 | 51 | - 32 | 2" | 2" | | 39.0 | 194.5 | 79.6 | 92.5 | | | |



XTRAFRANGE

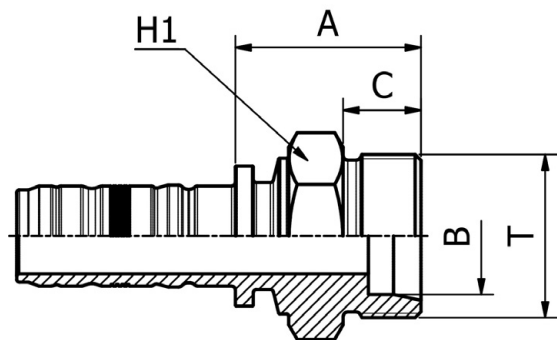
M88591

90° XTRAFRANGE/62
(SAE J518 -2/ ISO 6162-2
PORT COMPATIBLE)

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|-------|--|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | | | |
| M88591-12-12 | 19 | - 12 | 3/4" | 3/4" | | 14.5 | 76.5 | 41.4 | 75.0 | | | |
| M88591-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 84.5 | 47.7 | 90.0 | | | |
| M88591-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 107.0 | 54.4 | 120.0 | | | |
| M88591-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 30.5 | 122.0 | 63.7 | 140.0 | | | |
| M88591-32-32 | 51 | - 32 | 2" | 2" | | 39.0 | 148.5 | 79.6 | 178.0 | | | |

DIN STANDARD CONNECTIONS

M71210



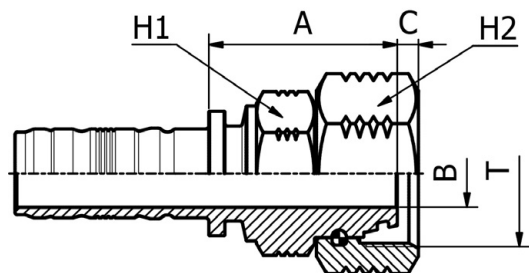
METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|------|------|------|---|----|
| | DN | Dash | inch | | | T | mm | B | A | C | H1 |
| M71210-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 14.5 | 39.5 | 16.0 | 32.0 | | |
| M71210-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 44.5 | 18.0 | 36.0 | | |
| M71210-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 19.5 | 46.0 | 18.0 | 36.0 | | |
| M71210-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 47.5 | 20.0 | 46.0 | | |
| M71210-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 55.0 | 22.0 | 55.0 | | |
| M71210-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 30.5 | 55.5 | 22.0 | 55.0 | | |

FITTINGS 240

DIN STANDARD CONNECTIONS

M81612



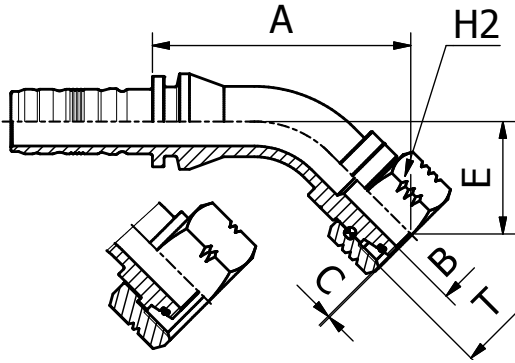
METRIC
O-RING FEMALE 24° CONE HEAVY DUTY
DIN 20066 / ISO 12151-2

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|------|---------------|------|-----|------|------|----|
| | DN | Dash | inch | | | T | mm | B | A | C | H1 |
| M81612-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 49.5 | 3.2 | 32.0 | 36.0 | |
| M81612-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 52.0 | 4.1 | 36.0 | 41.0 | |
| M81612-12-42 | 19 | - 12 | 3/4" | M 42X2 | 30.0 | 19.5 | 52.5 | 6.0 | 41.0 | 50.0 | |
| M81612-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 16.0 | 56.0 | 4.1 | 41.0 | 41.0 | |
| M81612-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 54.5 | 6.0 | 41.0 | 50.0 | |
| M81612-16-52 | 25 | - 16 | 1" | M 52X2 | 38.0 | 25.0 | 56.0 | 8.8 | 50.0 | 60.0 | |
| M81612-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.5 | 56.0 | 6.1 | 46.0 | 50.0 | |
| M81612-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 25.0 | 57.0 | 8.8 | 50.0 | 60.0 | |
| M81612-24-52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 26.1 | 58.0 | 8.8 | 55.0 | 60.0 | |

DIN STANDARD CONNECTIONS

M81642/M81643

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



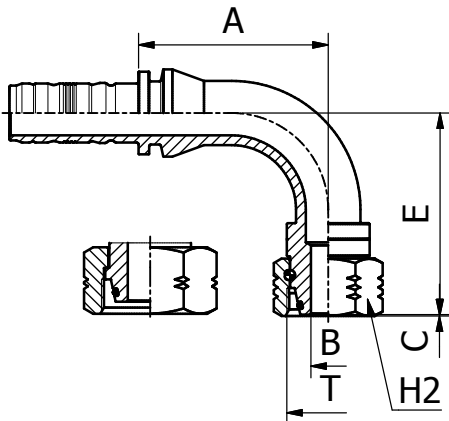
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M81642-10-24 | 16 | - 10 | 5/8" | M24X1.5 | 16.0 | 9.3 | 70.0 | 4.0 | 29.5 | 30.0 | | |
| M81642-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 74.0 | 3.2 | 33.5 | 36.0 | | |
| M81643-10-36 | 16 | - 10 | 5/8" | M 36X2 | 25.0 | 16.0 | 74.5 | 3.4 | 30.5 | 41.0 | | |
| M81642-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 80.0 | 3.2 | 35.0 | 36.0 | | |
| M81643-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 82.0 | 3.4 | 33.5 | 41.0 | | |
| M81642-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 103.0 | 4.1 | 44.5 | 41.0 | | |
| M81643-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 94.0 | 5.3 | 36.0 | 50.0 | | |
| M81642-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.1 | 117.5 | 6.0 | 44.0 | 50.0 | | |
| M81643-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 111.0 | 8.0 | 40.0 | 60.0 | | |

241 FITTINGS

DIN STANDARD CONNECTIONS

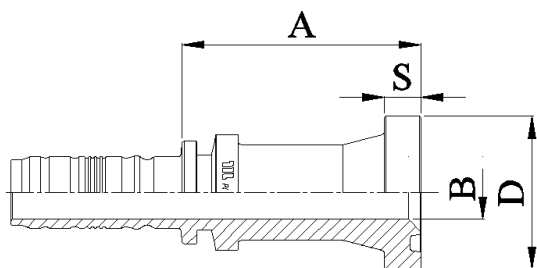
M81692/M81693

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------|------|---------------|-------|-----|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | E | H2 | | |
| M81692-10-24 | 16 | - 10 | 5/8" | M24X1.5 | 16.0 | 9.3 | 57.0 | 4.0 | 58.5 | 30.0 | | |
| M81692-10-30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.0 | 57.0 | 3.2 | 64.0 | 36.0 | | |
| M81693-10-36 | 16 | - 10 | 5/8" | M 36X2 | 25.0 | 16.0 | 60.5 | 3.4 | 60.0 | 41.0 | | |
| M81692-12-30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 64.5 | 3.2 | 68.5 | 36.0 | | |
| M81693-12-36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 14.5 | 68.0 | 3.4 | 67.5 | 41.0 | | |
| M81692-16-36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 83.0 | 4.1 | 87.5 | 41.0 | | |
| M81693-16-42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.5 | 82.5 | 5.3 | 75.5 | 50.0 | | |
| M81692-20-42 | 31 | - 20 | 1.1/4" | M 42X2 | 30.0 | 19.1 | 102.0 | 6.0 | 90.0 | 50.0 | | |
| M81693-20-52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.1 | 101.0 | 8.0 | 86.5 | 60.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

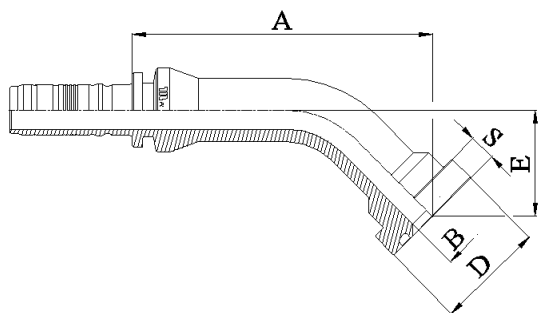


M83711

FLANGE PLUS
(SAE J518 -2 /ISO 6162-2 P
ORT 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 | 65.0 | 41.4 | 10.0 | | |
| M83711-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 65.0 | 47.7 | 11.0 | | |
| M83711-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 81.0 | 54.2 | 12.0 | | |

FITTINGS 242



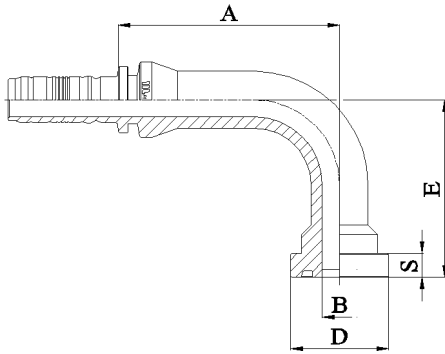
ORIGINAL EQUIPMENT CONNECTIONS

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 | 114.0 | 41.4 | 40.0 | 10.0 | |
| M83741-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 107.5 | 47.7 | 43.0 | 11.0 | |
| M83741-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 25.0 | 133.5 | 54.2 | 50.0 | 12.0 | |

ORIGINAL EQUIPMENT CONNECTIONS

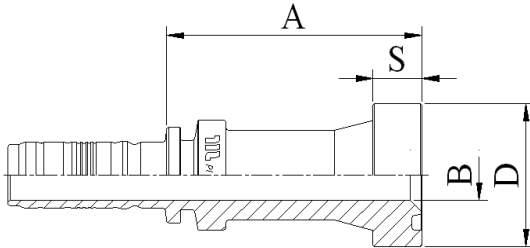


M83791

**90° FLANGE PLUS
(SAE J518 -2/ ISO 6162-2
PORT COMPATIBLE)**

| PART. REF. | HOSE BORE | | | Flange | 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 | 75.0 | 10.0 | | |
| M83791-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 91.0 | 47.7 | 90.0 | 11.0 | | |
| M83791-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 25.0 | 115.0 | 54.2 | 110.0 | 12.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS



M83911

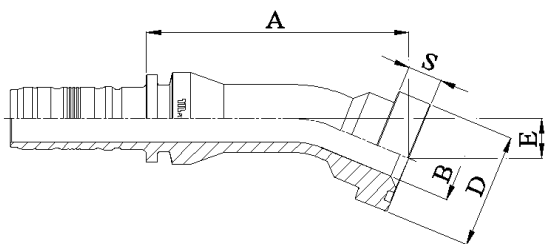
STRAIGHT SUPERCAT SERIES FLANGE

| PART. REF. | HOSE BORE | | | Flange | Flange | DIMENSIONS mm | | | |
|--------------|-----------|------|--------|--------|--------|---------------|-------|------|------|
| | DN | Dash | inch | | | inch | B | A | D |
| M83911-12-12 | 19 | - 12 | 3/4" | 3/4" | | 14.5 | 75.0 | 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 | 80.0 | 47.7 | 14.3 |
| M83911-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 84.0 | 54.0 | 14.3 |
| M83911-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 80.5 | 54.0 | 14.3 |
| M83911-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 84.0 | 63.6 | 14.3 |
| M83911-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 84.5 | 63.6 | 14.3 |
| M83911-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 107.5 | 79.3 | 14.3 |
| M83911-32-24 | 51 | - 32 | 2" | 1.1/2" | | 32.0 | 95.5 | 63.6 | 14.3 |
| M83911-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 110.5 | 79.3 | 14.3 |

ORIGINAL EQUIPMENT CONNECTIONS

M83921

22,5° SUPERCAT SERIES FLANGE



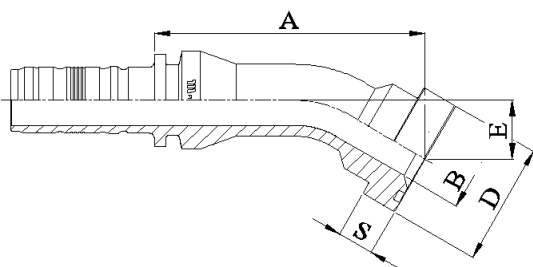
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|------|------|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | | |
| M83921-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 101.5 | 41.5 | 16.0 | 14.3 | | |
| M83921-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 98.0 | 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" | | 26.0 | 113.0 | 54.0 | 18.5 | 14.3 | | |
| M83921-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 120.5 | 54.0 | 18.0 | 14.3 | | |
| M83921-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 119.0 | 63.7 | 21.0 | 14.3 | | |
| M83921-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 123.5 | 63.7 | 20.0 | 14.3 | | |

FITTINGS 244

ORIGINAL EQUIPMENT CONNECTIONS

M83931

30° SUPERCAT SERIES FLANGE

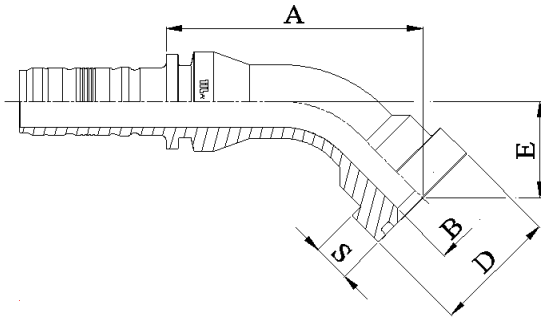


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|------|------|--|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | | |
| M83931-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 99.0 | 41.5 | 22.0 | 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 | 106.0 | 47.7 | 23.0 | 14.3 | | |
| M83931-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 110.0 | 54.0 | 26.0 | 14.3 | | |
| M83931-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 117.5 | 54.0 | 25.0 | 14.3 | | |
| M83931-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 115.5 | 63.7 | 29.0 | 14.3 | | |
| M83931-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 120.5 | 63.7 | 28.0 | 14.3 | | |
| M83931-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 134.5 | 79.3 | 36.0 | 14.3 | | |
| M83931-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 163.5 | 79.3 | 37.5 | 14.3 | | |

ORIGINAL EQUIPMENT CONNECTIONS

M83941

45° SUPERCAT SERIES FLANGE



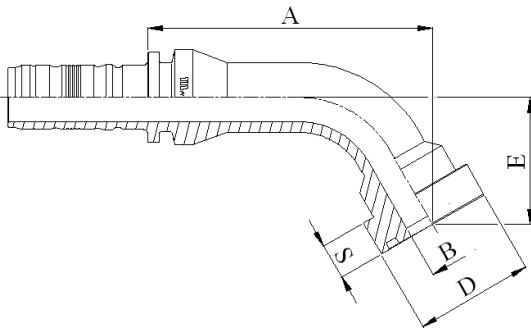
| PART. REF. | HOSE BORE | | | Flange | Flange | DIMENSIONS mm | | | | |
|--------------|-----------|------|--------|--------|--------|---------------|-------|------|------|------|
| | DN | Dash | inch | | | inch | B | A | D | E |
| M83941-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 91.5 | 41.5 | 34.5 | 14.3 |
| M83941-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 92.0 | 47.7 | 35.5 | 14.3 |
| M83941-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 98.0 | 47.7 | 36.5 | 14.3 |
| M83941-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 101.0 | 54.0 | 40.5 | 14.3 |
| M83941-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 109.0 | 54.0 | 40.0 | 14.3 |
| M83941-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 106.0 | 63.7 | 46.0 | 14.3 |
| M83941-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 111.0 | 63.7 | 45.5 | 14.3 |
| M83941-24-32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 122.0 | 79.3 | 56.5 | 14.3 |
| M83941-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 150.5 | 79.3 | 61.5 | 14.3 |

245 FITTINGS

ORIGINAL EQUIPMENT CONNECTIONS

M83961

60° SUPERCAT SERIES FLANGE

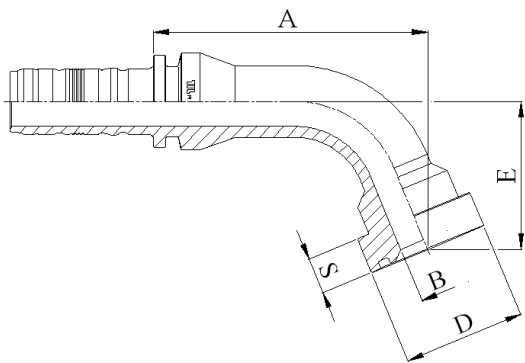


| PART. REF. | HOSE BORE | | | Flange | Flange | DIMENSIONS mm | | | | |
|-----------------|-----------|------|--------|--------|--------|---------------|-------|------|-------|------|
| | DN | Dash | inch | | | inch | B | A | D | E |
| M83961-12-12 | 19 | - 12 | 3/4" | 3/4" | | 16.0 | 106.5 | 41.5 | 47.0 | 14.3 |
| M83961-12-16 | 19 | - 12 | 3/4" | 1" | | 19.5 | 107.0 | 47.7 | 48.0 | 14.3 |
| M83961-16-16 | 25 | - 16 | 1" | 1" | | 19.5 | 114.0 | 47.7 | 51.0 | 14.3 |
| M83961-16-16055 | 25 | - 16 | 1" | 1" | | 19.5 | 100.0 | 47.7 | 55.0 | 14.3 |
| M83961-16-20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 116.5 | 54.0 | 54.0 | 14.3 |
| M83961-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 130.0 | 54.0 | 54.5 | 14.3 |
| M83961-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 126.0 | 63.7 | 63.5 | 14.3 |
| M83961-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 140.0 | 63.7 | 63.0 | 14.3 |
| M83961-32-32 | 51 | - 32 | 2" | 2" | | 42.0 | 194.0 | 79.3 | 86.5 | 14.3 |
| M83961-32-32150 | 51 | - 32 | 2" | 2" | | 42.0 | 198.0 | 79.3 | 150.0 | 14.3 |

ORIGINAL EQUIPMENT CONNECTIONS

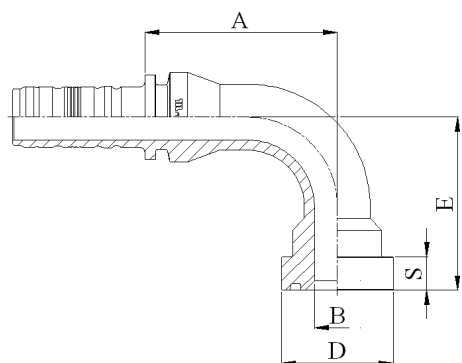
M83971

67,5° SUPERCAT SERIES FLANGE



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | S |
| M83971-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 100.0 | 41.5 | 53.0 | 14.3 | |
| M83971-12-16 | 19 | - 12 | 3/4" | 1" | 19.5 | 100.5 | 47.7 | 54.0 | 14.3 | |
| M83971-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 107.0 | 47.7 | 58.0 | 14.3 | |
| M83971-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 109.0 | 54.0 | 62.0 | 14.3 | |
| M83971-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 123.0 | 54.0 | 62.0 | 14.3 | |
| M83971-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 117.5 | 63.7 | 71.5 | 14.3 | |
| M83971-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 131.0 | 63.7 | 72.0 | 14.3 | |
| M83971-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 181.5 | 79.3 | 99.0 | 14.3 | |

FITTINGS 246



ORIGINAL EQUIPMENT CONNECTIONS

M83991

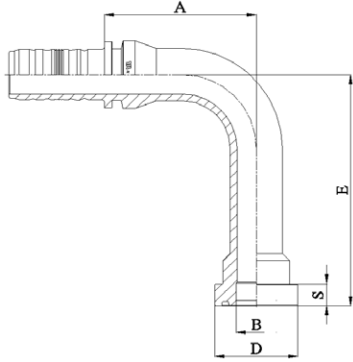
90° SUPERCAT SERIES FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|--------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | S |
| M83991-12-12 | 19 | - 12 | 3/4" | 3/4" | 16.0 | 76.0 | 41.5 | 68.5 | 14.3 | |
| M83991-12-16 | 19 | - 12 | 3/4" | 1" | 19.5 | 76.0 | 47.7 | 69.5 | 14.3 | |
| M83991-16-16 | 25 | - 16 | 1" | 1" | 19.5 | 82.0 | 47.7 | 73.5 | 14.3 | |
| M83991-16-20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 82.0 | 54.0 | 78.5 | 14.3 | |
| M83991-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 94.0 | 54.0 | 82.0 | 14.3 | |
| M83991-20-24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 85.0 | 63.7 | 92.0 | 14.3 | |
| M83991-24-24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 98.0 | 63.7 | 96.0 | 14.3 | |
| M83991-24-32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 98.0 | 79.3 | 112.0 | 14.3 | |
| M83991-32-32 | 51 | - 32 | 2" | 2" | 42.0 | 136.0 | 79.3 | 133.5 | 14.3 | |

ORIGINAL EQUIPMENT CONNECTIONS

M83991 LONG DROP

90° LONG DROP SUPERCAT SERIES FLANGE

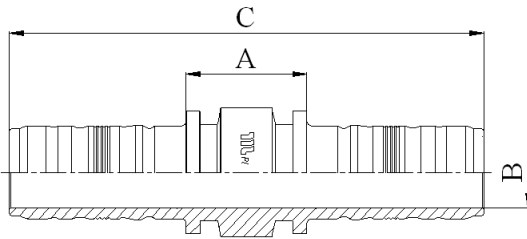


| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|--------|--------|---------------|-------|------|-------|------|---|--|
| | DN | Dash | inch | | inch | B | A | D | E | S | |
| M83991-16-16132 | 25 | - 16 | 1" | 1" | 19.5 | 86.0 | 47.7 | 132.0 | 14.3 | | |
| M83991-16-16150 | 25 | - 16 | 1" | 1" | 19.5 | 86.0 | 47.7 | 150.0 | 14.3 | | |
| M83991-16-20150 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 82.0 | 54.0 | 150.0 | 14.3 | | |
| M83991-20-20092 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 99.0 | 54.0 | 92.0 | 14.3 | | |
| M83991-20-20150 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.1 | 99.0 | 54.0 | 150.0 | 14.3 | | |
| M83991-20-24135 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 98.5 | 63.7 | 135.0 | 14.3 | | |
| M83991-24-24106 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 112.5 | 63.7 | 106.0 | 14.3 | | |

DOUBLE CONNECTOR

M70050

DOUBLE CONNECTOR

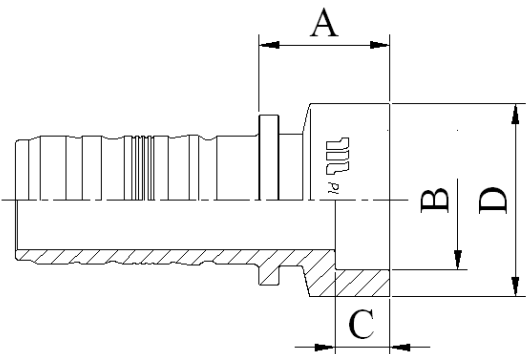


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|---------------|------|-------|--|--|--|--|
| | DN | Dash | inch | B | A | C | | | | |
| M70050-20-20 | 31 | - 20 | 1.1/4" | 25.0 | 42.5 | 166.2 | | | | |
| M70050-24-24 | 38 | - 24 | 1.1/2" | 30.5 | 43.0 | 178.9 | | | | |
| M70050-32-32 | 51 | - 32 | 2" | 41.0 | 45.5 | 220.8 | | | | |

TAIL

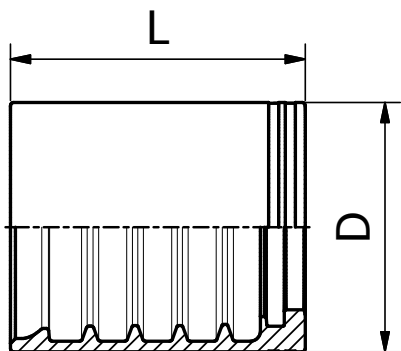
M89510WL

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 | 12.0 | 34.0 | | | |
| M89510-16-28WL | 25 | - 16 | 1" | 28.1 | 32.5 | 14.0 | 40.0 | | | |
| M89510-20-35WL | 31 | - 20 | 1.1/4" | 35.1 | 33.0 | 14.0 | 49.0 | | | |

FERRULE



M05500-GX

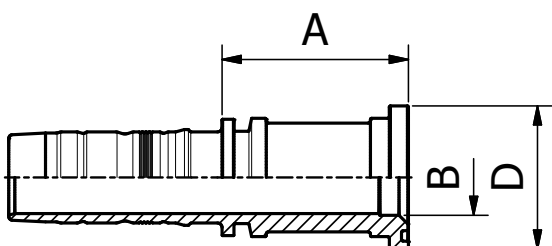
**NO-SKIVE FERRULE FOR
HEAVY DUTY SPIRAL HOSES
(4-6 PLY)**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|-------------|-----------|------|--------|---------------|--|------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| M05500-24GX | 38 | - 24 | 1.1/2" | | | 75.0 | 88.5 | | | | |
| M05500-32GX | 51 | - 32 | 2" | | | 98.0 | 120.3 | | | | |

FITTINGS 248

SAE STANDARD CONNECTIONS

M83611-GX

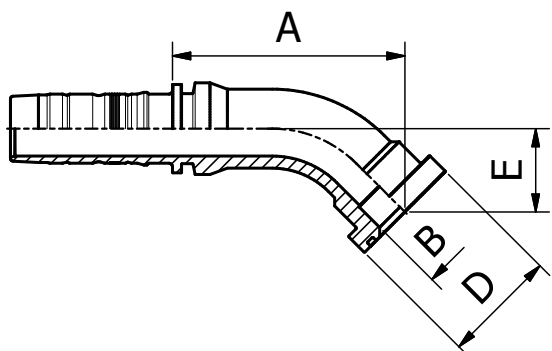


**ISO/SAE CODE 62 FLANGE
(ISO 6162-2 / SAE J518 CODE 62)**

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | inch | | B | A | D | | | |
| M83611-24-24GX | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 79.0 | 63.7 | | | |
| M83611-24-32GX | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 95.0 | 79.6 | | | |
| M83611-32-32GX | 51 | - 32 | 2" | 2" | | 42.0 | 98.5 | 79.6 | | | |

SAE STANDARD CONNECTIONS

M83641-GX



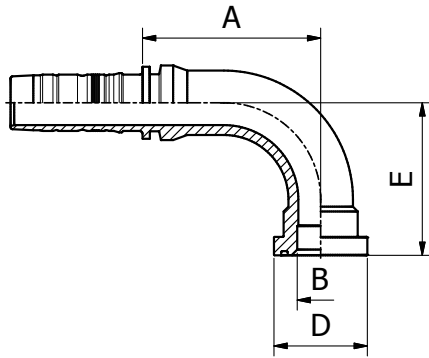
**45° ISO/SAE CODE 62 FLANGE
(ISO 6162-2 / SAE J518 CODE 62)**

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|------|-------|------|------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | | |
| M83641-24-24GX | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 129.0 | 63.7 | 46.5 | | |
| M83641-24-32GX | 38 | - 24 | 1.1/2" | 2" | | 32.0 | 138.0 | 79.6 | 57.5 | | |
| M83641-32-32GX | 51 | - 32 | 2" | 2" | | 42.0 | 149.0 | 79.6 | 59.0 | | |

SAE STANDARD CONNECTIONS

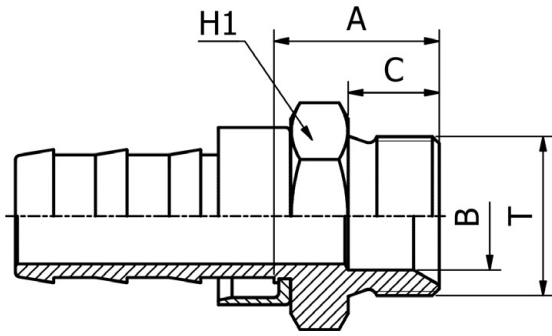
M83691-GX

**90° ISO/SAE CODE 62 FLANGE
(ISO 6162-2 / SAE J518 CODE 62)**



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | E | | | |
| M83691-24-24GX | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 121.5 | 63.7 | 104.5 | | | |
| M83691-32-32GX | 51 | - 32 | 2" | 2" | 42.0 | 136.5 | 79.6 | 138.0 | | | |

BS STANDARD CONNECTIONS



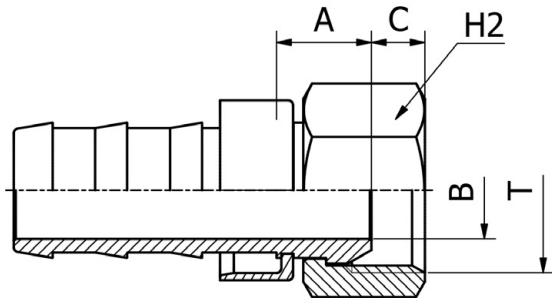
L10510

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | H1 | |
| L10510-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 5.0 | 20.5 | 11.0 | 19.0 | | |
| L10510-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 8.0 | 22.5 | 12.0 | 22.0 | | |
| L10510-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 8.0 | 23.0 | 12.0 | 22.0 | | |
| L10510-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 11.0 | 27.0 | 14.0 | 27.0 | | |
| L10510-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 14.5 | 28.5 | 16.0 | 30.0 | | |
| L10510-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 17.0 | 30.5 | 16.0 | 32.0 | | |
| L10510-16-16 | 25 | - 16 | 1" | 1" - 11 | 22.5 | 34.5 | 19.0 | 41.0 | | |

FITTINGS 250

BS STANDARD CONNECTIONS

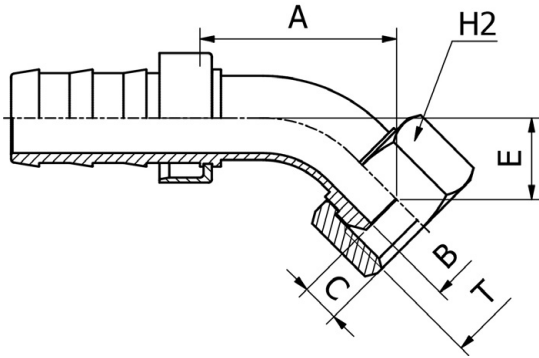


L20513

BSP
FEMALE 60° CONE
BS5200 / ISO 12151-6
(SLIP-ON NUT)

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | H2 | |
| L20513-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 12.5 | 5.8 | 19.0 | | |
| L20513-04-06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 14.6 | 6.2 | 22.0 | | |
| L20513-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 15.0 | 6.2 | 22.0 | | |
| L20513-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.5 | 16.5 | 6.5 | 27.0 | | |
| L20513-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.0 | 16.0 | 9.0 | 28.0 | | |
| L20513-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 18.0 | 9.0 | 32.0 | | |
| L20513-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.0 | 19.5 | 11.0 | 38.0 | | |
| L20513-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.0 | 19.5 | 11.0 | 38.0 | | |

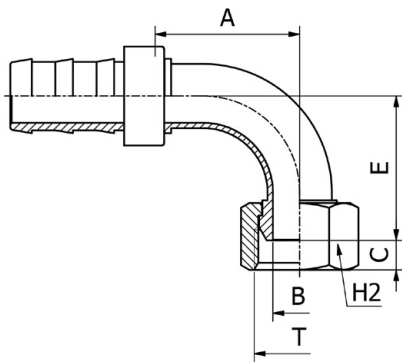
BS STANDARD CONNECTIONS



L20543

**45° BSP
FEMALE SWEPT ELBOW 60° CONE
BS5200/ISO 12151-6
(SLIP-ON NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| L20543-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 31.0 | 5.8 | 12.0 | 19.0 | | |
| L20543-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 38.5 | 6.2 | 14.5 | 22.0 | | |
| L20543-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.5 | 44.0 | 6.5 | 18.5 | 27.0 | | |
| L20543-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.0 | 50.5 | 9.0 | 19.0 | 28.0 | | |
| L20543-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 53.0 | 9.0 | 21.0 | 32.0 | | |
| L20543-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.0 | 56.0 | 11.0 | 23.5 | 38.0 | | |

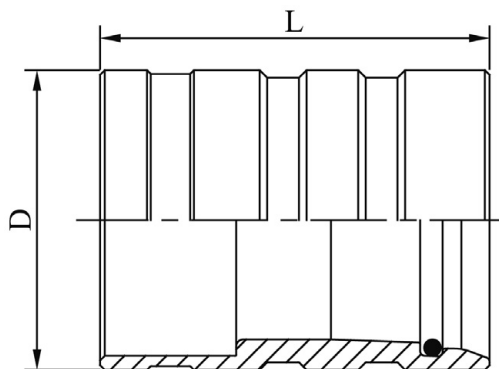


BS STANDARD CONNECTIONS

L20593

**90° BSP
FEMALE SWEPT ELBOW 60° CONE
BS5200/ISO 12151-6
(SLIP-ON NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | H2 | | |
| L20593-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 26.0 | 5.8 | 24.0 | 19.0 | | |
| L20593-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 35.0 | 6.2 | 30.5 | 22.0 | | |
| L20593-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.5 | 38.0 | 6.5 | 38.5 | 27.0 | | |
| L20593-10-10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.0 | 45.5 | 9.0 | 41.0 | 28.0 | | |
| L20593-12-16 | 19 | - 12 | 3/4" | 1" - 11 | 19.0 | 48.5 | 11.0 | 48.5 | 38.0 | | |
| L20593-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 48.5 | 9.0 | 46.5 | 32.0 | | |
| L20593-16-16 | 25 | - 16 | 1" | 1" - 11 | 19.0 | 54.0 | 11.0 | 54.0 | 38.0 | | |



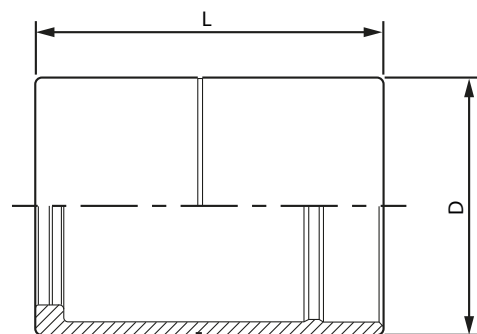
ACCESSORIES

0820

ANTI-KINK SLEEVE

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| O82040-12 | 19 | - 12 | 3/4" | | | 45.0 | 67.0 | | | | |
| O82040-16 | 25 | - 16 | 1" | | | 52.0 | 81.0 | | | | |
| O82068-16 | 25 | - 16 | 1" | | | 55.0 | 75.0 | | | | |
| O82062-20 | 31 | - 20 | 1.1/4" | | | 64.0 | 83.0 | | | | |
| O82060-20 | 31 | - 20 | 1.1/4" | | | 64.0 | 84.0 | | | | |
| O82068-20 | 31 | - 20 | 1.1/4" | | | 65.5 | 83.0 | | | | |
| O82060-24 | 38 | - 24 | 1.1/2" | | | 72.0 | 102.0 | | | | |
| O82068-24 | 38 | - 24 | 1.1/2" | | | 73.0 | 99.0 | | | | |
| O82068-32 | 51 | - 32 | 2" | | | 86.5 | 116.0 | | | | |
| O82068-40 | 63 | - 40 | 2.1/2" | | | 100.5 | 148.5 | | | | |
| O82068-48 | 76 | - 48 | 3" | | | 112.0 | 158.0 | | | | |

FITTINGS 252



ACCESSORIES

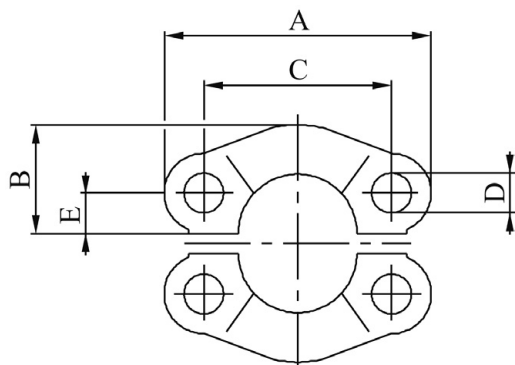
0821 / IO821

METAL SLEEVE / STAINLESS STEEL SLEEVE

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| O82110-06 | 10 | - 6 | 3/8" | | | 36.1 | 51.0 | | | | |
| O82110-08 | 12 | - 8 | 1/2" | | | 44.5 | 59.0 | | | | |
| O82110-10 | 16 | - 10 | 5/8" | | | 48.0 | 65.0 | | | | |
| O82110-12 | 19 | - 12 | 3/4" | | | 55.5 | 75.0 | | | | |
| O82110-16 | 25 | - 16 | 1" | | | 64.5 | 90.0 | | | | |
| O82110-20 | 31 | - 20 | 1.1/4" | | | 75.0 | 112.0 | | | | |
| O82110-24 | 38 | - 24 | 1.1/2" | | | 83.3 | 117.0 | | | | |
| O82110-32 | 51 | - 32 | 2" | | | 95.4 | 128.0 | | | | |
| IO82110-06 | 10 | - 6 | 3/8" | | | 36.1 | 51.0 | | | | |
| IO82110-08 | 12 | - 8 | 1/2" | | | 44.5 | 59.0 | | | | |
| IO82110-10 | 16 | - 10 | 5/8" | | | 48.0 | 65.0 | | | | |
| IO82110-12 | 19 | - 12 | 3/4" | | | 55.5 | 75.0 | | | | |
| IO82110-16 | 25 | - 16 | 1" | | | 64.5 | 90.0 | | | | |
| IO82110-20 | 31 | - 20 | 1.1/4" | | | 75.0 | 112.0 | | | | |
| IO82110-24 | 38 | - 24 | 1.1/2" | | | 83.3 | 117.0 | | | | |
| IO82110-32 | 51 | - 32 | 2" | | | 95.4 | 128.0 | | | | |

ACCESSORIES

O83308

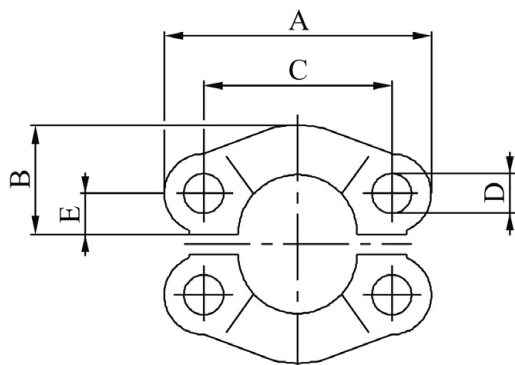


ISO/SAE
CODE 61 SPLIT FLANGE CLAMPS
SAE J518 / ISO 6162-1

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|---------------|-------|--------|-------|-------|--|--|
| | DN | Dash | inch | B | A | C | D | E | | |
| O83308-08 | | | | 22.8 | 54.0 | 38.1 | 8.75 | 8.7 | | |
| O83308-12 | | | | 25.9 | 65.0 | 47.6 | 10.75 | 11.1 | | |
| O83308-16 | | | | 29.2 | 70.0 | 52.4 | 10.75 | 13.1 | | |
| O83308-20 | | | | 36.3 | 79.0 | 58.7 | 12.0 | 15.1 | | |
| O83308-24 | | | | 41.1 | 94.0 | 69.8 | 13.5 | 17.9 | | |
| O83308-32 | | | | 48.2 | 102.0 | 77.8 | 13.5 | 21.4 | | |
| O83308-40 | | | | 54.1 | 114.0 | 88.9 | 13.5 | 25.4 | | |
| O83308-48 | | | | 65.3 | 135.0 | 106.4 | 16.75 | 31.0 | | |
| O83308-56 | | | | 70.0 | 152.0 | 120.65 | 17.0 | 34.85 | | |
| O83308-64 | | | | 75.0 | 160.0 | 130.18 | 17.0 | 38.9 | | |

ACCESSORIES

O83609



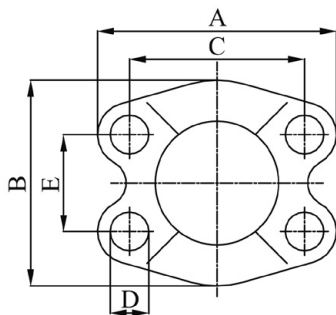
ISO/SAE
CODE 62 SPLIT FLANGE CLAMPS
SAE J518 / ISO 6162-2

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | B | A | C | D | E | | |
| O83609-08 | | | | 23.6 | 56.0 | 40.5 | 8.75 | 9.1 | | |
| O83609-12 | | | | 30.0 | 71.0 | 50.8 | 11.0 | 11.9 | | |
| O83609-16 | | | | 34.8 | 81.0 | 57.1 | 13.0 | 13.9 | | |
| O83609-20 | | | | 38.6 | 95.0 | 66.7 | 15.0 | 15.9 | | |
| O83609-24 | | | | 47.5 | 113.0 | 79.4 | 17.0 | 18.3 | | |
| O83609-32 | | | | 56.9 | 133.0 | 96.8 | 21.0 | 22.2 | | |

ACCESSORIES

083607

CODE 62 ONE-PIECE FLANGE CLAMP ISO 6162-2 / SAE J518



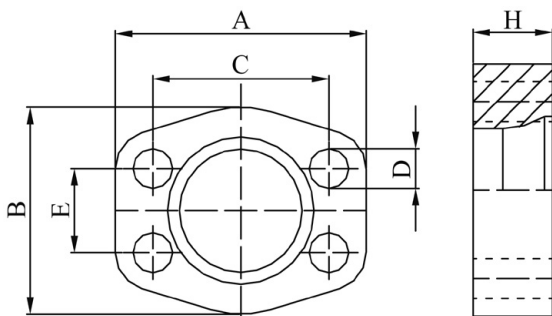
| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | |
|------------|-----------|------|--------|---------------|-------|-------|------|------|--|--|
| | DN | Dash | inch | B | A | C | D | E | | |
| O83607-12 | 19 | - 12 | 3/4" | 60.0 | 72.0 | 50.8 | 10.5 | 23.8 | | |
| O83607-16 | 25 | - 16 | 1" | 70.0 | 81.0 | 57.2 | 13.0 | 27.8 | | |
| O83607-20 | 31 | - 20 | 1.1/4" | 78.0 | 96.0 | 66.7 | 15.0 | 31.8 | | |
| O83607-24 | 38 | - 24 | 1.1/2" | 96.0 | 113.0 | 79.4 | 17.0 | 36.5 | | |
| O83607-32 | 51 | - 32 | 2" | 114.0 | 134.0 | 96.8 | 21.0 | 44.4 | | |
| O83607-40 | 63 | - 40 | 2.1/2" | 150.0 | 175.0 | 123.8 | 25.0 | 58.7 | | |
| O83607-48 | 76 | - 48 | 3" | 178.0 | 210.0 | 152.4 | 32.0 | 71.4 | | |

FITTINGS 254

ACCESSORIES

088507

ONE-PIECE CODE 62 XTRAFRANGE CLAMP ISO 6162-2 / SAE J518 PORT COMPATIBLE

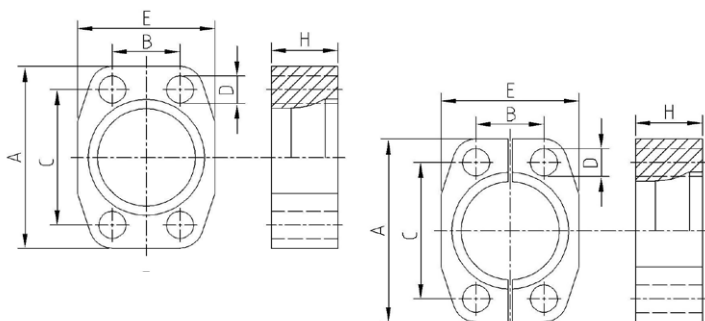


| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|---------------|-------|-------|------|------|------|--|
| | DN | Dash | inch | B | A | C | D | E | H | |
| O88507-12 | | | | 60.0 | 71.5 | 50.8 | 11.0 | 23.8 | 21.5 | |
| O88507-16 | | | | 66.7 | 80.0 | 57.2 | 13.0 | 27.8 | 24.0 | |
| O88507-20 | | | | 78.0 | 95.0 | 66.7 | 15.0 | 31.7 | 30.0 | |
| O88507-24 | | | | 94.0 | 112.0 | 79.4 | 17.0 | 36.5 | 36.0 | |
| O88507-32 | | | | 114.0 | 133.0 | 96.8 | 21.0 | 44.5 | 47.0 | |
| O88507-40 | | | | 150.0 | 180.0 | 123.8 | 26.0 | 58.8 | 55.0 | |
| O88507-48 | | | | 176.0 | 210.3 | 152.4 | 31.0 | 71.4 | 60.0 | |

ACCESSORIES

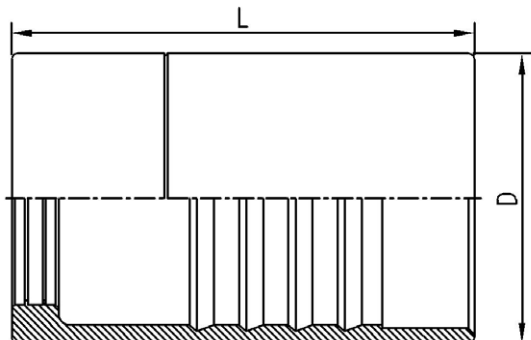
088407

ONE-PIECE XTRAFRANGE 61 CLAMP / SPLIT XTRAFRANGE/61 CLAMP



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|------------|-----------|------|------|--------|---------------|-------|------|------|-------|------|--|
| | DN | Dash | inch | inch | B | A | C | D | E | H | |
| O88407-16 | | | | 1" | 26.2 | 70.5 | 52.4 | 10.6 | 53.0 | 25.7 | |
| O88407-20 | | | | 1.1/4" | 30.2 | 80.0 | 58.7 | 12.0 | 64.0 | 26.8 | |
| O88407-24 | | | | 1.1/2" | 35.7 | 94.0 | 69.9 | 13.3 | 77.0 | 33.6 | |
| O88407-32 | | | | 2" | 42.9 | 102.0 | 77.8 | 13.3 | 88.0 | 35.0 | |
| O88407-40 | | | | 2.1/2" | 50.8 | 114.0 | 88.9 | 13.3 | 102.0 | 44.3 | |

O88407-32 and O88407-40: Split XtraFlange/61 Clamp



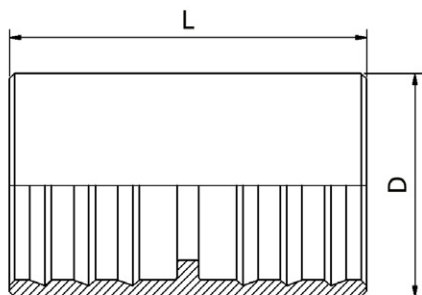
ACCESSORIES

IO821GA

**METAL SLEEVE FOR ARMOUR
(STAINLESS STEEL)**

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|--------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IO82110-06GA | 10 | - 6 | 3/8" | | | 40.5 | 60.0 | | | | |
| IO82110-08GA | 12 | - 8 | 1/2" | | | 46.8 | 75.0 | | | | |
| IO82110-10GA | 16 | - 10 | 5/8" | | | 53.2 | 90.0 | | | | |
| IO82110-12GA | 19 | - 12 | 3/4" | | | 59.5 | 105.0 | | | | |
| IO82110-16GA | 25 | - 16 | 1" | | | 66.0 | 120.0 | | | | |
| IO82110-20GA | 31 | - 20 | 1.1/4" | | | 78.6 | 135.0 | | | | |
| IO82110-24GA | 38 | - 24 | 1.1/2" | | | 91.5 | 150.0 | | | | |
| IO82110-32GA | 51 | - 32 | 2" | | | 106.5 | 165.0 | | | | |

255 FITTINGS



ACCESSORIES

IO84210

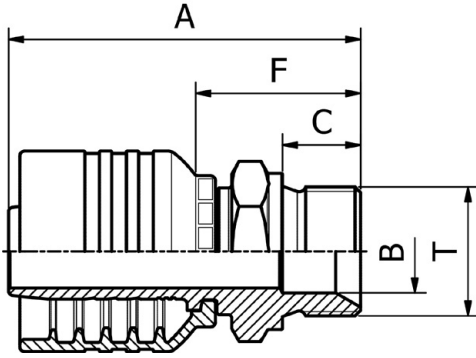
ARMOUR-JOINT

| PART. REF. | HOSE BORE | | | DIMENSIONS mm | | | | | | | |
|------------|-----------|------|--------|---------------|--|-------|-------|--|--|--|--|
| | DN | Dash | inch | | | D | L | | | | |
| IO84210-06 | 10 | - 6 | 3/8" | | | 40.5 | 65.0 | | | | |
| IO84210-08 | 12 | - 8 | 1/2" | | | 46.8 | 65.0 | | | | |
| IO84210-10 | 16 | - 10 | 5/8" | | | 53.2 | 65.0 | | | | |
| IO84210-12 | 19 | - 12 | 3/4" | | | 59.5 | 70.0 | | | | |
| IO84210-16 | 25 | - 16 | 1" | | | 66.0 | 75.0 | | | | |
| IO84210-20 | 31 | - 20 | 1.1/4" | | | 78.6 | 95.0 | | | | |
| IO84210-24 | 38 | - 24 | 1.1/2" | | | 91.5 | 105.0 | | | | |
| IO84210-32 | 51 | - 32 | 2" | | | 106.5 | 115.0 | | | | |

BS STANDARD CONNECTIONS

OPK10510

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



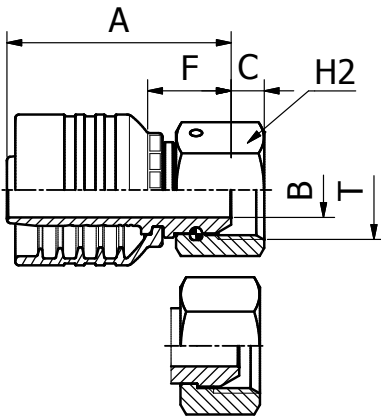
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|-------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPK10510-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | 5.0 | 55.5 | 11.0 | 26.0 | 19.0 | | |
| OPK10510-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 8.0 | 57.5 | 12.0 | 28.0 | 22.0 | | |
| OPK10510-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 11.0 | 60.0 | 14.0 | 30.5 | 27.0 | | |
| OPK10510-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | 8.0 | 59.0 | 12.0 | 28.0 | 22.0 | | |
| OPK10510-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 11.0 | 62.0 | 14.0 | 31.0 | 27.0 | | |
| OPK10510-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 14.5 | 64.0 | 16.0 | 33.0 | 30.0 | | |
| OPK10510-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 17.0 | 65.0 | 16.0 | 34.0 | 32.0 | | |
| OPK10510-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 14.5 | 67.5 | 16.0 | 33.0 | 30.0 | | |
| OPK10510-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 17.0 | 68.5 | 16.0 | 35.5 | 32.0 | | |
| OPK10510-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 17.0 | 72.0 | 16.0 | 35.5 | 32.0 | | |
| OPK10510-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 22.5 | 76.0 | 19.0 | 39.5 | 41.0 | | |
| OPK10510-16A16 | 25 | - 16 | 1" | 1" - 11 | 22.5 | 89.0 | 19.0 | 41.0 | 41.0 | | |
| OPK10510-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | 28.5 | 93.0 | 20.0 | 45.0 | 50.0 | | |
| OPK10510-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 28.5 | 99.0 | 20.0 | 46.5 | 50.0 | | |
| OPK10510-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 33.5 | 111.5 | 22.0 | 49.5 | 55.0 | | |
| OPK10510-32A32 | 51 | - 32 | 2" | 2" - 11 | 46.0 | 120.0 | 25.0 | 54.0 | 70.0 | | |

FITTINGS 256

BS STANDARD CONNECTIONS

OPK20512/OPK20513

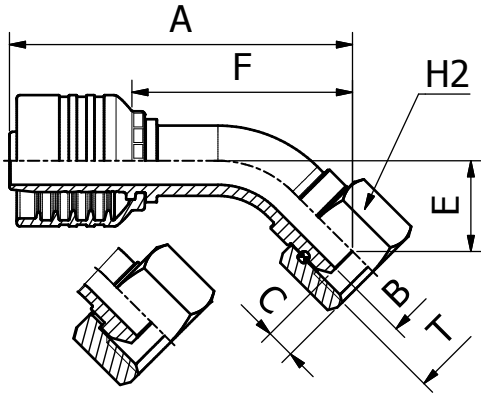
**BSP
FEMALE 60° CONE
BS5200 / ISO 12151-6**



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 18.0 | 19.0 | | |
| OPK20513-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 49.0 | 6.0 | 19.5 | 22.0 | | |
| OPK20513-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 49.5 | 6.3 | 20.0 | 27.0 | | |
| OPK20512-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | 7.1 | 52.0 | 6.0 | 21.0 | 22.0 | | |
| OPK20513-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 51.5 | 6.3 | 20.5 | 27.0 | | |
| OPK20512-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 53.0 | 10.2 | 22.0 | 28.0 | | |
| OPK20512-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 56.0 | 9.0 | 24.5 | 32.0 | | |
| OPK20512-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 56.0 | 10.2 | 21.5 | 28.0 | | |
| OPK20512-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 57.5 | 9.0 | 23.0 | 32.0 | | |
| OPK20512-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 62.5 | 10.5 | 26.0 | 38.0 | | |
| OPK20512-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.0 | 9.0 | 24.5 | 32.0 | | |
| OPK20512-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 75.5 | 10.5 | 27.5 | 38.0 | | |

OPK20512: THRUST WIRE NUT / OPK20513: SLIP-ON NUT

BS STANDARD CONNECTIONS

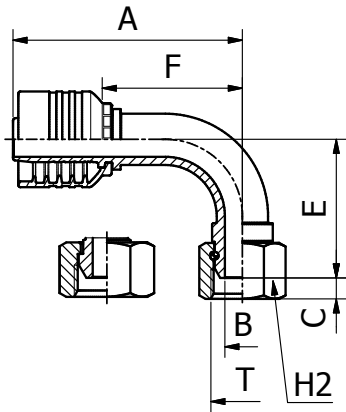


OPK20542/OPK20543

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK20543-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 71.5 | 6.0 | 15.5 | 42.0 | 22.0 | |
| OPK20543-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 72.0 | 6.3 | 16.0 | 42.5 | 27.0 | |
| OPK20543-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 81.0 | 6.3 | 17.0 | 49.5 | 27.0 | |
| OPK20542-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 85.5 | 10.2 | 22.5 | 54.5 | 28.0 | |
| OPK20542-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 97.5 | 10.2 | 26.0 | 63.0 | 28.0 | |
| OPK20542-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 98.0 | 9.0 | 27.0 | 64.0 | 32.0 | |
| OPK20542-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 107.0 | 9.0 | 28.5 | 70.5 | 32.0 | |
| OPK20542-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 109.0 | 10.5 | 30.0 | 72.5 | 38.0 | |
| OPK20542-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 139.5 | 10.5 | 36.5 | 91.0 | 38.0 | |

OPK20542: THRUST WIRE NUT / OPK20543: SLIP-ON NUT



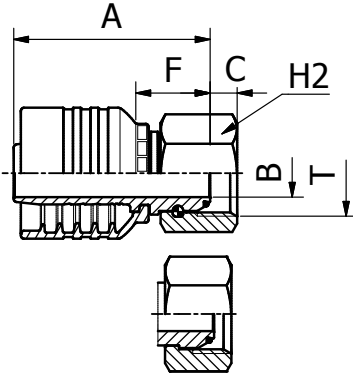
BS STANDARD CONNECTIONS

OPK20592/OPK20593

**90° BSP
FEMALE ELBOW 60° CONE
BS5200**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK20593-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 66.0 | 6.0 | 31.5 | 36.5 | 22.0 | |
| OPK20593-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 66.0 | 6.3 | 32.0 | 36.5 | 27.0 | |
| OPK20592-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | 7.1 | 76.0 | 6.0 | 41.0 | 45.0 | 22.0 | |
| OPK20593-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 76.0 | 6.3 | 36.5 | 45.0 | 27.0 | |
| OPK20592-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 75.5 | 10.2 | 44.0 | 44.0 | 28.0 | |
| OPK20592-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 75.5 | 9.0 | 45.5 | 44.0 | 32.0 | |
| OPK20592-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 88.0 | 10.2 | 53.5 | 53.5 | 28.0 | |
| OPK20592-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 88.0 | 9.0 | 55.0 | 53.5 | 32.0 | |
| OPK20592-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 98.0 | 9.0 | 59.5 | 61.5 | 32.0 | |
| OPK20592-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 98.0 | 10.5 | 62.0 | 61.5 | 38.0 | |
| OPK20592-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 127.5 | 10.5 | 76.0 | 79.5 | 38.0 | |

OPK20592: THRUST WIRE NUT / OPK20593: SLIP-ON NUT



BS STANDARD CONNECTIONS

OPK20812/OPK20813

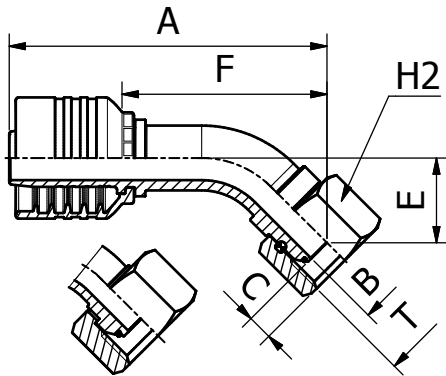
**BSP
O-RING FEMALE 60° CONE
BS5200 / ISO 12151-6**

FITTINGS 258

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 18.0 | 19.0 | |
| OPK20813-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 49.0 | 6.0 | 19.5 | 22.0 | |
| OPK20813-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 51.5 | 6.3 | 20.5 | 27.0 | |
| OPK20812-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 56.5 | 9.7 | 22.0 | 28.0 | |
| OPK20812-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.5 | 8.5 | 25.0 | 32.0 | |
| OPK20812-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 75.5 | 10.6 | 27.5 | 38.0 | |
| OPK20812-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 79.0 | 10.5 | 31.0 | 50.0 | |
| OPK20812-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 84.0 | 10.5 | 31.5 | 50.0 | |
| OPK20812-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 82.0 | 12.5 | 29.5 | 60.0 | |
| OPK20812-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 92.5 | 12.5 | 30.5 | 60.0 | |
| OPK20812-24A32 | 38 | - 24 | 1.1/2" | 2" | 42.1 | 92.0 | 16.1 | 30.0 | 70.0 | |
| OPK20812-32A32 | 51 | - 32 | 2" | 2" | 42.0 | 98.0 | 16.1 | 32.0 | 70.0 | |

OPK20812: THRUST WIRE NUT / OPK20813: SLIP-ON NUT

BS STANDARD CONNECTIONS



OPK20842/OPK20843

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

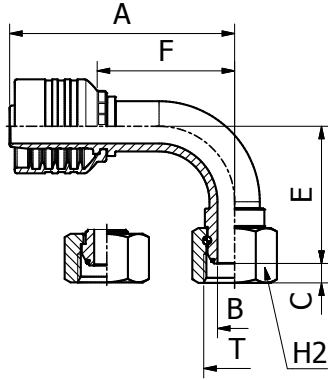
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|-------------|---------------|-------|------|------|-------|------|
| | DN | Dash | inch | | T | B | A | C | E | F |
| OPK20843-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 71.5 | 6.0 | 15.5 | 42.0 | 22.0 |
| OPK20843-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 81.0 | 6.3 | 17.0 | 49.5 | 27.0 |
| OPK20842-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 98.0 | 9.7 | 27.5 | 63.5 | 28.0 |
| OPK20842-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 107.5 | 8.5 | 29.0 | 71.0 | 32.0 |
| OPK20842-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 154.0 | 10.5 | 39.0 | 101.5 | 50.0 |
| OPK20842-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 180.0 | 12.5 | 45.0 | 118.0 | 60.0 |
| OPK20842-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 138.5 | 10.6 | 35.5 | 90.5 | 38.0 |
| OPK20842-32A32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 200.0 | 16.1 | 47.0 | 134.0 | 70.0 |

OPK20842: THRUST WIRE NUT / OPK20843: SLIP-ON NUT

BS STANDARD CONNECTIONS

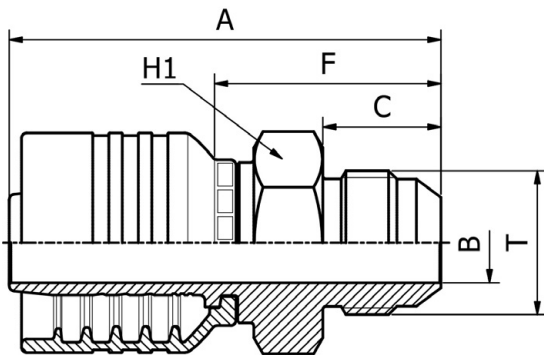
OPK20892/OPK20893

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|-------------|---------------|-------|------|-------|-------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK20892-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 65.0 | 4.1 | 33.0 | 35.5 | 19.0 | |
| OPK20893-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 66.0 | 6.0 | 31.5 | 36.5 | 22.0 | |
| OPK20893-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 76.0 | 6.3 | 36.5 | 45.0 | 27.0 | |
| OPK20892-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 87.5 | 9.7 | 55.0 | 53.0 | 28.0 | |
| OPK20892-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 98.0 | 8.5 | 60.0 | 61.5 | 32.0 | |
| OPK20892-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 127.5 | 10.5 | 78.5 | 79.5 | 50.0 | |
| OPK20892-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 127.5 | 10.6 | 76.0 | 79.5 | 38.0 | |
| OPK20892-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11 | 26.0 | 143.0 | 10.5 | 83.5 | 90.5 | 50.0 | |
| OPK20892-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" - 11 | 32.1 | 143.0 | 12.5 | 84.5 | 90.5 | 60.0 | |
| OPK20892-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11 | 32.0 | 170.0 | 12.5 | 98.5 | 108.0 | 60.0 | |
| OPK20892-32A32 | 51 | - 32 | 2" | 2" - 11 | 42.0 | 197.0 | 16.1 | 110.5 | 131.0 | 70.0 | |

OPK20892: THRUST WIRE NUT / OPK20893: SLIP-ON NUT



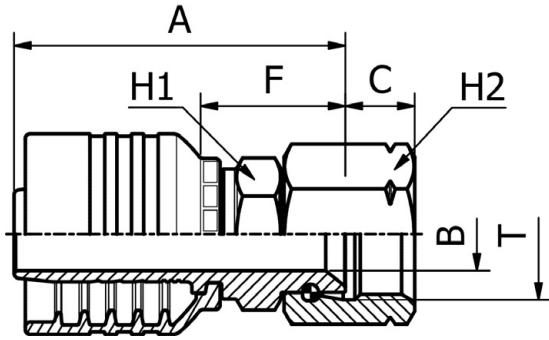
SAE STANDARD CONNECTIONS

OPK12510

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|--------------|---------------|-------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | |
| OPK12510-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 59.0 | 14.0 | 29.5 | 17.0 | |
| OPK12510-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 63.5 | 16.5 | 34.0 | 19.0 | |
| OPK12510-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 12.5 | 68.0 | 19.5 | 38.5 | 24.0 | |
| OPK12510-08A06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 63.0 | 14.0 | 32.0 | 19.0 | |
| OPK12510-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 65.5 | 16.5 | 34.5 | 19.0 | |
| OPK12510-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 12.5 | 70.0 | 19.5 | 39.0 | 24.0 | |
| OPK12510-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.0 | 74.0 | 22.0 | 43.0 | 27.0 | |
| OPK12510-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 73.5 | 19.5 | 39.0 | 24.0 | |
| OPK12510-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.0 | 77.0 | 22.0 | 42.5 | 27.0 | |
| OPK12510-12A10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 78.0 | 19.5 | 41.5 | 27.0 | |
| OPK12510-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 80.5 | 22.0 | 44.0 | 27.0 | |
| OPK12510-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 81.0 | 22.5 | 44.5 | 32.0 | |
| OPK12510-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 83.5 | 23.0 | 47.0 | 34.0 | |
| OPK12510-16A12 | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 93.0 | 22.0 | 45.0 | 32.0 | |
| OPK12510-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 96.0 | 23.0 | 48.0 | 34.0 | |
| OPK12510-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 101.0 | 24.3 | 53.0 | 42.0 | |
| OPK12510-20A20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 106.0 | 24.3 | 53.5 | 42.0 | |
| OPK12510-20A24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 113.0 | 27.5 | 60.5 | 50.0 | |
| OPK12510-24A24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 122.5 | 27.5 | 60.5 | 50.0 | |
| OPK12510-32A32 | 51 | - 32 | 2" | 2.1/2" - 12 | 42.0 | 138.0 | 34.0 | 72.0 | 65.0 | |

SAE STANDARD CONNECTIONS

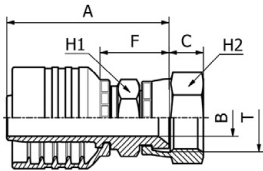


OPK22712

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------------|---------------|------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPK22712-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 69.0 | 15.0 | 32.5 | 32.0 | 38.0 | |
| OPK22712-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 91.0 | 16.2 | 43.0 | 41.0 | 50.0 | |
| OPK22712-20A20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 96.0 | 16.2 | 43.5 | 41.0 | 50.0 | |

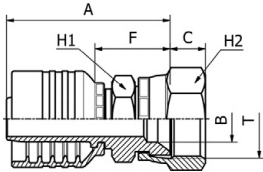
FITTINGS 260



SAE STANDARD CONNECTIONS

OPK22711/OPK22711KR

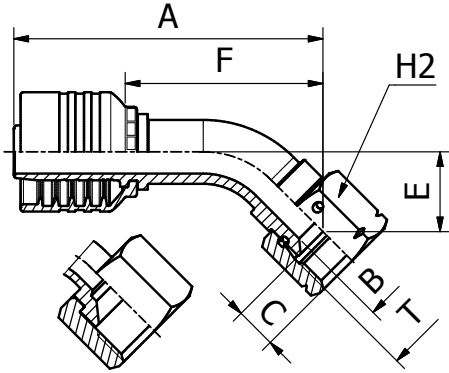
JIC
FEMALE 37° CONE SEAT DOUBLE HEXAGON
 SAE J516 / ISO 12151-5



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPK22711-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 51.5 | 9.5 | 22.0 | 17.0 | 17.0 | |
| OPK22711-06A08KR | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 56.0 | 10.7 | 26.5 | 19.0 | 22.0 | |
| OPK22711-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 58.0 | 10.7 | 27.0 | 19.0 | 22.0 | |
| OPK22711-08A10KR | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 60.5 | 12.5 | 29.5 | 22.0 | 25.0 | |
| OPK22711-08A12KR | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.0 | 60.0 | 14.1 | 28.5 | 27.0 | 32.0 | |
| OPK22711-10A08KR | 16 | - 10 | 5/8" | 3/4" - 16 | 9.3 | 62.5 | 10.7 | 28.5 | 22.0 | 22.0 | |
| OPK22711-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 64.0 | 12.5 | 29.5 | 22.0 | 25.0 | |
| OPK22711-16A12KR | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 80.5 | 14.1 | 32.5 | 32.0 | 32.0 | |
| OPK22711-12A08KR | 19 | - 12 | 3/4" | 3/4" - 16 | 9.3 | 66.0 | 10.7 | 29.5 | 27.0 | 22.0 | |
| OPK22711-12A10KR | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 67.0 | 12.5 | 30.5 | 27.0 | 25.0 | |
| OPK22711-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 66.5 | 14.1 | 30.0 | 27.0 | 32.0 | |
| OPK22711-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 71.0 | 15.3 | 34.5 | 32.0 | 38.0 | |
| OPK22711-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 83.5 | 15.3 | 35.5 | 32.0 | 38.0 | |

KR: CRIMPED BACK COMPACT ROBUST NUT

SAE STANDARD CONNECTIONS

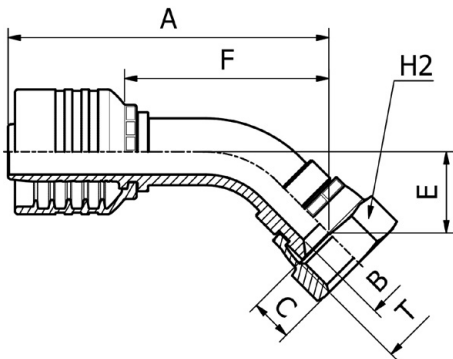


OPK22542/OPK22543

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 | F | H2 |
| OPK22542-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 71.5 | 9.2 | 16.5 | 42.0 | 19.0 | |
| OPK22543-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 70.5 | 10.1 | 14.0 | 41.0 | 22.0 | |
| OPK22543-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 72.0 | 12.4 | 15.5 | 42.5 | 27.0 | |
| OPK22542-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 83.0 | 10.2 | 20.0 | 52.0 | 22.0 | |
| OPK22543-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 80.5 | 12.4 | 17.0 | 49.5 | 27.0 | |
| OPK22543-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 80.5 | 14.1 | 17.0 | 49.5 | 32.0 | |
| OPK22542-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 96.5 | 12.3 | 25.5 | 62.0 | 27.0 | |
| OPK22543-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 94.5 | 14.1 | 24.0 | 60.0 | 32.0 | |
| OPK22542-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 106.0 | 14.2 | 27.5 | 70.0 | 32.0 | |
| OPK22542-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 106.0 | 14.3 | 27.5 | 69.5 | 36.0 | |
| OPK22542-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 106.5 | 15.0 | 27.5 | 70.0 | 38.0 | |
| OPK22542-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 132.5 | 15.0 | 32.0 | 84.0 | 38.0 | |
| OPK22542-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 138.0 | 16.2 | 36.0 | 90.0 | 50.0 | |
| OPK22542-20A20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 156.0 | 16.2 | 41.5 | 103.5 | 50.0 | |
| OPK22542-20A24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 159.0 | 18.8 | 44.5 | 106.5 | 60.0 | |
| OPK22542-24A24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 181.0 | 18.8 | 46.5 | 119.0 | 60.0 | |
| OPK22542-32A32 | 51 | - 32 | 2" | 2.1/2" - 12 | 44.0 | 229.0 | 24.0 | 68.0 | 163.0 | 75.0 | |

OPK22542: THRUST WIRE NUT / OPK22543: SLIP-ON NUT



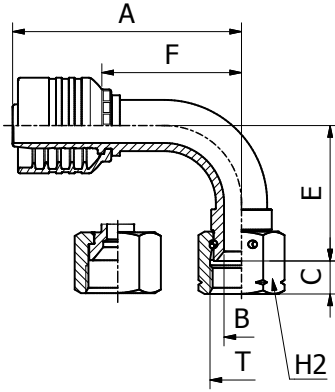
SAE STANDARD CONNECTIONS

OPK22541KR

45° ELBOW JIC
FEMALE 37° CONE SEAT
SAE J516 / ISO 12151-5
(CRIMPED-BACK NUT)

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|-------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | E | F | H2 |
| OPK22541-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 71.5 | 9.5 | 16.0 | 42.0 | 17.0 | |
| OPK22541-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 83.0 | 10.7 | 20.0 | 52.0 | 22.0 | |
| OPK22541-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 95.5 | 12.5 | 22.5 | 61.0 | 25.0 | |
| OPK22541-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 105.5 | 14.1 | 26.5 | 69.0 | 32.0 | |

SAE STANDARD CONNECTIONS



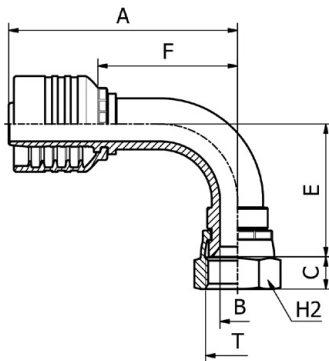
OPK22592/OPK22593

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

FITTINGS 262

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 30.0 | 17.0 | |
| OPK22592-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.2 | 32.5 | 35.5 | 19.0 | |
| OPK22593-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 66.0 | 10.1 | 29.5 | 36.5 | 22.0 | |
| OPK22593-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 66.0 | 12.4 | 31.5 | 36.5 | 27.0 | |
| OPK22592-08A06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 68.0 | 9.2 | 33.0 | 37.0 | 19.0 | |
| OPK22592-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.2 | 41.0 | 44.0 | 22.0 | |
| OPK22593-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 76.0 | 12.4 | 36.0 | 45.0 | 27.0 | |
| OPK22593-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 76.0 | 14.1 | 36.0 | 45.0 | 32.0 | |
| OPK22592-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.3 | 52.5 | 53.5 | 27.0 | |
| OPK22593-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 86.0 | 14.1 | 50.0 | 51.5 | 32.0 | |
| OPK22592-12A10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 91.5 | 12.3 | 52.5 | 55.0 | 27.0 | |
| OPK22592-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.2 | 58.0 | 62.0 | 32.0 | |
| OPK22592-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 99.0 | 14.3 | 58.0 | 63.0 | 36.0 | |
| OPK22592-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 99.0 | 15.0 | 57.5 | 63.0 | 38.0 | |
| OPK22592-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 124.0 | 15.0 | 68.5 | 76.0 | 38.0 | |
| OPK22592-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 125.5 | 16.2 | 74.5 | 77.5 | 50.0 | |
| OPK22592-20A20 | 31 | - 20 | 1.1/4" | 1.5/8" - 12 | 26.0 | 143.0 | 16.2 | 86.5 | 90.5 | 50.0 | |
| OPK22592-20A24 | 31 | - 20 | 1.1/4" | 1.7/8" - 12 | 32.0 | 143.0 | 18.8 | 90.5 | 90.5 | 60.0 | |
| OPK22592-24A24 | 38 | - 24 | 1.1/2" | 1.7/8" - 12 | 32.0 | 170.0 | 18.8 | 100.5 | 108.0 | 60.0 | |
| OPK22592-32A32 | 51 | - 32 | 2" | 2.1/2" - 12 | 44.0 | 208.0 | 24.0 | 137.0 | 142.0 | 75.0 | |

OPK22592: THRUST WIRE NUT / OPK22593: SLIP-ON NUT

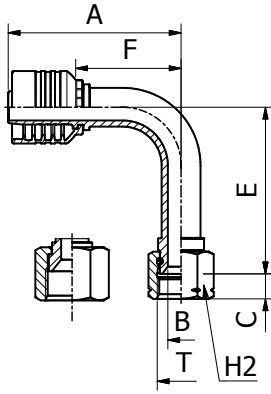


SAE STANDARD CONNECTIONS

OPK22591KR

**90° ELBOW JIC
FEMALE 37° CONE SEAT SAE
J516 / ISO 12151-5
(CRIMPED-BACK NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK22591-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.5 | 32.0 | 35.5 | 17.0 | |
| OPK22591-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.7 | 40.5 | 44.0 | 22.0 | |
| OPK22591-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.5 | 47.0 | 53.5 | 25.0 | |
| OPK22591-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.1 | 57.0 | 62.0 | 32.0 | |



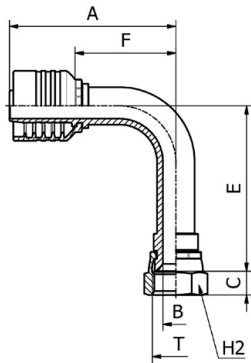
SAE STANDARD CONNECTIONS

OPK24792/OPK24793

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 | F | H2 | |
| OPK24792-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.2 | 55.0 | 35.5 | 19.0 | |
| OPK24793-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 66.0 | 10.1 | 61.5 | 36.5 | 22.0 | |
| OPK24793-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 76.0 | 12.4 | 65.0 | 45.0 | 27.0 | |
| OPK24792-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.2 | 61.0 | 44.0 | 22.0 | |
| OPK24792-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.3 | 65.5 | 53.5 | 27.0 | |
| OPK24792-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.2 | 94.5 | 62.0 | 32.0 | |
| OPK24792-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 125.5 | 15.0 | 110.0 | 77.5 | 38.0 | |

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)

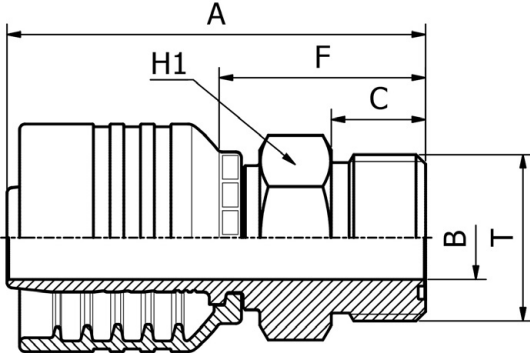
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK24791-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.5 | 55.0 | 35.5 | 17.0 | |
| OPK24791-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.7 | 64.0 | 44.0 | 22.0 | |
| OPK24791-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.5 | 70.0 | 53.5 | 25.0 | |
| OPK24791-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.1 | 96.0 | 62.0 | 32.0 | |

SAE STANDARD CONNECTIONS

OPK12410

ORFS
MALE

SAE J516 / ISO 12151-1



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|---------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPK12410-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.7 | 57.0 | 11.2 | 27.5 | 19.0 | | |
| OPK12410-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 59.5 | 12.8 | 30.0 | 22.0 | | |
| OPK12410-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 61.5 | 12.8 | 30.5 | 22.0 | | |
| OPK12410-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 12.5 | 66.0 | 15.5 | 35.0 | 27.0 | | |
| OPK12410-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 12.5 | 69.0 | 15.5 | 34.5 | 27.0 | | |
| OPK12410-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 15.0 | 72.0 | 17.0 | 37.5 | 32.0 | | |
| OPK12410-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 75.5 | 17.0 | 39.0 | 32.0 | | |
| OPK12410-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 77.0 | 17.5 | 40.5 | 38.0 | | |
| OPK12410-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 90.0 | 17.5 | 42.0 | 38.0 | | |
| OPK12410-20A20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 99.0 | 17.5 | 46.5 | 46.0 | | |
| OPK12410-24A24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 110.5 | 17.5 | 48.5 | 55.0 | | |

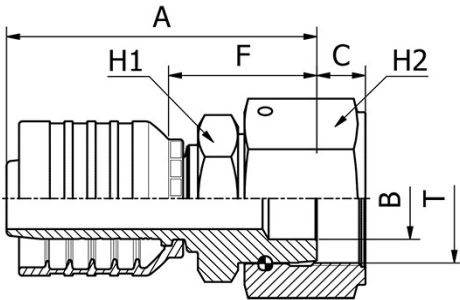
FITTINGS 264

SAE STANDARD CONNECTIONS

OPK22411

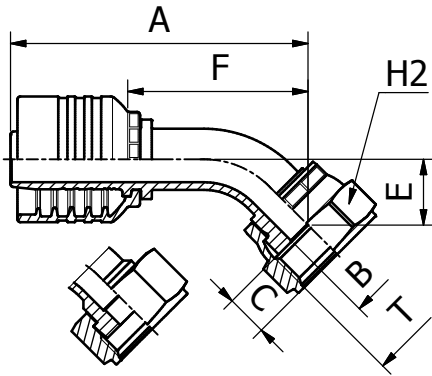
ORFS
FEMALE

SAE J516 / ISO 12151-1
PULLBACK TYPE



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|---------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | H2 | |
| OPK22411-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 7.0 | 60.5 | 9.5 | 31.0 | 16.0 | 22.0 | |
| OPK22411-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 65.0 | 11.0 | 35.5 | 19.0 | 24.0 | |
| OPK22411-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 63.0 | 9.5 | 32.0 | 19.0 | 22.0 | |
| OPK22411-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 67.0 | 11.0 | 36.0 | 19.0 | 24.0 | |
| OPK22411-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 69.5 | 13.5 | 38.5 | 24.0 | 30.0 | |
| OPK22411-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 73.0 | 14.5 | 42.0 | 28.0 | 36.0 | |
| OPK22411-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 73.0 | 13.5 | 38.5 | 24.0 | 30.0 | |
| OPK22411-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 76.5 | 14.5 | 42.0 | 28.0 | 36.0 | |
| OPK22411-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 77.5 | 13.5 | 41.0 | 28.0 | 30.0 | |
| OPK22411-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 80.0 | 14.5 | 43.5 | 28.0 | 36.0 | |
| OPK22411-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 82.0 | 15.0 | 45.5 | 36.0 | 41.0 | |
| OPK22411-16A12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 94.0 | 13.5 | 48.0 | 36.0 | 36.0 | |
| OPK22411-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 94.5 | 15.0 | 46.5 | 36.0 | 41.0 | |
| OPK22411-16A20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 97.5 | 14.8 | 49.5 | 41.0 | 50.0 | |
| OPK22411-20A20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 101.5 | 14.8 | 49.0 | 41.0 | 50.0 | |
| OPK22411-24A24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 116.0 | 15.8 | 54.0 | 50.0 | 60.0 | |

SAE STANDARD CONNECTIONS

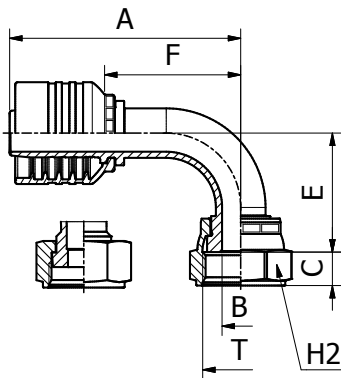


OPK22441/OPK22443

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|---------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK22443-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 61.5 | 9.5 | 11.0 | 32.5 | 22.0 | |
| OPK22443-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 63.0 | 11.0 | 12.5 | 34.0 | 24.0 | |
| OPK22441-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 63.5 | 9.5 | 11.0 | 32.5 | 22.0 | |
| OPK22443-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 73.0 | 11.0 | 13.0 | 42.0 | 24.0 | |
| OPK22443-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 73.0 | 13.5 | 13.5 | 42.0 | 30.0 | |
| OPK22443-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 78.0 | 14.5 | 18.5 | 46.5 | 36.0 | |
| OPK22443-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 83.5 | 13.5 | 16.0 | 49.0 | 30.0 | |
| OPK22443-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 86.0 | 14.5 | 18.5 | 51.5 | 36.0 | |
| OPK22441-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 87.0 | 13.5 | 16.5 | 50.5 | 30.0 | |
| OPK22443-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 97.0 | 14.5 | 21.5 | 60.5 | 36.0 | |
| OPK22443-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 96.5 | 14.8 | 21.0 | 60.0 | 41.0 | |
| OPK22443-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 120.0 | 14.8 | 23.5 | 72.0 | 41.0 | |
| OPK22443-16A20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 122.0 | 14.8 | 25.0 | 74.0 | 50.0 | |
| OPK22443-20A20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 134.5 | 14.8 | 27.0 | 82.0 | 50.0 | |

OPK22442: THRUST WIRE NUT / OPK22443: SLIP-ON NUT



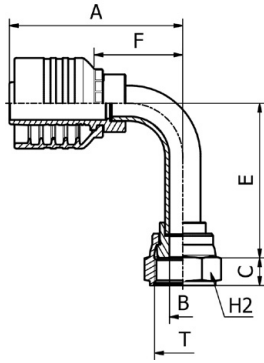
SAE STANDARD CONNECTIONS

OPK22491/OPK22493

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|---------------|---------------|-------|------|------|-------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPK22493-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 59.5 | 9.5 | 24.0 | 30.0 | 22.0 | |
| OPK22493-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 59.5 | 11.0 | 26.5 | 30.0 | 24.0 | |
| OPK22491-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 61.5 | 9.5 | 24.5 | 30.0 | 22.0 | |
| OPK22493-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 71.5 | 11.0 | 30.0 | 40.5 | 24.0 | |
| OPK22493-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 71.0 | 13.5 | 30.5 | 40.0 | 30.0 | |
| OPK22493-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 71.0 | 14.5 | 37.5 | 39.5 | 36.0 | |
| OPK22493-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 82.5 | 13.5 | 37.5 | 48.0 | 30.0 | |
| OPK22493-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 82.5 | 14.5 | 41.0 | 48.0 | 36.0 | |
| OPK22491-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 85.5 | 13.5 | 38.0 | 49.0 | 30.0 | |
| OPK22493-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 93.0 | 14.5 | 48.0 | 56.5 | 36.0 | |
| OPK22493-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 93.0 | 14.8 | 47.5 | 56.5 | 41.0 | |
| OPK22491-16A12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 106.0 | 13.5 | 48.0 | 57.5 | 36.0 | |
| OPK22493-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 119.5 | 14.8 | 56.0 | 71.5 | 41.0 | |
| OPK22493-16A20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 119.5 | 14.8 | 58.5 | 71.5 | 50.0 | |
| OPK22493-20A20 | 31 | - 20 | 1.1/4" | 1.11/16" - 12 | 26.0 | 135.5 | 14.8 | 66.0 | 83.0 | 50.0 | |
| OPK22493-24A24 | 38 | - 24 | 1.1/2" | 2" - 12 | 32.0 | 164.0 | 14.8 | 79.5 | 102.0 | 60.0 | |

OPK22492: THRUST WIRE NUT / OPK22493: SLIP-ON NUT



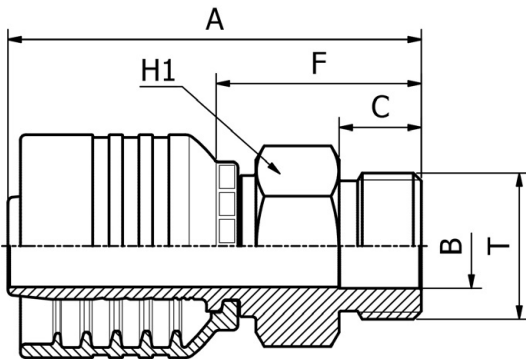
SAE STANDARD CONNECTIONS

OPK24491

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 54.0 | 32.0 | 22.0 | |
| OPK24491-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 6.7 | 61.5 | 11.0 | 54.0 | 32.0 | 24.0 | |
| OPK24491-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.6 | 68.0 | 11.0 | 64.0 | 37.0 | 24.0 | |
| OPK24491-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 9.6 | 68.0 | 12.5 | 64.5 | 37.0 | 30.0 | |
| OPK24491-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 12.0 | 75.5 | 13.0 | 70.0 | 41.0 | 30.0 | |
| OPK24491-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 12.7 | 75.5 | 13.5 | 73.0 | 41.0 | 36.0 | |
| OPK24491-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 95.0 | 13.5 | 96.0 | 58.5 | 36.0 | |
| OPK24491-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 119.5 | 13.5 | 114.0 | 71.5 | 41.0 | |

All items made by brazing with the exception of OPK24491-12-12 and OPK24491-16-16

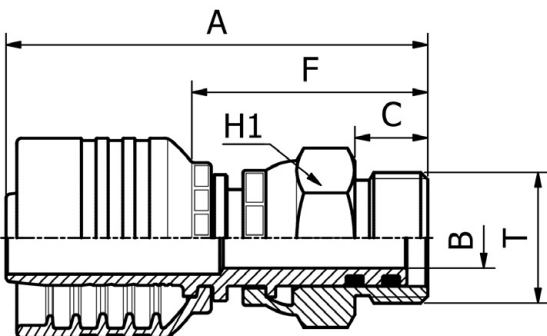


SAE STANDARD CONNECTIONS

OPK13010

SAE
MALE O'RING BOSS TYPE

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------------|---------------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | |
| OPK13010-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.9 | 60.0 | 11.1 | 29.0 | 22.0 | |
| OPK13010-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.5 | 76.0 | 15.1 | 39.5 | 32.0 | |
| OPK13010-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.5 | 89.5 | 15.1 | 41.0 | 38.0 | |



SAE STANDARD CONNECTIONS

OPK14310

SAE
SWIVEL MALE O'RING BOSS TYPE

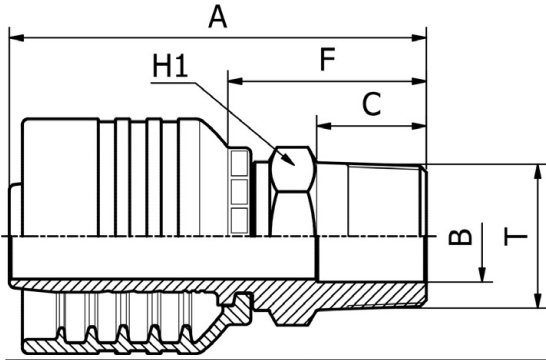
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H2 | |
| OPK14310-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 84.0 | 11.1 | 53.0 | 27.0 | |

Not to be used as a live swivel

SAE STANDARD CONNECTIONS

OPK12810

NPTF
MALE 60° CONE SEAT
SAE J516/J514



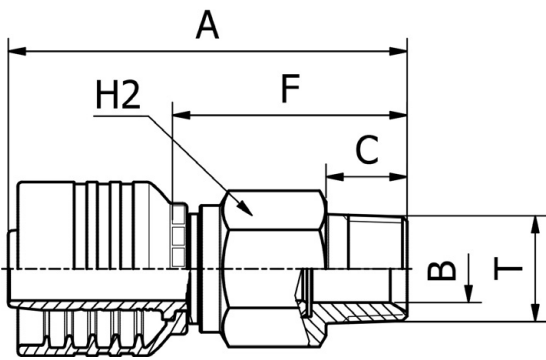
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|---------------|---------------|-------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | |
| OPK12810-06A04 | 10 | - 6 | 3/8" | 1/4" - 18 | 5.5 | 59.5 | 14.5 | 30.0 | 14.0 | |
| OPK12810-06A06 | 10 | - 6 | 3/8" | 3/8" - 18 | 9.3 | 58.0 | 14.5 | 28.5 | 19.0 | |
| OPK12810-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 12.5 | 64.0 | 19.2 | 34.5 | 24.0 | |
| OPK12810-08A06 | 12 | - 8 | 1/2" | 3/8" - 18 | 9.3 | 60.0 | 14.5 | 29.0 | 19.0 | |
| OPK12810-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 12.5 | 66.0 | 19.2 | 35.0 | 24.0 | |
| OPK12810-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.5 | 66.5 | 19.2 | 35.5 | 27.0 | |
| OPK12810-10A08 | 16 | - 10 | 5/8" | 1/2" - 14 | 12.5 | 73.0 | 19.2 | 38.5 | 24.0 | |
| OPK12810-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 16.0 | 74.5 | 19.2 | 40.0 | 27.0 | |
| OPK12810-12A08 | 19 | - 12 | 3/4" | 1/2" - 14 | 12.5 | 73.0 | 19.2 | 36.5 | 27.0 | |
| OPK12810-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 73.0 | 19.2 | 36.5 | 27.0 | |
| OPK12810-12A16 | 19 | - 12 | 3/4" | 1" - 11,5 | 19.8 | 82.5 | 24.2 | 46.0 | 36.0 | |
| OPK12810-16A20 | 25 | - 16 | 1" | 1.1/4" - 11,5 | 26.0 | 104.5 | 25.0 | 56.5 | 46.0 | |
| OPK12810-16A12 | 25 | - 16 | 1" | 3/4" - 14 | 15.5 | 87.0 | 19.2 | 39.0 | 32.0 | |
| OPK12810-16A16 | 25 | - 16 | 1" | 1" - 11,5 | 19.8 | 92.0 | 24.2 | 44.0 | 36.0 | |
| OPK12810-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" - 11,5 | 26.0 | 109.0 | 25.0 | 56.5 | 46.0 | |
| OPK12810-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" - 11,5 | 32.0 | 119.5 | 26.0 | 57.5 | 50.0 | |
| OPK12810-32A32 | 51 | - 32 | 2" | 2" - 11,5 | 45.0 | 130.5 | 26.5 | 64.5 | 65.0 | |

267 FITTINGS

SAE STANDARD CONNECTIONS

OPK14110R

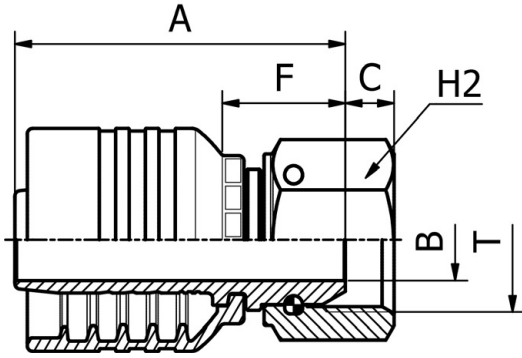
NPTF
SWIVEL MALE 60° CONE SEAT
SAE J516/J514



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|-----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H2 | |
| OPK14110-06A04R | 10 | - 6 | 3/8" | 1/4" - 18 | 4.0 | 80.0 | 14.5 | 50.5 | 22.0 | |
| OPK14110-06A06R | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 80.0 | 14.5 | 50.5 | 22.0 | |
| OPK14110-08A08R | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 90.0 | 19.2 | 59.0 | 27.0 | |
| OPK14110-12A12R | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 94.5 | 19.2 | 58.0 | 32.0 | |
| OPK14110-16A16R | 25 | - 16 | 1" | 1" - 11,5 | 19.8 | 114 | 24.2 | 66.0 | 38.0 | |

Not to be used as a live swivel

SAE STANDARD CONNECTIONS

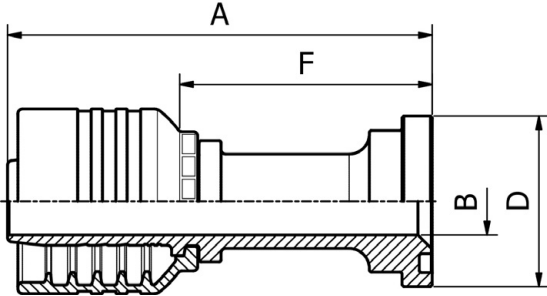


OPK22812

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H2 | | |
| OPK22812-06A06 | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 50.5 | 6.0 | 21.0 | 22.0 | | |
| OPK22812-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 54.0 | 6.5 | 23.0 | 27.0 | | |
| OPK22812-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.0 | 9.0 | 24.5 | 32.0 | | |
| OPK22812-16A16 | 25 | - 16 | 1" | 1" - 11,5 | 19.8 | 75.5 | 10.5 | 27.5 | 38.0 | | |

SAE STANDARD CONNECTIONS



OPK23311

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

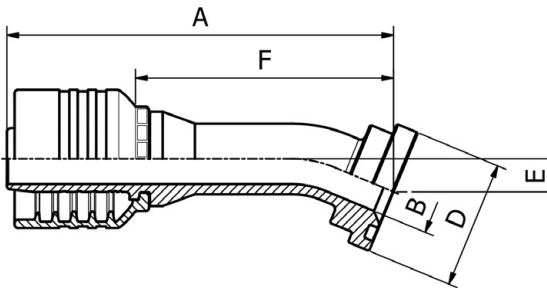
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | F | | | |
| OPK23311-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 82.0 | 30.3 | 51.0 | | | |
| OPK23311-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.1 | 89.0 | 38.0 | 58.0 | | | |
| OPK23311-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 100.0 | 38.0 | 65.5 | | | |
| OPK23311-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 94.5 | 38.0 | 58.0 | | | |
| OPK23311-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 94.5 | 44.6 | 58.0 | | | |
| OPK23311-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 112.5 | 44.6 | 64.5 | | | |
| OPK23311-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 118.5 | 51.0 | 70.5 | | | |
| OPK23311-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 123.0 | 51.0 | 70.5 | | | |
| OPK23311-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 125.0 | 60.5 | 72.5 | | | |
| OPK23311-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 137.5 | 60.5 | 75.5 | | | |
| OPK23311-24A32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 137.5 | 71.6 | 75.5 | | | |
| OPK23311-32A32 | 51 | - 32 | 2" | 2" | 42.0 | 145.0 | 71.6 | 79.0 | | | |
| OPK23311-32A40 | 51 | - 32 | 2" | 2.1/2" | 56.0 | 147.0 | 84.3 | 81.0 | | | |

SAE STANDARD CONNECTIONS

OPK23321

22,5° ISO / SAE
CODE 61 FLANGE

SAE J516 / ISO 12151-3



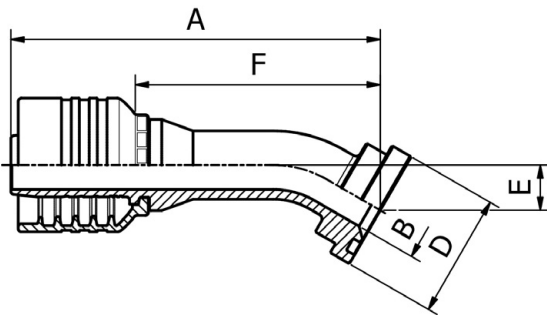
| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPK23321-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 95.0 | 30.3 | 8.0 | 64.0 | | |
| OPK23321-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 111.0 | 38.0 | 10.0 | 74.5 | | |
| OPK23321-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 111.0 | 44.6 | 10.0 | 74.5 | | |
| OPK23321-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 137.0 | 44.6 | 11.5 | 89.0 | | |
| OPK23321-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 152.5 | 51.0 | 12.0 | 100.0 | | |
| OPK23321-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 154.5 | 60.5 | 13.0 | 102.0 | | |

SAE STANDARD CONNECTIONS

OPK23331

30° ISO / SAE
CODE 61 FLANGE

SAE J516 / ISO 12151-3

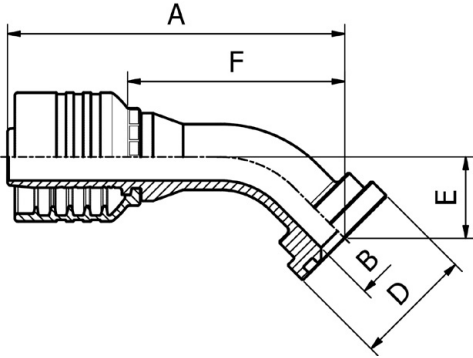


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPK23331-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 93.5 | 30.3 | 11.0 | 62.5 | | |
| OPK23331-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 109.5 | 38.0 | 14.0 | 73.0 | | |
| OPK23331-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 109.5 | 44.6 | 14.0 | 73.0 | | |
| OPK23331-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 135.0 | 44.6 | 16.5 | 87.0 | | |
| OPK23331-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 150.5 | 51.0 | 17.5 | 98.0 | | |
| OPK23331-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 176.5 | 60.5 | 20.0 | 114.5 | | |

SAE STANDARD CONNECTIONS

OPK23341

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



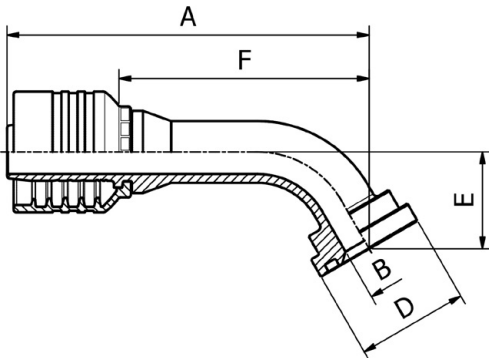
| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | F | | |
| OPK23341-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 90.0 | 30.3 | 18.5 | 58.5 | | |
| OPK23341-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.0 | 90.5 | 38.0 | 19.0 | 59.5 | | |
| OPK23341-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 95.0 | 38.0 | 22.0 | 61.0 | | |
| OPK23341-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 104.5 | 38.0 | 23.0 | 68.5 | | |
| OPK23341-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 104.5 | 44.6 | 23.0 | 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" | 26.0 | 129.5 | 51.0 | 27.5 | 81.5 | | |
| OPK23341-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 144.5 | 51.0 | 29.5 | 92.0 | | |
| OPK23341-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 146.0 | 60.5 | 31.0 | 93.5 | | |
| OPK23341-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 169.5 | 60.5 | 34.5 | 107.5 | | |
| OPK23341-24A32 | 38 | - 24 | 1.1/2" | 2" | 42.0 | 169.5 | 71.6 | 34.5 | 107.5 | | |
| OPK23341-32A32 | 51 | - 32 | 2" | 2" | 42.0 | 190.0 | 71.6 | 39.0 | 124.0 | | |

FITTINGS 270

SAE STANDARD CONNECTIONS

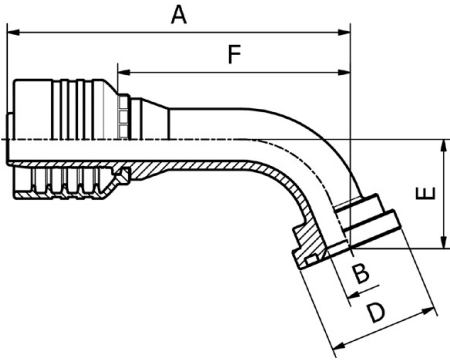
OPK23361

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



| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | F | | |
| OPK23361-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 102.5 | 30.3 | 26.0 | 71.5 | | |
| OPK23361-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 123.5 | 38.0 | 33.0 | 87.0 | | |
| OPK23361-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 152.0 | 44.6 | 39.0 | 104.0 | | |
| OPK23361-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 152.0 | 51.0 | 39.0 | 104.0 | | |
| OPK23361-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 173.5 | 60.5 | 44.5 | 121.0 | | |
| OPK23361-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 172.5 | 51.0 | 43.0 | 120.0 | | |
| OPK23361-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 205.5 | 60.5 | 50.5 | 143.5 | | |

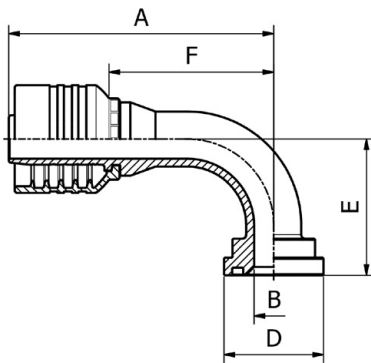
SAE STANDARD CONNECTIONS



OPK23371

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPK23371-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 99.0 | 30.3 | 29.5 | 68.0 | | |
| OPK23371-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 118.5 | 38.0 | 38.0 | 82.0 | | |
| OPK23371-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 118.5 | 44.6 | 38.0 | 82.0 | | |
| OPK23371-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 147.0 | 44.6 | 45.0 | 98.5 | | |
| OPK23371-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 166.5 | 51.0 | 50.0 | 114.0 | | |
| OPK23371-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 198.5 | 60.5 | 59.0 | 136.5 | | |



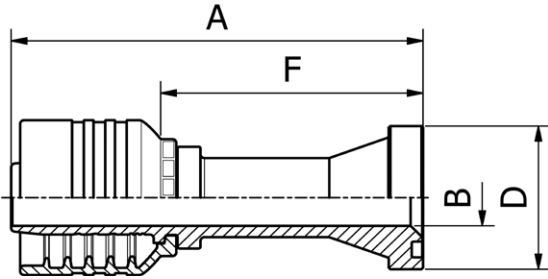
SAE STANDARD CONNECTIONS

OPK23391

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPK23391-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 85.5 | 30.3 | 40.0 | 54.5 | | |
| OPK23391-08A12 | 12 | - 8 | 1/2" | 3/4" | | 15.0 | 85.5 | 38.0 | 41.0 | 54.5 | | |
| OPK23391-10A12 | 16 | - 10 | 5/8" | 3/4" | | 15.0 | 90.0 | 38.0 | 47.5 | 56.0 | | |
| OPK23391-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 101.0 | 38.0 | 52.0 | 64.5 | | |
| OPK23391-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 101.0 | 44.6 | 52.0 | 64.5 | | |
| OPK23391-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 125.5 | 44.6 | 62.0 | 77.5 | | |
| OPK23391-16A20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 125.5 | 51.0 | 62.0 | 77.5 | | |
| OPK23391-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 143.0 | 51.0 | 70.0 | 90.5 | | |
| OPK23391-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 143.0 | 60.5 | 72.0 | 90.5 | | |
| OPK23391-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 170.0 | 60.5 | 84.0 | 108.0 | | |
| OPK23391-24A32 | 38 | - 24 | 1.1/2" | 2" | | 42.0 | 170.0 | 71.6 | 84.0 | 108.0 | | |
| OPK23391-32A32 | 51 | - 32 | 2" | 2" | | 42.0 | 195.0 | 71.6 | 99.0 | 129.0 | | |

SAE STANDARD CONNECTIONS

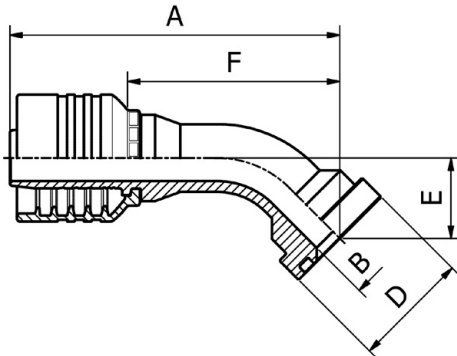


OPK23611

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|-------|--|--|--|
| | DN | Dash | inch | inch | B | A | D | F | | | |
| OPK23611-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 83.0 | 31.8 | 52.0 | | | |
| OPK23611-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.0 | 99.5 | 41.5 | 68.5 | | | |
| OPK23611-10A08 | 16 | - 10 | 5/8" | 1/2" | 9.3 | 86.5 | 31.8 | 52.0 | | | |
| OPK23611-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 104.5 | 41.5 | 70.0 | | | |
| OPK23611-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 105.5 | 41.5 | 69.0 | | | |
| OPK23611-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 117.5 | 47.7 | 81.0 | | | |
| OPK23611-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 130.5 | 47.7 | 82.5 | | | |
| OPK23611-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 138.0 | 54.2 | 90.0 | | | |
| OPK23611-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 137.0 | 54.2 | 84.5 | | | |
| OPK23611-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 143.0 | 63.7 | 90.5 | | | |
| OPK23611-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 154.5 | 63.6 | 92.5 | | | |
| OPK23611-32A32 | 51 | - 32 | 2" | 2" | 42.0 | 175.0 | 79.5 | 109.0 | | | |

FITTINGS 272



SAE STANDARD CONNECTIONS

OPK23641

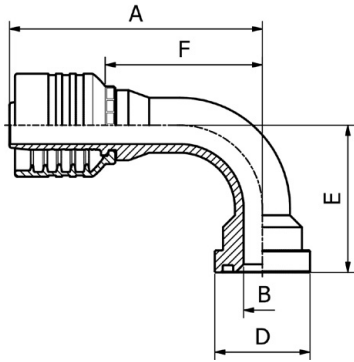
45° ISO / SAE
CODE 62 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | B | A | D | E | F | | |
| OPK23641-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 93.5 | 31.8 | 22.0 | 62.0 | | |
| OPK23641-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.0 | 99.0 | 41.5 | 27.5 | 68.0 | | |
| OPK23641-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 102.0 | 41.5 | 31.0 | 67.5 | | |
| OPK23641-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 109.0 | 41.5 | 28.0 | 72.5 | | |
| OPK23641-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 114.0 | 47.7 | 32.5 | 77.0 | | |
| OPK23641-16A12 | 25 | - 16 | 1" | 3/4" | 15.0 | 128.0 | 41.5 | 30.0 | 80.0 | | |
| OPK23641-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 132.0 | 47.7 | 32.5 | 83.5 | | |
| OPK23641-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 136.5 | 54.2 | 37.5 | 88.5 | | |
| OPK23641-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 147.5 | 54.2 | 37.5 | 95.0 | | |
| OPK23641-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | 32.0 | 155.0 | 63.7 | 45.0 | 102.5 | | |
| OPK23641-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | 32.0 | 180.0 | 63.7 | 44.0 | 118.0 | | |
| OPK23641-32A32 | 51 | - 32 | 2" | 2" | 42.0 | 217.5 | 79.6 | 60.5 | 151.5 | | |

SAE STANDARD CONNECTIONS

OPK23691

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



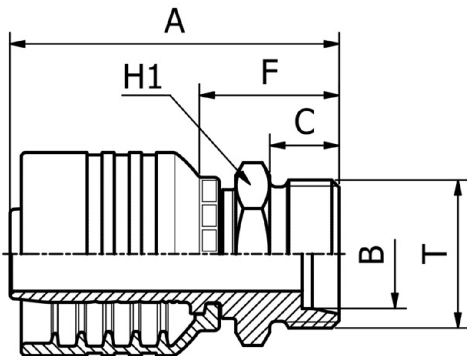
| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|--|---------------|-------|------|-------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPK23691-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 85.5 | 31.8 | 45.0 | 54.5 | | |
| OPK23691-08A12 | 12 | - 8 | 1/2" | 3/4" | | 15.0 | 85.5 | 41.5 | 53.0 | 54.5 | | |
| OPK23691-10A12 | 16 | - 10 | 5/8" | 3/4" | | 15.0 | 87.5 | 41.5 | 60.5 | 53.5 | | |
| OPK23691-10A16 | 16 | - 10 | 5/8" | 1" | | 19.8 | 90.0 | 47.7 | 64.0 | 56.0 | | |
| OPK23691-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 100.5 | 41.5 | 59.0 | 64.0 | | |
| OPK23691-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 101.0 | 47.7 | 65.0 | 64.5 | | |
| OPK23691-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 121.5 | 47.7 | 68.0 | 73.5 | | |
| OPK23691-16A20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 121.5 | 54.2 | 75.0 | 73.5 | | |
| OPK23691-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 138.0 | 54.2 | 81.0 | 85.5 | | |
| OPK23691-20A24 | 31 | - 20 | 1.1/4" | 1.1/2" | | 32.0 | 138.0 | 63.7 | 91.5 | 85.5 | | |
| OPK23691-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 168.0 | 63.7 | 94.5 | 106.0 | | |
| OPK23691-32A32 | 51 | - 32 | 2" | 2" | | 42.0 | 204.0 | 79.6 | 132.0 | 138.0 | | |

273 FITTINGS

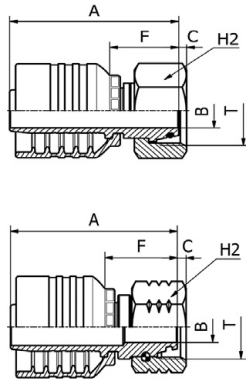
DIN STANDARD CONNECTIONS

OPK11110

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | F | H1 | | |
| OPK11110-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 7.0 | 53.5 | 11.0 | 24.0 | 17.0 | | |
| OPK11110-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 9.0 | 54.0 | 11.0 | 24.5 | 19.0 | | |
| OPK11110-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 10.0 | 55.0 | 12.0 | 25.5 | 22.0 | | |
| OPK11110-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 10.0 | 56.5 | 12.0 | 25.5 | 22.0 | | |
| OPK11110-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 57.5 | 12.0 | 26.5 | 27.0 | | |
| OPK11110-10A22 | 16 | - 10 | 5/8" | M 22X1,5 | 15.0 | 10.0 | 60.0 | 12.0 | 25.5 | 22.0 | | |
| OPK11110-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 61.0 | 12.0 | 26.5 | 27.0 | | |
| OPK11110-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 66.5 | 14.0 | 30.0 | 30.0 | | |
| OPK11110-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 80.5 | 14.0 | 32.5 | 36.0 | | |
| OPK11110-20A45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 93.0 | 16.0 | 40.5 | 46.0 | | |
| OPK11110-24A52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 105.0 | 16.0 | 43.0 | 55.0 | | |



DIN STANDARD CONNECTIONS

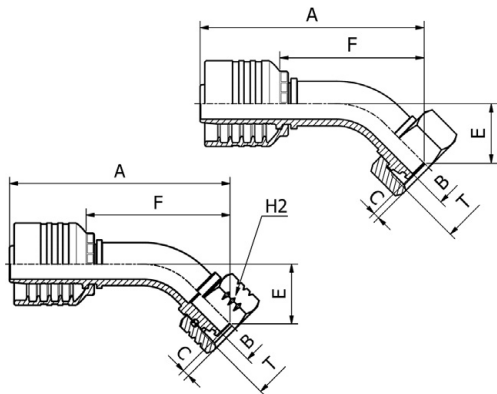
OPK21512/OPK21513

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

FITTINGS 274

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|------|-----|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | F |
| OPK21512-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 52.5 | 3.0 | 23.0 | 19.0 | |
| OPK21513-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 52.0 | 2.0 | 22.5 | 22.0 | |
| OPK21513-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 54.5 | 1.5 | 25.0 | 27.0 | |
| OPK21512-08A18 | 12 | - 8 | 1/2" | M 18X1,5 | 12.0 | 7.0 | 60.0 | 2.9 | 29.0 | 22.0 | |
| OPK21513-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 56.5 | 1.5 | 25.5 | 27.0 | |
| OPK21513-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 57.0 | 2.0 | 26.0 | 32.0 | |
| OPK21513-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 60.5 | 2.0 | 26.0 | 32.0 | |
| OPK21513-10A30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 68.5 | 3.0 | 34.0 | 36.0 | |
| OPK21512-12A26 | 19 | - 12 | 3/4" | M 26X1,5 | 18.0 | 12.5 | 67.5 | 2.3 | 31.0 | 32.0 | |
| OPK21513-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 64.5 | 3.0 | 28.0 | 36.0 | |
| OPK21513-12A36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 20.0 | 65.0 | 3.7 | 28.5 | 41.0 | |
| OPK21513-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 77.5 | 3.7 | 29.5 | 41.0 | |
| OPK21513-20A45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 85.5 | 4.0 | 33.0 | 50.0 | |
| OPK21513-24A52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 95.0 | 4.5 | 33.0 | 60.0 | |

OPK21512: THRUST WIRE NUT / OPK21513: SLIP-ON NUT



DIN STANDARD CONNECTIONS

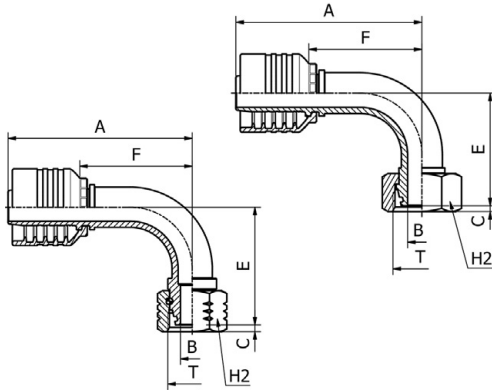
OPK21542/OPK21543

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|-------|------|
| | DN | Dash | inch | | | T | mm | B | A | C | E |
| OPK21542-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 77.0 | 3.0 | 21.5 | 47.5 | 19.0 |
| OPK21543-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 73.0 | 2.0 | 16.5 | 43.5 | 22.0 |
| OPK21543-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 74.0 | 1.5 | 18.0 | 45.0 | 27.0 |
| OPK21543-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 83.0 | 1.5 | 19.0 | 52.0 | 27.0 |
| OPK21543-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 96.5 | 2.0 | 26.5 | 62.0 | 32.0 |
| OPK21543-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 107.5 | 3.0 | 28.5 | 71.0 | 36.0 |
| OPK21543-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 133.0 | 3.7 | 32.0 | 85.0 | 41.0 |
| OPK21543-20A45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 152.5 | 4.0 | 36.0 | 100.0 | 50.0 |
| OPK21543-24A52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 179.0 | 4.5 | 44.5 | 117.0 | 60.0 |

OPK21542: THRUST WIRE NUT / OPK21543: SLIP-ON NUT

DIN STANDARD CONNECTIONS

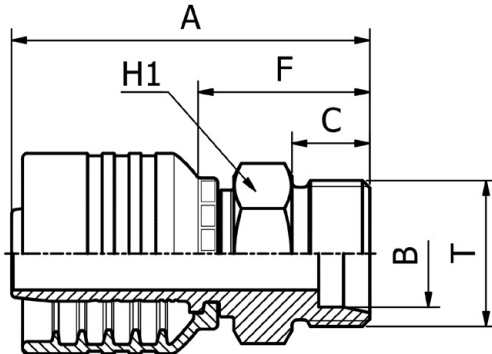


OPK21592/OPK21593

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|-------|------|
| | DN | Dash | inch | T | mm | B | A | C | E | F | H2 |
| OPK21592-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 65.0 | 3.0 | 40.0 | 35.5 | 19.0 |
| OPK21593-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 66.0 | 2.0 | 33.5 | 36.5 | 22.0 |
| OPK21593-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 66.0 | 1.5 | 35.0 | 36.5 | 27.0 |
| OPK21592-08A18 | 12 | - 8 | 1/2" | M 18X1,5 | 12.0 | 7.0 | 75.0 | 2.9 | 48.0 | 44.0 | 22.0 |
| OPK21593-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 76.0 | 1.5 | 39.5 | 45.0 | 27.0 |
| OPK21593-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 76.0 | 2.0 | 40.0 | 45.0 | 32.0 |
| OPK21593-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 86.0 | 2.0 | 53.0 | 51.5 | 32.0 |
| OPK21593-10A30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 86.0 | 3.0 | 54.0 | 51.5 | 36.0 |
| OPK21593-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 97.5 | 3.0 | 59.5 | 61.5 | 36.0 |
| OPK21593-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 125.0 | 3.7 | 69.5 | 76.5 | 41.0 |
| OPK21593-20A45 | 31 | - 20 | 1.1/4" | M 45X2 | 35.0 | 26.0 | 146.0 | 4.0 | 81.0 | 93.5 | 50.0 |
| OPK21593-24A52 | 38 | - 24 | 1.1/2" | M 52X2 | 42.0 | 32.0 | 169.5 | 4.5 | 98.0 | 107.5 | 60.0 |

OPK21592: THRUST WIRE NUT / OPK21593: SLIP-ON NUT



DIN STANDARD CONNECTIONS

OPK11210

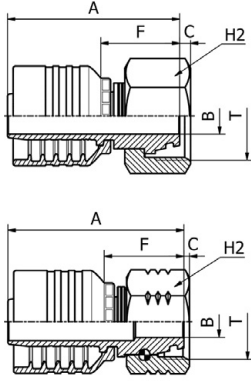
**METRIC
MALE 24° CONE SEAT HEAVY DUTY
DIN 20066 / ISO 12151-2**

| 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 | 10.0 | 7.0 | 56.5 | 12.0 | 27.0 | 19.0 | |
| OPK11210-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 58.5 | 12.0 | 29.0 | 22.0 | |
| OPK11210-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 8.0 | 60.5 | 14.0 | 31.0 | 22.0 | |
| OPK11210-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 62.5 | 14.0 | 31.5 | 24.0 | |
| OPK11210-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 15.0 | 70.0 | 16.0 | 35.5 | 30.0 | |
| OPK11210-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 15.0 | 73.5 | 16.0 | 37.0 | 30.0 | |
| OPK11210-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 19.8 | 77.5 | 18.0 | 41.0 | 36.0 | |
| OPK11210-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 19.8 | 90.5 | 18.0 | 42.5 | 36.0 | |
| OPK11210-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 25.0 | 92.5 | 20.0 | 44.5 | 46.0 | |
| OPK11210-20A52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 30.0 | 103.5 | 22.0 | 51.0 | 55.0 | |

DIN STANDARD CONNECTIONS

OPK21612/OPK21613

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



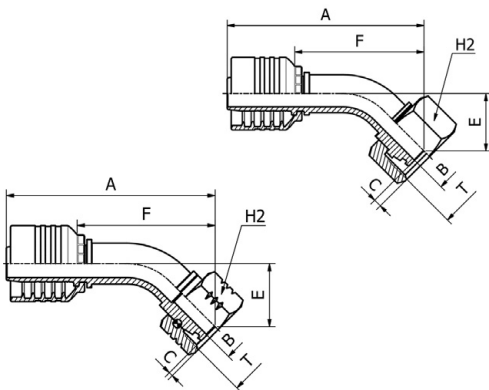
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | F |
| OPK21613-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 54.5 | 2.0 | 25.5 | 24.0 | |
| OPK21613-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 62.0 | 3.0 | 32.5 | 27.0 | |
| OPK21613-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 58.0 | 4.0 | 26.5 | 30.0 | |
| OPK21613-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 65.0 | 3.5 | 30.5 | 36.0 | |
| OPK21612-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 70.0 | 2.2 | 33.5 | 36.0 | |
| OPK21613-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 70.5 | 4.5 | 34.0 | 41.0 | |
| OPK21612-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 83.5 | 1.7 | 35.5 | 41.0 | |
| OPK21613-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 83.5 | 6.3 | 35.5 | 50.0 | |
| OPK21613-20A52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 90.0 | 8.0 | 37.5 | 60.0 | |
| OPK21613-24A52 | 38 | - 24 | 1.1/2" | M 52X2 | 38.0 | 26.0 | 111.5 | 8.0 | 49.5 | 60.0 | |

OPK21612: THRUST WIRE NUT / OPK21613: SLIP-ON NUT

DIN STANDARD CONNECTIONS

OPK21642/OPK21643

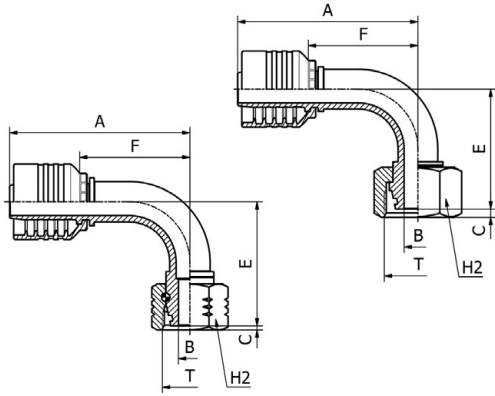
**45° METRIC
O-RING FEMALE SWEPT ELBOW 24° CONE
HEAVY DUTY
DIN 20066 / ISO 12151-2**



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|-------|------|
| | DN | Dash | inch | | | T | mm | B | A | C | E |
| OPK21643-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 73.5 | 2.0 | 17.0 | 44.0 | 24.0 |
| OPK21643-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 75.0 | 3.0 | 18.5 | 45.5 | 27.0 |
| OPK21643-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 83.5 | 4.0 | 20.0 | 52.5 | 30.0 |
| OPK21643-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 99.5 | 3.5 | 29.5 | 65.5 | 36.0 |
| OPK21642-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 113.0 | 2.2 | 34.0 | 76.5 | 36.0 |
| OPK21643-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 111.5 | 4.5 | 32.5 | 75.0 | 41.0 |
| OPK21643-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 138.0 | 6.3 | 35.5 | 90.0 | 50.0 |
| OPK21643-20A52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 155.5 | 8.0 | 39.5 | 103.0 | 60.0 |

OPK21642: THRUST WIRE NUT / OPK21643: SLIP-ON NUT

DIN STANDARD CONNECTIONS

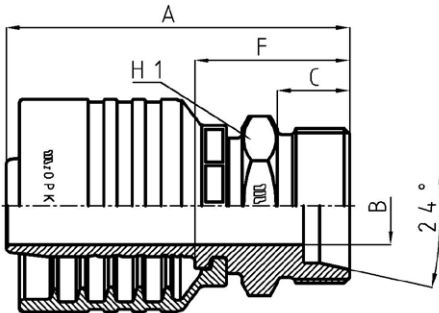


OPK21692/OPK21693

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|----------|------|---------------|-------|-----|------|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | E | F |
| OPK21693-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 66.0 | 2.0 | 35.0 | 36.5 | 24.0 | |
| OPK21693-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 66.0 | 3.0 | 37.0 | 36.5 | 27.0 | |
| OPK21693-06A24 | 10 | - 6 | 3/8" | M 24X1,5 | 16.0 | 9.3 | 66.0 | 4.0 | 36.0 | 36.5 | 30.0 | |
| OPK21693-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 76.0 | 4.0 | 40.5 | 45.0 | 30.0 | |
| OPK21693-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 86.0 | 3.5 | 57.5 | 51.5 | 36.0 | |
| OPK21692-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 98.0 | 2.2 | 67.5 | 61.5 | 36.0 | |
| OPK21693-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 97.5 | 4.5 | 64.5 | 61.5 | 41.0 | |
| OPK21692-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 127.5 | 1.7 | 86.0 | 79.5 | 41.0 | |
| OPK21693-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 127.5 | 6.3 | 74.5 | 79.0 | 50.0 | |
| OPK21693-20A52 | 31 | - 20 | 1.1/4" | M 52X2 | 38.0 | 26.0 | 146.0 | 8.0 | 85.5 | 93.5 | 60.0 | |

OPK21692: THRUST WIRE NUT / OPK21693: SLIP-ON NUT

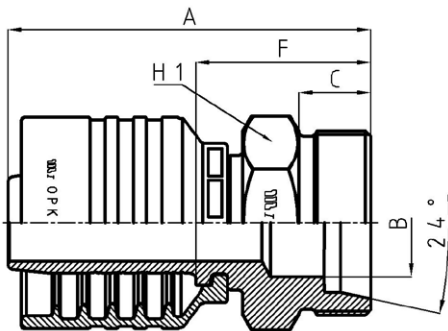


NF STANDARD CONNECTIONS

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 | 22.0 | 15.0 | 66.5 | 14.0 | 30.0 | 30.0 | | |



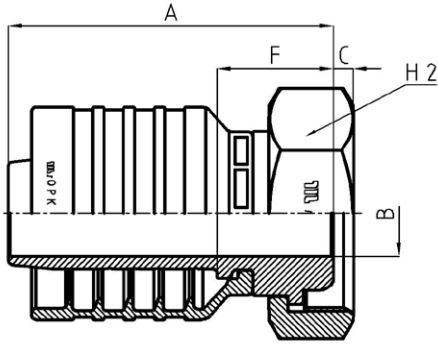
NF STANDARD CONNECTIONS

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 | 21.0 | 70.5 | 14.0 | 34.0 | 36.0 | | |

NF STANDARD CONNECTIONS



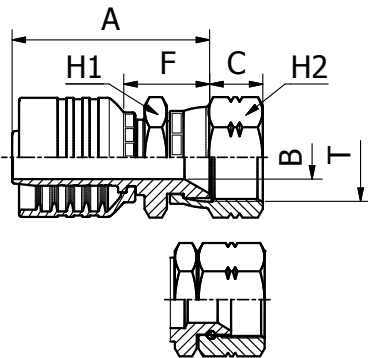
OPK21813

**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 | 75.0 | 4.5 | 27.0 | 50.0 | | |

FITTINGS 278

JIS STANDARD CONNECTIONS



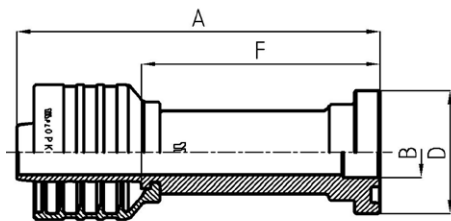
OPK24011/OPK24012

**JIS METRIC
FEMALE (KOMATSU)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|----------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | H2 | |
| OPK24011-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 7.0 | 53.0 | 11.5 | 23.5 | 24.0 | 24.0 | |
| OPK24011-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 9.3 | 56.0 | 13.0 | 25.0 | 27.0 | 27.0 | |
| OPK24011-10A24 | 16 | - 10 | 5/8" | M 24X1,5 | 12.5 | 61.0 | 15.1 | 26.5 | 32.0 | 32.0 | |
| OPK24011-12A30 | 19 | - 12 | 3/4" | M 30X1,5 | 15.0 | 68.0 | 18.3 | 31.5 | 36.0 | 36.0 | |
| OPK24011-16A33 | 25 | - 16 | 1" | M 33X1,5 | 19.8 | 81.5 | 21.3 | 33.5 | 41.0 | 41.0 | |
| OPK24012-24A42 | 38 | - 24 | 1.1/2" | M 42X1,5 | 26.0 | 106.0 | 18.8 | 44.0 | 55.0 | 55.0 | |

OPK24011: CRIMPED BACK-NUT / OPK24012: THRUST WIRE NUT

ORIGINAL EQUIPMENT CONNECTIONS

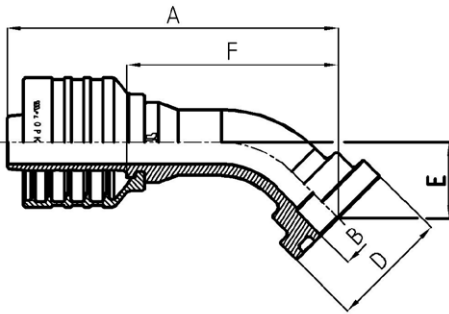


OPK24111

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" | 14.0 | 100.0 | 34.0 | 65.5 | | | |

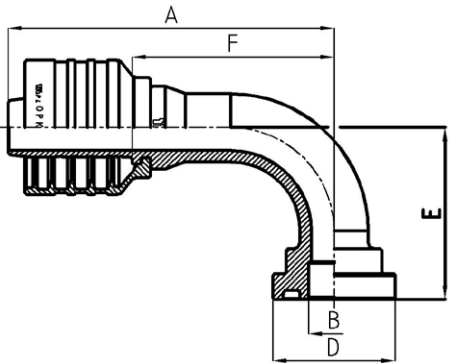
ORIGINAL EQUIPMENT CONNECTIONS



OPK24141

45° KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | Flange | inch | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | | | B | A | D | E | F | | |
| OPK24141-10A10 | 16 | - 10 | 5/8" | 5/8" | | 14.0 | 95.0 | 34.0 | 22.0 | 61.0 | | |

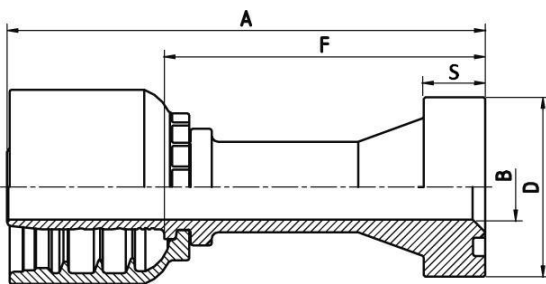


ORIGINAL EQUIPMENT CONNECTIONS

OPK24191

90° KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | Flange | inch | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | | | B | A | D | E | F | | |
| OPK24191-10A10 | 16 | - 10 | 5/8" | 5/8" | | 14.0 | 90.0 | 34.0 | 47.5 | 56.0 | | |

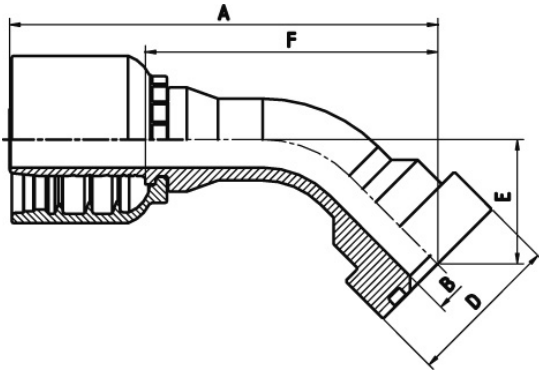


ORIGINAL EQUIPMENT CONNECTIONS

OPK23911

STRAIGHT SUPERCAT FLANGE

| PART. REF. | HOSE BORE | | | Flange | inch | DIMENSIONS mm | | | | |
|----------------|-----------|------|--------|--------|------|---------------|-------|------|------|------|
| | DN | Dash | inch | | | B | A | D | F | S |
| OPK23911-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 111.0 | 41.5 | 74.5 | 14.3 |
| OPK23911-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 135.0 | 47.7 | 87.0 | 14.3 |
| OPK23911-16A20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 140.5 | 54.0 | 92.5 | 14.3 |
| OPK23911-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | | 26.0 | 138.5 | 54.0 | 86.0 | 14.3 |
| OPK23911-24A24 | 38 | - 24 | 1.1/2" | 1.1/2" | | 32.0 | 156.0 | 63.6 | 94.0 | 14.3 |



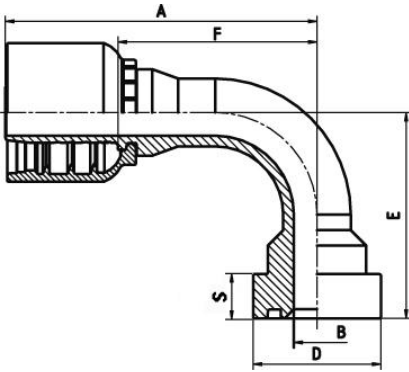
ORIGINAL EQUIPMENT CONNECTIONS

OPK23941

45° SUPERCAT FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | F | S |
| OPK23941-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 114.0 | 41.5 | 32.0 | 77.0 | 14.3 | |
| OPK23941-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 138.0 | 47.7 | 36.5 | 89.5 | 14.3 | |
| OPK23941-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 140.5 | 54.0 | 40.5 | 92.5 | 14.3 | |
| OPK23941-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 151.5 | 54.0 | 41.5 | 99.0 | 14.3 | |

FITTINGS 280



ORIGINAL EQUIPMENT CONNECTIONS

OPK23991

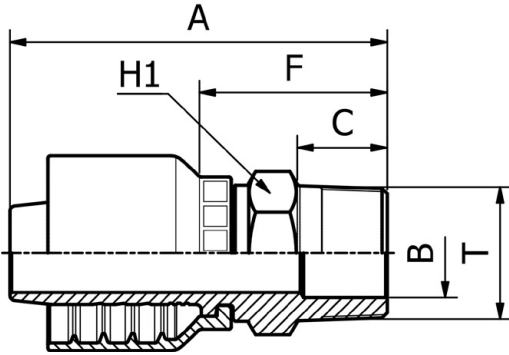
90° SUPERCAT FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|--------|--------|---------------|-------|------|------|------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | F | S |
| OPK23991-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 101.0 | 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" | 26.0 | 123.5 | 54.0 | 80.5 | 75.5 | 14.3 | |
| OPK23991-20A20 | 31 | - 20 | 1.1/4" | 1.1/4" | 26.0 | 138.0 | 54.0 | 87.0 | 85.5 | 14.3 | |

BS STANDARD CONNECTIONS

OPF10710

**BSP
MALE TAPERED**

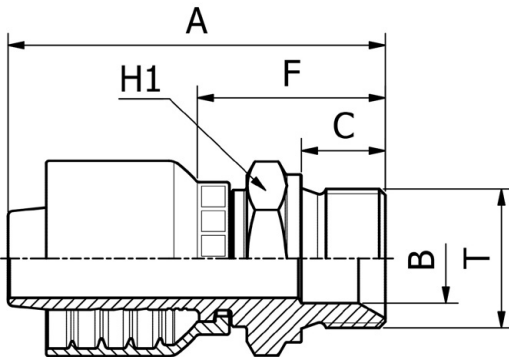


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPF10710-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 10.0 | 62.0 | 15.0 | 31.0 | 22.0 | | |
| OPF10710-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 17.0 | 68.5 | 17.0 | 34.0 | 27.0 | | |

BS STANDARD CONNECTIONS

OPF10510

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

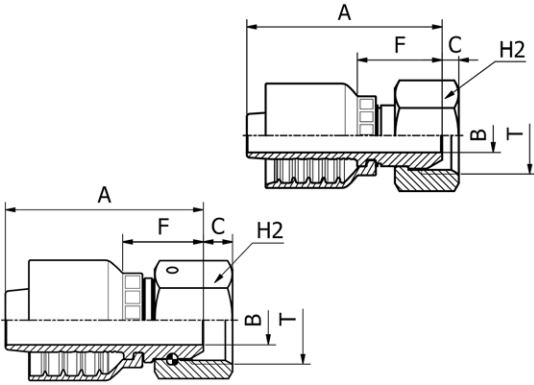


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|-------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPF10510-03A02 | 5 | - 3 | 3/16" | 1/8" - 28 | 3.5 | 44.0 | 10.0 | 22.5 | 14.0 | | |
| OPF10510-04A02 | 6 | - 4 | 1/4" | 1/8" - 28 | 3.5 | 50.0 | 10.0 | 22.5 | 14.0 | | |
| OPF10510-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | 5.0 | 53.0 | 11.0 | 25.5 | 19.0 | | |
| OPF10510-04A06 | 6 | - 4 | 1/4" | 3/8" - 19 | 8.0 | 54.5 | 12.0 | 27.0 | 22.0 | | |
| OPF10510-05A04 | 8 | - 5 | 5/16" | 1/4" - 19 | 5.0 | 54.0 | 11.0 | 26.0 | 19.0 | | |
| OPF10510-05A06 | 8 | - 5 | 5/16" | 3/8" - 19 | 8.0 | 55.5 | 12.0 | 27.5 | 22.0 | | |
| OPF10510-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | 5.0 | 55.5 | 11.0 | 26.0 | 19.0 | | |
| OPF10510-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 8.0 | 57.5 | 12.0 | 28.0 | 22.0 | | |
| OPF10510-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 11.0 | 60.0 | 14.0 | 30.5 | 27.0 | | |
| OPF10510-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | 8.0 | 59.0 | 12.0 | 28.0 | 22.0 | | |
| OPF10510-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 11.0 | 62.0 | 14.0 | 31.0 | 27.0 | | |
| OPF10510-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 14.5 | 64.0 | 16.0 | 33.0 | 30.0 | | |
| OPF10510-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 17.0 | 65.0 | 16.0 | 34.0 | 32.0 | | |
| OPF10510-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 14.5 | 67.5 | 16.0 | 33.0 | 30.0 | | |
| OPF10510-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 17.0 | 68.5 | 16.0 | 34.0 | 32.0 | | |
| OPF10510-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 17.0 | 72.0 | 16.0 | 35.5 | 32.0 | | |
| OPF10510-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 22.5 | 76.0 | 19.0 | 39.5 | 41.0 | | |
| OPF10510-16A16 | 25 | - 16 | 1" | 1" - 11 | 22.5 | 89.0 | 19.0 | 41.0 | 41.0 | | |
| OPF10510-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | 28.5 | 93.0 | 20.0 | 45.0 | 50.0 | | |

BS STANDARD CONNECTIONS

OPF20512/OPF20513

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



FITTINGS 282

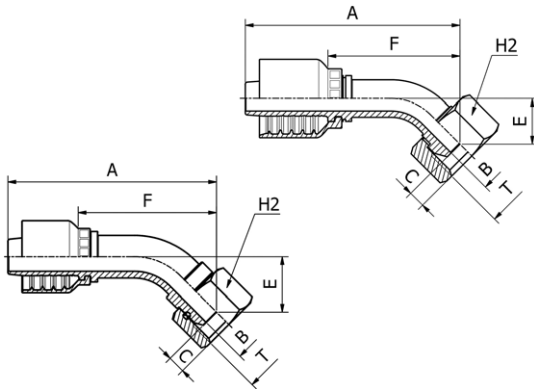
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|-----------|---------------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H2 |
| OPF20512-03A02 | 5 | - 3 | 3/16" | 1/8" - 28 | 3.0 | 37.0 | 4.4 | 16.0 | 14.0 | |
| OPF20513-03A04 | 5 | - 3 | 3/16" | 1/4" - 19 | 4.0 | 38.0 | 5.4 | 16.5 | 19.0 | |
| OPF20512-04A02 | 6 | - 4 | 1/4" | 1/8" - 28 | 3.1 | 44.0 | 4.4 | 16.5 | 14.0 | |
| OPF20513-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 44.5 | 5.4 | 17.0 | 19.0 | |
| OPF20513-04A06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 45.5 | 6.0 | 19.0 | 22.0 | |
| OPF20512-05A04 | 8 | - 5 | 5/16" | 1/4" - 19 | 4.1 | 45.5 | 4.2 | 17.5 | 19.0 | |
| OPF20513-05A06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 47.0 | 6.0 | 19.0 | 22.0 | |
| OPF20512-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 47.5 | 4.2 | 18.0 | 19.0 | |
| OPF20513-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 49.0 | 6.0 | 19.5 | 22.0 | |
| OPF20513-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 49.5 | 6.3 | 20.0 | 27.0 | |
| OPF20512-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | 7.1 | 52.0 | 6.0 | 21.0 | 22.0 | |
| OPF20513-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 51.5 | 6.3 | 20.5 | 27.0 | |
| OPF20512-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 53.0 | 10.2 | 22.0 | 28.0 | |
| OPF20512-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 56.0 | 9.0 | 24.5 | 32.0 | |
| OPF20512-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 56.0 | 10.2 | 21.5 | 28.0 | |
| OPF20512-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 57.5 | 9.0 | 23.0 | 32.0 | |
| OPF20512-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.0 | 9.0 | 24.5 | 32.0 | |
| OPF20512-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 62.5 | 10.5 | 26.0 | 38.0 | |
| OPF20512-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 75.5 | 10.5 | 27.5 | 38.0 | |

OPF20512: THRUST WIRE NUT / OPF20513: SLIP-ON NUT

BS STANDARD CONNECTIONS

OPF20542/OPF20543

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



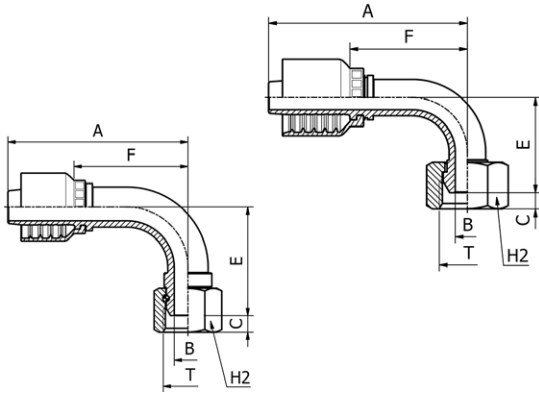
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|-----------|---------------|-------|------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | E | F |
| OPF20543-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 63.5 | 5.4 | 15.0 | 36.0 | 19.0 |
| OPF20543-04A06 | 6 | - 4 | 1/4" | 3/8" - 19 | 7.0 | 65.0 | 6.0 | 16.0 | 37.5 | 22.0 |
| OPF20543-05A06 | 8 | - 5 | 5/16" | 3/8" - 19 | 7.0 | 66.0 | 6.0 | 13.5 | 38.0 | 22.0 |
| OPF20543-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 71.5 | 6.0 | 15.5 | 42.0 | 22.0 |
| OPF20543-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 72.0 | 6.3 | 16.0 | 42.5 | 27.0 |
| OPF20543-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 81.0 | 6.3 | 17.0 | 49.5 | 27.0 |
| OPF20542-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | 12.1 | 85.5 | 10.2 | 22.5 | 54.5 | 28.0 |
| OPF20542-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 97.5 | 10.2 | 26.0 | 63.0 | 28.0 |
| OPF20542-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 15.0 | 98.0 | 9.0 | 27.0 | 64.0 | 32.0 |
| OPF20542-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 107.0 | 9.0 | 28.5 | 70.5 | 32.0 |
| OPF20542-12A16 | 19 | - 12 | 3/4" | 1" - 11 | 19.8 | 109.0 | 10.5 | 30.0 | 72.5 | 38.0 |
| OPF20542-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 139.5 | 10.5 | 36.5 | 91.0 | 38.0 |

OPF20542: THRUST WIRE NUT / OPF20543: SLIP-ON NUT

BS STANDARD CONNECTIONS

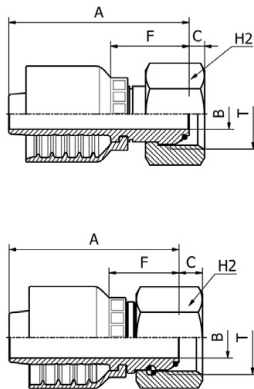
OPF20592/OPF20593

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|----------------|-----------|------|-------|-----------|---------------|------|-------|------|------|------|------|--|
| | DN | Dash | inch | | T | B | A | C | E | F | H2 | |
| OPF20592-03A02 | 5 | - 3 | 3/16" | 1/8" - 28 | | 3.0 | 43.0 | 4.4 | 26.0 | 21.5 | 14.0 | |
| OPF20592-04A02 | 6 | - 4 | 1/4" | 1/8" - 28 | | 3.1 | 56.0 | 4.4 | 27.0 | 28.5 | 14.0 | |
| OPF20593-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 57.0 | 5.4 | 29.0 | 29.5 | 19.0 | |
| OPF20593-04A06 | 6 | - 4 | 1/4" | 3/8" - 19 | | 7.0 | 57.0 | 6.0 | 31.0 | 29.5 | 22.0 | |
| OPF20593-05A06 | 8 | - 5 | 5/16" | 3/8" - 19 | | 7.0 | 60.0 | 6.0 | 27.5 | 32.0 | 22.0 | |
| OPF20592-05A04 | 8 | - 5 | 5/16" | 1/4" - 19 | | 4.0 | 54.5 | 4.1 | 29.5 | 26.5 | 19.0 | |
| OPF20593-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | | 9.3 | 66.0 | 6.3 | 32.0 | 36.5 | 27.0 | |
| OPF20593-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 66.0 | 6.0 | 31.5 | 36.5 | 22.0 | |
| OPF20592-08A06 | 12 | - 8 | 1/2" | 3/8" - 19 | | 7.1 | 76.0 | 6.0 | 41.0 | 45.0 | 22.0 | |
| OPF20593-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 76.0 | 6.3 | 36.5 | 45.0 | 27.0 | |
| OPF20592-08A10 | 12 | - 8 | 1/2" | 5/8" - 14 | | 12.1 | 75.5 | 10.2 | 44.0 | 44.0 | 28.0 | |
| OPF20592-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | | 15.0 | 75.5 | 9.0 | 45.5 | 44.0 | 32.0 | |
| OPF20592-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | | 12.5 | 88.0 | 10.2 | 53.5 | 53.5 | 28.0 | |
| OPF20592-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | | 15.0 | 88.0 | 9.0 | 55.0 | 53.5 | 32.0 | |
| OPF20592-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 98.0 | 9.0 | 59.5 | 61.5 | 32.0 | |
| OPF20592-12A16 | 19 | - 12 | 3/4" | 1" - 11 | | 19.8 | 98.0 | 10.5 | 62.0 | 61.5 | 38.0 | |
| OPF20592-16A16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 127.5 | 10.5 | 76.0 | 79.5 | 38.0 | |

OPF20592: THRUST WIRE NUT / OPF20593: SLIP-ON NUT



BS STANDARD CONNECTIONS

OPF20812/OPF20813

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

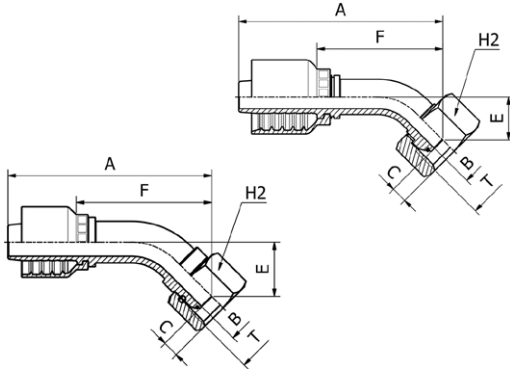
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|----------------|-----------|------|------|-------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | | T | B | A | C | F | H2 | | |
| OPF20813-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 44.5 | 5.4 | 17.0 | 19.0 | | |
| OPF20812-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | | 4.1 | 47.5 | 4.1 | 18.0 | 19.0 | | |
| OPF20813-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 49.0 | 6.0 | 19.5 | 22.0 | | |
| OPF20813-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 51.5 | 6.3 | 20.5 | 27.0 | | |
| OPF20812-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | | 12.5 | 56.5 | 9.7 | 22.0 | 28.0 | | |
| OPF20812-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 61.5 | 8.5 | 25.0 | 32.0 | | |
| OPF20812-16A16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 75.5 | 10.6 | 27.5 | 38.0 | | |
| OPF20812-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | | 26.1 | 79.0 | 10.5 | 31.0 | 50.0 | | |

OPF20812: THRUST WIRE NUT / OPF20813: 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 mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF20843-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 63.5 | 5.4 | 14.5 | 36.0 | 19.0 | |
| OPF20843-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 71.5 | 6.0 | 15.5 | 42.0 | 22.0 | |
| OPF20843-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 81.0 | 6.3 | 17.0 | 49.5 | 27.0 | |
| OPF20842-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 98.0 | 9.7 | 27.5 | 63.5 | 28.0 | |
| OPF20842-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 107.5 | 8.5 | 29.0 | 71.0 | 32.0 | |
| OPF20842-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 138.5 | 10.6 | 35.5 | 90.5 | 38.0 | |

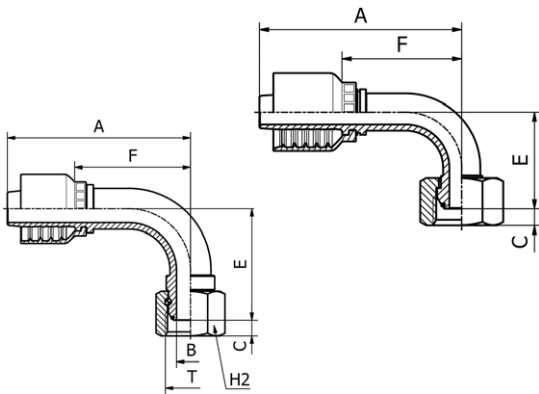
OPF20842: THRUST WIRE NUT / OPF20843: SLIP-ON NUT

FITTINGS 284

BS STANDARD CONNECTIONS

OPF20892/OPF20893

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



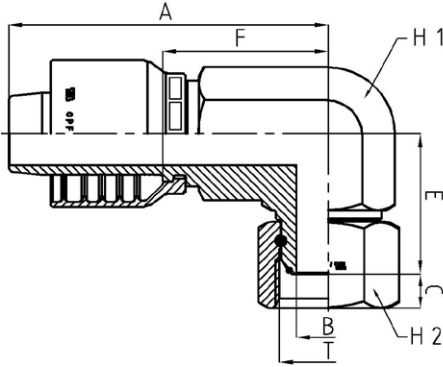
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF20893-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 57.0 | 5.4 | 29.0 | 29.5 | 19.0 | |
| OPF20892-06A04 | 10 | - 6 | 3/8" | 1/4" - 19 | 4.1 | 65.0 | 4.1 | 33.0 | 35.5 | 19.0 | |
| OPF20893-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 66.0 | 6.0 | 31.5 | 36.5 | 22.0 | |
| OPF20893-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 76.0 | 6.3 | 36.5 | 45.0 | 27.0 | |
| OPF20892-10A10 | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 87.5 | 9.7 | 55.0 | 53.0 | 28.0 | |
| OPF20892-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 98.0 | 8.5 | 60.0 | 61.5 | 32.0 | |
| OPF20892-16A16 | 25 | - 16 | 1" | 1" - 11 | 19.8 | 127.5 | 10.6 | 76.0 | 79.5 | 38.0 | |
| OPF20892-16A20 | 25 | - 16 | 1" | 1.1/4" - 11 | 26.1 | 127.5 | 10.5 | 78.5 | 79.5 | 50.0 | |

OPF20892: THRUST WIRE NUT / OPF20893: SLIP-ON NUT

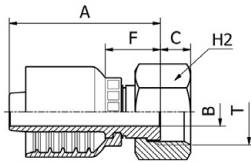
BS STANDARD CONNECTIONS

OPF20882F

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



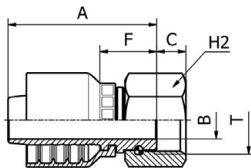
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|------|-----------|---------------|-------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H1 | H2 | |
| OPF20882-04A04F | 6 | - 4 | 1/4" | 1/4" - 19 | 4.0 | 47.5 | 4.1 | 22.0 | 20.0 | 14.0 | 19.0 | |
| OPF20882-06A06F | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 52.5 | 6.0 | 27.5 | 23.0 | 19.0 | 22.0 | |
| OPF20882-08A08F | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 56.0 | 6.5 | 31.0 | 25.0 | 22.0 | 27.0 | |
| OPF20882-10A10F | 16 | - 10 | 5/8" | 5/8" - 14 | 12.5 | 59.0 | 9.7 | 32.5 | 24.5 | 24.0 | 28.0 | |
| OPF20882-12A12F | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 74.0 | 8.5 | 36.0 | 37.5 | 27.0 | 32.0 | |
| OPF20882-16A16F | 25 | - 16 | 1" | 1" - 11 | 20.0 | 100.0 | 10.6 | 44.0 | 52.0 | 36.0 | 38.0 | |



BS STANDARD CONNECTIONS

OPF20612/OPF20613

BSP
FEMALE FLAT SEAT
(SLIP-ON NUT)

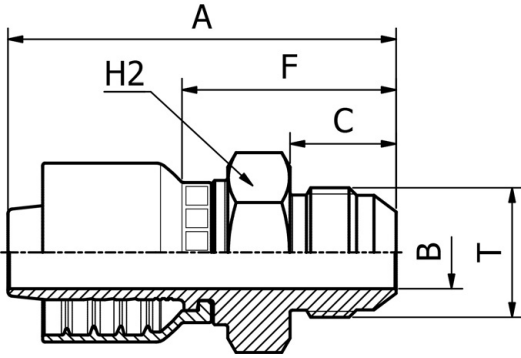


| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|--|
| | DN | Dash | inch | T | B | A | C | F | H2 | | | |
| OPF20613-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | 7.0 | 46.0 | 9.0 | 16.5 | 22.0 | | | |
| OPF20613-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 47.0 | 9.8 | 17.5 | 27.0 | | | |
| OPF20613-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 49.0 | 9.8 | 18.0 | 27.0 | | | |
| OPF20612-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.0 | 52.0 | 11.5 | 21.0 | 32.0 | | | |

SAE STANDARD CONNECTIONS

OPF12510

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



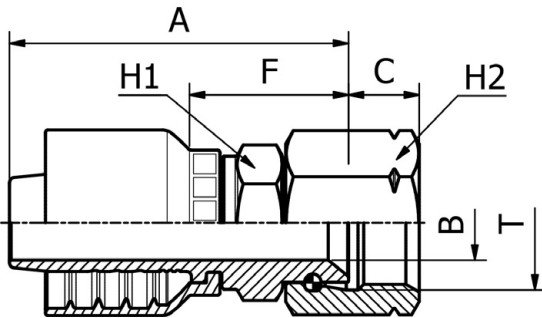
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|--------------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPF12510-04A04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 55.5 | 14.0 | 28.0 | 12.0 | | |
| OPF12510-04A05 | 6 | - 4 | 1/4" | 1/2" - 20 | 5.5 | 56.5 | 14.0 | 29.0 | 14.0 | | |
| OPF12510-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 56.5 | 14.0 | 29.0 | 17.0 | | |
| OPF12510-05A05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 57.0 | 14.0 | 29.0 | 14.0 | | |
| OPF12510-05A06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 57.0 | 14.0 | 29.0 | 17.0 | | |
| OPF12510-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 59.0 | 14.0 | 29.5 | 17.0 | | |
| OPF12510-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 63.5 | 16.5 | 34.0 | 19.0 | | |
| OPF12510-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 12.5 | 68.0 | 19.5 | 38.5 | 24.0 | | |
| OPF12510-08A06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 63.0 | 14.0 | 32.0 | 19.0 | | |
| OPF12510-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 65.5 | 16.5 | 34.5 | 19.0 | | |
| OPF12510-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 12.5 | 70.0 | 19.5 | 39.0 | 24.0 | | |
| OPF12510-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.0 | 74.0 | 22.0 | 43.0 | 27.0 | | |
| OPF12510-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 73.5 | 19.5 | 39.0 | 24.0 | | |
| OPF12510-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.0 | 77.0 | 22.0 | 42.5 | 27.0 | | |
| OPF12510-12A10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 78.0 | 19.5 | 41.5 | 27.0 | | |
| OPF12510-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 80.5 | 22.0 | 44.0 | 27.0 | | |
| OPF12510-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 81.0 | 22.5 | 44.5 | 32.0 | | |
| OPF12510-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 83.5 | 23.0 | 47.0 | 34.0 | | |
| OPF12510-16A12 | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 93.0 | 22.0 | 45.0 | 32.0 | | |
| OPF12510-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 96.0 | 23.0 | 48.0 | 34.0 | | |
| OPF12510-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 101.0 | 24.3 | 53.0 | 42.0 | | |

FITTINGS 286

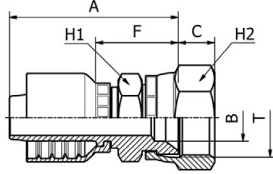
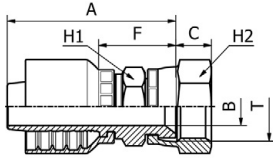
SAE STANDARD CONNECTIONS

OPF22712

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



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------------|---------------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | H2 | |
| OPF22712-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 69.5 | 14.3 | 33.0 | 30.0 | 36.0 | |
| OPF22712-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 91.0 | 16.2 | 43.0 | 41.0 | 50.0 | |



SAE STANDARD CONNECTIONS

OPF22711/OPF22711KR/ OPF22711K

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

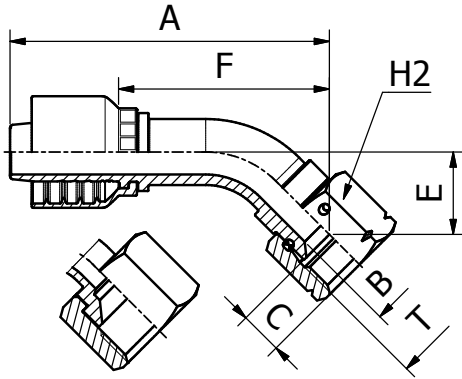
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|-------|--------------|---------------|------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPF22711-03A04K | 5 | - 3 | 3/16" | 7/16" - 20 | 4.0 | 41.5 | 8.9 | 20.0 | 12.0 | 15.0 | |
| OPF22711-04A04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 48.0 | 8.9 | 20.5 | 12.0 | 15.0 | |
| OPF22711-04A05KR | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 48.5 | 9.4 | 21.0 | 14.0 | 17.0 | |
| OPF22711-04A06KR | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 49.0 | 9.5 | 21.5 | 14.0 | 17.0 | |
| OPF22711-05A05KR | 8 | - 5 | 5/16" | 1/2" - 20 | 4.0 | 49.5 | 9.4 | 21.5 | 17.0 | 17.0 | |
| OPF22711-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 51.5 | 9.5 | 22.0 | 17.0 | 17.0 | |
| OPF22711-06A08KR | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 56.0 | 10.7 | 26.5 | 19.0 | 22.0 | |
| OPF22711-08A12KR | 12 | - 8 | 1/2" | 1.1/16" - 12 | 15.0 | 60.0 | 14.1 | 28.5 | 27.0 | 32.0 | |
| OPF22711-08A06KR | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 55.5 | 9.5 | 24.0 | 19.0 | 17.0 | |
| OPF22711-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 58.0 | 10.7 | 27.0 | 19.0 | 22.0 | |
| OPF22711-08A10KR | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 60.5 | 12.5 | 29.5 | 22.0 | 25.0 | |
| OPF22711-10A08KR | 16 | - 10 | 5/8" | 3/4" - 16 | 9.3 | 62.5 | 10.7 | 28.5 | 22.0 | 22.0 | |
| OPF22711-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 9.3 | 64.0 | 12.5 | 29.5 | 22.0 | 25.0 | |
| OPF22711-10A12KR | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.0 | 63.5 | 14.1 | 29.0 | 27.0 | 32.0 | |
| OPF22711-12A08KR | 19 | - 12 | 3/4" | 3/4" - 16 | 9.3 | 66.0 | 10.7 | 29.5 | 27.0 | 22.0 | |
| OPF22711-12A10KR | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 67.0 | 12.5 | 30.5 | 27.0 | 25.0 | |
| OPF22711-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 66.5 | 14.1 | 30.0 | 27.0 | 32.0 | |
| OPF22711-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 71.0 | 15.3 | 34.5 | 32.0 | 38.0 | |
| OPF22711-16A12KR | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 80.5 | 14.1 | 32.5 | 32.0 | 32.0 | |
| OPF22711-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 83.5 | 15.3 | 35.5 | 32.0 | 38.0 | |

KR: CRIMPED KOMPACT ROBUST BACK-NUT

SAE STANDARD CONNECTIONS

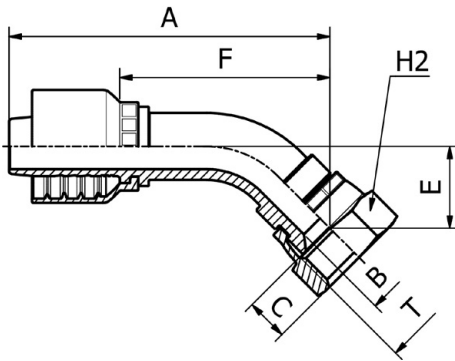
OPF22542/OPF22543

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 | F | H2 | |
| OPF22542-04A04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 63.0 | 8.7 | 14.5 | 35.5 | 17.0 | |
| OPF22542-04A05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 63.0 | 9.1 | 14.5 | 35.5 | 17.0 | |
| OPF22543-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 63.0 | 9.8 | 14.0 | 35.5 | 19.0 | |
| OPF22542-05A05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 65.5 | 9.1 | 14.0 | 37.5 | 17.0 | |
| OPF22542-05A06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 66.0 | 9.2 | 14.5 | 38.0 | 19.0 | |
| OPF22542-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 71.5 | 9.2 | 16.5 | 42.0 | 19.0 | |
| OPF22543-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 70.5 | 10.1 | 14.0 | 41.0 | 22.0 | |
| OPF22543-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 72.0 | 12.4 | 15.5 | 42.5 | 27.0 | |
| OPF22542-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 83.0 | 10.2 | 20.0 | 52.0 | 22.0 | |
| OPF22543-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 80.5 | 12.4 | 17.0 | 49.5 | 27.0 | |
| OPF22543-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 80.5 | 14.1 | 17.0 | 49.5 | 32.0 | |
| OPF22542-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 96.5 | 12.3 | 25.5 | 62.0 | 27.0 | |
| OPF22543-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 94.5 | 14.1 | 24.0 | 60.0 | 32.0 | |
| OPF22542-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 106.0 | 14.2 | 27.5 | 70.0 | 32.0 | |
| OPF22542-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 106.0 | 14.3 | 27.5 | 69.5 | 36.0 | |
| OPF22542-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 106.5 | 15.0 | 27.5 | 70.0 | 38.0 | |
| OPF22542-16A12 | 25 | - 16 | 1" | 1.1/16" - 12 | 15.0 | 120.5 | 14.2 | 27.5 | 72.5 | 32.0 | |
| OPF22542-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 132.5 | 15.0 | 32.0 | 84.0 | 38.0 | |
| OPF22542-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 138.0 | 16.2 | 36.0 | 90.0 | 50.0 | |

OPF22542: THRUST WIRE NUT / OPF22543: SLIP-ON NUT



SAE STANDARD CONNECTIONS

OPF22541KR

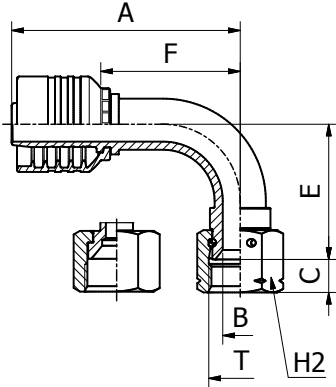
45° ELBOW JIC
FEMALE 37° CONE SEAT
SAE J516 / ISO 12151-5
(CRIMPED-BACK NUT)

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF22541-04A04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.2 | 62.0 | 8.9 | 13.5 | 34.5 | 15.0 | |
| OPF22541-04A05KR | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 62.5 | 9.4 | 14.0 | 35.0 | 17.0 | |
| OPF22541-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 71.5 | 9.5 | 16.0 | 42.0 | 17.0 | |
| OPF22541-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 83.0 | 10.7 | 20.0 | 52.0 | 22.0 | |
| OPF22541-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 95.5 | 12.5 | 22.5 | 61.0 | 25.0 | |
| OPF22541-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 105.5 | 14.1 | 26.5 | 69.0 | 32.0 | |

SAE STANDARD CONNECTIONS

OPF22592/OPF22593

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



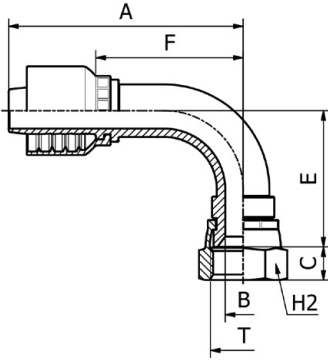
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|--------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF22593-03A04 | 5 | - 3 | 3/16" | 7/16" - 20 | 3.0 | 47.5 | 8.5 | 23.5 | 26.0 | 15.0 | |
| OPF22592-04A04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 56.0 | 8.7 | 27.0 | 28.5 | 17.0 | |
| OPF22592-04A05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 56.0 | 9.1 | 27.5 | 28.5 | 17.0 | |
| OPF22593-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 57.0 | 9.8 | 28.0 | 29.5 | 19.0 | |
| OPF22593-04A08 | 6 | - 4 | 1/4" | 3/4" - 16 | 7.0 | 57.0 | 10.0 | 30.5 | 29.5 | 22.0 | |
| OPF22592-05A05 | 8 | - 5 | 5/16" | 1/2" - 20 | 5.5 | 59.0 | 9.1 | 28.0 | 31.0 | 17.0 | |
| OPF22592-05A06 | 8 | - 5 | 5/16" | 9/16" - 18 | 7.0 | 59.0 | 9.2 | 28.5 | 31.0 | 19.0 | |
| OPF22592-06A05 | 10 | - 6 | 3/8" | 1/2" - 20 | 5.5 | 59.5 | 9.1 | 26.5 | 30.0 | 17.0 | |
| OPF22592-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.2 | 32.5 | 35.5 | 19.0 | |
| OPF22593-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 66.0 | 10.1 | 29.5 | 36.5 | 22.0 | |
| OPF22593-06A10 | 10 | - 6 | 3/8" | 7/8" - 14 | 9.3 | 66.0 | 12.4 | 31.5 | 36.5 | 27.0 | |
| OPF22592-08A06 | 12 | - 8 | 1/2" | 9/16" - 18 | 7.0 | 68.0 | 9.2 | 33.0 | 37.0 | 19.0 | |
| OPF22592-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.2 | 41.0 | 44.0 | 22.0 | |
| OPF22593-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 76.0 | 12.4 | 36.0 | 45.0 | 27.0 | |
| OPF22593-08A12 | 12 | - 8 | 1/2" | 1.1/16" - 12 | 12.5 | 76.0 | 14.1 | 36.0 | 45.0 | 32.0 | |
| OPF22592-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.3 | 52.5 | 53.5 | 27.0 | |
| OPF22593-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 12.5 | 86.0 | 14.1 | 50.0 | 51.5 | 32.0 | |
| OPF22592-12A10 | 19 | - 12 | 3/4" | 7/8" - 14 | 12.5 | 91.5 | 12.3 | 52.5 | 55.0 | 27.0 | |
| OPF22592-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.2 | 58.0 | 62.0 | 32.0 | |
| OPF22592-12A14 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 99.0 | 14.3 | 58.0 | 63.0 | 36.0 | |
| OPF22592-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 19.8 | 99.0 | 15.0 | 57.5 | 63.0 | 38.0 | |
| OPF22592-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 124.0 | 15.0 | 68.5 | 76.0 | 38.0 | |
| OPF22592-16A20 | 25 | - 16 | 1" | 1.5/8" - 12 | 26.0 | 125.5 | 16.2 | 74.5 | 77.5 | 50.0 | |

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)**



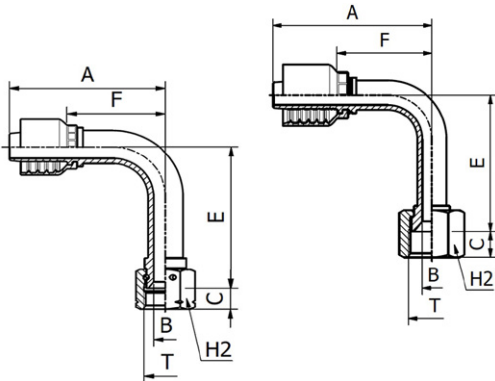
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|------------------|-----------|------|------|--------------|---------------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF22591-04A04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.2 | 56.0 | 8.9 | 26.0 | 28.5 | 15.0 | |
| OPF22591-04A05KR | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 56.0 | 9.4 | 26.5 | 28.5 | 17.0 | |
| OPF22591-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.5 | 32.0 | 35.5 | 17.0 | |
| OPF22591-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.7 | 40.5 | 44.0 | 22.0 | |
| OPF22591-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.5 | 47.0 | 53.5 | 25.0 | |
| OPF22591-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.1 | 57.0 | 62.0 | 32.0 | |

FITTINGS 290

SAE STANDARD CONNECTIONS

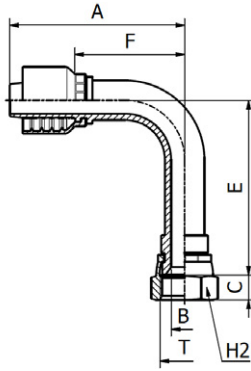
OPF24792/OPF24793

**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 | F | H2 | |
| OPF24792-04A04 | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 56.0 | 8.7 | 45.0 | 28.5 | 17.0 | |
| OPF24792-04A05 | 6 | - 4 | 1/4" | 1/2" - 20 | 4.0 | 56.0 | 9.1 | 45.0 | 28.5 | 17.0 | |
| OPF24793-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 57.0 | 9.8 | 55.5 | 29.5 | 19.0 | |
| OPF24792-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.2 | 61.0 | 44.0 | 22.0 | |
| OPF24792-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.2 | 55.0 | 35.5 | 19.0 | |
| OPF24793-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 7.0 | 66.0 | 10.1 | 61.5 | 36.5 | 22.0 | |
| OPF24793-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 76.0 | 12.4 | 65.0 | 45.0 | 27.0 | |
| OPF24792-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.3 | 65.5 | 53.5 | 27.0 | |
| OPF24792-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.2 | 94.5 | 62.0 | 32.0 | |
| OPF24792-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 19.8 | 125.5 | 15.0 | 110.0 | 77.5 | 38.0 | |

OPF24792: THRUST WIRE NUT / OPF24793: SLIP-ON NUT

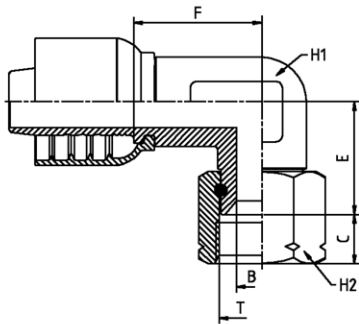


SAE STANDARD CONNECTIONS

OPF24791KR

**90° LONG DROP ELBOW JIC
FEMALE 37° CONE SEAT
SAE J516 / ISO 12151-5
(CRIMPED-BACK NUT)**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|------------------|-----------|------|------|--------------|---------------|------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | | |
| OPF24791-04A04KR | 6 | - 4 | 1/4" | 7/16" - 20 | 4.2 | 56.0 | 8.9 | 45.0 | 28.5 | 15.0 | | |
| OPF24791-06A06KR | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 65.0 | 9.5 | 55.0 | 35.5 | 17.0 | | |
| OPF24791-08A08KR | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 75.5 | 10.7 | 64.0 | 44.0 | 22.0 | | |
| OPF24791-10A10KR | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 88.0 | 12.5 | 70.0 | 53.5 | 25.0 | | |
| OPF24791-12A12KR | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 98.0 | 14.1 | 96.0 | 62.0 | 32.0 | | |



SAE STANDARD CONNECTIONS

OPF22582F

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

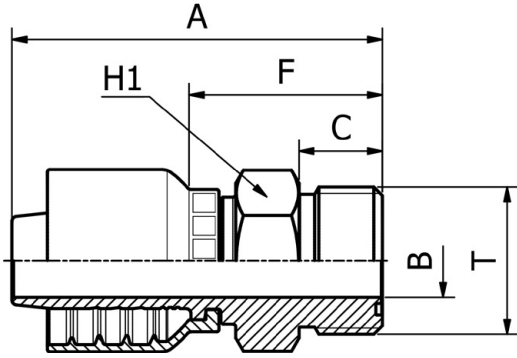
| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|-----------------|-----------|------|------|--------------|---------------|-------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H1 | H2 | |
| OPF22582-04A04F | 6 | - 4 | 1/4" | 7/16" - 20 | 4.0 | 47.5 | 8.7 | 20.5 | 20.0 | 14.0 | 17.0 | |
| OPF22582-04A06F | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 47.5 | 9.2 | 21.5 | 20.0 | 14.0 | 19.0 | |
| OPF22582-06A06F | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 52.5 | 9.2 | 24.0 | 23.0 | 19.0 | 19.0 | |
| OPF22582-06A08F | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 56.0 | 10.2 | 28.0 | 26.5 | 22.0 | 22.0 | |
| OPF22582-08A08F | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 56.0 | 10.2 | 28.0 | 25.0 | 22.0 | 22.0 | |
| OPF22582-08A10F | 12 | - 8 | 1/2" | 7/8" - 14 | 12.5 | 56.0 | 12.3 | 29.0 | 25.0 | 22.0 | 27.0 | |
| OPF22582-12A12F | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.0 | 74.0 | 14.2 | 33.0 | 37.5 | 27.0 | 32.0 | |
| OPF22582-16A16F | 25 | - 16 | 1" | 1.5/16" - 12 | 20.0 | 100.0 | 15.0 | 40.0 | 52.0 | 36.0 | 38.0 | |

SAE STANDARD CONNECTIONS

OPF12410

ORFS
MALE

SAE J516 / ISO 12151-1



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|--------------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPF12410-04A04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 51.5 | 9.8 | 24.0 | 16.0 | | |
| OPF12410-04A06 | 6 | - 4 | 1/4" | 11/16" - 16 | 6.7 | 54.0 | 11.2 | 26.5 | 19.0 | | |
| OPF12410-05A06 | 8 | - 5 | 5/16" | 11/16" - 16 | 6.7 | 55.0 | 11.2 | 27.0 | 19.0 | | |
| OPF12410-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.7 | 57.0 | 11.2 | 27.5 | 19.0 | | |
| OPF12410-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 59.5 | 12.8 | 30.0 | 22.0 | | |
| OPF12410-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 61.5 | 12.8 | 30.5 | 22.0 | | |
| OPF12410-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 12.5 | 66.0 | 15.5 | 35.0 | 27.0 | | |
| OPF12410-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 12.5 | 69.0 | 15.5 | 34.5 | 27.0 | | |
| OPF12410-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 15.0 | 72.0 | 17.0 | 37.5 | 32.0 | | |
| OPF12410-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 75.5 | 17.0 | 39.0 | 32.0 | | |
| OPF12410-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 77.0 | 17.5 | 40.5 | 38.0 | | |
| OPF12410-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 90.0 | 17.5 | 42.0 | 38.0 | | |

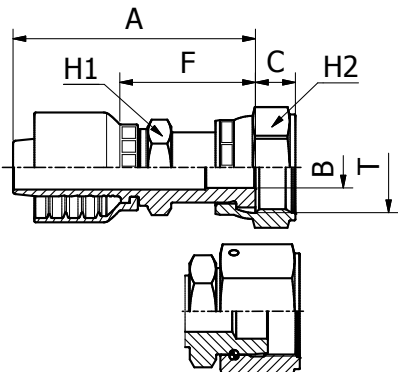
FITTINGS 292

SAE STANDARD CONNECTIONS

OPF22411 / OPF22412

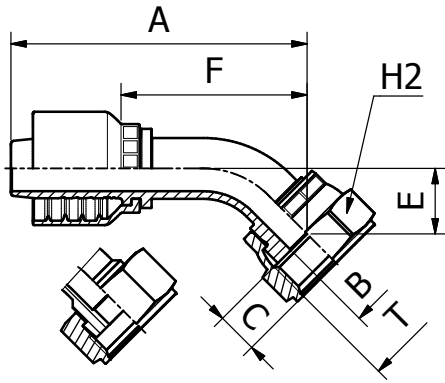
ORFS
FEMALE

SAE J516 / ISO 12151-1
PULL-BACK TYPE



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|--------------|---------------|------|------|------|------|------|
| | DN | Dash | inch | T | B | A | C | F | H1 | H2 |
| OPF22411-04A04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 55.0 | 8.0 | 27.5 | 13.0 | 19.0 |
| OPF22411-04A06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 57.5 | 9.5 | 30.0 | 16.0 | 22.0 |
| OPF22411-05A06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 58.5 | 9.5 | 30.5 | 16.0 | 22.0 |
| OPF22411-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 7.0 | 60.5 | 9.5 | 31.0 | 16.0 | 22.0 |
| OPF22411-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 65.0 | 11.0 | 35.5 | 19.0 | 24.0 |
| OPF22411-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 63.0 | 9.5 | 32.0 | 19.0 | 22.0 |
| OPF22411-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.3 | 67.0 | 11.0 | 36.0 | 19.0 | 24.0 |
| OPF22411-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 69.5 | 13.5 | 38.5 | 24.0 | 30.0 |
| OPF22411-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 73.0 | 14.5 | 42.0 | 28.0 | 36.0 |
| OPF22411-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 73.0 | 13.5 | 38.5 | 24.0 | 30.0 |
| OPF22411-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 76.5 | 14.5 | 42.0 | 28.0 | 36.0 |
| OPF22411-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 77.5 | 13.5 | 41.0 | 28.0 | 30.0 |
| OPF22411-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 80.0 | 14.5 | 43.5 | 28.0 | 36.0 |
| OPF22411-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 82.0 | 15.0 | 45.5 | 36.0 | 41.0 |
| OPF22411-16A12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 94.0 | 13.5 | 48.0 | 36.0 | 36.0 |
| OPF22411-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 94.5 | 15.0 | 46.5 | 36.0 | 41.0 |

SAE STANDARD CONNECTIONS

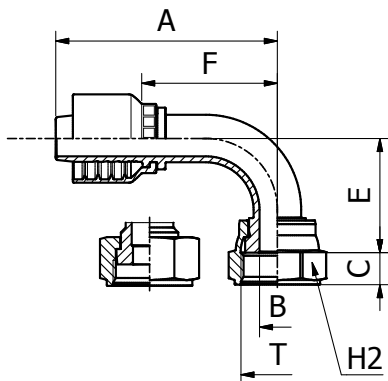


OPF22441 / OPF22443

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|---------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF22443-04A04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 58.5 | 8.2 | 10.5 | 31.0 | 17.0 | |
| OPF22443-04A06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 58.5 | 9.5 | 10.5 | 31.0 | 22.0 | |
| OPF22443-05A06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 62.0 | 9.5 | 10.5 | 34.0 | 22.0 | |
| OPF22443-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 61.5 | 9.5 | 11.0 | 32.5 | 22.0 | |
| OPF22443-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 63.0 | 11.0 | 12.5 | 34.0 | 24.0 | |
| OPF22441-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 63.5 | 9.5 | 11.0 | 32.5 | 22.0 | |
| OPF22443-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 73.0 | 11.0 | 13.0 | 42.0 | 24.0 | |
| OPF22443-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 73.0 | 13.5 | 13.5 | 42.0 | 30.0 | |
| OPF22443-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 78.0 | 14.5 | 18.5 | 46.5 | 36.0 | |
| OPF22443-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 83.5 | 13.5 | 16.0 | 49.0 | 30.0 | |
| OPF22443-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 86.0 | 14.5 | 18.5 | 51.5 | 36.0 | |
| OPF22441-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 87.0 | 13.5 | 16.5 | 50.5 | 30.0 | |
| OPF22443-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 97.0 | 14.5 | 21.5 | 60.5 | 36.0 | |
| OPF22443-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 96.5 | 14.8 | 21.0 | 60.0 | 41.0 | |
| OPF22443-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 120.0 | 14.8 | 23.5 | 72.0 | 41.0 | |
| OPF22443-16A20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 122.0 | 14.8 | 25.0 | 74.0 | 50.0 | |

OPF22441: CRIMPED BACK-NUT / OPF22443: SLIP-ON NUT



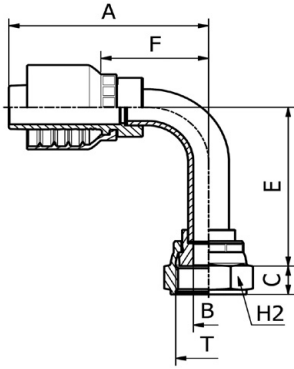
SAE STANDARD CONNECTIONS

OPF22491 / OPF22493

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|---------------|---------------|-------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF22493-04A04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.0 | 55.0 | 8.2 | 22.0 | 27.5 | 17.0 | |
| OPF22493-04A06 | 6 | - 4 | 1/4" | 11/16" - 16 | 7.0 | 55.0 | 9.5 | 22.0 | 27.5 | 22.0 | |
| OPF22493-05A06 | 8 | - 5 | 5/16" | 11/16" - 16 | 7.0 | 60.0 | 9.5 | 23.0 | 32.0 | 22.0 | |
| OPF22493-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.0 | 59.5 | 9.5 | 24.0 | 30.0 | 22.0 | |
| OPF22493-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 9.3 | 59.5 | 11.0 | 26.5 | 30.0 | 24.0 | |
| OPF22491-08A06 | 12 | - 8 | 1/2" | 11/16" - 16 | 7.0 | 61.5 | 9.5 | 24.5 | 30.0 | 22.0 | |
| OPF22493-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.0 | 71.5 | 11.0 | 30.0 | 40.5 | 24.0 | |
| OPF22493-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 11.5 | 71.0 | 13.5 | 30.5 | 40.0 | 30.0 | |
| OPF22493-08A12 | 12 | - 8 | 1/2" | 1.3/16" - 12 | 13.9 | 71.0 | 14.5 | 37.5 | 39.5 | 36.0 | |
| OPF22493-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 11.5 | 82.5 | 13.5 | 37.5 | 48.0 | 30.0 | |
| OPF22493-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 13.9 | 82.5 | 14.5 | 41.0 | 48.0 | 36.0 | |
| OPF22491-12A10 | 19 | - 12 | 3/4" | 1" - 14 | 11.5 | 85.5 | 13.5 | 38.0 | 49.0 | 30.0 | |
| OPF22493-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 13.9 | 93.0 | 14.5 | 48.0 | 56.5 | 36.0 | |
| OPF22493-12A16 | 19 | - 12 | 3/4" | 1.7/16" - 12 | 19.8 | 93.0 | 14.8 | 47.5 | 56.5 | 41.0 | |
| OPF22491-16A12 | 25 | - 16 | 1" | 1.3/16" - 12 | 13.9 | 106.0 | 13.5 | 48.0 | 57.5 | 36.0 | |
| OPF22493-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 119.5 | 14.8 | 56.0 | 71.5 | 41.0 | |
| OPF22493-16A20 | 25 | - 16 | 1" | 1.11/16" - 12 | 26.0 | 119.5 | 14.8 | 58.5 | 71.5 | 50.0 | |

OPF22491: CRIMPED BACK-NUT / OPF22493: SLIP-ON NUT



SAE STANDARD CONNECTIONS

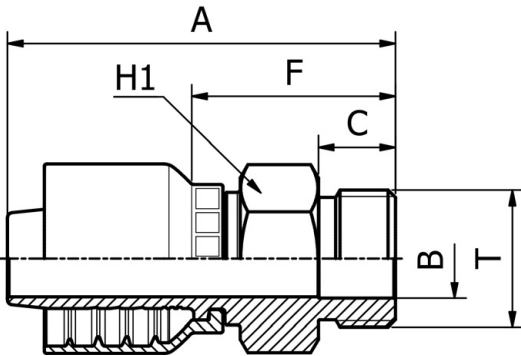
OPF24491

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------------|---------------|-------|------|-------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H2 | |
| OPF24491-04A04 | 6 | - 4 | 1/4" | 9/16" - 18 | 4.4 | 52.5 | 8.0 | 46.0 | 25.0 | 17.0 | |
| OPF24491-06A06 | 10 | - 6 | 3/8" | 11/16" - 16 | 6.7 | 61.5 | 9.5 | 54.0 | 32.0 | 22.0 | |
| OPF24491-06A08 | 10 | - 6 | 3/8" | 13/16" - 16 | 6.7 | 61.5 | 11.0 | 54.0 | 32.0 | 24.0 | |
| OPF24491-08A08 | 12 | - 8 | 1/2" | 13/16" - 16 | 9.6 | 68.0 | 11.0 | 64.0 | 37.0 | 24.0 | |
| OPF24491-08A10 | 12 | - 8 | 1/2" | 1" - 14 | 9.6 | 68.0 | 12.5 | 64.5 | 37.0 | 30.0 | |
| OPF24491-10A10 | 16 | - 10 | 5/8" | 1" - 14 | 12.0 | 75.5 | 13.0 | 70.0 | 41.0 | 30.0 | |
| OPF24491-10A12 | 16 | - 10 | 5/8" | 1.3/16" - 12 | 12.7 | 75.5 | 13.5 | 73.0 | 41.0 | 36.0 | |
| OPF24491-12A12 | 19 | - 12 | 3/4" | 1.3/16" - 12 | 15.0 | 95.0 | 13.5 | 96.0 | 58.5 | 36.0 | |
| OPF24491-16A16 | 25 | - 16 | 1" | 1.7/16" - 12 | 19.8 | 119.5 | 13.5 | 114.0 | 71.5 | 41.0 | |

All items made by brazing with the exception of OPF24491-12A12 and OPF24491-16A16

FITTINGS 294



SAE STANDARD CONNECTIONS

OPF13010

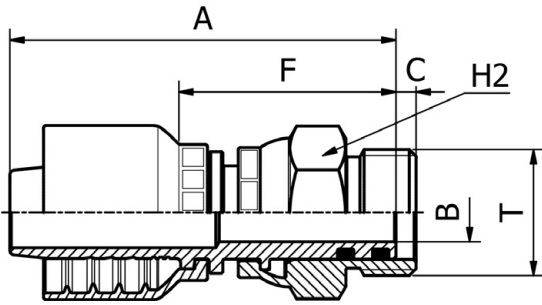
**SAE MALE
O-RING BOSS TYPE
SAE J516 / ISO 11926**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS 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 | 24.0 | 14.0 | |
| OPF13010-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.5 | 52.0 | 9.9 | 24.5 | 17.0 | |
| OPF13010-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.5 | 55.0 | 9.9 | 25.5 | 17.0 | |
| OPF13010-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.9 | 58.0 | 11.1 | 28.5 | 22.0 | |
| OPF13010-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.9 | 60.0 | 11.1 | 29.0 | 22.0 | |
| OPF13010-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 12.3 | 63.0 | 12.7 | 32.0 | 25.0 | |
| OPF13010-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 12.5 | 63.0 | 12.7 | 32.0 | 25.0 | |
| OPF13010-10A12 | 16 | - 10 | 5/8" | 1.1/16" - 12 | 15.5 | 72.0 | 15.1 | 37.5 | 32.0 | |
| OPF13010-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 15.5 | 76.0 | 15.1 | 39.5 | 32.0 | |
| OPF13010-12A16 | 19 | - 12 | 3/4" | 1.5/16" - 12 | 21.5 | 76.5 | 15.1 | 40.0 | 38.0 | |
| OPF13010-16A16 | 25 | - 16 | 1" | 1.5/16" - 12 | 21.5 | 89.5 | 15.1 | 41.0 | 38.0 | |

SAE STANDARD CONNECTIONS

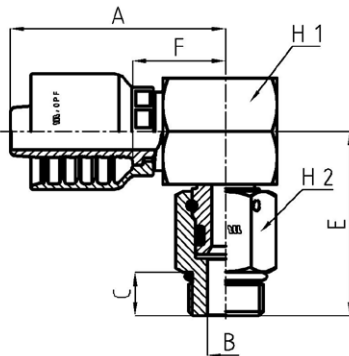
OPF14310

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 | 4.0 | 70.5 | 9.1 | 43.0 | 17.0 | | |
| OPF14310-04A06 | 6 | - 4 | 1/4" | 9/16" - 18 | 7.0 | 71.5 | 9.9 | 44.0 | 22.0 | | |
| OPF14310-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 77.5 | 9.9 | 48.0 | 22.0 | | |
| OPF14310-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 76.5 | 11.1 | 47.0 | 22.0 | | |
| OPF14310-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 84.0 | 11.1 | 53.0 | 27.0 | | |
| OPF14310-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.3 | 72.4 | 13.0 | 41.5 | 27.0 | | |
| OPF14310-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 12.5 | 87.0 | 15.0 | 50.5 | 32.0 | | |

Not to be used as a live swivel



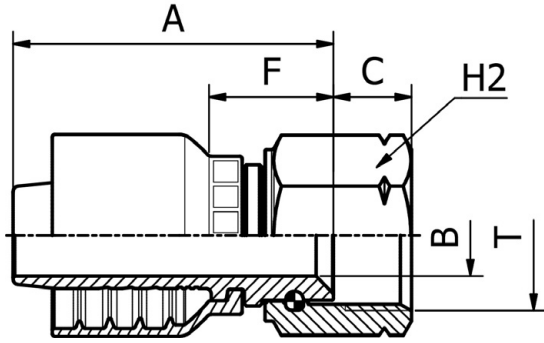
SAE STANDARD CONNECTIONS

OPF14390

90° SAE
SWIVEL MALE OR. BOSS

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | | |
|----------------|-----------|------|------|--------------|---------------|------|------|------|------|------|------|--|
| | DN | Dash | inch | T | B | A | C | E | F | H1 | H2 | |
| OPF14390-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 5.7 | 49.5 | 9.9 | 40.0 | 20.0 | 22.0 | 17.0 | |
| OPF14390-06A08 | 10 | - 6 | 3/8" | 3/4" - 16 | 9.3 | 49.5 | 11.1 | 44.5 | 20.0 | 22.0 | 22.0 | |
| OPF14390-08A08 | 12 | - 8 | 1/2" | 3/4" - 16 | 9.3 | 54.5 | 11.1 | 47.0 | 23.5 | 27.0 | 22.0 | |
| OPF14390-08A10 | 12 | - 8 | 1/2" | 7/8" - 14 | 9.8 | 54.5 | 13.0 | 47.0 | 23.5 | 27.0 | 27.0 | |
| OPF14390-10A10 | 16 | - 10 | 5/8" | 7/8" - 14 | 9.8 | 58.0 | 13.0 | 47.0 | 23.5 | 27.0 | 27.0 | |
| OPF14390-12A12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 13.0 | 64.5 | 15.0 | 58.5 | 28.0 | 34.0 | 32.0 | |

SAE STANDARD CONNECTIONS



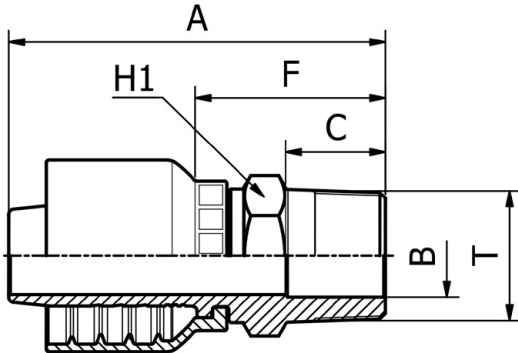
OPF22612

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|------------|---------------|------|------|------|------|----|--|
| | DN | Dash | inch | | T | B | A | C | F | H2 | |
| OPF22612-06A06 | 10 | - 6 | 3/8" | 9/16" - 18 | 7.0 | 46.0 | 10.8 | 16.5 | 22.0 | | |

FITTINGS 296

SAE STANDARD CONNECTIONS



OPF12810

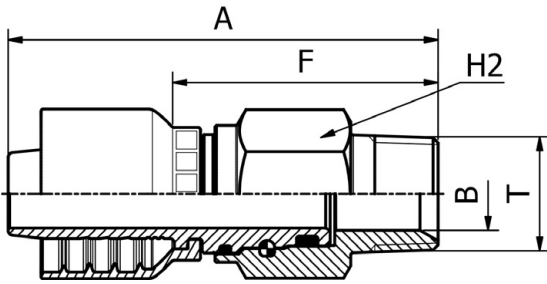
**NPTF
MALE 60° CONE SEAT
SAE J516 / J514**

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|---------------|---------------|-------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H1 |
| OPF12810-03A02 | 5 | - 3 | 3/16" | 1/8" - 27 | 3.0 | 45.0 | 10.0 | 23.5 | 12.0 | |
| OPF12810-03A04 | 5 | - 3 | 3/16" | 1/4" - 18 | 5.5 | 50.5 | 14.5 | 29.0 | 14.0 | |
| OPF12810-04A02 | 6 | - 4 | 1/4" | 1/8" - 27 | 4.0 | 51.5 | 10.0 | 24.0 | 12.0 | |
| OPF12810-04A04 | 6 | - 4 | 1/4" | 1/4" - 18 | 5.5 | 56.5 | 14.5 | 29.0 | 14.0 | |
| OPF12810-04A06 | 6 | - 4 | 1/4" | 3/8" - 18 | 9.3 | 55.0 | 14.5 | 27.5 | 19.0 | |
| OPF12810-04A08 | 6 | - 4 | 1/4" | 1/2" - 14 | 9.3 | 61.0 | 19.2 | 33.5 | 24.0 | |
| OPF12810-05A04 | 8 | - 5 | 5/16" | 1/4" - 18 | 5.5 | 57.5 | 14.5 | 29.5 | 14.0 | |
| OPF12810-05A06 | 8 | - 5 | 5/16" | 3/8" - 18 | 9.3 | 60.0 | 14.5 | 32.0 | 19.0 | |
| OPF12810-06A04 | 10 | - 6 | 3/8" | 1/4" - 18 | 5.5 | 59.5 | 14.5 | 30.0 | 14.0 | |
| OPF12810-06A06 | 10 | - 6 | 3/8" | 3/8" - 18 | 9.3 | 58.0 | 14.5 | 28.5 | 19.0 | |
| OPF12810-06A08 | 10 | - 6 | 3/8" | 1/2" - 14 | 12.5 | 64.0 | 19.2 | 34.5 | 24.0 | |
| OPF12810-08A06 | 12 | - 8 | 1/2" | 3/8" - 18 | 9.3 | 60.0 | 14.5 | 29.0 | 19.0 | |
| OPF12810-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 12.5 | 66.0 | 19.2 | 35.0 | 24.0 | |
| OPF12810-08A12 | 12 | - 8 | 1/2" | 3/4" - 14 | 15.5 | 66.5 | 19.2 | 35.5 | 27.0 | |
| OPF12810-10A08 | 16 | - 10 | 5/8" | 1/2" - 14 | 12.5 | 73.0 | 19.2 | 38.5 | 24.0 | |
| OPF12810-10A12 | 16 | - 10 | 5/8" | 3/4" - 14 | 16.0 | 74.5 | 19.2 | 40.0 | 27.0 | |
| OPF12810-12A08 | 19 | - 12 | 3/4" | 1/2" - 14 | 12.5 | 73.0 | 19.2 | 36.5 | 27.0 | |
| OPF12810-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 73.0 | 19.2 | 36.5 | 27.0 | |
| OPF12810-12A16 | 19 | - 12 | 3/4" | 1" - 11,5 | 19.8 | 82.5 | 24.2 | 46.0 | 36.0 | |
| OPF12810-16A12 | 25 | - 16 | 1" | 3/4" - 14 | 15.5 | 87.0 | 19.2 | 39.0 | 32.0 | |
| OPF12810-16A16 | 25 | - 16 | 1" | 1" - 11,5 | 19.8 | 92.0 | 24.2 | 44.0 | 36.0 | |
| OPF12810-16A20 | 25 | - 16 | 1" | 1.1/4" - 11,5 | 26.0 | 104.5 | 25.0 | 56.5 | 46.0 | |

SAE STANDARD CONNECTIONS

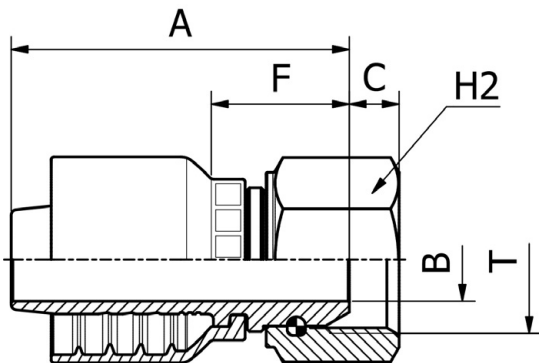
OPF14110R

**NPTF
SWIVEL MALE**



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|-----------------|-----------|------|------|-----------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H1 | | |
| OPF14110-04A02R | 6 | - 4 | 1/4" | 1/8" - 28 | 3.0 | 69.5 | 10.0 | 42.0 | 17.0 | | |
| OPF14110-04A04R | 6 | - 4 | 1/4" | 1/4" - 18 | 4.0 | 74.0 | 14.5 | 46.5 | 17.0 | | |
| OPF14110-04A06R | 6 | - 4 | 1/4" | 3/8" - 18 | 7.0 | 74.0 | 14.5 | 46.5 | 19.0 | | |
| OPF14110-06A04R | 10 | - 6 | 3/8" | 1/4" - 18 | 4.0 | 80.0 | 14.5 | 50.5 | 22.0 | | |
| OPF14110-06A06R | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 80.0 | 14.5 | 50.5 | 22.0 | | |
| OPF14110-06A08R | 10 | - 6 | 3/8" | 1/2" - 14 | 9.3 | 84.5 | 19.2 | 55.0 | 24.0 | | |
| OPF14110-08A08R | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 90.0 | 19.2 | 59.0 | 27.0 | | |
| OPF14110-12A12R | 19 | - 12 | 3/4" | 3/4" - 14 | 16.0 | 94.5 | 19.2 | 58.0 | 32.0 | | |
| OPF14110-16A16R | 25 | - 16 | 1" | 1" - 11 | 19.8 | 114.0 | 24.2 | 66.0 | 38.0 | | |

Not to be used as a live swivel



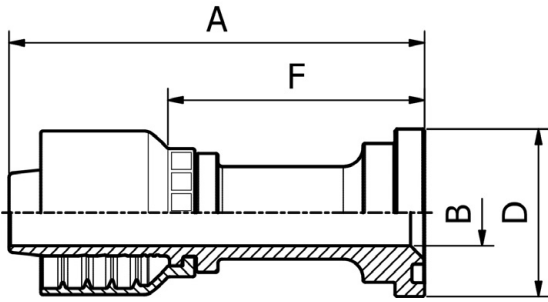
SAE STANDARD CONNECTIONS

OPF22812

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | B | A | C | F | H2 | | |
| OPF22812-04A04 | 6 | - 4 | 1/4" | 1/4" - 18 | 4.0 | 45.0 | 4.2 | 17.5 | 19.0 | | |
| OPF22812-06A06 | 10 | - 6 | 3/8" | 3/8" - 18 | 7.0 | 50.5 | 6.0 | 21.0 | 22.0 | | |
| OPF22812-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | 9.3 | 54.0 | 6.5 | 23.0 | 27.0 | | |
| OPF22812-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | 15.0 | 61.0 | 9.0 | 24.5 | 32.0 | | |
| OPF22812-16A16 | 25 | - 16 | 1" | 1" - 11,5 | 19.8 | 75.5 | 10.5 | 27.5 | 38.0 | | |

SAE STANDARD CONNECTIONS



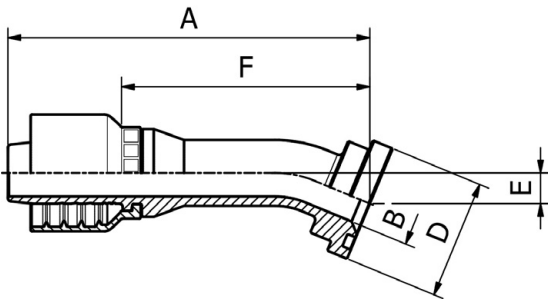
OPF23311

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|---------------|-------|------|------|---|--|--|
| | DN | Dash | inch | | inch | B | A | D | F | | |
| OPF23311-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 82.0 | 30.3 | 51.0 | | | |
| OPF23311-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.1 | 89.0 | 38.0 | 58.0 | | | |
| OPF23311-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 100.0 | 38.0 | 65.5 | | | |
| OPF23311-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 94.5 | 38.0 | 58.0 | | | |
| OPF23311-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 94.5 | 44.6 | 58.0 | | | |
| OPF23311-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 112.5 | 44.6 | 64.5 | | | |
| OPF23311-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 118.5 | 51.0 | 70.5 | | | |

FITTINGS 298

SAE STANDARD CONNECTIONS

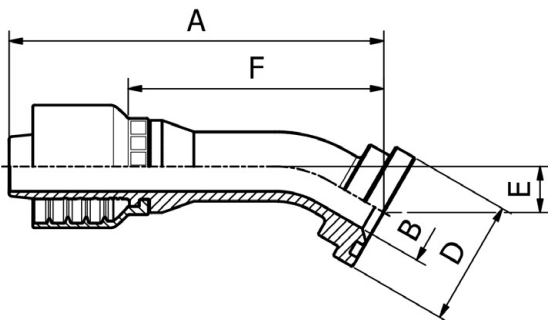


OPF23321

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------|---------------|-------|------|------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | F |
| OPF23321-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 95.0 | 30.3 | 8.0 | 64.0 | |
| OPF23321-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 111.0 | 38.0 | 10.0 | 74.5 | |
| OPF23321-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 111.0 | 44.6 | 10.0 | 74.5 | |
| OPF23321-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 137.0 | 44.6 | 11.5 | 89.0 | |

SAE STANDARD CONNECTIONS

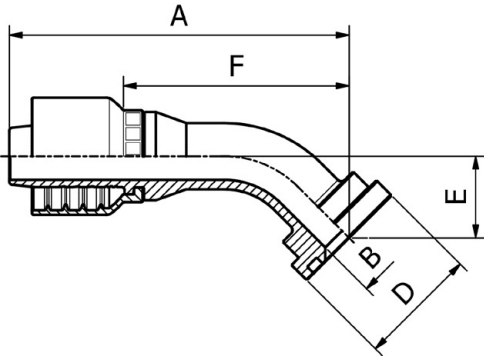


OPF23331

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

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|--------|---------------|-------|------|------|------|---|
| | DN | Dash | inch | | inch | B | A | D | E | F |
| OPF23331-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 93.5 | 30.3 | 11.0 | 62.5 | |
| OPF23331-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 109.5 | 38.0 | 14.0 | 73.0 | |
| OPF23331-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 109.5 | 44.6 | 14.0 | 73.0 | |
| OPF23331-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 135.0 | 44.6 | 16.5 | 87.0 | |

SAE STANDARD CONNECTIONS



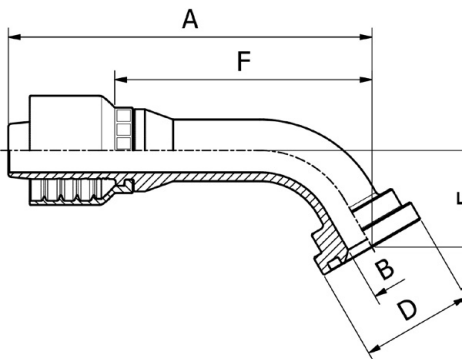
OPF23341

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|--|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPF23341-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 90.0 | 30.3 | 18.5 | 58.5 | | |
| OPF23341-08A12 | 12 | - 8 | 1/2" | 3/4" | | 15.0 | 90.5 | 38.0 | 19.0 | 59.5 | | |
| OPF23341-10A12 | 16 | - 10 | 5/8" | 3/4" | | 15.0 | 95.0 | 38.0 | 22.0 | 61.0 | | |
| OPF23341-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 104.5 | 38.0 | 23.0 | 68.5 | | |
| OPF23341-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 104.5 | 44.6 | 23.0 | 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" | | 26.0 | 129.5 | 51.0 | 27.5 | 81.5 | | |

299 FITTINGS

SAE STANDARD CONNECTIONS

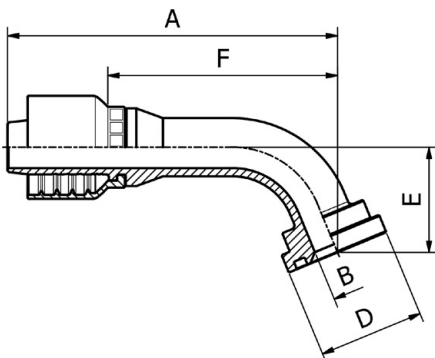


OPF23361

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|--|---------------|-------|------|------|-------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPF23361-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 102.5 | 30.3 | 26.0 | 71.5 | | |
| OPF23361-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 123.5 | 38.0 | 33.0 | 87.0 | | |
| OPF23361-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 152.0 | 44.6 | 39.0 | 104.0 | | |
| OPF23361-16A20 | 25 | - 16 | 1" | 1.1/4" | | 26.0 | 152.0 | 51.0 | 39.0 | 104.0 | | |

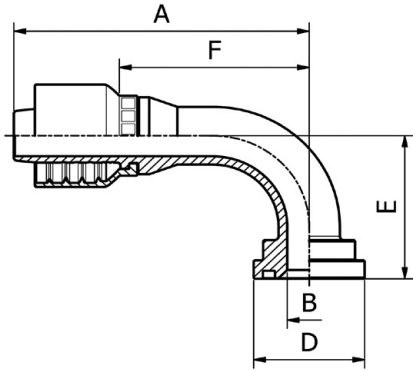
SAE STANDARD CONNECTIONS



OPF23371

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

| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|--|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPF23371-08A08 | 12 | - 8 | 1/2" | 1/2" | | 9.3 | 99.0 | 30.3 | 29.5 | 68.0 | | |
| OPF23371-12A12 | 19 | - 12 | 3/4" | 3/4" | | 15.0 | 118.5 | 38.0 | 38.0 | 82.0 | | |
| OPF23371-12A16 | 19 | - 12 | 3/4" | 1" | | 20.0 | 118.5 | 44.6 | 38.0 | 82.0 | | |
| OPF23371-16A16 | 25 | - 16 | 1" | 1" | | 19.8 | 147.0 | 44.6 | 45.0 | 98.5 | | |



SAE STANDARD CONNECTIONS

OPF23391

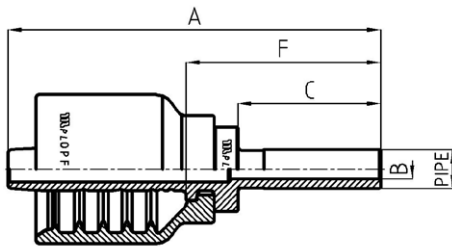
90° ISO / SAE
CODE 61 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|---------------|-------|------|------|------|--|--|
| | DN | Dash | inch | | B | A | D | E | F | | |
| OPF23391-08A08 | 12 | - 8 | 1/2" | 1/2" | 9.3 | 85.5 | 30.3 | 40.0 | 54.5 | | |
| OPF23391-08A12 | 12 | - 8 | 1/2" | 3/4" | 15.0 | 85.5 | 38.0 | 41.0 | 54.5 | | |
| OPF23391-10A12 | 16 | - 10 | 5/8" | 3/4" | 15.0 | 90.0 | 38.0 | 47.5 | 56.0 | | |
| OPF23391-12A12 | 19 | - 12 | 3/4" | 3/4" | 15.0 | 101.0 | 38.0 | 52.0 | 64.5 | | |
| OPF23391-12A16 | 19 | - 12 | 3/4" | 1" | 20.0 | 101.0 | 44.6 | 52.0 | 64.5 | | |
| OPF23391-16A16 | 25 | - 16 | 1" | 1" | 19.8 | 125.5 | 44.6 | 62.0 | 77.5 | | |
| OPF23391-16A20 | 25 | - 16 | 1" | 1.1/4" | 26.0 | 125.5 | 51.0 | 62.0 | 77.5 | | |

FITTINGS 300

DIN STANDARD CONNECTIONS

OPF22010

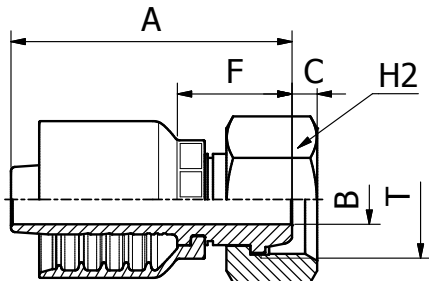


METRIC
STANDPIPE STRAIGHT L.T.

| PART. REF. | HOSE BORE | | | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|------|---------------|------|------|------|---|--|--|
| | DN | Dash | inch | | mm | B | A | C | F | | |
| OPF22010-04A06 | 6 | - 4 | 1/4" | 6.0 | 3.0 | 57.5 | 22.0 | 30.0 | | | |
| OPF22010-06A10 | 10 | - 6 | 3/8" | 10.0 | 7.0 | 61.0 | 23.0 | 31.5 | | | |

DIN STANDARD CONNECTIONS

OPF21312/OPF21313



METRIC
FEMALE
MULTISEAL

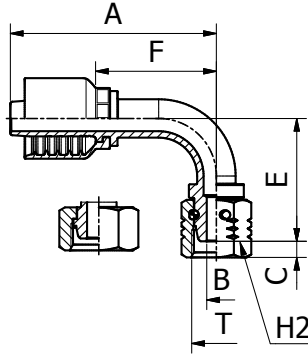
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|------|----------|------|---------------|------|-----|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | F |
| OPF21312-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 7.0 | 51.0 | 5.0 | 21.5 | 19.0 | |
| OPF21313-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 49.5 | 4.0 | 20.0 | 22.0 | |
| OPF21313-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 52.5 | 4.7 | 21.5 | 27.0 | |

OPF21312: THRUST WIRE NUT / OPF21313: SLIP-ON NUT

DIN STANDARD CONNECTIONS

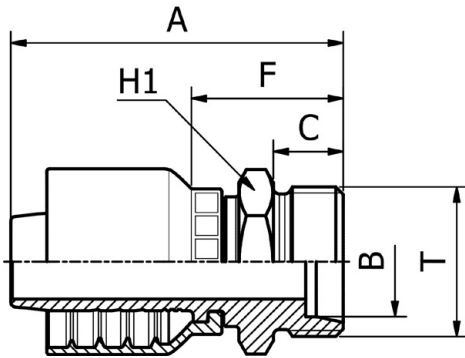
OPF21392 / OPF21393

**90° METRIC
FEMALE
MULTISEAL**



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|----------|------|---------------|------|-----|------|------|------|--|
| | DN | Dash | inch | T | mm | B | A | C | E | F | H2 | |
| OPF21392-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 7.0 | 65.0 | 5.0 | 38.0 | 35.5 | 19.0 | |
| OPF21393-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 66.0 | 4.0 | 31.5 | 36.5 | 22.0 | |

OPF21392: THRUST WIRE NUT / OPF21393: SLIP-ON NUT



DIN STANDARD CONNECTIONS

OPF11110

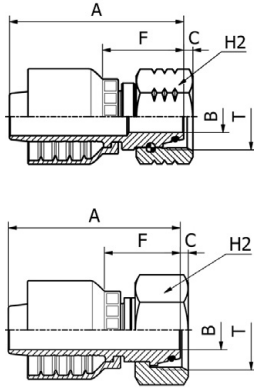
**METRIC
MALE 24° CONE SEAT LIGHT DUTY
DIN 20066 / ISO 12151-2**

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T | mm | B | A | C | F | H1 | | |
| OPF11110-04A12 | 6 | - 4 | 1/4" | M 12X1,5 | 6.0 | 4.0 | 49.0 | 10.0 | 21.5 | 14.0 | | |
| OPF11110-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 8.0 | 4.0 | 49.0 | 10.0 | 21.5 | 14.0 | | |
| OPF11110-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 10.0 | 7.0 | 51.0 | 11.0 | 23.5 | 17.0 | | |
| OPF11110-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 12.0 | 9.0 | 51.0 | 11.0 | 23.5 | 19.0 | | |
| OPF11110-05A16 | 8 | - 5 | 5/16" | M 16X1,5 | 10.0 | 7.0 | 52.0 | 11.0 | 24.0 | 17.0 | | |
| OPF11110-05A18 | 8 | - 5 | 5/16" | M 18X1,5 | 12.0 | 9.0 | 52.0 | 11.0 | 24.0 | 19.0 | | |
| OPF11110-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 7.0 | 53.5 | 11.0 | 24.0 | 17.0 | | |
| OPF11110-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 9.0 | 54.0 | 11.0 | 24.5 | 19.0 | | |
| OPF11110-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 10.0 | 55.0 | 12.0 | 25.5 | 22.0 | | |
| OPF11110-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 10.0 | 56.5 | 12.0 | 25.5 | 22.0 | | |
| OPF11110-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 57.5 | 12.0 | 26.5 | 27.0 | | |
| OPF11110-10A22 | 16 | - 10 | 5/8" | M 22X1,5 | 15.0 | 10.0 | 60.0 | 12.0 | 25.5 | 22.0 | | |
| OPF11110-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 61.0 | 12.0 | 26.5 | 27.0 | | |
| OPF11110-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 66.5 | 14.0 | 30.0 | 30.0 | | |

DIN STANDARD CONNECTIONS

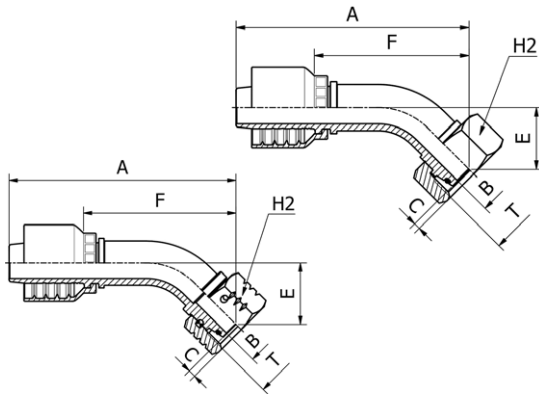
OPF21512/OPF21513

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|------|-----|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | F |
| OPF21512-04A12 | 6 | - 4 | 1/4" | M 12X1,5 | 6.0 | 3.0 | 48.5 | 2.2 | 21.0 | 17.0 | |
| OPF21513-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 8.0 | 4.0 | 49.5 | 1.3 | 22.0 | 17.0 | |
| OPF21513-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 10.0 | 6.0 | 50.0 | 1.8 | 22.5 | 19.0 | |
| OPF21513-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 12.0 | 7.0 | 49.5 | 2.0 | 22.0 | 22.0 | |
| OPF21512-05A14 | 8 | - 5 | 5/16" | M 14X1,5 | 8.0 | 4.0 | 48.0 | 2.9 | 20.0 | 17.0 | |
| OPF21513-05A16 | 8 | - 5 | 5/16" | M 16X1,5 | 10.0 | 6.0 | 50.5 | 1.8 | 22.5 | 19.0 | |
| OPF21513-05A18 | 8 | - 5 | 5/16" | M 18X1,5 | 12.0 | 7.0 | 50.0 | 2.0 | 22.0 | 22.0 | |
| OPF21512-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 52.5 | 3.0 | 23.0 | 19.0 | |
| OPF21513-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 52.0 | 2.0 | 22.5 | 22.0 | |
| OPF21513-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 54.5 | 1.5 | 25.0 | 27.0 | |
| OPF21512-08A18 | 12 | - 8 | 1/2" | M 18X1,5 | 12.0 | 7.0 | 60.0 | 2.9 | 29.0 | 22.0 | |
| OPF21513-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 56.5 | 1.5 | 25.5 | 27.0 | |
| OPF21513-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 57.0 | 2.0 | 26.0 | 32.0 | |
| OPF21513-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 60.5 | 2.0 | 26.0 | 32.0 | |
| OPF21513-10A30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 68.5 | 3.0 | 34.0 | 36.0 | |
| OPF21512-12A26 | 19 | - 12 | 3/4" | M 26X1,5 | 18.0 | 12.5 | 67.5 | 2.3 | 31.0 | 32.0 | |
| OPF21513-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 64.5 | 3.0 | 28.0 | 36.0 | |
| OPF21513-12A36 | 19 | - 12 | 3/4" | M 36X2 | 28.0 | 20.0 | 65.0 | 3.7 | 28.5 | 41.0 | |
| OPF21513-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 77.5 | 3.7 | 29.5 | 41.0 | |

OPF21512: THRUST WIRE NUT / OPF21513: SLIP-ON NUT



DIN STANDARD CONNECTIONS

OPF21542/OPF21543

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

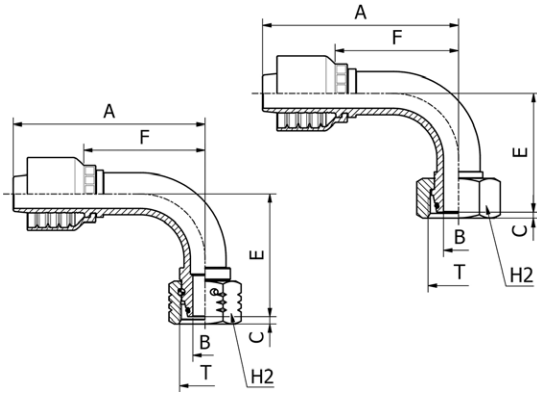
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|-------|-----|------|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | E | F |
| OPF21543-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 8.0 | 4.0 | 65.5 | 1.3 | 16.5 | 38.0 | 17.0 | |
| OPF21543-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 10.0 | 6.0 | 65.5 | 1.8 | 17.0 | 38.0 | 19.0 | |
| OPF21543-05A16 | 8 | - 5 | 5/16" | M 16X1,5 | 10.0 | 6.0 | 69.5 | 1.8 | 17.5 | 41.5 | 19.0 | |
| OPF21543-05A18 | 8 | - 5 | 5/16" | M 18X1,5 | 12.0 | 7.0 | 69.5 | 2.0 | 17.0 | 41.5 | 22.0 | |
| OPF21542-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 77.0 | 3.0 | 21.5 | 47.5 | 19.0 | |
| OPF21543-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 73.0 | 2.0 | 16.5 | 43.5 | 22.0 | |
| OPF21543-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 74.0 | 1.5 | 18.0 | 45.0 | 27.0 | |
| OPF21543-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 83.0 | 1.5 | 19.0 | 52.0 | 27.0 | |
| OPF21543-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 96.5 | 2.0 | 26.5 | 62.0 | 32.0 | |
| OPF21543-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 107.5 | 3.0 | 28.5 | 71.0 | 36.0 | |
| OPF21543-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 133.0 | 3.7 | 32.0 | 85.0 | 41.0 | |

OPF21542: THRUST WIRE NUT / OPF21543: SLIP-ON NUT

DIN STANDARD CONNECTIONS

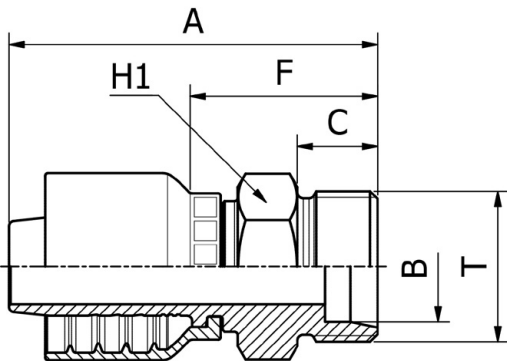
OPF21592/OPF21593

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



| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|-------|-----|------|------|------|
| | DN | Dash | inch | T | mm | B | A | C | E | F | H2 |
| OPF21593-03A12 | 5 | - 3 | 3/16" | M 12X1,5 | 6.0 | 3.0 | 47.5 | 0.7 | 30.0 | 26.0 | 14.0 |
| OPF21592-04A12 | 6 | - 4 | 1/4" | M 12X1,5 | 6.0 | 3.0 | 56.0 | 2.2 | 32.5 | 28.5 | 17.0 |
| OPF21593-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 8.0 | 4.0 | 57.0 | 1.3 | 31.5 | 29.5 | 17.0 |
| OPF21593-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 10.0 | 6.0 | 57.0 | 1.8 | 32.0 | 29.5 | 19.0 |
| OPF21593-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 12.0 | 7.0 | 57.0 | 2.0 | 33.0 | 29.5 | 22.0 |
| OPF21593-05A16 | 8 | - 5 | 5/16" | M 16X1,5 | 10.0 | 6.0 | 60.0 | 1.8 | 32.5 | 32.0 | 19.0 |
| OPF21593-05A18 | 8 | - 5 | 5/16" | M 18X1,5 | 12.0 | 7.0 | 60.0 | 2.0 | 32.5 | 32.0 | 22.0 |
| OPF21592-06A16 | 10 | - 6 | 3/8" | M 16X1,5 | 10.0 | 6.0 | 65.0 | 3.0 | 40.0 | 35.5 | 19.0 |
| OPF21593-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 12.0 | 7.0 | 66.0 | 2.0 | 33.5 | 36.5 | 22.0 |
| OPF21593-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 15.0 | 9.3 | 66.0 | 1.5 | 35.0 | 36.5 | 27.0 |
| OPF21592-08A18 | 12 | - 8 | 1/2" | M 18X1,5 | 12.0 | 7.0 | 75.0 | 2.9 | 48.0 | 44.0 | 22.0 |
| OPF21593-08A26 | 12 | - 8 | 1/2" | M 26X1,5 | 18.0 | 12.5 | 76.0 | 2.0 | 40.0 | 45.0 | 32.0 |
| OPF21593-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 15.0 | 9.3 | 76.0 | 1.5 | 39.5 | 45.0 | 27.0 |
| OPF21593-10A26 | 16 | - 10 | 5/8" | M 26X1,5 | 18.0 | 12.5 | 86.0 | 2.0 | 53.0 | 51.5 | 32.0 |
| OPF21593-10A30 | 16 | - 10 | 5/8" | M 30X2 | 22.0 | 15.0 | 86.0 | 3.0 | 54.0 | 51.5 | 36.0 |
| OPF21593-12A30 | 19 | - 12 | 3/4" | M 30X2 | 22.0 | 15.0 | 97.5 | 3.0 | 59.5 | 61.5 | 36.0 |
| OPF21593-16A36 | 25 | - 16 | 1" | M 36X2 | 28.0 | 19.8 | 125.0 | 3.7 | 69.5 | 76.5 | 41.0 |

OPF21592: THRUST WIRE NUT / OPF21593: SLIP-ON NUT

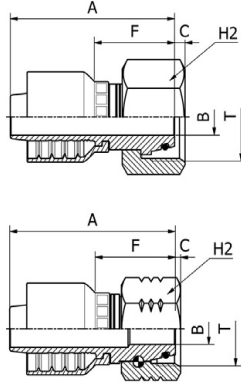


DIN STANDARD CONNECTIONS

OPF11210

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

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | |
|----------------|-----------|------|-------|----------|------|---------------|------|------|------|------|
| | DN | Dash | inch | T | mm | B | A | C | F | H1 |
| OPF11210-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 8.0 | 5.5 | 53.0 | 12.0 | 25.5 | 17.0 |
| OPF11210-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 10.0 | 6.0 | 54.0 | 12.0 | 26.5 | 19.0 |
| OPF11210-04A20 | 6 | - 4 | 1/4" | M 20X1,5 | 12.0 | 7.0 | 56.5 | 12.0 | 29.0 | 22.0 |
| OPF11210-05A20 | 8 | - 5 | 5/16" | M 20X1,5 | 12.0 | 7.0 | 57.0 | 12.0 | 29.0 | 22.0 |
| OPF11210-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 10.0 | 7.0 | 56.5 | 12.0 | 27.0 | 19.0 |
| OPF11210-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 58.5 | 12.0 | 29.0 | 22.0 |
| OPF11210-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 8.0 | 60.5 | 14.0 | 31.0 | 22.0 |
| OPF11210-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 62.5 | 14.0 | 31.5 | 24.0 |
| OPF11210-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 15.0 | 70.0 | 16.0 | 35.5 | 30.0 |
| OPF11210-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 15.0 | 73.5 | 16.0 | 37.0 | 30.0 |
| OPF11210-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 19.8 | 77.5 | 18.0 | 41.0 | 36.0 |
| OPF11210-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 19.8 | 90.5 | 18.0 | 42.5 | 36.0 |
| OPF11210-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 25.0 | 92.5 | 20.0 | 44.5 | 46.0 |



DIN STANDARD CONNECTIONS

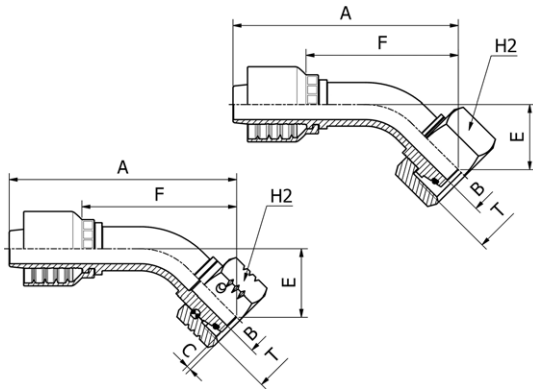
OPF21612/OPF21613

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

FITTINGS 304

| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|------|-----|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | F |
| OPF21613-03A16 | 5 | - 3 | 3/16" | M 16X1,5 | 8.0 | 3.0 | 43.0 | 3.4 | 21.5 | 19.0 | |
| OPF21613-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 6.0 | 3.0 | 51.0 | 1.9 | 23.5 | 17.0 | |
| OPF21613-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 8.0 | 4.0 | 49.5 | 3.4 | 22.0 | 19.0 | |
| OPF21613-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 10.0 | 4.0 | 55.5 | 2.5 | 28.0 | 22.0 | |
| OPF21613-04A20 | 6 | - 4 | 1/4" | M 20X1,5 | 12.0 | 7.0 | 53.5 | 2.0 | 26.0 | 24.0 | |
| OPF21613-05A18 | 8 | - 5 | 5/16" | M 18X1,5 | 10.0 | 5.5 | 56.0 | 2.5 | 28.0 | 22.0 | |
| OPF21613-05A20 | 8 | - 5 | 5/16" | M 20X1,5 | 12.0 | 5.5 | 53.0 | 2.0 | 25.0 | 24.0 | |
| OPF21613-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 54.5 | 2.0 | 25.5 | 24.0 | |
| OPF21613-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 62.0 | 3.0 | 32.5 | 27.0 | |
| OPF21613-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 58.0 | 4.0 | 26.5 | 30.0 | |
| OPF21613-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 65.0 | 3.5 | 30.5 | 36.0 | |
| OPF21612-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 70.0 | 2.2 | 33.5 | 36.0 | |
| OPF21613-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 70.5 | 4.5 | 34.0 | 41.0 | |
| OPF21612-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 83.5 | 1.7 | 35.5 | 41.0 | |
| OPF21613-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 83.5 | 6.3 | 35.5 | 50.0 | |

OPF21612: THRUST WIRE NUT / OPF21613: SLIP-ON NUT



DIN STANDARD CONNECTIONS

OPF21642/OPF21643

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

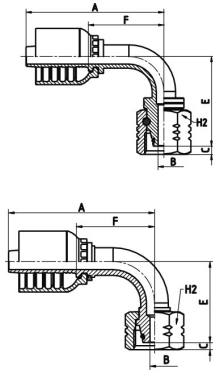
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|-------|-----|------|------|------|
| | DN | Dash | inch | | | T | mm | B | A | C | E |
| OPF21643-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 8.0 | 4.0 | 64.0 | 3.4 | 15.0 | 36.5 | 19.0 |
| OPF21643-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 10.0 | 4.0 | 65.0 | 2.5 | 16.5 | 37.5 | 22.0 |
| OPF21643-05A20 | 8 | - 5 | 5/16" | M 20X1,5 | 12.0 | 5.5 | 70.0 | 2.0 | 18.5 | 42.0 | 24.0 |
| OPF21643-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 73.5 | 2.0 | 17.0 | 44.0 | 24.0 |
| OPF21643-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 75.0 | 3.0 | 18.5 | 45.5 | 27.0 |
| OPF21643-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 83.5 | 4.0 | 20.0 | 52.5 | 30.0 |
| OPF21643-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 99.5 | 3.5 | 29.5 | 65.5 | 36.0 |
| OPF21642-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 113.0 | 2.2 | 34.0 | 76.5 | 36.0 |
| OPF21643-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 111.5 | 4.5 | 32.5 | 75.0 | 41.0 |
| OPF21643-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 138.0 | 6.3 | 35.5 | 90.0 | 50.0 |

OPF21642: THRUST WIRE NUT / OPF21643: SLIP-ON NUT

DIN STANDARD CONNECTIONS

OPF21692/OPF21693

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



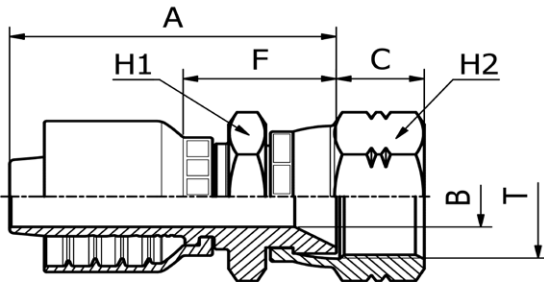
| PART. REF. | HOSE BORE | | | Thread | Pipe | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|-------|----------|------|---------------|-------|-----|------|------|------|---|
| | DN | Dash | inch | | | T | mm | B | A | C | E | F |
| OPF21693-04A16 | 6 | - 4 | 1/4" | M 16X1,5 | 8.0 | 4.0 | 57.0 | 3.4 | 29.5 | 29.5 | 19.0 | |
| OPF21693-04A18 | 6 | - 4 | 1/4" | M 18X1,5 | 10.0 | 4.0 | 57.0 | 2.5 | 31.0 | 29.5 | 22.0 | |
| OPF21693-04A20 | 6 | - 4 | 1/4" | M 20X1,5 | 12.0 | 5.5 | 57.0 | 2.0 | 34.5 | 29.5 | 24.0 | |
| OPF21693-05A20 | 8 | - 5 | 5/16" | M 20X1,5 | 12.0 | 5.5 | 60.0 | 2.0 | 34.0 | 32.0 | 24.0 | |
| OPF21693-06A20 | 10 | - 6 | 3/8" | M 20X1,5 | 12.0 | 7.0 | 66.0 | 2.0 | 35.0 | 36.5 | 24.0 | |
| OPF21693-06A22 | 10 | - 6 | 3/8" | M 22X1,5 | 14.0 | 7.0 | 66.0 | 3.0 | 37.0 | 36.5 | 27.0 | |
| OPF21693-06A24 | 10 | - 6 | 3/8" | M 24X1,5 | 16.0 | 9.3 | 66.0 | 4.0 | 36.0 | 36.5 | 30.0 | |
| OPF21693-08A24 | 12 | - 8 | 1/2" | M 24X1,5 | 16.0 | 9.3 | 76.0 | 4.0 | 40.5 | 45.0 | 30.0 | |
| OPF21693-10A30 | 16 | - 10 | 5/8" | M 30X2 | 20.0 | 12.5 | 86.0 | 3.5 | 57.5 | 51.5 | 36.0 | |
| OPF21692-12A30 | 19 | - 12 | 3/4" | M 30X2 | 20.0 | 12.5 | 98.0 | 2.2 | 67.5 | 61.5 | 36.0 | |
| OPF21693-12A36 | 19 | - 12 | 3/4" | M 36X2 | 25.0 | 15.0 | 97.5 | 4.5 | 64.5 | 61.5 | 41.0 | |
| OPF21692-16A36 | 25 | - 16 | 1" | M 36X2 | 25.0 | 15.0 | 127.5 | 1.7 | 86.0 | 79.5 | 41.0 | |
| OPF21693-16A42 | 25 | - 16 | 1" | M 42X2 | 30.0 | 19.8 | 127.5 | 6.3 | 74.5 | 79.0 | 50.0 | |

OPF21692: THRUST WIRE NUT / OPF21693: SLIP-ON NUT

JIS STANDARD CONNECTIONS

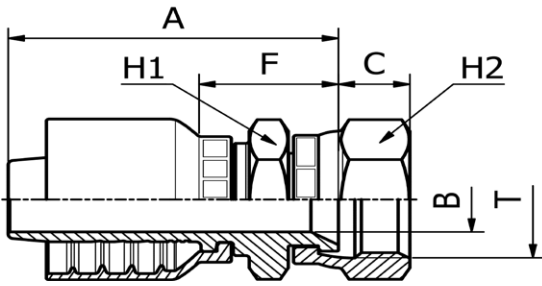
OPF24011

JIS METRIC
FEMALE (KOMATSU)



| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|----------|---------------|------|------|------|------|------|----|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPF24011-04A14 | 6 | - 4 | 1/4" | M 14X1,5 | 4.0 | 50.5 | 10.5 | 23.0 | 19.0 | 19.0 | |
| OPF24011-06A14 | 10 | - 6 | 3/8" | M 14X1,5 | 4.0 | 53.0 | 10.5 | 23.5 | 19.0 | 19.0 | |
| OPF24011-06A18 | 10 | - 6 | 3/8" | M 18X1,5 | 7.0 | 53.0 | 11.5 | 23.5 | 24.0 | 24.0 | |
| OPF24011-08A22 | 12 | - 8 | 1/2" | M 22X1,5 | 9.3 | 56.0 | 13.0 | 25.0 | 27.0 | 27.0 | |
| OPF24011-10A24 | 16 | - 10 | 5/8" | M 24X1,5 | 12.5 | 61.0 | 15.1 | 26.5 | 32.0 | 32.0 | |
| OPF24011-12A30 | 19 | - 12 | 3/4" | M 30X1,5 | 15.0 | 68.0 | 18.3 | 31.5 | 36.0 | 36.0 | |
| OPF24011-16A33 | 25 | - 16 | 1" | M 33X1,5 | 19.8 | 81.5 | 21.3 | 33.5 | 41.0 | 41.0 | |

JIS STANDARD CONNECTIONS



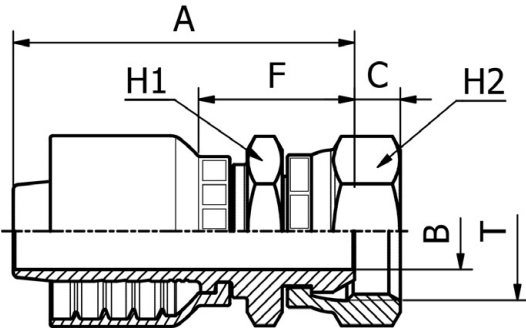
OPF23811

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|------|------|------|------|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPF23811-04A04 | 6 | - 4 | 1/4" | 1/4" - 19 | | 4.0 | 46.0 | 8.3 | 18.5 | 19.0 | 19.0 |
| OPF23811-06A06 | 10 | - 6 | 3/8" | 3/8" - 19 | | 7.0 | 52.5 | 10.0 | 23.0 | 22.0 | 22.0 |
| OPF23811-08A08 | 12 | - 8 | 1/2" | 1/2" - 14 | | 9.3 | 53.0 | 11.5 | 22.0 | 27.0 | 27.0 |
| OPF23811-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 62.5 | 13.5 | 26.0 | 32.0 | 32.0 |
| OPF23811-16A16 | 25 | - 16 | 1" | 1" - 11 | | 19.8 | 78.5 | 14.5 | 30.5 | 38.0 | 38.0 |

FITTINGS 306

JIS STANDARD CONNECTIONS

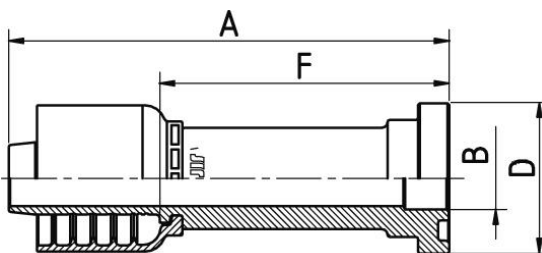


OPF20711

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

| PART. REF. | HOSE BORE | | | Thread | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|-----------|---------------|------|------|-----|------|------|------|
| | DN | Dash | inch | | T | B | A | C | F | H1 | H2 |
| OPF20711-12A12 | 19 | - 12 | 3/4" | 3/4" - 14 | | 15.0 | 66.5 | 8.9 | 30.0 | 32.0 | 32.0 |

ORIGINAL EQUIPMENT CONNECTIONS



OPF24111

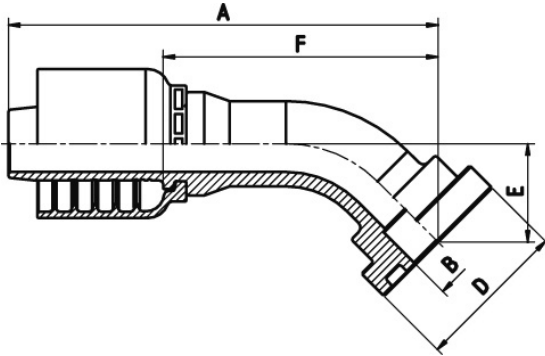
STRAIGHT KOMATSU FLANGE

| PART. REF. | HOSE BORE | | | Flange | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|---------------|------|-------|------|------|--|--|
| | DN | Dash | inch | | inch | B | A | D | F | | |
| OPF24111-10A10 | 16 | - 10 | 5/8" | 5/8" | | 14.0 | 100.0 | 34.0 | 65.5 | | |

ORIGINAL EQUIPMENT CONNECTIONS

OPF24141

45° KOMATSU FLANGE

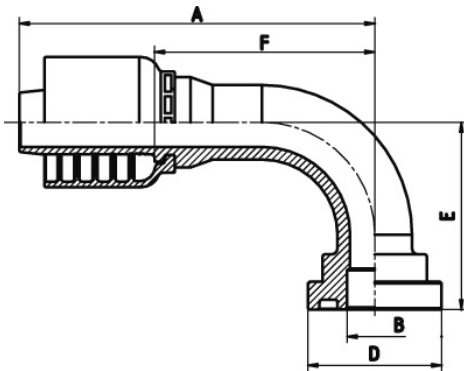


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|--|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPF24141-10A10 | 16 | - 10 | 5/8" | 5/8" | | 14.0 | 95.0 | 34.0 | 22.0 | 61.0 | | |

ORIGINAL EQUIPMENT CONNECTIONS

OPF24191

90° KOMATSU FLANGE

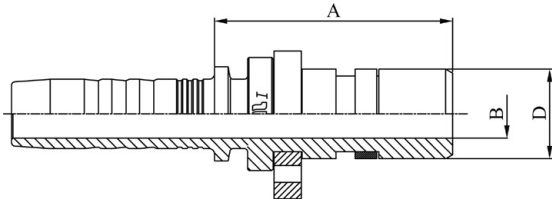


| PART. REF. | HOSE BORE | | | Flange | | DIMENSIONS mm | | | | | | |
|----------------|-----------|------|------|--------|--|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | inch | | B | A | D | E | F | | |
| OPF24191-10A10 | 16 | - 10 | 5/8" | 5/8" | | 14.0 | 90.0 | 34.0 | 47.5 | 56.0 | | |

MULTIFIT INSERT

M12H10

EF STRAIGHT
MALE INSERT



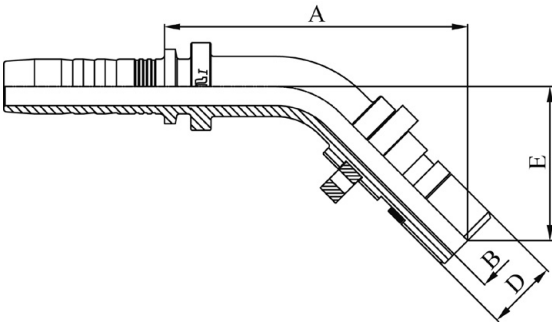
| PART. REF. | HOSE BORE | | | Bar | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|-------|---------------|------|------|--|--|--|
| | DN | Dash | inch | | B | A | D | | | |
| M12H10-04-04 | 6 | - 4 | 1/4" | 350.0 | 4.0 | 30.0 | 10.0 | | | |
| M12H10-04-06 | 6 | - 4 | 1/4" | 350.0 | 7.0 | 34.0 | 13.0 | | | |
| M12H10-05-06 | 8 | - 5 | 5/16" | 350.0 | 7.0 | 34.0 | 13.0 | | | |
| M12H10-06-04 | 10 | - 6 | 3/8" | 350.0 | 4.0 | 30.5 | 10.0 | | | |
| M12H10-06-06 | 10 | - 6 | 3/8" | 350.0 | 7.0 | 34.5 | 13.0 | | | |
| M12H10-06-08 | 10 | - 6 | 3/8" | 350.0 | 9.3 | 34.5 | 16.0 | | | |
| M12H10-08-06 | 12 | - 8 | 1/2" | 350.0 | 7.0 | 35.0 | 13.0 | | | |
| M12H10-08-08 | 12 | - 8 | 1/2" | 350.0 | 9.3 | 35.0 | 16.0 | | | |
| M12H10-10-08 | 16 | - 10 | 5/8" | 350.0 | 9.3 | 35.0 | 16.0 | | | |
| M12H10-10-12 | 16 | - 10 | 5/8" | 280.0 | 15.0 | 44.5 | 23.0 | | | |
| M12H10-12-12 | 19 | - 12 | 3/4" | 280.0 | 15.0 | 44.5 | 23.0 | | | |

FITTINGS 308

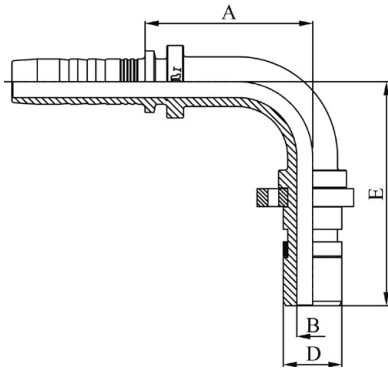
MULTIFIT INSERT

M12H40

EF 45° ELBOW
MALE INSERT



| PART. REF. | HOSE BORE | | | Bar | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|-------|---------------|------|------|------|--|--|
| | DN | Dash | inch | | B | A | D | E | | |
| M12H40-04-04 | 6 | - 4 | 1/4" | 350.0 | 4.0 | 46.0 | 10.0 | 23.5 | | |
| M12H40-04-06 | 6 | - 4 | 1/4" | 350.0 | 7.0 | 52.0 | 13.0 | 27.0 | | |
| M12H40-05-06 | 8 | - 5 | 5/16" | 350.0 | 7.0 | 53.0 | 13.0 | 27.5 | | |
| M12H40-06-04 | 10 | - 6 | 3/8" | 350.0 | 4.0 | 47.0 | 10.0 | 23.5 | | |
| M12H40-06-06 | 10 | - 6 | 3/8" | 350.0 | 7.0 | 55.5 | 13.0 | 28.0 | | |
| M12H40-08-08 | 12 | - 8 | 1/2" | 350.0 | 9.3 | 61.5 | 16.0 | 30.0 | | |
| M12H40-10-12 | 16 | - 10 | 5/8" | 280.0 | 15.0 | 79.0 | 23.0 | 41.0 | | |
| M12H40-10-08 | 16 | - 10 | 5/8" | 350.0 | 9.3 | 65.0 | 16.0 | 30.0 | | |
| M12H40-12-12 | 19 | - 12 | 3/4" | 280.0 | 15.0 | 85.5 | 23.0 | 42.5 | | |



MULTIFIT INSERT

M12H90

EF 90° ELBOW
MALE INSERT

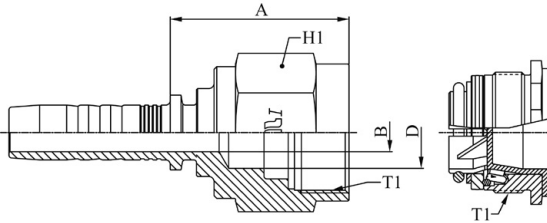
| PART. REF. | HOSE BORE | | | Bar | DIMENSIONS mm | | | | | |
|--------------|-----------|------|-------|-------|---------------|------|------|------|--|--|
| | DN | Dash | inch | | B | A | D | E | | |
| M12H90-04-04 | 6 | - 4 | 1/4" | 350.0 | 4.0 | 30.0 | 10.0 | 40.0 | | |
| M12H90-04-06 | 6 | - 4 | 1/4" | 350.0 | 7.0 | 32.0 | 13.0 | 45.0 | | |
| M12H90-05-06 | 8 | - 5 | 5/16" | 350.0 | 7.0 | 33.5 | 13.0 | 46.5 | | |
| M12H90-06-04 | 10 | - 6 | 3/8" | 350.0 | 4.0 | 30.5 | 10.0 | 40.0 | | |
| M12H90-06-06 | 10 | - 6 | 3/8" | 350.0 | 7.0 | 37.0 | 13.0 | 49.5 | | |
| M12H90-08-06 | 12 | - 8 | 1/2" | 350.0 | 7.0 | 37.5 | 13.0 | 49.5 | | |
| M12H90-08-08 | 12 | - 8 | 1/2" | 350.0 | 9.3 | 44.0 | 16.0 | 55.0 | | |
| M12H90-10-08 | 16 | - 10 | 5/8" | 350.0 | 9.3 | 47.0 | 16.0 | 55.0 | | |
| M12H90-10-12 | 16 | - 10 | 5/8" | 280.0 | 15.0 | 55.0 | 23.0 | 74.5 | | |
| M12H90-12-12 | 19 | - 12 | 3/4" | 280.0 | 15.0 | 62.5 | 23.0 | 79.0 | | |

309 FITTINGS

MULTIFIT INSERT

M22H10

EF STRAIGHT
FEMALE INSERT

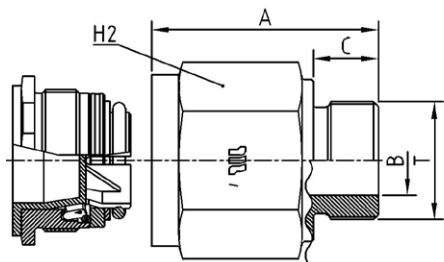


| PART. REF. | HOSE BORE | | | Thread | W.P. | DIMENSIONS mm | | | | |
|--------------|-----------|------|------|----------|-------|---------------|------|------|------|---|
| | DN | Dash | inch | | | T | Bar | B | A | D |
| M22H10-04-04 | 6 | - 4 | 1/4" | M 18X1 | 350.0 | 4.0 | 30.0 | 10.0 | 22.0 | |
| M22H10-06-06 | 10 | - 6 | 3/8" | M 22X1 | 350.0 | 7.0 | 33.5 | 13.0 | 25.0 | |
| M22H10-08-08 | 12 | - 8 | 1/2" | M 25X1 | 350.0 | 9.3 | 34.0 | 16.0 | 28.0 | |
| M22H10-10-08 | 16 | - 10 | 5/8" | M 25X1 | 350.0 | 12.5 | 34.0 | 23.0 | 28.0 | |
| M22H10-10-12 | 16 | - 10 | 5/8" | M 33X1,5 | 280.0 | 12.5 | 45.5 | 23.0 | 38.0 | |
| M22H10-12-12 | 19 | - 12 | 3/4" | M 33X1,5 | 280.0 | 15.0 | 46.5 | 23.0 | 38.0 | |

ADAPTORS

A52032H

**ADAPTOR BSP
MALE O-RING BOSS TYPE
ISO 1179
EF FEMALE**

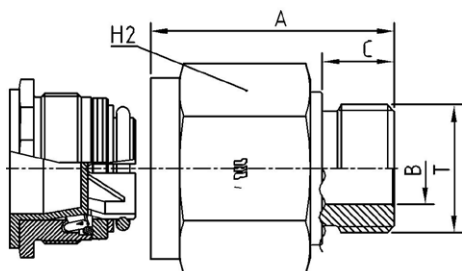


| PART. REF. | HOSE BORE | | | Thread | W.P. | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|------|-----------|-------|---------------|------|------|------|------|---|----|
| | DN | Dash | inch | | | T | Bar | B | A | C | D | H2 |
| A52032H-04-04 | 6 | - 4 | 1/4" | 1/4" - 19 | 350.0 | 7.5 | 34.0 | 11.2 | 10.0 | 22.0 | | |
| A52032H-06-04 | 6 | - 4 | 1/4" | 3/8" - 19 | 350.0 | 9.0 | 34.0 | 11.2 | 10.0 | 22.0 | | |
| A52032H-06-06 | 10 | - 6 | 3/8" | 3/8" - 19 | 350.0 | 9.9 | 36.5 | 11.2 | 13.0 | 25.0 | | |
| A52032H-08-06 | 10 | - 6 | 3/8" | 1/2" - 14 | 350.0 | 12.3 | 39.5 | 14.5 | 13.0 | 27.0 | | |
| A52032H-08-08 | 12 | - 8 | 1/2" | 1/2" - 14 | 350.0 | 12.3 | 40.0 | 14.5 | 16.0 | 28.0 | | |
| A52032H-12-12 | 19 | - 12 | 3/4" | 3/4" - 14 | 280.0 | 15.5 | 50.5 | 14.5 | 23.0 | 38.0 | | |
| A52032H-16-12 | 19 | - 12 | 3/4" | 1" - 11 | 280.0 | 20.0 | 53.5 | 18.6 | 23.0 | 46.0 | | |

ADAPTORS

A52302H

**ADAPTOR SAE
O-RING BOSS MALE
ISO 11926
EF FEMALE**

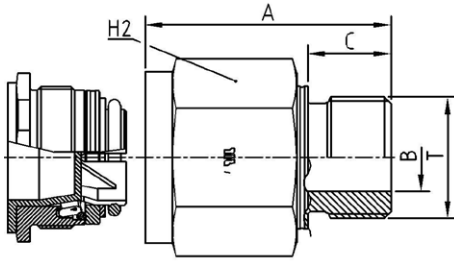


| PART. REF. | HOSE BORE | | | Thread | W.P. | DIMENSIONS mm | | | | | | |
|---------------|-----------|------|------|--------------|-------|---------------|------|------|------|------|---|----|
| | DN | Dash | inch | | | T | Bar | B | A | C | D | H2 |
| A52302H-06-04 | 6 | - 4 | 1/4" | 9/16" - 18 | 350.0 | 7.0 | 32.5 | 9.9 | 10.0 | 22.0 | | |
| A52302H-06-06 | 10 | - 6 | 3/8" | 9/16" - 18 | 350.0 | 7.0 | 36.0 | 9.9 | 13.0 | 25.0 | | |
| A52302H-08-06 | 10 | - 6 | 3/8" | 3/4" - 16 | 350.0 | 9.3 | 37.0 | 11.1 | 13.0 | 25.0 | | |
| A52302H-08-08 | 12 | - 8 | 1/2" | 3/4" - 16 | 350.0 | 9.3 | 37.0 | 11.1 | 16.0 | 28.0 | | |
| A52302H-10-08 | 12 | - 8 | 1/2" | 7/8" - 14 | 350.0 | 12.5 | 38.5 | 12.7 | 16.0 | 28.0 | | |
| A52302H-10-12 | 19 | - 12 | 3/4" | 7/8" - 14 | 280.0 | 12.5 | 49.5 | 12.7 | 23.0 | 38.0 | | |
| A52302H-12-12 | 19 | - 12 | 3/4" | 1.1/16" - 12 | 280.0 | 15.0 | 51.0 | 15.1 | 23.0 | 38.0 | | |

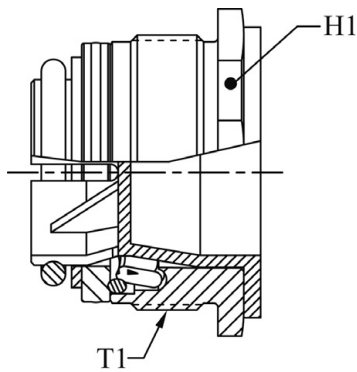
ADAPTORS

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 | H2 |
| A52192H-14-04 | 6 | - 4 | 1/4" | M 14X1,5 | 350.0 | 6.0 | 34.0 | 11.0 | 10.0 | 22.0 | | |
| A52192H-16-04 | 6 | - 4 | 1/4" | M 16X1,5 | 350.0 | 7.0 | 35.0 | 12.5 | 10.0 | 22.0 | | |
| A52192H-18-06 | 10 | - 6 | 3/8" | M 18X1,5 | 350.0 | 9.0 | 40.0 | 14.0 | 13.0 | 25.0 | | |
| A52192H-22-06 | 10 | - 6 | 3/8" | M 22X1,5 | 350.0 | 12.0 | 40.0 | 15.0 | 13.0 | 27.0 | | |
| A52192H-22-08 | 12 | - 8 | 1/2" | M 22X1,5 | 350.0 | 12.0 | 40.0 | 15.0 | 16.0 | 28.0 | | |
| A52192H-27-08 | 12 | - 8 | 1/2" | M 27X2 | 350.0 | 15.0 | 43.0 | 18.5 | 16.0 | 32.0 | | |
| A52192H-27-12 | 19 | - 12 | 3/4" | M 27X2 | 280.0 | 15.0 | 55.0 | 18.5 | 23.0 | 38.0 | | |
| A52192H-33-12 | 19 | - 12 | 3/4" | M 33X2 | 280.0 | 20.0 | 54.0 | 18.5 | 23.0 | 41.0 | | |



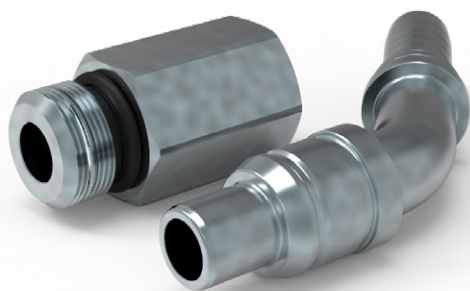
ADAPTORS

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 | 350.0 | 10.0 | 19.0 | | | | | |
| O82H10-06 | 10 | - 6 | 3/8" | M 22X1 | 350.0 | 13.0 | 23.0 | | | | | |
| O82H10-08 | 12 | - 8 | 1/2" | M 25X1 | 350.0 | 16.0 | 26.0 | | | | | |
| O82H10-12 | 19 | - 12 | 3/4" | M 33X1,5 | 280.0 | 23.0 | 34.0 | | | | | |

311 FITTINGS



FASTFIT TYPE PUSH-TO-CONNECT

FITTINGS 312

| TECHNICAL DATA | | | | |
|---|------|--------|---|-------|
|  | | |  | |
| SIZE | | | WORKING PRESSURE [Dynamic] | |
| DN | Dash | inch | MPa | PSI |
| 10 | -06 | 3/8" | 42 | 6,090 |
| 12 | -08 | 1/2" | 42 | 6,090 |
| 16 | -10 | 5/8" | 42 | 6,090 |
| 19 | -12 | 3/4" | 42 | 6,090 |
| 25 | -16 | 1" | 42 | 6,090 |
| 31 | -20 | 1.1/4" | 42 | 6,090 |

PRODUCT DESCRIPTION

- Push-to-connect design
- No assembly tools required
- Low connection effort
- Reduced assembly time even in hard-to-reach areas
- Disconnection by unscrewing adaptor

MATERIAL

Adaptor and Insert in steel, with some hardened areas in correspondence to the most stressed points. Seals in NBR. Other materials (VITON, EPDM or any others) on request

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For different temperature range, the coupling can be assembled with specific seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles at 120% of the rated one (freq. 1Hz)

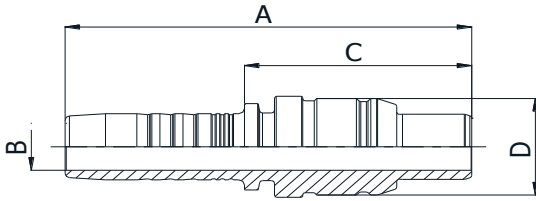
TEST SPECIFICATIONS

ISO 18879

MULTIFIT INSERT

M13H10

FAST-FIT STRAIGHT MALE INSERT

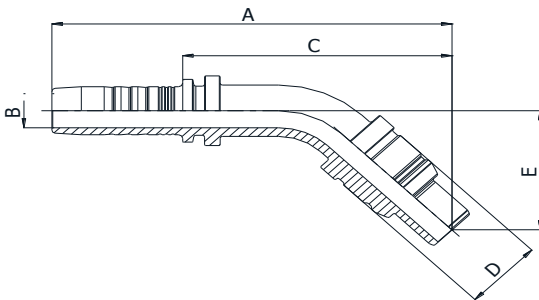


| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|------|------|--|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | | |
| 10 | -06 | 3/8" | M13H10-04-06 | 6 | -04 | 1/4" | 42 | 63.0 | 4.0 | 35.5 | 14.8 | | |
| 10 | -06 | 3/8" | M13H10-06-06 | 10 | -06 | 3/8" | 42 | 66.5 | 7.0 | 37.1 | 14.8 | | |
| 12 | -08 | 1/2" | M13H10-08-08 | 12 | -08 | 1/2" | 42 | 70.5 | 9.3 | 39.4 | 19.1 | | |
| 16 | -10 | 5/8" | M13H10-10-10 | 16 | -10 | 5/8" | 38 | 74.8 | 12.5 | 40.5 | 21.5 | | |
| 19 | -12 | 3/4" | M13H10-12-12 | 19 | -12 | 3/4" | 38 | 80.5 | 15.0 | 44.0 | 26.1 | | |
| 25 | -16 | 1" | M13H10-16-16 | 25 | -16 | 1" | 32 | 96.0 | 19.8 | 47.8 | 31.3 | | |

MULTIFIT INSERT

M13H40

FAST-FIT 45° ELBOW MALE INSERT

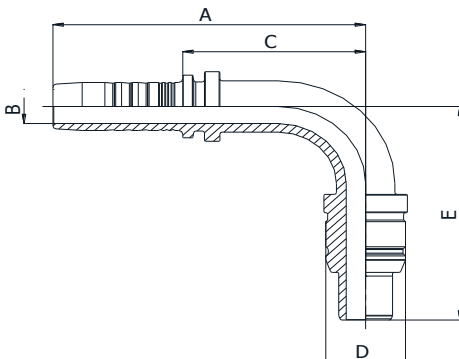


| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|-------|------|------|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | E | |
| 10 | -06 | 3/8" | M13H40-04-06 | 6 | -04 | 1/4" | 42 | 77.6 | 4.0 | 50.1 | 14.8 | 27.0 | |
| 10 | -06 | 3/8" | M13H40-06-06 | 10 | -06 | 3/8" | 42 | 86.1 | 7.0 | 56.7 | 14.8 | 29.4 | |
| 12 | -08 | 1/2" | M13H40-08-08 | 12 | -08 | 1/2" | 42 | 95.1 | 9.3 | 64.0 | 19.1 | 32.5 | |
| 19 | -12 | 3/4" | M13H40-12-12 | 19 | -12 | 3/4" | 38 | 120.4 | 15.0 | 83.9 | 26.1 | 40.7 | |
| 25 | -16 | 1" | M13H40-16-16 | 25 | -16 | 1" | 32 | 152.3 | 19.8 | 104.1 | 31.3 | 50.2 | |

MULTIFIT INSERT

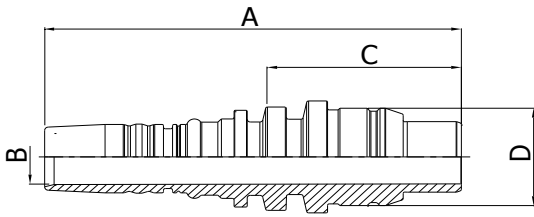
M13H90

FAST-FIT 90° ELBOW MALE INSERT



| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|------|------|------|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | E | |
| 10 | -06 | 3/8" | M13H90-04-06 | 6 | -04 | 1/4" | 42 | 57.6 | 4.0 | 30.1 | 14.8 | 45.2 | |
| 10 | -06 | 3/8" | M13H90-06-06 | 10 | -06 | 3/8" | 42 | 66.4 | 7.0 | 37.0 | 14.8 | 51.2 | |
| 12 | -08 | 1/2" | M13H90-08-08 | 12 | -08 | 1/2" | 42 | 74.9 | 9.3 | 43.8 | 19.1 | 58.3 | |
| 19 | -12 | 3/4" | M13H90-12-12 | 19 | -12 | 3/4" | 38 | 99.0 | 15.0 | 62.5 | 26.1 | 76.9 | |
| 25 | -16 | 1" | M13H90-16-16 | 25 | -16 | 1" | 32 | 125.5 | 19.8 | 77.3 | 31.3 | 94.4 | |

INTERLOCK PLUS INSERT

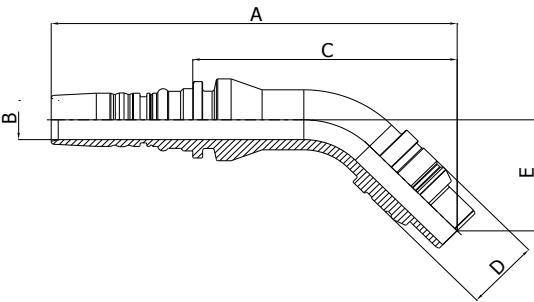


M33H10

**FAST-FIT STRAIGHT
MALE INSERT**

| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|------|------|--|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | | |
| 19 | -12 | 3/4" | M33H10-12-12 | 19 | -12 | 3/4" | 42 | 96.6 | 14.5 | 46.4 | 26.1 | | |
| 25 | -16 | 1" | M33H10-16-16 | 25 | -16 | 1" | 42 | 112.0 | 19.5 | 50.3 | 31.3 | | |

FITTINGS 314



INTERLOCK PLUS INSERT

M33H40

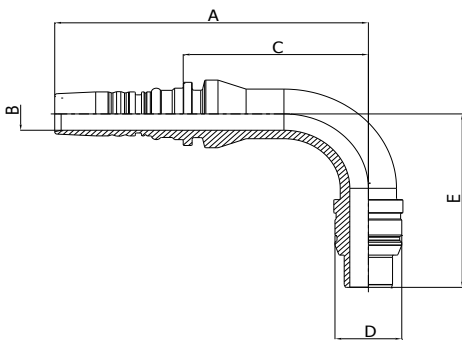
**FAST-FIT 45° ELBOW
MALE INSERT**

| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|-------|------|------|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | E | |
| 19 | -12 | 3/4" | M33H40-12-12 | 19 | -12 | 3/4" | 42 | 143.9 | 14.5 | 93.8 | 26.1 | 40.7 | |
| 25 | -16 | 1" | M33H40-16-16 | 25 | -16 | 1" | 42 | 174.8 | 19.5 | 113.1 | 31.3 | 50.2 | |

INTERLOCK PLUS INSERT

M33H90

**FAST-FIT 90° ELBOW
MALE INSERT**

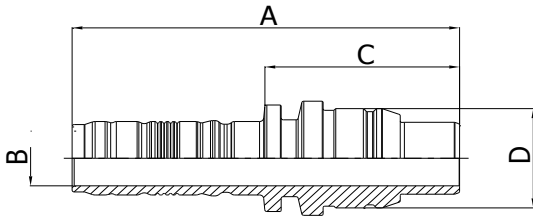


| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|------|------|------|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | E | |
| 19 | -12 | 3/4" | M33H90-12-12 | 19 | -12 | 3/4" | 42 | 122.6 | 14.5 | 72.4 | 26.1 | 76.9 | |
| 25 | -16 | 1" | M33H90-16-16 | 25 | -16 | 1" | 42 | 148.0 | 19.5 | 86.3 | 31.3 | 94.4 | |

SPIRALFIT INSERT

M73H10

FAST-FIT STRAIGHT MALE INSERT

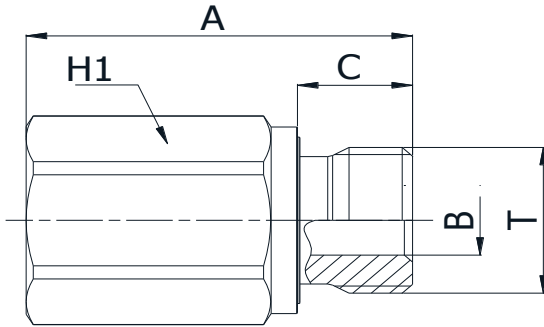


| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|------|------|------|--|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | | |
| 19 | -12 | 3/4" | M73H10-12-12 | 19 | -12 | 3/4" | 42 | 93.4 | 14.5 | 46.9 | 26.1 | | |
| 25 | -16 | 1" | M73H10-16-16 | 25 | -16 | 1" | 42 | 107.5 | 19.5 | 51.3 | 31.3 | | |

ADAPTORS

A52013H

BSP MALE OR BOSS TYPE TO ISO 1179- 2

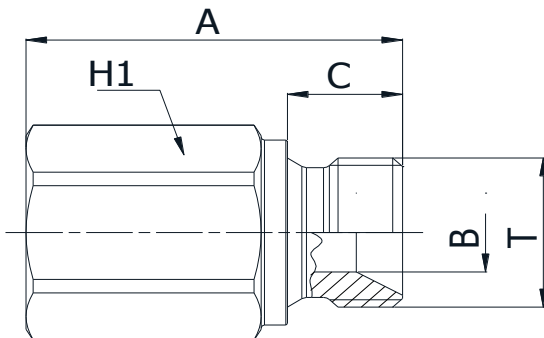


| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|----|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | H1 | | |
| 10 | -06 | 3/8" | A52013H-04-06 | 1/4"-19 | 42 | 45.0 | 5.0 | 12.0 | 19 | | |
| 10 | -06 | 3/8" | A52013H-06-06 | 3/8"-19 | 42 | 44.5 | 8.0 | 12.0 | 22 | | |
| 12 | -08 | 1/2" | A52013H-08-08 | 1/2"-14 | 42 | 47.0 | 10.0 | 14.0 | 27 | | |
| 19 | -12 | 3/4" | A52013H-12-12 | 3/4"-14 | 42 | 53.0 | 16.0 | 16.0 | 32 | | |
| 25 | -16 | 1" | A52013H-16-16 | 1"-11 | 42 | 60.0 | 20.0 | 18.0 | 41 | | |

ADAPTORS

A52053H

BSP MALE 60° CONE (ISO 8434-6 / BS5200)

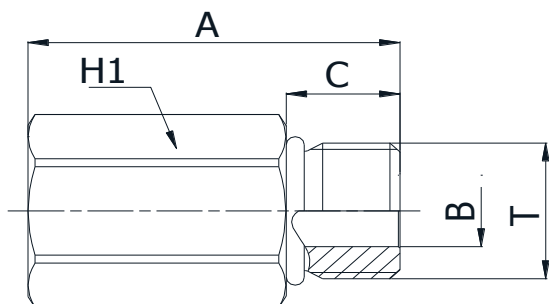


| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|----|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | H1 | | |
| 12 | -08 | 1/2" | A52053H-08-08 | 1/2"-14 | 42 | 45.8 | 11.0 | 14.0 | 27 | | |

ADAPTORS

A52323H

SAE MALE
OR BOSS TYPE
TO SAE J1926-2



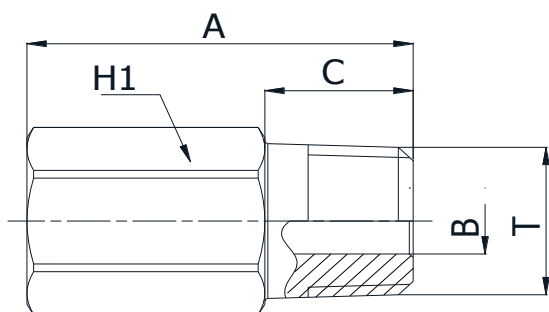
| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|------------|-----|---------------|------|------|----|--|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | H1 | | | |
| 10 | -06 | 3/8" | A52323H-04-06 | 7/16"-20 | 42 | 42.2 | 4.5 | 11.0 | 19 | | | |
| 10 | -06 | 3/8" | A52323H-06-06 | 9/16"-18 | 42 | 42.4 | 7.5 | 12.0 | 19 | | | |
| 12 | -08 | 1/2" | A52323H-08-08 | 3/4"-16 | 42 | 45.8 | 10.0 | 14.0 | 24 | | | |
| 16 | -10 | 5/8" | A52323H-10-10 | 7/8"-14 | 42 | 49.2 | 12.5 | 16.0 | 27 | | | |
| 19 | -12 | 3/4" | A52323H-12-12 | 1.1/16"-12 | 42 | 53.5 | 15.5 | 18.5 | 32 | | | |
| 25 | -16 | 1" | A52323H-16-16 | 1.5/16"-12 | 42 | 56.0 | 20.5 | 18.5 | 38 | | | |

FITTINGS 316

ADAPTORS

A52283H

STRAIGHT ADAPTOR
NPTF MALE
TO ASME B1.20.3

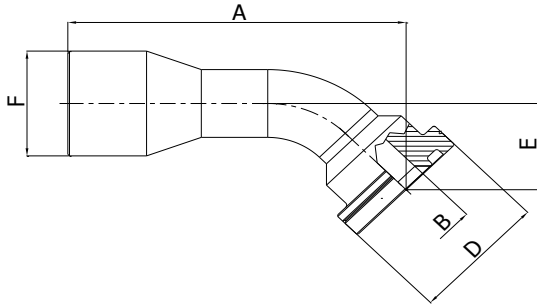


| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|----|--|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | H1 | | | |
| 10 | -06 | 3/8" | A52283H-04-06 | 1/4"-18 | 42 | 44.7 | 6.0 | 14.5 | 19 | | | |
| 10 | -06 | 3/8" | A52283H-06-06 | 3/8"-18 | 42 | 43.7 | 8.0 | 14.5 | 19 | | | |
| 12 | -08 | 1/2" | A52283H-08-08 | 1/2"-14 | 42 | 50.0 | 9.5 | 19.2 | 24 | | | |
| 19 | -12 | 3/4" | A52283H-12-12 | 3/4"-14 | 42 | 54.5 | 15.0 | 19.2 | 32 | | | |
| 25 | -16 | 1" | A52283H-16-16 | 1"-11.5 | 42 | 62.0 | 19.5 | 24.2 | 38 | | | |

ADAPTORS

A54363H

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

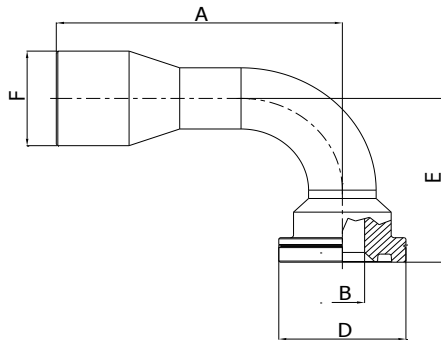


| SIZE | | | PART. REF. | FLANGE | W.P | DIMENSIONS mm | | | | | | |
|------|------|--------|---------------|--------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | inch | MPa | A | B | D | E | F | | |
| 12 | -08 | 1/2" | A54363H-08-08 | 1/2" | 42 | 82.0 | 9.3 | 31.8 | 21.9 | 25.0 | | |
| 19 | -12 | 3/4" | A54363H-12-12 | 3/4" | 42 | 101.8 | 14.5 | 41.4 | 28.0 | 34.0 | | |
| 25 | -16 | 1" | A54363H-16-16 | 1" | 42 | 125.2 | 19.5 | 47.7 | 37.9 | 41.0 | | |
| 31 | -20 | 1-1/4" | A54363H-20-20 | 1-1/4" | 42 | 136.1 | 25.0 | 54.2 | 35.6 | 55.0 | | |

ADAPTORS

A57363H

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



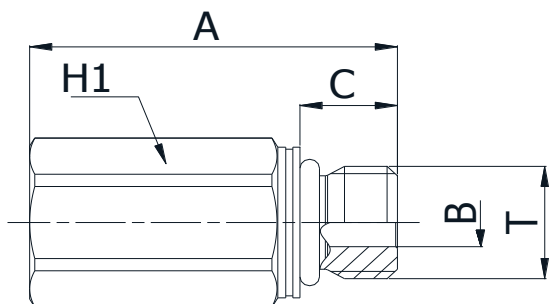
| SIZE | | | PART. REF. | FLANGE | W.P | DIMENSIONS mm | | | | | | |
|------|------|--------|---------------|--------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | inch | MPa | A | B | D | E | F | | |
| 12 | -08 | 1/2" | A57363H-08-08 | 1/2" | 42 | 74.2 | 9.3 | 31.8 | 45.0 | 25.0 | | |
| 19 | -12 | 3/4" | A57363H-12-12 | 3/4" | 42 | 93.2 | 14.5 | 41.4 | 58.9 | 34.0 | | |
| 25 | -16 | 1" | A57363H-16-16 | 1" | 42 | 113.6 | 19.5 | 47.7 | 80.0 | 41.0 | | |
| 31 | -20 | 1-1/4" | A57363H-20-20 | 1-1/4" | 42 | 132.1 | 25.0 | 54.2 | 82.0 | 55.0 | | |

FITTINGS
317

ADAPTORS

A52193H

**STRAIGHT ADAPTOR
METRIC MALE
ISO 6149-2**



| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|----|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | H1 | | |
| 10 | -06 | 3/8" | A52193H-14-06 | M14X1.5 | 42 | 41.5 | 6.0 | 11.0 | 19 | | |
| 10 | -06 | 3/8" | A52193H-18-06 | M18X1.5 | 42 | 43.5 | 8.0 | 14.0 | 24 | | |
| 12 | -08 | 1/2" | A52193H-22-08 | M22X1.5 | 42 | 45.0 | 10.0 | 15.0 | 27 | | |
| 19 | -12 | 3/4" | A52193H-27-12 | M27X2 | 42 | 53.5 | 15.0 | 18.5 | 32 | | |
| 25 | -16 | 1" | A52193H-33-16 | M33X2 | 42 | 57.0 | 20.0 | 18.5 | 41 | | |

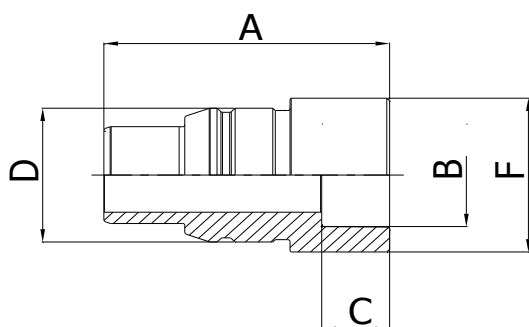
FITTINGS

318

ADAPTORS

A523H95



BRAZING SOCKET



| SIZE | | | PART. REF. | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | MPa | A | B | C | D | F | | |
| 19 | - 12 | 3/4" | A523H95-12-20 | 42 | 50.5 | 20.1 | 12.0 | 26.1 | 30.0 | | |
| 25 | - 16 | 1" | A523H95-16-26 | 42 | 58.0 | 26.1 | 16.0 | 31.3 | 38.0 | | |



DISCONNECTABLE FASTFIT TYPE PUSH-TO-CONNECT

| TECHNICAL DATA | | | | |
|---|------|------|--|-------|
|  | | |  | |
| SIZE | | | WORKING PRESSURE (Dynamic) | |
| DN | Dash | inch | MPa | PSI |
| 12 | -08 | 1/2" | 42 | 6,090 |

PRODUCT DESCRIPTION

- Push-to-connect design
- No assembly tools required
- Low connection effort
- Reduced assembly time even in hard-to-reach areas
- Disconnection by unlocking male insert by means of a standard tool

MATERIAL

Adaptor and Insert in steel, with some hardened areas in correspondence to the most stressed points. Seals in NBR. Other materials (VITON, EPDM or any others) on request

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For different temperature range, the coupling can be assembled with specific seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles at 120% of the rated one (freq. 1Hz)

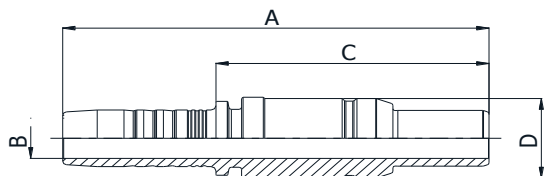
TEST SPECIFICATIONS

ISO 18879

MULTIFIT INSERT

M14H10

DISCONNECTABLE FAST-FIT
STRAIGHT MALE INSERT



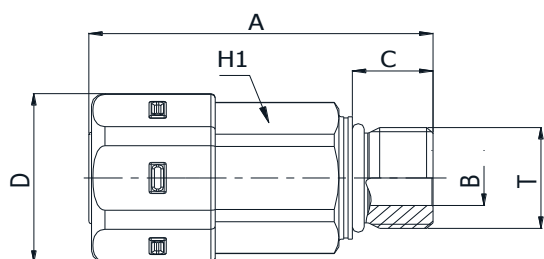
| SIZE | | | PART REF. | SIZE | | | W.P | DIMENSIONS mm | | | | | |
|------|------|------|--------------|------|------|------|-----|---------------|-----|------|------|--|--|
| DN | Dash | inch | | DN | Dash | inch | MPa | A | B | C | D | | |
| 12 | -08 | 1/2" | M14H10-08-08 | 12 | -08 | 1/2" | 42 | 86.5 | 9.3 | 55.4 | 18.4 | | |

FITTINGS 320

ADAPTORS

A52194H

STRAIGHT ADAPTOR
METRIC MALE ISO 6149-2

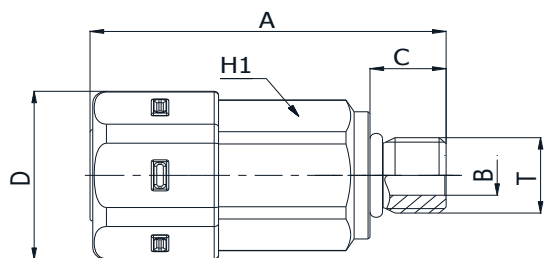


| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | D | H1 | | |
| 12 | -08 | 1/2" | A52194H-22-08 | M22X1.5 | 42 | 64.0 | 12.0 | 15.0 | 37.0 | 30.0 | | |

ADAPTORS

A52324H

SAE MALE
OR BOSS TYPE
TO SAE J1926-2

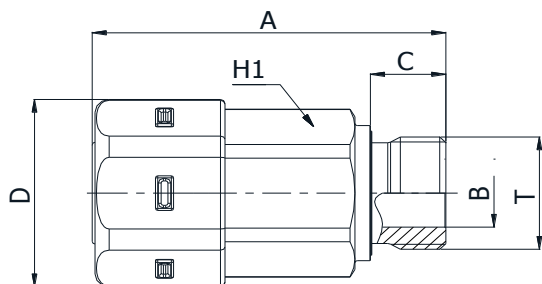


| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | D | H1 | | |
| 12 | -08 | 1/2" | A52324H-08-08 | 3/4"-16 | 42 | 64.8 | 10.0 | 14.0 | 37.0 | 30.0 | | |

ADAPTORS

A52014H

**BSP MALE
OR BOSS TYPE
TO ISO 1179-2**



| SIZE | | | PART. REF. | Thread | W.P | DIMENSIONS mm | | | | | | |
|------|------|------|---------------|---------|-----|---------------|------|------|------|------|--|--|
| DN | Dash | inch | | T | MPa | A | B | C | D | H1 | | |
| 12 | -08 | 1/2" | A52014H-08-08 | 1/2"-14 | 42 | 66.0 | 12.0 | 14.0 | 37.0 | 30.0 | | |



ROTOFIT TYPE SWIVEL JOINT

FITTINGS 322

| TECHNICAL DATA | | | | | | | | | | |
|----------------|------|--------|----------------------------|-------|----------------|-------|-----------|-------|---------|-------|
| SIZE | | | WORKING PRESSURE (Dynamic) | | | | | | | |
| | | | MULTIFIT | | INTERLOCK PLUS | | SPIRALFIT | | ADAPTOR | |
| DN | Dash | inch | MPa | PSI | MPa | PSI | MPa | PSI | MPa | PSI |
| 6 | -04 | 1/4" | 42 | 6,090 | - | - | - | - | - | - |
| 10 | -06 | 3/8" | 42 | 6,090 | - | - | - | - | 42 | 6,090 |
| 12 | -08 | 1/2" | 42 | 6,090 | - | - | - | - | - | - |
| 16 | -10 | 5/8" | 42 | 6,090 | - | - | - | - | 35 | 5,075 |
| 19 | -12 | 3/4" | 35 | 5,075 | 42 | 6,090 | 42 | 6,090 | 35 | 5,075 |
| 25 | -16 | 1" | 35 | 5,075 | 42 | 6,090 | 42 | 6,090 | 35 | 5,075 |
| 31 | -20 | 1.1/4" | 35 | 5,075 | 42 | 6,090 | 42 | 6,090 | 35 | 5,075 |
| 38 | -24 | 1.1/2" | 28 | 4,060 | 42 | 6,090 | 42 | 6,090 | 35 | 5,075 |
| 51 | -32 | 2" | 21 | 3,045 | - | - | - | - | - | - |
| 63 | -40 | 2.1/2" | 14 | 2,030 | - | - | - | - | - | - |

PRODUCT DESCRIPTION

- Swivel joint purposely designed to eliminate torsional stresses due to hose twist under external torque
- Prevents connection unscrewing
- Full flow design to minimize pressure drops
- High number of balls to minimize friction

ROTATION ANGLE

Up to 40°

ROTATION FREQUENCY

Up to 15 alternative RPM

MATERIAL

Body in steel, with some hardened areas in correspondence to the most stressed points. Balls in 100Cr6 quenched and seals in NBR or Polyurethane. Other materials (VITON, EPDM or any others) on request

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

For different temperature range, the coupling can be assembled with specific seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles at 120% of the rated one (freq. 1Hz)

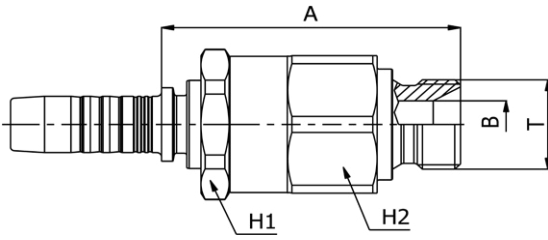
TEST SPECIFICATIONS

ISO 18879

BS STANDARD CONNECTIONS

MR10510

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

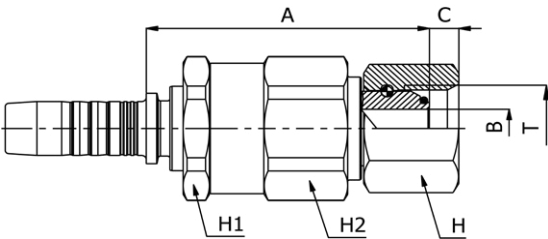


| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|-----------|------|---------------|------|----|----|----|----|--|
| | DN | Dash | inch | | | T | MPa | A | B | H1 | H2 | |
| MR10510-04-04 | 6 | -04 | 1/4" | 1/4"-19 | 42 | 57.7 | 4.7 | 24 | 24 | | | |
| MR10510-06-06 | 10 | -06 | 3/8" | 3/8"-19 | 42 | 58.2 | 8.0 | 27 | 27 | | | |
| MR10510-08-08 | 12 | -08 | 1/2" | 1/2"-14 | 42 | 61.6 | 11.0 | 32 | 32 | | | |
| MR10510-10-10 | 16 | -10 | 5/8" | 5/8"-14 | 35 | 69.3 | 14.3 | 36 | 36 | | | |
| MR10510-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 35 | 71.0 | 16.7 | 41 | 41 | | | |
| MR10510-16-16 | 25 | -16 | 1" | 1"-11 | 35 | 83.0 | 22.2 | 50 | 50 | | | |
| MR10510-20-20 | 31 | -20 | 1.1/4" | 1.1/4"-11 | 35 | 91.9 | 28.6 | 60 | 60 | | | |
| MR10510-24-24 | 38 | -24 | 1.1/2" | 1.1/2"-11 | 28 | 105.1 | 33.3 | 70 | 70 | | | |

BS STANDARD CONNECTIONS

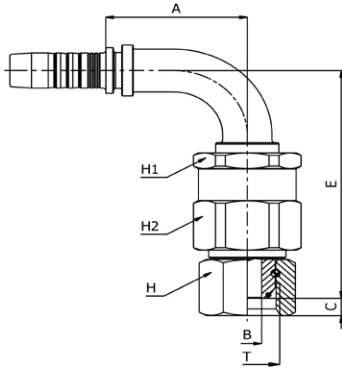
MR20812

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



| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|---------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | T | MPa | A | B | C | H | H1 |
| MR20812-04-04 | 6 | -04 | 1/4" | 1/4"-19 | 42 | 58.0 | 4.3 | 4.1 | 19 | 24 | 24 | |
| MR20812-06-06 | 10 | -06 | 3/8" | 3/8"-19 | 42 | 59.4 | 7.0 | 5.9 | 22 | 27 | 27 | |
| MR20812-08-08 | 12 | -08 | 1/2" | 1/2"-14 | 42 | 62.4 | 9.3 | 6.5 | 27 | 32 | 32 | |
| MR20812-10-10 | 16 | -10 | 5/8" | 5/8"-14 | 35 | 68.0 | 12.5 | 9.7 | 28 | 36 | 36 | |
| MR20812-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 35 | 70.8 | 15.0 | 8.5 | 32 | 41 | 41 | |
| MR20812-16-16 | 25 | -16 | 1" | 1"-11 | 35 | 81.0 | 19.8 | 10.6 | 38 | 50 | 50 | |

BS STANDARD CONNECTIONS



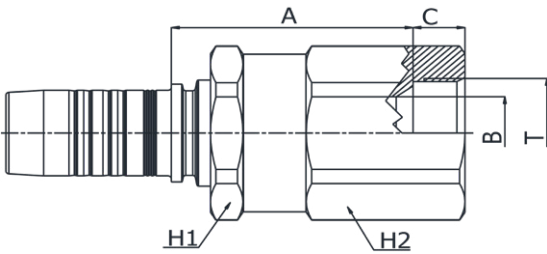
MR20892RT

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

| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|-----------------|------|------|------|---------|------|---------------|-----|-----|------|----|----|----|
| | DN | Dash | inch | | | T | A | B | C | E | H | H1 |
| MR20892-08-08RT | 12 | -08 | 1/2" | 1/2"-14 | 42 | 45.9 | 9.3 | 6.5 | 85.3 | 27 | 32 | 32 |

FITTINGS 324

SAE STANDARD CONNECTIONS

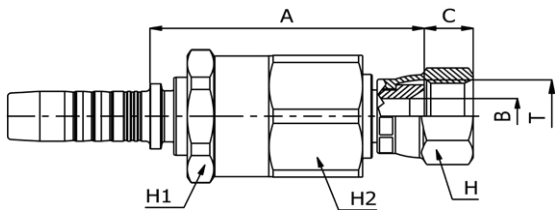


MR22510

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

| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|-----------|------|---------------|------|------|----|----|----|--|
| | DN | Dash | inch | | | T | A | B | C | H1 | H2 | |
| MR22510-20-20 | 31 | -20 | 1.1/4" | 1.5/8"-12 | 21 | 76.7 | 27.5 | 16.5 | 60 | 60 | | |
| MR22510-24-24 | 38 | -24 | 1.1/2" | 1.7/8"-12 | 16 | 87.5 | 33.5 | 19.5 | 70 | 70 | | |

SAE STANDARD CONNECTIONS



MR22711

JIC
FEMALE DOUBLE HEXAGON 37° CONE SEAT

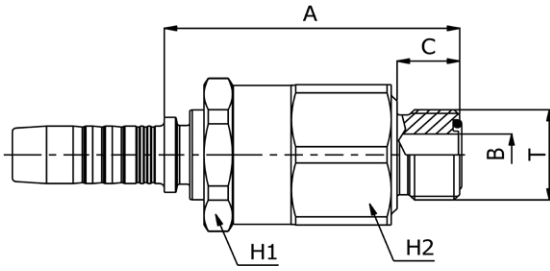
| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|------------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | T | A | B | C | H | H1 | H2 |
| MR22711-06-06 | 10 | -06 | 3/8" | 9/16"-18 | 35 | 56.0 | 7.0 | 9.5 | 17 | 27 | 27 | |
| MR22711-08-08 | 12 | -08 | 1/2" | 3/4"-16 | 35 | 59.9 | 9.3 | 10.7 | 22 | 32 | 32 | |
| MR22711-08-10 | 12 | -08 | 1/2" | 7/8"-14 | 35 | 61.9 | 11.3 | 12.5 | 25 | 32 | 32 | |
| MR22711-10-10 | 16 | -10 | 5/8" | 7/8"-14 | 35 | 66.8 | 11.3 | 12.5 | 25 | 36 | 36 | |
| MR22711-12-12 | 19 | -12 | 3/4" | 1.1/16"-12 | 35 | 68.3 | 15.0 | 14.1 | 32 | 41 | 41 | |
| MR22711-16-16 | 25 | -16 | 1" | 1.5/16"-12 | 28 | 79.8 | 19.8 | 15.3 | 38 | 50 | 50 | |

SAE STANDARD CONNECTIONS

MR12410

ORFS
MALE

SAE J516 / ISO 12151-1



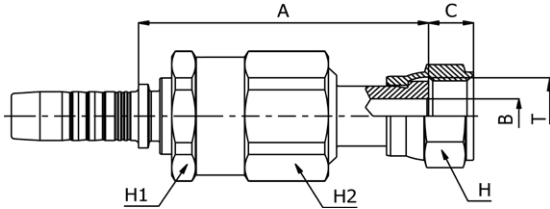
| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|-----------|------|---------------|------|------|----|----|----|--|
| | DN | Dash | inch | | | T | A | B | C | H1 | H2 | |
| MR12410-08-08 | 12 | -08 | 1/2" | 13/16"-16 | 42 | 60.4 | 9.5 | 12.8 | 32 | 32 | | |
| MR12410-10-10 | 16 | -10 | 5/8" | 1"-14 | 42 | 68.8 | 12.5 | 15.5 | 36 | 36 | | |

SAE STANDARD CONNECTIONS

MR22411

ORFS
FEMALE

SAE J516 / ISO 12151-1
PULL BACK TYPE (CRIMPED BACK-NUT)

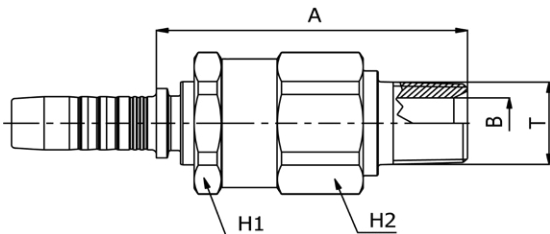


| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|------------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | T | A | B | C | H | H1 | H2 |
| MR22411-06-06 | 10 | -06 | 3/8" | 11/16"-16 | 42 | 64.5 | 7.0 | 9.5 | 22 | 27 | 27 | |
| MR22411-08-08 | 12 | -08 | 1/2" | 13/16"-16 | 42 | 70.9 | 9.3 | 11.0 | 24 | 32 | 32 | |
| MR22411-10-10 | 16 | -10 | 5/8" | 1"-14 | 42 | 77.8 | 11.5 | 13.5 | 30 | 36 | 36 | |
| MR22411-12-12 | 19 | -12 | 3/4" | 1.3/16"-12 | 35 | 83.8 | 14.0 | 14.5 | 36 | 41 | 41 | |
| MR22411-16-16 | 25 | -16 | 1" | 1.7/16"-12 | 35 | 93.4 | 19.8 | 15.0 | 41 | 50 | 50 | |

SAE STANDARD CONNECTIONS

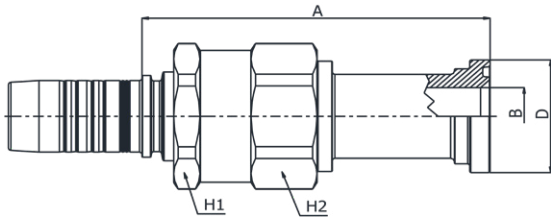
MR12810

NPTF MALE 60° CONE SEAT - SAE J516/J514



| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|---------|------|---------------|------|----|----|----|--|--|
| | DN | Dash | inch | | | T | A | B | H1 | H2 | | |
| MR12810-04-04 | 6 | -04 | 1/4" | 1/4"-18 | 35 | 61.2 | 5.5 | 24 | 24 | | | |
| MR12810-06-06 | 10 | -06 | 3/8" | 3/8"-18 | 28 | 60.7 | 9.3 | 27 | 27 | | | |
| MR12810-08-08 | 12 | -08 | 1/2" | 1/2"-14 | 24.5 | 66.8 | 12.5 | 32 | 32 | | | |
| MR12810-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 21 | 74.2 | 16.0 | 41 | 41 | | | |
| MR12810-16-16 | 25 | -16 | 1" | 1"-11.5 | 17.5 | 88.2 | 19.5 | 50 | 50 | | | |

SAE STANDARD CONNECTIONS



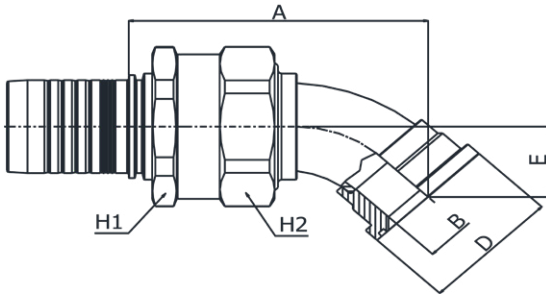
MR23311FK

ISO / SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3
(VITON)

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|-----------------|------|------|--------|--------|------|---------------|------|------|----|----|----|--|
| | DN | Dash | inch | | | inch | A | B | D | H1 | H2 | |
| MR23311-20-20FK | 31 | -20 | 1.1/4" | 1.1/4" | 28 | 136.7 | 26.0 | 51.0 | 60 | 60 | | |
| MR23311-20-24FK | 31 | -20 | 1.1/4" | 1.1/2" | 21 | 134.7 | 32.0 | 60.5 | 60 | 60 | | |
| MR23311-24-24FK | 38 | -24 | 1.1/2" | 1.1/2" | 21 | 147.9 | 32.0 | 60.5 | 70 | 70 | | |
| MR23311-32-32FK | 51 | -32 | 2" | 2" | 21 | 154.4 | 42.0 | 71.6 | 90 | 90 | | |

FITTINGS 326

SAE STANDARD CONNECTIONS

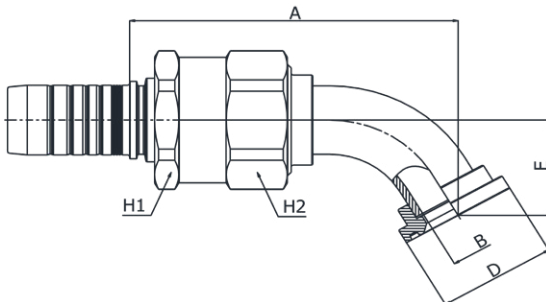


MR23341FK

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

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|-----------------|------|------|--------|--------|------|---------------|------|------|------|-----|-----|----|
| | DN | Dash | inch | | | inch | A | B | D | E | H1 | H2 |
| MR23341-40-40FK | 63 | -40 | 2.1/2" | 2.1/2" | 14 | 174.5 | 52.0 | 84.3 | 48.5 | 100 | 100 | |

SAE STANDARD CONNECTIONS



MR23361FK

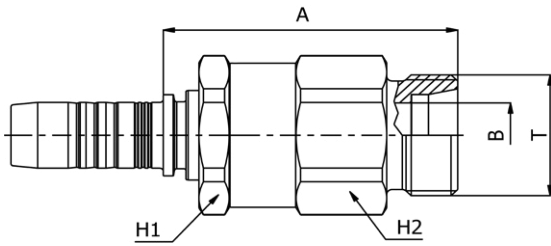
60° ISO / SAE CODE 61 FLANGE
SAE J516 / ISO 12151-3
(VITON)

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|-----------------|------|------|--------|--------|------|---------------|------|------|------|----|----|----|
| | DN | Dash | inch | | | inch | A | B | D | E | H1 | H2 |
| MR23361-24-24FK | 38 | -24 | 1.1/2" | 1.1/2" | 21 | 166.6 | 32.0 | 60.5 | 52.9 | 70 | 70 | |
| MR23361-24-32FK | 38 | -24 | 1.1/2" | 2" | 21 | 170.1 | 42.0 | 71.6 | 59.0 | 70 | 70 | |

DIN STANDARD CONNECTIONS

MR11210

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

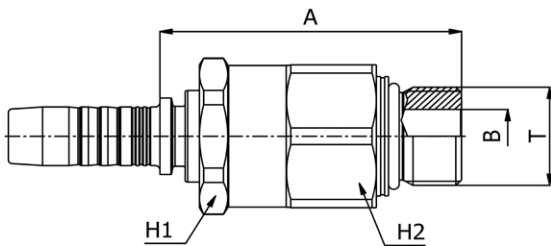


| PART. REF. | SIZE | | | THREAD | PIPE | W.P. | DIMENSIONS mm | | | | | |
|---------------|------|------|------|--------|------|------|---------------|------|-----|----|---|----|
| | DN | Dash | inch | | | | T | mm | MPa | A | B | H1 |
| MR11210-10-30 | 16 | -10 | 5/8" | M30X2 | 20 | 42 | 66.3 | 16.0 | 36 | 36 | | |

DIN STANDARD CONNECTIONS

MR11910

**METRIC
MALE HEAVY DUTY SERIES
ISO 6149-2**

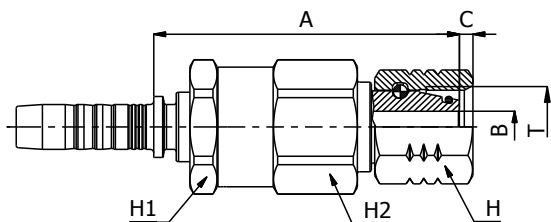


| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | |
|---------------|------|------|------|---------|------|---------------|------|----|----|----|----|
| | DN | Dash | inch | | | T | MPa | A | B | H1 | H2 |
| MR11910-06-18 | 10 | -06 | 3/8" | M18X1.5 | 42 | 60.5 | 9.0 | 27 | 27 | | |
| MR11910-08-22 | 12 | -8 | 1/2" | M22X1.5 | 42 | 61.9 | 12.0 | 32 | 32 | | |

DIN STANDARD CONNECTIONS

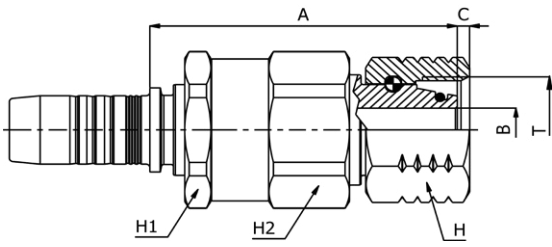
MR21512

**METRIC
O-RING FEMALE 24° CONE LIGHT DUTY
DIN 20066 / ISO 12151-2
(THRUST-WIRE NUT)**



| PART. REF. | SIZE | | | THREAD | PIPE | W.P. | DIMENSIONS mm | | | | | |
|---------------|------|------|------|---------|------|------|---------------|------|-----|----|----|----|
| | DN | Dash | inch | | | | T | mm | MPa | A | B | C |
| MR21512-04-16 | 6 | -04 | 1/4" | M16X1.5 | 10 | 35 | 63.2 | 6.0 | 3.0 | 19 | 24 | 24 |
| MR21512-06-18 | 10 | -06 | 3/8" | M18X1.5 | 12 | 33 | 65.3 | 7.0 | 2.9 | 22 | 27 | 27 |
| MR21512-10-26 | 16 | -10 | 5/8" | M26X1.5 | 18 | 25 | 72.3 | 12.5 | 2.3 | 32 | 36 | 36 |

DIN STANDARD CONNECTIONS



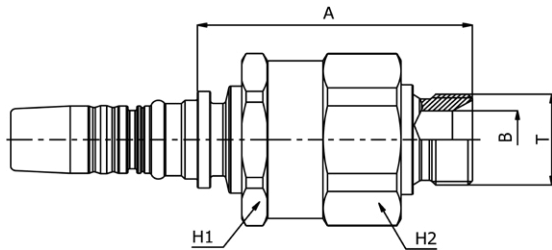
MR21612

**METRIC O-RING FEMALE 24° CONE HEAVY DUTY
DIN 20066 / ISO 12151-2 (THRUST-WIRE NUT)**

| PART. REF. | SIZE | | | THREAD | PIPE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|--------|------|------|---------------|------|-----|----|----|----|---|
| | DN | Dash | inch | | | | T | mm | MPa | A | B | C | H |
| MR21612-12-30 | 19 | -12 | 3/4" | M30X2 | 20 | 35 | 79.8 | 12.5 | 3.2 | 36 | 41 | 41 | |

FITTINGS 328

BS STANDARD CONNECTIONS

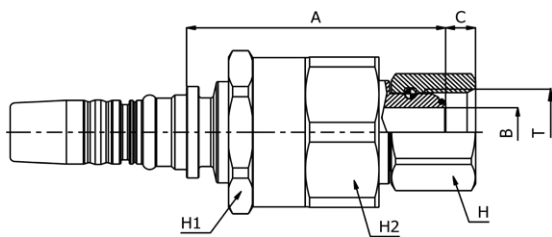


MR30510

**BSP
MALE 60° CONE SEAT
BS5200**

| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|-----------|------|---------------|------|----|----|----|----|--|
| | DN | Dash | inch | | | T | MPa | A | B | H1 | H2 | |
| MR30510-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 35 | 73.9 | 16.7 | 46 | 46 | | | |
| MR30510-16-16 | 25 | -16 | 1" | 1"-11 | 35 | 85.7 | 22.2 | 55 | 55 | | | |
| MR30510-20-20 | 31 | -20 | 1.1/4" | 1.1/4"-11 | 35 | 95.8 | 28.6 | 65 | 65 | | | |
| MR30510-24-24 | 38 | -24 | 1.1/2" | 1.1/2"-11 | 30 | 109.6 | 33.3 | 75 | 75 | | | |

BS STANDARD CONNECTIONS



MR40812

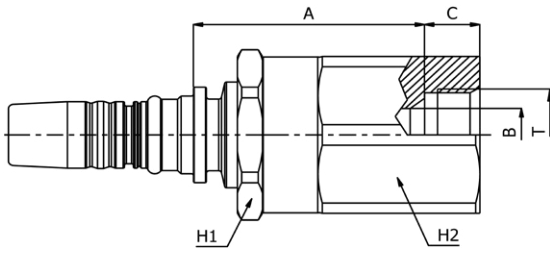
**BSP
O-RING FEMALE 60° CONE
BS5200/ ISO 8434-6**

| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|---------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | T | MPa | A | B | C | H | H1 |
| MR40812-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 35 | 73.7 | 15.0 | 8.5 | 32 | 46 | 46 | |
| MR40812-16-16 | 25 | -16 | 1" | 1"-11 | 35 | 83.7 | 19.8 | 10.6 | 41 | 55 | 55 | |

SAE STANDARD CONNECTIONS

MR42510

JIC
FEMALE 37 °CONE SEAT
SAE J514

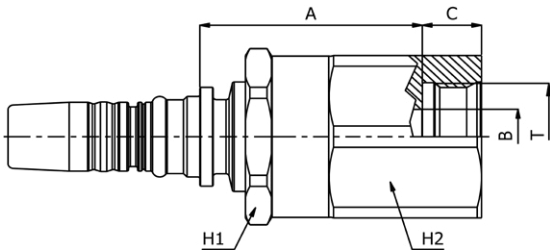


| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|------------|------|---------------|------|------|----|----|----|--|
| | DN | Dash | inch | | | T | A | B | C | H1 | H2 | |
| MR42510-12-12 | 19 | -12 | 3/4" | 1.1/16"-12 | 35 | 62.7 | 15.5 | 15.0 | 46 | 46 | | |
| MR42510-16-16 | 25 | -16 | 1" | 1.5/16"-12 | 28 | 70.0 | 21.5 | 16.5 | 55 | 55 | | |

SAE STANDARD CONNECTIONS

MR42410

ORFS
FEMALE
ISO 8434-3 / SAE J1453

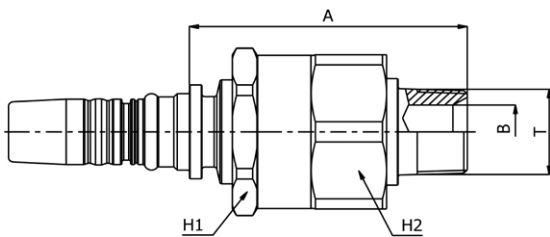


| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|------------|------|---------------|------|------|----|----|----|--|
| | DN | Dash | inch | | | T | A | B | C | H1 | H2 | |
| MR42410-12-12 | 19 | -12 | 3/4" | 1.3/16"-12 | 42 | 58.2 | 15.5 | 15.5 | 46 | 46 | | |
| MR42410-16-16 | 25 | -16 | 1" | 1.7/16"-12 | 42 | 66.0 | 20.5 | 16.0 | 55 | 55 | | |

SAE STANDARD CONNECTIONS

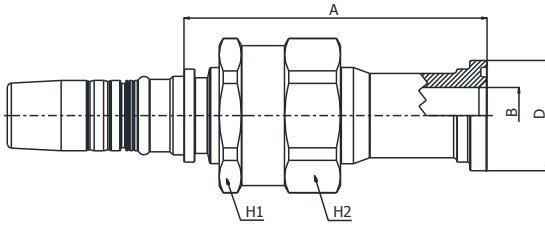
MR32810

NPTF
MALE 60° CONE SEAT
SAE J476A



| PART. REF. | SIZE | | | THREAD | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|------|---------|------|---------------|------|----|----|----|--|--|
| | DN | Dash | inch | | | T | A | B | H1 | H2 | | |
| MR32810-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 21 | 77.1 | 16.0 | 46 | 46 | | | |
| MR32810-16-16 | 25 | -16 | 1" | 1"-11.5 | 17.5 | 90.9 | 19.5 | 55 | 55 | | | |

SAE STANDARD CONNECTIONS

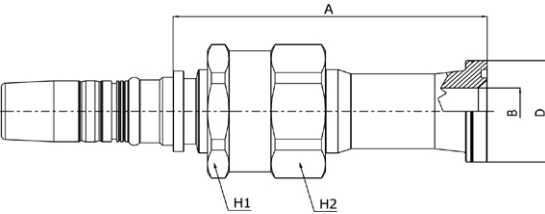


MR43310

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

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|--------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | inch | MPa | A | B | D | H1 | H2 |
| MR43310-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 28 | 140.6 | 26.0 | 51.0 | 65 | 65 | | |

SAE STANDARD CONNECTIONS

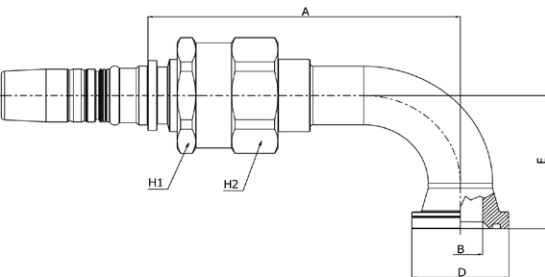


MR43610

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

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|--------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | inch | MPa | A | B | D | H1 | H2 |
| MR43610-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 42 | 149.8 | 25.0 | 54.2 | 65 | 65 | | |

SAE STANDARD CONNECTIONS



MR43690

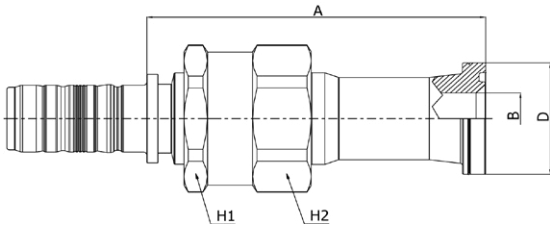
90° ISO / SAE CODE 62 FLANGE
SAE J516 / ISO 12151-3

| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|--------|------|---------------|------|------|------|----|----|----|
| | DN | Dash | inch | | | inch | MPa | A | B | D | E | H1 |
| MR43690-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 42 | 174.6 | 25.0 | 54.2 | 82.0 | 65 | 65 | |

SAE STANDARD CONNECTIONS

MR83611

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

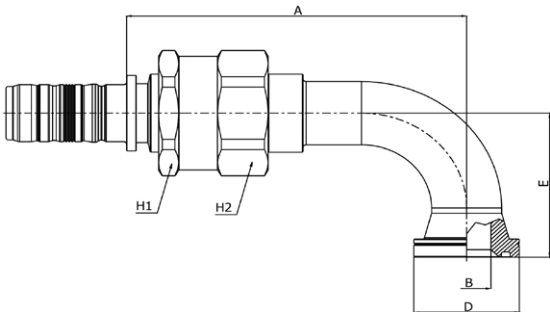


| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|--------|------|---------------|------|------|----|----|----|----|
| | DN | Dash | inch | | | inch | MPa | A | B | D | H1 | H2 |
| MR83611-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 42 | 149.9 | 25.0 | 54.2 | 65 | 65 | | |

SAE STANDARD CONNECTIONS

MR83691

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

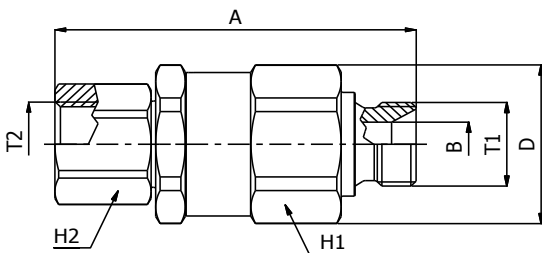


| PART. REF. | SIZE | | | FLANGE | W.P. | DIMENSIONS mm | | | | | | |
|---------------|------|------|--------|--------|------|---------------|------|------|------|----|----|----|
| | DN | Dash | inch | | | inch | MPa | A | B | D | E | H1 |
| MR83691-20-20 | 31 | -20 | 1.1/4" | 1.1/4" | 42 | 174.6 | 25.0 | 54.2 | 82.0 | 65 | 65 | |

BS STANDARD CONNECTIONS

AR520504

SWIVEL JOINT STRAIGHT
MALE BSP - FEMALE BSP

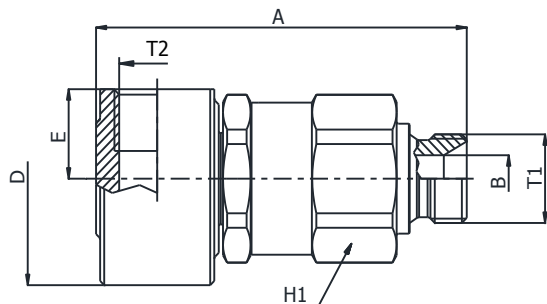


| PART. REF. | SIZE | | | THREAD | | W.P. | DIMENSIONS mm | | | | | |
|----------------|------|------|--------|-----------|-----------|------|---------------|------|------|------|------|----|
| | DN | Dash | inch | T1 | T2 | | MPa | A | B | D | H1 | H2 |
| AR520504-04-04 | 10 | -06 | 3/8" | 1/4"-19 | 1/4"-19 | 42 | 69.9 | 4.7 | 30.0 | 27.0 | 19.0 | |
| AR520504-06-06 | 10 | -06 | 3/8" | 3/8"-19 | 3/8"-19 | 42 | 69.9 | 8.0 | 30.0 | 27.0 | 22.0 | |
| AR520504-08-08 | 16 | -10 | 5/8" | 1/2"-14 | 1/2"-14 | 35 | 82.9 | 11.0 | 39.5 | 36.0 | 27.0 | |
| AR520504-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 3/4"-14 | 35 | 87.6 | 16.7 | 45.0 | 41.0 | 34.0 | |
| AR520504-16-16 | 25 | -16 | 1" | 1"-11 | 1"-11 | 35 | 101.8 | 22.2 | 55.0 | 50.0 | 41.0 | |
| AR520504-20-20 | 31 | -20 | 1.1/4" | 1.1/4"-11 | 1.1/4"-11 | 35 | 112.1 | 28.6 | 66.0 | 60.0 | 55.0 | |
| AR520504-24-24 | 38 | -24 | 1.1/2" | 1.1/2"-11 | 1.1/2"-11 | 30 | 128.3 | 33.3 | 77.0 | 70.0 | 65.0 | |

BS STANDARD CONNECTIONS

AR580504

SWIVEL JOINT 90°
MALE BSP - FEMALE BSP



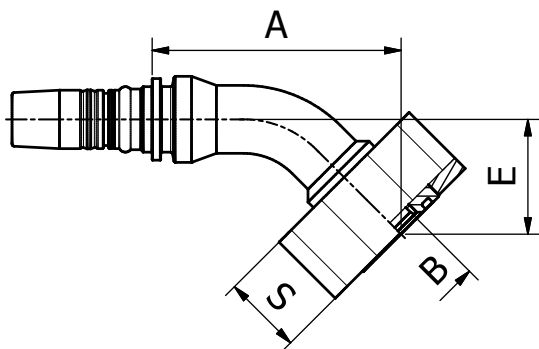
| PART. REF. | SIZE | | | THREAD | | W.P. | DIMENSIONS mm | | | | | | |
|----------------|------|------|------|---------|---------|------|---------------|------|------|------|------|--|--|
| | DN | Dash | inch | T1 | T2 | | A | B | D | E | H1 | | |
| AR580504-04-04 | 10 | -06 | 3/8" | 1/4"-19 | 1/4"-19 | 42 | 70.4 | 4.7 | 36.0 | 16.0 | 27.0 | | |
| AR580504-06-06 | 10 | -06 | 3/8" | 3/8"-19 | 3/8"-19 | 42 | 75.4 | 8.0 | 39.0 | 16.0 | 27.0 | | |
| AR580504-08-08 | 16 | -10 | 5/8" | 1/2"-14 | 1/2"-14 | 35 | 90.9 | 11.0 | 50.0 | 21.0 | 36.0 | | |
| AR580504-12-12 | 19 | -12 | 3/4" | 3/4"-14 | 3/4"-14 | 35 | 100.1 | 16.7 | 60.0 | 24.0 | 41.0 | | |
| AR580504-16-16 | 25 | -16 | 1" | 1"-11 | 1"-11 | 35 | 117.3 | 22.2 | 70.0 | 28.0 | 50.0 | | |

FITTINGS 332

SAE STANDARD CONNECTIONS

M4364A

45° ADJUSTABLE FLANGE

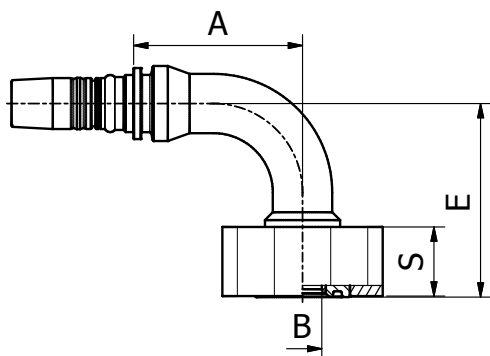


| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|------|------|--|--|--|
| | DN | Dash | inch | inch | A | B | E | S | | | |
| M4364A-12-12 | 19 | - 12 | 3/4" | 3/4" | 90.5 | 14.5 | 37.5 | 27.4 | | | |
| M4364A-16-16 | 25 | - 16 | 1" | 1" | 109.5 | 19.5 | 50.5 | 35 | | | |
| M4364A-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 136.5 | 25 | 56.5 | 35 | | | |

SAE STANDARD CONNECTIONS

M4369A

90° ADJUSTABLE FLANGE



| PART. REF. | HOSE BORE | | | FLANGE | DIMENSIONS mm | | | | | | |
|--------------|-----------|------|--------|--------|---------------|------|-------|------|--|--|--|
| | DN | Dash | inch | inch | A | B | E | S | | | |
| M4369A-12-12 | 19 | - 12 | 3/4" | 3/4" | 72.5 | 14.5 | 73 | 27.4 | | | |
| M4369A-16-16 | 25 | - 16 | 1" | 1" | 85.5 | 19.5 | 98 | 35 | | | |
| M4369A-20-20 | 31 | - 20 | 1.1/4" | 1.1/4" | 112 | 25 | 111.5 | 35 | | | |



QUICK 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 our E-Coat 500 treatment which provides an environmentally friendly surface coating (chrome free) far exceeding ISO 4520 requirements (salt spray resistance: 240 hours for white corrosion and 500 for red corrosion). Some Q.Safe products also have the option to upgrade to our new E-Coat 1000 plating which offers 1,000 hours to red corrosion (see page 96 for details).

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

OIL & GAS

- MQS-SO
- MQS-BOP

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.

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 FLAT FACE MULTICONNECTORS

The Q.Safe quick coupling range is widely renowned for representing the Gold Standard in quick coupling quality and performance. The introduction of the Q.Safe Flat Face Multiconnector range combines this superior performance with the added efficiency and safety related benefits of a multiconnector block system.

- Reduces connection time when multiple connectors are used
- No risk of incorrect connection
- No misalignment between mobile and static blocks
- Compact design for minimal added weight
- Flat face couplings allow high pressures (350 bar) and high flow rates
- Allows hoses to be arranged closer together whilst still allowing easy access
- Industry leading performance with reduced pressure drop
- Almost zero (between 0.007cc and 0.009cc) oil spillage on connection / disconnection
- Connection under residual pressure
- Easy to clean

Q.SAFE QUICK COUPLINGS

| QUICK COUPLINGS SERIES | DESCRIPTION | FEMALE | MALE | SHUT-OFF SYSTEM | SPECIFICATIONS | CONNECTION | SIZE | | | | | | | | | | PAGE No. | | |
|------------------------|--|--------|--------|-----------------|--|-----------------|------|------|------|------|------|------|----|--------|--------|----|----------|--|-----|
| | | | | | | | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | | | |
| MQS-A | ISO A | Q008 | Q002 | POPPET VALVE | ISO 7241 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 341 |
| | | | Q004 | SHIELDED POPPET | | | | | | | | | | | | | | | |
| | | Q009 | Q003 | BALL VALVE | | | | | | | | | | | | | | | |
| MQS-AP | ISO A CONNECTABLE UNDER PRESSURE | Q010 | Q006 | POPPET VALVE | ISO 7241 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 352 |
| MQS-AM | ISO A CONNECTABLE WITH MALE UNDER PRESSURE | Q011 | - | POPPET VALVE | ISO 7241 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 354 |
| MQS-AB | ISO A CONNECTABLE WITH BOTH PARTS UNDER PRESSURE | Q012 | - | POPPET VALVE | ISO 7241 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 356 |
| MQS-B | ISO B | Q024 | Q021 | POPPET VALVE | ISO 7241 SERIES B | LOCKING BALLS | | | | | | | | | | | | | 358 |
| MQS-BOP | ISO B FOR DRILLING BOP UNIT | Q026 F | Q021 F | POPPET VALVE | ISO 7241 SERIES B + FLAME TEST RES. TO API 16D | LOCKING BALLS | | | | | | | | | | | | | 361 |
| MQS-N | STANDARD | Q032 | Q029 | POPPET VALVE | - | LOCKING BALLS | | | | | | | | | | | | | 363 |
| | | Q033 | Q030 | BALL VALVE | | | | | | | | | | | | | | | |
| MQS-NL | FREE-FLOW | Q038 | Q037 | WITHOUT | - | LOCKING BALLS | | | | | | | | | | | | | 369 |
| MQS-NF | STANDARD PUSH-PULL | Q036 | - | POPPET VALVE | - | LOCKING BALLS | | | | | | | | | | | | | 371 |
| MQS-AF | PUSH-PULL | Q013 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 373 |
| MQS-AFP | PUSH-PULL CONNECTABLE UNDER PRESSURE | Q015 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 380 |
| MQS-AFM | PUSH-PULL, CONNECTABLE WITH MALE UNDER PRESSURE, FLEXIBLE MOUNTING | Q016 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 382 |
| MQS-AFB | PUSH-PULL CONNECTABLE WITH MALE UNDER PRESSURE, FLEXIBLE MOUNTING | Q017 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 384 |
| MQS-ARM | PUSH-PULL, CONNECTABLE WITH MALE UNDER PRESSURE, RIGID MOUNTING | Q018 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 386 |
| MQS-ARB | PUSH-PULL CONNECTABLE WITH BOTH PARTS UNDER PRESSURE, RIGID MOUNTING | Q019 | - | POPPET VALVE | ISO 7421 SERIES A | LOCKING BALLS | | | | | | | | | | | | | 390 |
| MQS-VB | BRAKING CIRCUIT VALVE | Q048 | Q047 | FLAT VALVE | ISO 5676 | LOCKING BALLS | | | | | | | | | | | | | 395 |
| MQS-VS | AGRICULTURAL VALVE | Q050 | Q049 | FLAT VALVE | - | SCREW-ON SLEEVE | | | | | | | | | | | | | 401 |

Q.SAFE 338

Q.SAFE MULTICONNECTORS

| MULTI-COUPLING SERIES | CONFIGURATION | NO. OF LINES | SIZE | | | PAGE No. |
|-----------------------|---------------|--------------|------|------|------|----------|
| | | | DN | inch | Dash | |
| Q401 | | 2 | 10 | 3/8" | -06 | 472 |
| Q402 | | 2 | 12.5 | 1/2" | -08 | 473 |
| Q403 | | 4 | 10 | 3/8" | -06 | 474 |
| Q404 | | 4 | 12.5 | 1/2" | -08 | 475 |
| Q405 | | 2 | 10 | 3/8" | -06 | 476 |
| Q406 | | 2 | 12.5 | 1/2" | -08 | 477 |
| | | 2 | 19 | 3/4" | -12 | |

| MULTI-COUPLING SERIES | CONFIGURATION | NO. OF LINES | SIZE | | | PAGE No. |
|-----------------------|---------------|--------------|------|------|------|----------|
| | | | DN | inch | Dash | |
| Q407 | | 6 | 10 | 3/8" | -06 | 478 |
| Q408 | | 6 | 12.5 | 1/2" | -08 | 479 |
| Q409 | | 8 | 12.5 | 1/2" | -08 | 480 |
| Q410 | | 4 | 12.5 | 1/2" | -08 | 481 |
| Q411 | | 4 | 10 | 3/8" | -06 | 482 |

Q.SAFE 340

Q.SAFE ACCESSORIES

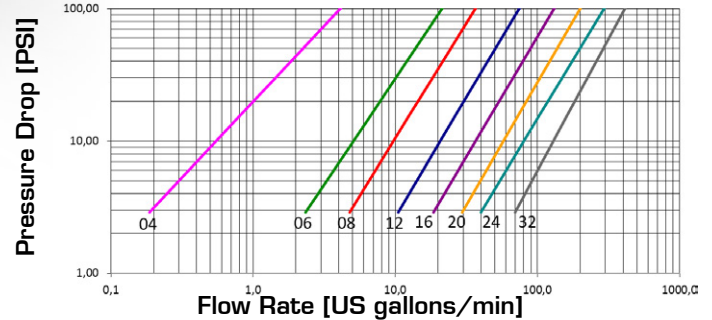
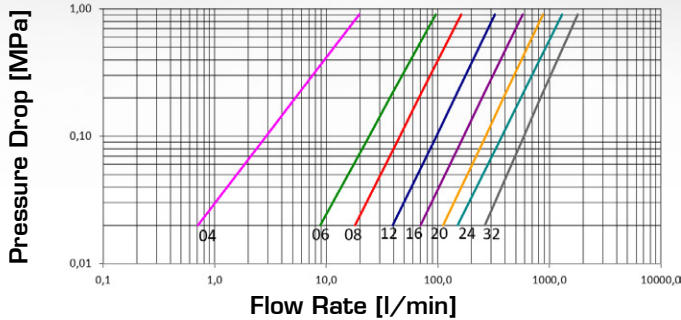
| ACCESSORY TYPE | SIZE | | | | | | | | | | PAGE No. |
|----------------|------|------|------|------|------|------|----|--------|--------|----|----------|
| | 1/8" | 1/4" | 3/8" | 1/2" | 5/8" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | |
| PARKING | | | | | | | | | | | 485 |
| PLUGS & CAPS | | | | | | | | | | | 487 |
| SPARE PARTS | | | | | | | | | | | 496 |



ISO A POPPET VALVES

Pressure Drop

Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|------|-----|------|-----------|--------|-----|------|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|--|
| DN | 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 | 37 | 9.2 | 80 | 18.0 | 1.4 | 0.085 | 140 | 20300 | 150 | 21750 | 150 | 21750 | Not allowed | |
| 12.5 | ½ | 08 | 30 | 4350 | 68 | 19.8 | 80 | 18.0 | 2 | 0.122 | 125 | 18125 | 150 | 21750 | 150 | 21750 | Not allowed | |
| 20 | ¾ | 12 | 25 | 3625 | 142 | 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 | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

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. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

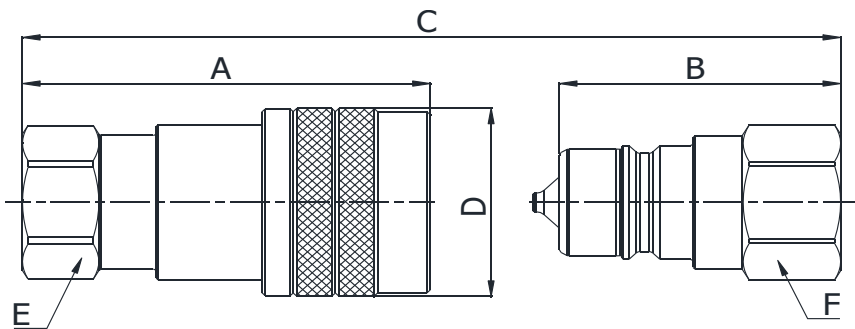
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

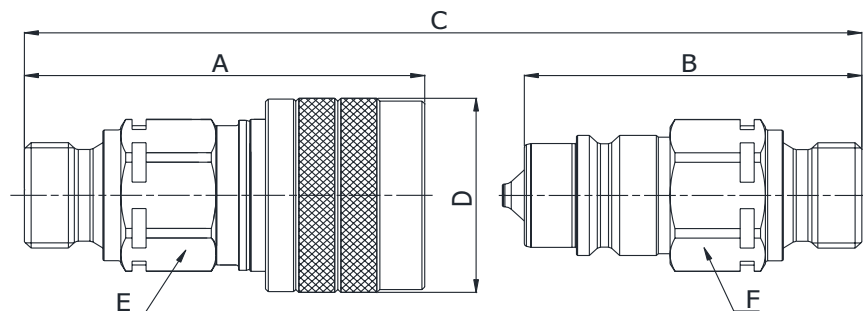
ISO 18869



Q00811021A
Q00211021A

BSPT TERMINATION ENDS
TO ISO 7-1
TAPERED

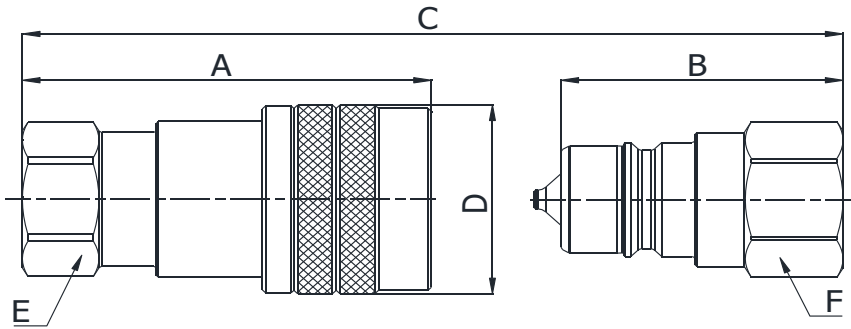
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 6.3 | 1/4" | -04 | Q00811021A-04-04 | 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 |
| 25 | 1" | -16 | Q00811021A-16-16 | Q00211021A-16-16 | 1" | 97.9 | 64.5 | A+B-32,7 | ø52,3 | 41 | 41 |



Q00811050A
Q00211050A

BSP TERMINATION ENDS
TO ISO 8434-6

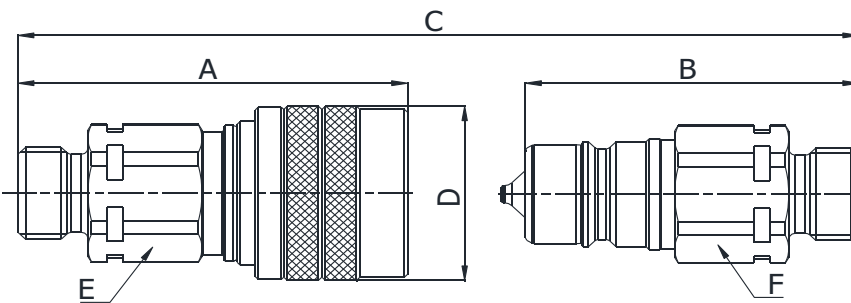
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q00811050A-06-06 | 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 |
| 12.5 | 1/2" | -08 | Q00811050A-08-08 | Q00211050A-08-08 | 1/2" | 71.4 | 60.2 | A+B-21,8 | ø38 | 27 | 27 |



Q00811041A
Q00211041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|------|----|----|
| DN | Inch | Dash | 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 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | Q00811041A-08-08 | Q00211041A-08-08 | 1/2" | 67 | 45 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811041A-08-12 | Q00211041A-08-12 | 3/4" | 69 | 53 | A+B-21,8 | ø38 | 34 | 34 |
| 20 | 3/4" | -12 | Q00811041A-12-08 | Q00211041A-12-08 | 1/2" | 85.7 | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
| 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 |
| 25 | 1" | -16 | 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 |

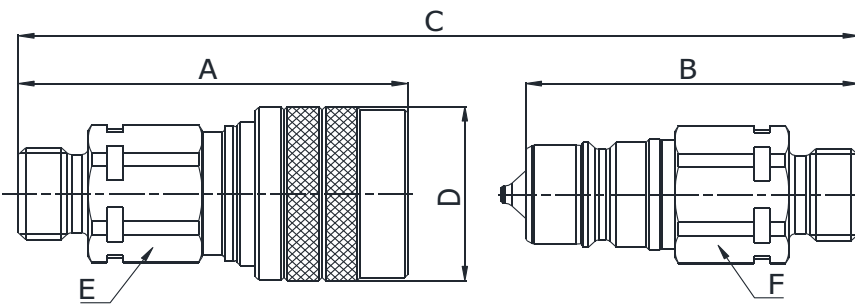


Q00811110A
Q00211110A

METRIC TERMINATION ENDS
TO ISO 8434-1
L SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |
| 10 | 3/8" | -06 | Q00811110A-06-14 | Q00211110A-06-14 | M14x1,5 | 61 | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
| 10 | 3/8" | -06 | Q00811110A-06-16 | Q00211110A-06-16 | M16x1,5 | 61 | 52.5 | A+B-17,5 | ø30 | 22 | 22 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | Q00811110A-08-16 | Q00211110A-08-16 | M16x1,5 | 66.2 | 55 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811110A-08-18 | Q00211110A-08-18 | M18x1,5 | 65.2 | 54 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811110A-08-22 | Q00211110A-08-22 | M22x1,5 | 66.2 | 55 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811110A-08-26 | Q00211110A-08-26 | M26x1,5 | 66.2 | 55 | A+B-21,8 | ø38 | 27 | 27 |
| 20 | 3/4" | -12 | Q00811110A-12-18 | Q00211110A-12-18 | M18x1,5 | 85.4 | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
| 20 | 3/4" | -12 | Q00811110A-12-22 | Q00211110A-12-22 | M22x1,5 | 85.7 | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
| 20 | 3/4" | -12 | Q00811110A-12-26 | Q00211110A-12-26 | M26x1,5 | 85.7 | 66.3 | A+B-26,7 | ø45 | 34 | 34 |
| 20 | 3/4" | -12 | 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 |
| 25 | 1" | -16 | Q00811110A-16-30 | Q00211110A-16-30 | M30x2 | 96.5 | 81.5 | A+B-32,7 | ø52 | 41 | 41 |
| 25 | 1" | -16 | Q00811110A-16-36 | Q00211110A-16-36 | M36x2 | 97 | 81.5 | A+B-32,7 | ø52 | 41 | 41 |

343 **Q.SAFE**

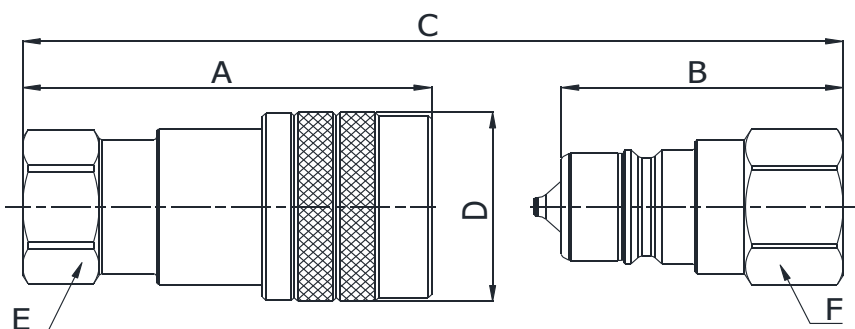


Q00811120A
Q00211120A

METRIC TERMINATION ENDS
TO ISO 8434-1
S SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | Q00811120A-08-20 | Q00211120A-08-20 | M20x1,5 | 66.2 | 55 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | 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 |
| 25 | 1" | -16 | Q00811120A-16-36 | Q00211120A-16-36 | M36x2 | 100.5 | 85.5 | A+B-32,7 | ø52 | 41 | 41 |
| 25 | 1" | -16 | Q00811120A-16-42 | Q00211120A-16-42 | M40x2 | 102.5 | 87.5 | A+B-32,7 | ø52 | 46 | 46 |

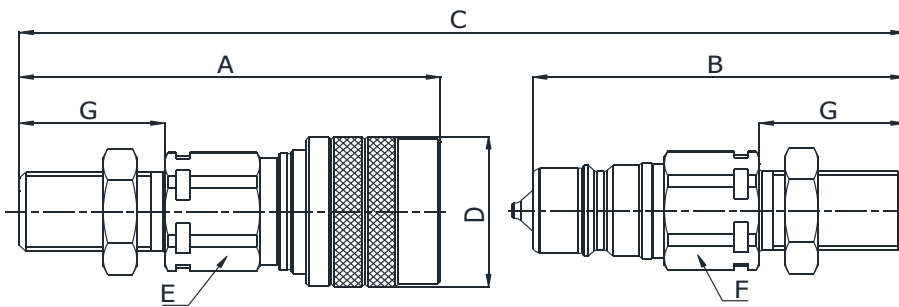
Q.SAFE 344



Q00811191A
Q00211191A

METRIC TERMINATION ENDS
TO ISO 6149-1

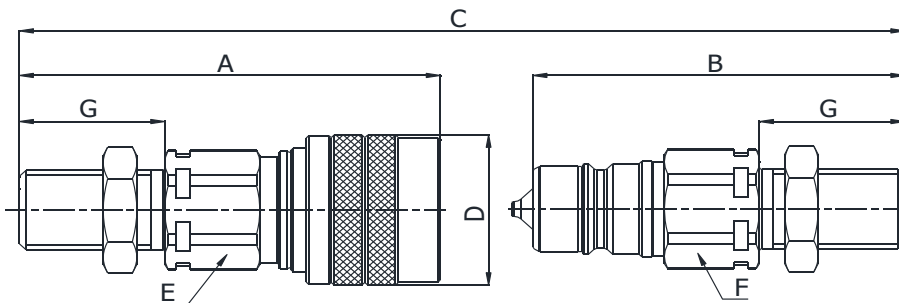
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q00811191A-08-16 | Q00211191A-08-16 | M16x1,5 | 66.7 | 55.5 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811191A-08-18 | Q00211191A-08-18 | M18x1,5 | 68.2 | 57 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811191A-08-22 | Q00211191A-08-22 | M22x1,5 | 67 | 48 | A+B-21,8 | ø38 | 27 | 27 |



Q00811770B
Q00211770B

METRIC TERMINATION ENDS
TO ISO 8434-1
BULKHEAD L SERIES

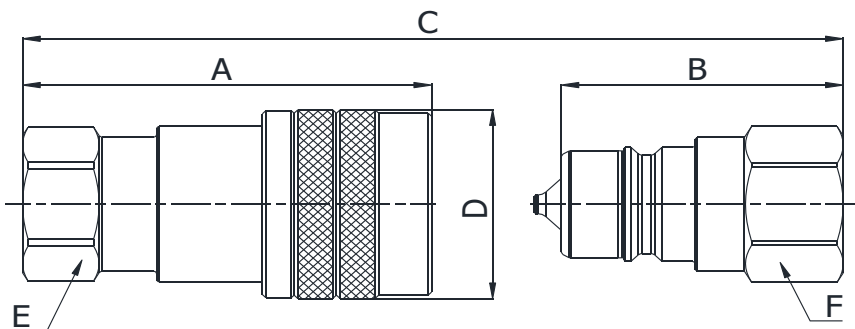
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 10 | 3/8" | -06 | Q00811770B-06-12 | Q00211770B-06-12 | M12x1,5 | 76 | 67.5 | A+B-17,5 | ø30 | 22 | 22 | 25 |
| 10 | 3/8" | -06 | Q00811770B-06-14 | Q00211770B-06-14 | M14x1,5 | 75 | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 25 |
| 10 | 3/8" | -06 | Q00811770B-06-16 | Q00211770B-06-16 | M16x1,5 | 75 | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 26 |
| 10 | 3/8" | -06 | Q00811770B-06-18 | Q00211770B-06-18 | M18x1,5 | 75 | 66.5 | A+B-17,5 | ø30 | 22 | 22 | 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 |
| 12.5 | 1/2" | -08 | Q00811770B-08-16 | Q00211770B-08-16 | M16x1,5 | 80.2 | 69 | A+B-21,8 | ø38 | 27 | 27 | 26 |
| 12.5 | 1/2" | -08 | Q00811770B-08-18 | Q00211770B-08-18 | M18x1,5 | 80.2 | 69 | A+B-21,8 | ø38 | 27 | 27 | 26 |
| 12.5 | 1/2" | -08 | Q00811770B-08-22 | Q00211770B-08-22 | M22x1,5 | 81.2 | 70 | A+B-21,8 | ø38 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811770B-08-26 | Q00211770B-08-26 | M26x1,5 | 82.2 | 71 | A+B-21,8 | ø38 | 30 | 30 | 28 |
| 20 | 3/4" | -12 | Q00811770B-12-22 | Q00211770B-12-22 | M22x1,5 | 100.7 | 81.3 | A+B-26,7 | ø45 | 34 | 34 | 27 |
| 20 | 3/4" | -12 | Q00811770B-12-30 | Q00211770B-12-30 | M30x2 | 105.7 | 86.3 | A+B-26,7 | ø45 | 34 | 34 | 32 |
| 25 | 1" | -16 | Q00811770B-16-26 | Q00211770B-16-26 | M26x1,5 | 110.5 | 92.3 | A+B-32,7 | ø52 | 41 | 41 | 28 |
| 25 | 1" | -16 | Q00811770B-16-30 | Q00211770B-16-30 | M30x2 | 114.5 | 96.3 | A+B-32,7 | ø52 | 41 | 41 | 32 |
| 25 | 1" | -16 | Q00811770B-16-36 | Q00211770B-16-36 | M36x2 | 114.5 | 96.3 | A+B-32,7 | ø52 | 41 | 41 | 32 |



Q00811870B
Q00211870B

METRIC TERMINATION ENDS
TO ISO 8434-1
BULKHEAD S SERIES

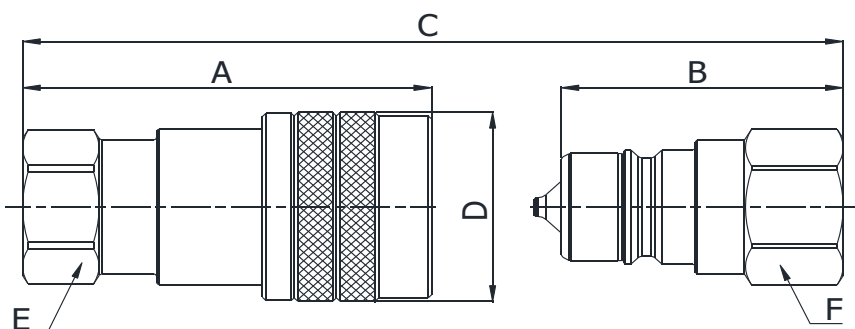
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 10 | 3/8" | -06 | Q00811870B-06-16 | Q00211870B-06-16 | M16x1,5 | 76 | 67.5 | A+B-17,5 | ø30 | 22 | 22 | 27 |
| 10 | 3/8" | -06 | Q00811870B-06-18 | Q00211870B-06-18 | M18x1,5 | 76 | 67.5 | A+B-17,5 | ø30 | 22 | 22 | 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 |
| 12.5 | 1/2" | -08 | Q00811870B-08-20 | Q00211870B-08-20 | M20x1,5 | 81.2 | 70 | A+B-21,8 | ø38 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811870B-08-24 | Q00211870B-08-24 | M24x1,5 | 83.2 | 72 | A+B-21,8 | ø38 | 27 | 27 | 29 |
| 25 | 1" | -16 | Q00811870B-16-30 | Q00211870B-16-30 | M30x2 | 116.5 | 101.5 | A+B-32,7 | ø52 | 41 | 41 | 34 |
| 25 | 1" | -16 | Q00811870B-16-36 | Q00211870B-16-36 | M36x2 | 118.5 | 103.5 | A+B-32,7 | ø52 | 41 | 41 | 36 |
| 25 | 1" | -16 | Q00811870B-16-42 | Q00211870B-16-42 | M40x2 | 120.5 | 105.5 | A+B-32,7 | ø52 | 41 | 41 | 40 |



Q00811141A
Q00211141A

METRIC TERMINATION ENDS
TO ISO 3852-1 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN | Inch | Dash | 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 |
| 12.5 | 1/2" | -08 | Q00811141A-08-20 | Q00211141A-08-20 | M20x1,5 | 67 | 45 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q00811141A-08-22 | Q00211141A-08-22 | M22x1,5 | 67 | 48 | A+B-21,8 | ø38 | 27 | 27 |



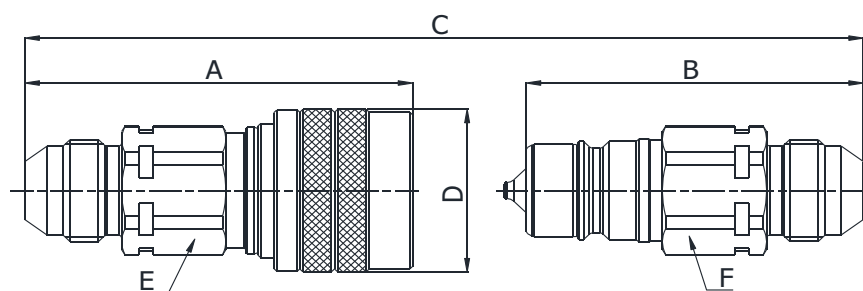
Q00811341A
Q00211341A

NPTF TERMINATION ENDS
TO ANSI B 1.20.3

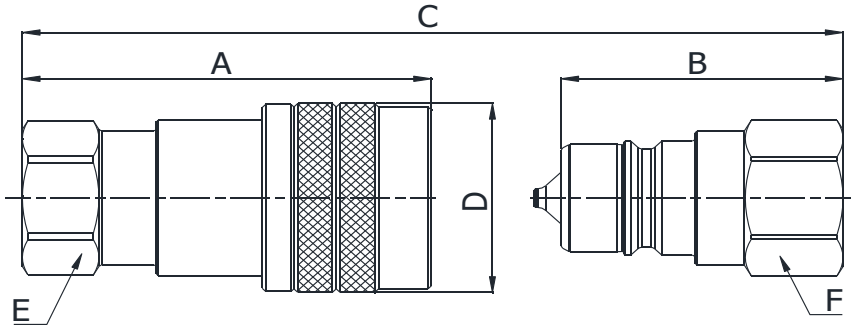
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 6.3 | 1/4" | -04 | Q00811341A-04-04 | 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 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | 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 |

Q00811250A
Q00211250A

SAE TERMINATION ENDS
TO ISO 8434-2



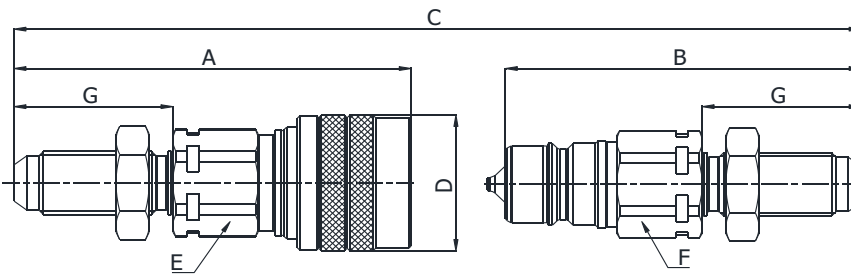
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q00811250A-06-08 | Q00211250A-06-08 | 3/4"-16 UNF | 67 | 58.2 | A+B-18,1 | ø30 | 22 | 22 |



Q00811301A
Q00211301A

SAE TERMINATION ENDS
TO SAE J1926-1

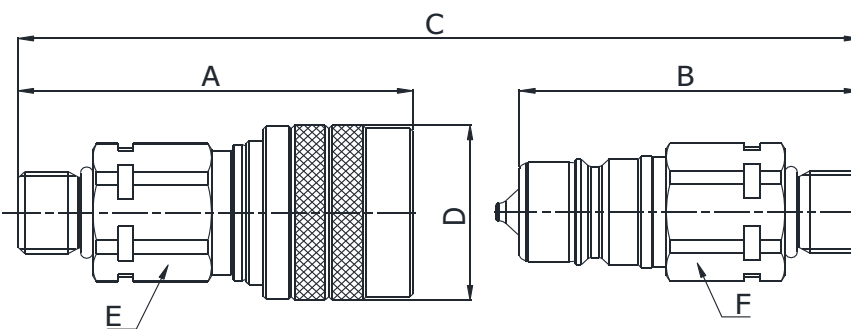
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 6.3 | 1/4" | -04 | Q00811301A-04-06 | 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 |
| 12.5 | 1/2" | -08 | Q00811301A-08-10 | Q00211301A-08-10 | 7/8"-14 UNF | 69 | 50 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | 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 | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 10 | 3/8" | -06 | Q00811230A-06-06 | Q00211230A-06-06 | 9/16"-18 UNF | 83.8 | 75 | A+B-18 | ø30 | 22 | 22 | 22 |
| 10 | 3/8" | -06 | Q00811230A-06-10 | Q00211230A-06-10 | 7/8"-14 UNF | 91.3 | 79.6 | A+B-17,5 | ø30 | 27 | 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 | 27 | 36.6 |
| 12.5 | 1/2" | -08 | Q00811230A-08-10 | Q00211230A-08-10 | 7/8"-14 UNF | 95.3 | 84.1 | A+B-21,8 | ø38 | 27 | 27 | 40.1 |



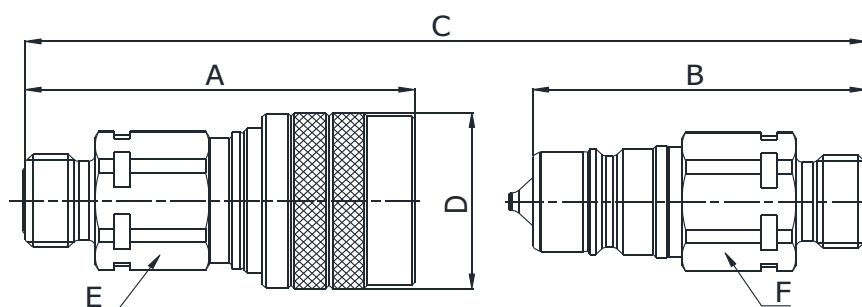
Q00811320A
Q00211320A

ORB TERMINATION ENDS
TO SAE J1926-2
S SERIES

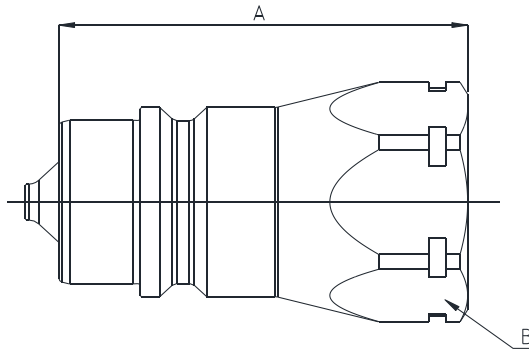
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q00811320A-06-06 | 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 |

Q00811240A
Q00211240A

ORFS TERMINATION ENDS
 TO ISO 8434-3



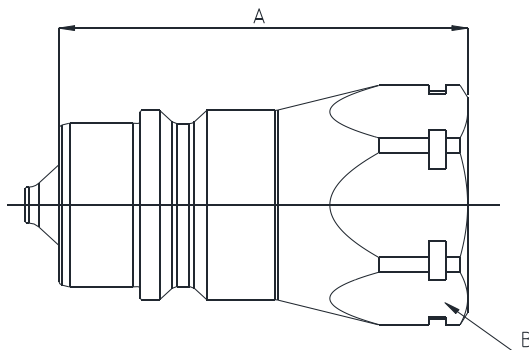
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q00811240A-06-04 | Q00211240A-06-04 | 9/16"-18 UNF | 60.8 | 52.3 | A+B-17,5 | ø30 | 22 | 22 |
| 10 | 3/8" | -06 | 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 |



Q00411041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

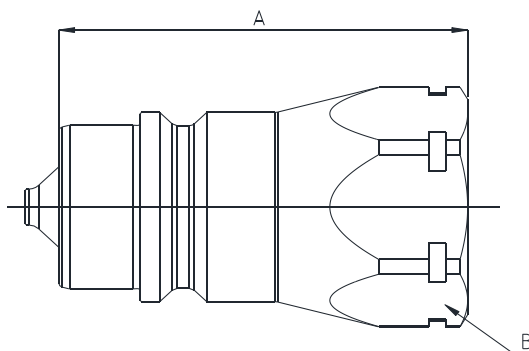
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|---|--|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | | |
| 12.5 | 1/2" | 08 | Q00411041A-08-08 | 1/2" | 47 | 27 | | | | |



Q00411341A

NPTF TERMINATION ENDS
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-----------|---------------|----|---|--|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | | |
| 12.5 | 1/2" | 08 | Q00411341A-08-08 | 1/2" NPTF | 47 | 27 | | | | |



Q00411301A

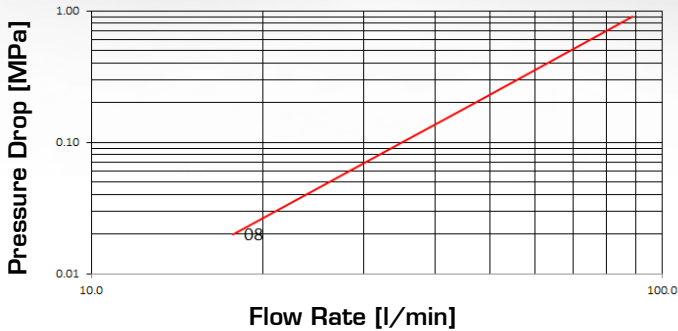
SAE TERMINATION ENDS
TO SAE J1926-1

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|----------|---------------|----|---|--|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | | |
| 12.5 | 1/2" | 08 | Q00411301A-08-08 | 3/4" UNF | 47 | 27 | | | | |

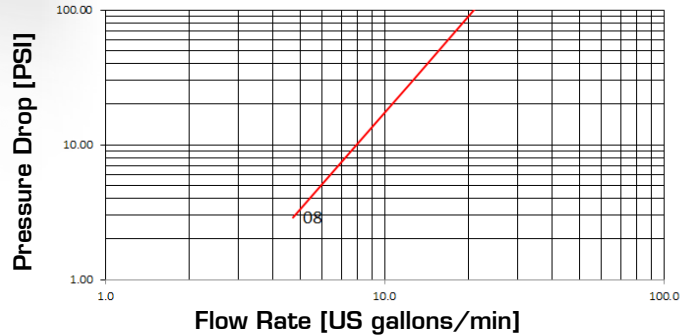
ISO A BALL VALVES



Pressure Drop



Pressure Drop



Q.SAFE 350

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

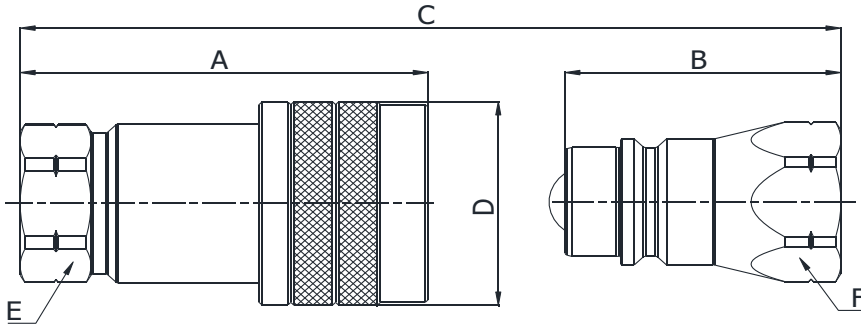
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

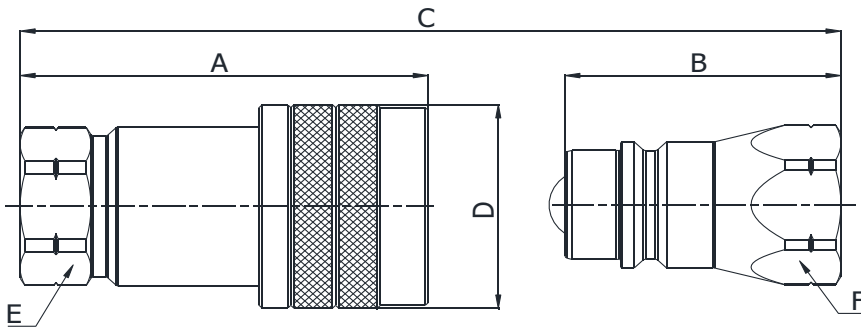
ISO 18869



Q00911041A
Q00311041A

BSP TERMINATION ENDS
TO DIN 3852

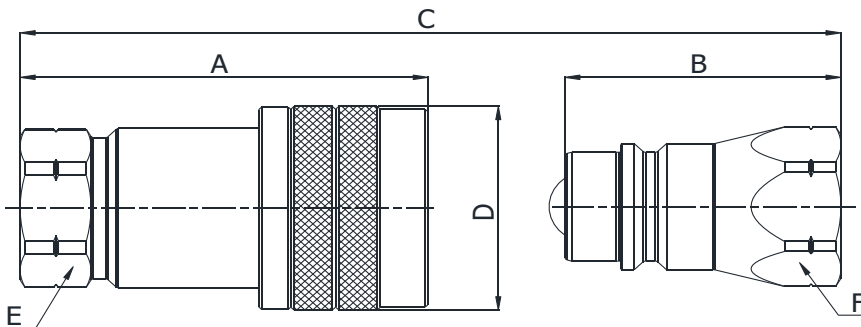
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q00911041A-08-08 | Q00310041A-08-08 | 1/2" | 68.2 | 46.2 | A+B-21,8 | ø38 | 27 | 27 |



Q00911341A
Q00310341A

NFTS TERMINATION ENDS
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |



Q00911301A
Q00310301A

SAE TERMINATION ENDS
TO SAE J1926-1

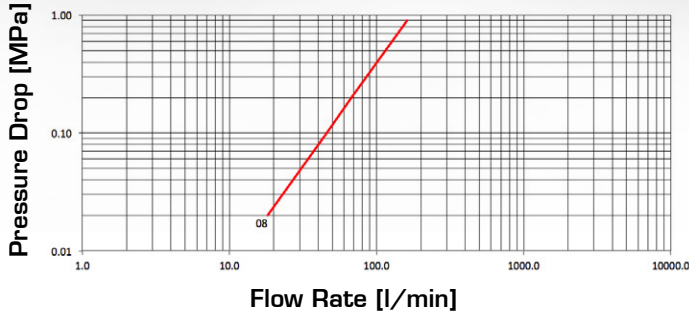
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-------------|---------------|----|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q00911301A-08-08 | Q00310301A-08-08 | 3/4"-16 UNF | 67 | 45 | A+B-21,8 | ø38 | 27 | 27 |

351 Q.SAFE

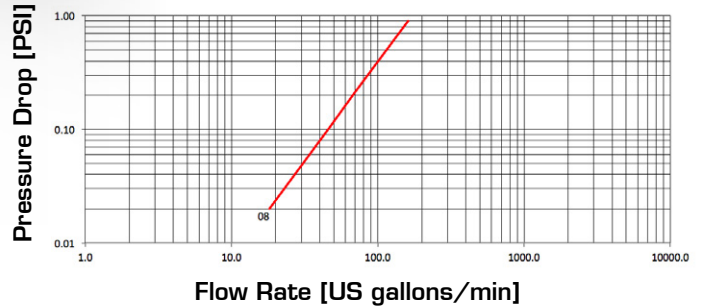


ISO A CONNECTABLE UNDER PRESSURE

Pressure Drop



Pressure Drop



Q.SAFE 352

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|------|----------------------------|------|--|--------|-------------------|-----|---------------------------------------|---------------------|------------------------|-------|--------|-------|-------|-------|---|--|
| DN | 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 | | | | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

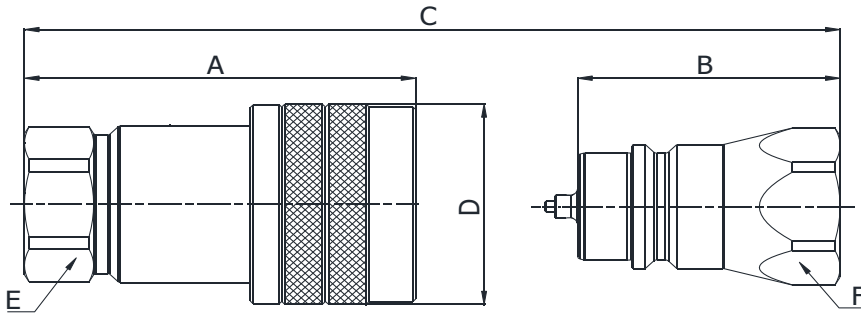
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

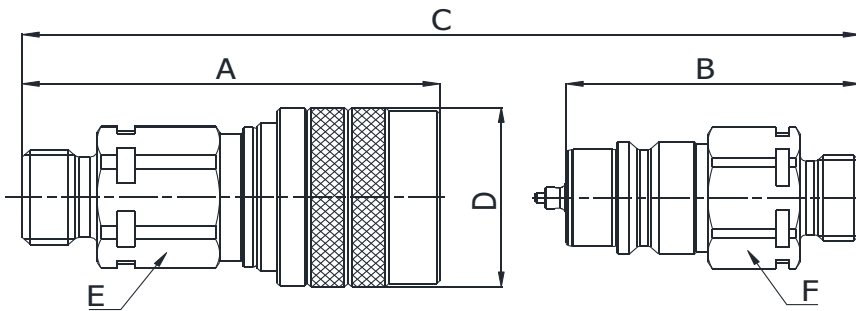
ISO 18869



Q01011041A
Q00611041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

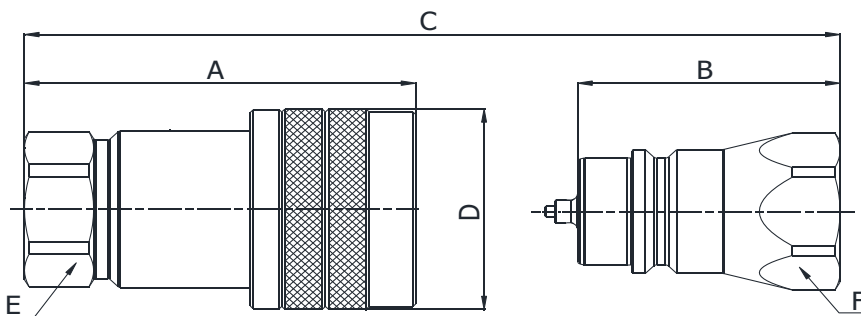
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|----|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q01011041A-08-08 | Q00611041A-08-08 | 1/2" | 67 | 45 | A+B-21,8 | ø38 | 27 | 27 |



Q01011110A
Q00611110A

METRIC TERMINATION END
TO ISO 8434-1
L SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------|---------------|----|----------|-----|----|----|
| DN | Inch | Dash | 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 |



Q01011341A
Q00611341A

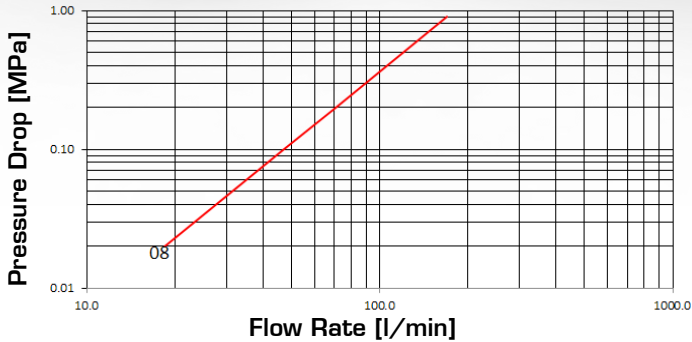
NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|----|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q01011341A-08-08 | Q00611341A-08-08 | 1/2" NPTF | 67 | 45 | A+B-21,8 | ø38 | 27 | 27 |

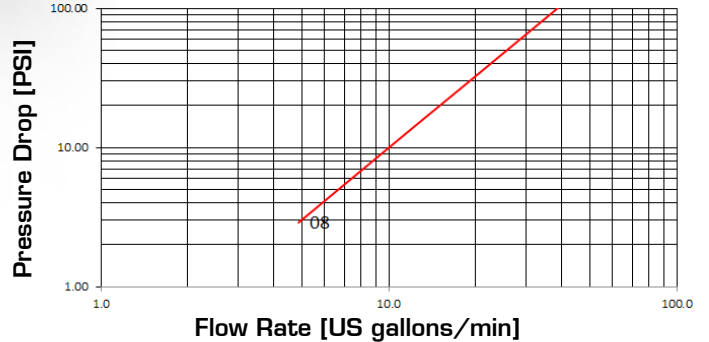
ISO A MALE CONNECTABLE UNDER PRESSURE



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-----|--------|-------|-------|-------|---|
| DN | 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 | 71 | 18.8 | 80 | 178 | 2 | 0.122 | - | - | 125 | 18125 | 125 | 18125 | Connection only, with male under pressure |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

Female couplings in steel, with some hardened areas, in correspondence to the most stressed points. Carbonitrided valve, and sleeve, springs in C98 steel, seals in NBR (other materials on request) and back-up ring in PTFE. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

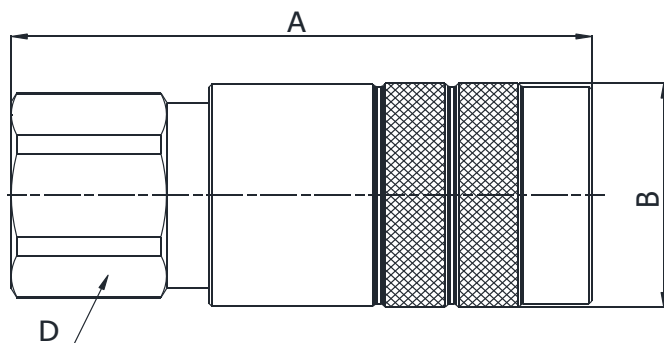
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

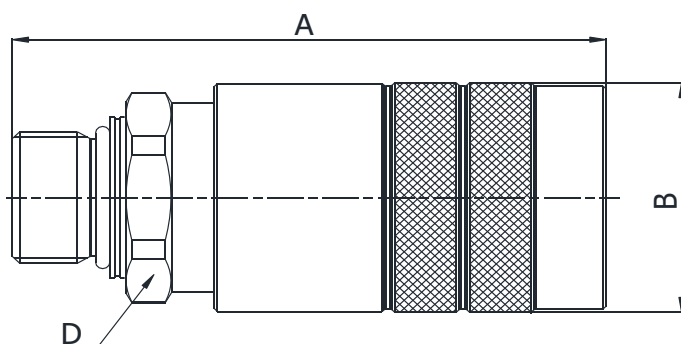
ISO 18869



Q01111041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-------|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01111041A-08-08 | 1/2" | 91.7 | ø38,3 | 32 | | | |



Q01111190A

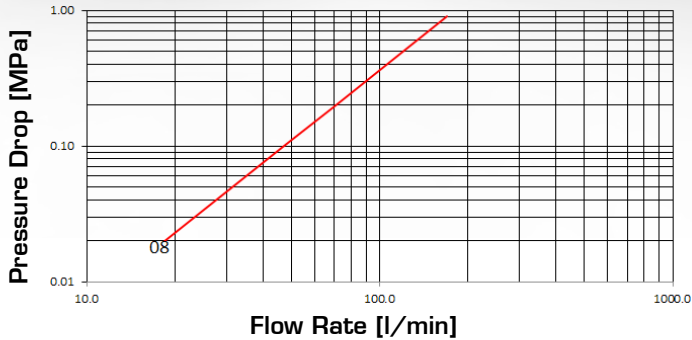
METRIC TERMINATION ENDS
TO ISO 6149-1

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-------|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01111190A-08-22 | M22x1,5 | 91.2 | ø38,3 | 32 | | | |

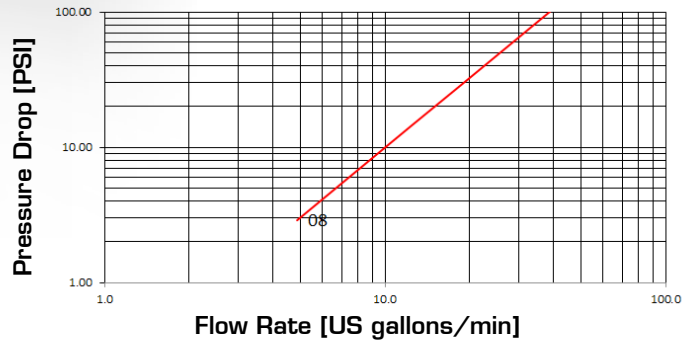


ISO A BOTH PARTS CONNECTABLE UNDER PRESSURE

Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-----|--------|-------|-------|-------|--|
| DN | 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 | 71 | 18.8 | 80 | 178 | 2 | 0.122 | - | - | 125 | 18125 | 125 | 18125 | Connection only, with male and female under pressure |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

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. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

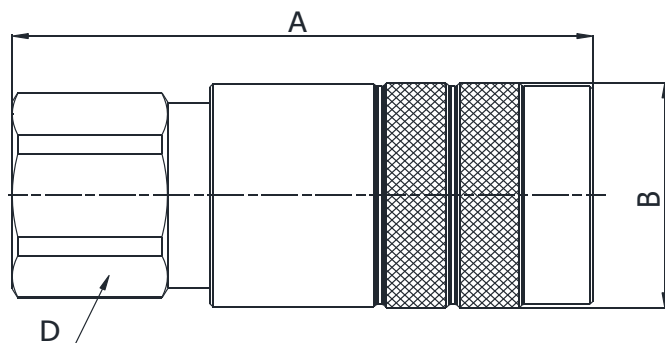
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

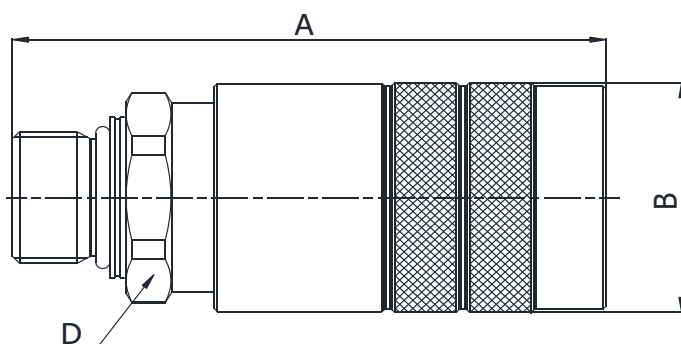
ISO 18869



Q01211041A

BSP TERMINATION ENDS
TO DIN3852

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-------|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01211041A-08-08 | 1/2" | 93.6 | ø38,3 | 32 | | | |



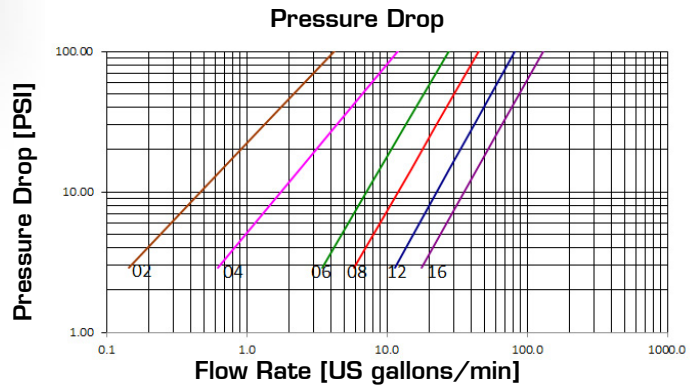
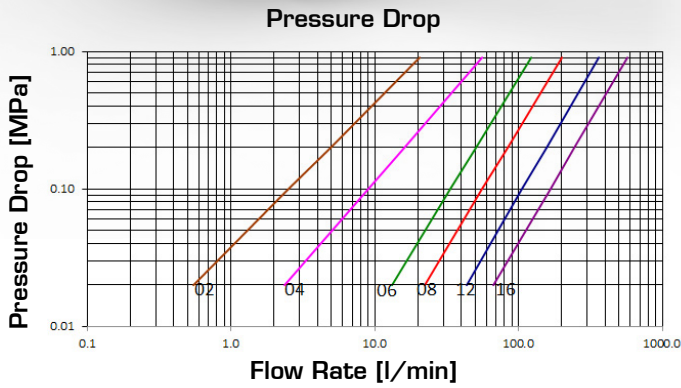
Q01211190A

METRIC TERMINATION ENDS
TO ISO 6149-2

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-------|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01211190A-08-22 | M22x1,5 | 93.1 | ø38,3 | 32 | | | |



ISO B POPPET VALVES



TECHNICAL DATA

| SIZE | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|----------------------------|-----|--|-------|-------------------|----|---------------------------------------|------|------------------------|------|-------|--------|-------|-------|---|-------------|
| DN | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series B

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

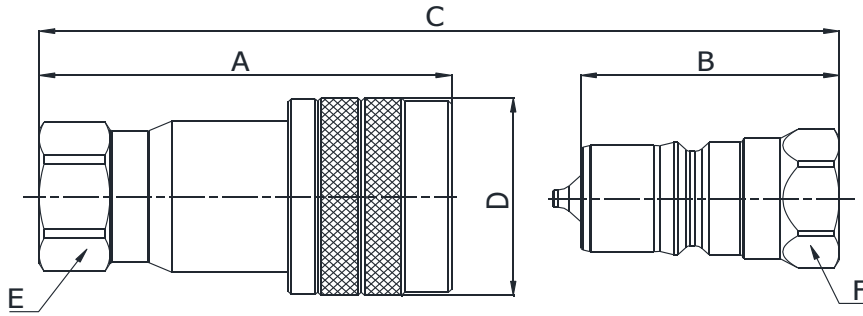
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

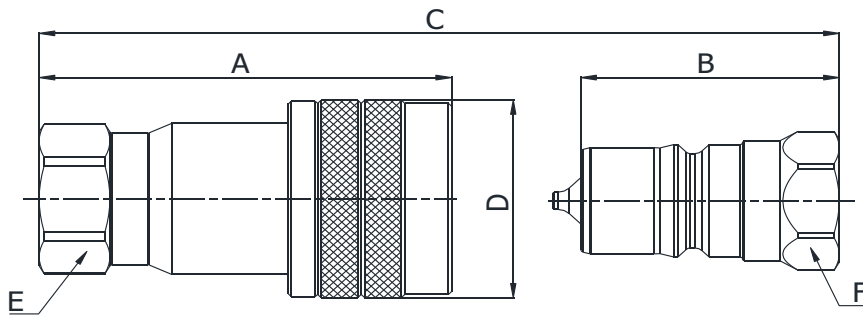
ISO 18869



**Q02411041A
Q02111041A**

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

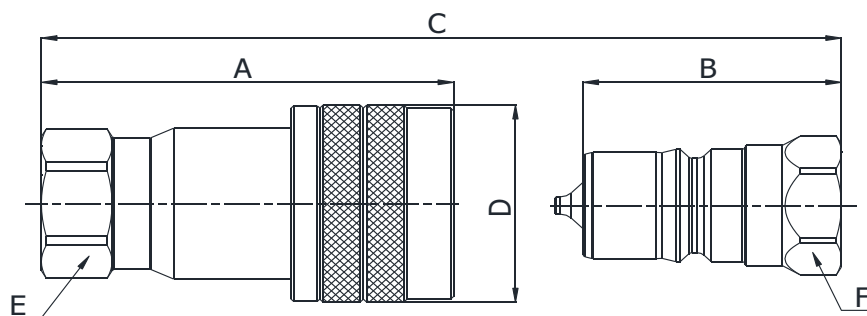
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 5 | 1/8" | -02 | Q02411041A-02-02 | 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 | Q02111041A-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 |



**Q02411341A
Q02111341A**

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |



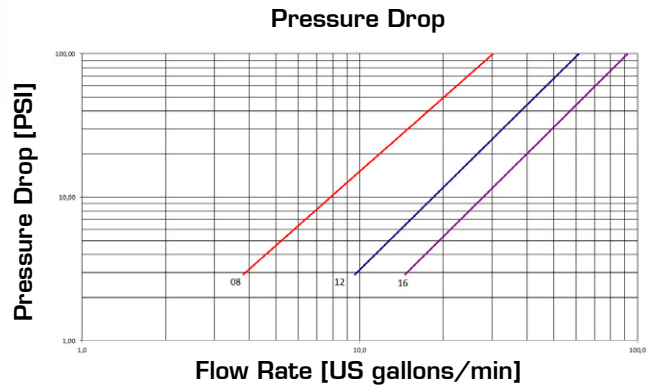
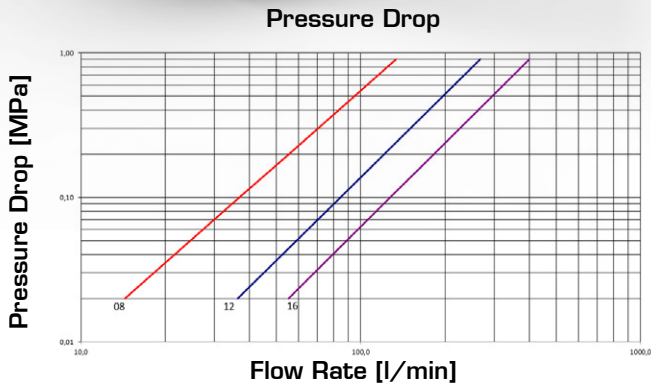
Q02411301A
Q02111301A

SAE TERMINATION ENDS
TO SAE J1926-1

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |



ISO B FOR DRILLING BOP UNITS



TECHNICAL DATA

| SIZE | | | MPa | | PSI | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|-----|------|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | MPa | PSI | MPa | PSI | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 12.5 | ½ | 08 | 42 | 6090 | 35 | 5075 | 55 | 14.6 | 70 | 156 | 2.5 | 0.153 | 140 | 20300 | 140 | 20300 | 180 | 26100 | Not allowed |
| 20 | ¾ | 12 | 35 | 5075 | 25 | 3625 | 122 | 32.1 | 90 | 200 | 8.5 | 0.519 | 100 | 14500 | 100 | 14500 | 150 | 21750 | Not allowed |
| 25 | 1 | 16 | 35 | 5075 | 25 | 3625 | 183 | 48.3 | 90 | 200 | 15 | 0.916 | 100 | 14500 | 100 | 14500 | 140 | 20300 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series B interchangeable
- API 16D approval.

MATERIAL

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.

WORKING TEMPERATURE

-25°C to +200°C

SAFETY FACTOR

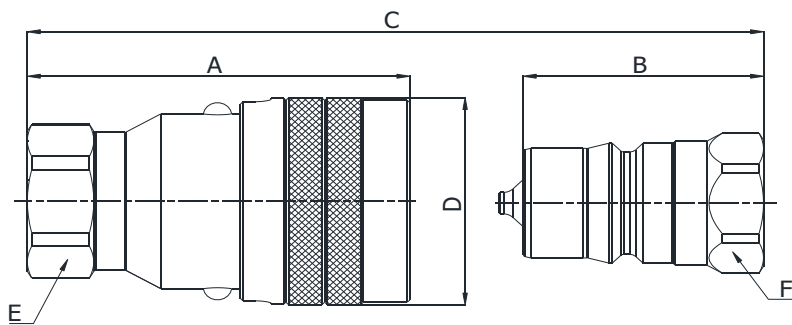
4:1 in CONNECTED & DISCONNECTED conditions

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869 , Flame resistance test to API 16D



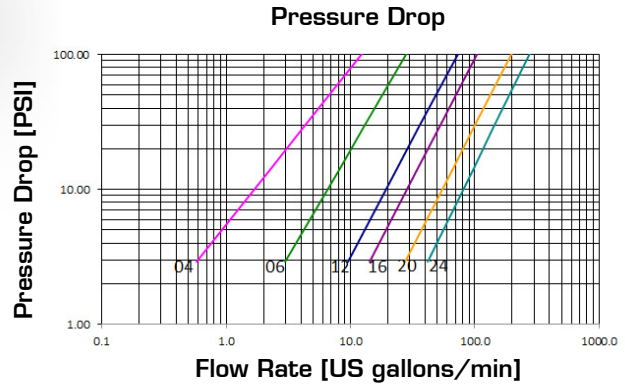
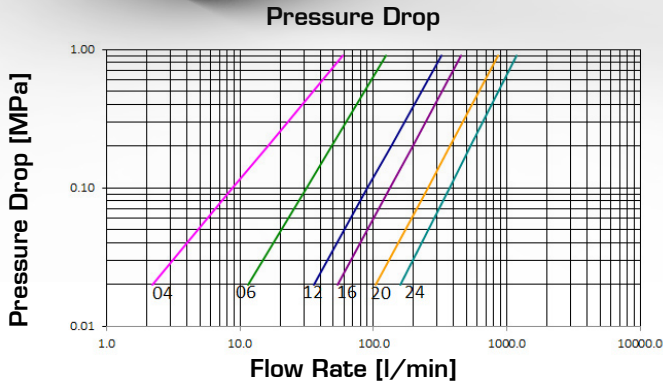
Q02613341F
Q02113341F

NPTF TERMINATION ENDS
TO ANSI B1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 VALVES



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION / DISCONNECTION UNDER PRESSURE |
|------|-------|------|------------------|------|-----------|--------|-----|-----|--------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | MPa | PSI | MPa | PSI | MPa | PSI | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 16 | 4.2 | 40 | 89 | 0.8 | 0.049 | 190 | 27550 | 190 | 27550 | 140 | 20300 | Not allowed |
| 10 | 3/8 | 06 | 35 | 5075 | 49 | 12.9 | 65 | 144 | 1.3 | 0.079 | 150 | 21750 | 160 | 23200 | 160 | 23200 | Not allowed |
| 12.5 | 1/2 | 08 | See ISO A Series | | | | | | | | | | | | | | |
| 20 | 3/4 | 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 | 1 1/4 | 20 | 22 | 3190 | 376 | 99.3 | 105 | 233 | 15 | 0.916 | 90 | 13050 | 90 | 13050 | 100 | 14500 | Not allowed |
| 40 | 1 1/2 | 24 | 21 | 3045 | 536 | 141.6 | 115 | 256 | 24 | 1.465 | 85 | 12325 | 90 | 13050 | 100 | 14500 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 (1/2" size according to ISO 7241-1 series A)

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

4:1 for dynamic pressures

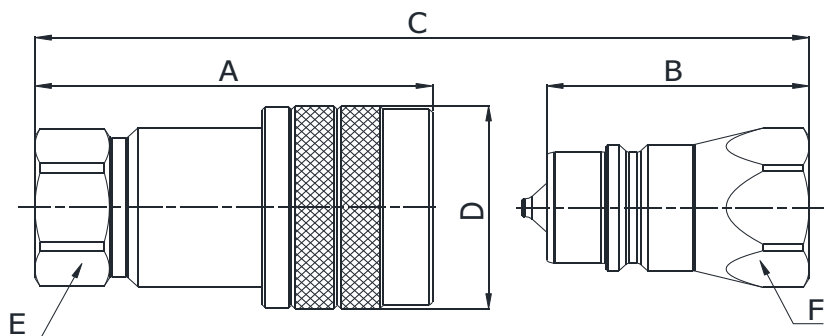
IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

Q.SAFE 363

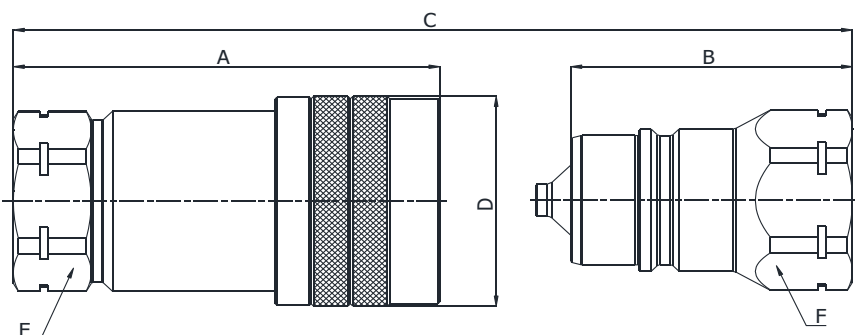


Q03211041A
Q02911041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|
| DN | Inch | Dash | 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 | |

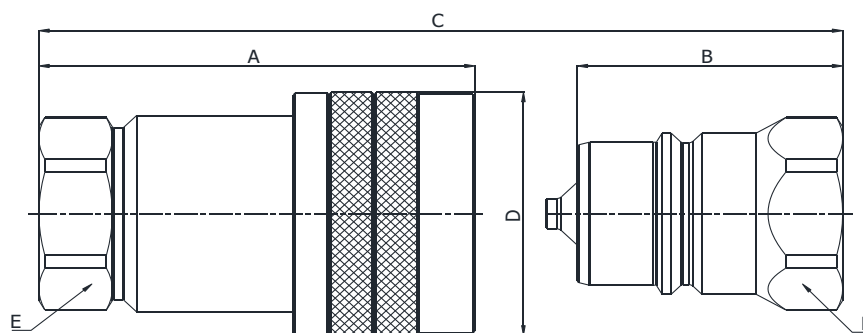
Q.SAFE 364



Q03211041B
Q02911041B

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

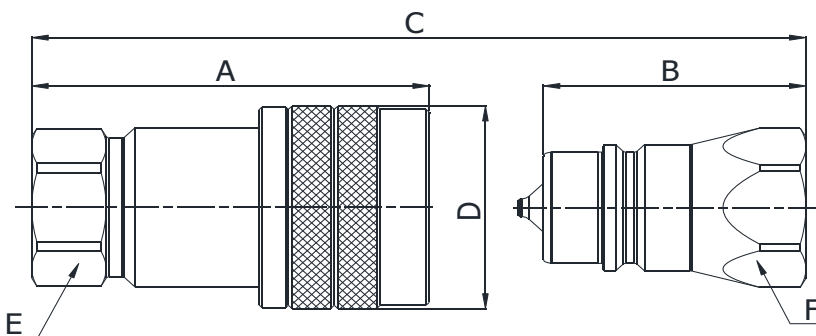
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 20 | 3/4" | -12 | Q03211041B-12-12 | 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 |



Q03211041C
Q02911041C

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

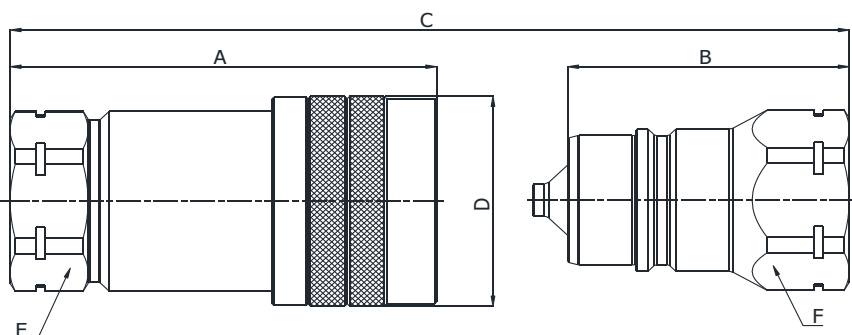
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 25 | 1" | -16 | Q03211041C-16-16 | Q02911041C-16-16 | 1" | 106 | 64.5 | A+B-40,9 | ø64,3 | 46 | 46 |



Q03211341A
Q02911341A

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|
| DN | Inch | Dash | 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 | |



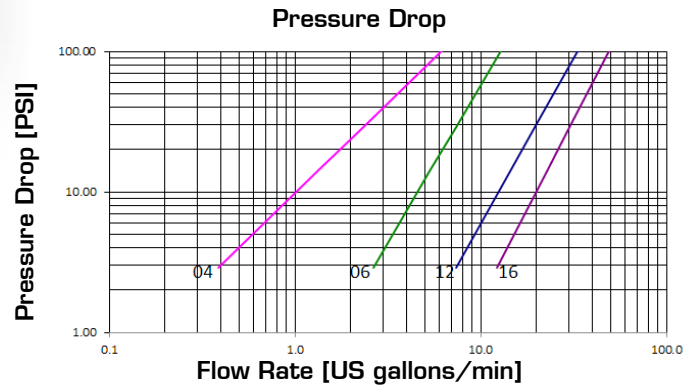
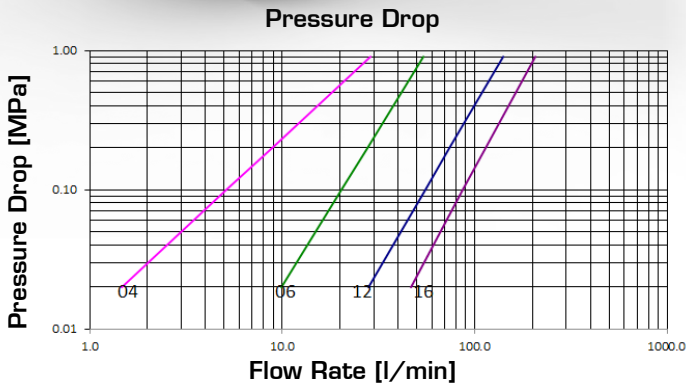
Q03211341B
Q02911341B

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |



STANDARD BALL VALVES



TECHNICAL DATA

| SIZE | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|----------------------------|------------------------------|--|-------|-------------------|-----|---------------------------------------|------|------------------------|------|-------|--------|-------|-------|---|-------------|
| DN | 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 | 1/4 | 04 | 30 | 4350 | 9 | 2.4 | 40 | 89 | 0.35 | 0.021 | 140 | 20300 | 125 | 18125 | 150 | 21750 | Not allowed |
| 10 | 3/8 | 06 | 25 | 3625 | 28 | 7.4 | 65 | 144 | 0.85 | 0.052 | 115 | 16675 | 120 | 17400 | 160 | 23200 | Not allowed |
| 12.5 | 1/2 | 08 | See ISO A Series sealed ball | | | | | | | | | | | | | | |
| 20 | 3/4 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 (1/2" size according to ISO 7241-1 series A)

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

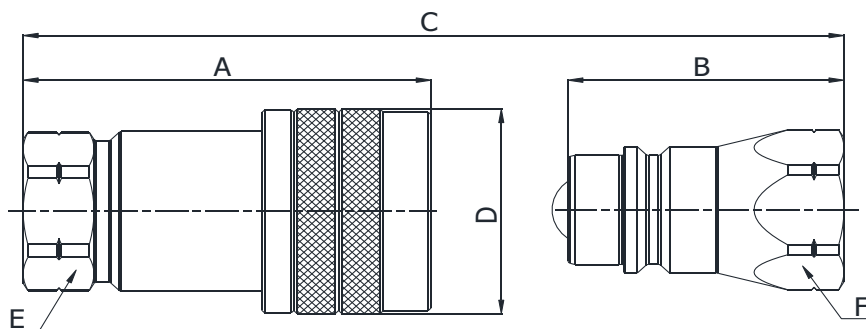
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

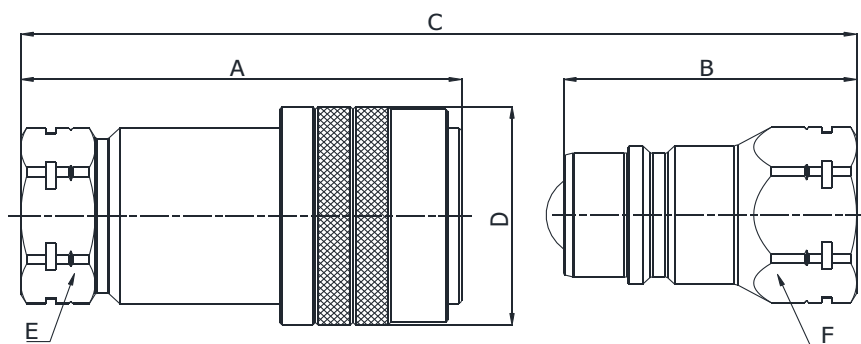
ISO 18869



Q03311041A
Q03011041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

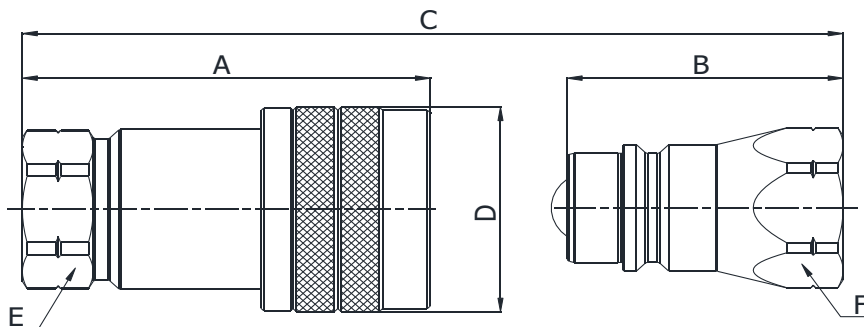
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | |
| 6.3 | 1/4" | -04 | Q03311041A-04-04 | 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
Q03011041B

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |

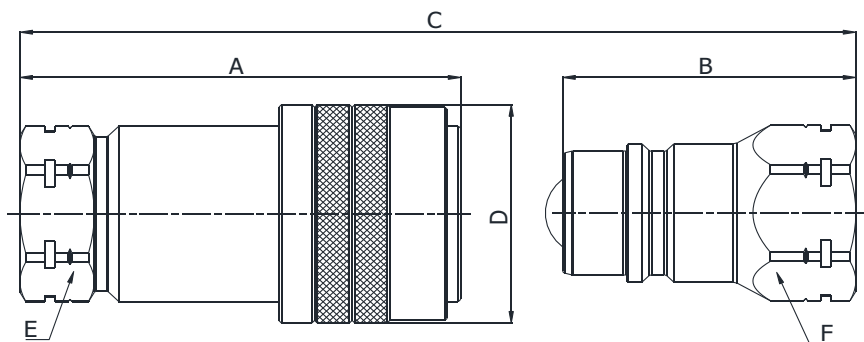


Q03311341A
Q03011341A

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |

Q.SAFE 368



Q03311341B
Q03011341B

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |



STANDARD FREE-FLOW

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | MINIMUM BURST PRESSURE | | CONNECTION / DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|------------------------|-------|---|
| DN | inch | Dash | MPa | PSI | M & F | | |
| | | | | | MPa | PSI | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 160 | 23200 | Not allowed |
| 10 | 3/8 | 06 | 35 | 5075 | 145 | 21025 | Not allowed |
| 12.5 | 1/2 | 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

MATERIAL

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.

WORKING TEMPERATURE

-30°C to +110°C

SAFETY FACTOR

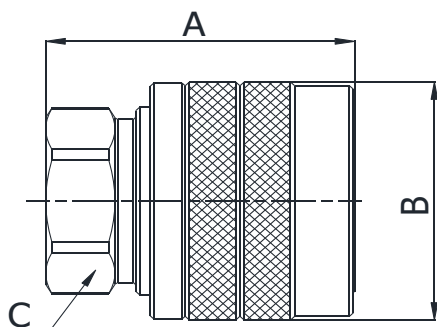
4:1 in CONNECTED & DISCONNECTED conditions

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

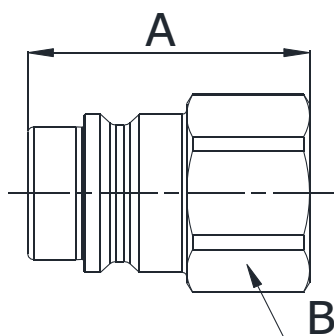
ISO 18869



Q03811041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|------|----|--|--|--|
| DN | Inch | Dash | 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 | | | |



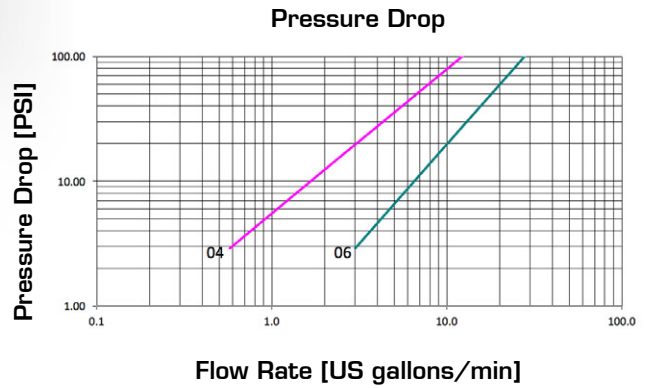
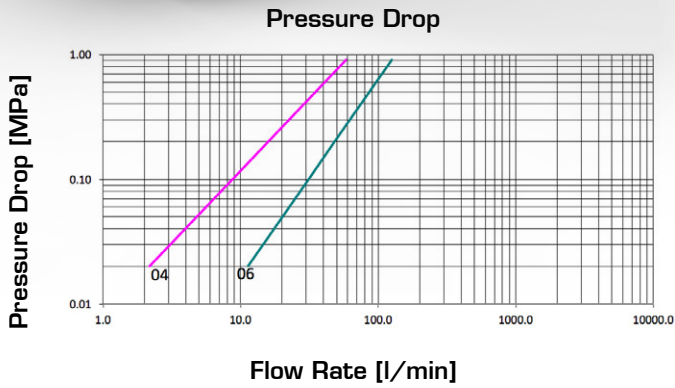
Q03711041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 6.3 | 1/4" | -04 | Q03711041A-04-04 | 1/4" | 27.5 | 19 | | | | |
| 10 | 3/8" | -06 | Q03711041A-06-06 | 3/8" | 29 | 24 | | | | |
| 12.5 | 1/2" | -08 | Q03711041A-08-08 | 1/2" | 34 | 27 | | | | |

Q.SAFE 370

STANDARD PUSH-PULL



TECHNICAL DATA

| SIZE | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE | |
|------|------|----------------------------|------------------|--|-------|-------------------|-----|--|-----|------------------------|------|-------|-------|--|-------------|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | M & F | | |
| | | | | | | | | | | MPa | PSI | MPa | PSI | | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 16 | 4.2 | 65 | 144 | 0.8 | 0.049 | 230 | 33350 | 140 | 20300 | Not allowed |
| 10 | 3/8 | 06 | 35 | 5075 | 49 | 12.9 | 100 | 222 | 1.3 | 0.079 | 170 | 24650 | 150 | 21750 | Not allowed |
| 12.5 | 1/2 | 08 | See ISO A Series | | | | | | | | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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.

WORKING TEMPERATURE

-30°C to +110°C

SAFETY FACTOR

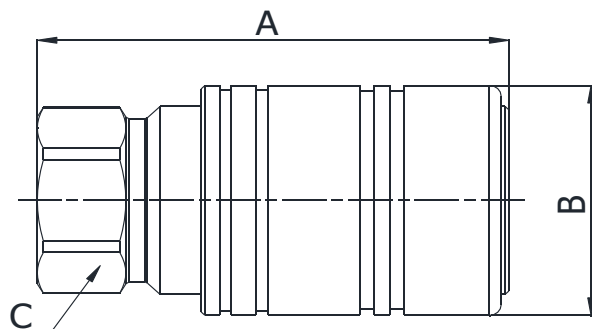
4:1 in CONNECTED & DISCONNECTED conditions

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

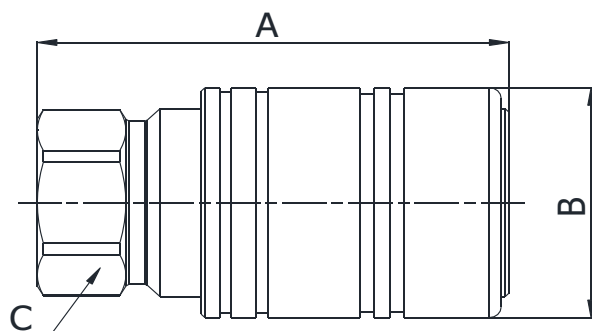
ISO 18869



Q03611041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | 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 | | | |



Q03611341A

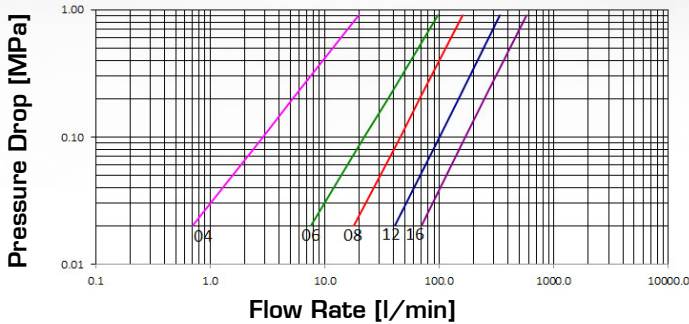
NPT TERMINATION ENDS
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|----------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | 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 | | | |

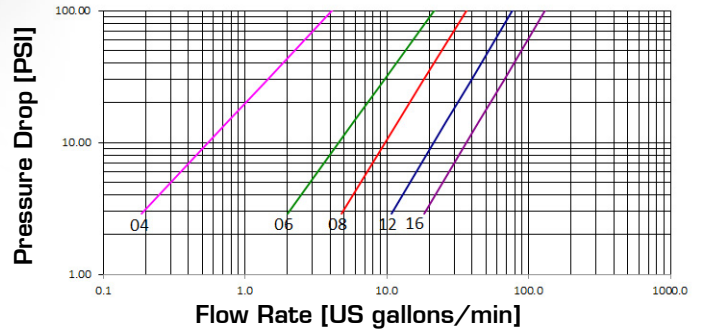
PUSH-PULL POPPET VALVE



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|------|------|-----------|--------|-----|-----|--|------------|------------------------|-------|-------|-------|--|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Female | | M & F | | |
| | | | | | | | | | | | MPa | PSI | MPa | PSI | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 5 | 1.3 | 80 | 178 | 0.7 | 0.043 | 180 | 26100 | 145 | 21025 | Not allowed |
| 10 | 3/8 | 06 | 31.5 | 4568 | 35 | 9.2 | 105 | 233 | 1.4 | 0.085 | 150 | 21750 | 130 | 18850 | Not allowed |
| 12.5 | 1/2 | 08 | 30 | 4350 | 68 | 18.0 | 110 | 244 | 2 | 0.122 | 140 | 20300 | 140 | 20300 | Not allowed |
| 20 | 3/4 | 12 | 25 | 3625 | 147 | 38.8 | 165 | 367 | 7 | 0.427 | 120 | 17400 | 110 | 15950 | Not allowed |
| 25 | 1 | 16 | 25 | 3625 | 250 | 66.1 | 215 | 478 | 11 | 0.672 | 115 | 16675 | 120 | 17400 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

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. PU seal on 1/2" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling is assembled with specific seals

SAFETY FACTOR

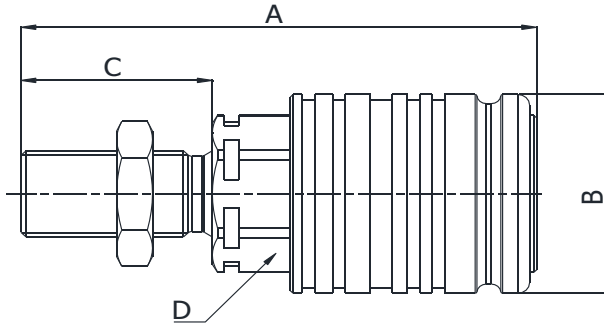
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

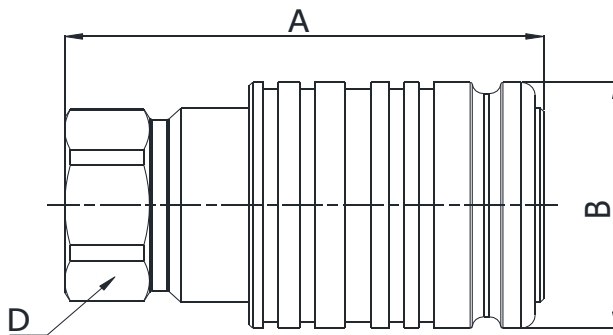
ISO 18869



Q01311040A

BSP TERMINATION ENDS
TO ISO 8434-6
BULKHEAD

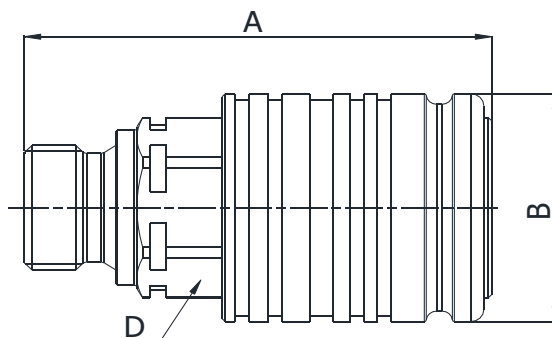
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q01311040A-08-06 | 3/8" | 86.2 | ø38 | 32 | 27 | | |



Q01311041A

BSP TERMINATION ENDS
TO DIN 3852
X TYPE

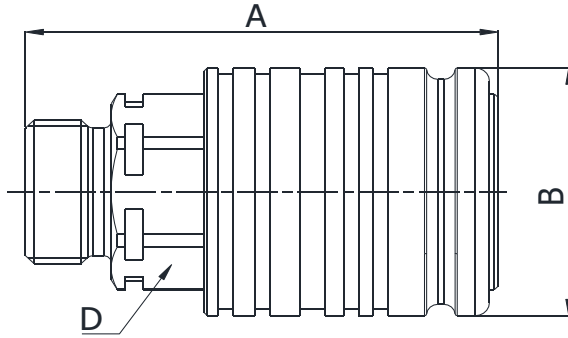
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 6 | 1/4" | -04 | Q01311041A-04-04 | 1/4" | 58.1 | ø26 | 17 | | | |
| 10 | 3/8" | -06 | Q01311041A-06-04 | 1/4" | 63 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | Q01311041A-06-06 | 3/8" | 64.5 | ø32 | 22 | | | |
| 12.5 | 1/2" | -08 | Q01311041A-08-06 | 3/8" | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311041A-08-08 | 1/2" | 67 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311041A-08-12 | 3/4" | 73.2 | ø38 | 34 | | | |
| 20 | 3/4" | -12 | Q01311041A-12-08 | 1/2" | 85.7 | ø48 | 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 | | | |
| 25 | 1" | -16 | Q01311041A-16-16 | 1" | 97.9 | ø54 | 41 | | | |



Q01311050A

BSP TERMINATION ENDS
TO ISO 8434-6

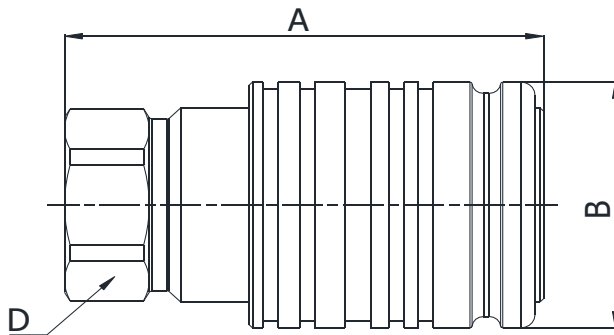
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01311050A-08-06 | 3/8" | 68.9 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311050A-08-08 | 1/2" | 71.4 | ø38 | 27 | | | |



Q01311110A

METRIC TERMINATION ENDS
TO ISO 8434-1
L SERIES

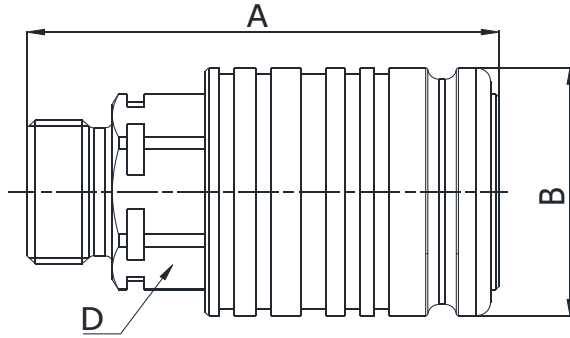
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | | |
| 10 | 3/8" | -06 | Q01311110A-06-12 | M12x1,5 | 61 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | Q01311110A-06-14 | M14x1,5 | 61 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | Q01311110A-06-16 | M16x1,5 | 61 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | Q01311110A-06-18 | M18x1,5 | 61 | ø32 | 22 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-12 | M12x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-14 | M14x1,5 | 65.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-16 | M16x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-18 | M18x1,5 | 65.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-22 | M22x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311110A-08-26 | M26x1,5 | 66.2 | ø38 | 30 | | | |
| 20 | 3/4" | -12 | Q01311110A-12-22 | M22x1,5 | 85.7 | ø48 | 34 | | | |
| 20 | 3/4" | -12 | Q01311110A-12-26 | M26x1,5 | 85.7 | ø48 | 34 | | | |
| 20 | 3/4" | -12 | Q01311110A-12-30 | M30x2 | 87.7 | ø48 | 34 | | | |
| 25 | 1" | -16 | Q01311110A-16-26 | M26x1,5 | 94.5 | ø54 | 41 | | | |
| 25 | 1" | -16 | Q01311110A-16-30 | M30x2 | 96.5 | ø54 | 41 | | | |
| 25 | 1" | -16 | Q01311110A-16-36 | M36x2 | 96.5 | ø54 | 41 | | | |



Q01311141A

METRIC TERMINATION ENDS
TO DIN 3852 X TYPE

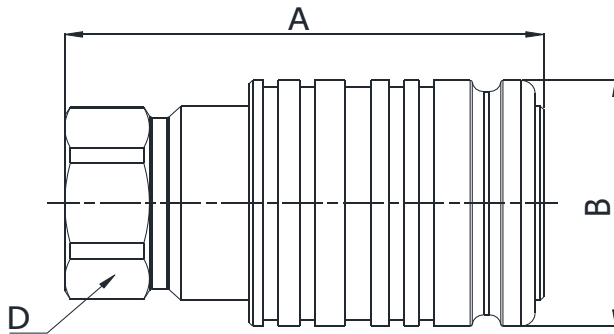
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | | |
| 10 | 3/8" | -06 | Q01311141A-06-16 | M16x1,5 | 64.5 | ø32 | 22 | | | |
| 12.5 | 1/2" | -08 | Q01311141A-08-18 | M18x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311141A-08-20 | M20x1,5 | 67 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q01311141A-08-22 | M22x1,5 | 67 | ø38 | 27 | | | |
| 20 | 3/4" | -12 | Q01311141A-12-22 | M22x1,5 | 84.7 | ø48 | 34 | | | |



Q0131120A

METRIC TERMINATION ENDS
TO ISO 8434-1
S SERIES

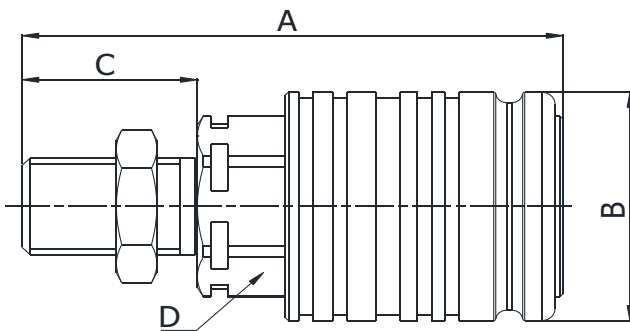
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 10 | 3/8" | -06 | Q0131120A-06-16 | M16x1,5 | 62 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | Q0131120A-06-18 | M18x1,5 | 62 | ø32 | 22 | | | |
| 12.5 | 1/2" | -08 | Q0131120A-08-18 | M18x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q0131120A-08-20 | M20x1,5 | 66.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q0131120A-08-24 | M24x1,5 | 68.2 | ø38 | 27 | | | |
| 25 | 1" | -16 | Q0131120A-16-30 | M30x2 | 98.5 | ø54 | 41 | | | |
| 25 | 1" | -16 | Q0131120A-16-36 | M36x2 | 100.5 | ø54 | 41 | | | |
| 25 | 1" | -16 | Q0131120A-16-42 | M40x2 | 102.5 | ø54 | 46 | | | |



Q0131191A

METRIC TERMINATION ENDS
TO DIN 3852 X TYPE

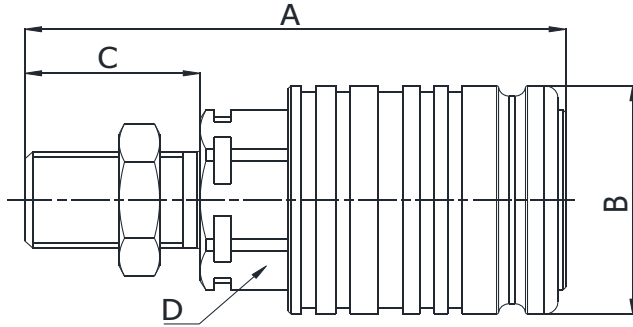
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q0131191A-08-16* | M16x1,5 | 66.7 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q0131191A-08-18* | M18x1,5 | 68.2 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q0131191A-08-22 | M22x1,5 | 67 | ø38 | 27 | | | |



Q01311770A

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

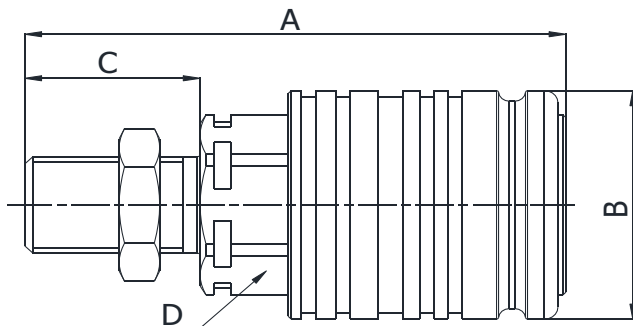
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q01311770A-08-18 | M18x1,5 | 90.2 | ø38 | 36 | 27 | | |



Q01311770B

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

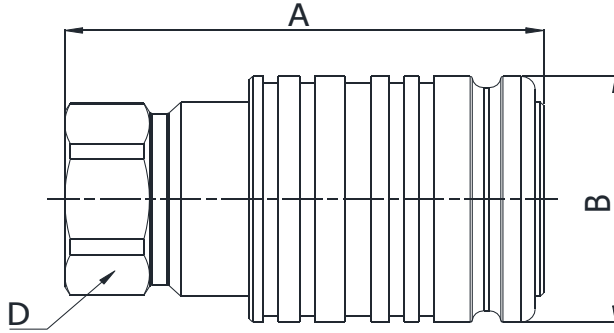
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|----|---|--|
| DN | Inch | Dash | | | Female coupling | A | B | C | D | |
| 10 | 3/8" | -06 | Q01311770B-06-12 | M12x1,5 | 76 | ø32 | 25 | 22 | | |
| 10 | 3/8" | -06 | Q01311770B-06-14 | M14x1,5 | 75 | ø32 | 25 | 22 | | |
| 10 | 3/8" | -06 | Q01311770B-06-16 | M16x1,5 | 75 | ø32 | 26 | 22 | | |
| 10 | 3/8" | -06 | Q01311770B-06-18 | M18x1,5 | 75 | ø32 | 26 | 22 | | |
| 12.5 | 1/2" | -08 | Q01311770B-08-14 | M14x1,5 | 80.2 | ø38 | 25 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311770B-08-16 | M16x1,5 | 80.2 | ø38 | 26 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311770B-08-18 | M18x1,5 | 80.2 | ø38 | 26 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311770B-08-22 | M22x1,5 | 81.2 | ø38 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311770B-08-26 | M26x1,5 | 82.2 | ø38 | 28 | 30 | | |
| 20 | 3/4" | -12 | Q01311770B-12-22 | M22x1.5 | 100.7 | ø48 | 27 | 34 | | |
| 20 | 3/4" | -12 | Q01311770B-12-26 | M26x1.5 | 101.7 | ø48 | 28 | 34 | | |
| 20 | 3/4" | -12 | Q01311770B-12-30 | M30x2 | 105.7 | ø48 | 32 | 34 | | |
| 25 | 1" | -16 | Q01311770B-16-30 | M30x2 | 114.5 | ø54 | 32 | 41 | | |



Q01311870B

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD S SERIES

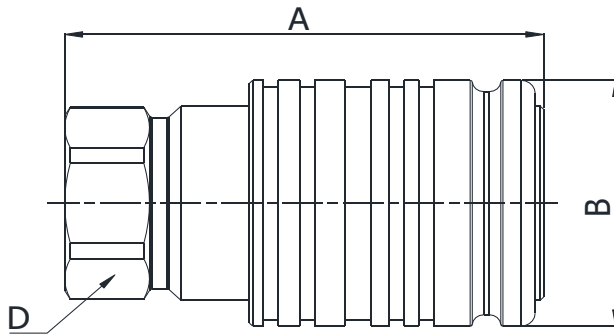
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|----|---|--|
| DN | Inch | Dash | | | Female coupling | A | B | C | D | |
| 10 | 3/8" | -06 | Q01311870B-06-16 | M16x1,5 | 76 | ø32 | 27 | 22 | | |
| 10 | 3/8" | -06 | Q01311870B-06-18 | M18x1,5 | 76 | ø32 | 27 | 22 | | |
| 12.5 | 1/2" | -08 | Q01311870B-08-18 | M18x1,5 | 81.2 | ø38 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311870B-08-20 | M20x1,5 | 81.2 | ø38 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311870B-08-24 | M24x1,5 | 83.2 | ø38 | 29 | 27 | | |
| 20 | 3/4" | -12 | Q01311870B-12-30 | M30x2 | 107.7 | ø48 | 34 | 34 | | |
| 25 | 1" | -16 | Q01311870B-16-36 | M36x2 | 118.5 | ø54 | 36 | 41 | | |



Q01311341A

NPT TERMINATION END
TO ANSI B 1.20.3 STANDARD

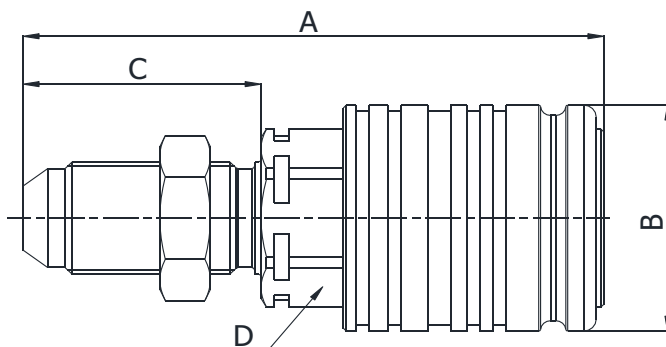
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|-----------|-----------------|-----|----|---|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | |
| 6 | 1/4" | -04 | Q01311341A-04-04 | 1/4" NPTF | 58 | ø26 | 17 | | |
| 10 | 3/8" | -06 | Q01311341A-06-06 | 3/8" NPTF | 64.5 | ø32 | 22 | | |
| 12.5 | 1/2" | -08 | Q01311341A-08-08 | 1/2" NPTF | 67 | ø38 | 27 | | |
| 20 | 3/4" | -12 | Q01311341A-16-12 | 3/4" NPTF | 97.9 | ø54 | 41 | | |
| 25 | 1" | -16 | Q01311341A-16-16 | 1" NPTF | 97.9 | ø54 | 41 | | |



Q01311301A

SAE TERMINATION ENDS
TO SAE J1926-1

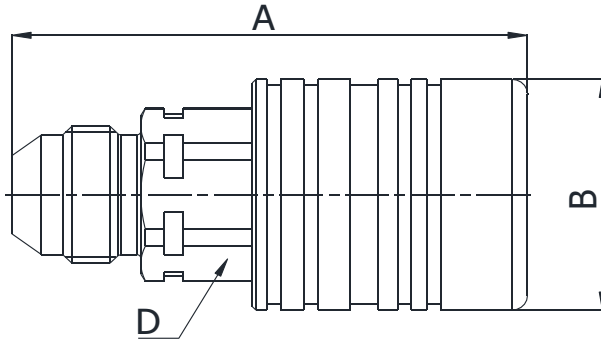
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|-------------------|--------------|-----------------|-----|----|---|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | |
| 10 | 3/8" | -06 | Q01311301A-06-06* | 9/16"-18 UNF | 64.5 | ø32 | 22 | | |
| 12.5 | 1/2" | -08 | Q01311301A-08-08 | 3/4"-16 UNF | 67 | ø38 | 27 | | |
| 12.5 | 1/2" | -08 | Q01311301A-08-10 | 7/8"-14 UNF | 69 | ø38 | 27 | | |



Q01311230A

SAE TERMINATION END
TO ISO 8434-2
BULKHEAD

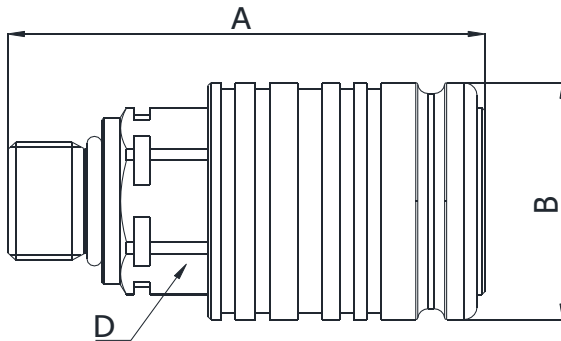
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|-------------|-----------------|-----|------|----|---|
| DN | Inch | Dash | | | Female coupling | A | B | C | D |
| 12.5 | 1/2" | -08 | Q01311230A-08-08 | 3/4"-16 UNF | 91.8 | ø38 | 37.6 | 27 | |
| 12.5 | 1/2" | -08 | Q01311230A-08-10 | 7/8"-14 UNF | 95.3 | ø38 | 41.1 | 27 | |



Q01311250A

SAE TERMINATION END
TO ISO 8434-2

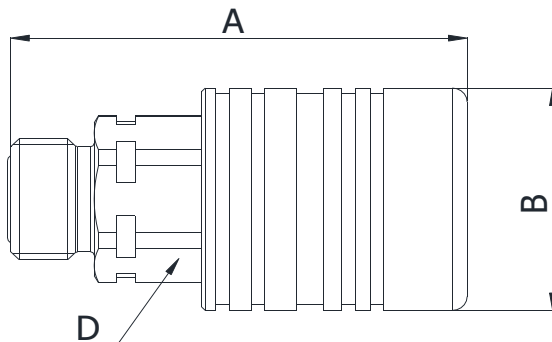
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 10 | 3/8" | -06 | Q01311250A-06-08 | 3/4"-16 UNF | 66.7 | ø32 | 22 | | | |



Q01311320A

ORB TERMINATION ENDS
TO SAE J1926-2
S SERIES

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01311320A-08-08 | 3/4"-16 UNF | 68.2 | ø38 | 27 | | | |



Q01311240A

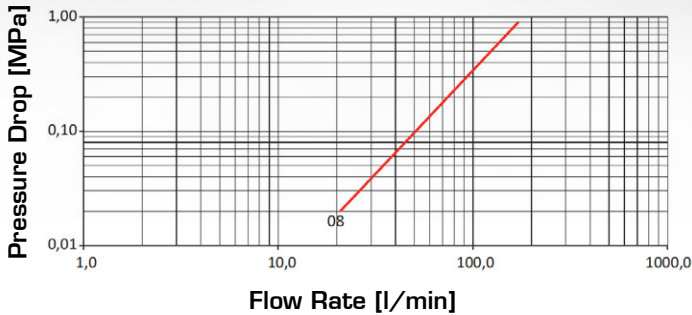
ORFS TERMINATION ENDS
TO ISO 8434-3

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 10 | 3/8" | -06 | Q01311240A-06-04 | 9/16"-18 UN | 60.8 | ø32 | 22 | | | |
| 10 | 3/8" | -06 | 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 | | | |

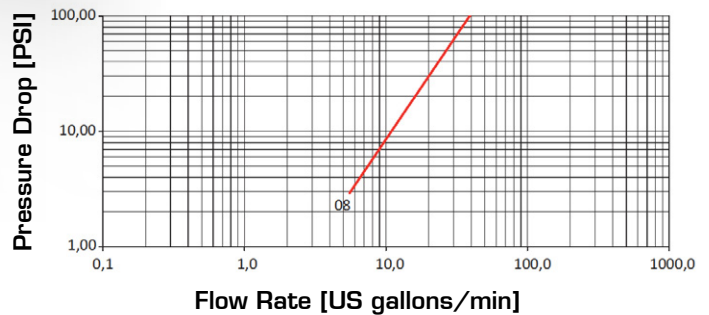
PUSH-PULL CONNECTABLE UNDER PRESSURE



Pressure Drop



Pressure Drop



Q.SAFE 380

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|------|-----|------|-----------|--------|-----|-----|---------------------------------------|---------------------|------------------------|-------|-------|-------|---|--|
| DN | 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 | | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A

MATERIAL

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. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

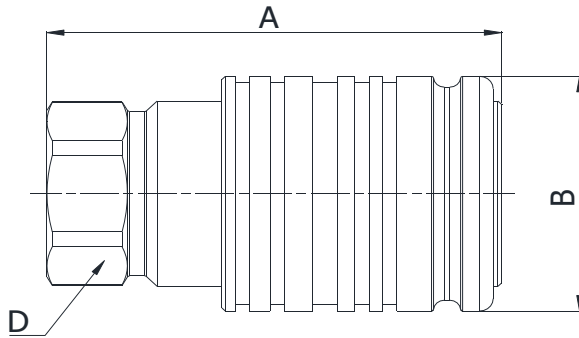
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

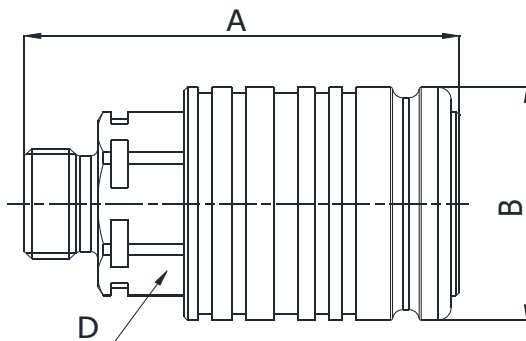
ISO 18869



Q01511041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

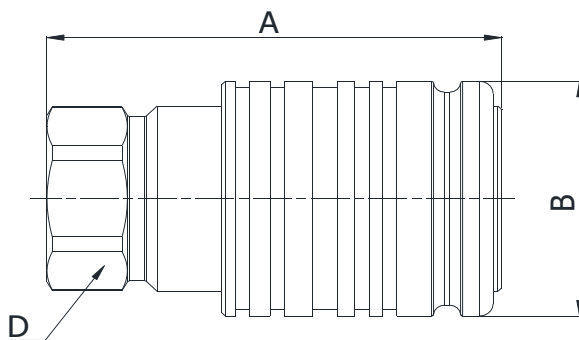
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01511041A-08-08 | 1/2" | 67 | ø38 | 27 | | | |



Q01511110A

METRIC TERMINATION END
TO ISO 8434-1
L SERIES

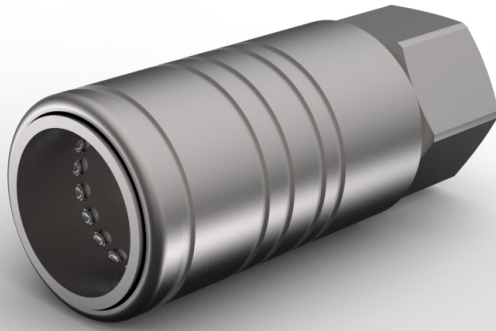
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01511110A-08-18 | M18x1,5 | 65.2 | ø38 | 27 | | | |



Q01511341A

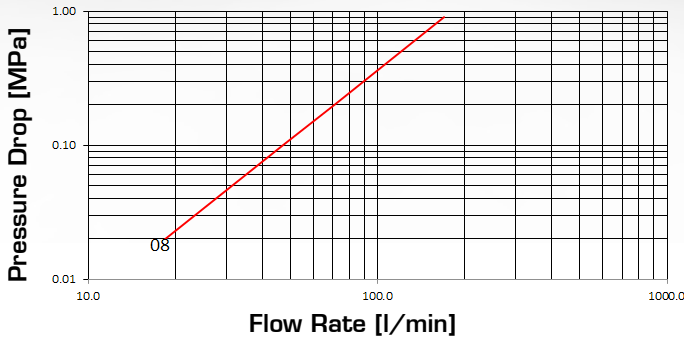
NPT TERMINATION END
TO ANSI B 1.20.3 STANDARD

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01511341A-08-08 | 1/2" NPTF | 67 | ø38 | 27 | | | |

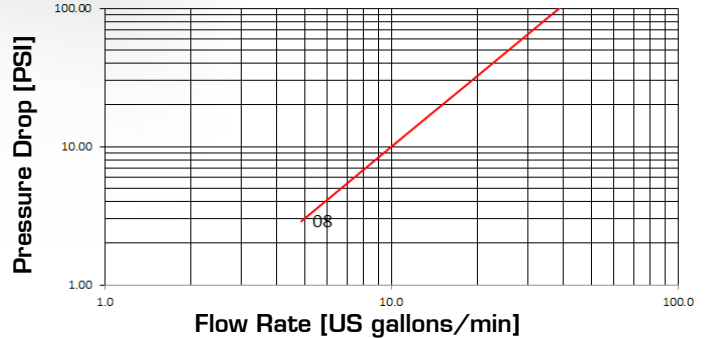


PUSH-PULL FEMALE CONNECTABLE WITH MALE UNDER PRESSURE

Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|-------------------|-----|--|------------|------------------------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Female | | M & F | | |
| | | | | | | | | | | | MPa | PSI | MPa | PSI | |
| 12.5 | 1/2 | 08 | 30 | 4350 | 71 | 18.8 | 170 | 378 | 2 | 0.122 | 125 | 18125 | 125 | 18125 | Connection only, with male under pressure |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A
- Wide range of termination end

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in NBR, back-up ring PTFE. PU seal on 1/2" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

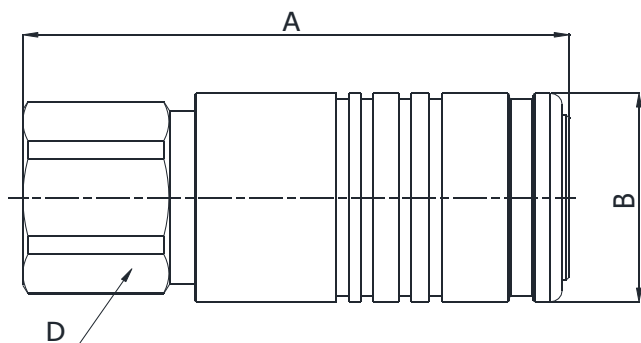
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

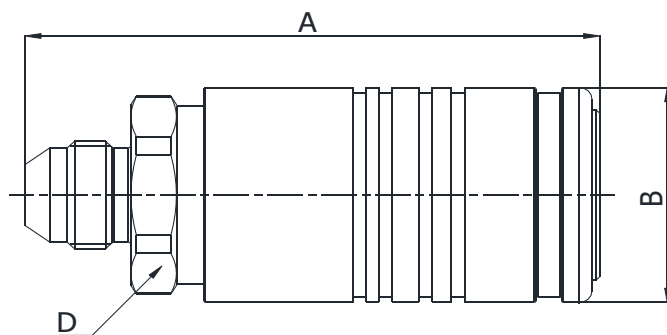
ISO 18869



Q01611041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

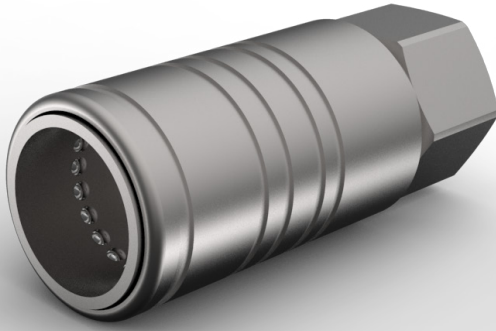
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01611041A-08-08 | 1/2" | 91.2 | ø38 | 32 | | | |



Q01611250A

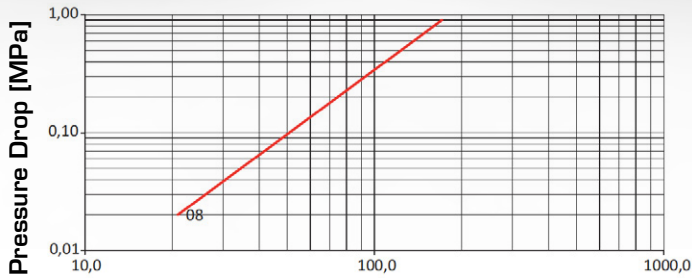
SAE TERMINATION ENDS
TO ISO 8434-2

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01611250A-08-08 | 3/4"- 16 UNF | 90.7 | ø38 | 32 | | | |



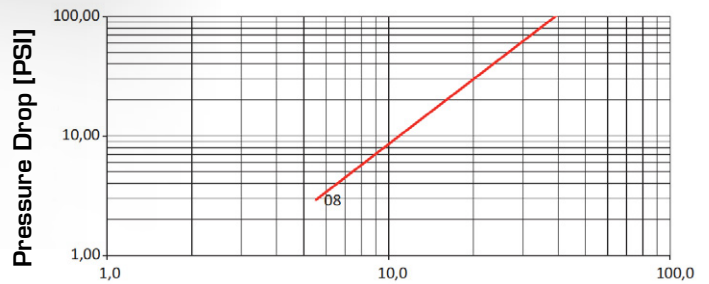
PUSH-PULL FEMALE BOTH PARTS CONNECTABLE UNDER PRESSURE

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | Oil Spillage Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|-----------|--------|-----|-----|---------------------------------------|------------------------|------------------------|-------|-------|-------|--|
| DN | 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 | 170 | 378 | 2 | 0.122 | 125 | 18125 | 125 | 18125 | Connection only, with male and female under pressure |
| | | | | | | | | | | With 0 MPa of pressure | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A
- Wide range of termination ends

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

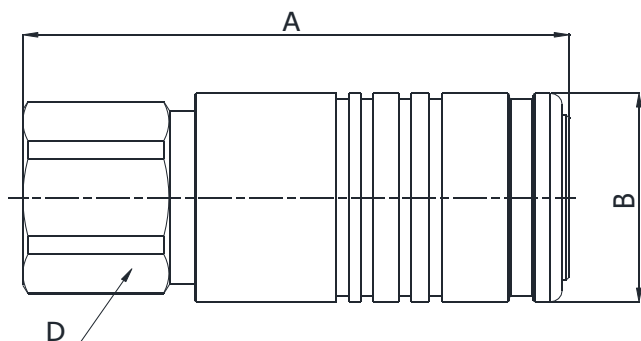
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

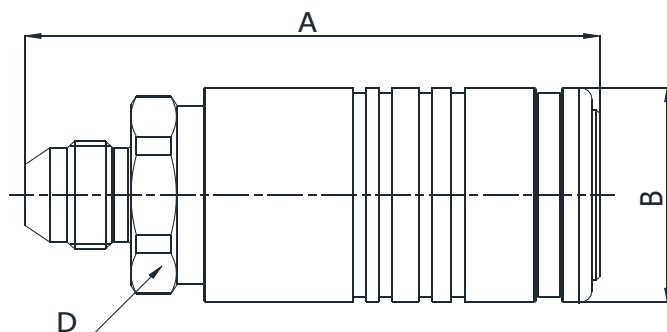
ISO 18869



Q01711041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01711041A-08-08 | 1/2" | 91.2 | ø38 | 32 | | | |

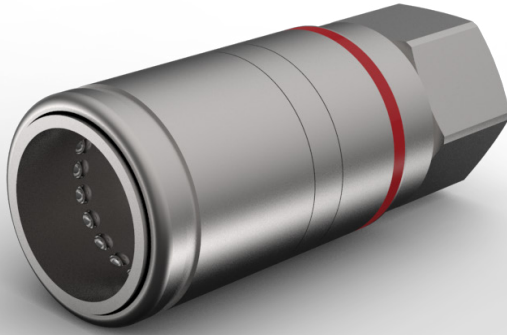


Q01711250A

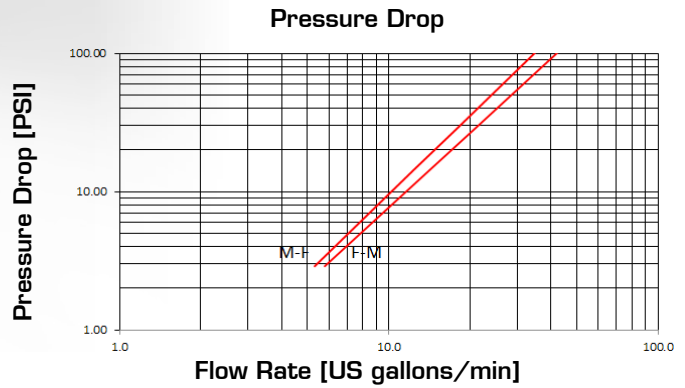
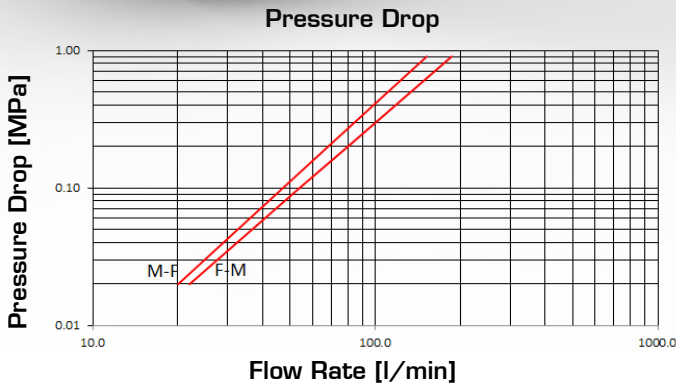
SAE TERMINATION ENDS
TO ISO 8434-2

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01711250A-08-08 | 3/4"- 16 UNF | 90.7 | ø38 | 32 | | | |

385 Q.SAFE



PUSH-PULL FEMALE CONNECTABLE WITH MALE UNDER PRESSURE



TECHNICAL DATA

| SIZE | | MPa | FLOW RATE | N | OIL SPILLAGE Connection/Disconnection | MINIMUM BURST PRESSURE | CONNECTION/DISCONNECTION UNDER PRESSURE | | | | | | | | | |
|------|------|------|-----------|------|---------------------------------------|------------------------|---|-----|-----|-----|------------|----------|----------|-----------|-----------|---|
| DN | inch | Dash | MPa | PSI | Flow direction | l/min | US GPM | N | lb. | cc. | cubic inch | Male MPa | Male PSI | M & F MPa | M & F PSI | Connection only, with male under pressure |
| 12.5 | 1/2 | 08 | 30 | 4350 | F → M | 80 | 21.1 | 230 | 511 | 2 | 0.122 | 125 | 18125 | 125 | 18125 | |
| | | | | | M → F | 68 | 18.0 | | | | | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A
- Wide range of termination ends
- According to all requirements of ISO 5675

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in NBR, back-up ring PTFE. PU seal on 1/2" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

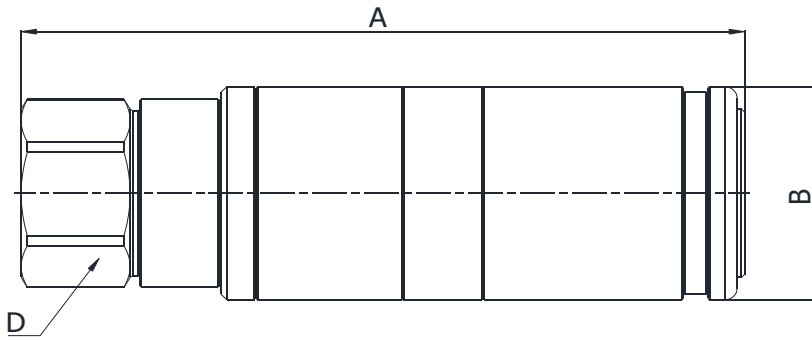
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

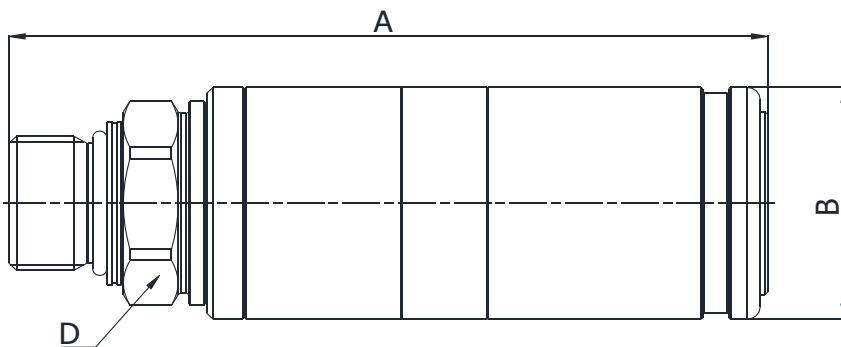
ISO 18869



Q01811041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

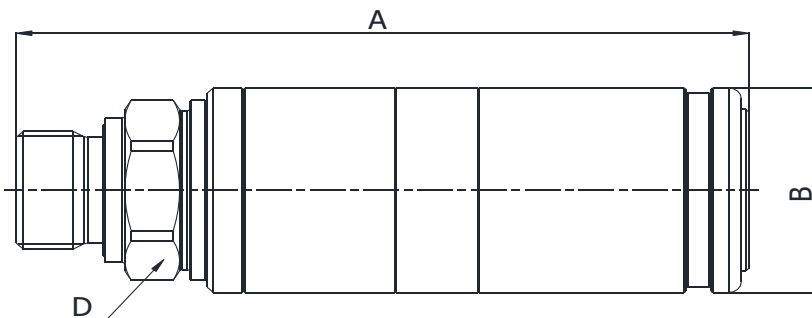
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811041A-08-08 | 1/2" | 118.4 | ø38 | 30 | | | |



Q01811190A

METRIC TERMINATION ENDS
TO ISO 6149-2

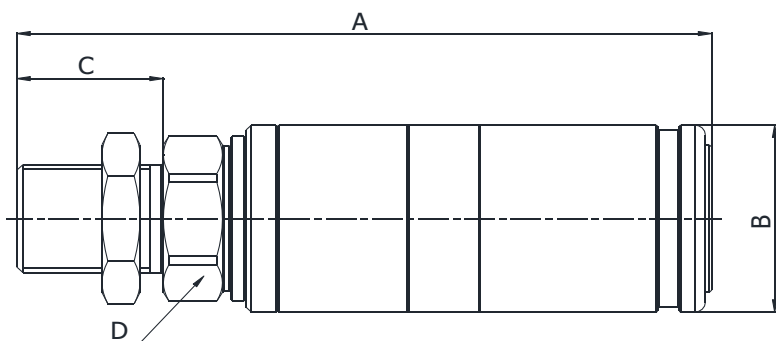
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811190A-08-22 | M22x1,5 | 115.9 | ø38 | 30 | | | |



Q01811140A

METRIC TERMINATION ENDS
TO ISO 9974-2

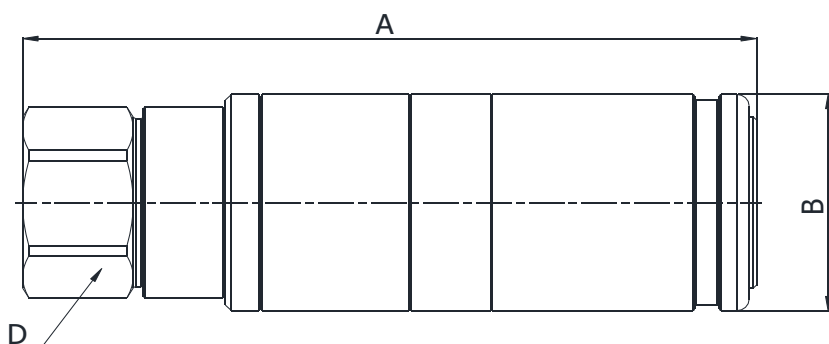
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811140A-08-22 | M22x1,5 | 115.9 | ø38 | 30 | | | |



Q01811770B

METRIC TERMINATION ENDS
ISO 8434-1 L SERIES BULKHEAD

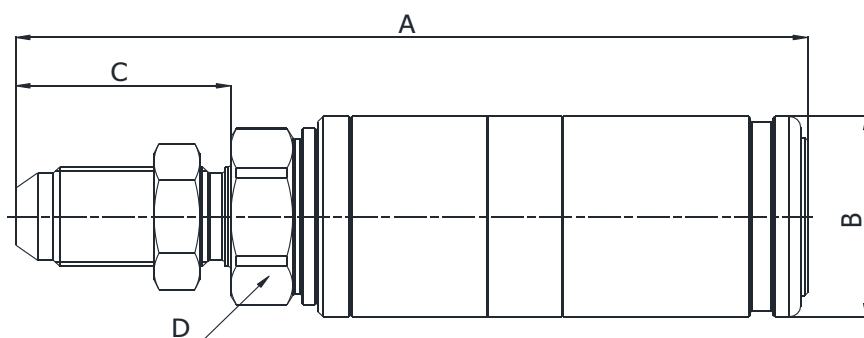
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q01811770B-08-22 | M22x1,5 | 127.9 | ø38 | 27 | 30 | | |



Q01811341A

NPT TERMINATION ENDS
TO ANSI B 1.20.3

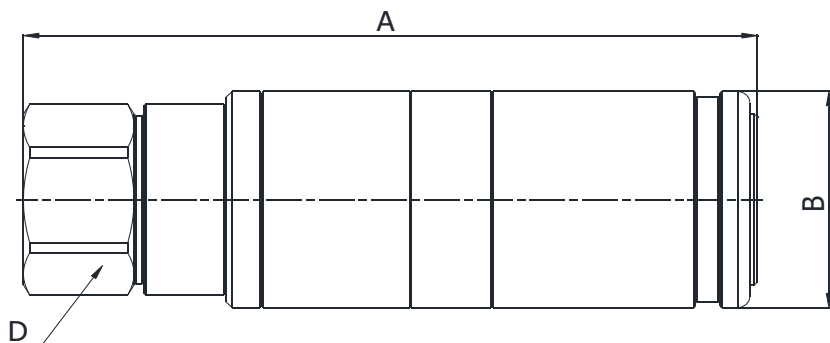
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-----------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811341A-08-08 | 1/2" NPTF | 118.4 | ø38 | 30 | | | |



Q01811230A

SAE TERMINATION ENDS
ISO 8434-2 BULKHEAD

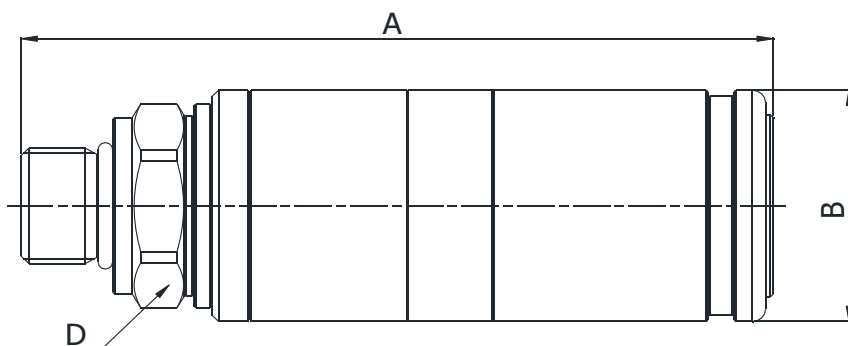
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|------|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q01811230A-08-08 | 3/4"-16 UNF | 138.5 | ø38 | 37.6 | 30 | | |
| 12.5 | 1/2" | -08 | Q01811230A-08-10 | 7/8"-14UNF | 142 | ø38 | 40.1 | 30 | | |



Q01811301A

SAE TERMINATION ENDS
TO SAE J1926-1

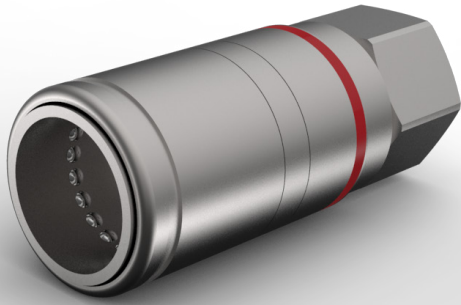
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811301A-08-08 | 3/4"-16 UNF | 117.4 | ø38 | 30 | | | |



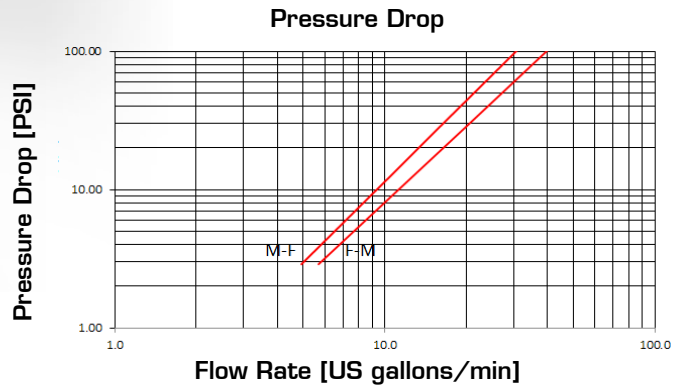
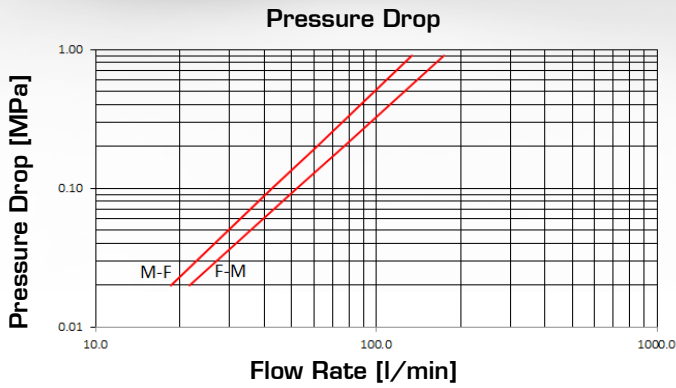
Q01811320A

ORB TERMINATION ENDS
TO SAE J1926-2 S SERIES

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01811320A-08-08 | 3/4"-16 UNF | 115 | ø38 | 30 | | | |
| 12.5 | 1/2" | -08 | Q01811320A-08-10 | 7/8"-14UNF | 117 | ø38 | 30 | | | |



PUSH-PULL FEMALE CONNECTABLE WITH BOTH PARTS UNDER PRESSURE



Q.SAFE 390

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | | N | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|----------------|-------|--------|-----|-----|--|------------|------------------------|-------|-------|-------|--|
| DN | inch | Dash | MPa | PSI | Flow direction | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | 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 & female under pressure |
| | | | | | M → F | 68 | 18.0 | | | | | | | | | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series A
- Wide range of termination ends
- According to all requirements of ISO 5675

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE. PU seal on ½" female available on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

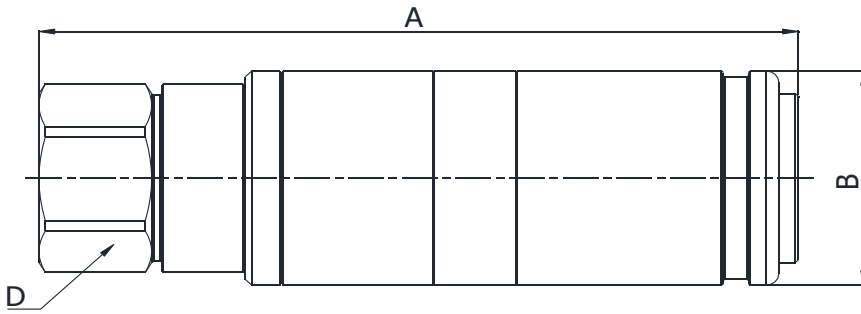
4:1 for dynamic pressures

IMPULSE PRESSURES

500,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

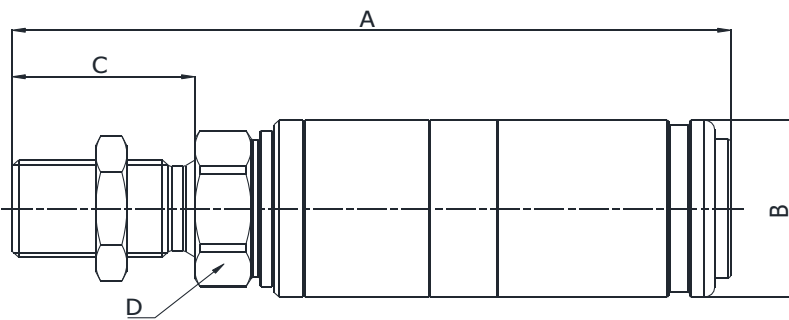
ISO 18869



Q01911041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

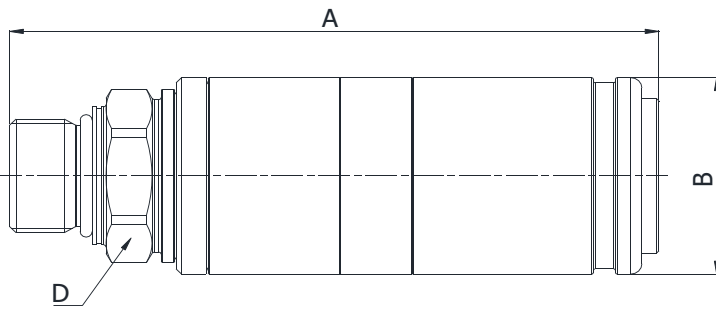
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01911041A-08-08 | 1/2" | 120.3 | ø38 | 30 | | | |



Q01911040A

BSP TERMINATION ENDS
TO ISO 8434-6
BULKHEAD

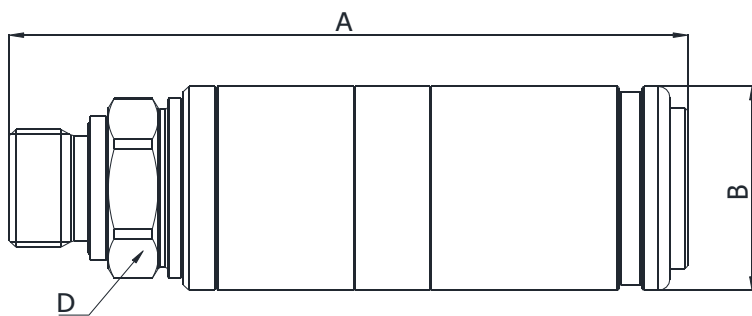
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q01911040A-08-08 | 1/2" | 137.8 | ø38 | 35 | 30 | | |



Q01911190A

METRIC TERMINATION ENDS
TO ISO 6149-2

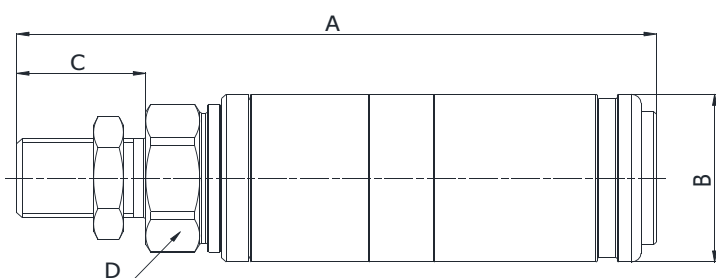
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01911190A-08-22 | M22x1,5 | 117.8 | ø38 | 30 | | | |



Q0191140A

METRIC TERMINATION ENDS
TO ISO 9974-2

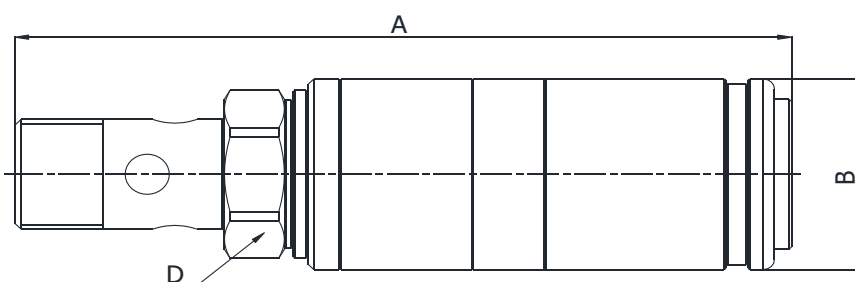
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|-----------------|---------|---------------|-----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | |
| 12.5 | 1/2" | -08 | Q0191140A-08-22 | M22x1,5 | 117.8 | ø38 | 30 | | |



Q01911770B

METRIC TERMINATION ENDS
ISO 8434-1 L SERIES BULKHEAD

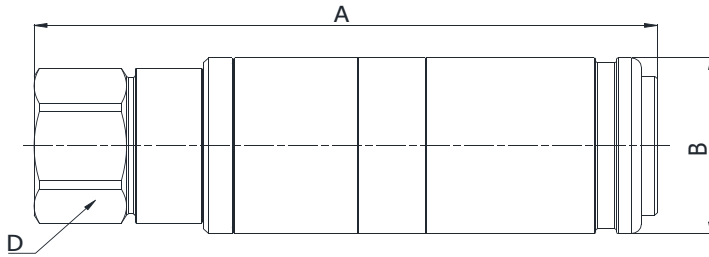
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|-----|----|----|--|
| DN | Inch | Dash | Female coupling | | A | B | C | D | |
| 12.5 | 1/2" | -08 | Q01911770B-08-18 | M18x1,5 | 128.8 | ø38 | 26 | 30 | |
| 12.5 | 1/2" | -08 | Q01911770B-08-22 | M22x1,5 | 129.8 | ø38 | 27 | 30 | |



Q01911080A

METRIC TERMINATION ENDS
DIN 7643

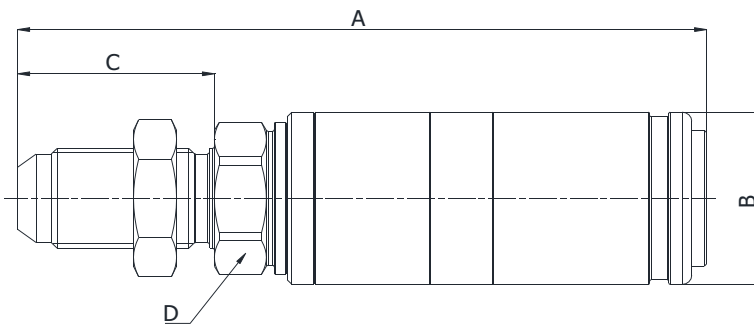
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|-----|----|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | |
| 12.5 | 1/2" | -08 | Q01911080A-08-22 | M22x1,5 | 140.8 | ø38 | 30 | | |



Q01911341A

NPT TERMINATION ENDS
TO ANSI B 1.20.3

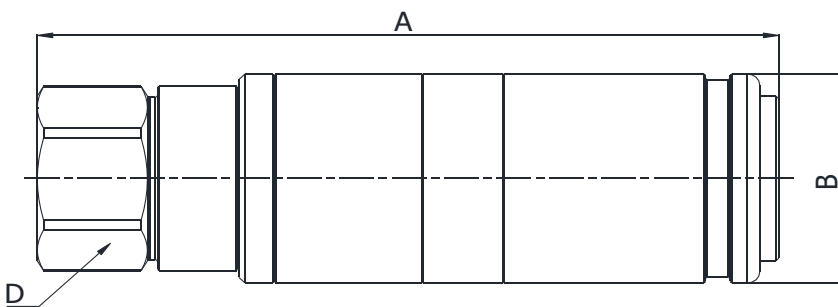
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-----------|-----------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | | |
| 12.5 | 1/2" | -08 | Q01911341A-08-08 | 1/2" NPTF | 120.3 | ø38 | 30 | | | |



Q01911230A

SAE TERMINATION ENDS
ISO 8434-2 BULKHEAD

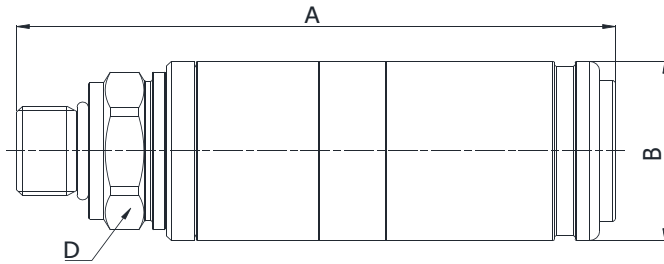
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------|-----------------|-----|------|----|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | | |
| 12.5 | 1/2" | -08 | Q01911230A-08-10 | 7/8"-14UNF | 143.9 | ø38 | 40.1 | 30 | | |



Q01911301A

SAE TERMINATION ENDS
TO SAE J1926-1

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|-----------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | D | | |
| 12.5 | 1/2" | -08 | Q01911301A-08-08 | 3/4"-16 UNF | 119.3 | ø38 | 30 | | | |



Q01911320A

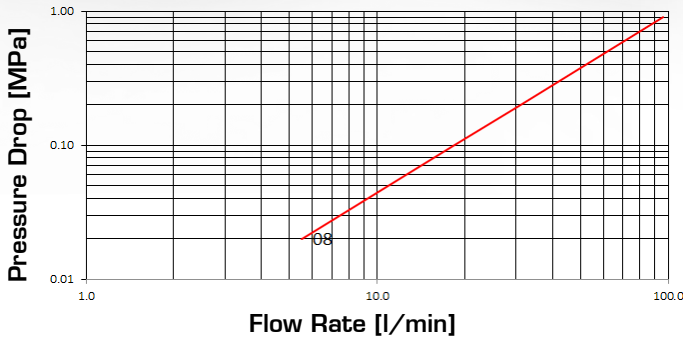
ORB TERMINATION ENDS
TO SAE J1926-2 S SERIES

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q01911320A-08-08 | 3/4"-16 UNF | 116.9 | ø38 | 30 | | | |
| 12.5 | 1/2" | -08 | Q01911320A-08-10 | 7/8"-14UNF | 118.9 | ø38 | 30 | | | |

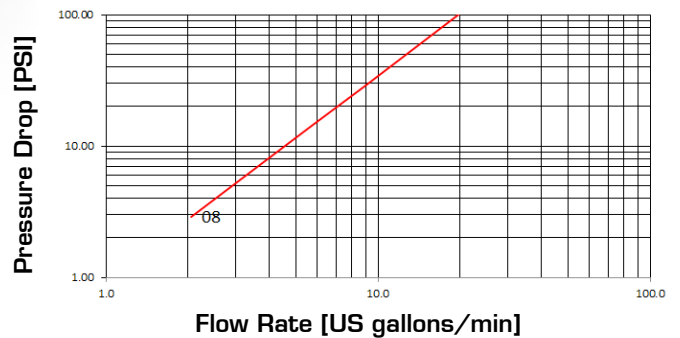
BRAKING CIRCUIT VALVES



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|----------------------------|-----|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-----|--------|-----|-------|-----|---|-------------|
| DN | inch | 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 | ½ | 08 | 15 | 2175 | 31 | 8.2 | 110 | 224 | 0.02 | 0.001 | 130 | 18850 | 60 | 8700 | 130 | 18850 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

PRODUCT DESCRIPTION

- Trailer brake coupling specially designed to connect the hydraulic breaking 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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

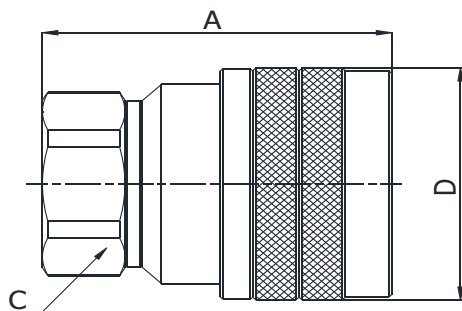
4:1 for dynamic pressures

TEST SPECIFICATIONS

ISO 18869



Safety cap for male coupling and female coupling with parking included

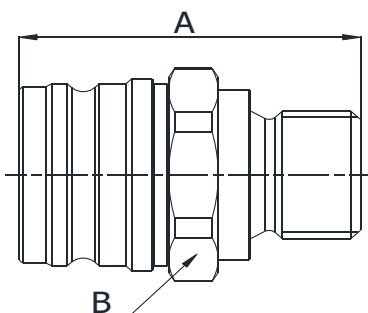


Q04811041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04811041A-08-06 | 3/8" | 55,5 | ø44 | 32 | | | |
| 12.5 | 1/2" | -08 | Q04811041A-08-08 | 1/2" | 56,5 | ø44 | 32 | | | |

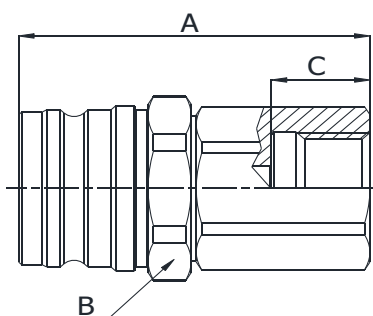
Q.SAFE 396



Q04711050A

BSP TERMINATION ENDS
TO ISO 8434-6

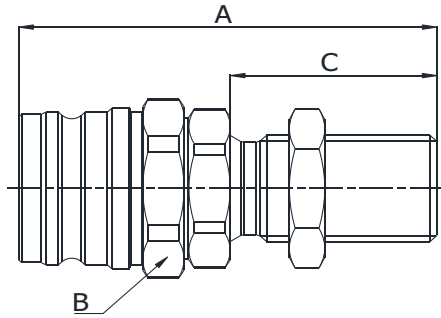
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 12.5 | 1/2" | -8 | Q04711050A-08-08 | 1/2" | 48 | 32 | | | | |



Q04711041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

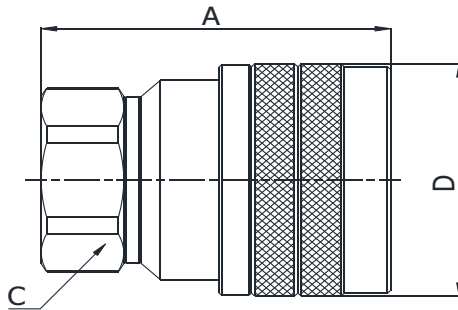
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|----------|---------------|----|----|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04711041A-08-08 | 1/2" GAS | 57 | 32 | 16 | | | |



Q04711040A

BSP TERMINATION ENDS
TO ISO 8434-6
BULKHEAD

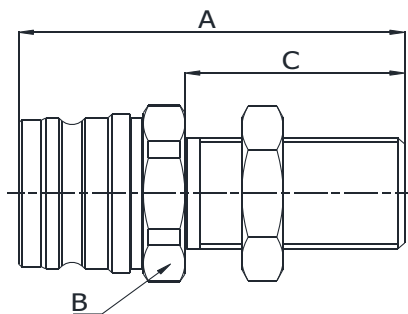
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | | |
| 12.5 | 1/2" | -08 | Q04711040A-08-08 | 1/2" | 70.8 | 32 | 35 | | | |



Q04811141A

METRIC TERMINATION ENDS
TO DIN 3852 X TYPE

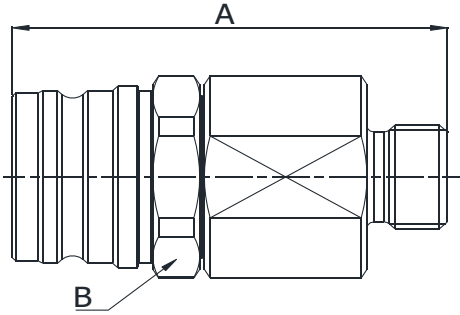
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Female coupling | A | B | C | | |
| 12.5 | 1/2" | -08 | Q04811141A-08-18 | M18x1,5 | 55,5 | ø44 | 32 | | | |



Q04711370A

METRIC TERMINATION ENDS
TO DIN 3863
BULKHEAD

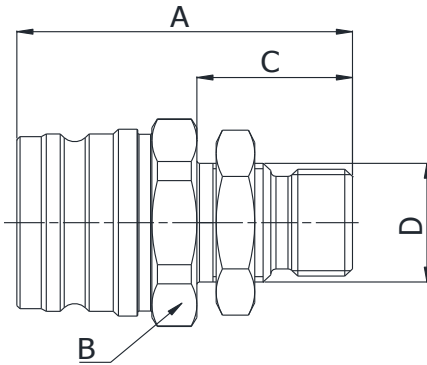
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | | |
| 12.5 | 1/2" | -08 | Q04711370A-08-22 | M22x1,5 | 65 | 32 | 37 | | | |



Q0471110A

METRIC TERMINATION ENDS
TO ISO 8434-1
L SERIES

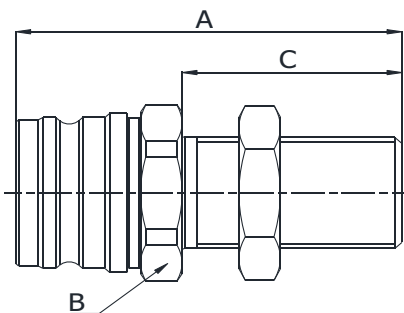
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 12.5 | 1/2" | -08 | Q04711110A-08-18 | M18x1,5 | 65 | 32 | | | | |
| 12.5 | 1/2" | -08 | Q04711110A-08-22 | M22x1,5 | 64.7 | 32 | | | | |



Q04711770A

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|------|---------|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q04711770A-08-16 | M16x1.5 | 52.5 | 32 | 24.5 | M20x1.5 | | |
| 12.5 | 1/2" | -08 | Q04711770A-08-18 | M18x1.5 | 52 | 32 | 24 | M20x1.5 | | |

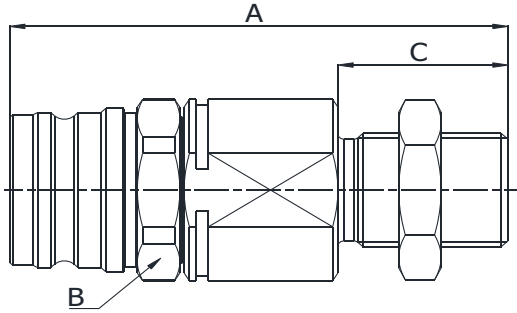


Q04711770A

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|----|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04711770A-08-22 | M22x1,5 | 63 | 32 | 35 | | | |

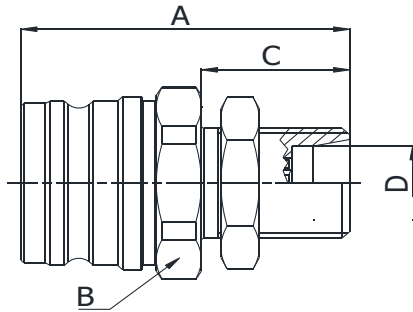
Q.SAFE 398



Q04711770B

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

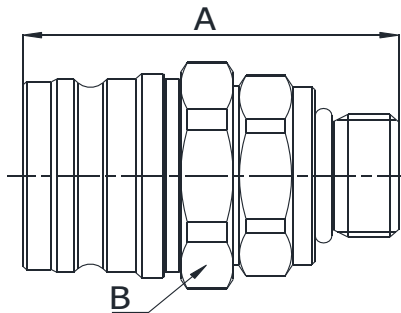
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|----|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04711770B-08-22 | M22x1,5 | 82 | 32 | 28 | | | |



Q04711820A

METRIC TERMINATION END
BULKHEAD

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|----|-------|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | D | | |
| 12.5 | 1/2" | -08 | Q04711820A-08-20 | M20x1,5 | 51 | 32 | 23 | ø13,5 | | |

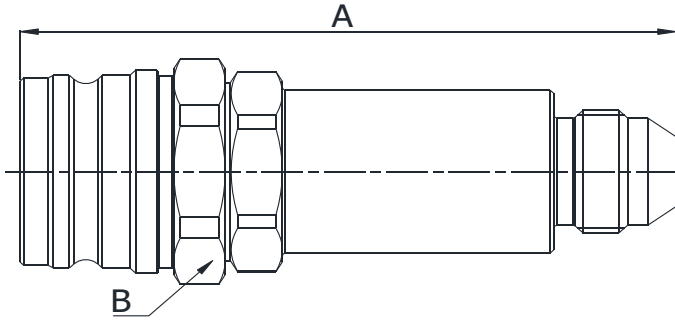


Q04711300A

SAE TERMINATION END
TO SAE J1926-3

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 12.5 | 1/2" | -08 | Q04711300A-08-08 | 3/4"-16 UNF | 50 | 32 | | | | |

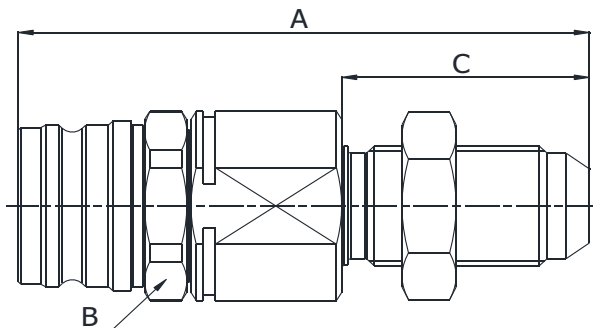
399 Q.SAFE



Q04711250A

SAE TERMINATION ENDS
TO ISO 8434-2

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | 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

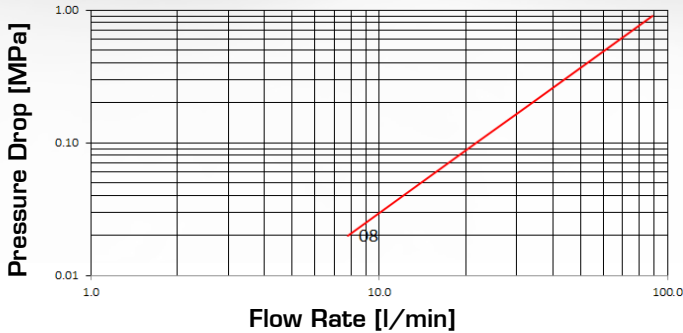
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|----|------|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04711230A-08-10 | 7/8"-14 UNF | 94.8 | 32 | 40.1 | | | |

Q.SAFE
400

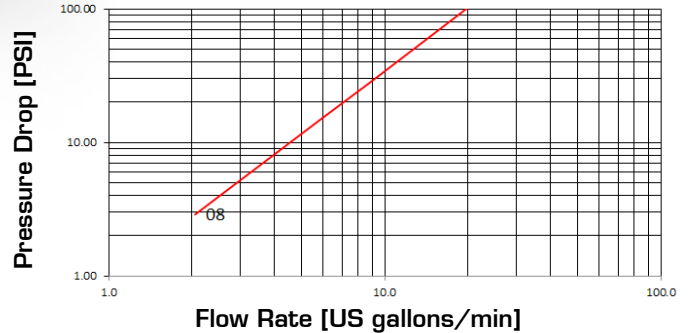
AGRICULTURAL VALVES



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION / DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|-----------|--------|--------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | ALLOWED |
| | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 12.5 | ½ | 08 | 20 | 2900 | 34 | 9.0 | 0.02 | 0.001 | 130 | 18850 | 80 | 11600 | 140 | 20300 | ALLOWED |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

Female and male coupling in steel, with hardened stressed areas. Carbonitrided valve, springs in C98 steel, seals in NBR and back-up ring PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

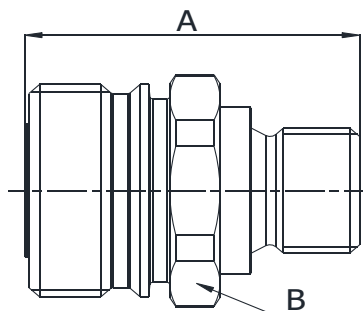
4:1 for dynamic pressures

TEST SPECIFICATIONS

ISO 18869



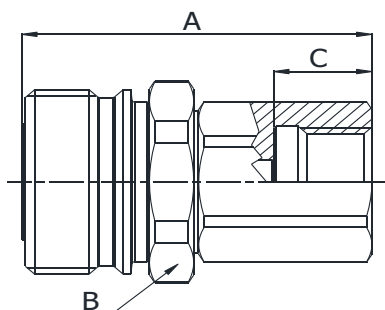
Safety cap for male coupling and female coupling with parking included



Q04911050A

BSP TERMINATION ENDS
TO ISO 8434-6

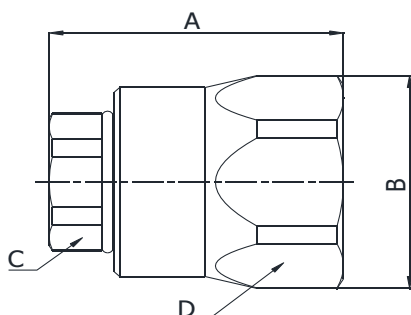
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|----------|---------------|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | |
| 12.5 | 1/2" | -08 | Q04911050A-08-08 | 1/2" GAS | 48 | 36 | | | |



Q04911041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|----------|---------------|----|----|---|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | |
| 12.5 | 1/2" | -08 | Q04911041A-08-08 | 1/2" BSP | 57 | 36 | 16 | | |

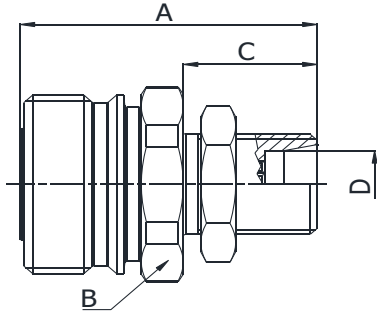


Q05011141A

METRIC TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|-----------------|-----|----|----|---|
| DN | Inch | Dash | | | Female coupling | A | B | C | D |
| 12.5 | 1/2" | -08 | Q05011141A-08-18 | M18x1,5 | 53.5 | ø45 | 27 | 41 | |

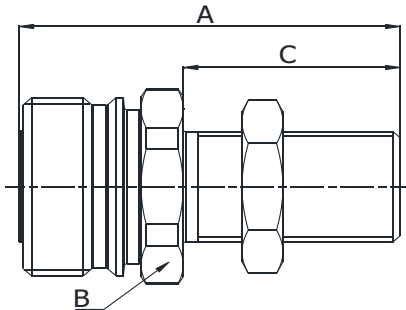
Q.SAFE
402



Q04911820A

METRIC TERMINATION ENDS
BULKHEAD

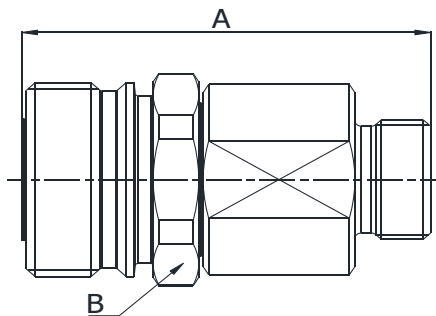
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|----|-------|--|
| DN | Inch | Dash | Male coupling | | A | B | C | D | |
| 12.5 | 1/2" | -08 | Q04911820A-08-20 | M20x1,5 | 51 | 36 | 23 | ø13,5 | |



Q04911370A

METRIC TERMINATION ENDS
TO DIN 3863
BULKHEAD

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|----|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | |
| 12.5 | 1/2" | -08 | Q04911370A-08-22 | M22x1,5 | 65 | 36 | 37 | | |

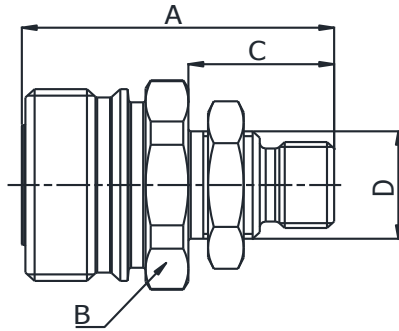


Q04911110A

METRIC TERMINATION ENDS
TO ISO 8434-1
L SERIES

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | |
| 12.5 | 1/2" | -08 | Q04911110A-08-18 | M18x1,5 | 65 | 36 | | | |
| 12.5 | 1/2" | -08 | Q04911110A-08-22 | M22x1,5 | 64.7 | 36 | | | |

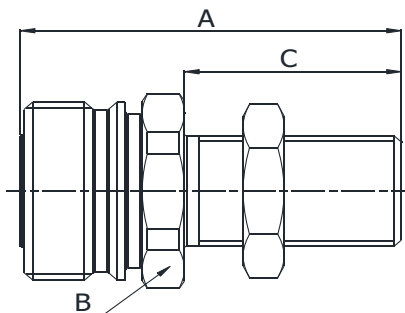
403 Q.SAFE



Q04911770A

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD

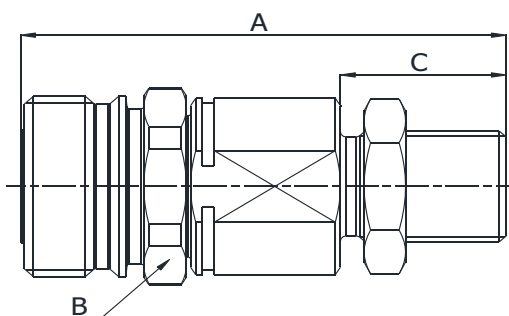
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|------|---------|---|
| DN | Inch | Dash | | | Male coupling | A | B | C | D |
| 12.5 | 1/2" | -08 | Q04911770A-08-16 | M16x1,5 | 52.5 | 36 | 24.5 | M20x1.5 | |
| 12.5 | 1/2" | -08 | Q04911770A-08-18 | M18x1,5 | 52 | 36 | 24 | M20x1.5 | |



Q04911770A

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

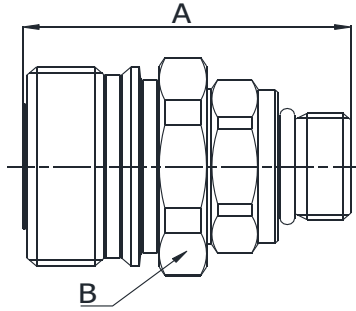
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|----|---|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | |
| 12.5 | 1/2" | -08 | Q04911770A-08-22 | M22x1,5 | 63 | 36 | 35 | | |



Q04911770B

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

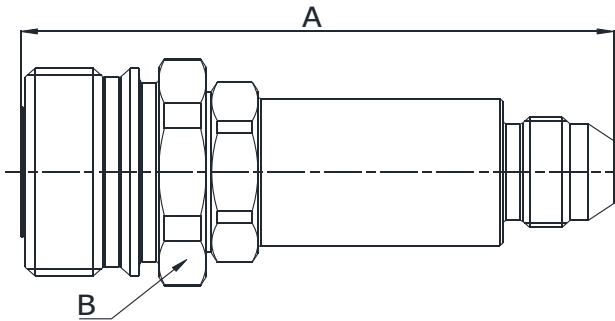
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|---------|---------------|----|----|---|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | |
| 12.5 | 1/2" | -08 | Q04911770B-08-22 | M22x1,5 | 82 | 36 | 28 | | |



Q04911300A

SAE TERMINATION END
TO SAE J1926-3

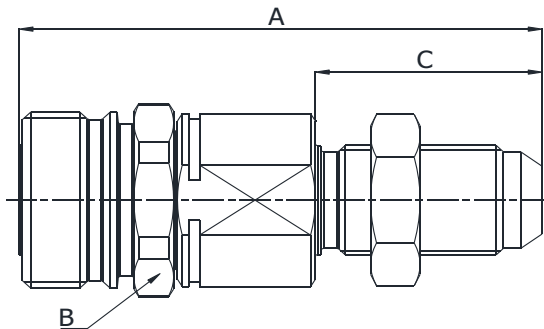
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 12.5 | 1/2" | -08 | Q04911300A-08-08 | 3/4"-16 UNF | 50 | 36 | | | | |



Q04911250A

BSP TERMINATION ENDS
TO ISO 8434-6

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 12.5 | 1/2" | -8 | Q04711050A-08-08 | 1/2" | 48 | 32 | | | | |



Q04911230A

SAE TERMINATION ENDS
TO ISO 8434-2
BULKHEAD

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|----|------|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | C | | | |
| 12.5 | 1/2" | -08 | Q04911230A-08-10 | 7/8"-14 UNF | 94.8 | 36 | 40.1 | | | |

405 Q.SAFE



DIAGNOSTIC

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | MINIMUM BURST PRESSURE | |
|------|------|------|----------------------------|------|------------------------|-------|
| DN | 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

MATERIAL

Male coupling in steel, with some hardened areas in correspondence to the most stressed points. Carbonitrided valve, spring in C98 steel and seals in NBR (other materials on request)

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For different temperature range, the coupling can be assembled with specific seals

SAFETY FACTOR

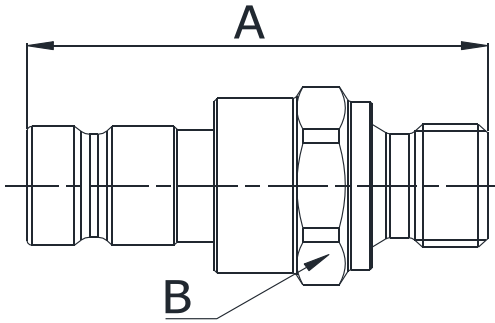
4:1 for dynamic pressures

IMPULSE PRESSURES

1,000,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

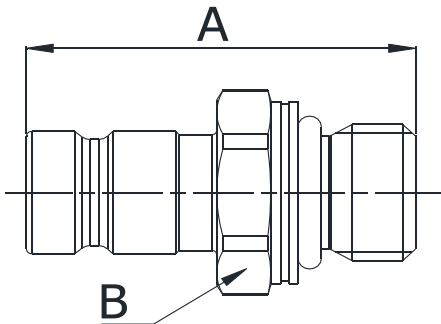
ISO 18869



Q04511050A

BSP TERMINATION ENDS
TO ISO 8434-6

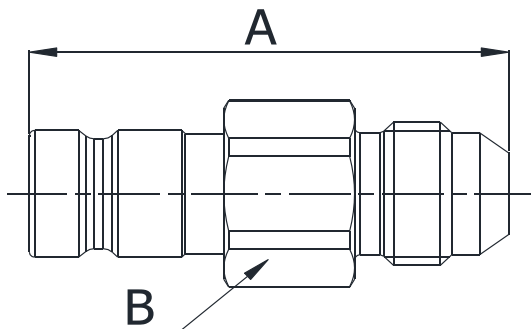
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511050A-02-04 | 3/8" | 43.8 | 19 | | | | |



Q04511190A

METRIC TERMINATION ENDS
TO ISO 6149-2

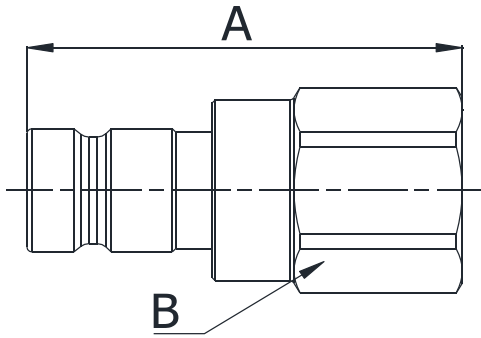
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511190A-02-14 | M14x1,5 | 36.4 | 19 | | | | |



Q04511250A

SAE TERMINATION ENDS
TO ISO 8434-2

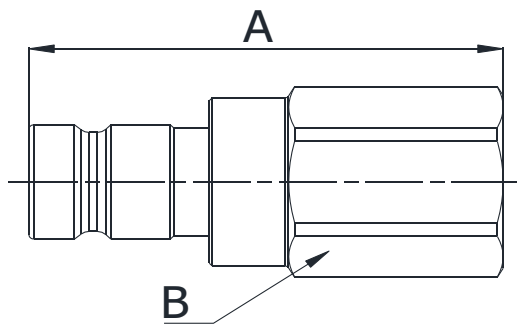
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511250A-02-06 | 3/8" | 43.9 | 17 | | | | |



Q04511251A

SAE TERMINATION ENDS
TO ISO 8434-2

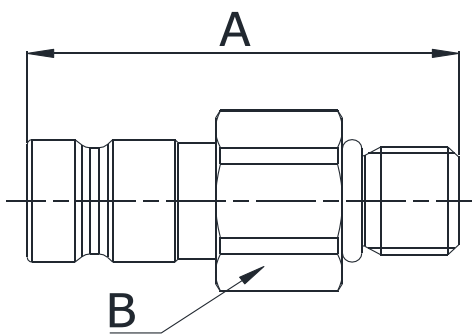
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511251A-02-06 | 3/8" | 41.8 | 19 | | | | |



Q04511301A

SAE TERMINATION ENDS
TO SAE J1926-1

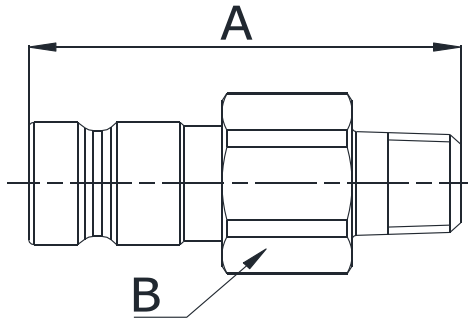
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511301A-02-06 | 9/16"-18 UNF | 46.8 | 19 | | | | |



Q04511320A

SAE TERMINATION ENDS
TO SAE J1926-2

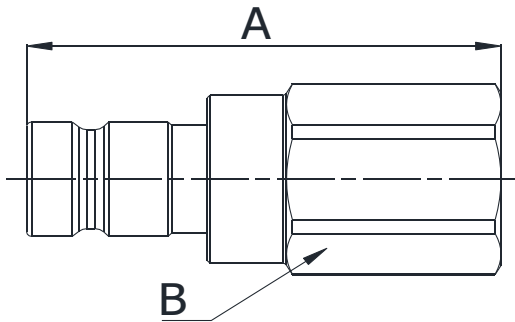
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511320A-02-04 | 7/16"-20 UNF | 40.8 | 17 | | | | |
| 5 | 1/8" | -02 | Q04511320A-02-06 | 9/16"-18 UNF | 37.4 | 17 | | | | |



Q04511280A

NPTF TERMINATION ENDS
TO ANSI B 1.20.3

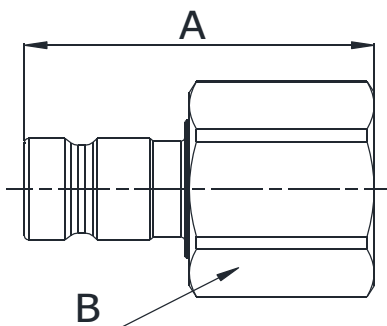
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|-----------|---------------|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | |
| 5 | 1/8" | -02 | Q04511280A-02-02 | 1/8" NPTF | 39.8 | 17 | | | |
| 5 | 1/8" | -02 | Q04511280A-02-04 | 1/4" NPTF | 44.3 | 17 | | | |
| 5 | 1/8" | -02 | Q04511280A-02-06 | 3/8" NPTF | 39.9 | 19 | | | |



Q04511341A

NPTF TERMINATION ENDS
TO ANSI B 1.20.3

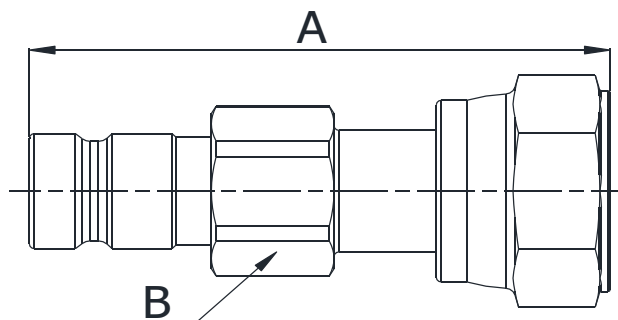
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|-----------|---------------|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | |
| 5 | 1/8" | -02 | Q04511341A-02-02 | 1/8" NPTF | 37.8 | 17 | | | |
| 5 | 1/8" | -02 | Q04511341A-02-04 | 1/4" NPTF | 45.8 | 17 | | | |



Q04511241A

ORFS TERMINATION ENDS
TO SAE J1453

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | |
|------|------|------|------------------|--------------|---------------|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | | |
| 5 | 1/8" | -02 | Q04511241A-02-08 | 13/16"-16 UN | 38.8 | 24 | | | |



Q04511241A

ORFS TERMINATION ENDS
TO SAE J1453

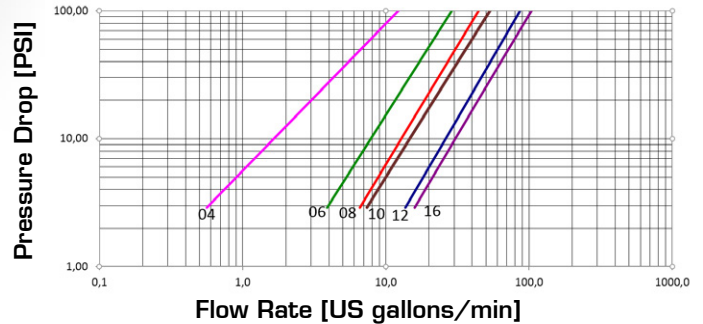
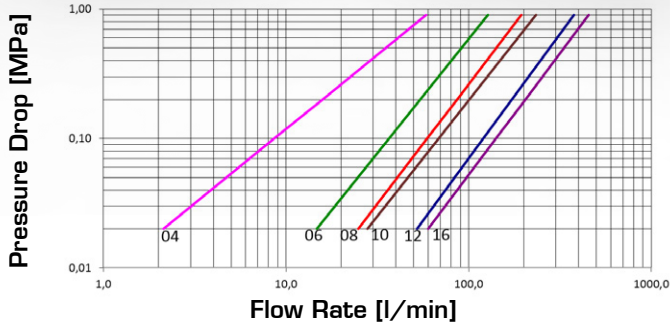
| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|--------------|---------------|----|--|--|--|--|
| DN | Inch | Dash | Male coupling | | A | B | | | | |
| 5 | 1/8" | -02 | Q04511241A-02-04 | 9/16"-16 UNF | 53 | 17 | | | | |
| 5 | 1/8" | -02 | Q04511241A-02-06 | 11/16"-16 UN | 56.8 | 17 | | | | |

FLAT FACE



Pressure Drop

Pressure Drop



TECHNICAL DATA

| 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 WITH FEMALE UNDER PRESSURE (MALE AT 0 MPa) | |
|------|------|--------------------------------------|-----|---|-----|--|--------|-------------------|-----|--|------------|------------------------|-----|--------|-----|-------|-----|---|---------------------|
| DN | inch | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | | |
| | | MPa | PSI | MPa | PSI | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | | |
| 6.3 | 1/4" | 04 | 35 | 5075 | 32 | 4640 | 16 | 4.2 | 120 | 27.0 | 0.005 | 0.0003 | 180 | 26100 | 130 | 18850 | 160 | 23200 | Allowed up to 6 MPa |
| 10 | 3/8" | 06 | 35 | 5075 | 25 | 3625 | 54 | 14.3 | 130 | 29.2 | 0.007 | 0.0004 | 135 | 19575 | 125 | 18125 | 140 | 20300 | Allowed up to 6 MPa |
| 12.5 | 1/2" | 08 | 35 | 5075 | 25 | 3625 | 86 | 22.7 | 150 | 33.7 | 0.008 | 0.0005 | 120 | 17400 | 110 | 15950 | 145 | 21025 | Allowed up to 4 MPa |
| 16 | 5/8" | 10 | 35 | 5075 | 25 | 3625 | 101 | 26.7 | 160 | 36.0 | 0.008 | 0.0005 | 150 | 21750 | 100 | 14500 | 160 | 23200 | Allowed up to 3 MPa |
| 19 | 3/4" | 12 | 35 | 5075 | 25 | 3625 | 172 | 45.4 | 210 | 47.2 | 0.009 | 0.0005 | 100 | 14500 | 105 | 15225 | 140 | 20300 | Allowed up to 2 MPa |
| 25 | 1" | 16 | 35 | 5075 | 21 | 3045 | 204 | 53.9 | 210 | 47.2 | 0.02 | 0.0012 | 105 | 15225 | 85 | 12325 | 145 | 21025 | Allowed up to 2 MPa |

Connection with Male under pressure not allowed; Disconnection under pressure not allowed
 The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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
- Safety system on female part to prevent accidental disconnection
- 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 120% of rated (freq. 1Hz - connected conditions)

MATERIAL

Female and male coupling in steel, with some stressed tempered or carbonitrided areas. Springs in AISI and C98 steel, seals in polyurethane and NBR. Other materials (VITON, EPDM or any others) on request

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
 For other temperatures the coupling is assembled with the specified seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

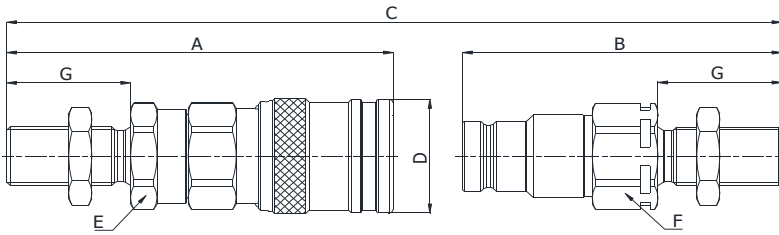
100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions. 1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected conditions.

TEST SPECIFICATIONS

ISO 18869

Q04111040A Q03911040A

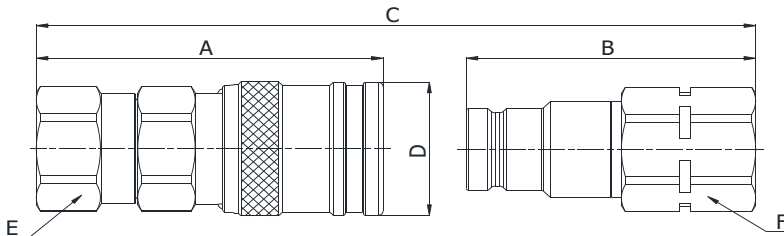
BSP TERMINATION ENDS
TO ISO 8434-6
BULKHEAD



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 10 | 3/8" | -06 | Q04111040A-06-06 | Q03911040A-06-06 | 3/8" | 99.9 | 82.5 | A+B-16,4 | ø32 | 27 | 27 | 32 |

Q04111041A Q03911041A

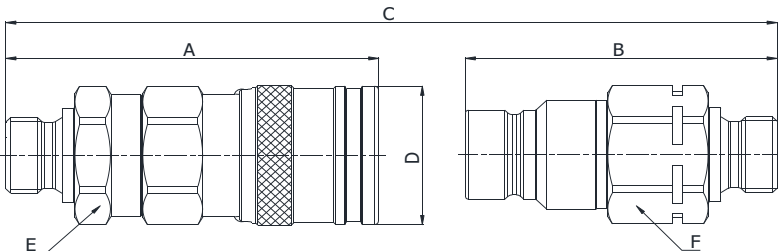
BSP TERMINATION ENDS
TO DIN 3852 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 6.3 | 1/4" | -04 | Q04111041A-04-06 | Q03911041A-04-06 | 3/8" | 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 | | |
| 10 | 3/8" | -06 | 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-08-06 | Q03911041A-08-06 | 3/8" | 81.7 | 72.5 | A+B-17,1 | ø38 | 34 | 34 | | |
| 12.5 | 1/2" | -08 | Q04111041A-08-08 | Q03911041A-08-08 | 1/2" | 84.7 | 72.5 | A+B-17,1 | ø38 | 34 | 34 | | |
| 12.5 | 1/2" | -08 | 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-12-08 | Q03911041A-12-08 | 1/2" | 105.9 | 88.5 | A+B-21,7 | ø48 | 41 | 41 | | |
| 20 | 3/4" | -12 | Q04111041A-12-12 | Q03911041A-12-12 | 3/4" | 105.9 | 88.5 | A+B-21,7 | ø48 | 41 | 41 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q04111041A-16-20 | Q03911041A-16-20 | 1.1/4" | 117 | 94.8 | A+B-22,9 | ø55 | 50 | 50 | | |

Q04111050A Q03911050A

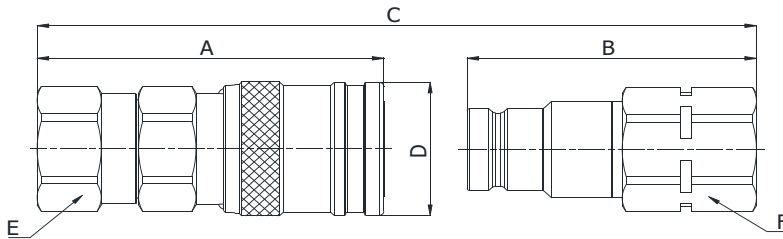
BSP TERMINATION ENDS
TO ISO 8434-6



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | 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 | | |

Q04111141A Q03911141A

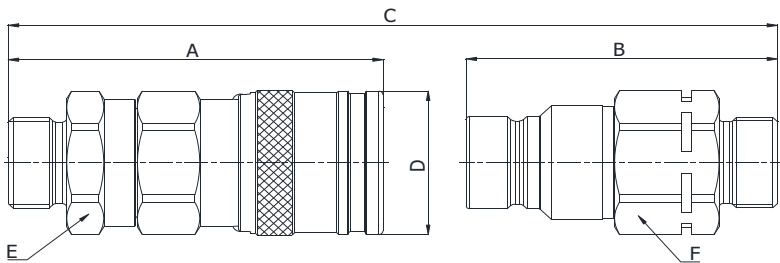
METRIC TERMINATION ENDS
TO ISO 3852-1 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | Q04111141A-06-22 | Q03911141A-06-22 | M22x1,5 | 77.9 | 64.5 | A+B-15,9 | ø32 | 27 | 27 | | |

Q04111120A Q03911120A

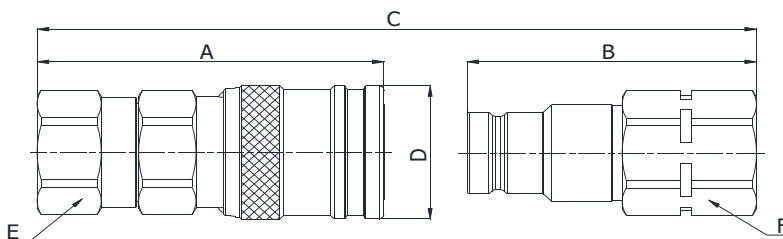
METRIC TERMINATION END
TO ISO 8434-1
S SERIES



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | | |
| 6.3 | 1/4" | -04 | Q04111120A-04-16 | Q03911120A-04-16 | M16x1,5 | 69.6 | 51.1 | A+B-11,1 | ø28 | 24 | 22 | | |
| 6.3 | 1/4" | -04 | Q04111120A-04-18 | Q03911120A-04-18 | M18x1,5 | 69.6 | 51.1 | A+B-11,1 | ø28 | 24 | 22 | | |
| 10 | 3/8" | -06 | Q04111120A-06-18 | Q03911120A-06-18 | M18x1,5 | 79.9 | 62.5 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | Q04111120A-06-20 | Q03911120A-06-20 | M20x1,5 | 79.9 | 62.5 | A+B-15,9 | ø32 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q04111120A-08-20 | Q03911120A-08-20 | M20x1,5 | 87.7 | 72.5 | A+B-17,1 | ø38 | 34 | 34 | | |
| 12.5 | 1/2" | -08 | Q04111120A-08-24 | Q03911120A-08-24 | M24x1,5 | 87.7 | 74.5 | A+B-17,1 | ø38 | 34 | 34 | | |
| 20 | 3/4" | -12 | Q04111120A-12-30 | Q03911120A-12-30 | M30x2 | 105.9 | 90.5 | A+B-21,7 | ø48 | 41 | 41 | | |

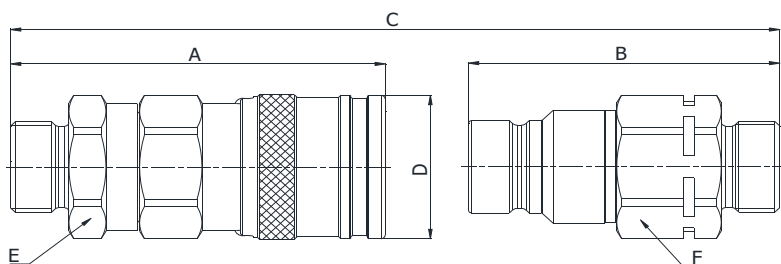
Q04111191A Q03911191A

METRIC TERMINATION ENDS
TO ISO 6149-1



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | | |
| 10 | 3/8" | -06 | Q04111191A-06-16 | Q03911191A-06-16 | M16x1,5 | 75.4 | 63 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | Q04111191A-06-18 | Q03911191A-06-18 | M18x1,5 | 76.9 | 64.5 | A+B-15,9 | ø32 | 27 | 27 | | |

413 Q.SAFE

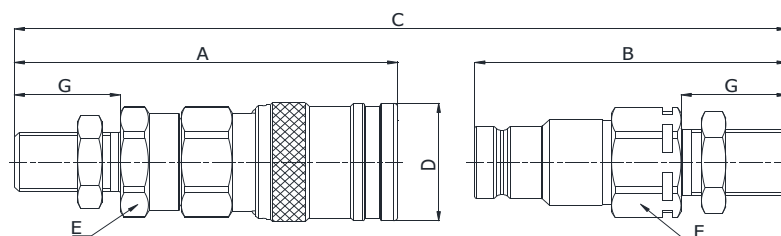


Q0411110A Q0391110A

METRIC TERMINATION END
TO ISO 8434-1
L SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|-----------------|-----------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 6.3 | 1/4" | -04 | Q0411110A-04-14 | Q0391110A-04-14 | M14x1,5 | 68.6 | 50.1 | A+B-11,1 | ø28 | 24 | 22 | | |
| 6.3 | 1/4" | -04 | 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 | | |
| 10 | 3/8" | -06 | Q0411110A-06-16 | Q0391110A-06-16 | M16x1,5 | 78.9 | 62.5 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | Q0411110A-06-18 | Q0391110A-06-18 | M18x1,5 | 78.9 | 61.5 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | Q0411110A-08-22 | Q0391110A-08-22 | M22x1,5 | 87.7 | 72.5 | A+B-17,1 | ø38 | 34 | 34 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 20 | 3/4" | -12 | 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 | | |

Q.SAFE 414



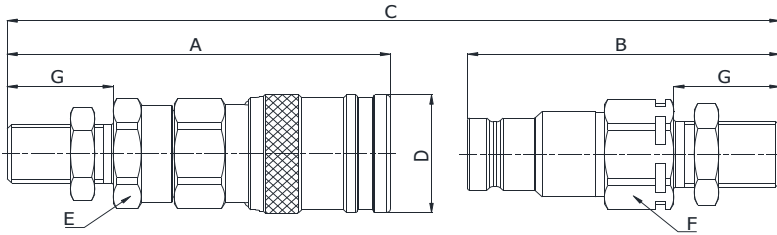
Q04111770B Q03911770B

METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 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 |
| 6.3 | 1/4" | -04 | Q04111770B-04-14 | Q03911770B-04-14 | M14x1,5 | 82.6 | 64.1 | A+B-11,1 | ø28 | 24 | 22 | 25 |
| 6.3 | 1/4" | -04 | Q04111770B-04-16 | Q03911770B-04-16 | M16x1,5 | 83.6 | 64.1 | A+B-11,1 | ø28 | 24 | 22 | 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 |
| 10 | 3/8" | -06 | Q04111770B-06-18 | Q03911770B-06-18 | M18x1,5 | 93.9 | 76.5 | A+B-15,9 | ø32 | 27 | 27 | 26 |
| 10 | 3/8" | -06 | Q04111770B-06-22 | Q03911770B-06-22 | M22x1,5 | 94.9 | 77.5 | A+B-15,9 | ø32 | 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 |
| 12.5 | 1/2" | -08 | Q04111770B-08-22 | Q03911770B-08-22 | M22x1,5 | 102.7 | 87.5 | A+B-17,1 | ø38 | 34 | 34 | 27 |
| 12.5 | 1/2" | -08 | Q04111770B-08-26 | Q03911770B-08-26 | M26x1,5 | 103.7 | 88.5 | A+B-17,1 | ø38 | 34 | 34 | 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 |
| 20 | 3/4" | -12 | Q04111770B-12-30 | Q03911770B-12-30 | M30x2 | 118.9 | 106.5 | A+B-21,7 | ø48 | 41 | 41 | 32 |

Q04111870B Q03911870B

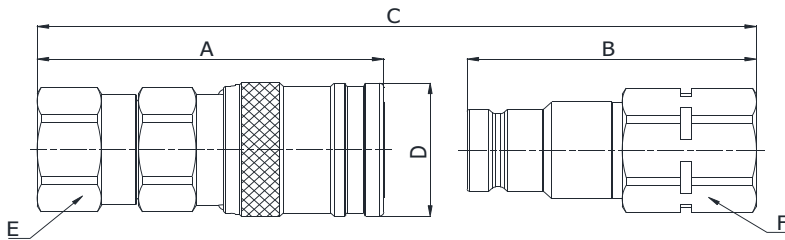
METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD S SERIES



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 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 |
| 6.3 | 1/4" | -04 | Q04111870B-04-18 | Q03911870B-04-18 | M18x1,5 | 83.6 | 65.1 | A+B-11,1 | ø28 | 24 | 22 | 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 |
| 10 | 3/8" | -06 | Q04111870B-06-20 | Q03911870B-06-20 | M20x1,5 | 94.9 | 77.5 | A+B-15,9 | ø32 | 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 |
| 20 | 3/4" | -12 | Q04111870B-12-30 | Q03911870B-12-30 | M30x2 | 119.9 | 108.5 | A+B-21,7 | ø48 | 41 | 41 | 34 |
| 25 | 1" | -16 | Q04111870B-16-36 | Q03911870B-16-36 | M36x2 | 128.5 | 101.8 | A+B-22,9 | ø55 | 50 | 50 | 36 |

Q04111341A Q03911341A

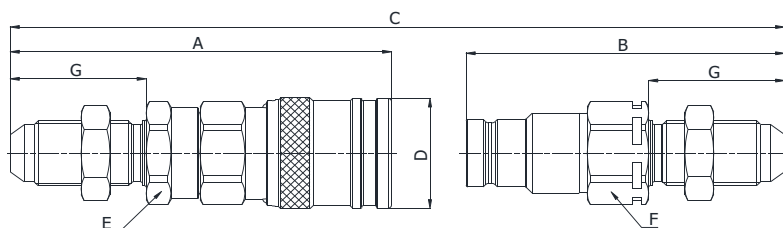
NPTF TERMINATION END
TO ANSI B 1.20.3



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 16 | 5/8" | -10 | 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 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q04111341A-16-20 | Q03911341A-16-20 | 1.1/4" NPTF | 116.6 | 94.8 | A+B-23,3 | ø55 | 50 | 50 | | |

415 Q.SAFE

Q04111230A Q03911230A

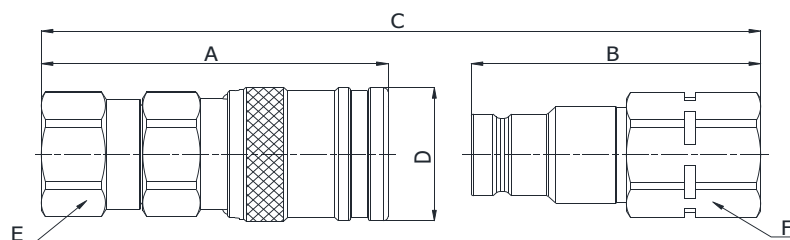


SAE TERMINATION END
TO ISO 8434-2
BULKHEAD

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-----|----|----|------|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 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 |
| 10 | 3/8" | -06 | Q04111230A-06-10 | Q03911230A-06-10 | 7/8"-14 UNF | 109 | 91.6 | A+B-15,9 | ø32 | 27 | 27 | 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 |
| 12.5 | 1/2" | -08 | Q04111230A-08-12 | Q03911230A-08-12 | 1.1/16"-12 UN | 121.1 | 105.9 | A+B-17,1 | ø38 | 34 | 34 | 44.4 |

Q.SAFE 416

Q04111301A Q03911301A

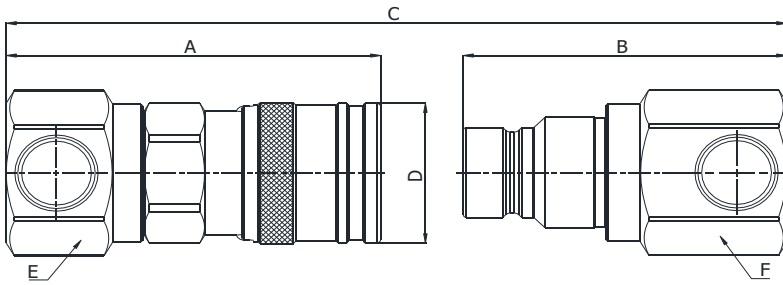


SAE TERMINATION END
TO SAE J1926-1

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | Q04111301A-06-08 | Q03911301A-06-08 | 3/4"-16 UNF | 77.4 | 65 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | Q04111301A-06-10 | Q03911301A-06-10 | 7/8"-14 UNF | 79.9 | 67.5 | A+B-15,9 | ø32 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 16 | 5/8" | -10 | 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 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q04111301A-16-16 | Q03911301A-16-16 | 1.5/16"-12 UN | 114.5 | 89.8 | A+B-22,9 | ø55 | 50 | 50 | | |

**Q04111301B
Q03911301B**

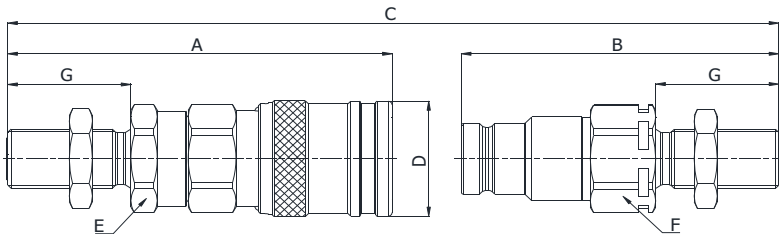
SAE TERMINATION END
TO SAE J1926-1



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | | |
| 10 | 3/8" | -06 | Q04111301B-06-06 | Q03911301B-06-06 | 9/16"-18 UNF | 84.9 | 72.5 | A+B-15,9 | ø32 | 34 | 34 | | |
| 12.5 | 1/2" | -08 | Q04111301B-08-08 | Q03911301B-08-08 | 3/4"-16 UNF | 93.2 | 80.5 | A+B-17,1 | ø38 | 41 | 41 | | |

**Q04111270A
Q03911270A**

ORFS TERMINATION ENDS
TO ISO 8434-3
BULKHEAD

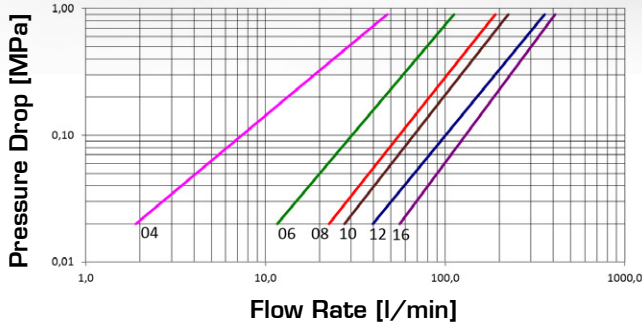


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------------|---------------|----|----------|-----|----|----|------|------|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G | H |
| 10 | 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 |

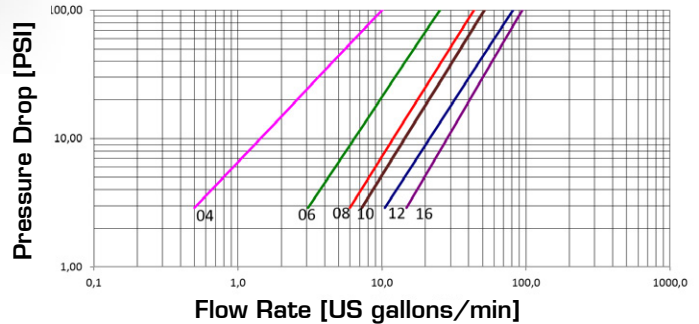
FLAT FACE HIGH PRESSURE



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | MPa | | FLOW RATE | | N | | Oil Spillage Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION WITH FEMALE UNDER PRESSURE [MALE AT 0 MPa] |
|------|------|------|-----|------|-----|------|-----------|--------|-----|------|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | | | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 35 | 5075 | 13 | 3.4 | 120 | 27.0 | 0.005 | 0.0003 | 180 | 26100 | 150 | 21750 | 190 | 27550 | Allowed up to 6 MPa |
| 10 | 3/8 | 06 | 35 | 5075 | 35 | 5075 | 46 | 12.2 | 130 | 29.2 | 0.007 | 0.0004 | 170 | 24650 | 140 | 20300 | 170 | 24650 | Allowed up to 6 MPa |
| 12.5 | 1/2 | 08 | 35 | 5075 | 35 | 5075 | 82 | 21.7 | 150 | 33.7 | 0.008 | 0.0005 | 160 | 23200 | 150 | 21750 | 170 | 24650 | Allowed up to 4 MPa |
| 16 | 5/8 | 10 | 35 | 5075 | 35 | 5075 | 98 | 25.9 | 160 | 36.0 | 0.008 | 0.0005 | 170 | 24650 | 150 | 21750 | 170 | 24650 | Allowed up to 3 MPa |
| 19 | 3/4 | 12 | 35 | 5075 | 35 | 5075 | 150 | 39.6 | 210 | 47.2 | 0.009 | 0.0005 | 150 | 21750 | 150 | 21750 | 160 | 23200 | Allowed up to 2 MPa |
| 25 | 1 | 16 | 35 | 5075 | 35 | 5075 | 186 | 49.1 | 210 | 47.2 | 0.02 | 0.0012 | 160 | 23200 | 170 | 24650 | 160 | 23200 | Allowed up to 2 MPa |

Connection with Male under pressure not allowed; Disconnection under pressure not allowed
 The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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
- Safety system on female part to prevent accidental disconnection
- Interchangeable with ISO 16028
- 1 Million impulse cycles qualified
- E-Coat 1000 plating

MATERIAL

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.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

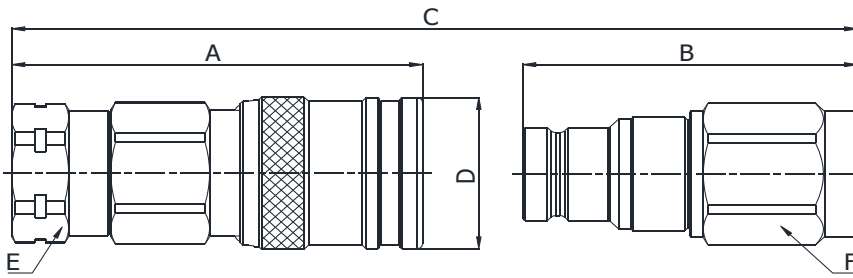
1,000,000 cycles at 120% of rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

Q04411041A Q04311041A

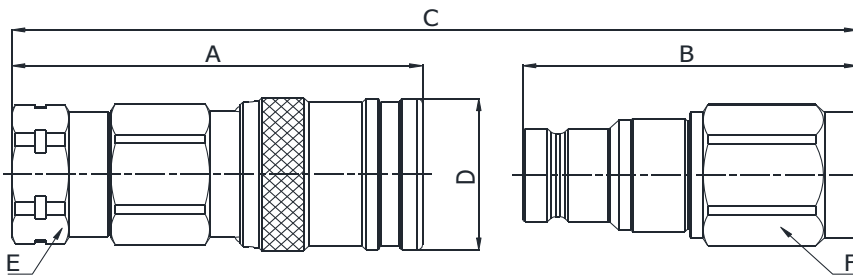
BSP TERMINATION ENDS
TO DIN 3852 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 6.3 | 1/4" | -04 | Q04411041A-04-04 | Q04311041A-04-04 | 1/4" | 65.2 | 52.4 | A+B-11,1 | ø28 | 24 | 22 |
| 10 | 3/8" | -06 | Q04411041A-06-06 | Q04311041A-06-06 | 3/8" | 78.3 | 63.8 | A+B-15,9 | ø32 | 27 | 27 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | 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 |
| 20 | 3/4" | -12 | 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 |
| 25 | 1" | -16 | Q04411041A-16-20 | Q04311041A-16-20 | 1.1/4" | 122.4 | 97.1 | A+B-22,9 | ø55 | 50 | 50 |

Q04411341A Q04311341A

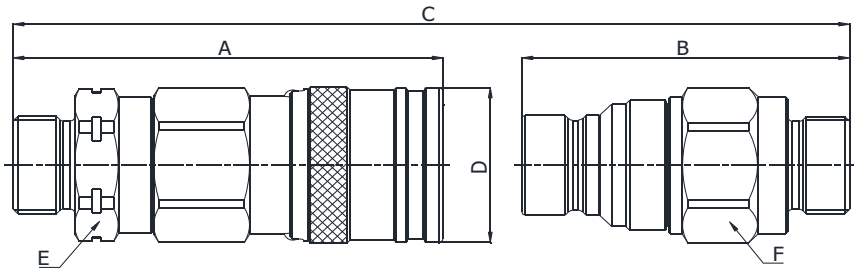
NPTF TERMINATION END
TO ANSI B 1.20.3



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |

Q0441120A Q0431120A

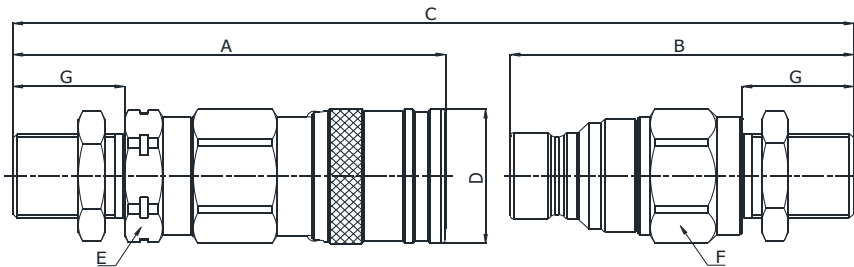
METRIC TERMINATION ENDS
TO ISO 8434-1 S SERIES



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|-----------------|-----------------|---------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q0441120A-08-24 | Q0431120A-08-24 | M24x1,5 | 97.5 | 74.3 | A+B-17,1 | ø38 | 34 | 34 |

Q04411870B Q04311870B

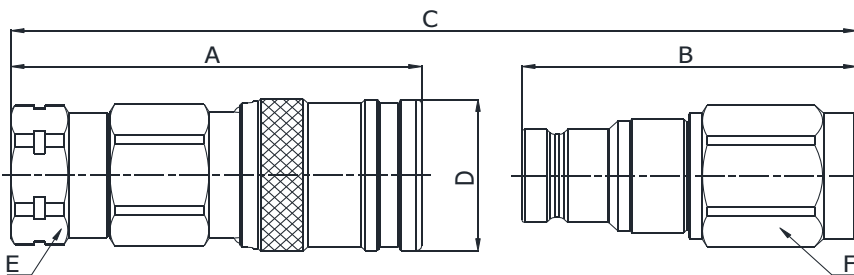
METRIC TERMINATION ENDS
TO ISO 8434-1 S SERIES
BULKHEAD



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 12.5 | 1/2" | -08 | Q04411870B-08-24 | Q04311870B-08-24 | M24x1,5 | 112.5 | 89.3 | A+B-17,1 | ø38 | 34 | 34 | 29 |

Q04411301A Q04311301A

SAE TERMINATION END
TO SAE J1926-1

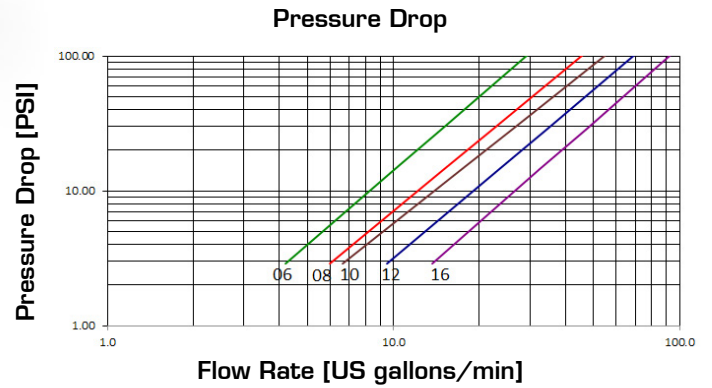
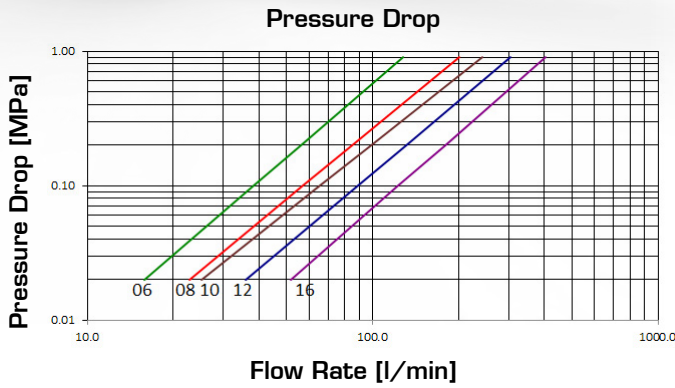


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q04411301A-06-08 | 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 |
| 12.5 | 1/2" | -08 | Q04411301A-08-12 | Q04311301A-08-12 | 1.1/16"-12UNF | 93.5 | 78.8 | A+B-17,1 | ø38 | 34 | 34 |
| 20 | 3/4" | -12 | Q04411301A-12-12 | Q04311301A-12-12 | 1.1/16"-12 UN | 111 | 89.8 | A+B-21,7 | ø48 | 41 | 41 |
| 20 | 3/4" | -12 | Q04411301A-12-16 | Q04311301A-12-16 | 1.5/16"-12 UN | 111 | 92.8 | A+B-21,7 | ø48 | 41 | 41 |

Q.SAFE 420



FLAT FACE MALE CONNECTABLE UNDER PRESSURE



TECHNICAL DATA

| SIZE | | | MPa | | | | FLOW RATE | | N | | Oil Spillage Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|-----|------|-----------|--------|-----|------|---------------------------------------|------------|------------------------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | M & F | | Connection allowed |
| | | | | | | | | | | | | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

PRODUCT DESCRIPTION

- Triple valve system that guarantees connection under pressure (female part always with 0MPa) 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
- E-Coat 1000 plating

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

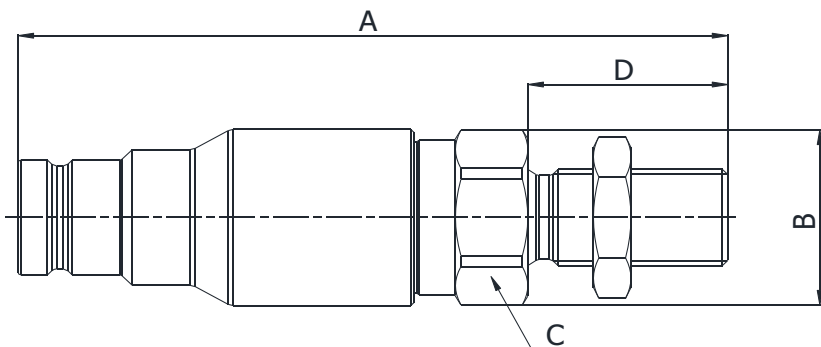
IMPULSE PRESSURES

1,000,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

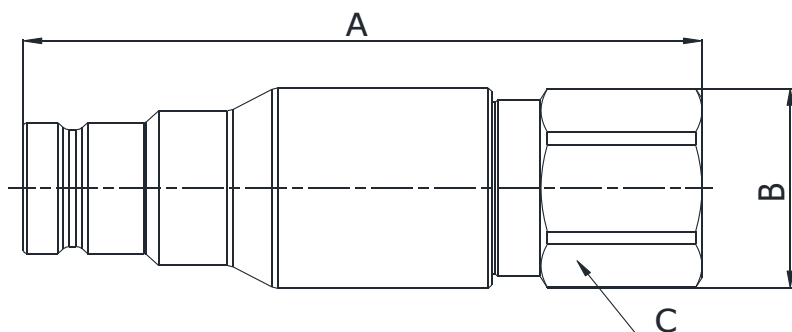
Q.SAFE 421



Q04011040A

BSP TERMINATION ENDS
TO ISO 8434-6
BULKHEAD

| SIZE | | | PART NUMBER Male coupling | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------------------|--------|---------------|-----|----|----|--|--|
| DN | Inch | Dash | | | A | B | C | D | | |
| 10 | 3/8" | -06 | Q04011040A-06-06 | 3/8" | 113.5 | ø30 | 27 | 32 | | |

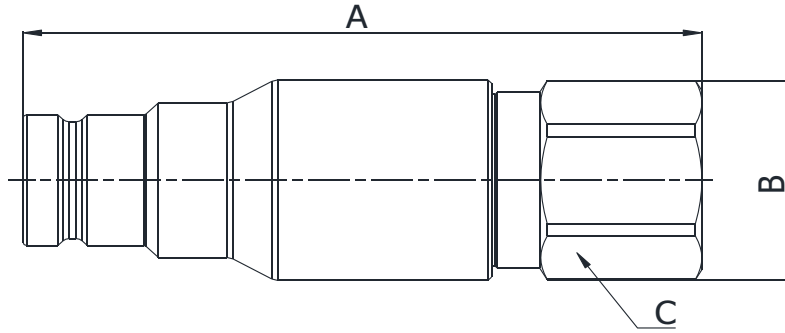


Q04011041A

BSP TERMINATION ENDS
TO DIN 3852 TYPE

| SIZE | | | PART NUMBER Male coupling | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------------------|--------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | | | A | B | C | | | |
| 10 | 3/8" | -06 | Q04011041A-06-06 | 3/8" | 91.7 | ø30 | 27 | | | |
| 10 | 3/8" | -06 | Q04011041A-06-08 | 1/2" | 94 | ø30 | 27 | | | |
| 12 | 1/2" | -08 | Q04011041A-08-06 | 3/8" | 99 | ø37 | 34 | | | |
| 12 | 1/2" | -08 | Q04011041A-08-08 | 1/2" | 99 | ø37 | 34 | | | |
| 12 | 1/2" | -08 | Q04011041A-08-12 | 3/4" | 102 | ø37 | 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 | | | |
| 19 | 3/4" | -12 | Q04011041A-12-16 | 1" | 122 | ø45 | 41 | | | |
| 25 | 1" | -16 | Q04011041A-16-16 | 1" | 126.3 | ø55 | 50 | | | |
| 25 | 1" | -16 | Q04011041A-16-20 | 1.1/4" | 130 | ø55 | 50 | | | |

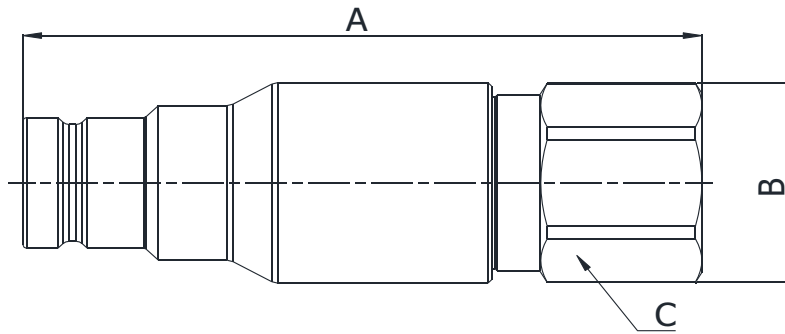
Q.SAFE
422



Q04011341A

NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-------------|---------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | | |
| 10 | 3/8" | -06 | Q04011341A-06-06 | 3/8" NPTF | 91.7 | ø30 | 27 | | | |
| 10 | 3/8" | -06 | Q04011341A-06-08 | 1/2" NPTF | 94 | ø30 | 27 | | | |
| 12 | 1/2" | -08 | Q04011341A-08-08 | 1/2" NPTF | 98 | ø38 | 34 | | | |
| 12 | 1/2" | -08 | 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 | | | |
| 19 | 3/4" | -12 | Q04011341A-12-16 | 1" NPTF | 122 | ø45 | 41 | | | |
| 25 | 1" | -16 | Q04011341A-16-20 | 1.1/4" NPTF | 130 | ø55 | 50 | | | |



Q04011301A

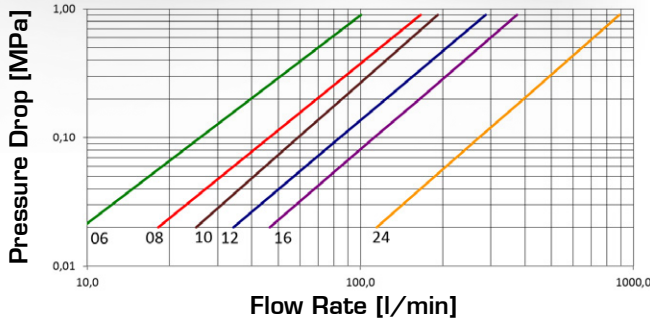
SAE TERMINATION ENDS
TO SAE J1926-1

| SIZE | | | PART NUMBER | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------------|---------------|-----|----|---|--|--|
| DN | Inch | Dash | | | Male coupling | A | B | C | | |
| 10 | 3/8" | -06 | Q04011301A-06-06 | 9/16"-18 UNF | 91.7 | ø30 | 27 | | | |
| 10 | 3/8" | -06 | Q04011301A-06-08 | 3/4" 16UNF | 94.5 | ø30 | 27 | | | |
| 12 | 1/2" | -08 | Q04011301A-08-10 | 7/8" -14 UNF | 102 | ø38 | 34 | | | |
| 12 | 1/2" | -08 | Q04011301A-08-12 | 1.1/16"-12UN | 105 | ø38 | 34 | | | |
| 19 | 3/4" | -12 | Q04011301A-12-16 | 1.5/16"-12UN | 122.1 | ø45 | 41 | | | |
| 25 | 1" | -16 | Q04011301A-16-16 | 1.5/16"-12 UN | 126.3 | ø55 | 50 | | | |

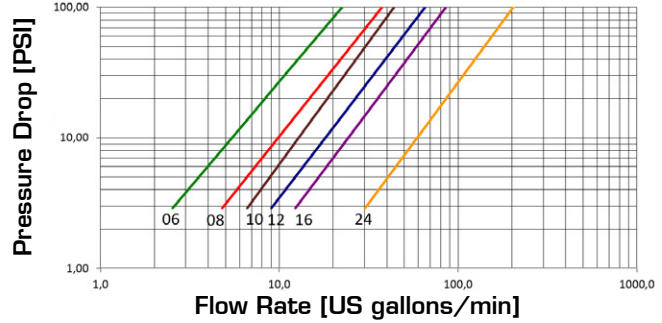


FLAT FACE SCREW TYPE

Pressure Drop



Pressure Drop



Q.SAFE 424

TECHNICAL DATA

| SIZE | | | MPa | | MPa | | FLOW RATE | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|-------|------|-----|------|-----|------|-----------|--------|--|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | | |
| 10 | 3/8 | 06 | 42 | 6090 | 35 | 5075 | 40 | 10.6 | 0.007 | 0.0004 | 190 | 27550 | 145 | 21025 | 175 | 25375 | Allowed |
| 12.5 | 1/2 | 08 | 42 | 6090 | 35 | 5075 | 69 | 18.2 | 0.008 | 0.0005 | 180 | 26100 | 145 | 21025 | 170 | 24650 | Allowed |
| 16 | 5/8 | 10 | 42 | 6090 | 35 | 5075 | 86 | 22.7 | 0.008 | 0.0005 | 200 | 29000 | 145 | 21025 | 185 | 26825 | Allowed |
| 19 | 3/4 | 12 | 42 | 6090 | 35 | 5075 | 124 | 32.8 | 0.009 | 0.0005 | 145 | 21025 | 145 | 21025 | 175 | 25375 | Allowed |
| 25 | 1 | 16 | 38 | 5510 | 35 | 5075 | 165 | 43.6 | 0.02 | 0.0012 | 145 | 21025 | 145 | 21025 | 155 | 22475 | Allowed |
| 38 | 1 1/2 | 24 | 32 | 4640 | 32 | 4640 | 396 | 104.6 | 0.05 | 0.0031 | 130 | 18850 | 130 | 18850 | 130 | 18850 | Allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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
- E-Coat 1000 plating

MATERIAL

Couplings in steel with some stressed area hardened, carbonitrided valve, springs in C98 steel, seals in polyurethane and NBR, back-up ring PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

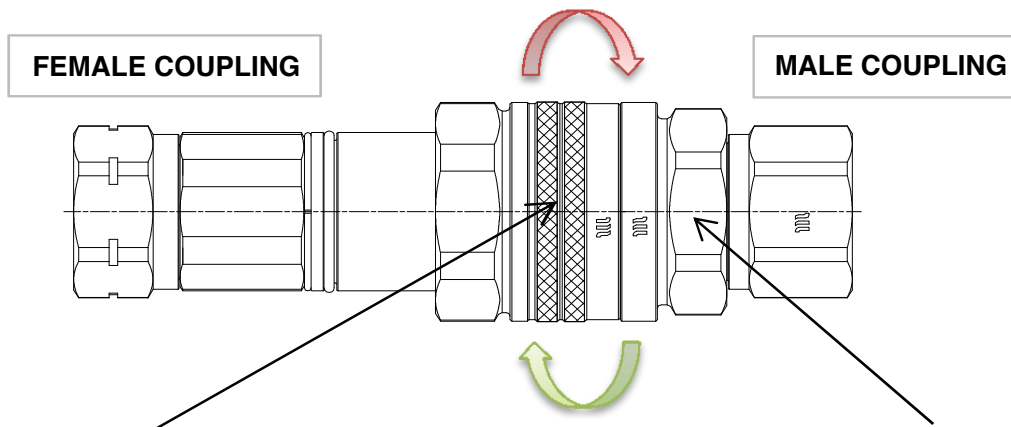
1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected and disconnected conditions

TEST SPECIFICATIONS

ISO 18869

ASSEMBLY INSTRUCTIONS

RECOMMENDED TIGHTENING TORQUES



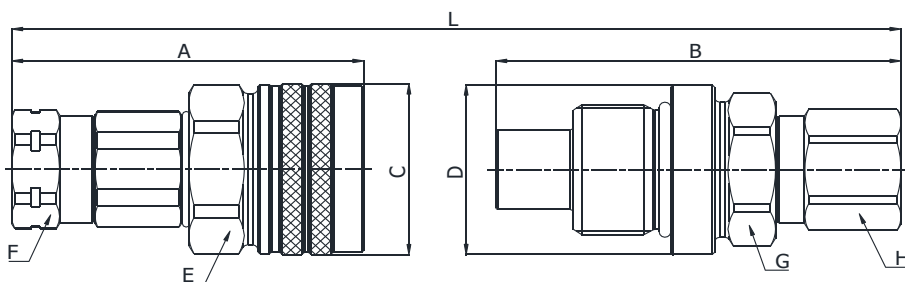
Turn the sleeve on the female applying the tightening torque through the hexagon

Hold the hexagon on the male body with a wrench

| SIZE | | | TIGHTENING TORQUE |
|------|-------|------|-------------------|
| DN | Inch | Dash | Nm |
| 10 | 3/8 | 06 | 60 |
| 12.5 | 1/2 | 08 | 80 |
| 16 | 5/8 | 10 | 100 |
| 19 | 3/4 | 12 | 120 |
| 25 | 1 | 16 | 200 |
| 38 | 1 1/2 | 24 | 400 |

Q06711041A Q06611041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

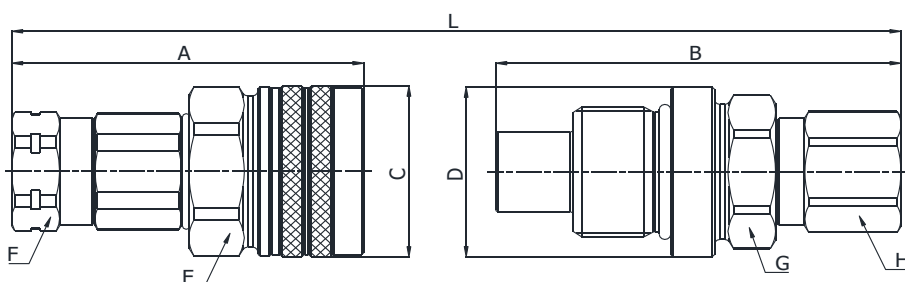


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|-------|-------|-----|----|----|----|----|----------|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G | H | L |
| 10 | 3/8" | -06 | Q06711041A-06-06 | Q06611041A-06-06 | 3/8" | 79.7 | Ø42,3 | 91.7 | Ø42 | 38 | 27 | 34 | 27 | A+B-17,1 |
| 10 | 3/8" | -06 | Q06711041A-06-08 | Q06611041A-06-08 | 1/2" | 82.7 | Ø42,3 | 94.5 | Ø42 | 38 | 27 | 34 | 27 | A+B-17,1 |
| 12.5 | 1/2" | -08 | Q06711041A-08-08 | Q06611041A-08-08 | 1/2" | 89.9 | Ø50,3 | 99.0 | Ø50 | 46 | 34 | 41 | 34 | A+B-18,4 |
| 12.5 | 1/2" | -08 | Q06711041A-08-12 | Q06611041A-08-12 | 3/4" | 91.9 | Ø50,3 | 102 | Ø50 | 46 | 34 | 41 | 34 | A+B-18,4 |
| 16 | 5/8" | -10 | Q06711041A-10-12 | Q06611041A-10-12 | 3/4" | 96.5 | 114.3 | Ø55,3 | Ø55 | 50 | 36 | 46 | 36 | A+B-18,9 |
| 19 | 3/4" | -12 | Q06711041A-12-12 | Q06611041A-12-12 | 3/4" | 109.9 | 118.7 | Ø60,3 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
| 19 | 3/4" | -12 | Q06711041A-12-16 | Q06611041A-12-16 | 1" | 112.9 | 122.1 | Ø60,3 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
| 25 | 1" | -16 | Q06711041A-16-16 | Q06611041A-16-16 | 1" | 121.3 | 126.3 | Ø70,3 | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
| 25 | 1" | -16 | Q06711041A-16-20 | Q06611041A-16-20 | 1.1/4" | 124.3 | 130 | Ø70,3 | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
| 38 | 1 1/2" | -24 | Q06711041A-24-24 | Q06611041A-24-24 | 1.1/2" | 167,6 | 166 | Ø97,3 | Ø97 | 90 | 75 | 85 | 75 | A+B-31 |

Q.SAFE 426

Q06711341A Q06611341A

NPTF TERMINATION END
TO ANSI B 1.20.3



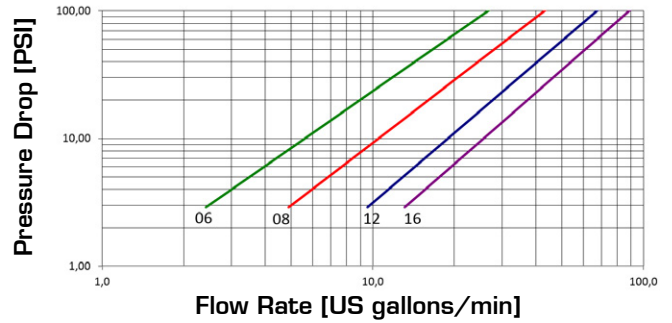
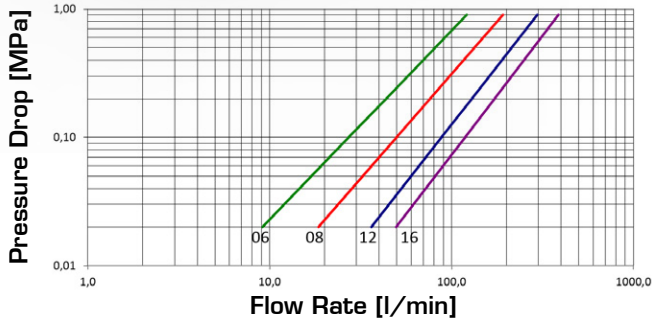
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | | |
|------|--------|------|------------------|------------------|-------------|---------------|-------|-------|-----|----|----|----|----|----------|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G | H | L |
| 10 | 3/8" | -06 | Q06711341A-06-06 | Q06611341A-06-06 | 3/8" NPTF | 79.7 | Ø42,3 | 91.7 | Ø42 | 38 | 27 | 34 | 27 | A+B-17,1 |
| 10 | 3/8" | -06 | Q06711341A-06-08 | Q06611341A-06-08 | 1/2" NPTF | 82.7 | Ø42,3 | 94.5 | Ø42 | 38 | 27 | 34 | 27 | A+B-17,1 |
| 12.5 | 1/2" | -08 | Q06711341A-08-08 | Q06611341A-08-08 | 1/2" NPTF | 89.9 | Ø50,3 | 99.0 | Ø50 | 46 | 34 | 41 | 34 | A+B-18,4 |
| 12.5 | 1/2" | -08 | Q06711341A-08-12 | Q06611341A-08-12 | 3/4" NPTF | 91.9 | Ø50,3 | 102 | Ø50 | 46 | 34 | 41 | 34 | A+B-18,4 |
| 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-12-12 | Q06611341A-12-12 | 3/4" NPTF | 109.9 | Ø60,3 | 118.7 | Ø60 | 55 | 41 | 50 | 41 | A+B-23,5 |
| 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-16-16 | Q06611341A-16-16 | 1" NPTF | 121.3 | Ø70,3 | 126.3 | Ø70 | 65 | 50 | 60 | 50 | A+B-24,5 |
| 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 | 1-1/2" | -24 | Q06711341A-24-24 | Q06611341A-24-24 | 1-1/2" NPTF | 167.6 | Ø97,3 | 166 | Ø97 | 90 | 75 | 85 | 75 | A+B-31 |



FLAT FACE FOR MULTICONNECTORS

Pressure Drop

Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | | | FLOW RATE | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|--------------------------------------|------|---|------|-----------|--------|--|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | inch | Dash | WORKING PRESSURE CONNECTED (Dynamic) | | WORKING PRESSURE DISCONNECTED (Dynamic) | | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | Allowed |
| | | | MPa | PSI | MPa | PSI | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 10 | 3/8" | 06 | 35 | 5075 | 35 | 5075 | 44 | 11.6 | 0.007 | 0.0004 | 170 | 24650 | 140 | 20300 | 180 | 26100 | Allowed |
| 12.5 | 1/2" | 08 | 35 | 5075 | 35 | 5075 | 76 | 20.1 | 0.008 | 0.0005 | 170 | 24650 | 140 | 20300 | 180 | 26100 | Allowed |
| 19 | 3/4" | 12 | 35 | 5075 | 35 | 5075 | 129 | 34.1 | 0.009 | 0.0005 | 140 | 20300 | 140 | 20300 | 160 | 23200 | Allowed |
| 25 | 1" | 16 | 35 | 5075 | 35 | 5075 | 172 | 45.4 | 0.02 | 0.0012 | 160 | 23200 | 150 | 21750 | 160 | 23200 | Allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

PRODUCT DESCRIPTION

- Flat face cartridges for multiconnections.
- Working pressure 35 MPa in connected and disconnected conditions.
- Flat mating surfaces easily wiped clean to prevent contamination and spillage during connection/disconnection.
- Shut-off by flat valve
- Polyurethane seals
- 1,000,000 cycles at 120% of rated one (freq. 1Hz – connected and disconnected conditions)
- E-Coat 1000 plating

MATERIAL

Female & male couplings in high grade carbon steel.
Male vs. female sealing system in Polyurethane compound; other seals in NBR, back-up ring in PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected and disconnected conditions

TEST SPECIFICATIONS

ISO 18869

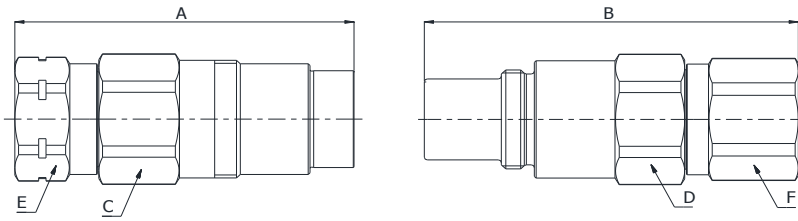
NOTE

*This product is intended as a replacement part for the couplings used on the **MQS-MC** type Multiconnector product range.*

*Instructions on removal and fitting of these components can be found in the **Appendices**.*

Q06811041A
Q06911041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

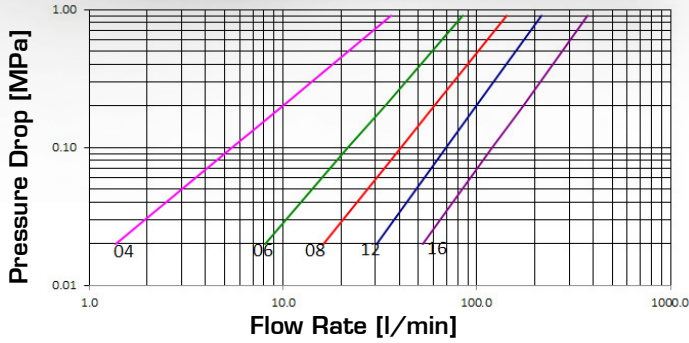


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|-------|----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q06911041A-06-06 | Q06811041A-06-06 | 3/8" | 82.3 | 93.7 | 30 | 30 | 27 | 27 |
| 10 | 3/8" | -06 | Q06911041A-06-08 | Q06811041A-06-08 | 1/2" | 85.3 | 96.5 | 30 | 30 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q06911041A-08-08 | Q06811041A-08-08 | 1/2" | 92.5 | 102 | 36 | 36 | 34 | 34 |
| 12.5 | 1/2" | -08 | Q06911041A-08-12 | Q06811041A-08-12 | 3/4" | 94.5 | 105 | 36 | 36 | 34 | 34 |
| 20 | 3/4" | -12 | Q06911041A-12-12 | Q06811041A-12-12 | 3/4" | 108 | 118.7 | 41 | 42 | 41 | 41 |
| 25 | 1" | -16 | Q06911041A-16-16 | Q06811041A-16-16 | 1" | 119.4 | 126.3 | 50 | 50 | 50 | 50 |

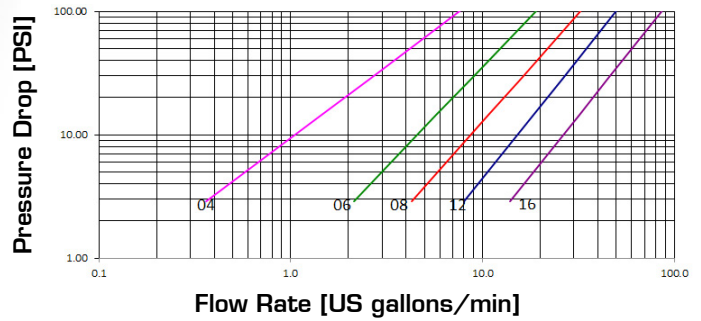
SCREW TYPE



Pressure Drop



Pressure Drop



Q.SAFE 430

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION / DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|----------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | Connection / Disconnection | | Male | | Female | | M & F | | Allowed max. 12 MPa |
| | | | MPa | PSI | l/min | US GPM | cc. | cubic inch | MPa | PSI | MPa | PSI | MPa | PSI | |
| 6.3 | 1/4 | 04 | 35 | 5075 | 10 | 2.6 | 0.8 | 0.049 | 145 | 21025 | 190 | 27500 | 190 | 27550 | Allowed max. 12 MPa |
| 10 | 3/8 | 06 | 35 | 5075 | 34 | 9.0 | 1.5 | 0.092 | 150 | 21750 | 160 | 23200 | 150 | 21750 | Allowed max. 10 MPa |
| 12.5 | 1/2 | 08 | 30 | 4350 | 61 | 16.1 | 2 | 0.122 | 130 | 18850 | 140 | 20300 | 140 | 20300 | Allowed max. 10 MPa |
| 20 | 3/4 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 male 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
- Up to size DN 20 ISO 14541 compliant

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

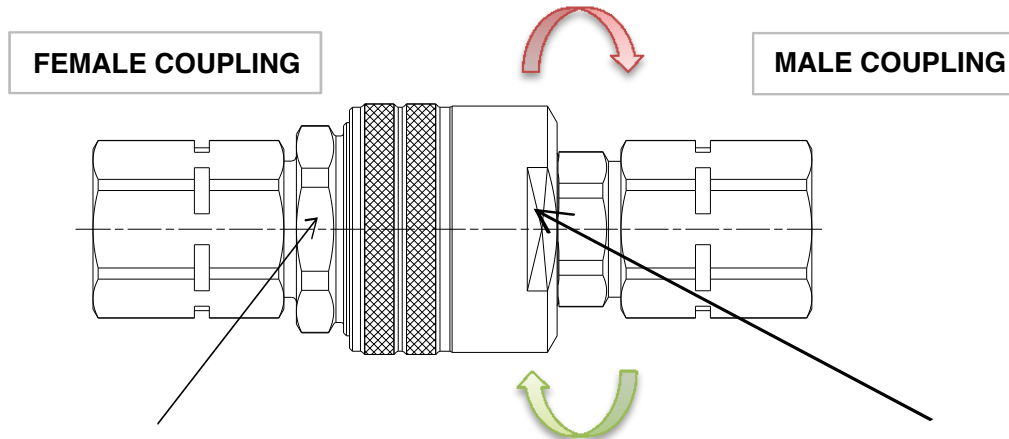
200,000 cycles at 133% of the rated one (freq. 1Hz) disconnected; 500,000 connected

TEST SPECIFICATIONS

ISO 18869

ASSEMBLY INSTRUCTIONS

RECOMMENDED TIGHTENING TORQUES

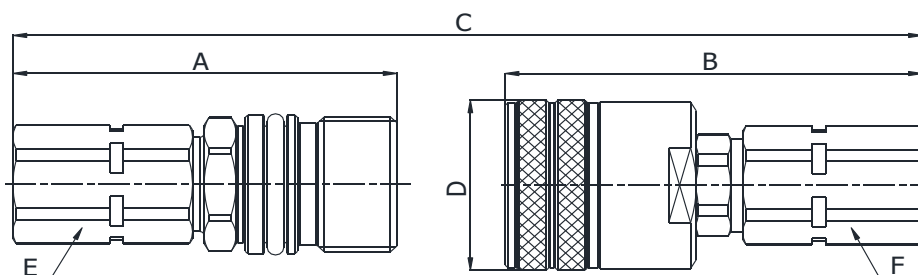


Hold the hexagon on the female body with a wrench

Turn the sleeve on the male applying the tightening torque through the wrench flats

| SIZE | | | TIGHTENING TORQUE |
|------|-------------|------|-------------------|
| DN | Inch | Dash | Nm |
| 6.3 | 1/4" | -04 | 25 |
| 10 | 3/8" | -06 | 40 |
| 12.5 | 1/2" | -08 | 70 |
| 20 | 3/4" | -12 | 100 |
| 25 | 1" | -16 | 150 |

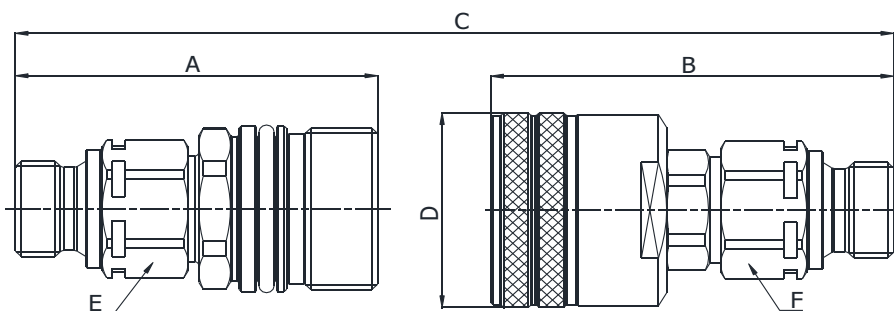
Q05211041A
Q05111041A



BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|-------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q05211041A-16-12 | Q05111041A-16-12 | 3/4" | 92.3 | 99.3 | A+B-34,5 | ø56 | 41 | 41 | | |
| 25 | 1" | -16 | Q05211041A-16-16 | Q05111041A-16-16 | 1" | 95.3 | 102.3 | A+B-34,5 | ø56 | 41 | 41 | | |

Q.SAFE 432



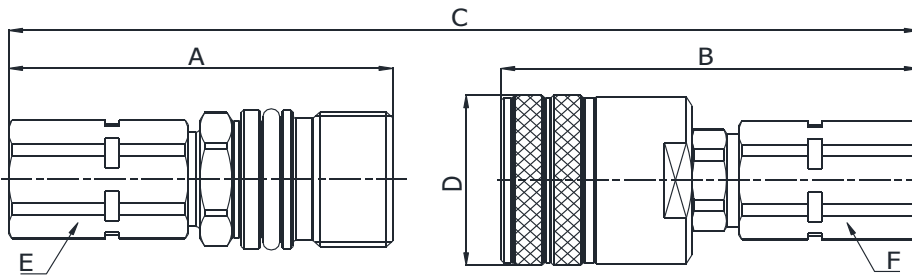
Q05211050A
Q05111050A

BSP TERMINATION ENDS
TO ISO 8434-6

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 12.5 | 1/2" | -08 | Q05211050A-08-08 | Q05111050A-08-08 | 1/2" | 71.7 | 79.7 | A+B-26,5 | ø42 | 27 | 27 | | |

**Q05211141A
Q05111141A**

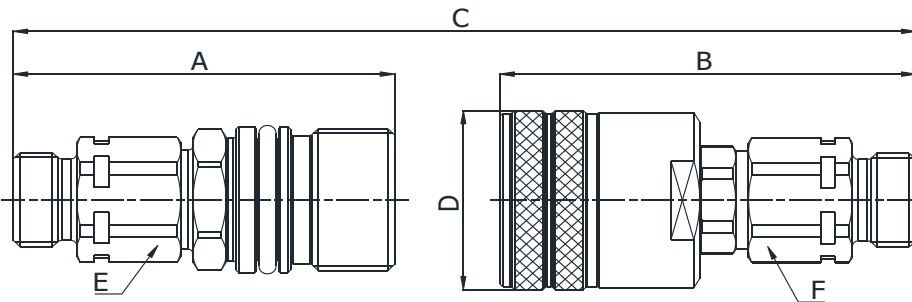
METRIC TERMINATION ENDS
TO ISO 3852-1 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 12.5 | 1/2" | -08 | Q05211141A-08-22 | Q05111141A-08-22 | M22x1,5 | 68.5 | 76.5 | A+B-26,5 | ø42 | 27 | 27 | | |

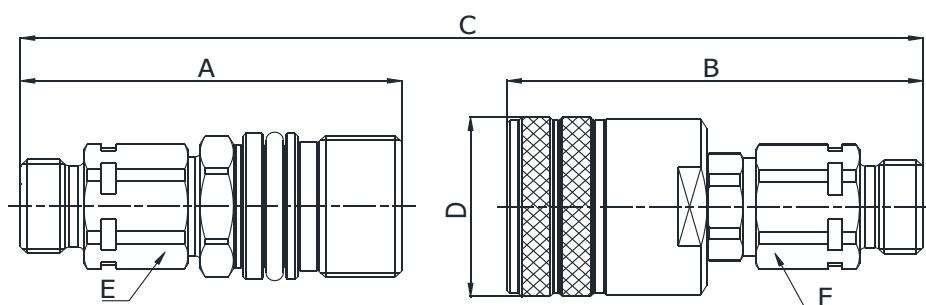
**Q05211110A
Q05111110A**

METRIC TERMINATION END
TO ISO 8434-1
L SERIES



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 6.3 | 1/4" | -04 | 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 | | |
| 10 | 3/8" | -06 | Q05211110A-06-14 | Q05211110A-06-14 | M14x1,5 | 66 | 72 | A+B-26,5 | ø34 | 22 | 22 | | |
| 10 | 3/8" | -06 | Q05211110A-06-16 | Q05211110A-06-16 | M16x1,5 | 66 | 72 | A+B-26,5 | ø34 | 22 | 22 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | Q05211110A-08-16 | Q05111110A-08-16 | M16x1,5 | 66.5 | 74.5 | A+B-26,5 | ø42 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q05211110A-08-18 | Q05111110A-08-18 | M18x1,5 | 65.5 | 73.5 | A+B-26,5 | ø42 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q05211110A-08-22 | Q05111110A-08-22 | M22x1,5 | 66.5 | 74.5 | A+B-26,5 | ø42 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q05211110A-08-26 | Q05111110A-08-26 | M26x1,5 | 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 | | |
| 20 | 3/4" | -12 | Q05211110A-12-22 | Q05111110A-12-22 | M22x1,5 | 80,8 | 89,3 | A+B-31 | ø49 | 34 | 34 | | |
| 20 | 3/4" | -12 | Q05211110A-12-26 | Q05111110A-12-26 | M26x1,5 | 80,8 | 89,3 | A+B-31 | ø49 | 34 | 34 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q05211110A-16-30 | Q05111110A-16-30 | M30x2 | 92,3 | 99,3 | A+B-34,5 | ø56 | 41 | 41 | | |
| 25 | 1" | -16 | Q05211110A-16-36 | Q05111110A-16-36 | M36x2 | 92,3 | 99,3 | A+B-34,5 | ø56 | 41 | 41 | | |

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433

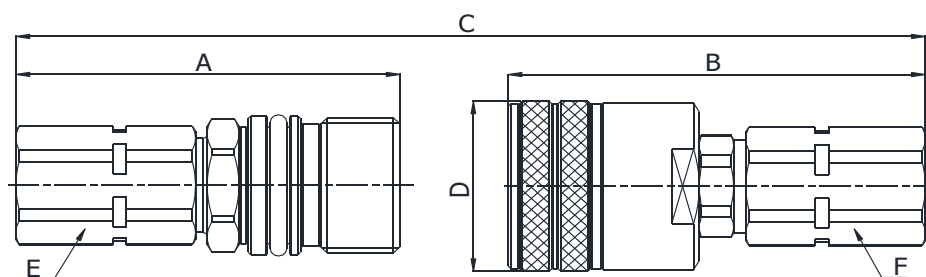


Q05211120A
Q05111120A

METRIC TERMINATION END
TO ISO 8434-1
S SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 10 | 3/8" | -06 | 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 | | |
| 12.5 | 1/2" | -08 | Q05211120A-08-20 | Q05111120A-08-20 | M20x1,5 | 66.5 | 74.5 | A+B-26,5 | ø42 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | 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 | | |
| 20 | 3/4" | -12 | Q05211120A-12-24 | Q05111120A-12-24 | M24x1,5 | 82.8 | 91.3 | A+B-31 | ø49 | 34 | 34 | | |
| 20 | 3/4" | -12 | 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 | | |
| 25 | 1" | -16 | Q05211120A-16-36 | Q05111120A-16-36 | M36x2 | 96,3 | 103.3 | A+B-34,5 | ø56 | 41 | 41 | | |
| 25 | 1" | -16 | Q05211120A-16-42 | Q05111120A-16-42 | M42x2 | 98,3 | 105.3 | A+B-34,5 | ø56 | 41 | 41 | | |

Q.SAFE 434

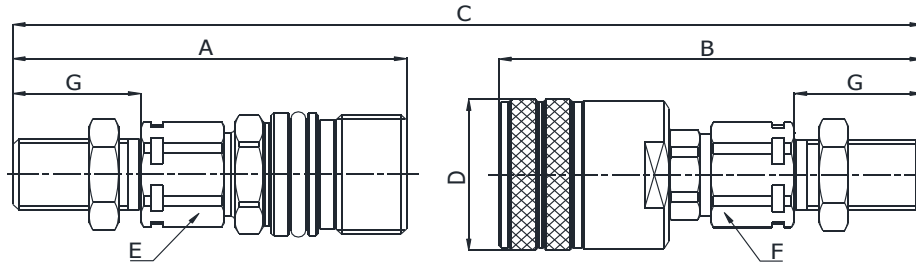


Q05211191A
Q05111191A

METRIC TERMINATION ENDS
TO ISO 6149-1

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | 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 | | |
| 12.5 | 1/2" | -08 | Q05211191A-08-18 | Q05111191A-08-18 | M18x1,5 | 68.5 | 76.5 | A+B-26,5 | ø42 | 27 | 27 | | |

Q05211770B
Q05111770B

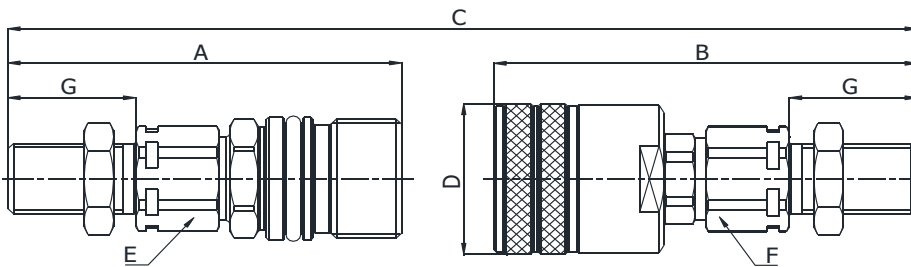


METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD L SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 6.3 | 1/4" | -04 | Q05211770B-04-12 | Q05111770B-04-12 | M12x1,5 | 74.5 | 78.5 | A+B-24,5 | ø30 | 19 | 19 | 25 |
| 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 |
| 10 | 3/8" | -06 | Q05211770B-06-12 | Q05111770B-06-12 | M12x1,5 | 81 | 87 | A+B-26,5 | ø34 | 22 | 22 | 25 |
| 10 | 3/8" | -06 | Q05211770B-06-14 | Q05111770B-06-14 | M14x1,5 | 80 | 86 | A+B-26,5 | ø34 | 22 | 22 | 25 |
| 10 | 3/8" | -06 | Q05211770B-06-16 | Q05111770B-06-16 | M16x1,5 | 80 | 86 | A+B-26,5 | ø34 | 22 | 22 | 26 |
| 10 | 3/8" | -06 | Q05211770B-06-18 | Q05111770B-06-18 | M18x1,5 | 80 | 86 | A+B-26,5 | ø34 | 22 | 22 | 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 |
| 12.5 | 1/2" | -08 | Q05211770B-08-16 | Q05111770B-08-16 | M16x1,5 | 80.5 | 88.5 | A+B-26,5 | ø42 | 27 | 27 | 26 |
| 12.5 | 1/2" | -08 | Q05211770B-08-18 | Q05111770B-08-18 | M18x1,5 | 80.5 | 88.5 | A+B-26,5 | ø42 | 27 | 27 | 26 |
| 12.5 | 1/2" | -08 | Q05211770B-08-22 | Q05111770B-08-22 | M22x1,5 | 81.5 | 89.5 | A+B-26,5 | ø42 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q05211770B-08-26 | Q05111770B-08-26 | M26x1,5 | 82.5 | 90.5 | A+B-26,5 | ø42 | 30 | 30 | 29 |
| 20 | 3/4" | -12 | Q05211770B-12-18 | Q05111770B-12-18 | M18x1,5 | 94.8 | 103.3 | A+B-31 | ø49 | 34 | 34 | 26 |
| 20 | 3/4" | -12 | Q05211770B-12-22 | Q05111770B-12-22 | M22x1,5 | 95.8 | 104.3 | A+B-31 | ø49 | 34 | 34 | 27 |
| 20 | 3/4" | -12 | Q05211770B-12-26 | Q05111770B-12-26 | M26x1,5 | 96.8 | 105.3 | A+B-31 | ø49 | 34 | 34 | 29 |
| 20 | 3/4" | -12 | Q05211770B-12-30 | Q05111770B-12-30 | M30x2 | 100.8 | 109.3 | A+B-31 | ø49 | 34 | 34 | 32 |
| 25 | 1" | -16 | Q05211770B-16-26 | Q05111770B-16-26 | M26x1,5 | 106.3 | 113.3 | A+B-34,5 | ø56 | 41 | 41 | 29 |
| 25 | 1" | -16 | Q05211770B-16-30 | Q05111770B-16-30 | M30x2 | 110.3 | 117.3 | A+B-34,5 | ø56 | 41 | 41 | 32 |
| 25 | 1" | -16 | Q05211770B-16-36 | Q05111770B-16-36 | M36x2 | 110.3 | 117.3 | A+B-34,5 | ø56 | 41 | 41 | 32 |

435 Q.SAFE

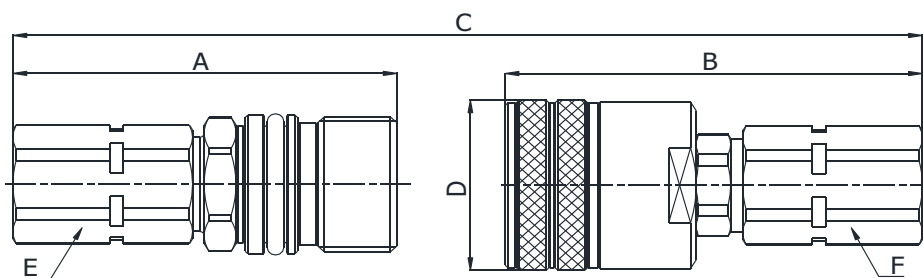
Q05211870B
Q05111870B



METRIC TERMINATION END
TO ISO 8434-1
BULKHEAD S SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|------|------|------------------|------------------|---------|---------------|-------|----------|-----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 6.3 | 1/4" | -04 | Q05211870B-04-14 | Q05111870B-04-14 | M14x1,5 | 75.5 | 79.5 | A+B-24,5 | ø30 | 19 | 19 | 27 |
| 6.3 | 1/4" | -04 | Q05211870B-04-16 | Q05111870B-04-16 | M16x1,5 | 76.5 | 77.5 | A+B-24,5 | ø30 | 19 | 19 | 27 |
| 10 | 3/8" | -06 | Q05211870B-06-16 | Q05111870B-06-16 | M16x1,5 | 81 | 87 | A+B-26,5 | ø34 | 22 | 22 | 27 |
| 10 | 3/8" | -06 | Q05211870B-06-18 | Q05111870B-06-18 | M18x1,5 | 81 | 87 | A+B-26,5 | ø34 | 22 | 22 | 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 |
| 12.5 | 1/2" | -08 | Q05211870B-08-20 | Q05111870B-08-20 | M20x1,5 | 81.5 | 89.5 | A+B-26,5 | ø42 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q05211870B-08-24 | Q05111870B-08-24 | M24x1,5 | 83.5 | 91.5 | A+B-26,5 | ø42 | 27 | 27 | 29 |
| 20 | 3/4" | -12 | Q05211870B-12-24 | Q05111870B-12-24 | M24x1,5 | 97.8 | 106.3 | A+B-31 | ø49 | 34 | 34 | 29 |
| 20 | 3/4" | -12 | Q05211870B-12-30 | Q05111870B-12-30 | M30x2 | 102.8 | 111.3 | A+B-31 | ø49 | 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 |
| 25 | 1" | -16 | Q05211870B-16-36 | Q05111870B-16-36 | M36x2 | 114.3 | 121.3 | A+B-34,5 | ø56 | 41 | 41 | 36 |
| 25 | 1" | -16 | Q05211870B-16-42 | Q05111870B-16-42 | M42x2 | 116.3 | 123.3 | A+B-34,5 | ø56 | 41 | 41 | 40 |

Q05211341A Q05111341A

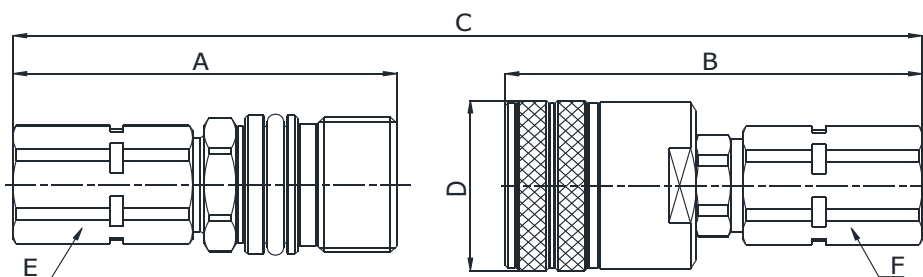


NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|-------|----------|-----|----|----|
| DN | Inch | Dash | 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 |

Q.SAFE 436

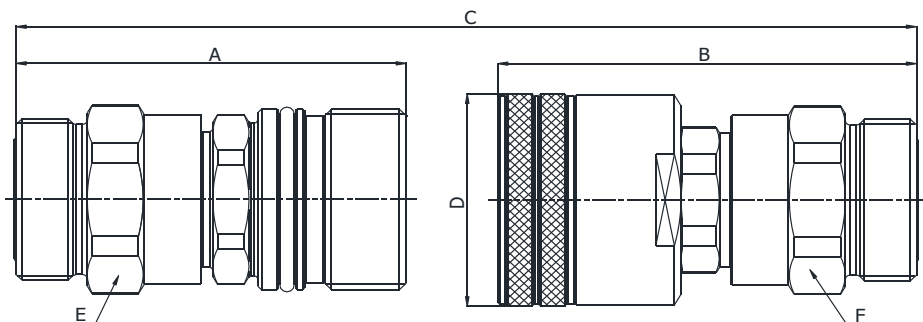
Q05211301A Q05111301A



SAE TERMINATION END
TO SAE J1926-1

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-------------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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 |
| 12.5 | 1/2" | -08 | Q05211301A-08-10 | Q05111301A-08-10 | 7/8"-14 UNF | 71.5 | 79.5 | A+B-26,5 | ø42 | 27 | 27 |

Q05211240A Q05111240A



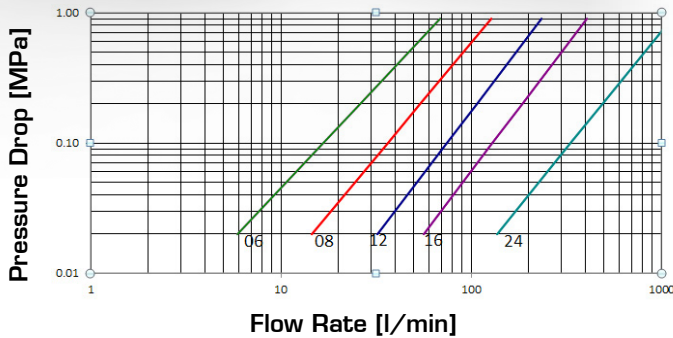
ORFS TERMINATION ENDS
TO ISO 8434-3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-----|----|----|
| DN | Inch | Dash | 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 |

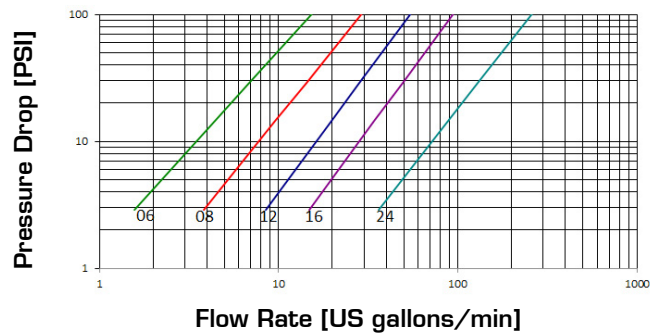


SCREW TYPE HEAVY DUTY

Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION / DISCONNECTION UNDER PRESSURE |
|------|-------|------|-----|------|-----------|--------|--------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | Allowed |
| | | | | | | | | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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
- Up to size DN 20 ISO 14541 compliant

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
Specific seals available in case of higher temperatures

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

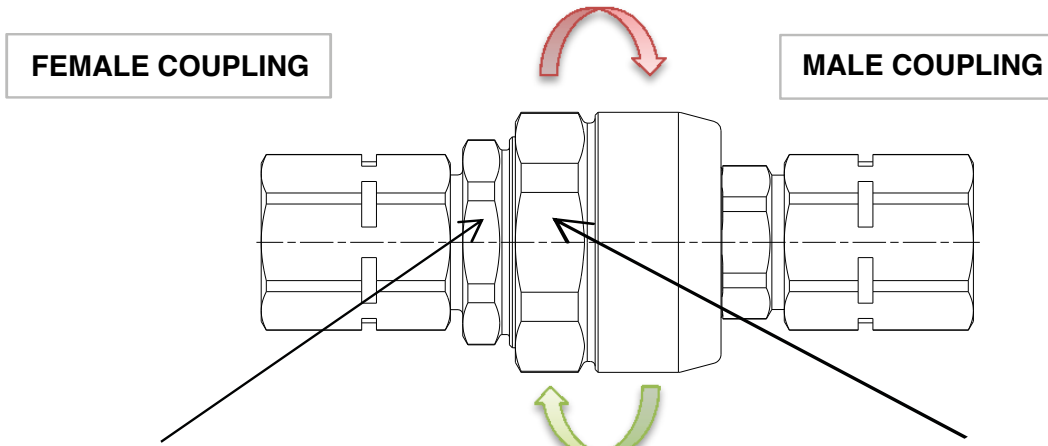
200,000 cycles at 133% of the rated one (freq. 1Hz) disconnected; 500,000 connected

TEST SPECIFICATIONS

ISO 18869

ASSEMBLY INSTRUCTIONS

RECOMMENDED TIGHTENING TORQUES



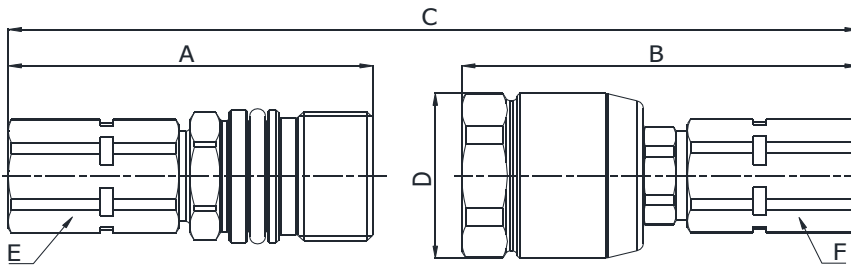
Hold the hexagon on the female body with a wrench

Turn the sleeve on the male applying the tightening torque through the hexagon

| SIZE | | | TIGHTENING TORQUE |
|------|--------|------|-------------------|
| DN | Inch | Dash | Nm |
| 10 | 3/8" | -06 | 50 |
| 12.5 | 1/2" | -08 | 80 |
| 20 | 3/4" | -12 | 120 |
| 25 | 1" | -16 | 180 |
| 38 | 1-1/2" | -24 | 300 |

Q06211041A Q06111041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

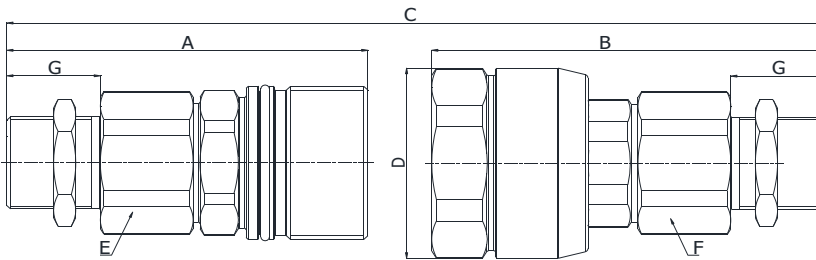


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|-------|----------|-------|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q06211041A-06-04 | Q06111041A-06-04 | 1/4" | 68 | 74 | A+B-26,5 | ø34,7 | 22 | 22 |
| 10 | 3/8" | -06 | 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 |
| 12.5 | 1/2" | -08 | 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 |
| 20 | 3/4" | -12 | 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 |
| 25 | 1" | -16 | 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 |
| 38 | 1-1/2" | -24 | Q06211041A-24-24 | Q06111041A-24-24 | 1.1/2" | 127.5 | 140.3 | A+B-47,5 | ø86,6 | 60 | 60 |

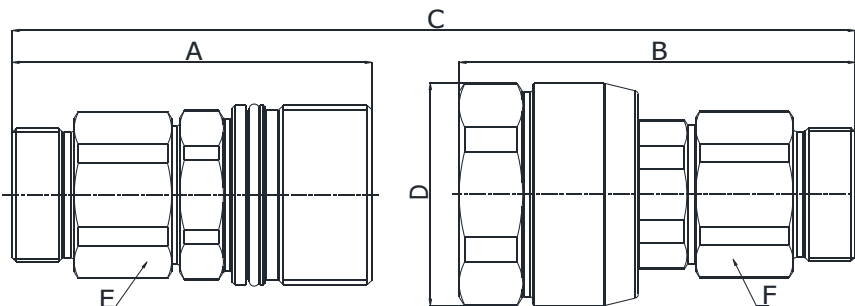
439 Q.SAFE

Q06211870B Q06111870B

METRIC TERMINATION ENDS
BULKHEAD S SERIES



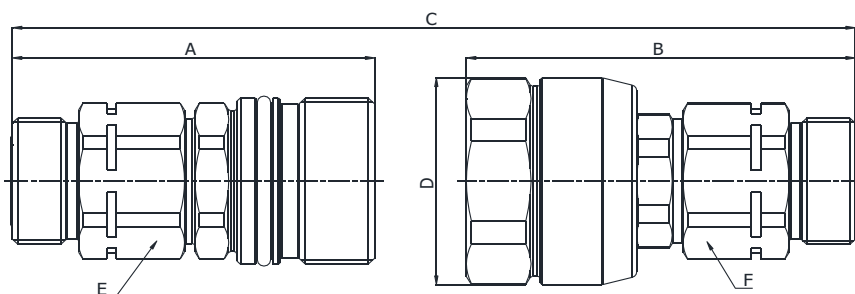
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|-------|----------|-------|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | |
| 38 | 1-1/2" | -24 | Q06211870B-24-42 | Q06111870B-24-42 | M42x2 | 146.7 | 159.5 | A+B-47,3 | ø86,6 | 60 | 60 | 38 |



Q06211120A
Q06111120A

METRIC TERMINATION ENDS
TO ISO 8434-1 S SERIES

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|-----|----------|-------|----|----|
| DN | Inch | Dash | 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 |



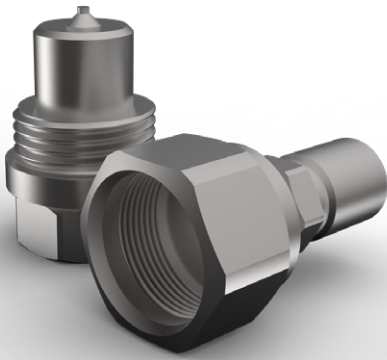
Q06211240A
Q06111240A

ORFS TERMINATION ENDS
TO ISO 8434-3

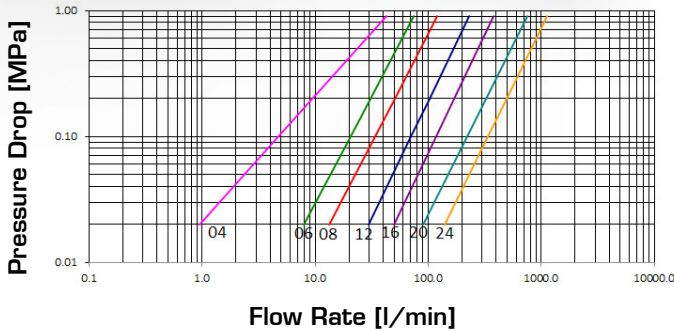
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|---------------|---------------|-------|----------|-------|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 25 | 1" | -16 | Q06211240A-16-16 | Q06111240A-16-16 | 1.7/16"-12 UN | 98.3 | 102.8 | A+B-34,5 | ø59,6 | 46 | 46 |

Q.SAFE 440

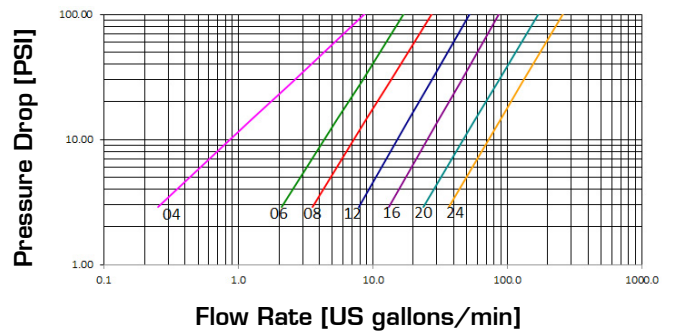
SCREW TYPE HEAVY DUTY



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|-------|--|--------|--|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | 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 | ⅜ | 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 | 0.122 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

Couplings in steel with some stressed area hardened.
Carbonitrided valve, springs in C98 steel, seals in NBR and back-up ring in PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

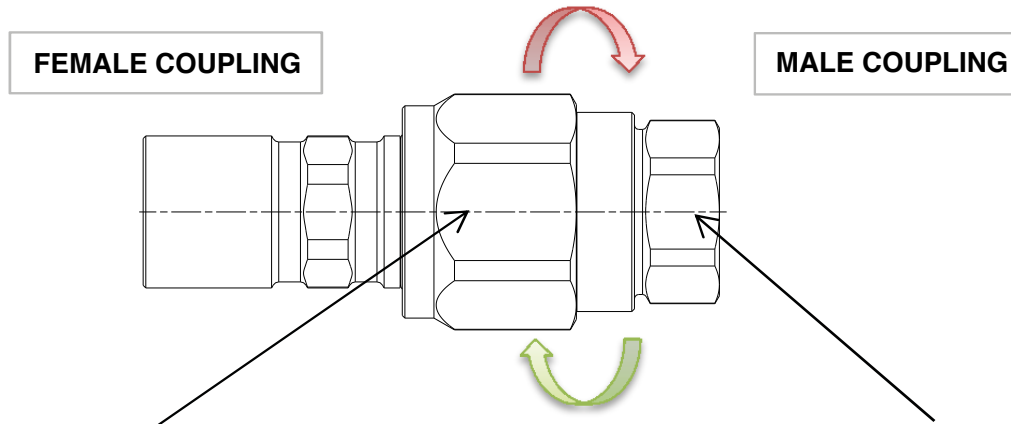
200,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

ASSEMBLY INSTRUCTIONS

RECOMMENDED TIGHTENING TORQUES



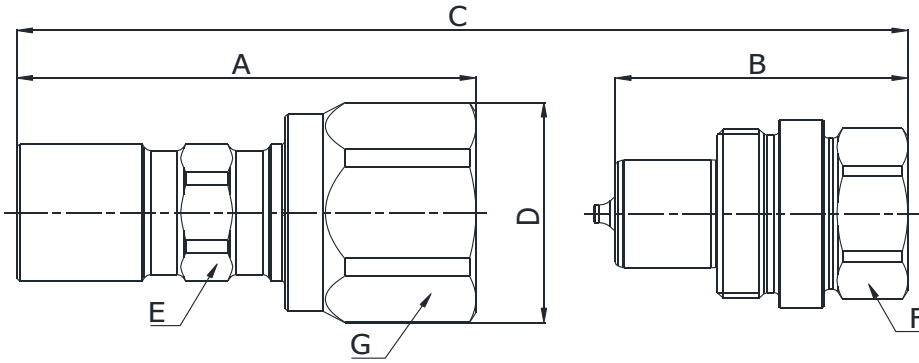
Turn the sleeve on the female applying the tightening torque through the hexagon

Hold the hexagon on the male body with a wrench

| SIZE | | | TIGHTENING TORQUE |
|------|-------------|------|-------------------|
| DN | Inch | Dash | Nm |
| 6 | 1/4" | -04 | 50 |
| 10 | 3/8" | -06 | 70 |
| 12.5 | 1/2" | -08 | 100 |
| 19 | 3/4" | -12 | 150 |
| 25 | 1" | -16 | 250 |
| 31 | 1-1/4" | -20 | 400 |
| 38 | 1-1/2" | -24 | 500 |

**Q05411041A
Q05311041A**

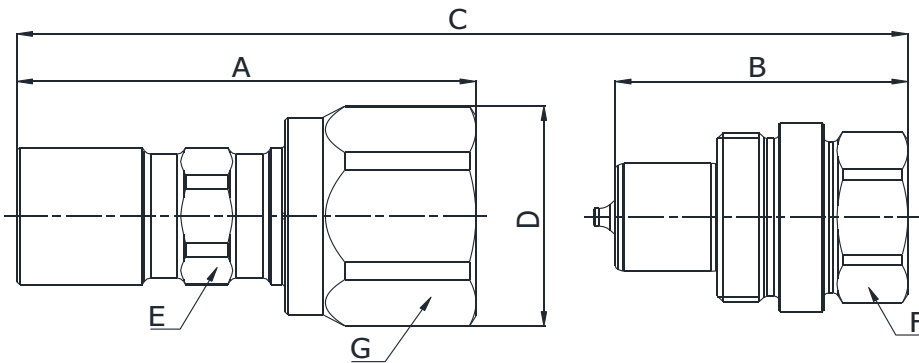
BSP TERMINATION ENDS
TO DIN 3852 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|----|
| DN | Inch | Dash | 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 |

**Q05411341A
Q05311341A**

NPTF TERMINATION END
TO ANSI B 1.20.3



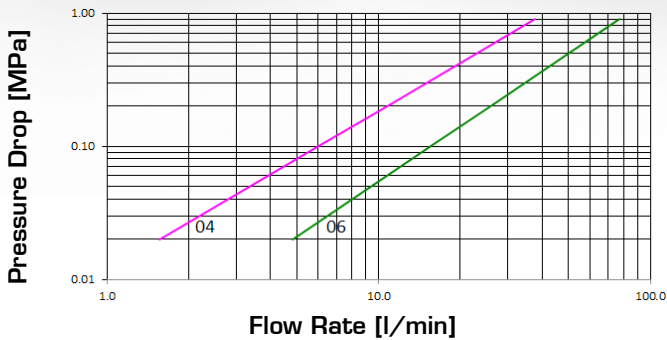
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-------|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 6.3 | 1/4" | -04 | 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 |

443 Q.SAFE

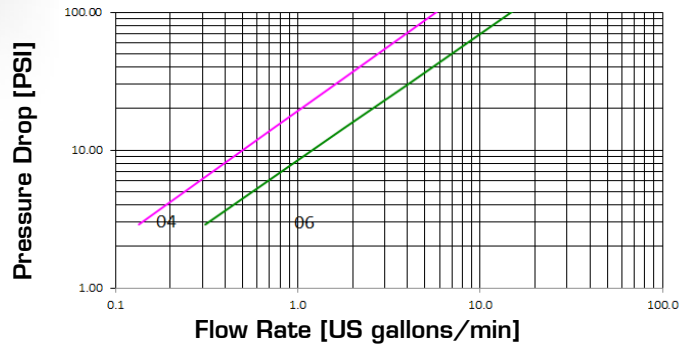
SCREW TYPE HYDRAULIC CYLINDERS (POPPET)



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|-------|-----------|--------|--------------|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | 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 | 72 | 10440 | 11 | 2.9 | 0.4 | 0.024 | 350 | 50750 | 310 | 44950 | 320 | 46400 | Allowed Max. 10 MPa* |
| 10 | 3/8 | 06 | 72 | 10440 | 26 | 7 | 0.6 | 0.037 | 290 | 42050 | 300 | 43500 | 290 | 42050 | Allowed Max. 10 MPa* |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow
*In one part

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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
Specific seals available in case of higher temperatures

SAFETY FACTOR

4:1 for dynamic pressures

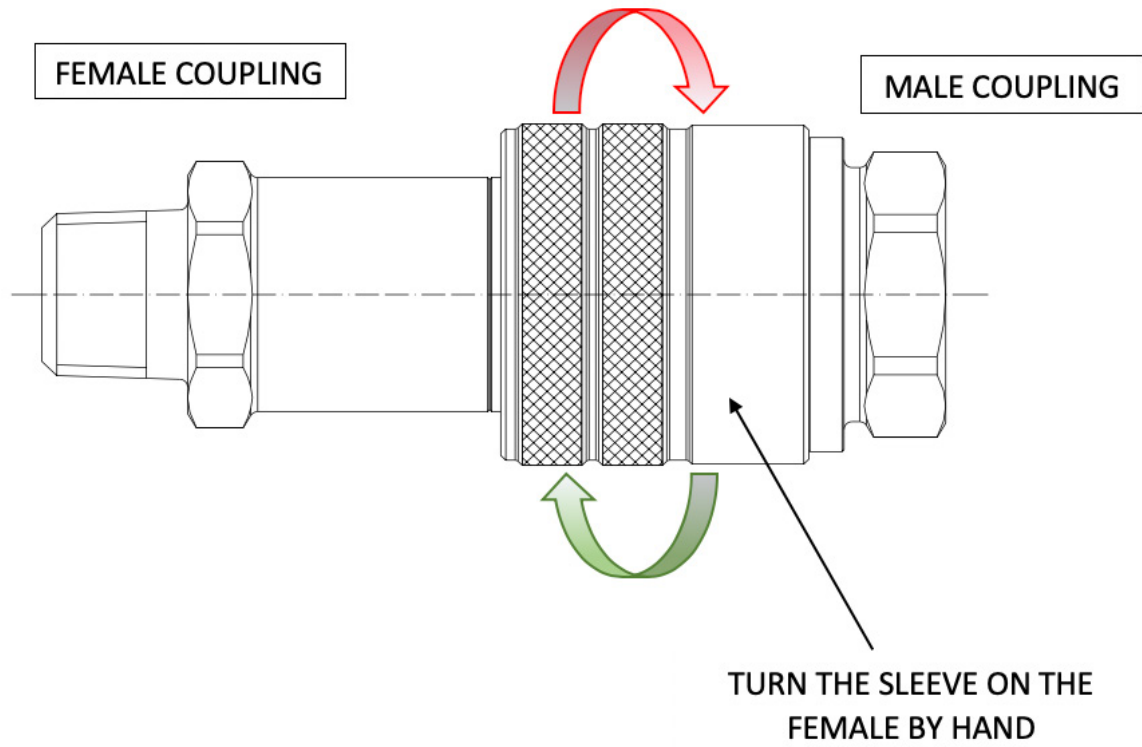
IMPULSE PRESSURES

10,000 cycles at 100% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

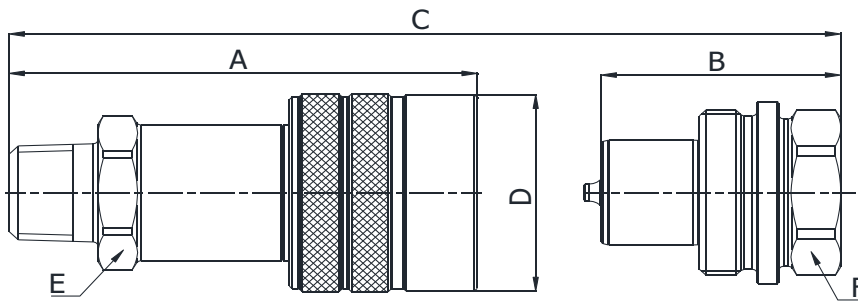
ISO 18869

ASSEMBLY INSTRUCTIONS



Q05611280B

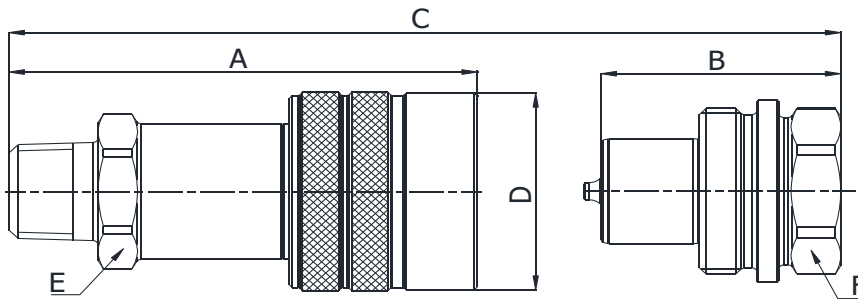
NPT TERMINATION ENDS
TO ANSI B1.20.3



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------------|-----------|---------------|---|--------|-------|----|---|
| DN | Inch | Dash | 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 | - |
| 10 | 3/8" | -06 | Q05611280B-06-06 | - | 3/8" NPTF | 76 | - | A+B-25 | ø35,6 | 25 | - |

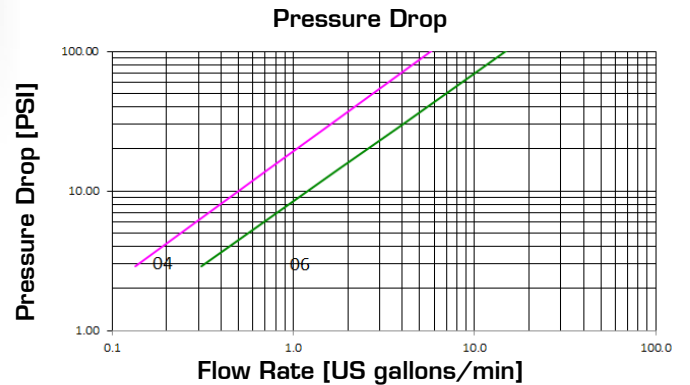
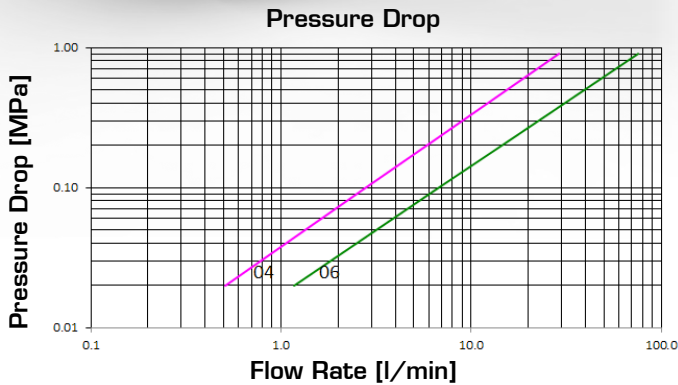
Q05511341B

NPT TERMINATION ENDS
TO ANSI B1.20.3



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|-----------------|------------------|-----------|---------------|----|--------|---|---|----|
| DN | Inch | Dash | 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 |
| 10 | 3/8" | -06 | - | Q05511341B-06-06 | 3/8" NPTF | - | 39 | A+B-25 | - | - | 27 |

SCREW TYPE HYDRAULIC CYLINDERS (BALL)



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|-------|-----------|--------|--|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | 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 | 72 | 10440 | 11 | 2.9 | 0.4 | 0.024 | 350 | 50750 | 310 | 44950 | 320 | 46400 | Allowed Max. 10 MPa* |
| 10 | 3/8 | 06 | 72 | 10440 | 26 | 7 | 0.6 | 0.037 | 290 | 42050 | 300 | 43500 | 290 | 42050 | Allowed Max. 10 MPa* |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow
*In one part

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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
Specific seals available in case of higher temperatures

SAFETY FACTOR

4:1 for dynamic pressures

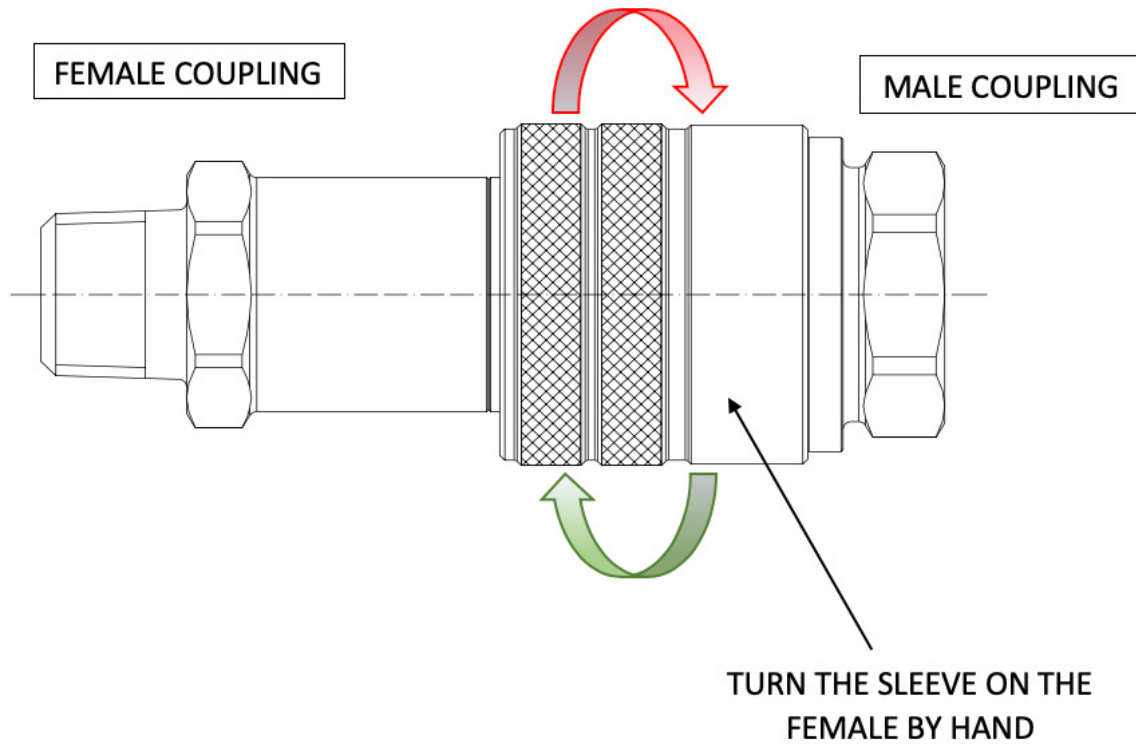
IMPULSE PRESSURES

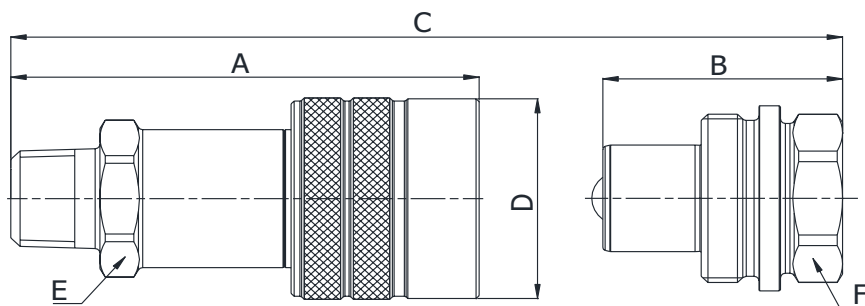
10,000 cycles at 100% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 7241-2

ASSEMBLY INSTRUCTIONS

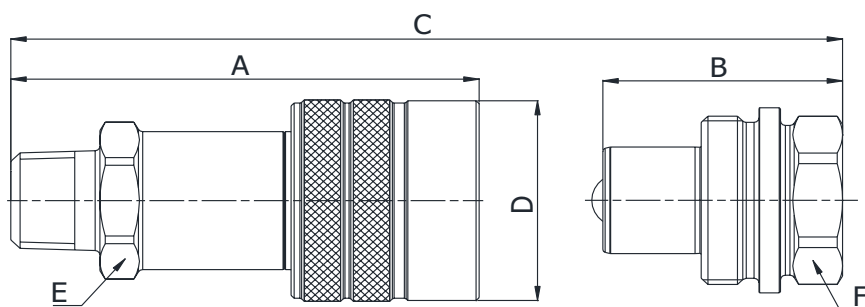




Q05611280C

NPT TERMINATION ENDS
TO ANSI B1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|---------------|-----------|---------------|---|--------|-------|----|---|
| DN | Inch | Dash | 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 | - |
| 10 | 3/8" | -06 | Q05611280C-06-06 | - | 3/8" NPTF | 75.6 | - | A+B-25 | ø35,6 | 25 | - |



Q05510341C

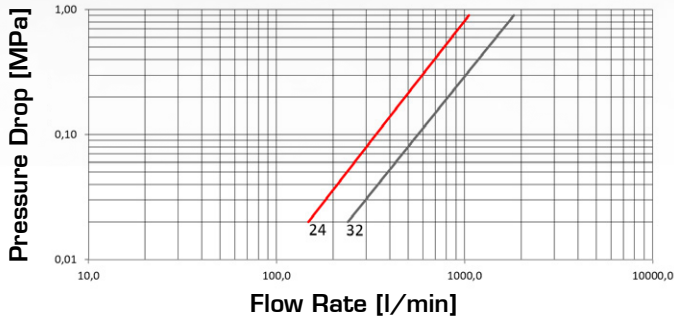
NPT TERMINATION ENDS
TO ANSI B1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|-----------------|------------------|-----------|---------------|----|--------|---|---|----|
| DN | Inch | Dash | 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 |
| 10 | 3/8" | -06 | - | Q05510341C-06-06 | 3/8" NPTF | - | 39 | A+B-25 | - | - | 27 |

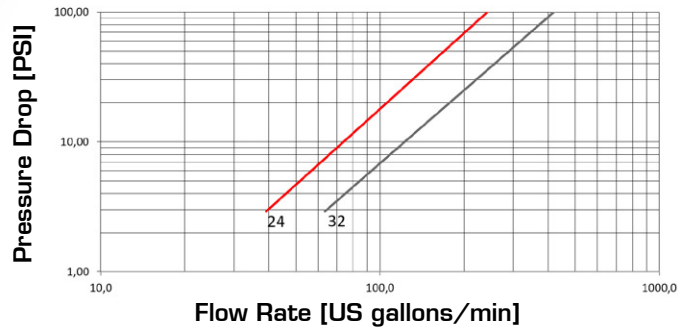


SCREW TYPE FOR OIL & GAS

Pressure Drop



Pressure Drop



Q.SAFE 450

TECHNICAL DATA

| SIZE | | | MPa | | | | FLOW RATE | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|-------|------|-----|------|-----|------|-----------|--------|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | Residual pressure |
| | | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | | |
| 38 | 1-1/2 | -24 | 35 | 5075 | 25 | 3625 | 485 | 128.1 | 35 | 2.137 | 100 | 14500 | 120 | 17400 | 150 | 21750 | Residual pressure |
| 51 | 2 | -32 | 35 | 5075 | 25 | 3625 | 820 | 216.6 | 80 | 4.884 | 100 | 14500 | 100 | 14500 | 180 | 26100 | Residual pressure |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

PRODUCT DESCRIPTION

- Screw-type couplings specially designed for Oil & Gas 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
- Inspection holes to check full connection
- Shut-off by poppet valve
- Interchangeable with similar products available on the market

MATERIAL

Female and male couplings in high grade carbon steel. Springs in C98 steel, seals in NBR (other materials available on request) and back-up ring in PTFE

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

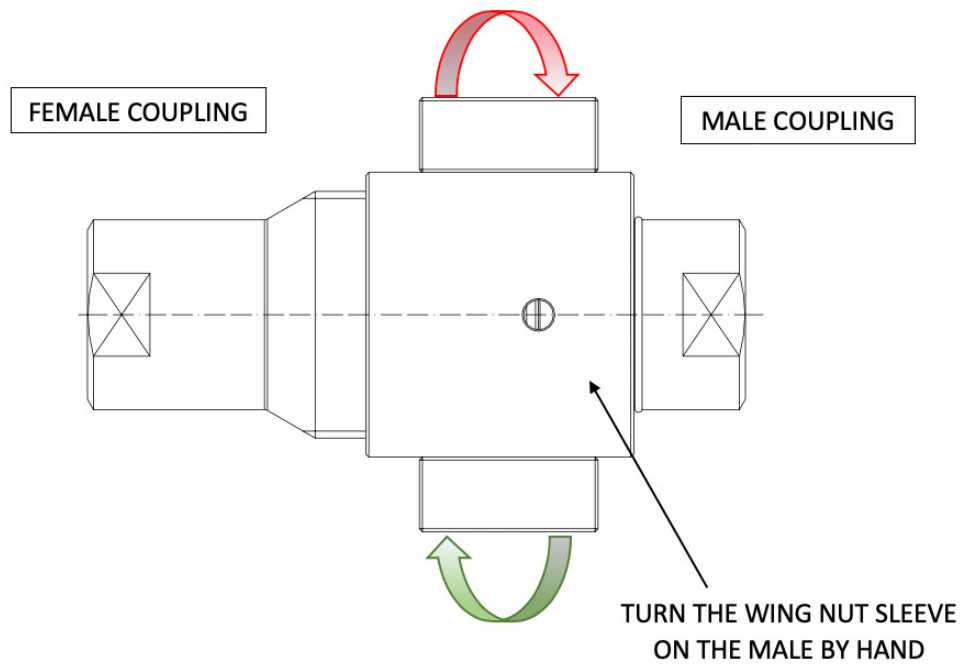
IMPULSE PRESSURES

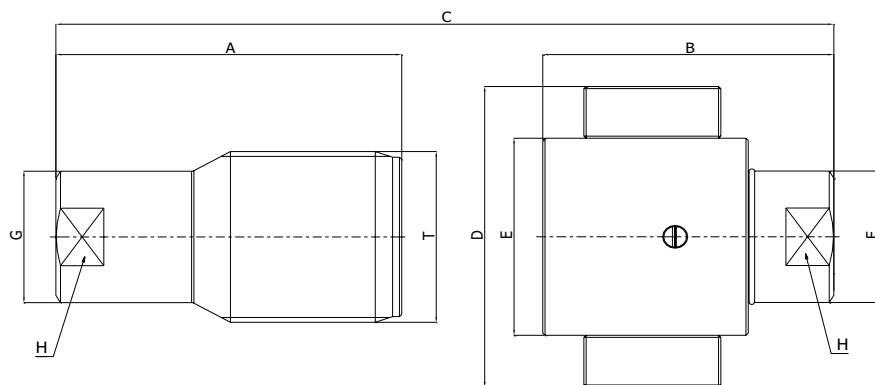
500,000 cycles at 120% of the rated one (freq. 1Hz) in connected and disconnected conditions.

TEST SPECIFICATIONS

ISO 18869

ASSEMBLY INSTRUCTIONS



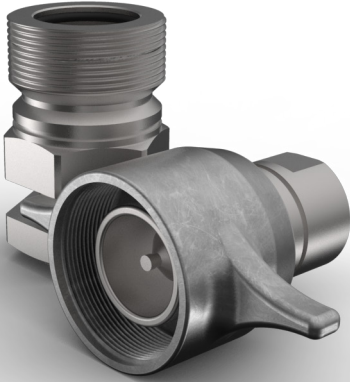


Q07711041A
Q07611041A

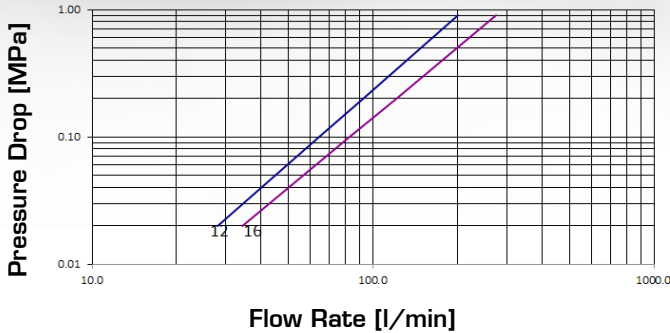
BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | | |
|------|-------|------|------------------|------------------|--------|---------------|-------|----------|-------|--------|-------|-------|------|---------------------|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G | H | T |
| 38 | 1-1/2 | -24 | Q07711041A-24-24 | Q07611041A-24-24 | 1.1/2" | 151.5 | 127.5 | A+B-40,5 | 145.2 | ø95,2 | ø63,5 | ø63,5 | 57.1 | STUB ACME 3-1/4 - 4 |
| 51 | 2 | -32 | Q07711041A-32-32 | Q07611041A-32-32 | 2" | 179 | 154 | A+B-51 | 168.7 | ø118,7 | ø83 | ø82,5 | 76.2 | STUB ACME 4 - 4 |

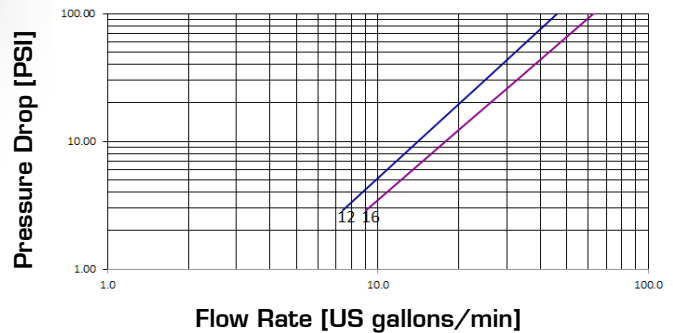
SCREW TYPE FOR TRUCKS



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|------|-----|------|-----------|--------|--|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 20 | 3/4 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 male coupling
- Shut-off by poppet valve
- Interchangeable with similar products available on the market

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

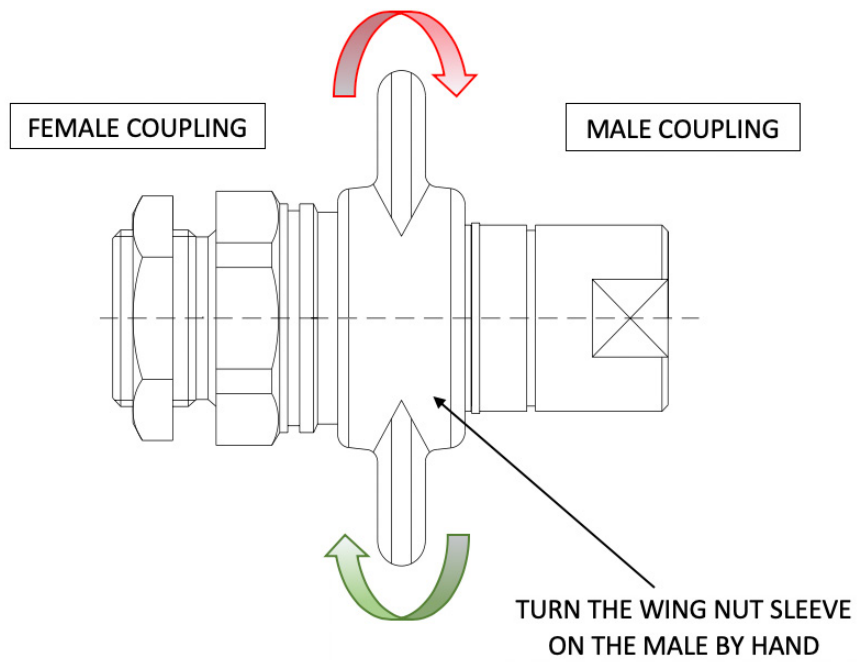
4:1 for dynamic pressures and 2:1 for static pressures

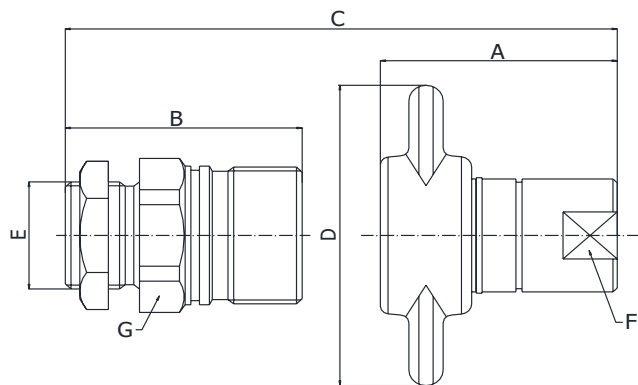
TEST SPECIFICATIONS

ISO 18869

453 Q.SAFE

ASSEMBLY INSTRUCTIONS





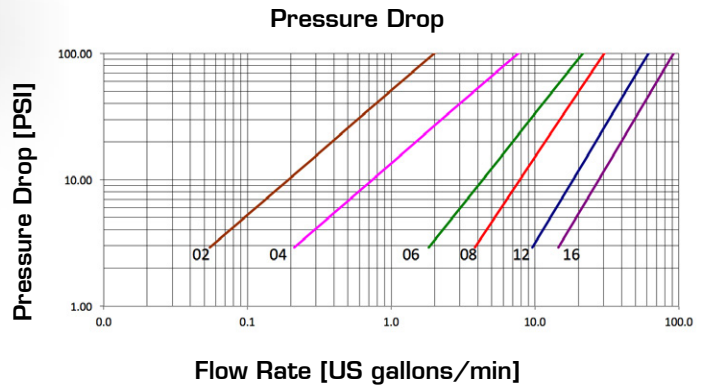
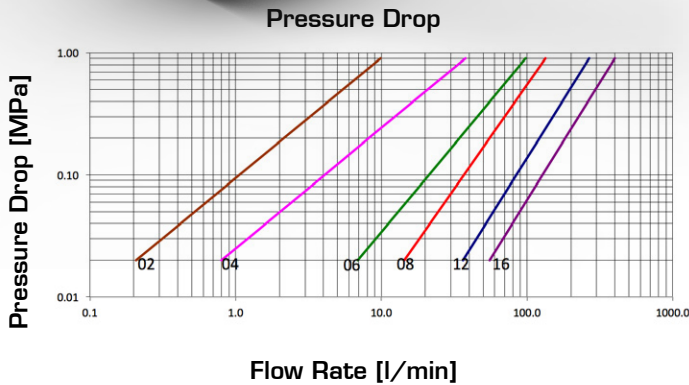
Q05811041A
Q05711041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|----|-----|-----|--------|----|----|--|
| DN | Inch | Dash | 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 | |



STAINLESS STEEL ISO B POPPET VALVE



Q.SAFE 456

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | N | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|------|-----|------|-----------|--------|----|------|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|--|
| DN | 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 | | | |
| 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 | |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 series B
- FKM (VITON) seal

MATERIAL

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

WORKING TEMPERATURE

-25°C up to +200°C
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

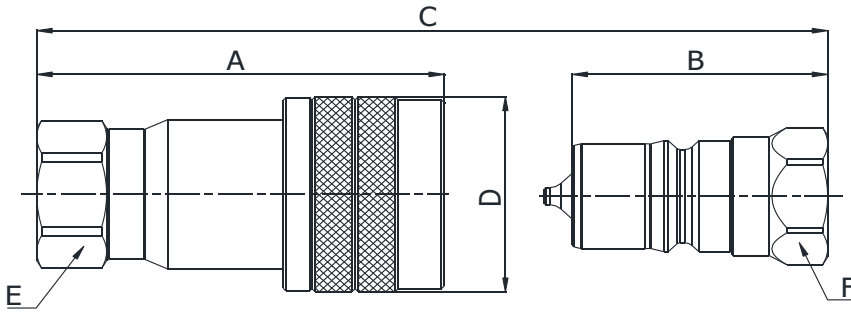
4:1 for dynamic pressures

IMPULSE PRESSURES

Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

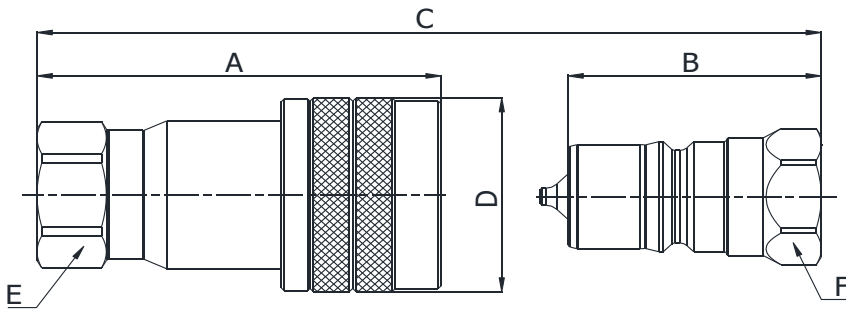
ISO 18869



Q02423041A
Q02123041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE
FKM SEAL

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 5 | 1/8" | -02 | Q02423041A-02-02 | Q02123041A-02-02 | 1/8" | 48.5 | 30 | A+B-18,2 | ø22 | 15 | 14 |
| 6.3 | 1/4" | -04 | Q02423041A-04-04 | Q02123041A-04-04 | 1/4" | 58.8 | 37.2 | A+B-21,2 | ø28 | 19 | 19 |
| 10 | 3/8" | -06 | Q02423041A-06-06 | Q02123041A-06-06 | 3/8" | 66.2 | 41.5 | A+B-24,4 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08 | Q02423041A-08-08 | Q02123041A-08-08 | 1/2" | 74 | 46.5 | A+B-27,2 | ø42 | 30 | 27 |
| 20 | 3/4" | -12 | Q02423041A-12-12 | Q02123041A-12-12 | 3/4" | 91 | 56.5 | A+B-34,2 | ø52 | 36 | 36 |
| 25 | 1" | -16 | Q02423041A-16-16 | Q02123041A-16-16 | 1" | 104 | 64.5 | A+B-39,2 | ø60 | 41 | 41 |



Q02423341A
Q02123341A

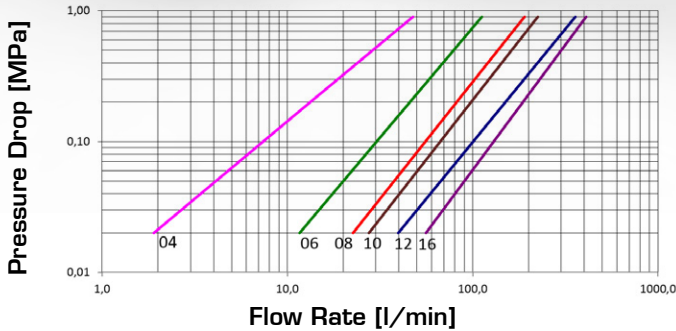
NPTF TERMINATION END
TO ANSI B 1.20.3
FKM SEAL

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | 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-18,2 | ø22 | 15 | 14 |
| 6.3 | 1/4" | -04 | Q02423341A-04-04 | Q02123341A-04-04 | 1/4" NPTF | 58.8 | 37.2 | A+B-21,2 | ø28 | 19 | 19 |
| 10 | 3/8" | -06 | Q02423341A-06-06 | Q02123341A-06-06 | 3/8" NPTF | 66.2 | 41.5 | A+B-24,4 | ø35 | 24 | 22 |
| 12.5 | 1/2" | -08 | Q02423341A-08-08 | Q02123341A-08-08 | 1/2" NPTF | 74 | 46.5 | A+B-27,2 | ø42 | 30 | 27 |
| 20 | 3/4" | -12 | Q02423341A-12-12 | Q02123341A-12-12 | 3/4" NPTF | 91 | 56.5 | A+B-34,2 | ø52 | 36 | 36 |
| 25 | 1" | -16 | Q02423341A-16-16 | Q02123341A-16-16 | 1" NPTF | 104 | 64.5 | A+B-39,2 | ø60 | 41 | 41 |

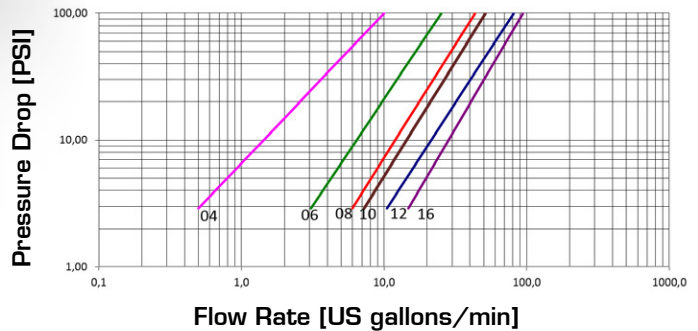


STAINLESS STEEL FLAT FACE

Pressure Drop



Pressure Drop



Q.SAFE 458

TECHNICAL DATA

| 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 WITH FEMALE UNDER PRESSURE (MALE AT 0 MPa) | | |
|------|------|--------------------------------------|-----|---|-----|--|-------|-------------------|-----|--|------------------------|------------|----------|----------|------------|------------|---|-----------|---------------------|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male MPa | Male PSI | Female MPa | Female PSI | M & F MPa | M & F PSI | |
| 6.3 | 1/4" | 04 | 35 | 5075 | 32 | 4640 | 13 | 3.4 | 120 | 27.0 | 0.005 | 0.0003 | 200 | 29000 | 130 | 18850 | 220 | 31900 | Allowed up to 6 MPa |
| 10 | 3/8" | 06 | 35 | 5075 | 32 | 4640 | 46 | 12.2 | 130 | 29.2 | 0.007 | 0.0004 | 180 | 26100 | 130 | 18850 | 170 | 24650 | Allowed up to 6 MPa |
| 12.5 | 1/2" | 08 | 35 | 5075 | 25 | 3625 | 82 | 21.7 | 150 | 33.7 | 0.008 | 0.0005 | 100 | 14500 | 100 | 14500 | 140 | 20300 | Allowed up to 4 MPa |
| 16 | 5/8" | 10 | 35 | 5075 | 25 | 3625 | 98 | 25.9 | 160 | 36.0 | 0.008 | 0.0005 | 100 | 14500 | 100 | 14500 | 140 | 20300 | Allowed up to 3 MPa |
| 19 | 3/4" | 12 | 35 | 5075 | 22 | 3190 | 150 | 39.6 | 210 | 47.2 | 0.009 | 0.0005 | 90 | 13050 | 100 | 14500 | 140 | 20300 | Allowed up to 2 MPa |
| 25 | 1" | 16 | 35 | 5075 | 21 | 3045 | 186 | 49.1 | 210 | 47.2 | 0.02 | 0.0012 | 110 | 15950 | 85 | 12325 | 140 | 20300 | Allowed up to 2 MPa |

Connection with Male under pressure not allowed; Disconnection under pressure not allowed
 The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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 120% of rated (freq. 1Hz - connected conditions)
- FKM (VITON) seal

MATERIAL

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

WORKING TEMPERATURE

-25°C up to +200°C
 For other temperatures the coupling is assembled with the specified seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

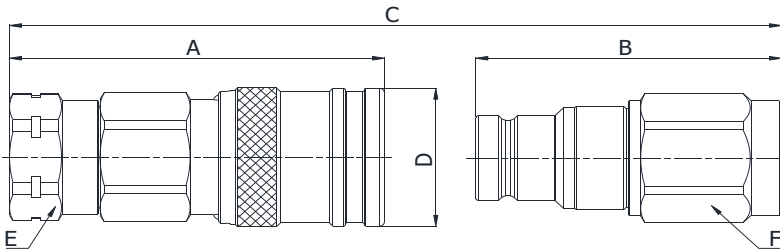
100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions. 1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected conditions.

TEST SPECIFICATIONS

ISO 18869

Q04123041A
Q03923041A

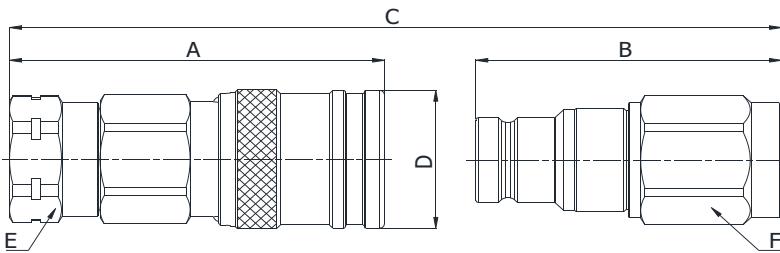
BSP TERMINATION ENDS
 TO DIN 3852 X TYPE



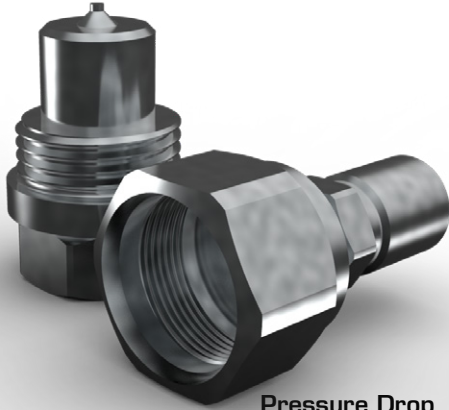
| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|--------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | | |
| 6.3 | 1/4" | -04 | Q04123041A-04-04 | Q03923041A-04-04 | 1/4" | 65.2 | 52.4 | A+B-11,1 | ø28 | 24 | 22 | | |
| 10 | 3/8" | -06 | Q04123041A-06-06 | Q03923041A-06-06 | 3/8" | 78.3 | 63.8 | A+B-15,9 | ø32 | 27 | 27 | | |
| 10 | 3/8" | -06 | Q04123041A-06-08 | Q03923041A-06-08 | 1/2" | 81.3 | 67.8 | A+B-15,9 | ø32 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q04123041A-08-08 | Q03923041A-08-08 | 1/2" | 88.5 | 71.3 | A+B-17,1 | ø38 | 36 | 36 | | |
| 12.5 | 1/2" | -08 | Q04123041A-08-12 | Q03923041A-08-12 | 3/4" | 90.5 | 75.8 | A+B-17,1 | ø38 | 36 | 36 | | |
| 16 | 5/8" | -10 | Q04123041A-10-12 | Q03923041A-10-12 | 3/4" | 94.6 | 76.4 | A+B-17,6 | ø42 | 36 | 36 | | |
| 19 | 3/4" | -12 | Q04123041A-12-12 | Q03923041A-12-12 | 3/4" | 108 | 89.8 | A+B-21.7 | ø48 | 41 | 41 | | |
| 25 | 1" | -16 | Q04123041A-16-16 | Q03923041A-16-16 | 1" | 119.4 | 92.1 | A+B-22,9 | ø55 | 50 | 50 | | |

Q04123341A
Q03923341A

NPTF TERMINATION ENDS
 TO ANSI B 1.20.3

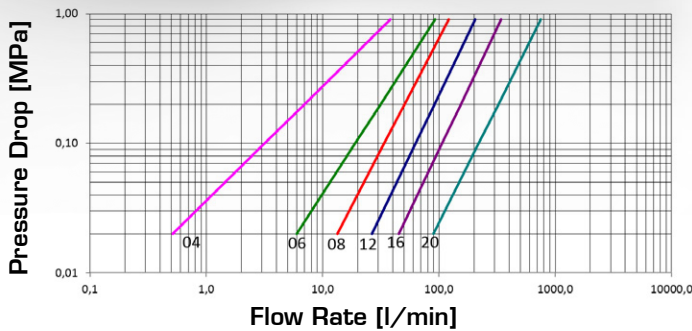


| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | | |
|------|------|------|------------------|------------------|-----------|---------------|------|----------|-----|----|----|--|--|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | | |
| 10 | 3/8" | -06 | Q04123341A-06-06 | Q03923341A-06-06 | 3/8" NPTF | 78.3 | 63.8 | A+B-15,9 | ø32 | 27 | 27 | | |
| 12.5 | 1/2" | -08 | Q04123341A-08-08 | Q03923341A-08-08 | 1/2" NPTF | 88.5 | 71.3 | A+B-17,1 | ø38 | 36 | 36 | | |
| 16 | 5/8" | -10 | Q04123341A-10-12 | Q03923341A-10-12 | 3/4" NPTF | 94.6 | 76.4 | A+B-17,6 | ø42 | 36 | 36 | | |
| 20 | 3/4" | -12 | Q04123341A-12-12 | Q03923341A-12-12 | 3/4" NPTF | 108 | 89.8 | A+B-21.7 | ø48 | 41 | 41 | | |
| 25 | 1" | -16 | Q04123341A-16-16 | Q03923341A-16-16 | 1" NPTF | 119.4 | 92.1 | A+B-22,9 | ø55 | 50 | 50 | | |

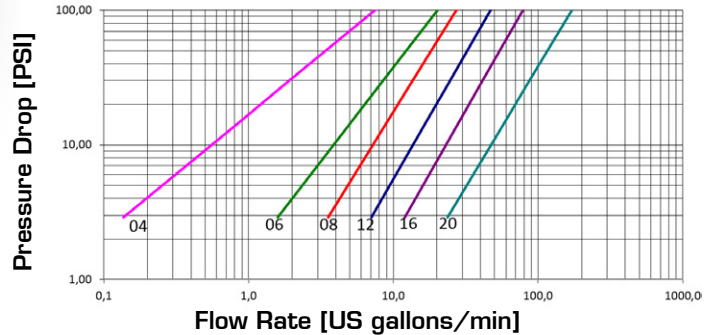


STAINLESS STEEL SCREW TYPE HEAVY DUTY

Pressure Drop



Pressure Drop



Q.SAFE 460

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | OIL SPILLAGE | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|--------|------|----------------------------|------|--|--------|---------------------------|------------|------------------------|-------|--------|-------|-------|-------|--|
| DN | inch | Dash | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | Connection/ Disconnection | | Male | | Female | | M & F | | Not allowed |
| | | | MPa | PSI | l/min | US GPM | cc. | cubic inch | MPa | PSI | MPa | PSI | MPa | PSI | |
| 6 | 1/4" | 04 | 50 | 7250 | 10 | 2.6 | 0.4 | 0.024 | 220 | 31900 | 350 | 50750 | 350 | 50750 | Not allowed |
| 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 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

Couplings in steel with some stressed area hardened.
Carbonitrided valve, springs in C98 steel, FKM (VITON) seal and back-up ring in PTFE

WORKING TEMPERATURE

-25°C up to +200°C

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

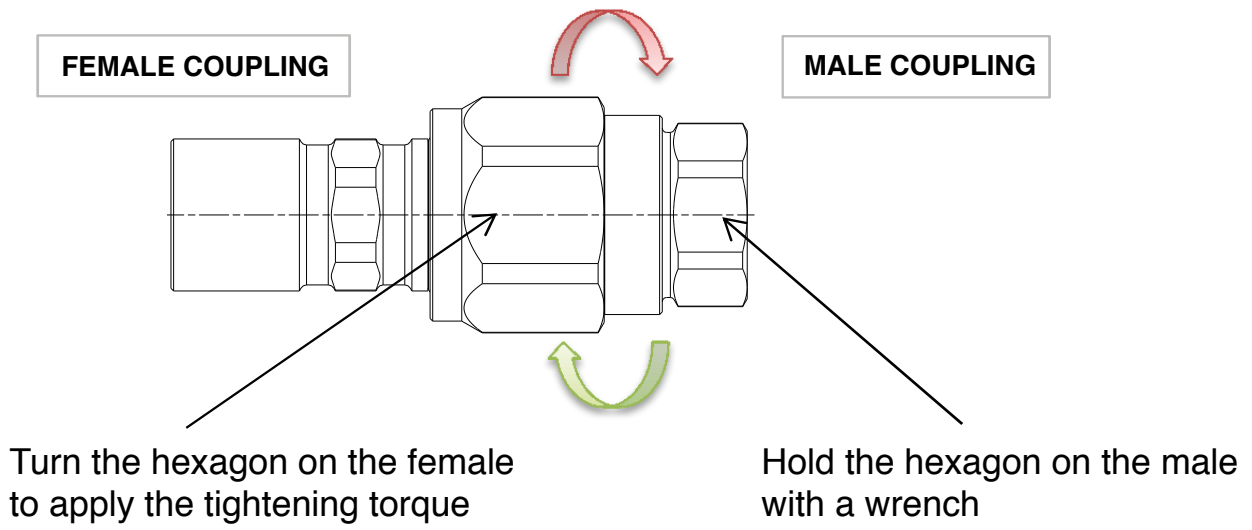
200,000 cycles (connected and disconnected conditions) at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

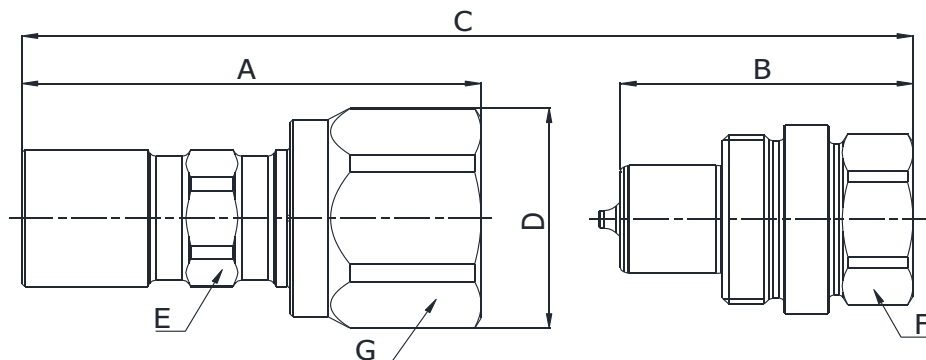
ISO 18869

ASSEMBLY INSTRUCTIONS

RECOMMENDED TIGHTENING TORQUES



| SIZE | | | TIGHTENING TORQUE |
|------|-------------|------|-------------------|
| DN | Inch | Dash | Nm |
| 6 | 1/4" | -04 | 50 |
| 10 | 3/8" | -06 | 70 |
| 12.5 | 1/2" | -08 | 100 |
| 19 | 3/4" | -12 | 150 |
| 25 | 1" | -16 | 250 |
| 31 | 1-1/4" | -20 | 400 |

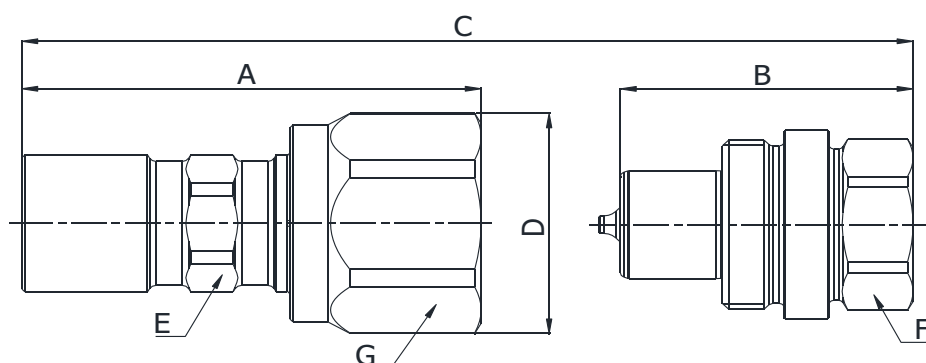


Q05423041A
Q05323041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|--------|---------------|------|----------|-------|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 6.3 | 1/4" | -04 | Q05423041A-04-04 | Q05323041A-04-04 | 1/4" | 63 | 42.2 | A+B-20,4 | ø35 | 19 | 22 | 32 |
| 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 |

Q.SAFE
462



Q05423341A
Q05323341A

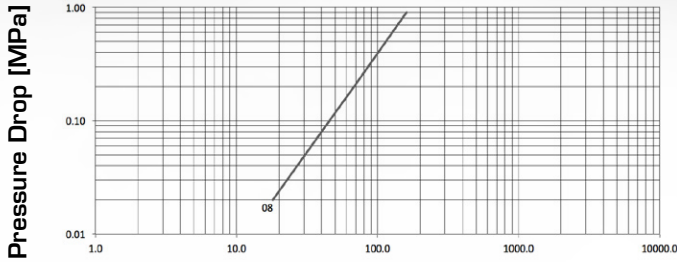
NPTF TERMINATION END
TO ANSI B 1.20.3

| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | | |
|------|--------|------|------------------|------------------|-------------|---------------|------|----------|-------|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F | G |
| 6.3 | 1/4" | -04 | Q05423341A-04-04 | Q05323341A-04-04 | 1/4" NPTF | 63 | 42.2 | A+B-20,4 | ø35 | 19 | 22 | 32 |
| 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 |



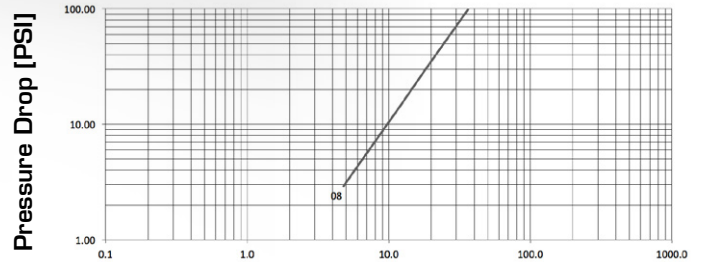
DHI TYPE ISO A POPPET VALVE

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

TECHNICAL DATA

| SIZE | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | CONNECTION/DISCONNECTION UNDER PRESSURE | | | | |
|------|------|----------------------------|-----|--|--------|-------------------|-----|---------------------------------------|------------|------------------------|-----|--------|---|-------|-----|-------|-------------|
| DN | inch | 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 | 18.0 | 1.8 | 0.110 | 125 | 18125 | 150 | 21750 | 150 | 21750 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling may be assembled with the specific seals

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

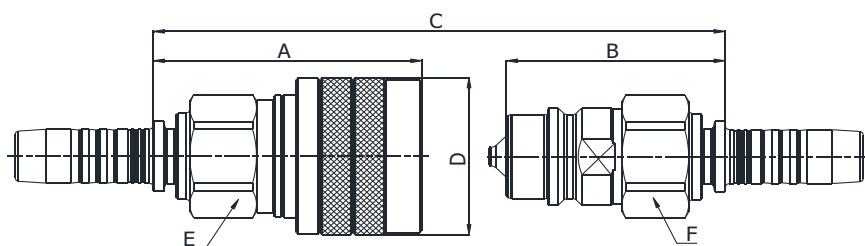
ISO 18869



Quick release couplings DHI maintenance without flexible hose replacement

Q30811MF1A Q30211MF1A

ISO A COUPLING
MULTIFIT INSERT

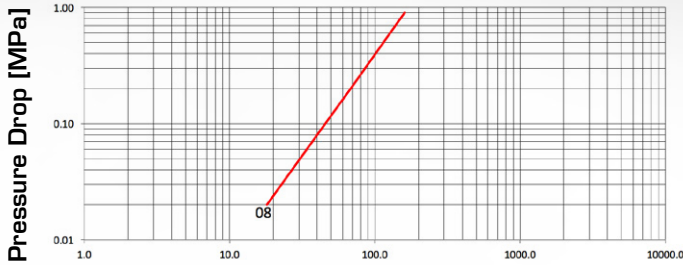


| SIZE | | | PART NUMBER | | HOSE BORE | | | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|-------|------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | DN | Inch | Dash | A | B | C | D | E | F |
| 12.5 | 1/2" | -08 | Q30811MF1A-08-04 | Q30211MF1A-08-04 | 6 | 1/4" | -04 | 62.5 | 51.3 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q30811MF1A-08-05 | Q30211MF1A-08-05 | 8 | 5/16" | -05 | 62.5 | 51.3 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q30811MF1A-08-06 | Q30211MF1A-08-06 | 10 | 3/8" | -06 | 62 | 50.8 | A+B-21,8 | ø38 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q30811MF1A-08-08 | Q30211MF1A-08-08 | 12 | 1/2" | -08 | 60.4 | 49.2 | A+B-21,8 | ø38 | 27 | 27 |



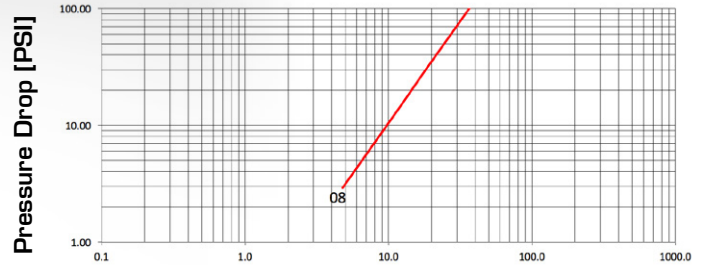
DHI TYPE ISO A PUSH-PULL POPPET VALVE

Pressure Drop



Flow Rate [l/min]

Pressure Drop



Flow Rate [US gallons/min]

TECHNICAL DATA

| SIZE | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/ Disconnection | | MINIMUM BURST PRESSURE | | | | CONNECTION/ DISCONNECTION UNDER PRESSURE |
|------|------|----------------------------|-----|--|--------|-------------------|-----|--|------------|------------------------|-------|-------|-------|--|
| DN | inch | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | M & F | | |
| | | | | | | | | | | MPa | PSI | MPa | PSI | |
| 12.5 | ½ | 08 | 30 | 4350 | 68 | 18.0 | 244 | 2 | 0.122 | 140 | 20300 | 140 | 20300 | Not allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the coupling is assembled with specific seals

SAFETY FACTOR

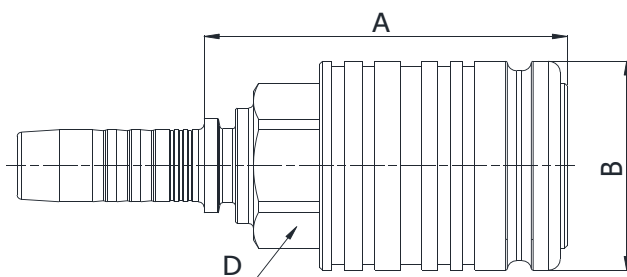
4:1 for dynamic pressures

IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

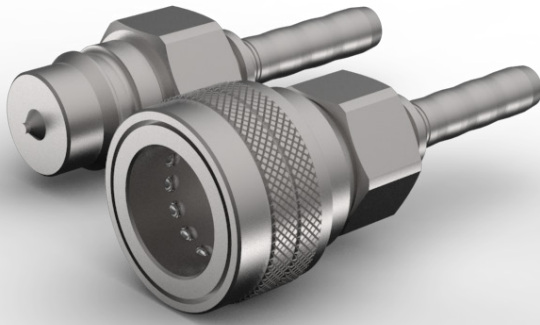


Q31311MF1A

FEMALE PUSH PULL COUPLING
MULTIFIT INSERT

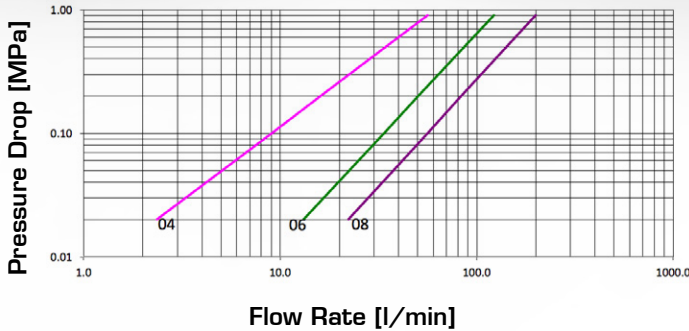
| SIZE | | | PART NUMBER | HOSE BORE | | | DIMENSIONS mm | | | | | |
|------|------|------|------------------|-----------|-------|------|---------------|-----|----|--|--|--|
| DN | Inch | Dash | Female coupling | DN | Inch | Dash | A | B | D | | | |
| 12.5 | 1/2" | -08 | Q31311MF1A-08-04 | 6 | 1/4" | -04 | 62.5 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q31311MF1A-08-05 | 8 | 5/16" | -05 | 62.5 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q31311MF1A-08-06 | 10 | 3/8" | -06 | 62 | ø38 | 27 | | | |
| 12.5 | 1/2" | -08 | Q31311MF1A-08-08 | 12 | 1/2" | -08 | 60.4 | ø38 | 27 | | | |

Q.SAFE 466

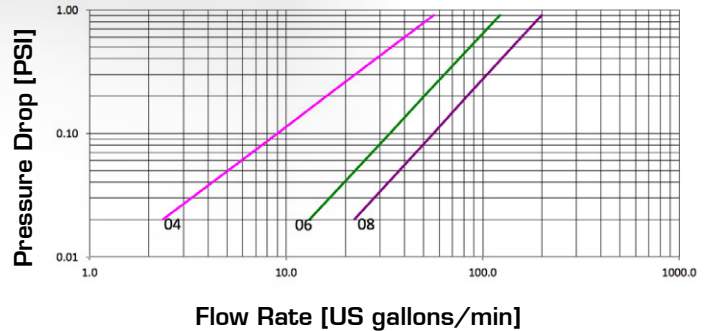


DHI TYPE ISO B POPPET VALVE

Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | WORKING PRESSURE [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | CONNECTION EFFORT | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE |
|------|------|------|----------------------------|------|--|--------|-------------------|------|---------------------------------------|------------|------------------------|-------|--------|-------|-------|-------|---|
| DN | 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 | 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 |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures, the quick coupling is assembled with specific seals

SAFETY FACTOR

4:1 for dynamic pressures

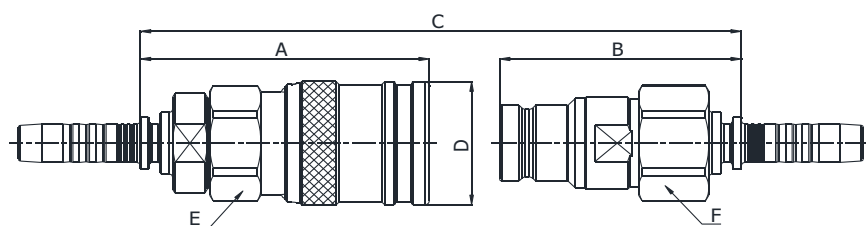
IMPULSE PRESSURES

Withstands 100,000 cycles of impulse pressure at 133% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

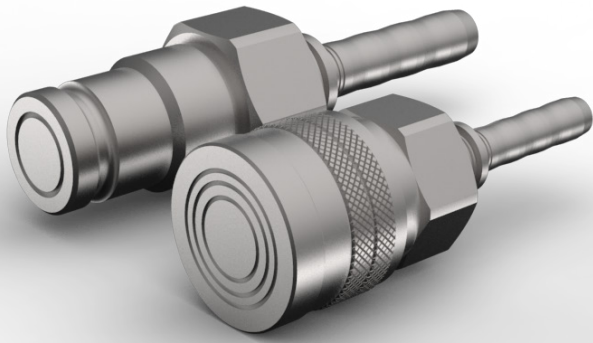
ISO 18869

Q32411MF1A Q32111MF1A



ISO B COUPLINGS
MULTIFIT INSERT

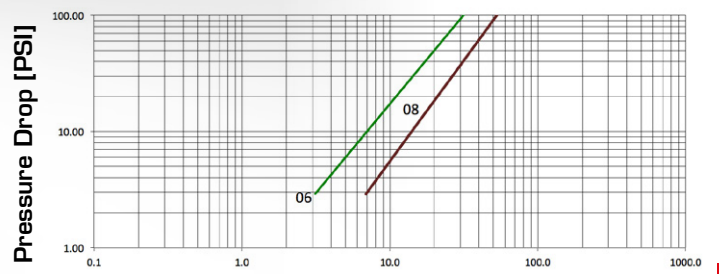
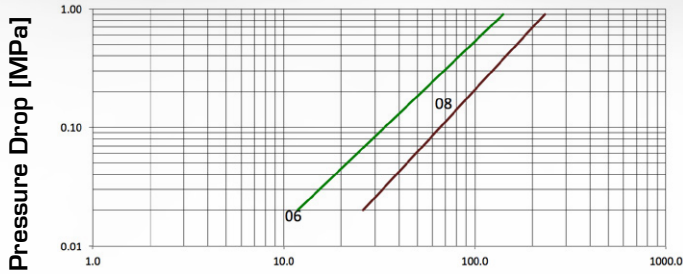
| SIZE | | | PART NUMBER | | HOSE BORE | | | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|-----------|------|------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | DN | Inch | Dash | A | B | C | D | E | F |
| 6.3 | 1/4" | -04 | Q32411MF1A-04-06 | Q32111MF1A-04-06 | 10 | 3/8" | -06 | 56 | 45.1 | A+B-21,2 | ø28 | 19 | 19 |
| 10 | 3/8" | -06 | Q32411MF1A-06-06 | Q32111MF1A-06-06 | 10 | 3/8" | -06 | 65.2 | 51.3 | A+B-24,4 | ø35 | 22 | 22 |
| 12.5 | 1/2" | -08 | Q32411MF1A-08-08 | Q32111MF1A-08-08 | 12 | 1/2" | -08 | 72 | 53.7 | A+B-27,2 | ø42 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q30811MF1A-08-08 | Q30211MF1A-08-08 | 12 | 1/2" | -08 | 60.4 | 49.2 | A+B-21,8 | ø38 | 27 | 27 |



DHI TYPE FLAT FACE

Pressure Drop

Pressure Drop



Flow Rate [l/min]

Flow Rate [US gallons/min]

TECHNICAL DATA

| 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 WITH FEMALE UNDER PRESSURE (MALE AT 0 MPa) | |
|------|------|--------------------------------------|-----|---|-----|--|-------|-------------------|-----|--|-------|------------------------|------|-------|--------|-------|-------|---|---------------------|
| DN | inch | Dash | MPa | PSI | MPa | PSI | l/min | US GPM | N | lb. | cc. | cubic inch | Male | | Female | | M & F | | |
| | | | MPa | PSI | MPa | PSI | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | |
| 10 | 3/8 | 06 | 35 | 5075 | 25 | 3625 | 54 | 14.3 | 130 | 29.2 | 0.007 | 0.0004 | 135 | 19575 | 125 | 18125 | 140 | 20300 | Allowed up to 6 MPa |
| 12.5 | 1/2 | 08 | 35 | 5075 | 25 | 3625 | 86 | 22.7 | 150 | 33.7 | 0.008 | 0.0005 | 120 | 17400 | 110 | 15950 | 145 | 21025 | Allowed up to 4 MPa |

Connection with Male under pressure not allowed; Disconnection under pressure not allowed
 The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

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

MATERIAL

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 (VITON, EPDM or any others) on request.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
 For other temperatures the coupling is assembled with the specified seals

SAFETY FACTOR

4:1 for dynamic pressures

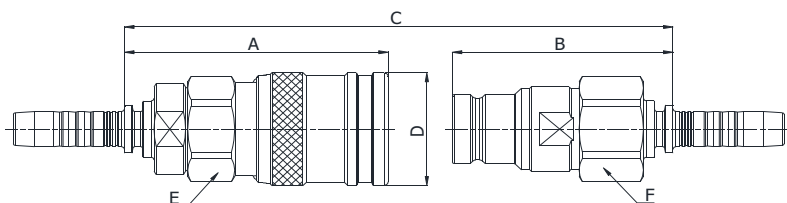
IMPULSE PRESSURES

100,000 cycles at 133% of the rated one (freq. 1Hz) in disconnected conditions.
 1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected conditions.

TEST SPECIFICATIONS

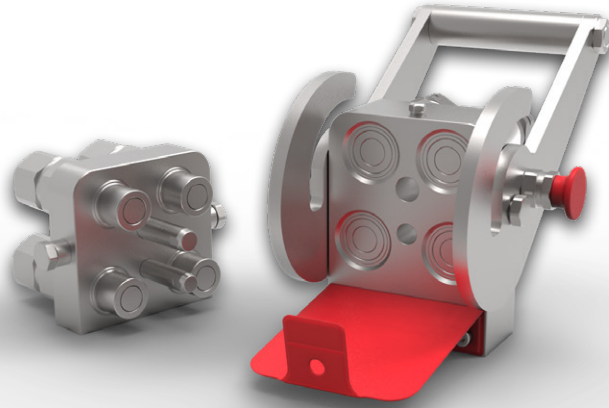
ISO 18869

Q3411MF1A Q33911MF1A

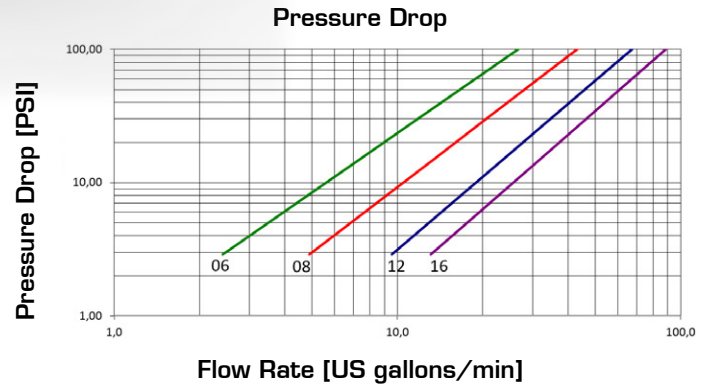
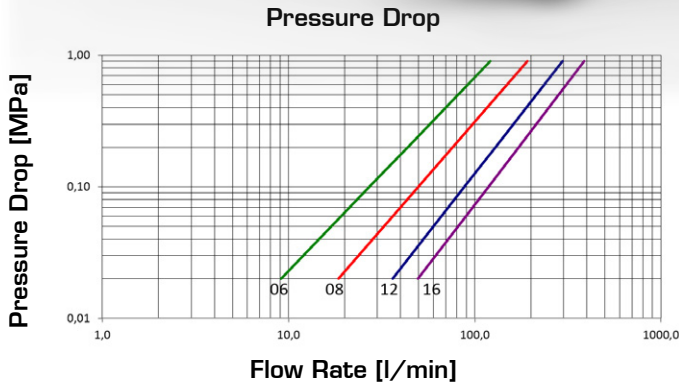


FLAT FACE COUPLING
 MULTIFIT INSERT

| SIZE | | | PART NUMBER | | HOSE BORE | | | DIMENSIONS mm | | | | | |
|------|------|------|-----------------|------------------|-----------|------|------|---------------|------|----------|-----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | DN | Inch | Dash | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q3411MF1A-06-06 | Q33911MF1A-06-06 | 10 | 3/8" | -06 | 69.7 | 58.3 | A+B-15,9 | ø32 | 27 | 27 |
| 10 | 3/8" | -06 | Q3411MF1A-06-08 | Q33911MF1A-06-08 | 12 | 1/2" | -08 | 69.6 | 56.7 | A+B-15,9 | ø32 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q3411MF1A-08-08 | Q33911MF1A-08-08 | 12 | 1/2" | -08 | 78.9 | 66.7 | A+B-17.1 | ø38 | 34 | 34 |
| 12.5 | 1/2" | -08 | Q3411MF1A-08-12 | Q33911MF1A-08-12 | 19 | 3/4" | -12 | 75.8 | 65.1 | A+B-17.1 | ø38 | 34 | 34 |



FLAT FACE MULTI-CONNECTOR



TECHNICAL DATA

| SIZE | | WORKING PRESSURE CONNECTED [Dynamic] | | WORKING PRESSURE DISCONNECTED [Dynamic] | | RATED FLOW at 0.2 MPa of pressure drop | | OIL SPILLAGE Connection/Disconnection | | MINIMUM BURST PRESSURE | | | | | | CONNECTION/DISCONNECTION UNDER PRESSURE | |
|------|------|--------------------------------------|-----|---|-----|--|--------|---------------------------------------|------------|------------------------|-----|--------|-----|--------|-----|---|---------|
| DN | inch | MPa | PSI | MPa | PSI | l/min | US GPM | cc. | cubic inch | Male | | Female | | M & F | | | |
| | | | | | | | | | | MPa | PSI | MPa | PSI | MPa | PSI | | |
| 10 | 3/8" | 06 | 35 | 5,075 | 35 | 5,075 | 44 | 11.6 | 0.007 | 0.0004 | 170 | 24,650 | 140 | 20,300 | 180 | 26,100 | Allowed |
| 12.5 | 1/2" | 08 | 35 | 5,075 | 35 | 5,075 | 76 | 20.1 | 0.008 | 0.0005 | 170 | 24,650 | 140 | 20,300 | 180 | 26,100 | Allowed |
| 19 | 3/4" | 12 | 35 | 5,075 | 35 | 5,075 | 129 | 34.1 | 0.009 | 0.0005 | 140 | 20,300 | 140 | 20,300 | 160 | 23,200 | Allowed |
| 25 | 1" | 16 | 35 | 5,075 | 35 | 5,075 | 172 | 45.4 | 0.02 | 0.0012 | 160 | 23,200 | 150 | 21,750 | 160 | 23,200 | Allowed |

The rated flow represents the normal operating condition. The maximum recommended flow rate is equal to 1.5 times the rated flow

PRODUCT DESCRIPTION

- Flat mating surfaces easily wiped clean to prevent contamination and spillage during connection/disconnection
- Lever provides simultaneous connection / disconnection of couplings
- Positive, quick connection of the male into the female by the lever
- Shut-off by flat valve
- 1,000,000 cycles at 120% of rated (freq. 1Hz)

MATERIAL

Female and male coupling in steel, with springs in AISI and C98 steel, seals in polyurethane and NBR. Other materials (VITON, EPDM or any others) on request

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)
For other temperatures the coupling is assembled with the specified seals

SAFETY FACTOR

4:1 for dynamic pressures

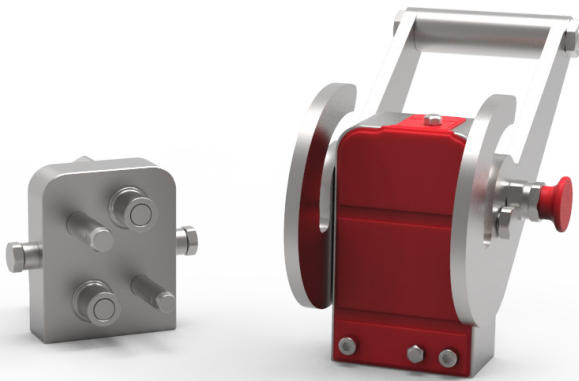
IMPULSE PRESSURES

1,000,000 cycles at 120% of rated one (freq. 1Hz) in connected and disconnected conditions.

TEST SPECIFICATIONS

ISO 18869

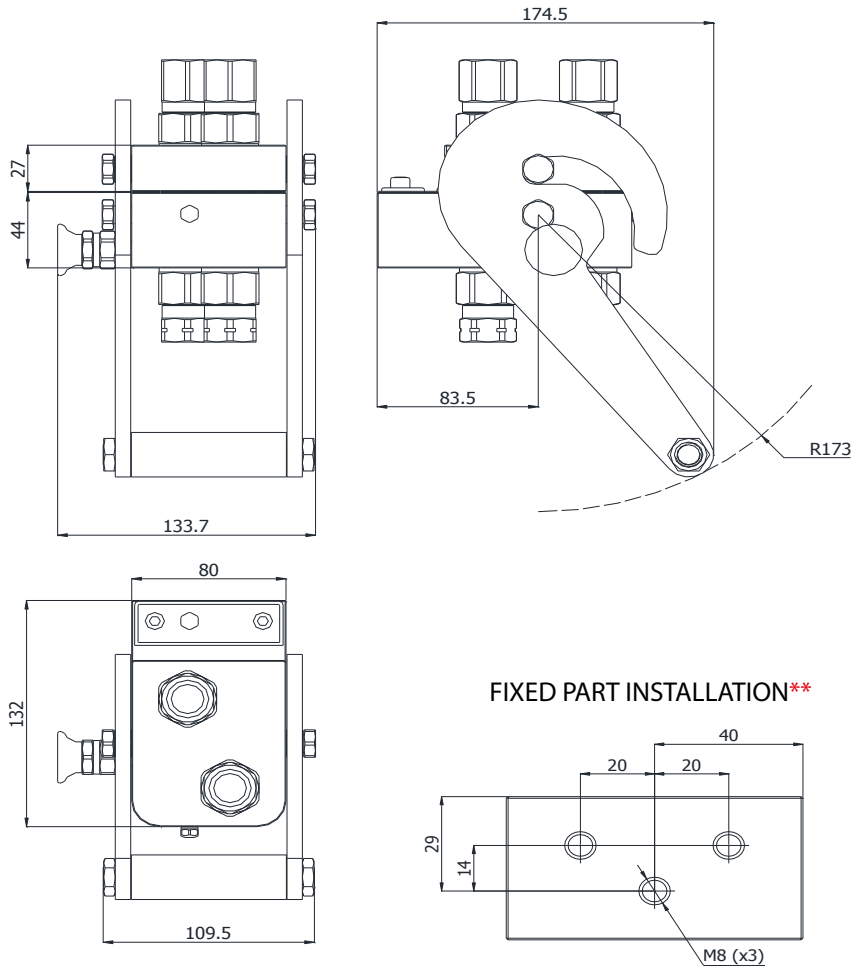
Q401 SERIES



2 LINE MULTI-COUPLING
DOUBLE-SIDED LEVER
LOCKING POSITION: LEFT *

* Right hand locking available on request
** Plate adaptor for frontal fixing available

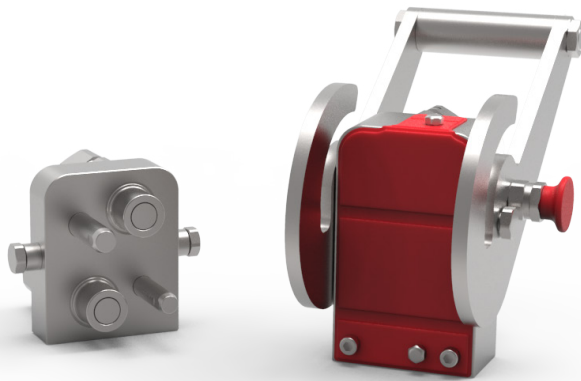
Q.SAFE
472



| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q401BOF-041-06 | Q401BOM-041-06 | 10 | 3/8" | -06 | 2 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |
| Q401BOF-041-08 | Q401BOM-041-08 | 10 | 3/8" | -06 | 2 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |

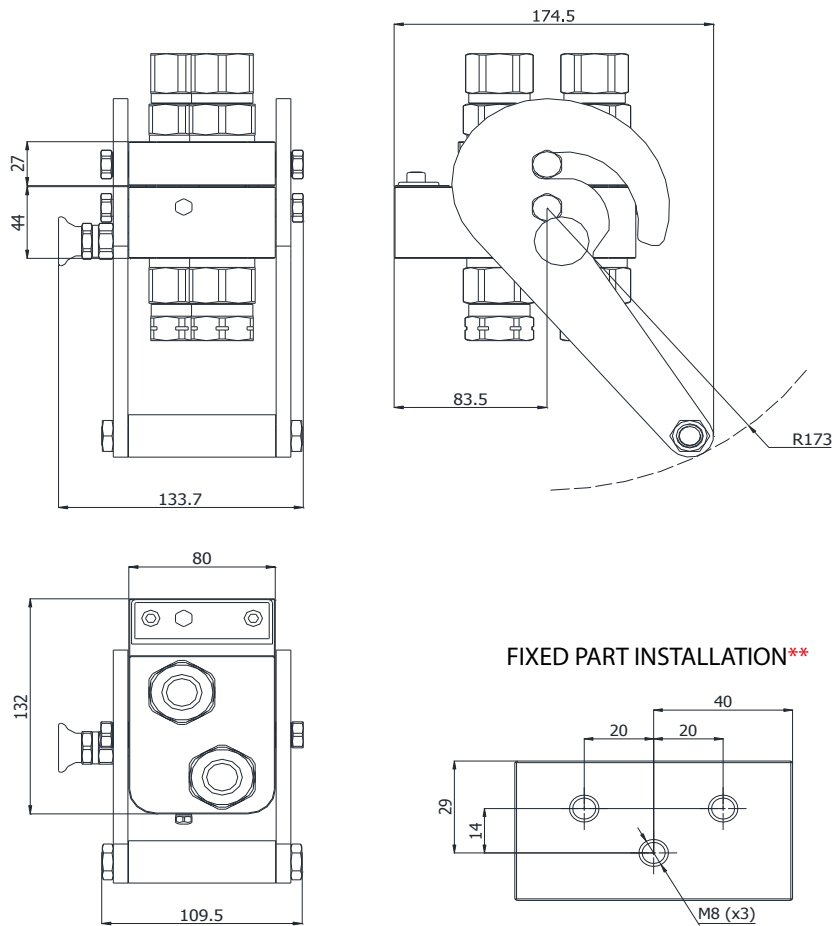
* Alternative termination ends can be provided - please ask your sales rep for details

Q402 SERIES



2 LINE MULTI-COUPLING
 DOUBLE-SIDED LEVER
 LOCKING POSITION: LEFT *

* Right hand locking available on request
 ** Plate adaptor for frontal fixing available

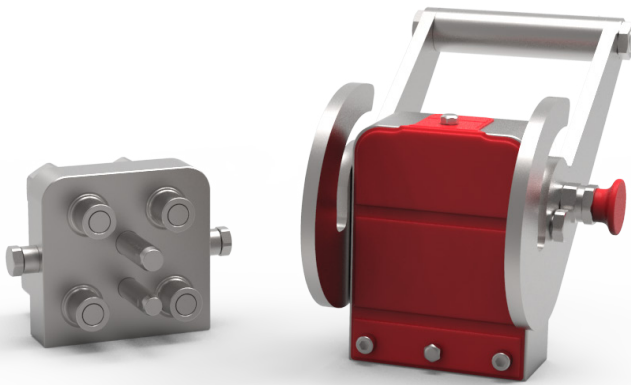


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| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q402B0F-041-08 | Q402B0M-041-08 | 12.5 | 1/2" | -08 | 2 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |
| Q402B0F-041-12 | Q402B0M-041-12 | 12.5 | 1/2" | -08 | 2 | BSP FEMALE DIN3852-2 TYPE X | 3/4" BSP |

* Alternative termination ends can be provided - please ask your sales rep for details

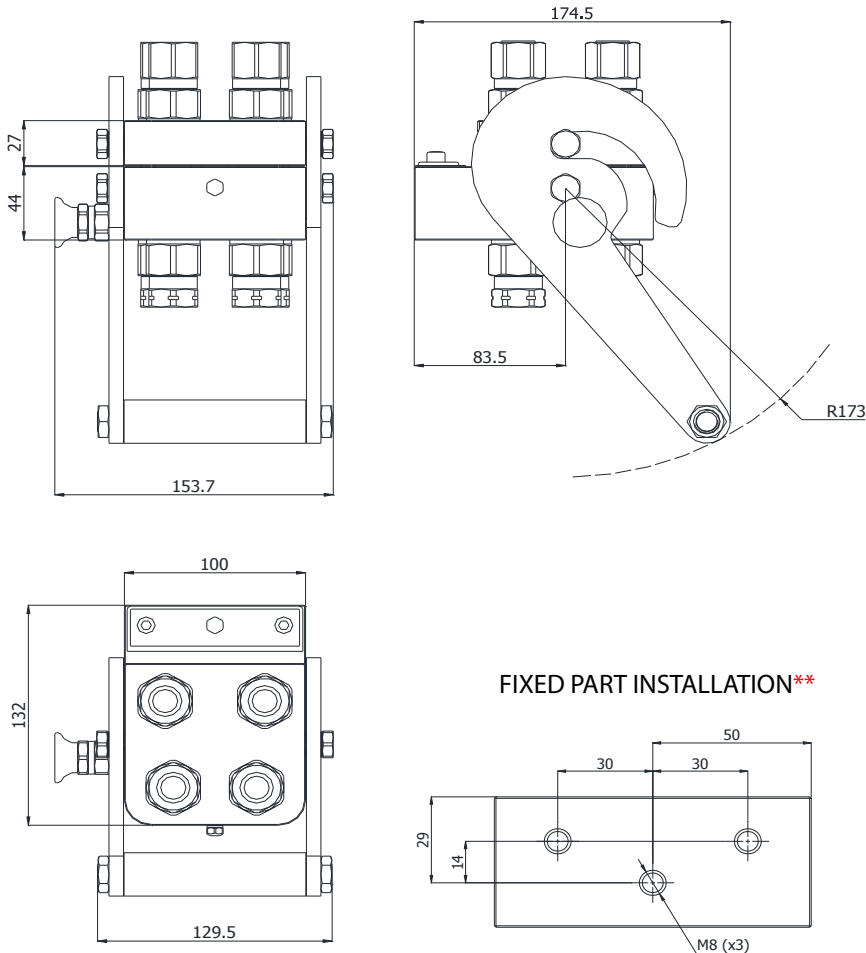
Q403 SERIES



4 LINE MULTI-COUPLING
DOUBLE-SIDED LEVER
LOCKING POSITION: LEFT *

* Right hand locking available on request
** Plate adaptor for frontal fixing available

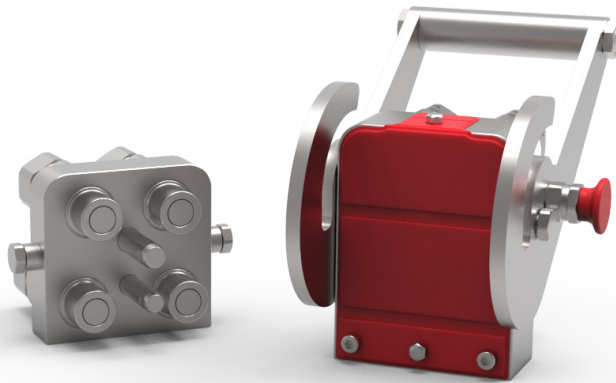
Q.SAFE
474



| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|---------------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q403D0F-041-06 | Q403D0M-041-06 | 10 | 3/8" | -06 | 4 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |
| Q403D0F-120-20 | Q403D0M-120-20 | 10 | 3/8" | -06 | 4 | METRIC MALE ISO 8434-1 S SERIES | M20x1.5 |

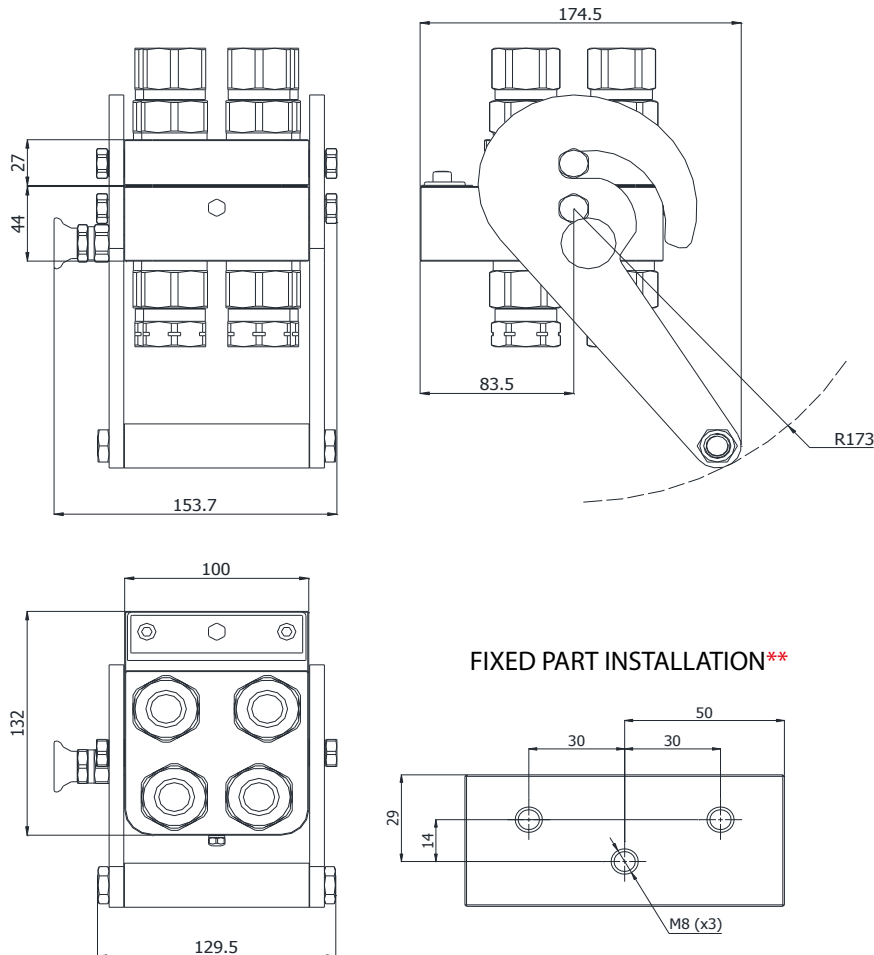
* Alternative termination ends can be provided - please ask your sales rep for details

Q404 SERIES



4 LINE MULTI-COUPLING
DOUBLE-SIDED LEVER
LOCKING POSITION: LEFT *

* Right hand locking available on request
** Plate adaptor for frontal fixing available



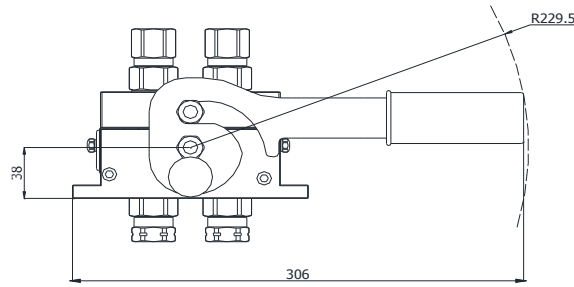
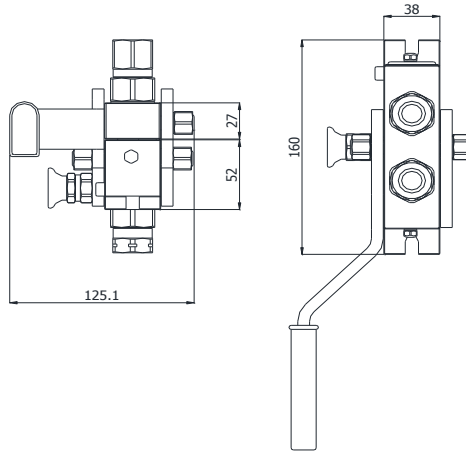
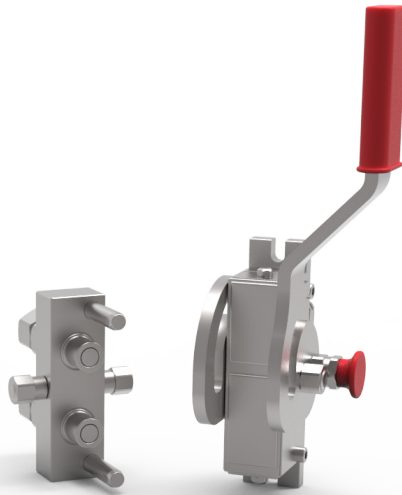
475 Q.SAFE

| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|---------------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q404D0F-041-08 | Q404D0M-041-08 | 12.5 | 1/2" | -08 | 4 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |
| Q404C0F-AA | - | 12.5 | 1/2" | -08 | 1 | ORFS MALE ISO 8434-3 | 13/16"-16 UN |
| | | | | | 2 | ORFS MALE ISO 8434-3 | 1-3/16"-12 UN |
| - | Q404C0M-AA | 12.5 | 1/2" | -08 | 1 | BSP MALE ISO 8434-6 | 1/2" BSP |
| | | | | | 2 | BSP MALE ISO 8434-6 | 3/4" BSP |

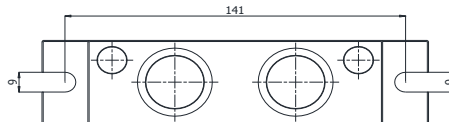
* Alternative termination ends can be provided - please ask your sales rep for details

Q405 SERIES

2 LINE MULTI-COUPLING
 SINGLE-SIDED LEVER
 LOCKING POSITION: LEFT



FIXED PART INSTALLATION**



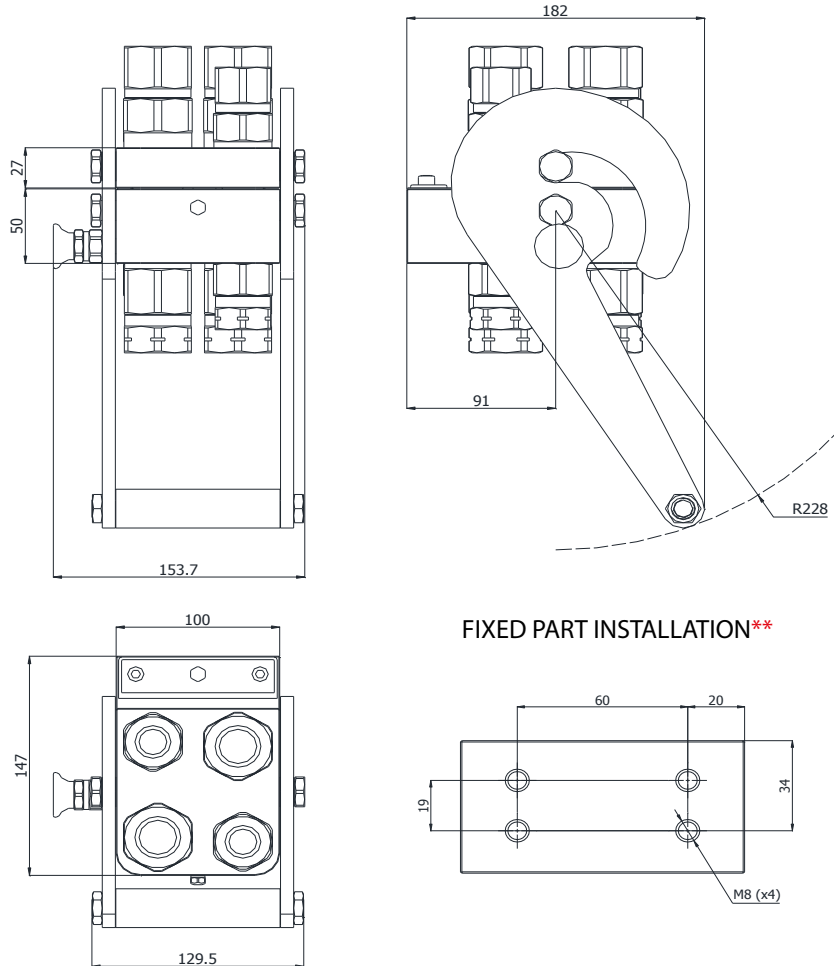
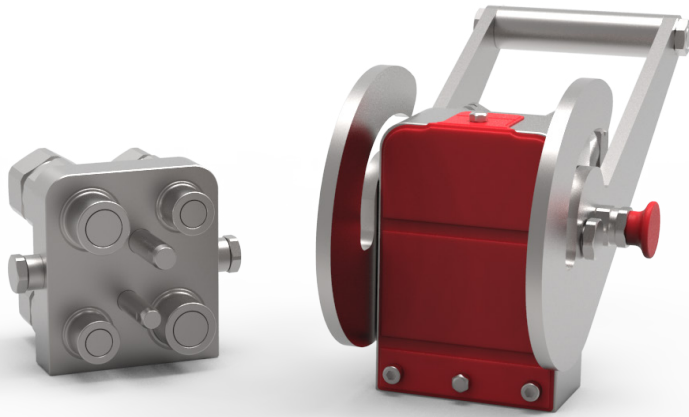
| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q405BOF-041-06 | Q405BOM-041-06 | 10 | 3/8" | -06 | 2 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |

* Alternative termination ends can be provided - please ask your sales rep for details

Q406 SERIES

2+2 LINE MULTI-COUPLING
 DOUBLE-SIDED LEVER
 LOCKING POSITION: LEFT *

* Right hand locking available on request
 ** Plate adaptor for frontal fixing available



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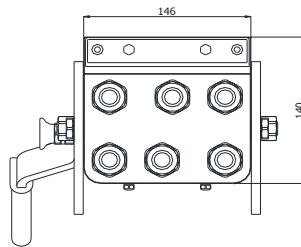
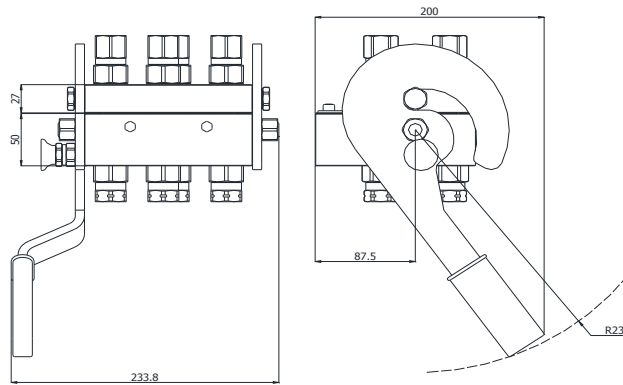
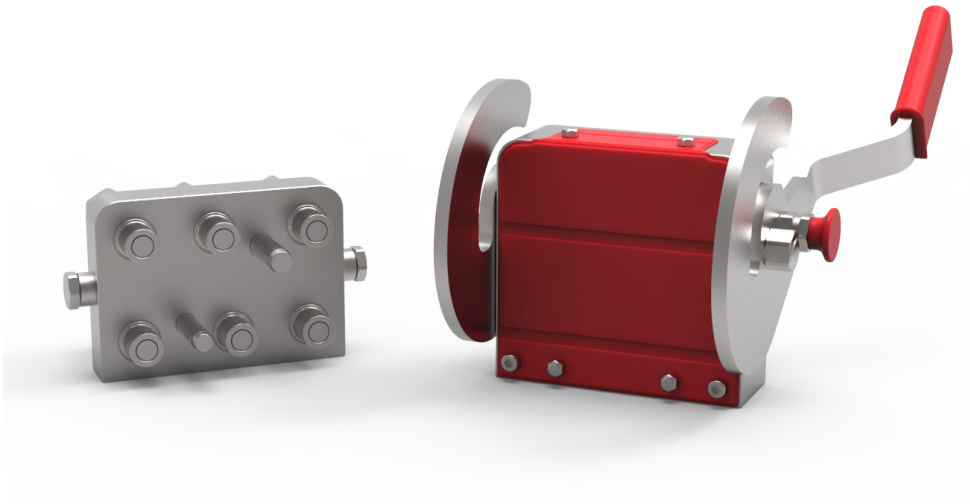
| MULTI-COUPLING | | | | | TERMINATION END* | | |
|----------------|------------|------|------|------|------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q406D0F-AA | Q406D0M-AA | 12.5 | 1/2" | -08 | 2 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |
| | | 19 | 3/4" | -12 | 2 | BSP FEMALE DIN3852-2 TYPE X | 3/4" BSP |

* Alternative termination ends can be provided - please ask your sales rep for details

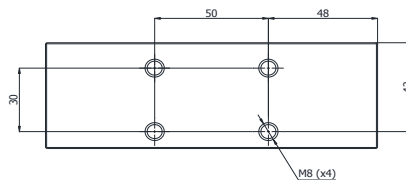
Q407 SERIES

6 LINE MULTI-COUPLING
 SINGLE-SIDED LEVER
 LOCKING POSITION: LEFT *

* Right hand locking available on request



FIXED PART INSTALLATION**



| MULTI-COUPLING | | | | | TERMINATION END * | | |
|------------------|------------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q407F0F-041-06 | Q407F0M-041-06 | 10 | 3/8" | -06 | 6 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |
| Q407E0F-041-06AA | Q407E0M-041-06AA | 10 | 3/8" | -06 | 5 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |

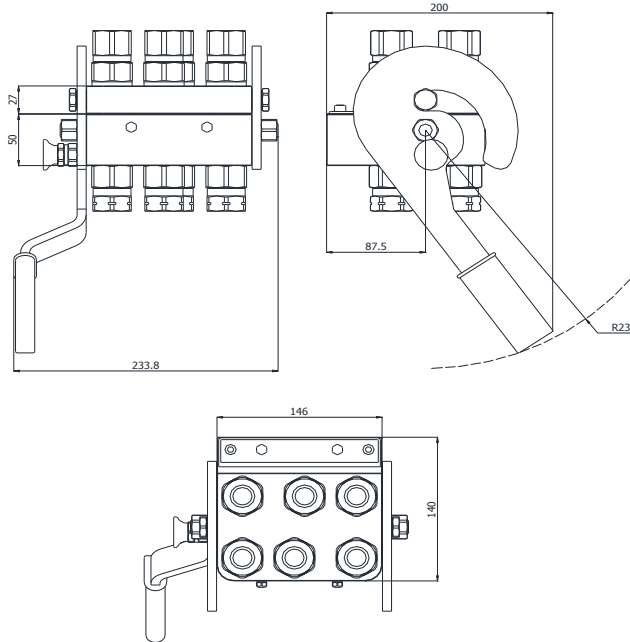
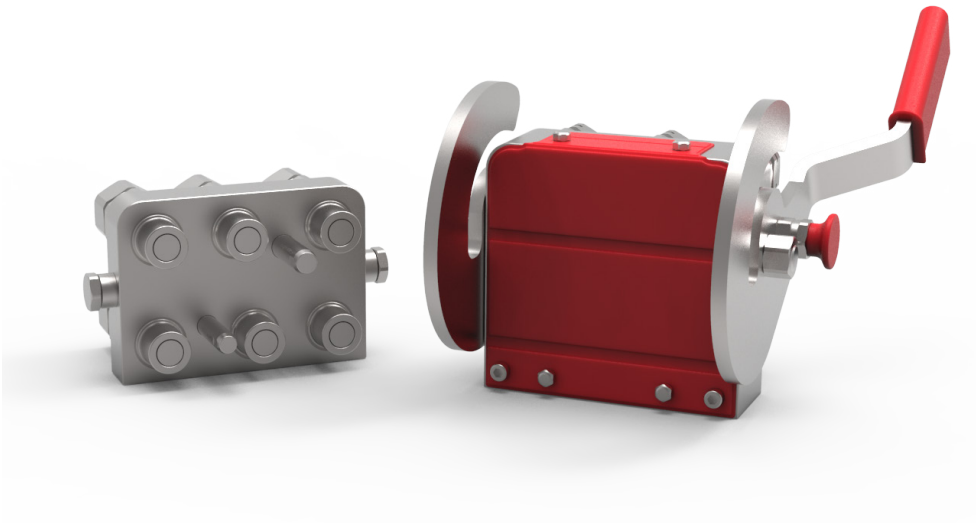
* Alternative termination ends can be provided - please ask your sales rep for details

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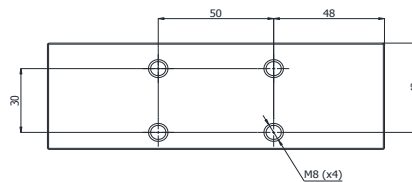
Q408 SERIES

6 LINE MULTI-COUPLING
 SINGLE-SIDED LEVER
 LOCKING POSITION: LEFT *

* Right hand locking available on request



FIXED PART INSTALLATION**

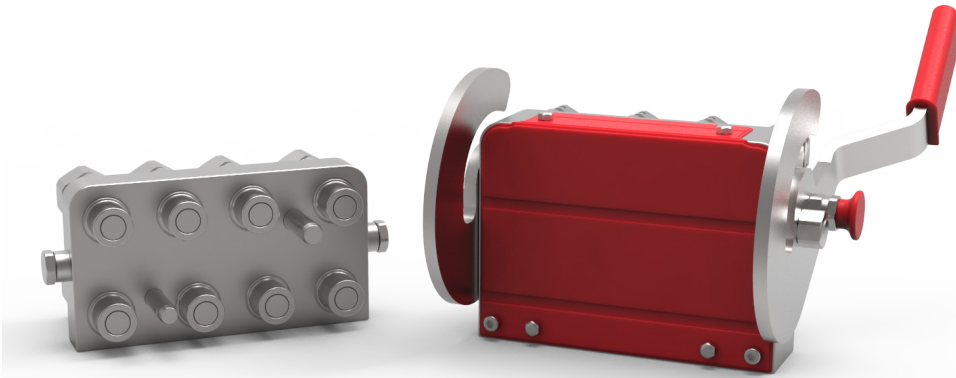


479 Q.SAFE

| MULTI-COUPLING | | | | | TERMINATION END* | | |
|----------------|----------------|------|------|------|------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q408F0F-041-08 | Q408F0M-041-08 | 12.5 | 1/2" | -08 | 6 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |

* Alternative termination ends can be provided - please ask your sales rep for details

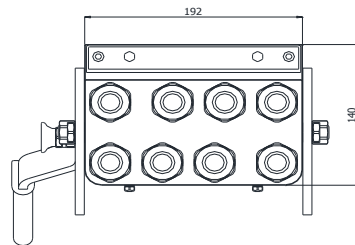
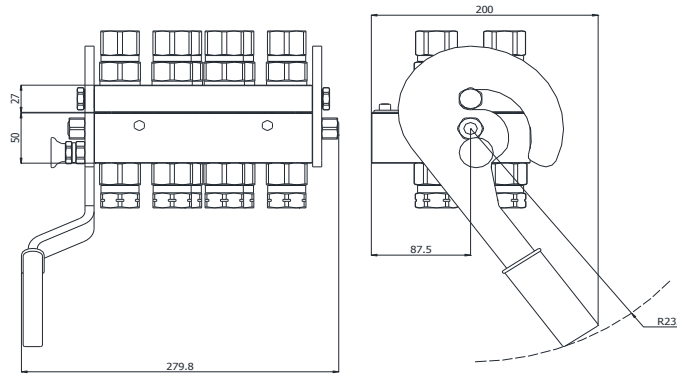
Q409 SERIES



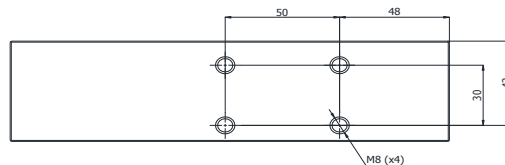
8 LINE MULTI-COUPLING
 SINGLE-SIDED LEVER
 LOCKING POSITION: LEFT *

* Right hand locking available on request

Q.SAFE
 480



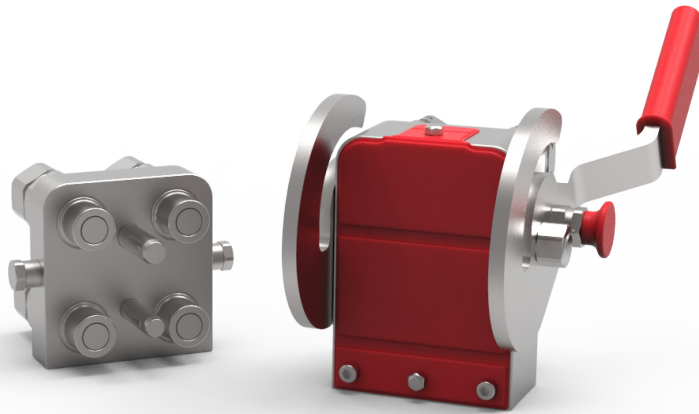
FIXED PART INSTALLATION**



| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q409H0F-041-08 | Q409H0M-041-08 | 12.5 | 1/2" | -08 | 8 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |

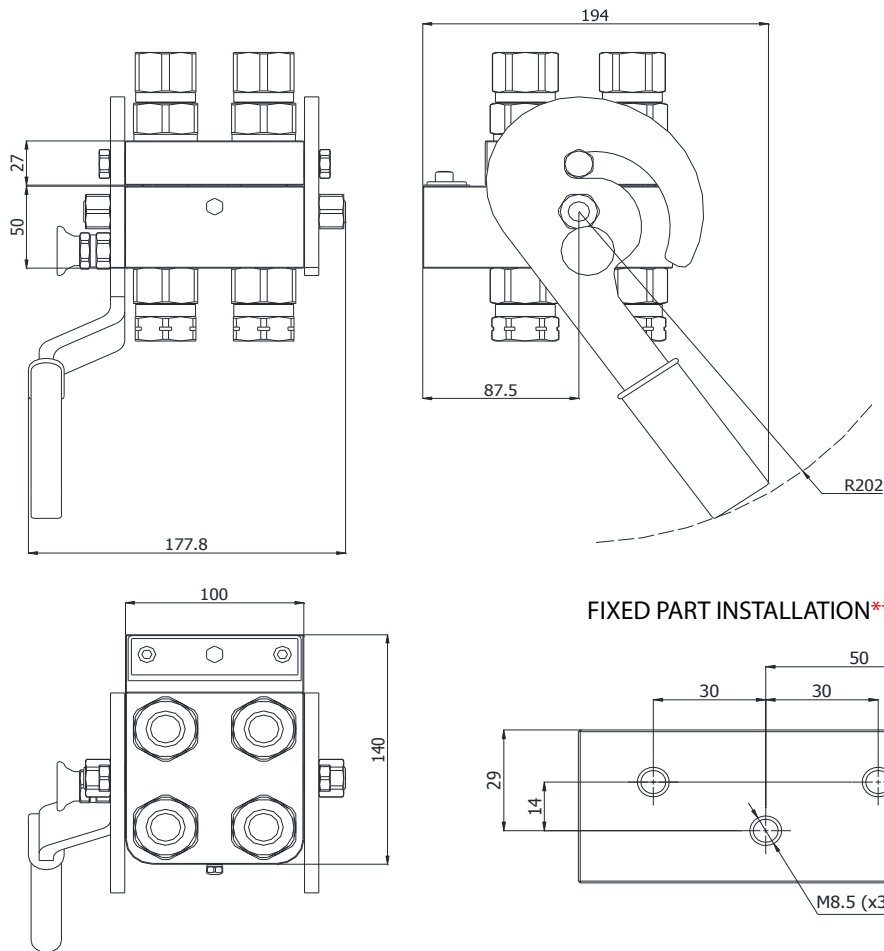
* Alternative termination ends can be provided - please ask your sales rep for details

Q410 SERIES



**4 LINE MULTI-COUPLING
SINGLE-SIDED LEVER
LOCKING POSITION: LEFT ***

** Right hand locking available on request
** Plate adaptor for frontal fixing available*



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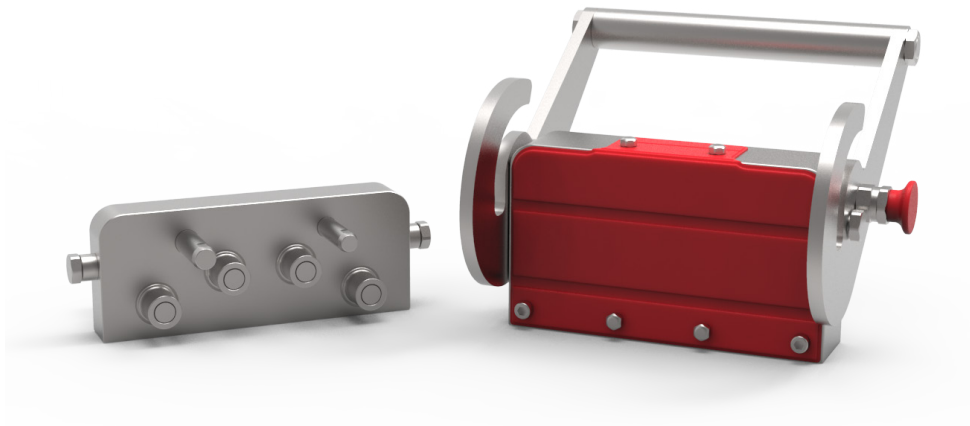
| MULTI-COUPLING | | | | | TERMINATION END* | | |
|------------------|------------------|------|------|------|------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q410D0F-041-08 | Q410D0M-041-08 | 12.5 | 1/2" | -08 | 4 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |
| Q410C0F-041-08AA | Q410C0M-041-08AA | 12.5 | 1/2" | -08 | 3 | BSP FEMALE DIN3852-2 TYPE X | 1/2" BSP |

** Alternative termination ends can be provided - please ask your sales rep for details*

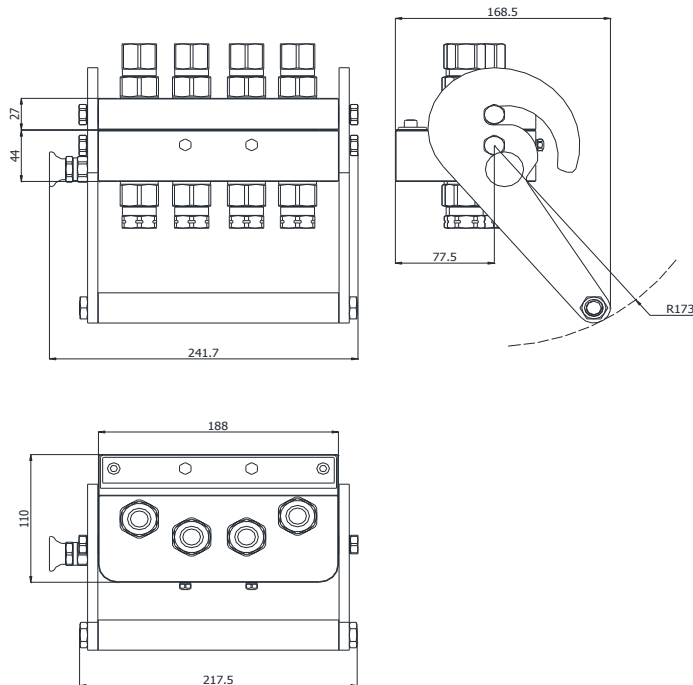
Q411 SERIES

4 LINE MULTI-COUPLING
DOUBLE-SIDED LEVER
LOCKING POSITION: LEFT *

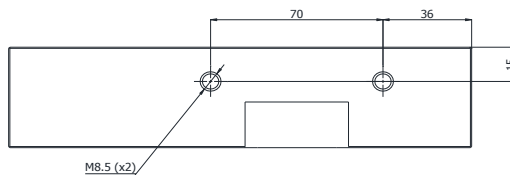
* Right hand locking available on request



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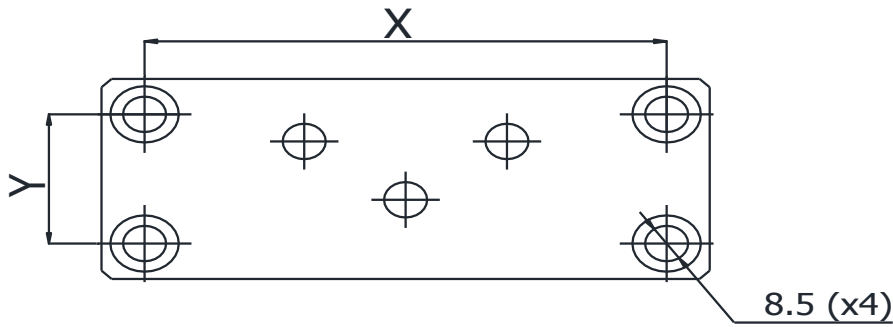


FIXED PART INSTALLATION**



| MULTI-COUPLING | | | | | TERMINATION END * | | |
|----------------|----------------|------|------|------|-------------------|-----------------------------|----------|
| PART NUMBER | | SIZE | | | LINES | DESCRIPTION | THREAD |
| Fixed | Mobile | DN | Inch | Dash | | | |
| Q411D0F-041-06 | Q411D0M-041-06 | 10 | 3/8" | -06 | 4 | BSP FEMALE DIN3852-2 TYPE X | 3/8" BSP |

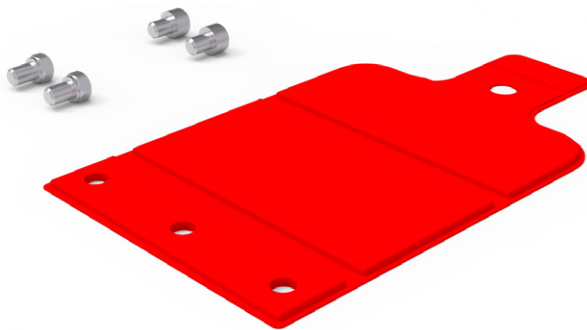
* Alternative termination ends can be provided - please ask your sales rep for details



Q1AZ50BN

PLATE ADAPTOR FOR
MULTICONNECTOR

| MULTICOUPLING SERIES | PART NUMBER | MATERIAL | DIMENSIONS mm | |
|----------------------|-------------|-----------|---------------|----|
| | | | X | Y |
| Q401 | Q1AZ50BN-01 | ALUMINIUM | 103 | 31 |
| Q402 | Q1AZ50BN-02 | ALUMINIUM | 103 | 31 |
| Q403 | Q1AZ50BN-03 | ALUMINIUM | 115 | 31 |
| Q404 | Q1AZ50BN-04 | ALUMINIUM | 115 | 31 |
| Q406 | Q1AZ50BN-06 | ALUMINIUM | 115 | 40 |
| Q410 | Q1AZ50BN-10 | ALUMINIUM | 115 | 31 |



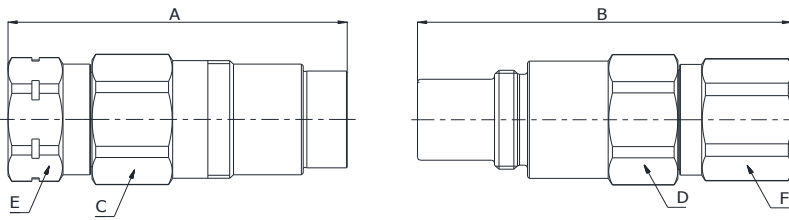
Q1AZ19FR

COVER FOR
MULTICONNECTOR

| MULTICOUPLING SERIES | PART NUMBER | MATERIAL | COLOUR |
|----------------------|-------------|----------|--------|
| Q401 | Q1AZ19FR-01 | STEEL+PU | RED |
| Q402 | Q1AZ19FR-02 | STEEL+PU | RED |
| Q403 | Q1AZ19FR-03 | STEEL+PU | RED |
| Q404 | Q1AZ19FR-04 | STEEL+PU | RED |
| Q405 | Q1AZ19FR-05 | STEEL+PU | RED |
| Q406 | Q1AZ19FR-06 | STEEL+PU | RED |
| Q407 | Q1AZ19FR-07 | STEEL+PU | RED |
| Q408 | Q1AZ19FR-08 | STEEL+PU | RED |
| Q409 | Q1AZ19FR-09 | STEEL+PU | RED |
| Q410 | Q1AZ19FR-10 | STEEL+PU | RED |
| Q411 | Q1AZ19FR-11 | STEEL+PU | RED |

Q06811041A
Q06911041A

BSP TERMINATION ENDS
TO DIN 3852 X TYPE



| SIZE | | | PART NUMBER | | THREAD | DIMENSIONS mm | | | | | |
|------|------|------|------------------|------------------|--------|---------------|-------|----|----|----|----|
| DN | Inch | Dash | Female coupling | Male coupling | | A | B | C | D | E | F |
| 10 | 3/8" | -06 | Q06911041A-06-06 | Q06811041A-06-06 | 3/8" | 82.3 | 93.7 | 30 | 30 | 27 | 27 |
| 10 | 3/8" | -06 | Q06911041A-06-08 | Q06811041A-06-08 | 1/2" | 85.3 | 96.5 | 30 | 30 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q06911041A-08-08 | Q06811041A-08-08 | 1/2" | 92.5 | 102 | 36 | 36 | 34 | 34 |
| 12.5 | 1/2" | -08 | Q06911041A-08-12 | Q06811041A-08-12 | 3/4" | 94.5 | 105 | 36 | 36 | 34 | 34 |
| 20 | 3/4" | -12 | Q06911041A-12-12 | Q06811041A-12-12 | 3/4" | 108 | 118.7 | 41 | 42 | 41 | 41 |
| 25 | 1" | -16 | Q06911041A-16-16 | Q06811041A-16-16 | 1" | 119.4 | 126.3 | 50 | 50 | 50 | 50 |

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Q1A0114

PARKING FOR MQS-A MALE
BULKHEAD MOUNTING

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN | Inch | Dash | Parking | | |
| 12.5 | 1/2" | -08 | Q1A0114N-08 | STEEL | - |



Q1A0114-B

PARKING FOR MQS-A MALE

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|--------------|----------|--------|
| DN | Inch | Dash | Parking | | |
| 12.5 | 1/2" | -08 | Q1A0114N-08B | STEEL | - |



Q1A0104

PARKING FOR MQS-A MALE

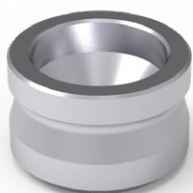
| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN | Inch | Dash | Parking | | |
| 12.5 | 1/2" | -08 | Q1A0104N-08 | STEEL | - |



Q1A0114-T

PARKING WITH CAP FOR MQS-A MALE BULKHEAD MOUNTING

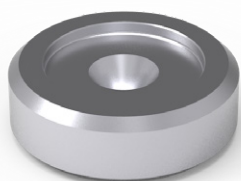
| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|--------------|-------------|--------|
| DN | Inch | Dash | Parking | | |
| 12.5 | 1/2" | -08 | Q1A0114K-08T | STEEL + POM | BLACK |



Q1AF104

PARKING FOR MQS-VB (BREAKING VALVES)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN | Inch | Dash | Parking | | |
| 12.5 | 1/2" | -08 | Q1AF104N-08 | STEEL | - |



Q1AH104

PARKING FOR MQS-VS (AGRICULTURAL VALVES)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------|----------|--------|
| DN | Inch | Dash | 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 | Dash | Parking | | | |
| 20 | 3/4" | -12 | Q1AP104N-12 | | STEEL | - |
| 25 | 1" | -16 | Q1AP104N-16 | | STEEL | - |



Q1A0B00 Q1A1B00

PLUGS AND CAPS
FOR MQS-A (ISO A)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1A1B00R-04 | Q1A0B00R-04 | PVC | RED |
| 6.3 | 1/4" | -04 | Q1A1B00Y-04 | Q1A0B00Y-04 | PVC | YELLOW |
| 10 | 3/8" | -06 | Q1A1B00R-06 | Q1A0B00R-06 | PVC | RED |
| 10 | 3/8" | -06 | Q1A1B00Y-06 | Q1A0B00Y-06 | PVC | YELLOW |
| 10 | 3/8" | -06 | Q1A1B00K-06 | Q1A0B00K-06 | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00R-08 | Q1A0B00R-08 | PVC | RED |
| 12.5 | 1/2" | -08 | Q1A1B00B-08 | Q1A0B00B-08 | PVC | BLUE |
| 12.5 | 1/2" | -08 | Q1A1B00G-08 | Q1A0B00G-08 | PVC | GREEN |
| 12.5 | 1/2" | -08 | Q1A1B00Y-08 | Q1A0B00Y-08 | PVC | YELLOW |
| 12.5 | 1/2" | -08 | Q1A1B00K-08 | Q1A0B00K-08 | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00H-08 | Q1A0B00H-08 | PVC | WHITE |
| 20 | 3/4" | -12 | Q1A1B00R-12 | Q1A0B00R-12 | PVC | RED |
| 20 | 3/4" | -12 | Q1A1B00Y-12 | Q1A0B00Y-12 | PVC | YELLOW |
| 25 | 1" | -16 | Q1A1B00R-16 | Q1A0B00R-16 | PVC | RED |
| 25 | 1" | -16 | Q1A1B00Y-16 | Q1A0B00Y-16 | PVC | YELLOW |



Q1A0B00 Q1A1B00

PLUGS AND CAPS
FOR MQS-AP (ISO A
CONNECTABLE UNDER
PRESSURE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 12.5 | 1/2" | -08 | Q1A1B00R-08 | Q1A0B00R-08 | PVC | RED |
| 12.5 | 1/2" | -08 | Q1A1B00B-08 | Q1A0B00B-08 | PVC | BLUE |
| 12.5 | 1/2" | -08 | Q1A1B00G-08 | Q1A0B00G-08 | PVC | GREEN |
| 12.5 | 1/2" | -08 | Q1A1B00Y-08 | Q1A0B00Y-08 | PVC | YELLOW |
| 12.5 | 1/2" | -08 | Q1A1B00K-08 | Q1A0B00K-08 | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00H-08 | Q1A0B00H-08 | PVC | WHITE |

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Q1A1B00

PLUGS FOR MQS-AF
(ISO A PUSH-PULL)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1A1B00R-04 | - | PVC | RED |
| 6.3 | 1/4" | -04 | Q1A1B00Y-04 | - | PVC | YELLOW |
| 10 | 3/8" | -06 | Q1A1B00R-06 | - | PVC | RED |
| 10 | 3/8" | -06 | Q1A1B00Y-06 | - | PVC | YELLOW |
| 10 | 3/8" | -06 | Q1A1B00K-06 | - | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00R-08 | - | PVC | RED |
| 12.5 | 1/2" | -08 | Q1A1B00B-08 | - | PVC | BLUE |
| 12.5 | 1/2" | -08 | Q1A1B00G-08 | - | PVC | GREEN |
| 12.5 | 1/2" | -08 | Q1A1B00Y-08 | - | PVC | YELLOW |
| 12.5 | 1/2" | -08 | Q1A1B00K-08 | - | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00H-08 | - | PVC | WHITE |
| 20 | 3/4" | -12 | Q1A1B00R-12 | - | PVC | RED |
| 20 | 3/4" | -12 | Q1A1B00Y-12 | - | PVC | YELLOW |
| 25 | 1" | -16 | Q1A1B00R-16 | - | PVC | RED |
| 25 | 1" | -16 | Q1A1B00Y-16 | - | PVC | YELLOW |



Q1A1B00

PLUGS FOR MQS-AM & MQS-AB (ISO A), MQS-AFP, MQS-AFM, MQS-AFB, MQS-ARM & MQS-ARB (ISO A PUSH-PULL)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 12.5 | 1/2" | -08 | Q1A1B00R-08 | - | PVC | RED |
| 12.5 | 1/2" | -08 | Q1A1B00B-08 | - | PVC | BLUE |
| 12.5 | 1/2" | -08 | Q1A1B00G-08 | - | PVC | GREEN |
| 12.5 | 1/2" | -08 | Q1A1B00Y-08 | - | PVC | YELLOW |
| 12.5 | 1/2" | -08 | Q1A1B00K-08 | - | PVC | BLACK |
| 12.5 | 1/2" | -08 | Q1A1B00H-08 | - | PVC | WHITE |



Q1A5B00 Q1A4B00

PLUGS AND CAPS FOR MQS-N (STANDARD) SERIES

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|-------------------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1A5B00R-04 | Q1A4B00R-04 | PVC | RED |
| 6.3 | 1/4" | -04 | Q1A5B00B-04 | Q1A4B00B-04 | PVC | BLUE |
| 6.3 | 1/4" | -04 | Q1A5B00G-04 | Q1A4B00G-04 | PVC | GREEN |
| 10 | 3/8" | -06 | Q1A5B00R-06 | Q1A4B00R-06 | PVC | RED |
| 10 | 3/8" | -06 | 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 |
| 20 | 3/4" | -12 | Q1A5B00B-12 | Q1A4B00B-12 | PVC | BLUE |
| 20 | 3/4" | -12 | Q1A5B00Y-12 | Q1A4B00Y-12 | PVC | YELLOW |



Q1A9B00 Q1A8B00

PLUGS AND CAPS FOR
MQS-F (FLAT-FACE) &
MQS-FH (FLAT-FACE HIGH
PRESSURE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|-------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Cap for female coupling | Cap for male coupling | | |
| 6.3 | 1/4" | -04 | Q1A9B00R-04 | Q1A8B00R-04 | PVC | RED |
| 6.3 | 1/4" | -04 | Q1A9B00B-04 | Q1A8B00B-04 | PVC | BLUE |
| 10 | 3/8" | -06 | Q1A9B00R-06 | Q1A8B00R-06 | PVC | RED |
| 10 | 3/8" | -06 | Q1A9B00B-06 | Q1A8B00B-06 | PVC | BLUE |
| 12.5 | 1/2" | -08 | Q1A9B00R-08 | Q1A8B00R-08 | PVC | RED |
| 12.5 | 1/2" | -08 | Q1A9B00B-08 | Q1A8B00B-08 | PVC | BLUE |
| 16 | 5/8" | -10 | Q1A9B00R-10 | Q1A8B00R-10 | PVC | RED |
| 20 | 3/4" | -12 | Q1A9B00R-12 | Q1A8B00R-12 | PVC | RED |
| 20 | 3/4" | -12 | Q1A9B00B-12 | Q1A8B00B-12 | PVC | BLUE |
| 25 | 1" | -16 | Q1A9B00R-16 | Q1A8B00R-16 | PVC | RED |
| 25 | 1" | -16 | Q1A9B00B-16 | Q1A8B00B-16 | PVC | BLUE |

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Q1A8B00

CAPS FOR
MQS-FP (FLAT-FACE MALE
CONNECTABLE UNDER
PRESSURE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 10 | 3/8" | -06 | - | Q1A8B00R-06 | PVC | RED |
| 10 | 3/8" | -06 | - | Q1A8B00B-06 | PVC | BLUE |
| 12.5 | 1/2" | -08 | - | Q1A8B00R-08 | PVC | RED |
| 12.5 | 1/2" | -08 | - | Q1A8B00B-08 | PVC | BLUE |
| 16 | 5/8" | -10 | - | Q1A8B00R-10 | PVC | RED |
| 19 | 3/4" | -12 | - | Q1A8B00R-12 | PVC | RED |
| 19 | 3/4" | -12 | - | Q1A8B00B-12 | PVC | BLUE |
| 25 | 1" | -16 | - | Q1A8B00B-16 | PVC | RED |
| 25 | 1" | -16 | - | Q1A8B00R-16 | PVC | BLUE |



Q1A3B00
Q1A2B00

PLUGS AND CAPS
FOR MQS-B (ISO B)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1A3B00R-04 | Q1A2B00R-04 | PVC | RED |



Q1AJA00
Q1AIA00

PLUGS AND CAPS
FOR MQS-SGR (SCREW-TYPE)
& MQS-SG (SCREW-TYPE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|--------|------|-------------------------|------------------------|----------|--------|
| DN | Inch | Dash | Cap for female coupling | Plug 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 |
| 38 | 1.1/2" | -24 | Q1AJA00R-24 | Q1AIA00R-24 | PE-HD | RED |



Q1AJ100 Q1AI100

CAPS AND PLUGS
FOR MQS-SG (SCREW-TYPE)
& MQS-SGR (SCREW-TYPE
GERMAN MARKET)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|-------------------------|------------------------|---------------|--------|
| DN | Inch | Dash | Cap for female coupling | Plug for male coupling | | |
| 6.3 | 1/4" | -04 | Q1AJ100N-04 | Q1AI100N-04 | STEEL + PE-LD | - |
| 10 | 3/8" | -06 | Q1AJ100N-06 | Q1AI100N-06 | STEEL + PE-LD | - |
| 12.5 | 1/2" | -08 | Q1AJ100N-08 | Q1AI100N-08 | STEEL + PE-LD | - |
| 20 | 3/4" | -12 | Q1AJ100N-12 | Q1AI100N-12 | STEEL + PE-LD | - |
| 25 | 1" | -16 | Q1AJ100N-16 | Q1AI100N-16 | STEEL + PE-LD | - |

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492



Q1AN100 Q1AM100

CAPS AND PLUGS
FOR MQS-SC (SCREW-TYPE
HYDRAULIC CYLINDERS)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|-----------------------|---------------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1AN100N-04 | Q1AM100N-04 | STEEL + PE-LD | - |
| 10 | 3/8" | -06 | Q1AN100N-06 | Q1AM100N-06 | STEEL + PE-LD | - |



Q1AQ100 Q1AP100

CAPS AND PLUGS
FOR MQS-ST
(SCREW-TYPE TRUCKS)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|-------------------------|------------------------|----------|--------|
| DN | Inch | Dash | Cap for female coupling | Plug 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 | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 6.3 | 1/4" | -04 | Q1AL100N-04 | Q1AK100N-04 | STEEL + PE-LD | - |
| 10 | 3/8" | -06 | Q1AL100N-06 | Q1AK100N-06 | STEEL + PE-LD | - |
| 12.5 | 1/2" | -08 | Q1AL100N-08 | Q1AK100N-08 | STEEL + PE-LD | - |
| 20 | 3/4" | -12 | Q1AL100N-12 | Q1AK100N-12 | STEEL + PE-LD | - |
| 25 | 1" | -16 | Q1AL100N-16 | Q1AK100N-16 | STEEL + PE-LD | - |



Q1ACB00

CAP
FOR MQS-D (DIAGNOSTIC)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-----------------------|----------|--------|
| DN | Inch | Dash | Cap for Male coupling | | |
| 5 | 1/8" | -02 | Q1ACB00K-02 | PVC | BLACK |



Q1AEA00

CAP
FOR MQS-VB
(BRAKING VALVES)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-----------------------|----------|--------|
| DN | Inch | Dash | Cap for Male coupling | | |
| 12.5 | 1/2" | -08 | Q1AEA00R-08 | PVC | RED |

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Q1AGA00

CAP
FOR MQS-VS
(AGRICULTURAL VALVES)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-----------------------|----------|--------|
| DN | Inch | Dash | Cap for Male coupling | | |
| 12.5 | 1/2" | -08 | Q1AGA00R-08 | PE-HD | RED |



Q1A1D02

AUTOMATIC CAP
FOR MQS-AF (PUSH-PULL)

| SIZE | | | PART NUMBER | MATERIAL | COLOUR |
|------|------|------|-------------------------|----------|--------|
| DN | Inch | Dash | Cap for Female coupling | | |
| 12.5 | 1/2" | -08 | Q1A1D02Y-08 | POM | YELLOW |
| 12.5 | 1/2" | -08 | Q1A1D02R-08 | POM | RED |
| 12.5 | 1/2" | -08 | Q1A1D02K-08 | POM | BLACK |
| 12.5 | 1/2" | -08 | Q1A1D02G-08 | POM | GREEN |
| 12.5 | 1/2" | -08 | Q1A1D02B-08 | POM | BLUE |
| 20 | 3/4" | -12 | Q1A1D02Y-12 | POM | YELLOW |
| 20 | 3/4" | -12 | Q1A1D02R-12 | POM | RED |
| 20 | 3/4" | -12 | Q1A1D02K-12 | POM | BLACK |
| 20 | 3/4" | -12 | Q1A1D02G-12 | POM | GREEN |
| 20 | 3/4" | -12 | Q1A1D02B-12 | POM | BLUE |



Q1A1D02

AUTOMATIC CAP
FOR MQS-AFP, MQS-AFM,
MQS-AFB, MQS-ARM &
MQS-ARB (ISO A PUSH-PULL)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|-------------------------|--|----------|--------|
| DN | Inch | Dash | Cap for Female coupling | | | |
| 12.5 | 1/2" | -08 | Q1A1D02B-08 | | POM | BLUE |
| 12.5 | 1/2" | -08 | Q1A1D02G-08 | | POM | GREEN |
| 12.5 | 1/2" | -08 | Q1A1D02K-08 | | POM | BLACK |
| 12.5 | 1/2" | -08 | Q1A1D02R-08 | | POM | RED |
| 12.5 | 1/2" | -08 | Q1A1D02Y-08 | | POM | YELLOW |



Q1A9D02

AUTOMATIC CAP
FOR MQS-F (FEMALE)
& MQS-FH (FEMALE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|------|------|--------------------------|--|----------|--------|
| DN | Inch | Dash | Plug for Female coupling | | | |
| 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 |



Q1AL500 Q1AK500

CAPS AND PLUGS
FOR MQS-SH (SCREW-TYPE
VERY HIGH PRESSURE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|--------|------|--------------------------|-----------------------|-------------------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 31.5 | 1.1/4" | -20 | Q1AL500N-20 | Q1AK500N-20 | ALUMINIUM + STEEL | - |
| 38 | 1.1/2" | -24 | Q1AL500N-24 | Q1AK500N-24 | ALUMINIUM + STEEL | - |



Q1AW500 Q1AV500

CAPS AND PLUGS
FOR MQS-FS (SCREW-TYPE
FLAT FACE)

| SIZE | | | PART NUMBER | | MATERIAL | COLOUR |
|------|--------|------|--------------------------|-----------------------|-------------------|--------|
| DN | Inch | Dash | Plug for Female coupling | Cap for Male coupling | | |
| 10 | 3/8" | -06 | Q1AW500N-06 | Q1AV500N-06 | ALUMINIUM + STEEL | - |
| 12.5 | 1/2" | -08 | Q1AW500N-08 | Q1AV500N-08 | ALUMINIUM + STEEL | - |
| 16 | 5/8" | -10 | Q1AW500N-10 | Q1AV500N-10 | ALUMINIUM + STEEL | - |
| 19 | 3/4" | -12 | Q1AW500N-12 | Q1AV500N-12 | ALUMINIUM + STEEL | - |
| 25 | 1" | -16 | Q1AW500N-16 | Q1AV500N-16 | ALUMINIUM + STEEL | - |
| 38 | 1-1/2" | -24 | Q1AW500N-24 | Q1AV500N-24 | ALUMINIUM + STEEL | - |

Q.SAFE 496

Q1A8093



SHAPED SEAL FOR MQS-F
(FLAT-FACE), MQS-FH (FLAT-
FACE HIGH PRESSURE) &
MQS-FP (FLAT-FACE MALE
CONNECTABLE UNDER
PRESSURE)

| SIZE | | | PART NUMBER | KIT | MATERIAL |
|------|------|------|-------------|-------------|--------------|
| DN | Inch | Dash | | | |
| 6.3 | 1/4" | -04 | Q1A8093N-04 | SHAPED SEAL | POLYURETHANE |
| 10 | 3/8" | -06 | Q1A8093N-06 | SHAPED SEAL | POLYURETHANE |
| 12.5 | 1/2" | -08 | Q1A8093N-08 | SHAPED SEAL | POLYURETHANE |
| 16 | 5/8" | -10 | Q1A8093N-10 | SHAPED SEAL | POLYURETHANE |
| 20 | 3/4" | -12 | Q1A8093N-12 | SHAPED SEAL | POLYURETHANE |
| 25 | 1" | -16 | Q1A8093N-16 | SHAPED SEAL | POLYURETHANE |

Q1AV093



SHAPED SEAL FOR MQS-FS
(FLAT-FACE SCREW TYPE)

| SIZE | | | PART NUMBER | KIT | MATERIAL |
|------|--------|------|-------------|-------------|--------------|
| DN | Inch | Dash | | | |
| 10 | 3/8" | -06 | Q1AV093N-06 | SHAPED SEAL | POLYURETHANE |
| 12.5 | 1/2" | -08 | Q1AV093N-08 | SHAPED SEAL | POLYURETHANE |
| 16 | 5/8" | -10 | Q1AV093N-10 | SHAPED SEAL | POLYURETHANE |
| 20 | 3/4" | -12 | Q1AV093N-12 | SHAPED SEAL | POLYURETHANE |
| 25 | 1" | -16 | Q1AV093N-16 | SHAPED SEAL | POLYURETHANE |
| 38 | 1.1/2" | -24 | Q1AV093N-24 | SHAPED SEAL | POLYURETHANE |



Q1A1013

O-RING AND BACK-UP RING
FOR MQS-A (ISO A)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|--------|------|-------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 |



Q1A1013

O-RING AND BACK-UP RING
FOR MQS-AF
(ISO A PUSH-PULL)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|------|------|-------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 |

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Q1A1013

O-RING AND BACK-UP RING
FOR MQS-AP, MQS-AM &
MQS-AB (ISO A), MQS-AFP,
MQS-AFM, MQS-AFB, MQS-
ARM & MQS-ARB
(ISO A PUSH-PULL)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|------|------|-------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup Ring |
| 12.5 | 1/2" | -08 | Q1A1013N-08 | 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 | Dash | | | O-Ring | Backup 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 |



Q1A5013

O-RING AND BACK-UP RING
FOR MQS-N
(STANDARD SERIES)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|--------|------|--------------------------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 |
| 20 | 3/4" | -12 | Q1A5013N-12B | O-RING + BACK-UP RING | NBR | PTFE |
| 25 | 1" | -16 | Q1A5013N-16 | O-RING + BACK-UP RING | NBR | PTFE |
| 25 | 1" | -16 | Q1A5013N-16B | O-RING + BACK-UP RING | NBR | PTFE |
| 25 | 1" | -16 | 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 |



Q1AJ013

O-RING AND BACK-UP RING
FOR MQS-SG
& MQS-SGR (SCREW-TYPE)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|--------|------|-------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 |

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Q1AN013

O-RING AND BACK-UP RING
FOR MQS-SC (SCREW-TYPE
HYDRAULIC CYLINDERS)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|------|------|-------------|-----------------------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 RING
FOR MQS-ST (SCREW-TYPE
FOR TRUCKS)

| SIZE | | | PART NUMBER | KIT | MATERIAL | |
|------|------|------|-------------|--------|----------|-------------|
| DN | Inch | Dash | | | O-Ring | Backup 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 | Dash | | | O-Ring | Backup 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 | 1¼" | -20 | Q1AL013N-20 | O-RING + BACK-UP RING | NBR | PTFE |
| 38 | 1½" | -24 | Q1AL013N-24 | O-RING + BACK-UP RING | NBR | PTFE |

ABOUT Q.SAFE CHECK VALVES

Manuli Hydraulics’ check valves are expertly designed for optimal hydrodynamic performance, ensuring minimal pressure drop across the component, and therefore minimising the impact on the fluid flow in your systems. Manufactured from high quality steel with a Cr3+ (trivalent chrome) plating, Manuli check valves offer superior corrosion resistance - up to 500 hours to red rust in salt spray conditions - with the option to upgrade to our new E-Coat 1000 plating (1,000 hours to red rust) on request.

Valve sealing is supplied by a C98 high-carbon steel spring and (where required) a nitrile (NBR) o-ring and back-up ring arrangement, which prevents unwanted creeping of the rubber seal over time.

Manuli check valve housings come in 3 basic forms, “Standard”, “DHI” and “Compact”. This choice of housing design makes it even easier for you to include Manuli check valves into your systems regardless of space constraints.

The Manuli check valve range also includes “Bi-Directional” options for both the “Standard” and “DHI” housing types, to allow an even greater level of pressure control in your systems.

Q.SAFE CHECK VALVES

| ACCESSORY TYPE | SIZE | | | | | | | | PAGE No. |
|----------------------|-------|-------|-------|-------|-------|--------|--------|-------|----------|
| | 1/4" | 3/8" | 1/2" | 3/4" | 1" | 1 1/4" | 1 1/2" | 2" | |
| STANDARD | Green | Green | Green | Green | Green | Green | Green | Green | 504 |
| COMPACT | Green | Green | Green | Green | Green | White | White | White | 511 |
| BI-DIRECTIONAL | White | Green | Green | Green | White | White | White | White | 515 |
| STANDARD - DHI | Green | Green | Green | Green | Green | Green | Green | Green | 518 |
| BI-DIRECTIONAL - DHI | White | Green | Green | Green | White | White | White | White | 522 |

How to order Manuli Check Valves

Our portfolio of check valves is designed to allow maximum flexibility of selection with the minimum number of unique parts required. So for all of our off-the-shelf valve families it is possible to have any of the listed configurations supplied with any one of the standard crack pressures.

When placing your order simply substitute the 11th character in the part number for the relevant "Digit" shown in the table below.

Note: All part numbers in the following pages are shown with a "A" in this position, corresponding to a 35 kPa (5.1 psi) crack pressure.*

** Except in the case of bi-directional check valves where all the options are listed.*



CRACK PRESSURE OPTIONS

| Digit | Pressure (kPa) | Pressure (psi) |
|-------|----------------|----------------|
| A | 35 | 5.1 |
| B | 10 | 1.5 |
| C | 20 | 2.9 |
| D | 50 | 7.3 |
| E | 100 | 14.5 |
| F | 150 | 21.8 |
| G | 200 | 29.0 |
| H | 250 | 36.3 |
| J | 300 | 43.5 |
| K | 350 | 50.8 |
| L | 400 | 58.0 |
| M | 450 | 65.3 |
| N | 500 | 72.5 |
| P | 600 | 87.0 |
| Q | 700 | 101.5 |
| R | 800 | 116.0 |
| S | 900 | 130.5 |
| T | 1000 | 145.0 |
| X | Without Spring | |

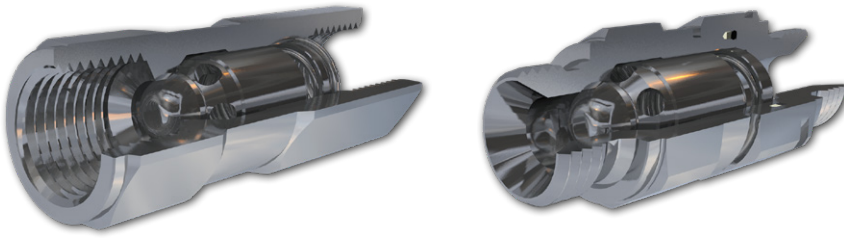
Example:

Part number "Q2A1110505A-04-04" would specify a 35 kPa crack pressure.

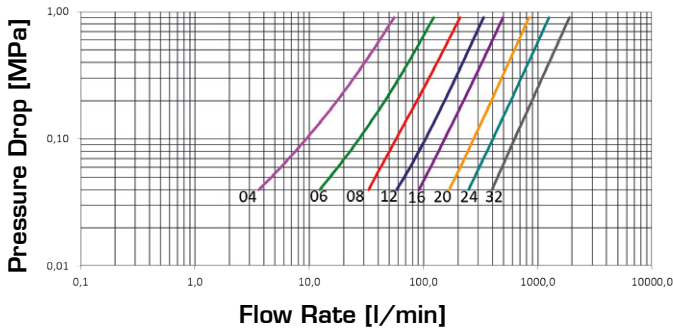
Part number "Q2A1110505M-04-04" would specify exactly the same valve configuration, but with a 450 kPa crack pressure.

Note: When specifying the crack pressure for a bi-directional check valve the digit value would refer to the crack pressure in the B-A direction. A-B direction crack pressure is always 35 kPa.

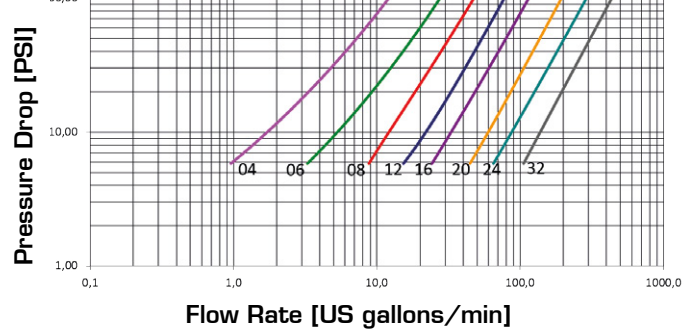
STANDARD CHECK VALVES



Pressure Drop



Pressure Drop



Q.SAFE 504

TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | MINIMUM BURST PRESSURE | |
|----------------------------|--------|------|--|-------|------------------------|--------|------------------------|--------|
| WORKING PRESSURE (Dynamic) | | | RATED FLOW at 0.2 MPa of pressure drop | | MINIMUM BURST PRESSURE | | | |
| DN | inch | Dash | MPa | PSI | l/min | US GPM | MPa | PSI |
| 6 | 1/4" | 04 | 45 | 6,525 | 18 | 4.8 | 180 | 26,100 |
| 10 | 3/8" | 06 | 35 | 5,075 | 46 | 12.2 | 140 | 20,300 |
| 12 | 1/2" | 08 | 35 | 5,075 | 88 | 23.2 | 140 | 20,300 |
| 19 | 3/4" | 12 | 35 | 5,075 | 153 | 40.4 | 140 | 20,300 |
| 25 | 1" | 16 | 35 | 5,075 | 225 | 59.4 | 140 | 20,300 |
| 31 | 1.1/4" | 20 | 35 | 5,075 | 394 | 104.1 | 140 | 20,300 |
| 38 | 1.1/2" | 24 | 35 | 5,075 | 580 | 153.2 | 140 | 20,300 |
| 51 | 2" | 32 | 35 | 5,075 | 890 | 235.1 | 140 | 20,300 |

PRODUCT DESCRIPTION

- Manufactured from high-quality materials
- Robust design
- Large range of termination end options available
- Large range of cracking-pressure available

MATERIAL

Steel, with springs in C98 high-carbon steel. Seals in NBR and back-up ring in PTFE.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

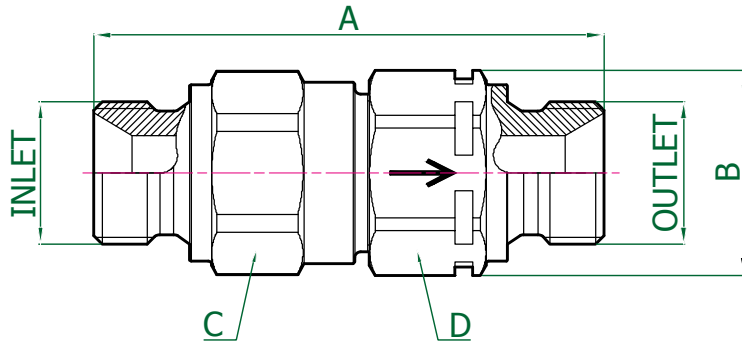
IMPULSE PRESSURES

1,000,000 cycles at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

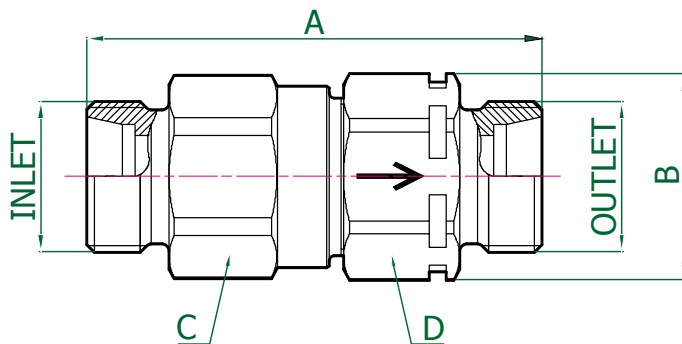
ISO 18869

Q2A1110505



MALE-MALE, STANDARD
INLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
OUTLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|--------|------|-------------------|------------------|---------|--------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A1110505A-04-04 | 35 kPa | 1/4" | 1/4" | 56 | Ø21 | 19 | 19 | |
| 10 | 3/8" | -06 | Q2A1110505A-06-06 | 35 kPa | 3/8" | 3/8" | 64 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1110505A-08-08 | 35 kPa | 1/2" | 1/2" | 74.5 | Ø30 | 27 | 27 | |
| 19 | 3/4" | -12 | Q2A1110505A-12-12 | 35 kPa | 3/4" | 3/4" | 88.2 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1110505A-16-16 | 35 kPa | 1" | 1" | 100.9 | Ø45 | 41 | 41 | |
| 31 | 1-1/4" | -20 | Q2A1110505A-20-20 | 35 kPa | 1-1/4" | 1-1/4" | 122.4 | Ø55 | 50 | 50 | |
| 38 | 1-1/2" | -24 | Q2A1110505A-24-24 | 35 kPa | 1-1/2" | 1-1/2" | 141 | Ø66 | 60 | 60 | |
| 51 | 2" | -32 | Q2A1110505A-32-32 | 35 kPa | 2" | 2" | 173.7 | Ø82 | 75 | 75 | |



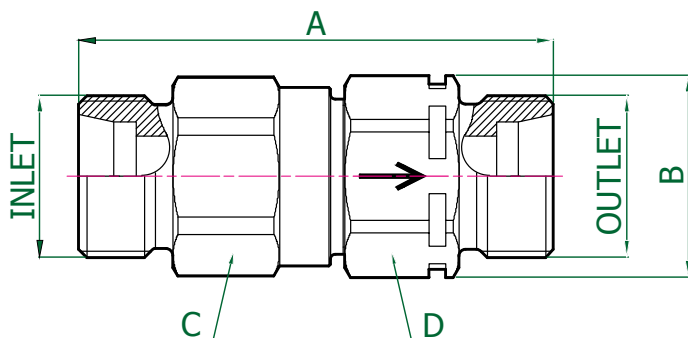
Q2A1111111

MALE-MALE, STANDARD
INLET: METRIC MALE 24° CONE SEAT
 LIGHT TYPE DIN 3861 / ISO 8434-1
OUTLET: METRIC MALE 24° CONE SEAT
 LIGHT TYPE DIN 3861 / ISO 8434-1
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|--------|------|-------------------|------------------|---------|---------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A1111111A-12-12 | 35 kPa | M12X1,5 | M12X1,5 | 50.5 | Ø21 | 19 | 19 | |
| 6 | 1/4" | -04 | Q2A1111111A-14-14 | 36 kPa | M14X1,5 | M14X1,5 | 50.5 | Ø21 | 19 | 19 | |
| 10 | 3/8" | -06 | Q2A1111111A-18-18 | 35 kPa | M18X1,5 | M18X1,5 | 58.5 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1111111A-22-22 | 35 kPa | M22X1,5 | M22X1,5 | 66.5 | Ø30 | 27 | 27 | |
| 19 | 3/4" | -12 | Q2A1111111A-26-26 | 35 kPa | M26X1,5 | M26X1,5 | 74.5 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1111111A-30-30 | 35 kPa | M30X2 | M30X2 | 84.5 | Ø45 | 41 | 41 | |
| 31 | 1-1/4" | -20 | Q2A1111111A-36-36 | 35 kPa | M36X2 | M36X2 | 104 | Ø55 | 50 | 50 | |

Q.SAFE
505

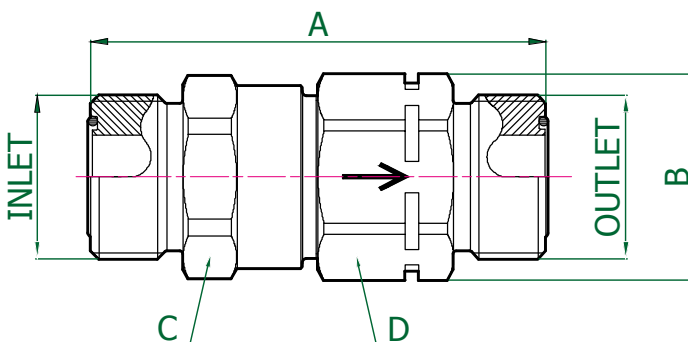
Q2A111212



MALE-MALE, STANDARD
INLET: METRIC MALE 24° CONE SEAT
 HEAVY TYPE DIN 3861 / ISO 8434-1
OUTLET: METRIC MALE 24° CONE SEAT
 HEAVY TYPE DIN 3861 / ISO 8434-1
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------|---------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A1111212A-16-16 | 35 kPa | M16X1,5 | M16X1,5 | 54.5 | Ø21 | 19 | 19 | |
| 10 | 3/8" | -06 | Q2A1111212A-20-20 | 35 kPa | M20X1,5 | M20X1,5 | 60.5 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1111212A-24-24 | 35 kPa | M24X1,5 | M24X1,5 | 70.5 | Ø30 | 27 | 27 | |
| 19 | 3/4" | -12 | Q2A1111212A-30-30 | 35 kPa | M30X2 | M30X2 | 82.5 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1111212A-36-36 | 35 kPa | M36X2 | M36X2 | 92.5 | Ø45 | 41 | 41 | |

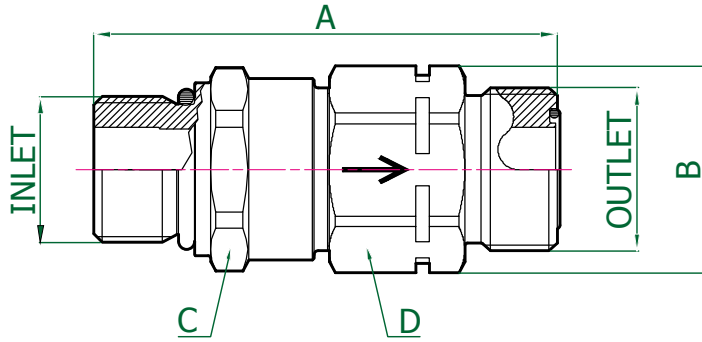
Q.SAFE 506



Q2A1112424

MALE-MALE, STANDARD
INLET: ORFS MALE ISO 8434-3
 / SAE J1453
OUTLET: ORFS MALE ISO 8434-3
 / SAE J1453
MATERIAL: STEEL
SEALS: NBR (NITRILE)

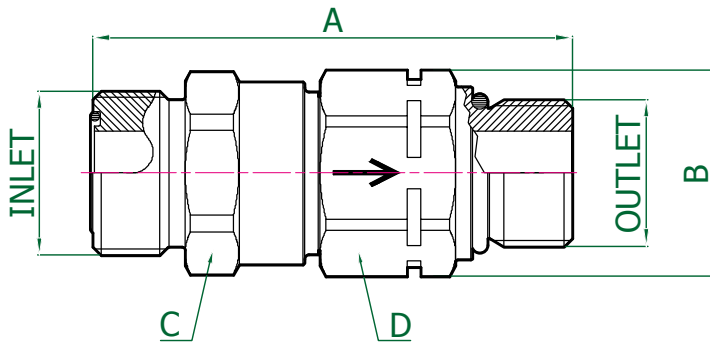
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -06 | Q2A1112424A-06-06 | 35 kPa | 11/16"-16 UN | 11/16"-16 UN | 58.9 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1112424A-08-08 | 35 kPa | 13/16"-16 UN | 13/16"-16 UN | 68.1 | Ø30 | 27 | 27 | |
| 20 | 3/4" | -12 | Q2A1112424A-10-10 | 35 kPa | 1"-14 UNS | 1"-14 UNS | 74.3 | Ø38 | 34 | 34 | |
| 20 | 3/4" | -12 | Q2A1112424A-12-12 | 35 kPa | 1.3/16"-12 UN | 1.3/16"-12 UN | 83.8 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1112424A-16-16 | 35 kPa | 1.7/16"-12 UN | 1.7/16"-12 UN | 91.5 | Ø45 | 41 | 41 | |



Q2A1113224

MALE-MALE, STANDARD
INLET: MALE O'RING BOSS
 (NON-ADJUSTABLE HEAVY) SAE J1926-2
OUTLET: ORFS MALE ISO 8434-3
 / SAE J1453
MATERIAL: STEEL
SEALS: NBR (NITRILE)

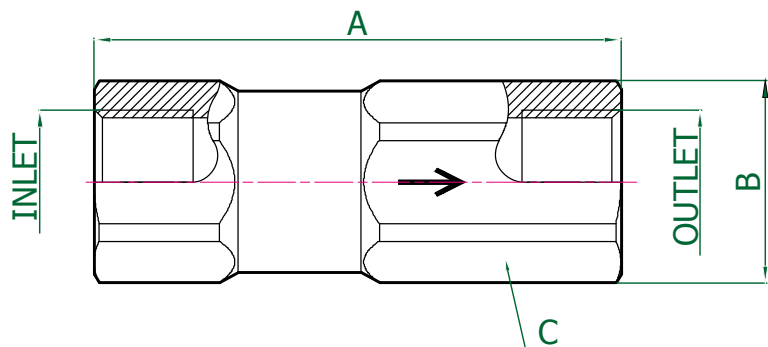
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -06 | Q2A1113224A-06-06 | 35 kPa | 9/16"-18 UNF | 11/16"-16 UN | 59.7 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1113224A-08-08 | 35 kPa | 3/4"-16 UNF | 13/16"-16 UN | 69.3 | Ø30 | 27 | 27 | |
| 20 | 3/4" | -12 | Q2A1113224A-10-10 | 35 kPa | 7/8"-14 UNF | 1"-14 UNS | 80.5 | Ø38 | 34 | 34 | |
| 20 | 3/4" | -12 | Q2A1113224A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.3/16"-12 UN | 86 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1113224A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.7/16"-12 UN | 92.5 | Ø45 | 41 | 41 | |



Q2A1112432

MALE-MALE, STANDARD
INLET: ORFS MALE ISO 8434-3
 / SAE J1453
OUTLET: MALE O'RING BOSS
 (NON-ADJUSTABLE HEAVY) SAE J1926-2
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -06 | Q2A1112432A-06-06 | 35 kPa | 11/16"-16 UN | 9/16"-18 UNF | 60.7 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A1112432A-08-08 | 35 kPa | 13/16"-16 UN | 3/4"-16 UNF | 72 | Ø30 | 27 | 27 | |
| 20 | 3/4" | -12 | Q2A1112432A-10-10 | 35 kPa | 1"-14 UNS | 7/8"-14 UNF | 81.3 | Ø38 | 34 | 34 | |
| 20 | 3/4" | -12 | Q2A1112432A-12-12 | 35 kPa | 1.3/16"-12 UN | 1.1/16"-12 UN | 85.3 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A1112432A-16-16 | 35 kPa | 1.7/16"-12 UN | 1.5/16"-12 UN | 92.5 | Ø45 | 41 | 41 | |



Q2A2100404

FEMALE-FEMALE, STANDARD

INLET: BSP FIXED FEMALE
DIN 3852-2 'FORM X' / ISO 1179-1

OUTLET: BSP FIXED FEMALE
DIN 3852-2 'FORM X' / ISO 1179-1

MATERIAL: STEEL

SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|--------|------|-------------------|------------------|---------|--------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A2100404A-04-04 | 35 kPa | 1/4" | 1/4" | 60 | Ø21 | 19 | | |
| 10 | 3/8" | -06 | Q2A2100404A-06-06 | 35 kPa | 3/8" | 3/8" | 65 (67*) | Ø24.2 | 22 | | |
| 12.5 | 1/2" | -08 | Q2A2100404A-08-08 | 35 kPa | 1/2" | 1/2" | 77 (81*) | Ø29.6 | 27 | | |
| 19 | 3/4" | -12 | Q2A2100404A-12-12 | 35 kPa | 3/4" | 3/4" | 90 | Ø37.4 | 34 | | |
| 25 | 1" | -16 | Q2A2100404A-16-16 | 35 kPa | 1" | 1" | 104 | Ø45 | 41 | | |
| 31 | 1-1/4" | -20 | Q2A2100404A-20-20 | 35 kPa | 1-1/4" | 1-1/4" | 128.5 | Ø55 | 50 | | |
| 38 | 1-1/2" | -24 | Q2A2100404A-24-24 | 35 kPa | 1-1/2" | 1-1/2" | 148 | Ø66 | 60 | | |
| 51 | 2" | -32 | Q2A2100404A-32-32 | 35 kPa | 2" | 2" | 178 | Ø82 | 75 | | |

Q2A2103434

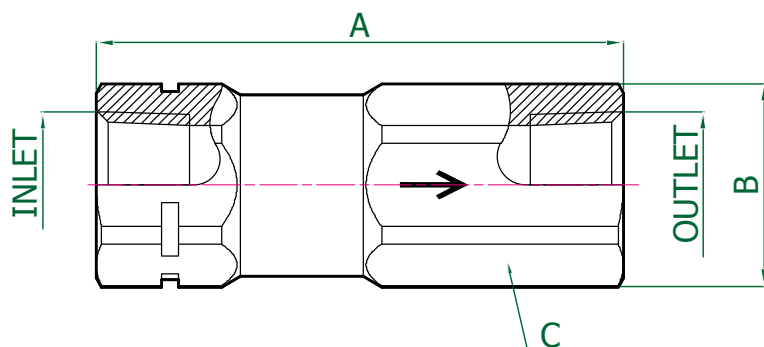
FEMALE-FEMALE, STANDARD

INLET: NPTF FIXED FEMALE
SAE J476A

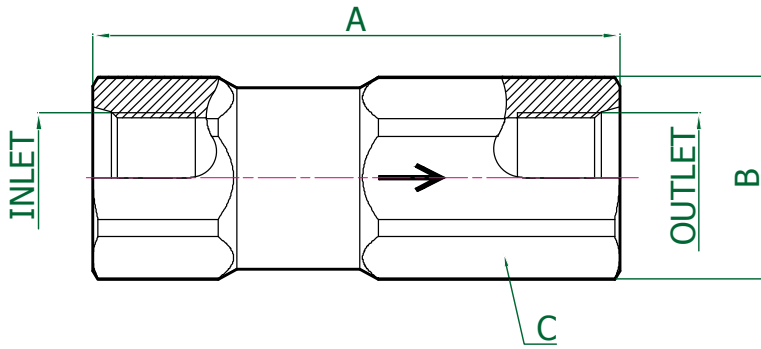
OUTLET: NPTF FIXED FEMALE
SAE J476A

MATERIAL: STEEL

SEALS: NBR (NITRILE)



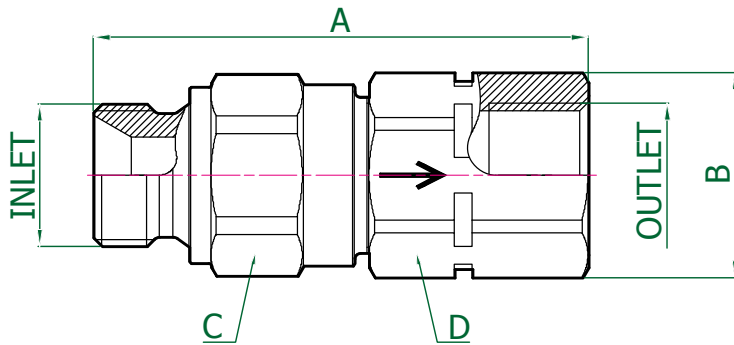
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|--------|------|-------------------|------------------|-------------|-------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A2103434A-04-04 | 35 kPa | 1/4" NPTF | 1/4" NPTF | 60 | Ø21 | 19 | | |
| 10 | 3/8" | -06 | Q2A2103434A-06-06 | 35 kPa | 3/8" NPTF | 3/8" NPTF | 65 (67*) | Ø24.2 | 22 | | |
| 12.5 | 1/2" | -08 | Q2A2103434A-08-08 | 35 kPa | 1/2" NPTF | 1/2" NPTF | 77 (81*) | Ø29.6 | 27 | | |
| 19 | 3/4" | -12 | Q2A2103434A-12-12 | 35 kPa | 3/4" NPTF | 3/4" NPTF | 90 | Ø37.4 | 34 | | |
| 25 | 1" | -16 | Q2A2103434A-16-16 | 35 kPa | 1" NPTF | 1" NPTF | 104 | Ø45 | 41 | | |
| 31 | 1-1/4" | -20 | Q2A2103434A-20-20 | 35 kPa | 1-1/4" NPTF | 1-1/4" NPTF | 128.5 | Ø55 | 50 | | |
| 38 | 1-1/2" | -24 | Q2A2103434A-24-24 | 35 kPa | 1-1/2" NPTF | 1-1/2" NPTF | 148 | Ø66 | 60 | | |
| 51 | 2" | -32 | Q2A2103434A-32-32 | 35 kPa | 2" NPTF | 2" NPTF | 178 | Ø82 | 75 | | |



Q2A2103030

FEMALE-FEMALE, STANDARD
INLET: FEMALE O’RING BOSS TYPE
 SAE J1926-1
OUTLET: FEMALE O’RING BOSS TYPE
 SAE J1926-1
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 12.5 | 1/2" | -08 | Q2A2103030A-08-08 | 35 kPa | 3/4"-16 UNF | 3/4"-16 UNF | 77 (81*) | Ø29.6 | 27 | | |
| 19 | 3/4" | -12 | Q2A2103030A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.1/16"-12 UN | 96 | Ø37.4 | 34 | | |
| 25 | 1" | -16 | Q2A2103030A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.5/16"-12 UN | 104 | Ø45 | 41 | | |

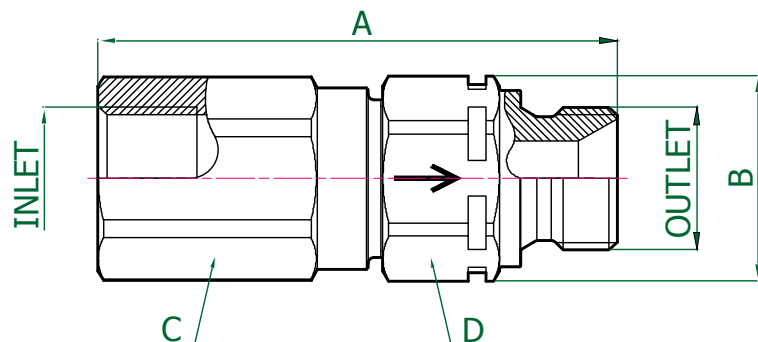


Q2A3110504

MALE-FEMALE, STANDARD
INLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
OUTLET: BSP FIXED FEMALE
 DIN 3852-2 'FORM X' / ISO 1179-1
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A3110504A-04-04 | 35 kPa | 1/4" | 1/4" | 54.8 | Ø21 | 19 | 19 | |
| 10 | 3/8" | -06 | Q2A3110504A-06-06 | 35 kPa | 3/8" | 3/8" | 63.8 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A3110504A-08-08 | 35 kPa | 1/2" | 1/2" | 72.3 | Ø30 | 27 | 27 | |
| 19 | 3/4" | -12 | Q2A3110504A-12-12 | 35 kPa | 3/4" | 3/4" | 83 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A3110504A-16-16 | 35 kPa | 1" | 1" | 95.7 | Ø45 | 41 | 41 | |

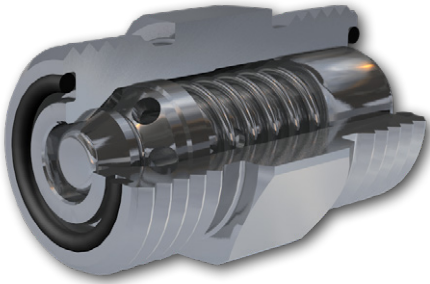
Q2A4110405



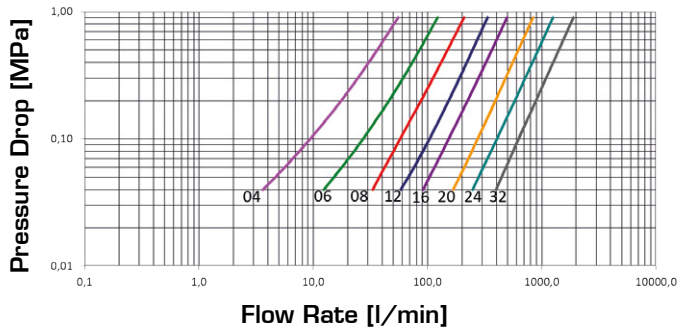
FEMALE-MALE, STANDARD
INLET: BSP FIXED FEMALE
 DIN 3852-2 'FORM X' / ISO 1179-1
OUTLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-------|----|----|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -04 | Q2A4110405A-04-04 | 35 kPa | 1/4" | 1/4" | 62.5 | Ø21 | 19 | 19 | |
| 10 | 3/8" | -06 | Q2A4110405A-06-06 | 35 kPa | 3/8" | 3/8" | 70.5 | Ø24,2 | 22 | 22 | |
| 12.5 | 1/2" | -08 | Q2A4110405A-08-08 | 35 kPa | 1/2" | 1/2" | 83 | Ø30 | 27 | 27 | |
| 19 | 3/4" | -12 | Q2A4110405A-12-12 | 35 kPa | 3/4" | 3/4" | 96.5 | Ø38 | 34 | 34 | |
| 25 | 1" | -16 | Q2A4110405A-16-16 | 35 kPa | 1" | 1" | 111.5 | Ø45 | 41 | 41 | |

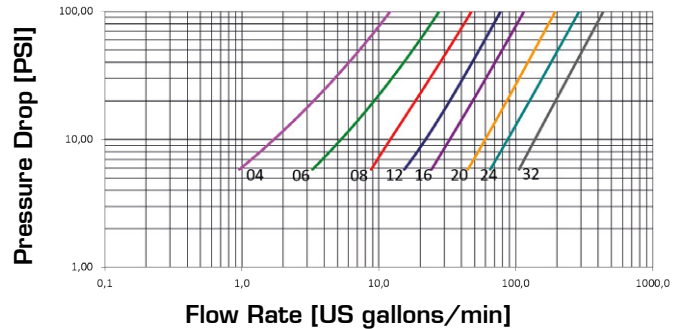
COMPACT CHECK VALVES



Pressure Drop



Pressure Drop



TECHNICAL DATA

| SIZE | | | MPa | | FLOW RATE | | MINIMUM BURST PRESSURE | |
|----------------------------|------|------|--|-------|------------------------|--------|------------------------|--------|
| WORKING PRESSURE (Dynamic) | | | RATED FLOW at 0.2 MPa of pressure drop | | MINIMUM BURST PRESSURE | | | |
| DN | inch | Dash | MPa | PSI | l/min | US GPM | MPa | PSI |
| 6 | 1/4" | 04 | 35 | 5,075 | 5 | 1.3 | 140 | 20,300 |
| 10 | 3/8" | 06 | 35 | 5,075 | 11 | 2.9 | 140 | 20,300 |
| 12 | 1/2" | 08 | 35 | 5,075 | 37 | 9.8 | 140 | 20,300 |
| 19 | 3/4" | 12 | 35 | 5,075 | 73 | 19.3 | 140 | 20,300 |
| 25 | 1" | 16 | 35 | 5,075 | 106 | 28.0 | 140 | 20,300 |

PRODUCT DESCRIPTION

- Manufactured from high-quality materials
- Robust design
- Space saving design
- Large range of termination end options available
- Large range of cracking-pressures available

MATERIAL

Steel, with springs in C98 high-carbon steel. Seals in NBR and back-up ring in PTFE.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

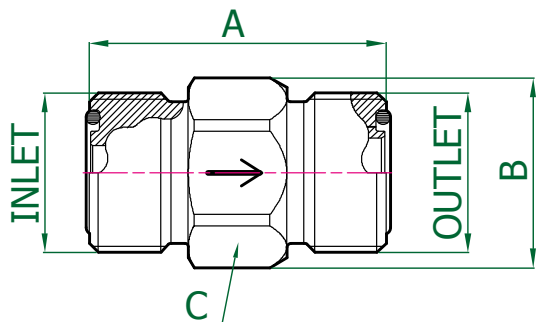
4:1 for dynamic pressures

IMPULSE PRESSURES

1,000,000 cycles at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

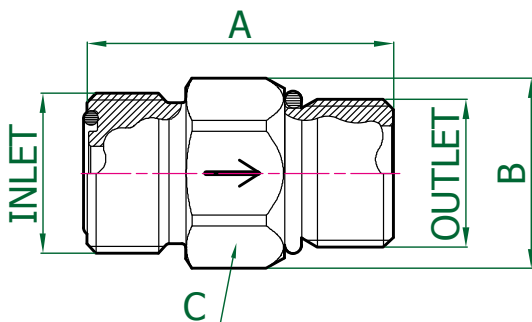
ISO 18869



Q2B1112424

MALE-MALE, COMPACT
INLET: ORFS MALE ISO 8434-3
 / SAE J1453
OUTLET: ORFS MALE ISO 8434-3
 / SAE J1453
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -4 | Q2B1112424A-04-04 | 35 kPa | 9/16"-18 UNF | 9/16"-18 UNF | 31 | ø18,8 | 17 | | |
| 10 | 3/8" | -6 | Q2B1112424A-06-06 | 35 kPa | 11/16"-16 UN | 11/16"-16 UN | 33.6 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1112424A-08-08 | 35 kPa | 13/16"-16 UN | 13/16"-16 UN | 38.3 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1112424A-10-10 | 35 kPa | 1"-14 UNS | 1"-14 UNS | 43.7 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1112424A-12-12 | 35 kPa | 1.3/16"-12 UN | 1.3/16"-12 UN | 46.7 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1112424A-16-16 | 35 kPa | 1.7/16"-12 UN | 1.7/16"-12 UN | 50.8 | ø42 | 38 | | |

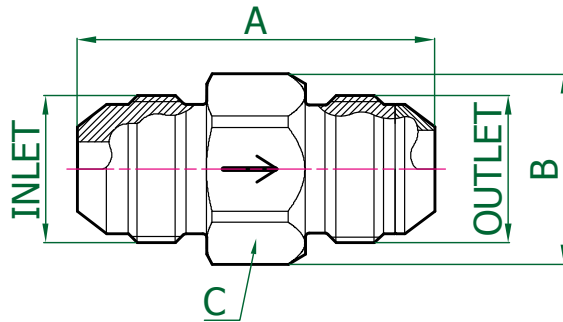


Q2B1112432

MALE-MALE, COMPACT
INLET: ORFS MALE ISO 8434-3
 / SAE J1453
OUTLET: MALE O'RING BOSS
 (NON-ADJUSTABLE HEAVY) SAE J1926-2
MATERIAL: STEEL
SEALS: NBR (NITRILE)

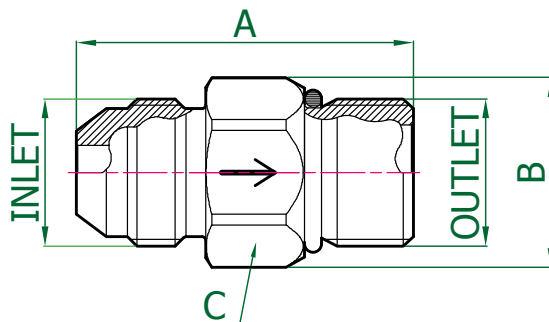
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -6 | Q2B1112432A-06-06 | 35 kPa | 11/16"-16 UN | 9/16"-18 UNF | 34.4 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1112432A-08-08 | 35 kPa | 13/16"-16 UN | 3/4"-16 UNF | 39.5 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1112432A-10-10 | 35 kPa | 1"-14 UNS | 7/8"-14 UNF | 44.2 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1112432A-12-12 | 35 kPa | 1.3/16"-12 UN | 1.1/16"-12 UN | 48.2 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1112432A-16-16 | 35 kPa | 1.7/16"-12 UN | 1.5/16"-12 UN | 51.8 | ø42 | 38 | | |

Q2B1112525



MALE-MALE, COMPACT
INLET: JIC MALE (37° CONE)
ISO 8434-2 / SAE J514
OUTLET: JIC MALE (37° CONE)
ISO 8434-2 / SAE J514
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -4 | Q2B1112525A-04-04 | 35 kPa | 7/16"-20 UNF | 7/16"-20 UNF | 39.2 | ø18,8 | 17 | | |
| 10 | 3/8" | -6 | Q2B1112525A-06-06 | 35 kPa | 9/16"-18 UNF | 9/16"-18 UNF | 39.4 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1112525A-08-08 | 35 kPa | 3/4"-16 UNF | 3/4"-16 UNF | 46.1 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1112525A-10-10 | 35 kPa | 7/8"-14 UNF | 7/8"-14 UNF | 51.3 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1112525A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.1/16"-12 UN | 56.5 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1112525A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.5/16"-12 UN | 62 | ø42 | 38 | | |

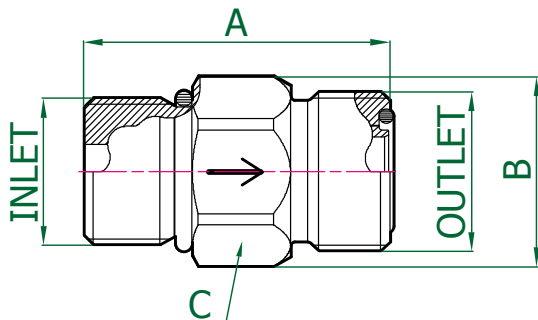


Q2B1112532

MALE-MALE, COMPACT
INLET: JIC MALE (37° CONE)
ISO 8434-2 / SAE J514
OUTLET: MALE O'RING BOSS
(NON-ADJUSTABLE HEAVY) SAE J1926-2
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -6 | Q2B1112532A-06-06 | 35 kPa | 9/16"-18 UNF | 9/16"-18 UNF | 37.3 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1112532A-08-08 | 35 kPa | 3/4"-16 UNF | 3/4"-16 UNF | 43.4 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1112532A-10-10 | 35 kPa | 7/8"-14 UNF | 7/8"-14 UNF | 48 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1112532A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.1/16"-12 UN | 53.1 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1112532A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.5/16"-12 UN | 57.4 | ø42 | 38 | | |

Q2B1113224

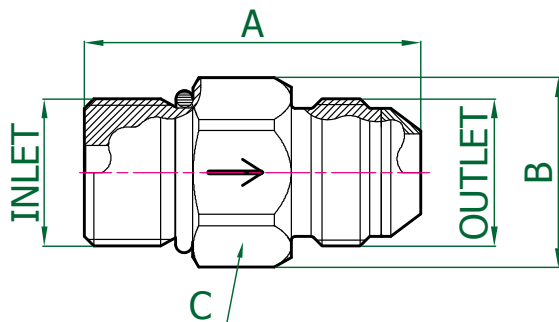


MALE-MALE, COMPACT
INLET: MALE O'RING BOSS
 (NON-ADJUSTABLE HEAVY) SAE J1926-2
OUTLET: ORFS MALE ISO 8434-3
 / SAE J1453
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -4 | Q2B1113224A-04-04 | 35 kPa | 7/16"-20 UNF | 9/16"-18 UNF | 32.2 | ø18,8 | 17 | | |
| 10 | 3/8" | -6 | Q2B1113224A-06-06 | 35 kPa | 9/16"-18 UNF | 11/16"-16 UN | 34.4 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1113224A-08-08 | 35 kPa | 3/4"-16 UNF | 13/16"-16 UN | 39.5 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1113224A-10-10 | 35 kPa | 7/8"-14 UNF | 1"-14 UNS | 44.2 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1113224A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.3/16"-12 UN | 48.2 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1113224A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.7/16"-12 UN | 51.8 | ø42 | 38 | | |

Q.SAFE 514

Q2B1113225



MALE-MALE, COMPACT
INLET: MALE O'RING BOSS
 (NON-ADJUSTABLE HEAVY) SAE J1926-2
OUTLET: JIC MALE (37° CONE)
 ISO 8434-2 / SAE J514
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|-------------------|------------------|---------------|---------------|---------------|-------|----|---|---|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E |
| 6 | 1/4" | -4 | Q2B1113225A-04-04 | 35 kPa | 7/16"-20 UNF | 7/16"-20 UNF | 36.2 | ø18,8 | 17 | | |
| 10 | 3/8" | -6 | Q2B1113225A-06-06 | 35 kPa | 9/16"-18 UNF | 9/16"-18 UNF | 37.3 | ø21 | 19 | | |
| 12.5 | 1/2" | -8 | Q2B1113225A-08-08 | 35 kPa | 3/4"-16 UNF | 3/4"-16 UNF | 43.4 | ø24,5 | 22 | | |
| 12.5 | 1/2" | -8 | Q2B1113225A-10-10 | 35 kPa | 7/8"-14 UNF | 7/8"-14 UNF | 48 | ø30 | 27 | | |
| 20 | 3/4" | -12 | Q2B1113225A-12-12 | 35 kPa | 1.1/16"-12 UN | 1.1/16"-12 UN | 53.1 | ø35,5 | 32 | | |
| 25 | 1" | -16 | Q2B1113225A-16-16 | 35 kPa | 1.5/16"-12 UN | 1.5/16"-12 UN | 57.4 | ø42 | 38 | | |



BI-DIRECTIONAL CHECK VALVES

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | MINIMUM BURST PRESSURE | |
|------|------|------|----------------------------|------|---|--------|------------------------|-------|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | MPa | PSI |
| 10 | 3/8" | 06 | 35 | 5075 | 39 | 10 | 150 | 21750 |
| 12.5 | 1/2" | 08 | 35 | 5075 | 84 | 22 | 140 | 20300 |
| 19 | 3/4" | -12 | 35 | 5075 | 119 | 31 | 140 | 20300 |

PRODUCT DESCRIPTION

- Manufactured from high-quality materials
- Robust design
- Large range of termination end options available
- A-B cracking pressures of 500kPa and 800kPa available
- B-A cracking pressure of 35kPa

MATERIAL

Steel, with springs in C98 high-carbon steel. Seals in NBR and back-up ring in PTFE.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

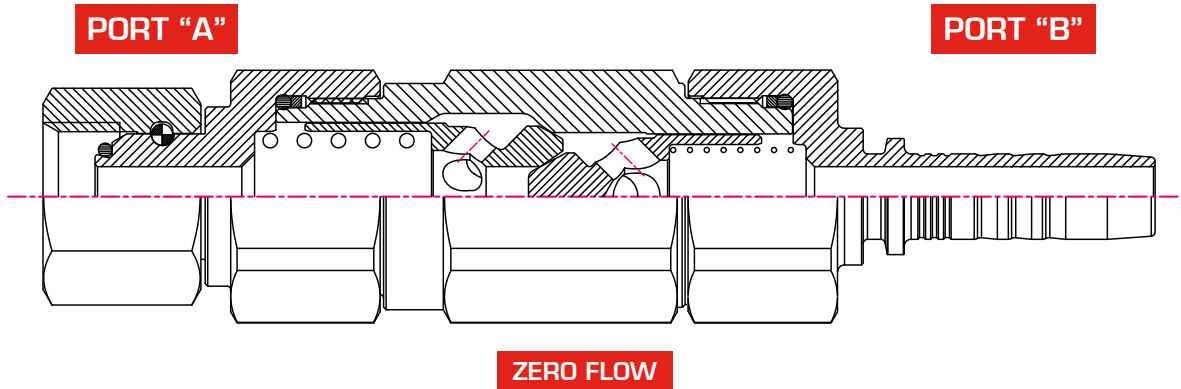
IMPULSE PRESSURES

1,000,000 cycles at 120% of the rated one (freq. 1Hz)

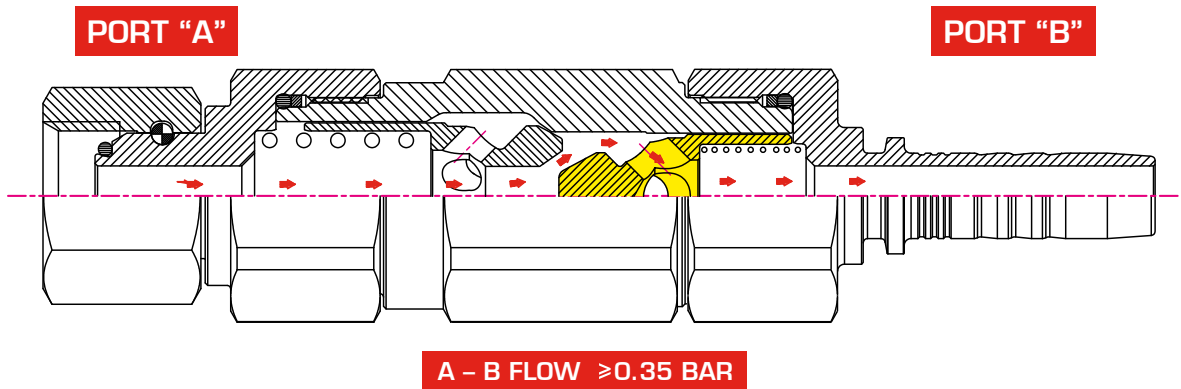
TEST SPECIFICATIONS

ISO 18869

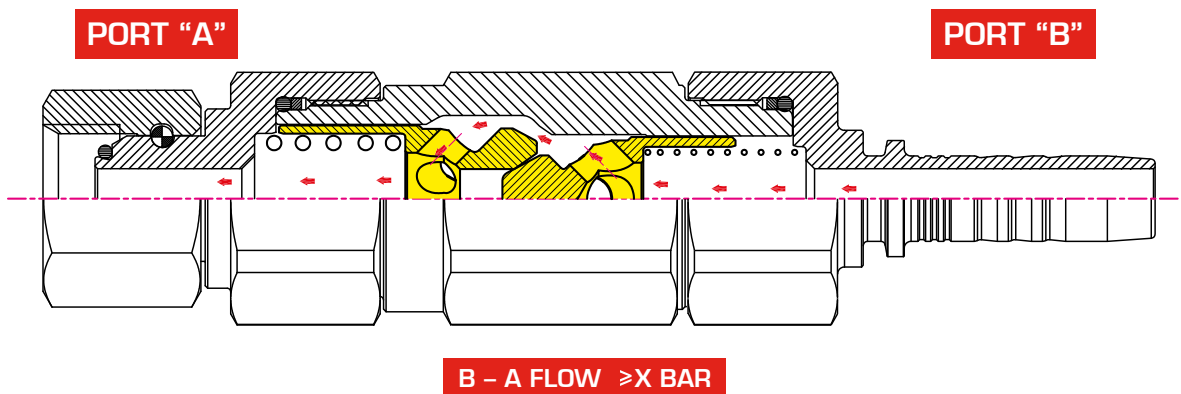
How Do Manuli Bi-Directional Check Valves Work?



In its zero flow state the bi-directional check valve is sealed in both flow directions, meaning that no fluid can cross from port "A" to port "B" or vice versa.

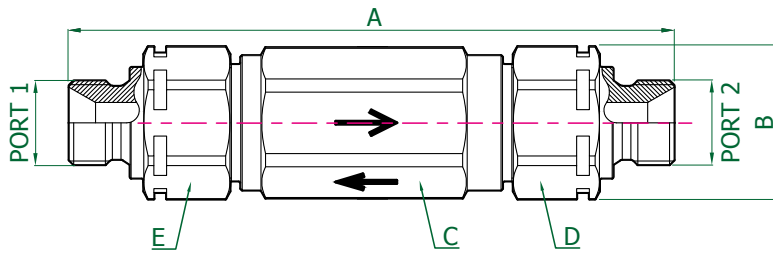


When the pressure of the fluid flowing from port "A" to port "B" exceeds the specified valve rating, "X" kPa, the highlighted valve assembly is similarly forced out of the way to allow the fluid to flow.



When the pressure of the fluid flowing from port "B" to port "A" exceeds 35 kPa the highlighted valve assembly is forced out of the way, thus allowing the fluid to flow.

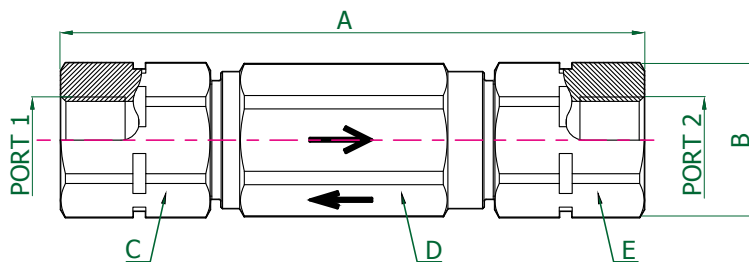
Q2D1110505



MALE-MALE, BI-DIRECTIONAL
INLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
OUTLET: BSP MALE 60° CONE SEAT
 BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

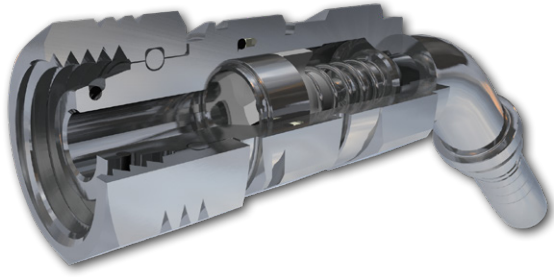
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|--------------------|------------------|--------|---------|--------|---------------|-----|----|----|----|
| DN | inch | Dash | | 1 -> 2 | 2 -> 1 | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -6 | Q2D1110505N-06-06A | 500 kPa | 35 kPa | 3/8" | 3/8" | 110.6 | Ø30 | 27 | 27 | 27 |
| 10 | 3/8" | -6 | Q2D1110505R-06-06A | 800 kPa | 35 kPa | 3/8" | 3/8" | 110.6 | Ø30 | 27 | 27 | 27 |
| 12.5 | 1/2" | -8 | Q2D1110505N-08-08A | 500 kPa | 35 kPa | 1/2" | 1/2" | 149.8 | Ø38 | 34 | 34 | 34 |
| 12.5 | 1/2" | -8 | Q2D1110505R-08-08A | 800 kPa | 35 kPa | 1/2" | 1/2" | 149.8 | Ø38 | 34 | 34 | 34 |
| 19 | 3/4" | -12 | Q2D1110505N-12-12A | 500 kPa | 35 kPa | 3/4" | 3/4" | 173.8 | Ø45 | 41 | 41 | 41 |
| 19 | 3/4" | -12 | Q2D1110505R-12-12A | 800 kPa | 35 kPa | 3/4" | 3/4" | 173.8 | Ø45 | 41 | 41 | 41 |

Q2D2110404



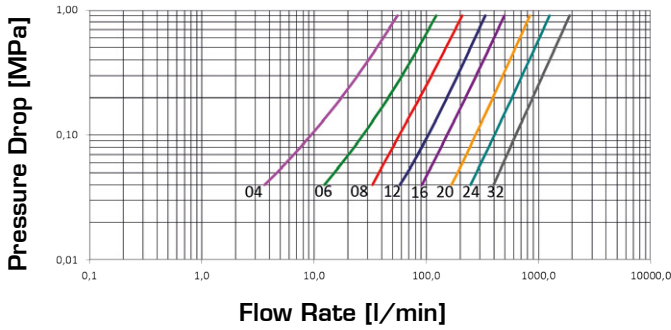
FEMALE-FEMALE, BI-DIRECTIONAL
INLET: BSP FIXED FEMALE
 DIN 3852-2 'FORM X' / ISO 1179-1
OUTLET: BSP FIXED FEMALE
 DIN 3852-2 'FORM X' / ISO 1179-1
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | | THREADS | | DIMENSIONS mm | | | | |
|--------------|------|------|--------------------|------------------|--------|---------|--------|---------------|-----|----|----|----|
| DN | inch | Dash | | 1 -> 2 | 2 -> 1 | INLET | OUTLET | A | B | C | D | E |
| 10 | 3/8" | -06 | Q2D2110404N-06-06A | 500 kPa | 35 kPa | 3/8" | 3/8" | 105.2 | Ø30 | 27 | 27 | 27 |
| 10 | 3/8" | -06 | Q2D2110404R-06-06A | 800 kPa | 35 kPa | 3/8" | 3/8" | 105.2 | Ø30 | 27 | 27 | 27 |
| 12.5 | 1/2" | -08 | Q2D2110404N-08-08A | 500 kPa | 35 kPa | 1/2" | 1/2" | 139.4 | Ø38 | 34 | 34 | 34 |
| 12.5 | 1/2" | -08 | Q2D2110404R-08-08A | 800 kPa | 35 kPa | 1/2" | 1/2" | 139.4 | Ø38 | 34 | 34 | 34 |
| 19 | 3/4" | -12 | Q2D2110404N-12-12A | 500 kPa | 35 kPa | 3/4" | 3/4" | 163.4 | Ø45 | 41 | 41 | 41 |
| 19 | 3/4" | -12 | Q2D2110404R-12-12A | 800 kPa | 35 kPa | 3/4" | 3/4" | 163.4 | Ø45 | 41 | 41 | 41 |

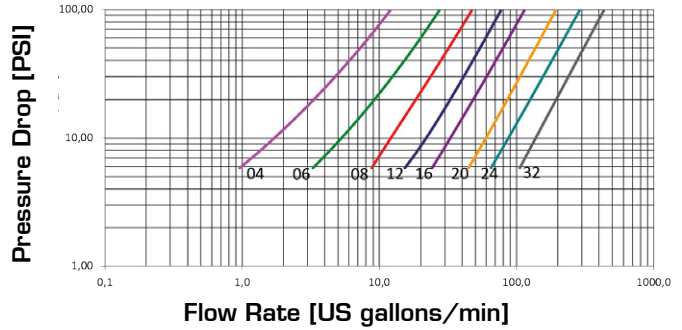


STANDARD CHECK VALVES DHI (DIRECT HOSE INTERFACE)

Pressure Drop



Pressure Drop



Q.SAFE 518

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | MINIMUM BURST PRESSURE | |
|------|--------|------|----------------------------|------|--|--------|------------------------|-------|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | MPa | PSI |
| 6 | 1/4" | 04 | 45 | 6525 | 18 | 4.8 | 180 | 26100 |
| 10 | 3/8" | 06 | 35 | 5075 | 46 | 12.2 | 140 | 20300 |
| 12 | 1/2" | 08 | 35 | 5075 | 88 | 23.2 | 140 | 20300 |
| 19 | 3/4" | 12 | 35 | 5075 | 153 | 40.4 | 140 | 20300 |
| 25 | 1" | 16 | 35 | 5075 | 225 | 59.4 | 140 | 20300 |
| 31 | 1.1/4" | 20 | 35 | 5075 | 394 | 104.1 | 140 | 20300 |
| 38 | 1.1/2" | 24 | 35 | 5075 | 580 | 153.2 | 140 | 20300 |
| 51 | 2" | 32 | 35 | 5075 | 890 | 235.1 | 140 | 20300 |

PRODUCT DESCRIPTION

- Manufactured from high-quality materials
- Robust design
- Large range of termination end options available
- Large range of cracking-pressure available
- Direct-to-hose connection minimises potential leak points

MATERIAL

Steel, with springs in C98 high-carbon steel. Seals in NBR and back-up ring in PTFE.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

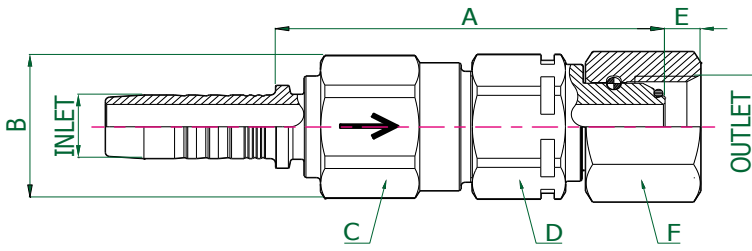
IMPULSE PRESSURES

1,000,000 cycles at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

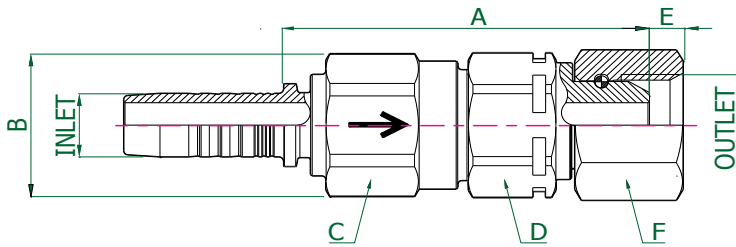
Q2A311M108



TAIL-FEMALE, STANDARD
INLET: MULTIFIT TAIL, STRAIGHT
OUTLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-------|----|----|------|----|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F |
| 6 | 1/4" | -4 | Q2A311M108A-04-04 | 35 kPa | 1/4" | 1/4" | 50.2 | Ø21 | 19 | 19 | 4.1 | 19 |
| 10 | 3/8" | -6 | Q2A311M108A-06-06 | 35 kPa | 3/8" | 3/8" | 62.3 | Ø24,2 | 22 | 22 | 5.9 | 22 |
| 12.5 | 1/2" | -8 | Q2A311M108A-08-08 | 35 kPa | 1/2" | 1/2" | 70.9 | Ø30 | 27 | 27 | 6.5 | 27 |
| 19 | 3/4" | -12 | Q2A311M108A-12-12 | 35 kPa | 3/4" | 3/4" | 80.6 | Ø38 | 34 | 34 | 8.5 | 32 |
| 25 | 1" | -16 | Q2A311M108A-16-16 | 35 kPa | 1" | 1" | 86.9 | Ø45 | 41 | 41 | 10.6 | 38 |

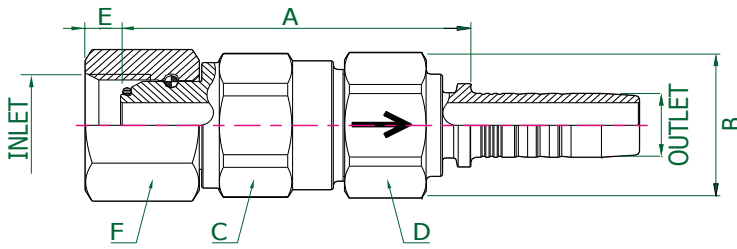
Q2A311M105



TAIL-FEMALE, STANDARD
INLET: MULTIFIT TAIL, STRAIGHT
OUTLET: BSP FEMALE 60° CONE
 BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | |
|--------------|--------|------|-------------------|------------------|---------|--------|---------------|-----|----|----|------|----|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F |
| 31 | 1-1/4" | -20 | Q2A311M105A-20-20 | 35 kPa | 1-1/4" | 1-1/4" | 111.2 | Ø55 | 50 | 50 | 10.5 | 50 |
| 38 | 1-1/2" | -24 | Q2A311M105A-24-24 | 35 kPa | 1-1/2" | 1-1/2" | 126 | Ø66 | 60 | 60 | 12.5 | 60 |

Q2A41108M1

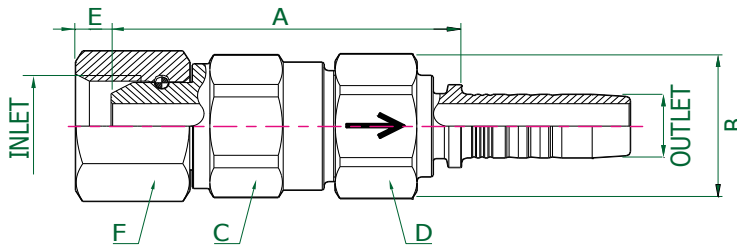


FEMALE-TAIL, STANDARD
INLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
OUTLET: MULTIFIT TAIL, STRAIGHT
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-------|----|----|------|----|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F |
| 6 | 1/4" | -4 | Q2A41108M1A-04-04 | 35 kPa | 1/4" | 1/4" | 48 | Ø21 | 19 | 19 | 4.1 | 19 |
| 10 | 3/8" | -6 | Q2A41108M1A-06-06 | 35 kPa | 3/8" | 3/8" | 57.3 | Ø24,2 | 22 | 22 | 5.9 | 22 |
| 12.5 | 1/2" | -8 | Q2A41108M1A-08-08 | 35 kPa | 1/2" | 1/2" | 64.3 | Ø30 | 27 | 27 | 6.5 | 27 |
| 19 | 3/4" | -12 | Q2A41108M1A-12-12 | 35 kPa | 3/4" | 3/4" | 73.4 | Ø38 | 34 | 34 | 8.5 | 32 |
| 25 | 1" | -16 | Q2A41108M1A-16-16 | 35 kPa | 1" | 1" | 84.4 | Ø45 | 41 | 41 | 10.6 | 38 |

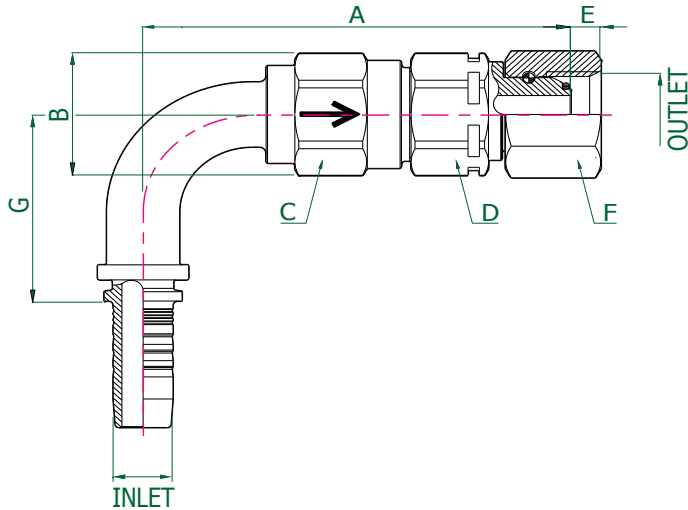
Q.SAFE 520

Q2A41105M1



FEMALE-TAIL, STANDARD
INLET: BSP FEMALE 60° CONE
 BS5200 / ISO 8434-6
OUTLET: MULTIFIT TAIL, STRAIGHT
MATERIAL: STEEL
SEALS: NBR (NITRILE)

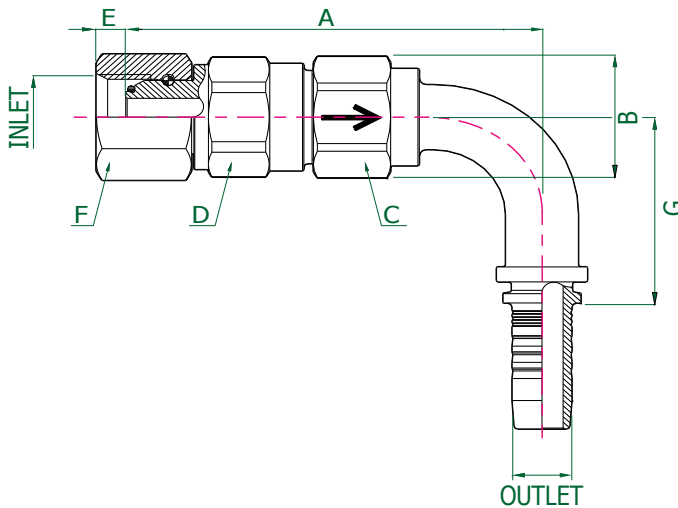
| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | |
|--------------|--------|------|-------------------|------------------|---------|--------|---------------|-----|----|----|------|----|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F |
| 31 | 1-1/4" | -20 | Q2A41105M1A-20-20 | 35 kPa | 1-1/4" | 1-1/4" | 111.2 | Ø55 | 50 | 50 | 10.5 | 50 |
| 38 | 1-1/2" | -24 | Q2A41105M1A-24-24 | 35 kPa | 1-1/2" | 1-1/2" | 126 | Ø66 | 60 | 60 | 12.5 | 60 |



Q2A311M908

TAIL-FEMALE, STANDARD
INLET: MULTIFIT TAIL, 90° SWEPT
OUTLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-----|----|----|------|----|------|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F | G |
| 6 | 1/4" | -4 | Q2A311M908A-04-04 | 35 kPa | 1/4" | 1/4" | 64.8 | Ø21 | 19 | 19 | 4.1 | 19 | 30.1 |
| 10 | 3/8" | -6 | Q2A311M908A-06-06 | 35 kPa | 3/8" | 3/8" | 79.9 | Ø24 | 22 | 22 | 5.9 | 22 | 37 |
| 12.5 | 1/2" | -8 | Q2A311M908A-08-08 | 35 kPa | 1/2" | 1/2" | 94.5 | Ø30 | 27 | 27 | 6.5 | 27 | 45.9 |
| 19 | 3/4" | -12 | Q2A311M908A-12-12 | 35 kPa | 3/4" | 3/4" | 115.8 | Ø38 | 34 | 34 | 8.5 | 32 | 62.5 |
| 25 | 1" | -16 | Q2A311M908A-16-16 | 35 kPa | 1" | 1" | 132 | Ø45 | 41 | 41 | 10.6 | 38 | 70.6 |



Q2A41108M9

TAIL-FEMALE, STANDARD
INLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
OUTLET: MULTIFIT TAIL, 90° SWEPT
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | THREADS | | DIMENSIONS mm | | | | | | |
|--------------|------|------|-------------------|------------------|---------|--------|---------------|-----|----|----|------|----|------|
| DN | inch | Dash | | | INLET | OUTLET | A | B | C | D | E | F | G |
| 6 | 1/4" | -4 | Q2A41108M9A-04-04 | 35 kPa | 1/4" | 1/4" | 62.6 | Ø21 | 19 | 19 | 4.1 | 19 | 30.1 |
| 10 | 3/8" | -6 | Q2A41108M9A-06-06 | 35 kPa | 3/8" | 3/8" | 74.9 | Ø24 | 22 | 22 | 5.9 | 22 | 37 |
| 12.5 | 1/2" | -8 | Q2A41108M9A-08-08 | 35 kPa | 1/2" | 1/2" | 88 | Ø30 | 27 | 27 | 6.5 | 27 | 45.9 |
| 19 | 3/4" | -12 | Q2A41108M9A-12-12 | 35 kPa | 3/4" | 3/4" | 108.6 | Ø38 | 34 | 34 | 8.5 | 32 | 62.5 |
| 25 | 1" | -16 | Q2A41108M9A-16-16 | 35 kPa | 1" | 1" | 129.5 | Ø45 | 41 | 41 | 10.6 | 38 | 70.6 |



BI-DIRECTIONAL CHECK VALVES DHI (DIRECT HOSE INTERFACE)

TECHNICAL DATA

| SIZE | | | WORKING PRESSURE (Dynamic) | | RATED FLOW at 0.2 MPa of pressure drop | | MINIMUM BURST PRESSURE | |
|------|------|------|----------------------------|------|---|--------|------------------------|-------|
| DN | inch | Dash | MPa | PSI | l/min | US GPM | MPa | PSI |
| 10 | 3/8" | 06 | 35 | 5075 | 39 | 10 | 150 | 21750 |
| 12.5 | 1/2" | 08 | 35 | 5075 | 84 | 22 | 140 | 20300 |
| 19 | 3/4" | -12 | 35 | 5075 | 119 | 31 | 140 | 20300 |

PRODUCT DESCRIPTION

- Manufactured from high-quality materials
- Robust design
- Large range of termination end options available
- A-B cracking pressures of 500kPa and 800kPa available
- B-A cracking pressure of 35kPa
- Direct-to-hose connection minimises potential leak points

MATERIAL

Steel, with springs in C98 high-carbon steel. Seals in NBR and back-up ring in PTFE.

WORKING TEMPERATURE

-22°F up to +230°F (-30°C up to +110°C)

SAFETY FACTOR

4:1 for dynamic pressures

IMPULSE PRESSURES

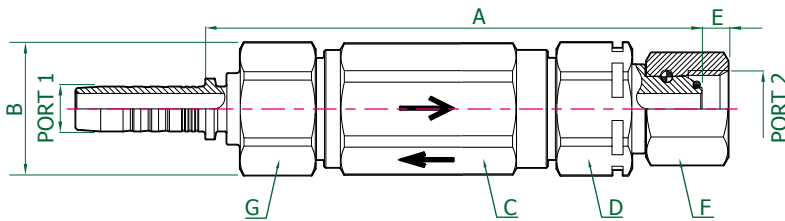
1,000,000 cycles at 120% of the rated one (freq. 1Hz)

TEST SPECIFICATIONS

ISO 18869

Q.SAFE 522

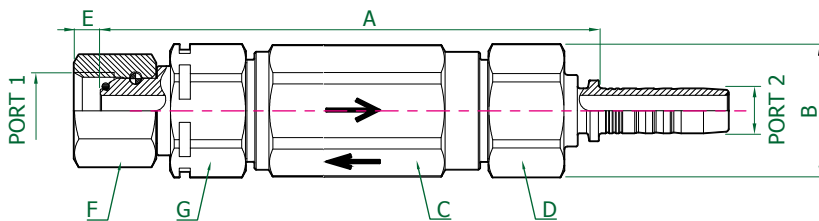
Q2D311M108



TAIL-FEMALE, BI-DIRECTIONAL
INLET: MULTIFIT TAIL, STRAIGHT
OUTLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | | THREADS | | DIMENSIONS mm | | | | | | |
|--------------|------|------|--------------------|------------------|--------|---------|--------|---------------|-----|----|----|-----|----|----|
| DN | inch | Dash | | 1 -> 2 | 2 -> 1 | INLET | OUTLET | A | B | C | D | E | F | G |
| 10 | 3/8" | -6 | Q2D311M108N-06-06A | 500 kPa | 35 kPa | 3/8" | 3/8" | 104.9 | Ø30 | 27 | 27 | 6 | 22 | 27 |
| 10 | 3/8" | -6 | Q2D311M108R-06-06A | 800 kPa | 35 kPa | 3/8" | 3/8" | 104.9 | Ø30 | 27 | 27 | 6 | 22 | 27 |
| 12.5 | 1/2" | -8 | Q2D311M108N-08-08A | 500 kPa | 35 kPa | 1/2" | 1/2" | 139.8 | Ø38 | 34 | 34 | 6.3 | 27 | 34 |
| 12.5 | 1/2" | -8 | Q2D311M108R-08-08A | 800 kPa | 35 kPa | 1/2" | 1/2" | 139.8 | Ø38 | 34 | 34 | 6.3 | 27 | 34 |
| 19 | 3/4" | -12 | Q2D311M108N-12-12A | 500 kPa | 35 kPa | 3/4" | 3/4" | 163.7 | Ø45 | 41 | 41 | 8.5 | 32 | 41 |
| 19 | 3/4" | -12 | Q2D311M108R-12-12A | 800 kPa | 35 kPa | 3/4" | 3/4" | 163.7 | Ø45 | 41 | 41 | 8.5 | 32 | 41 |

Q2D41108M1

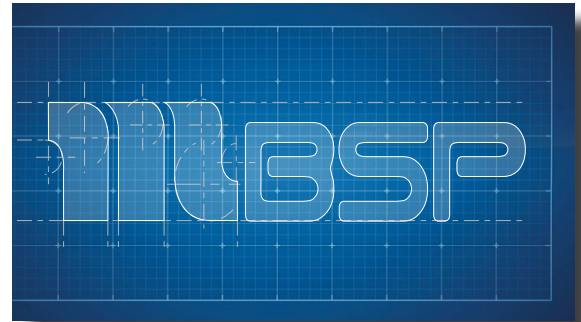


FEMALE-TAIL, BI-DIRECTIONAL
INLET: BSP O-RING FEMALE
 60° CONE BS5200 / ISO 8434-6
OUTLET: MULTIFIT TAIL, STRAIGHT
MATERIAL: STEEL
SEALS: NBR (NITRILE)

| NOMINAL SIZE | | | PART NUMBER | OPENING PRESSURE | | THREADS | | DIMENSIONS mm | | | | | | |
|--------------|------|------|--------------------|------------------|--------|---------|--------|---------------|-----|----|----|-----|----|----|
| DN | inch | Dash | | 1 -> 2 | 2 -> 1 | INLET | OUTLET | A | B | C | D | E | F | G |
| 10 | 3/8" | -6 | Q2D41108M1N-06-06A | 500 kPa | 35 kPa | 3/8" | 3/8" | 104.9 | Ø30 | 27 | 27 | 6 | 22 | 27 |
| 10 | 3/8" | -6 | Q2D41108M1R-06-06A | 800 kPa | 35 kPa | 3/8" | 3/8" | 104.9 | Ø30 | 27 | 27 | 6 | 22 | 27 |
| 12.5 | 1/2" | -8 | Q2D41108M1N-08-08A | 500 kPa | 35 kPa | 1/2" | 1/2" | 139.8 | Ø38 | 34 | 34 | 6.3 | 27 | 34 |
| 12.5 | 1/2" | -8 | Q2D41108M1R-08-08A | 800 kPa | 35 kPa | 1/2" | 1/2" | 139.8 | Ø38 | 34 | 34 | 6.3 | 27 | 34 |
| 19 | 3/4" | -12 | Q2D41108M1N-12-12A | 500 kPa | 35 kPa | 3/4" | 3/4" | 173.8 | Ø45 | 41 | 41 | 8.5 | 32 | 41 |
| 19 | 3/4" | -12 | Q2D41108M1R-12-12A | 800 kPa | 35 kPa | 3/4" | 3/4" | 173.8 | Ø45 | 41 | 41 | 8.5 | 32 | 41 |

Bespoke solutions to unique problems

*Hydraulics applications are so many and varied that it would be pretty much impossible to develop industrialised products for every possible situation. However, at Manuli Hydraulics we are fully prepared to meet any application challenge that our OEM partners can present us with, which is why we offer our **Bespoke Solutions Program (BSP)**.*

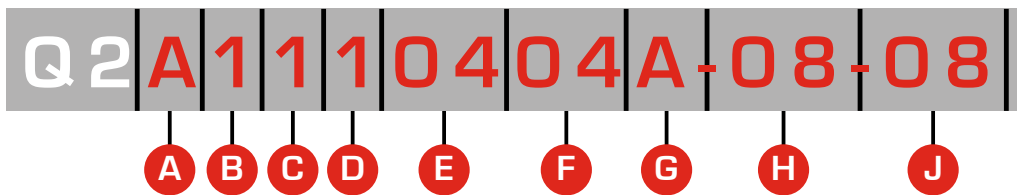


The BSP is just one way that Manuli Hydraulics provides an added value service to our OEM partners. Manuli Hydraulics is structured in such a way that we can tailor solutions to the specific requirements of our customers in a way that our competitors never could. We are small enough to be agile and responsive, yet large enough to have the design and manufacturing capabilities to produce bespoke products at a reasonable price. Used by some of the largest and most respected OEMs around the world, the Manuli Bespoke Solutions Program means that you never have to compromise on your hydraulic system design again.

Q.SAFE
524

How to specify your bespoke check valve

Specifying the required properties of your check valve is simply a matter of constructing an appropriate part number. The following pages explain how to construct the part number using the Manuli Hydraulics part numbering system.



- A - CHECK VALVE TYPE** - See Table 1
- B - INPUT / OUTPUT CONFIGURATION** - See Table 2
- C - VALVE MATERIAL** - See Table 3
- D - SEAL MATERIAL** - See Table 4
- E - INPUT TERMINATION END TYPE** - See Table 5
- F - OUTPUT TERMINATION END TYPE** - See Table 5
- G - CRACK PRESSURE** - See Table 6
- H - INPUT TUBE SIZE** - See Table 7
- J - OUTPUT TUBE SIZE** - See Table 7

1 - CHECK VALVE TYPE

| Digit | Check Valve Type |
|----------|------------------|
| A | Standard |
| B | Compact |
| C | Calibrated |
| D | Bi-directional |

2 - INLET / OUTLET CONFIGURATION

| Digit | INLET | OUTLET |
|----------|--------------|--------------|
| | Male / Tail* | Male / Tail* |
| 1 | | |
| | Female | Female |
| 2 | | |
| | Male / Tail* | Female |
| 3 | | |
| | Female | Male / Tail* |
| 4 | | |

* Use Table 5a for male termination ends, and Table 5b for DHI tails

3 - VALVE MATERIAL

| Digit | Material |
|----------|-----------|
| 1 | Steel |
| 2 | AISI 316 |
| 3 | AISI 303 |
| 4 | Brass |
| 5 | Aluminium |

4 - SEAL MATERIAL

| Digit | INLET |
|----------|-----------------------|
| 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) |

5 - INLET / OUTLET TERMINATION END TYPE

| Digit | Male Termination End | Female Termination End |
|-------|---|--|
| 01 | BSP Male DIN 3852-11 - ISO 1179-2 Heavy Duty "form E" | Fixed Female GAS JIS B 2351 "type O" |
| 02 | BSP Male Tapered Thread Long | BSP Female Tapered |
| 04 | BSP Male Bulkhead | BSP Fixed Female DIN 3852-2 "form X" / ISO 1179-1 |
| 05 | BSP Male 60° cone seat BS5200 / ISO 8434-6 | BSP Female 60° cone BS5200 / ISO 8434-6 |
| 08 | Metric Bolt DIN 7643 | BSP O-Ring Female 60° cone BS5200 / ISO 8434-6 |
| 11 | Metric male 24° cone seat light type DIN 3861 / ISO 8434-1 | - |
| 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 |
| 14 | Metric Male DIN 3852-11 "form E" b/ ISO 9974-2 | Metric Fixed Female DIN 3852-1 "form X" and "form Y" |
| 19 | Metric Male ISO 6149-2 / DIN 3852-3 "form F" (only for Fittings and Q.Safe) Metric Male with Retaining Ring (Adjustable + Non-Adjustable Heavy) ISO 9974 port compatible (only for Adaptors) | Metric Fixed Female ISO 6149-1 |
| 23 | JIC Bulkhead male 37° cone ISO 8434-2 / SAE J514 | - |
| 24 | ORFS male ISO 8434-3 / SAE J1453 | ORFS female ISO 8434-3 / SAE J1453 |
| 25 | JIC male (37° cone) ISO 8434-2 / SAE J514 | JIC female (37° cone seat) ISO 8434-2 / SAE J514 |
| 27 | ORFS Bulkhead male ISO 8434-3 / SAE J1453 | JIC female double hexagon 37° cone seat |
| 28 | NPTF Male 60° cone seat SAE J476a | NPSM Swivel Female 60° cone SAE J514 |
| 30 | Male O'Ring Boss type SAE J1926-3 | Female Port SAE J1926-1 |
| 32 | Male O'Ring Boss (Adjustable + Non-Adjustable Heavy) SAE J1926-2 | - |
| 34 | API Male | NPTF Fixed Female SAE J476a |
| 37 | Metric male 60° cone superlight DIN 3863 Bulkhead | Flange ISO/SAE 62 Plus / Flange (A/C) |
| 77 | DIN Bulkhead Male 24° cone Light type ISO 8434-1 | ASME B16.5 Ring Joint Type Flange |
| 82 | French GAZ Bulkhead metric male 24° cone seat | Staple Lock Swivel Female |
| 87 | DIN Bulkhead Male 24° cone Heavy type ISO 8434-1 | ASME B16.5 FLANGE / SDB compressor (A/C) |

Table 5a - Termination End Options

| Digit | DHI Tail Type |
|-------|--------------------------------|
| M1 | Multifit tail, straight |
| M4 | Multifit tail, 45° swept |
| M9 | Multifit Plus tail, 90° swept |
| I1 | Interlock Plus tail, straight |
| I4 | Interlock Plus tail, 45° swept |
| I9 | Interlock Plus tail, 90° swept |
| S1 | Spiralfit tail, straight |
| S4 | Spiralfit tail, 45° swept |
| S9 | Spiralfit tail, 90° swept |

Table 5b - DHI Tail Options

6 - CRACK PRESSURE

| Digit | Pressure (kPa) | Pressure (psi) |
|----------|----------------|----------------|
| A | 35 | 5.1 |
| B | 10 | 1.5 |
| C | 20 | 2.9 |
| D | 50 | 7.3 |
| E | 100 | 14.5 |
| F | 150 | 21.8 |
| G | 200 | 29.0 |
| H | 250 | 36.3 |
| J | 300 | 43.5 |
| K | 350 | 50.8 |
| L | 400 | 58.0 |
| M | 450 | 65.3 |
| N | 500 | 72.5 |
| P | 600 | 87.0 |
| Q | 700 | 101.5 |
| R | 800 | 116.0 |
| S | 900 | 130.5 |
| T | 1000 | 145.0 |
| X | Without Spring | |

7 - INLET / OUTLET TUBE SIZE

| Digit | DN | Inch | Dash |
|-----------|----|--------|------|
| 04 | 6 | 1/4" | -04 |
| 06 | 10 | 3/8" | -06 |
| 08 | 12 | 1/2" | -08 |
| 10 | 16 | 5/8" | -10 |
| 12 | 19 | 3/4" | -12 |
| 16 | 25 | 1" | -16 |
| 20 | 31 | 1-1/4" | -20 |
| 22 | 35 | 1-3/8" | -22 |
| 24 | 38 | 1-1/2" | -24 |
| 32 | 51 | 2" | -32 |
| 36 | 57 | 2-1/4" | -36 |



ASSEMBLY MACHINES

INTRODUCTION

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: always use 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.

CRIMPING MACHINES EVO RANGE

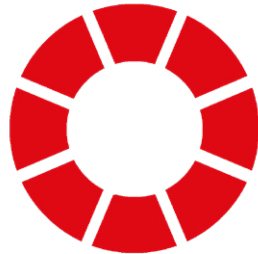
Manuli is always on the lookout for ways to improve both the efficiency and the quality of new and existing production operations.

As a market leader in assembly machines, we wanted to offer new crimping machines to improve the operator's comfort, giving more flexibility when assembling hoses. This led to the creation of the new EVO crimping machines.

These machines combine the robustness required for harsh environments with the reliability needed for busy workshops. Their compact and ergonomic design, along with the ease of set up and maintenance, make them suitable for a variety of applications.

This extensive range is highly adaptable, with various options available allowing users to customise their machine according to their specific needs.

- Extensive range for both industrial and hydraulic hoses



- 137, 240, 350 and 420 tonnes variants
- From 3/16 up to 4" hose diameter
- 4 kW or 5,5 kW motor for 3Ph

- Bluetooth connection



- SC panel - Smart Control panel. Daily counter. Semi-automatic opening



- SCE panel - electronic micrometer with the ability to save up to 25 configuration
- Caliper connected and numerical display of the crimping range on SCE

- Robust
- Ease of maintenance (foam pads and dust collector)



- Compatibility with all tensions (different frequencies)

- Compact and ergonomic design



- Easy set up
- Various options available to suit our customers' needs and workshops

| | MODEL | MACHINE TYPE | APPLICATION SECTOR | MACHINE PERFORMANCE | PAGE |
|----------------|---------------------------|--|---|---|------|
| CUTTING | M 22 CUT / MV 22 CUT | Benchtop | Aftermarket service | Medium size capacity | 533 |
| | M 30 CUT E | Benchtop cutting machine, optional skiving | Aftermarket service | Wide hose range capacity | 534 |
| | M 30 CUT & SKIVE | Benchtop: integrated cutting & skiving | Aftermarket service | Wide hose range capacity | 535 |
| | M 30 CUT L | Stand type cutting machine | Aftermarket service (smoke absorption integrated) | Wide hose range capacity | 536 |
| | M 55 CUT | Stand type cutting machine | Aftermarket service and small-medium OEM workshop | Whole hose range capacity | 537 |
| | M 75 CUT | Stand type cutting machine | Production unit | Whole hose range capacity | 538 |
| | M 90 CUT | Stand type cutting machine | Production unit | Whole hose range capacity | 539 |
| SKIVING | MH SKY | Manual, portable skiving tool | Aftermarket service | Wide hose range capacity | 541 |
| | M 50 SKY | Benchtop, skiving | Aftermarket service | Wide hose range capacity | 542 |
| | M 205 SKY | Stand type skive machine | Production unit | Whole hose range capacity | 543 |
| INSERT PUSHING | M 1500 INS | Benchtop coupling inserter | Production unit | Whole hose range capacity | 546 |
| | M 2000 INS | Benchtop coupling inserter | Production unit | Whole hose range capacity | 547 |
| MARKING | M 50 MARK | Benchtop, ferrules marking | Aftermarket service | Wide hose range capacity | 548 |
| CRIMPING | MHP 80 | Hand pump, portable | On site repair | Manual machine for small sizes | 551 |
| | MHP 110 | Hand pump, portable | On site repair | Manual machine for small sizes | 552 |
| | MHP 137 | Hand pump, portable | On site repair | Manual machine for small/medium sizes | 553 |
| | MRB 137 EVO R | Vertical Benchtop | Aftermarket service | Medium crimping force, small/medium sizes, limited productivity | 554 |
| | MB 137 EVO | Benchtop | Aftermarket service | Medium crimping force, small/medium sizes, limited productivity | 555 |
| | MB 240 EVO | Benchtop | Aftermarket service | Medium crimping force, medium productivity | 557 |
| | MB 350 EVO / MB 350 EVO L | Benchtop: very high crimp force | Aftermarket service | High crimping force, medium productivity, large size | 559 |
| | GOLDENCRIMP 420 EVO | Benchtop | Field maintenance shops, wide hose range | Very high crimping force, tough environments, large size | 561 |
| | GOLDENCRIMP 450 | Benchtop | Field maintenance shops, wide hose range | Very high crimping force, tough environments, large size | 563 |
| | MRV 137 EVO R | Field service and mobile workshop | On site repair mobile van | Medium crimping force, limited productivity | 564 |
| | MV 137 L | Field service and mobile workshop | On site repair mobile van | Medium crimping force, limited productivity | 565 |
| | MV 240 | Field service and mobile workshop | On site repair mobile van | Medium crimping force, limited productivity | 566 |

| | MODEL | MACHINE TYPE | APPLICATION SECTOR | MACHINE PERFORMANCE | PAGE |
|--------------|--------------------------------|--|--|--|------|
| CRIMPING | MV 240 L | Field service and mobile workshop | On site repair mobile van | Medium crimping force, limited productivity | 567 |
| | MV 350 / MV 350 L | Field service and mobile or container workshop | On site repair mobile van | High crimping force, limited productivity, large size | 568 |
| | MS 140 | Stand type crimp machine | Assembling production unit, small/medium sizes | Medium crimping force, high productivity for small - medium bore | 570 |
| | MS 320 | Stand-type crimp machine, SCS control | Assembling production unit, OEM and distribution | High crimping force, high productivity, large size | 571 |
| | 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 | 573 |
| | MS 800 | Stand-type crimp machine, SCS control | Assembling production unit | Very high crimping force for large bore hose focus | 575 |
| | MS 320 OPEN HEAD | Stand-type crimp machine | Assembling production unit | High crimping force for large bore hose focus | 577 |
| | MS 450-200 | Stand-type crimp machine | Assembling production unit | Very high crimping force for large bore hose focus | 578 |
| | MS 550 / MS 550-16 | Stand-type crimp machine, SCS control | Assembling production unit | Very high crimping force for large bore hose focus | 579 |
| TEST BENCHES | MTB 2000 L | Stand type machine; proof pressure and certify | Production unit | Wide hose range capacity | 582 |
| | MTB 2000 XL | Stand type machine; proof pressure and certify | Production unit | Wide hose range capacity | 583 |
| DIE SETS | DIE SETS FOR CRIMPING MACHINES | | | | 584 |

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"> • 1¼" 4WS • 25 Hoses / Day • Mixed sizes | M 22 CUT | M 50 SKY | MB 137 EVO |
| | MOBILE | | | M 22 CUT (12/24 V) | MH SKY | MRV 137 EVO R (12V) |
| M1 | STATIC | Intermittent Service Workshop | <ul style="list-style-type: none"> • 2" 4WS • 50 Hoses / Day • Mixed sizes | M 30 CUT L | M 50 SKY | MB 240 EVO |
| | MOBILE | | | | | MV 240 EVO (12/24 V or 220 V 1Ph) |
| M2 | STATIC | Continuous Service Workshop | <ul style="list-style-type: none"> • 2" 6WS - 3" 2WB • 100 Hoses / Day • Mixed sizes | M 75 CUT | M 205 SKY PLUS | GoldenCrimp/420 |
| | MOBILE | | | | | MB 350 EVO |
| | | | | | | MV 350 (12/24 V or 220 V 1Ph/3Ph) |
| | | | | | | MV 420 (220 1Ph) |
| M3 | STATIC | Container Service Workshop or Heavy Duty Workshop | <ul style="list-style-type: none"> • 3" 6WS - 4" 2WB • 100 Hoses / Day • Mixed sizes | M90 CUT | M 205 SKY PLUS (with reinforced clamping system) | GoldenCrimp/450 |
| P1 | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> • 1¼" 4WS - 2" 2WB • >100 Hoses / Day • Mixed sizes | M 55 CUT P | M 300 SKY | MS 140 SCS |
| P2 | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> • 2" 4WS - 3" 2WB • >100 Hoses / Day • Mixed sizes | M 55 CUT P | M 300 SKY | MS 320 |
| P3 | STATIC | OEM Assembly Workshop | <ul style="list-style-type: none"> • 2" 6WS - 3" 4WS • >100 Hoses / Day • Mixed sizes | M 90 CUT | M 205 SKY (With reinforced clamping system) | MS 480 |
| P4 | STATIC | XXL Assembly Workshop | <ul style="list-style-type: none"> • 3" 8WS - 4" 4WS - 8" Industrial Hose • 50 Hoses / Day • Mixed sizes | MDH 15 CUT | MDH 205 SKY | MS 550 / MS 800 |

531 MACHINES

Key

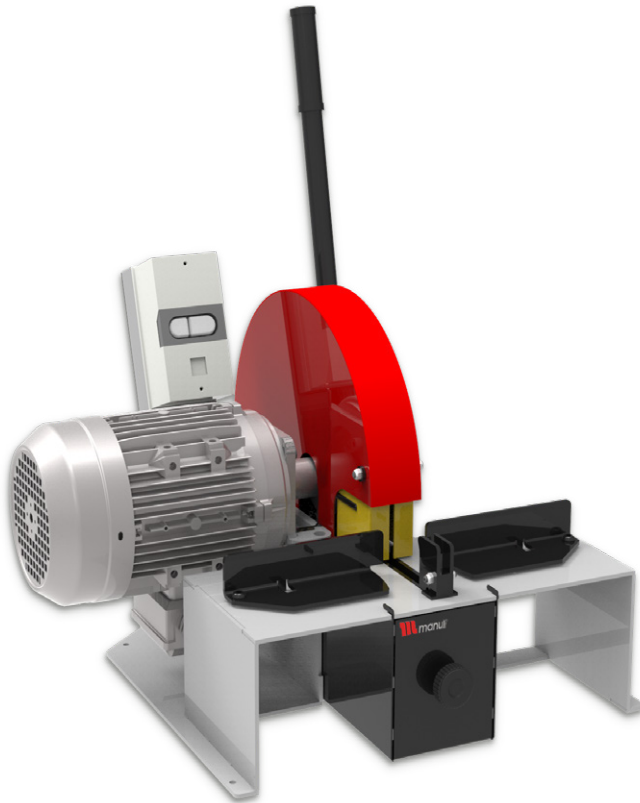
M Maintenance Operations
Intended for small or medium aftermarket, repair service

P Production Operations
Intended for small/medium/large OEM activity or large production aftermarket

| MODULE | | DESCRIPTION | CAPACITY | CUTTING | ACCESSORIES | CRIMPING |
|--------|--------|---------------------|--|-------------------------------|-------------------------|------------------|
| I1 | STATIC | Industrial Workshop | <ul style="list-style-type: none"> Industrial hose up to 6" | M75 CUT / MDH 15 CUT | Insert Pushing Decoiler | MS 320 OPEN HEAD |
| I2 | STATIC | Industrial Workshop | <ul style="list-style-type: none"> Intrustrial hose 4" & 6" 2wb : 4" max 4ws : 3" max 6ws : 2" max | M75 CUT / M90 CUT / MDH15 CUT | Insert Pushing Decoiler | MS 450-200 |

M 22 CUT / MV 22 CUT

STARTER WORKSHOP BENCHTOP



KEY FEATURES

- Smooth bending system
- 90° cut
- Clean cut
- Scalloped blade
- Dust collector included
- Multiple voltage options

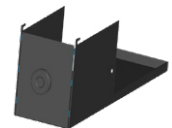
TECHNICAL SPECIFICATIONS

| | |
|-------------------------------------|------------------------------|
| CAPACITY | DIMENSIONS |
| 2wb: 1¼" max. | 630 x 485 x 650 mm |
| 4ws: 1¼" max. | (25 x 19 x 26 ") |
| ROTATION SPEED | PACKAGING |
| 3000 rpm | 800 x 600 x 830 mm |
| SCALLOPED BLADE DIAMETER | (31 x 24 x 33") |
| 254 mm (10") included | NET WEIGHT |
| MAX HOSE OD. | 42 kg (93 lb) |
| 50 mm (1.969") | GROSS WEIGHT |
| MOTOR | 55 kg (121 lb) |
| 2.2 kW | TECHNICAL FEATURES |
| VOLTAGES | Dimensions van type machine: |
| 220/240 V, 3Ph, 50 Hz | 488 x 630 x 650 mm |
| 380/415 V, 3Ph, 50 Hz | (19.2 x 24.8 x 25.6"); |
| 208/240 V, 3Ph, 60 Hz | 38 kg (84 lb) |
| 380/415 V, 3Ph, 60 Hz | |
| 12/24 V also available upon request | |

STANDARD



Scalloped Blade



Dust Collector

OPTIONAL



Battery & Charger

M 30 CUT E

STARTER & PROFESSIONAL WORKSHOP
BENCHTOP CUTTING MACHINE, OPTIONAL SKIVING



KEY FEATURES

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

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

6ws: 1¼" max.

Industrial: 2" max.

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

ROTATION SPEED

3000 rpm

DIMENSIONS

835 x 545 x 640 mm

(33 x 21 x 25")

SCALLOPED BLADE DIAMETER

300 mm (11.8")

MAX HOSE OD.

85 mm (3.346")

PACKAGING

1170 x 770 x 1100 mm

(46 x 30 x 43")

MOTOR

2.2 kW

NET WEIGHT

75 kg (165 lb)

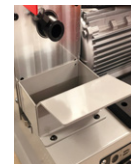
GROSS WEIGHT

90 kg (198 lb)

STANDARD



Scalloped Blade



Dust Collector

OPTIONAL



Cutting Rail

M 30 CUT & SKIVE

STARTER & PROFESSIONAL WORKSHOP
BENCHTOP, INTEGRATED CUTTING & SKIVING



KEY FEATURES

- 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

TECHNICAL SPECIFICATIONS

CAPACITY

- 2wb: 2" max.
- 4ws: 2" max.
- 6ws: 1 1/4" max.
- Industrial: 2" max.

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

ROTATION SPEED (CUT)

3000 rpm

DIMENSIONS

835 x 545 x 640 mm
(33 x 21 x 25")

ROTATION SPEED (SKIVE)

200 rpm

PACKAGING

1170 x 770 x 1100 mm
46 x 30 x 43"

SCALLOPED BLADE DIAMETER

300 mm (11.8")

MAX HOSE OD.

85 mm (3.34")

NET WEIGHT

85 kg (187 lb)

MOTOR

2.2 kW

GROSS WEIGHT

100 kg (220 lb)

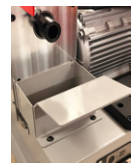
TECHNICAL FEATURES

Skiving tools for External Skiving (ESE) and for Internal Skiving (IS) to be ordered separately

STANDARD



Scalloped Blade

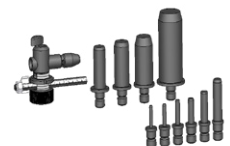


Dust Collector

OPTIONAL



Cutting Rail



Tool Kit ESE



Tool Kit IS

M 30 CUT L

STARTER & PROFESSIONAL WORKSHOP STAND TYPE CUTTING MACHINE



KEY FEATURES

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

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

6ws: 1¼" max.

Industrial: 2"

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

ROTATION SPEED

3000 rpm

DIMENSIONS

765 x 500 x 1150 mm

(30 x 20 x 45")

SCALLOPED BLADE DIAMETER

254 mm (10")

PACKAGING

800 x 600 x 1200 mm

MAX HOSE OD.

85 mm (3.34")

(32 x 24 x 47")

MOTOR

3.0 kW

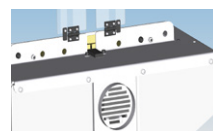
NET WEIGHT

92 kg (203 lb)

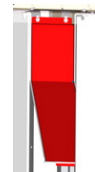
GROSS WEIGHT

120 kg (265 lb)

STANDARD



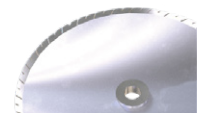
Smoke Suction Connector



2 Dust Collectors



Scalloped Blade



Slotted Blade

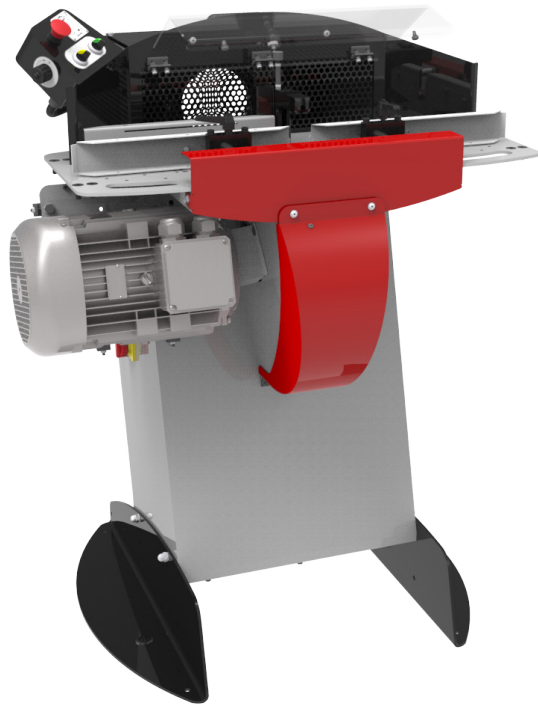
OPTIONAL



Cutting Rail

M 55 CUT

FULL SERVICE WORKSHOP, STARTER PRODUCTION UNITS
STAND TYPE CUTTING MACHINE



KEY FEATURES

- Versatile, slotted 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
- Adjustable speed for cutting on pneumatic version

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

6ws: 2" max.

Industrial: 2"

ROTATION SPEED

3000 rpm

SLOTTED BLADE DIAMETER

400 mm (15.7")

MAX HOSE OD.

80 mm (3.15")

MOTOR

7.5 kW

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

DIMENSIONS

1140 x 1000 x 1280 mm

(45 x 39 x 50")

PACKAGING

1600 x 1200 x 1600 mm

(63 x 47 x 63")

NET WEIGHT

240 kg (529 lb)

GROSS WEIGHT

280 kg (617 lb)

TECHNICAL FEATURES

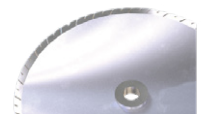
Diameter of the suction connection: 150 mm (6")

Options: Pneumatic bending system, scalloped blade

STANDARD



Control Panel



Slotted Blade



Feeding Guide

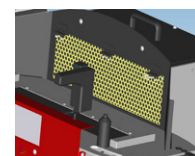


Dust Collector

OPTIONAL



Cutting Rail



Smoke Suction



Decoiler



DV 32



DVC

M 75 CUT

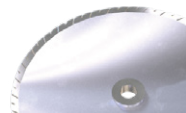
EXPERT SERVICE LINE
STAND TYPE CUTTING MACHINE



KEY FEATURES

- Powerful
- Safety cover
- High visibility
- Suitable for cutting large bore hoses

STANDARD



Slotted Blade

TECHNICAL SPECIFICATIONS

CAPACITY

- 2wb: 3" max.
- 4ws: 2" max.
- 6ws: 2" max.

VOLTAGES

- 220/240 V, 3Ph, 50 Hz
- 380/415 V, 3Ph, 50 Hz
- 208/240 V, 3Ph, 60 Hz

ROTATION SPEED

3000 rpm

380/415 V, 3Ph, 60 Hz

DIMENSIONS

910 x 820 x 1280 mm
(36 x 32 x 50")

SLOTTED BLADE DIAMETER

520 mm (20.5") included

MAX HOSE OD.

125 mm (5")

NET WEIGHT

215 kg (474 lb)

MOTOR

7.5 kW

TECHNICAL FEATURES

Diameter of suction connection: 110 mm (4.33 ")

Optional tool: Brake motor, slotted disc

OPTIONAL



Cutting Rail



Decoiler



DV 32



DVC

M 90 CUT

EXPERT SERVICE LINE
STAND TYPE CUTTING MACHINE



KEY FEATURES

- Very powerful
- Heavy duty for difficult cuts
- Hydraulic bending
- Brake motor
- Electronic soft start
- Smoke suction integrated in cutting table

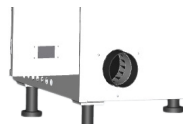
STANDARD



Slotted Blade



Production Counters



Smoke Suction Connector



CME Electrical Foot Switch

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 3½" max.

4ws: 3½" max.

6ws: 3" max.

ROTATION SPEED

3000 rpm

SLOTTED BLADE DIAMETER

520 mm (20.5") included

MAX HOSE OD.

125 mm (5")

MOTOR

9.0 kW

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

DIMENSIONS

1000 x 1060 x 1350 mm
(39 x 42 x 53")

NET WEIGHT

260 kg (573 lb)

TECHNICAL FEATURES

Diameter of suction connection: 110 mm (4.33")

Standard tool: Hydraulic bending, brake motor

Optional tool: Slotted disc

OPTIONAL



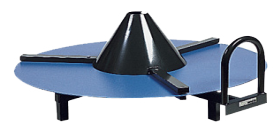
Cutting Rail



Decoiler



DV 32



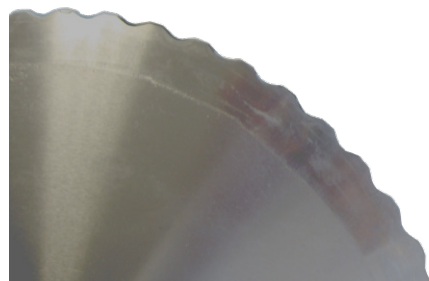
DVC

ACCESSORIES AND TOOLS

CUTTING DISCS

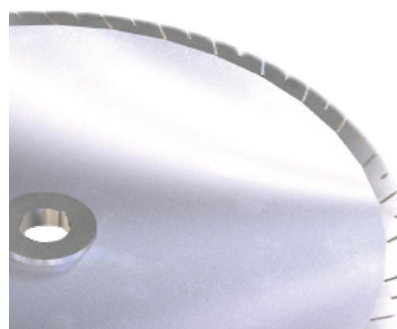
SCALLOPED BLADE TYPE

The scalloped blade is suitable for all hose types. It is able to reach a high quality of cutting surface and is the standard on 254 and 300 mm blades.



SLOTTED 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. This blade provides an extended operational life of up to 2 times that of the previous blade, and is the standard on 400 and 520 mm blades.



BRAKE MOTOR

The brake motor is a device which stops the disc immediately when the stop button is pushed.

PNEUMATIC BENDING

Available on M 75 CUT and M 55 CUT.

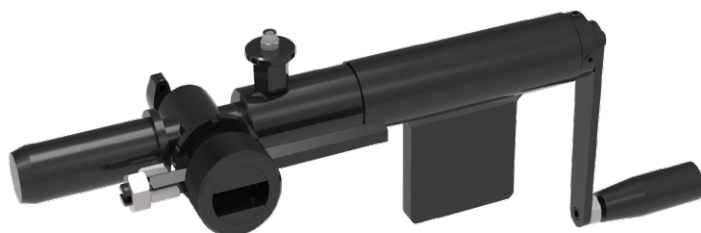
Pneumatic bending facilitates cutting, as the operator does not have to force the hose on the blade. The pneumatic system, activated by a foot switch, offers hands free operation. This is the same principle for the hydraulic bending on M 90 CUT.

MH SKY

FIELD SERVICE & MOBILE WORKSHOP MANUAL, PORTABLE SKIVING TOOL

KEY FEATURES

- Portable, lightweight
- Economic
- Simple
- Compact
- Robust
- Plug-in skive system



TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

DIMENSIONS

413 x 52 x 224 mm

(16 x 2 x 9")

NET WEIGHT

3 kg (7 lb)

TECHNICAL FEATURES

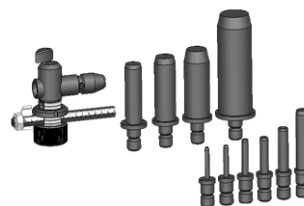
Tool selection:

- 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

OPTIONAL



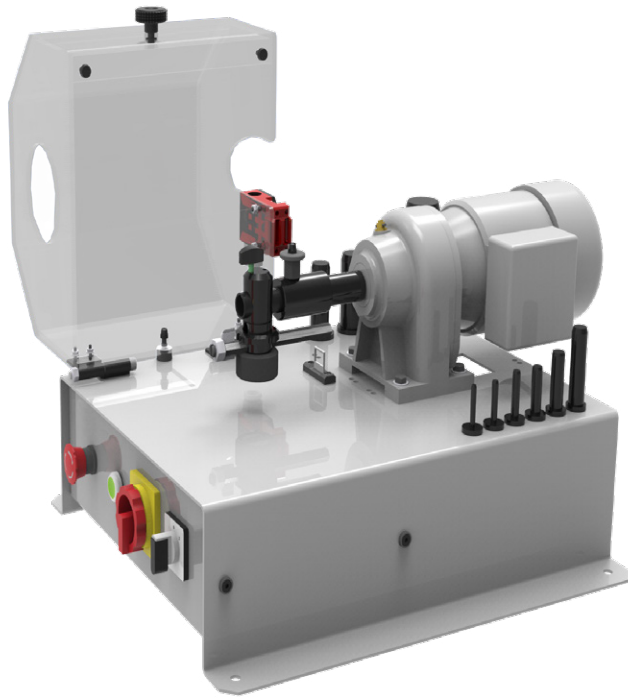
Tool Kit ESE



Tool Kit IS

M 50 SKY

SMALL SERVICE WORKSHOP BENCHTOP SKIVING



KEY FEATURES

- 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

STANDARD



CME Electrical Foot Switch

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

ROTATION SPEED

100 rpm

MOTOR

0.25 kW

VOLTAGES

220/240 V, 1Ph, 50 Hz

380/415 V, 3Ph, 50 Hz

220/240 V, 1Ph, 60 Hz

380/415 V, 3Ph, 60 Hz

DIMENSIONS

500 x 660 x 360 mm

(19 x 26 x 14")

PACKAGING

800 x 600 x 830 mm

(31 x 24 x 33")

NET WEIGHT

45 kg (99 lb)

GROSS WEIGHT

55 kg (121 lb)

TECHNICAL FEATURES

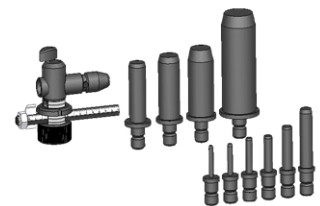
Tools available (to be ordered separately)

ESE, IS, ESP1, ESP2

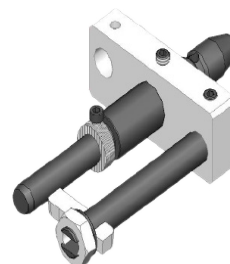
OPTIONAL



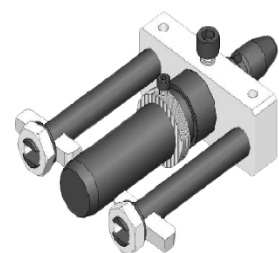
Tool Kit IS



Tool Kit ESE



Tool Kit ESP 1



Tool Kit ESP 2

M 205 SKY

STARTER & PROFESSIONAL WORKSHOP STAND TYPE SKIVING MACHINE



KEY FEATURES

- Plug'n skive system
- Large dust collector
- Robust & easily adjustable knife for quick and easy changeover
- Suitable for high volume production
- 2-way rotation

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 3" max. with optional tools
 4ws: 3" max. with optional tools
 6ws: 3" max. with optional tools

ROTATION SPEED

205 rpm

MOTOR

0.9 kW

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

DIMENSIONS

675 x 550 x 1130 mm
 (27 x 22 x 44")

PACKAGING

800 x 600 x 1200 mm
 (32 x 24 x 47")

NET WEIGHT

100 kg (220 lb)

GROSS WEIGHT

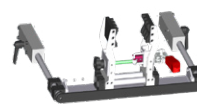
160 kg (353 lb)

TECHNICAL FEATURES

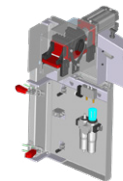
Options available: speed regulator, hose clamping system (limited to distribution workshop using sizes under 2")

Tools available (to be ordered separately):
 ESA, IS, ESP1, ESP2

OPTIONAL



Manual Hose Clamping System



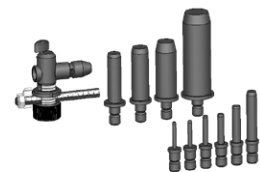
Pneumatic Hose Clamping System



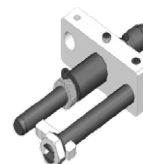
Speed Regulator



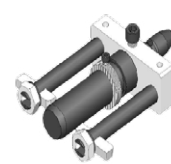
Tool Kit IS



Tool Kit ESE



Tool Kit ESP 1



Tool Kit ESP 2

ACCESSORIES AND TOOLS

EXTERNAL SKIVING TOOLS

Depending on the machine and on customer needs, Manuli Hydraulics offers 3 types of external skiving tools:

ESE (External Skiving Economic)

For MH SKY, M 50 SKY and M 30 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 M 205 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 M 50 SKY and M 205 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 $\frac{1}{2}$ " and 3"

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 $\frac{5}{8}$ " , 2 $\frac{1}{2}$ " and 3"

The ring is heat treated to resist the abrasion of the hose wires.

Optional venturi system with IS tool.

ACCESSORIES AND TOOLS

HOSE CLAMPING SYSTEM

Recommended for skiving hoses over 2" (DN 50)

PLUG N'SKIVE SYSTEM

All Manuli Hydraulics skiving machines are equipped with the Plug'n Skive System which allows the quick and easy insertion of tools.

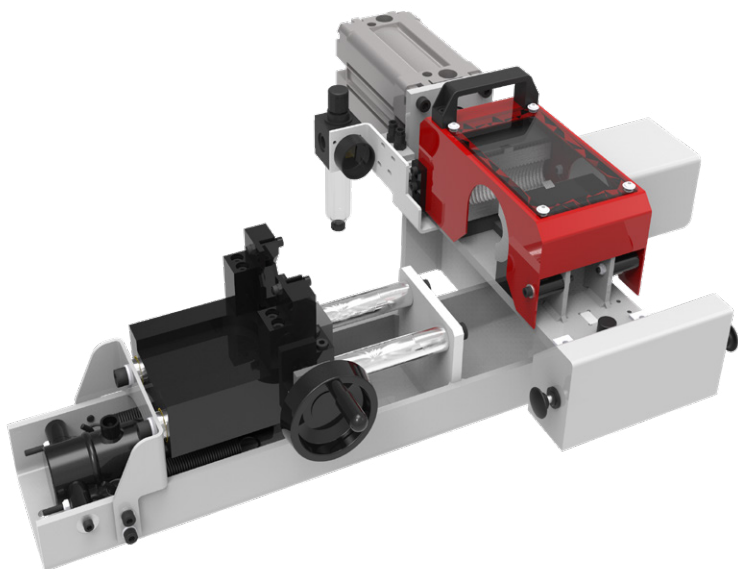
With the Plug n'Skive System no tools are needed to insert the skiving mandrel, simply push the mandrel into the locking system to unlock it, lift a knob and pull out the tool.

M 1500 INS

EXPERT SERVICE LINE BENCHTOP COUPLING INSERTER

KEY FEATURES

- Compact
- Sturdy
- Powerful
- Hydro pneumatic power pack



TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 2" max.

4ws: 2" max.

6ws: 2" max.

DIMENSIONS

750 x 660 x 300 mm

(30 x 26 x 12")

NET WEIGHT

70 kg (154 lb)

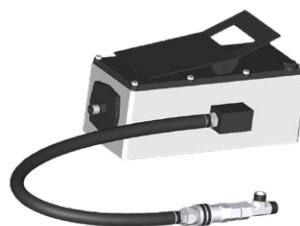
POWER SUPPLY

Compressed air (7 bar)

TECHNICAL FEATURES

Optional tool: for small bore
1/4", 3/8", 1/2" shell

STANDARD



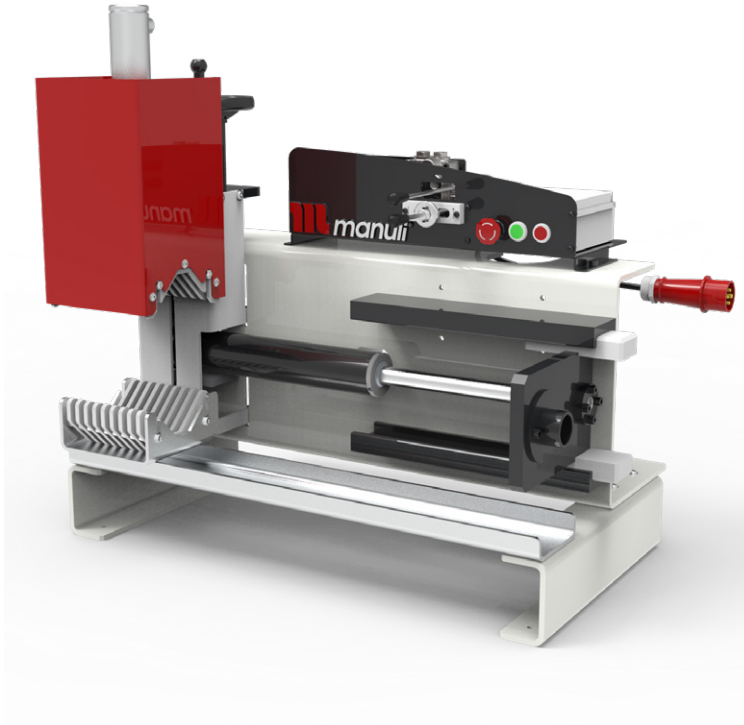
Hydro-pneumatic Pump

M 2000 INS

EXPERT SERVICE LINE
BENCHTOP COUPLING INSERTER

KEY FEATURES

- Compact
- Sturdy
- Powerful
- Manual insert centring device
- Joystick operated clamping and insertion



TECHNICAL SPECIFICATIONS

CAPACITY

76 mm - 170 mm OD Hose

DIMENSIONS

800 x 500 x 900 mm

(31 x 20 x 35")

NET WEIGHT

150 kg (330 lb)

VOLTAGES

380/415 V, 3Ph, 50 Hz

POWER

1.5kW

MAXIMUM FLANGE

250 mm

INSERTION FORCE

2,000 N

INSERTION STROKE

300 mm

INSERTION SPEED *

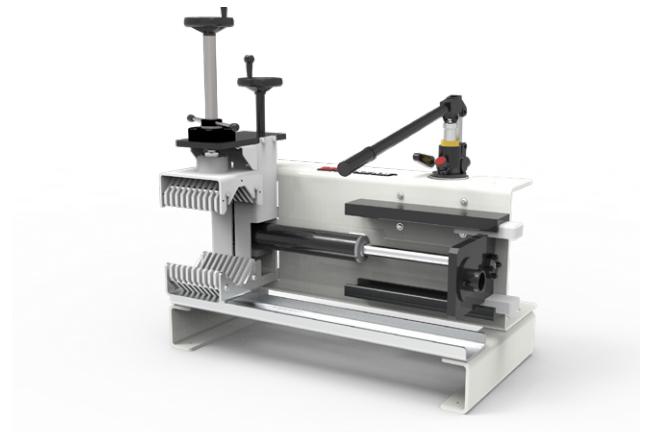
28 mm/s

CLAMPING LENGTH

200 mm

OPTIONS

Manual version available



* Electrical version only

M 50 MARK

AFTER MARKET SERVICE
BENCHTOP, FERRULE MARKING



KEY FEATURES

- Robust
- Easy to use
- Compact
- Large space for 14 stamps
- Stamp holder with numbering wheel; 3 figures on the wheel + 1 groove for stamps

TECHNICAL SPECIFICATIONS

CAPACITY

2wb: 4" max.

4ws: 4" max.

DIMENSIONS

390 x 360 x 520 mm

(15 x 14 x 20")

PACKAGING

800 x 600 x 830 mm

(31 x 24 x 33")

NET WEIGHT

34 kg (75 lb)

GROSS WEIGHT

50 kg (110 lb)

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

Includes stamp box of 100 stamps & 20 blanks

CK 50



TECHNICAL SPECIFICATIONS

NUMBER OF NOZZLES

10 to suit hose ID

COMPRESSED AIR

7 bar

MINIMUM INTERNAL DIAMETER OF HOSE

6 mm

MINIMUM INTERNAL DIAMETER

51 mm

TECHNICAL FEATURES

Includes 575 pellets & projectile catcher

HRD 07

HOSES CAN BE STORED ON THE HOSE DISPENSER



TECHNICAL SPECIFICATIONS

MAXIMUM NUMBER OF COILS

7

MAXIMUM WEIGHT/COIL

80 kg

MINIMUM INTERNAL DIAMETER

300 mm

MINIMUM EXTERNAL DIAMETER

850 mm

MAXIMUM HEIGHT

200 mm

DIMENSIONS

1180 x 1180 x 2115 mm (100 kg)

PACKAGING

1200 x 1200 x 720 mm (135 kg)

DV 32 - DVC - OEM DECOILER

DV 32



DVC



OEM



The hose decoiler is highly adaptable, suitable for a hose reel or a coil up to 100 kgs. It is stable and equipped with a hose guide system and a manual break, offering increased safety and efficiency.

INDUSTRIAL DECOILER

Robust, motorised decoiler for large bore industrial hose. Comes with 6 manually adjustable centring pins, remote stop-start controller and a high torque, 3kW motor with speed control.



VOLTAGES

400 V, 3Ph, 50 Hz

DIMENSIONS

2600 x 2600 x 1600 mm

(102 x 102 x 63")

NET WEIGHT

714 kg (1570 lb)

MOTOR

3 kW with speed control

POWER TORQUE

1200 N

TABLE DIAMETER

2200 mm

MHP 80

FIELD SERVICE & MOBILE WORKSHOP
HAND PUMP, PORTABLE



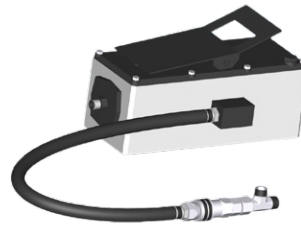
KEY FEATURES

- Compact
- Lightweight
- Easy to use
- Balanced design
- Dual stage pump
- 1" Die Set included

OPTIONAL



Maintenance Kits



Hydro-pneumatic Pump

TECHNICAL SPECIFICATIONS

| | |
|--|--|
| CRIMP RANGE 4 - 43 mm (0.157 - 1.693") | DIMENSIONS 330 x 250 x 400 mm (13 x 10 x 16") |
| CRIMP FORCE 80 t | PACKAGING 800 x 600 x 830 mm (31 x 24 x 33") |
| OPENING WITH DIES +20 mm (+0.787") | NET WEIGHT 28 kg (62 lb) |
| COMPLETE OPENING 59 mm (2.323") | GROSS WEIGHT 41 kg (90 lb) |
| MASTER DIE LENGTH 56 mm (2.205") | TECHNICAL FEATURES Hand pump: 5000 psi (double speed) |
| STANDARD DIES 15, 18, 21, 24, 27, 30, 39 | |

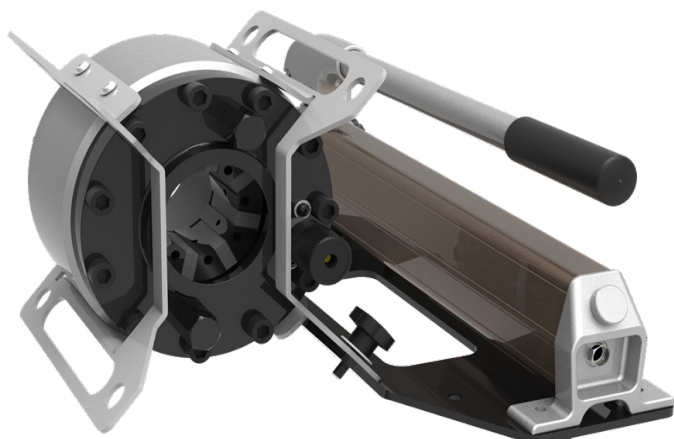
| HOSE AND FITTINGS SELECTION | | |
|-----------------------------|---|---------------|
| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPK; MF3000 OPF | 1" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | ½" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | ½" |

MHP 110

FIELD SERVICE & MOBILE WORKSHOP
HAND PUMP, PORTABLE

KEY FEATURES

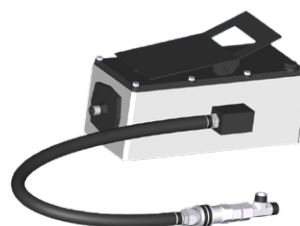
- Flexible
- Portable
- Robust (protected narrow head)
- Multi-positioning (with removable plate)



OPTIONAL



Maintenance Kits



Hydro-pneumatic Pump

TECHNICAL SPECIFICATIONS

CRIMP RANGE

4 - 43 mm (0.157 - 1.693")

CRIMP FORCE

110 t

OPENING WITH DIES

+20 mm (+0.787")

COMPLETE OPENING

59 mm (2.323")

MASTER DIE LENGTH

60 mm (2.362")

STANDARD DIES

15, 18, 21, 24, 27, 30

DIMENSIONS

220 x 222 x 240 mm

(7 x 9 x 10")

PACKAGING

800 x 600 x 830 mm

(31 x 24 x 33")

NET WEIGHT

28 kg (62 lb)

WEIGHT (HEAD ONLY)

21 kg (46 lbs)

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPK; MF3000 OPF | 1" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | 3/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1" |

MHP 137

FIELD SERVICE & MOBILE WORKSHOP
HAND PUMP, PORTABLE



KEY FEATURES

- High capacity
- Narrow head
- Audio-visual signal
- 350 bar technology more robust & reliable than 700 bar
- Large opening

OPTIONAL



Maintenance Kit



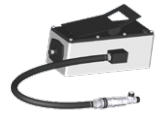
Quick Change Gun



Aluminium Quick Change Gun



Die Storage Panel



Hydro-pneumatic Pump



Marking Dies



Die Sets for Brake & Air Conditioning Hoses

TECHNICAL SPECIFICATIONS

| | |
|----------------------------|--|
| CRIMP RANGE | STANDARD DIES |
| 4 - 70 mm (0.157 - 2.756") | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51 and Refrifast dies 14, 18, 21 |
| CRIMP FORCE | |
| 137 t | |
| OPENING WITH DIES | DIMENSIONS |
| +28 mm (+1.102") | 480 x 250 x 340 mm (19 x 10 x 13") |
| COMPLETE OPENING | PACKAGING |
| 100 mm (3.937") | 800 x 600 x 830 mm (31 x 24 x 33") |
| MASTER DIE LENGTH | NET WEIGHT |
| 75 mm (2.362") | 55 kg (121 lb) |
| | GROSS WEIGHT |
| | 75 kg (165 lb) |

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |

MRB 137 EVO R

MAINTENANCE WORKSHOP VERTICAL BENCHTOP

KEY FEATURES

- Ergonomically positioned adjustable head
- Axis of the head situated perpendicular to the operator
- Compact
- Optional quick change tool for dies
- Range of standard dies available



OPTIONAL



Maintenance Kit



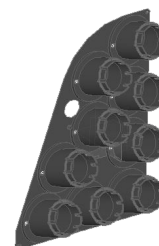
Die Storage Panel



Die Storage Table



Quick Change Gun



Die Storage Panel EVO R



Aluminium Quick Change Gun

TECHNICAL SPECIFICATIONS

CRIMP RANGE

6 to 56 mm (0.517 - 2.205")

CRIMP FORCE

137 t

OPENING WITH DIES

+28 mm (+1.102")

COMPLETE OPENING

100 mm (3.937")

MASTER DIE LENGTH

75 mm (2.953")

STANDARD DIES

15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51

NOISE LEVEL

70 dB A

MOTOR

1.5 kW (110V)

2.2 kW (230V)

VOLTAGES

110 V, 1Ph, 60 Hz

220/240 V, 1 Ph, 50 Hz

380/415V, 3 Ph + N, 50 Hz

+12/24

Other voltages available on request

DIMENSIONS

360 x 530 x 620 mm

(14 x 21 x 25")

NET WEIGHT

85 kg (187 lb)

GROSS WEIGHT

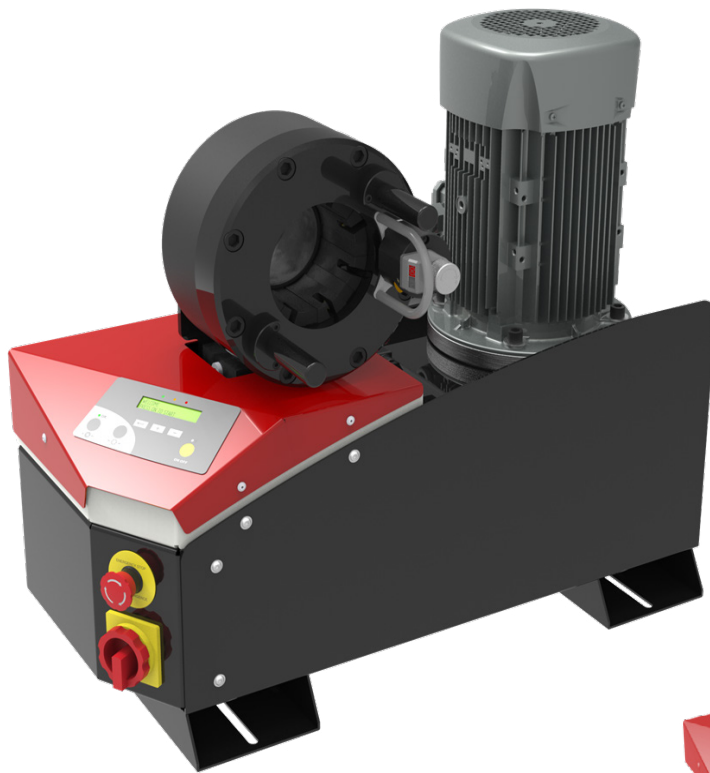
89 kg (196 lb)

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |

MB 137 EVO

ASSEMBLING FOR FIELD REPAIR BENCHTOP CRIMP MACHINE

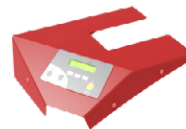


KEY FEATURES

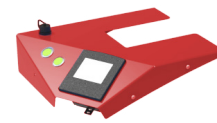
- Crimp force of up to 137 tonnes for hoses up to 1 1/4"
- Easy to use and robust
- Extensive range of dies to suit crimping of hydraulic hoses
- Easy to set up and maintain
- Fast and reliable
- Numerical micrometer
- Model shown equipped with SC control panel
- Calliper option on SCE control panel
- Bluetooth as standard on SC and SCE control panels



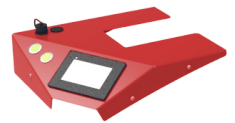
CONTROL OPTIONS AVAILABLE ON REQUEST



SC



SCE



SCS

TECHNICAL SPECIFICATIONS

CRIMP RANGE

4 - 70 mm (0.157 - 2.756")

CRIMP FORCE

137 t

OPENING WITH DIES

+28 mm (+1.102")

COMPLETE OPENING

100 mm (3.937")

MASTER DIE LENGTH

75 mm (2.953")

STANDARD DIES

15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51

NOISE LEVEL

70 dB A

MOTOR

4.0 kW

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

Other voltages available on request

DIMENSIONS

765 x 400 x 650 mm

(30 x 16 x 26")

NET WEIGHT

160 kg (353 lb)

OPTIONAL



Maintenance Kit



Marking Dies



Die Storage Panel



Die Storage Table



Electrical Footswitch



Quick Change Gun



Aluminium Quick Change Gun



Die Sets for Brake & Air Conditioning Hoses



Die Storage Panel EVO

555 MACHINES

MB 137 EVO

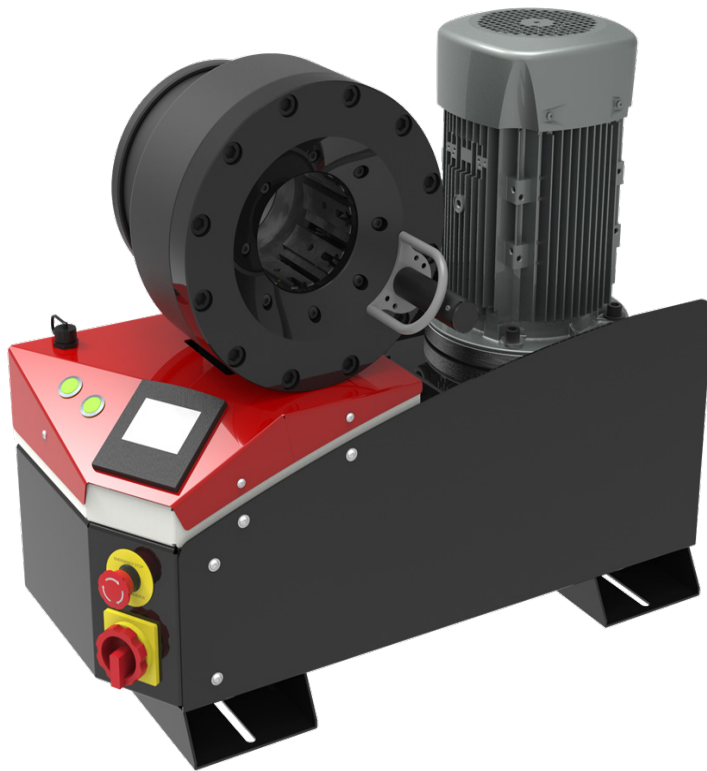
ASSEMBLING FOR FIELD REPAIR
BENCHTOP CRIMP MACHINE

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | ¾" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | ¾" |

MB 240 EVO

PROFESSIONAL WORKSHOP BENCHTOP

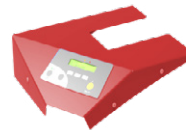


KEY FEATURES

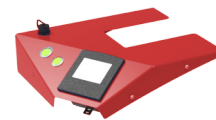
- Crimp force of up to 240 tonnes for hoses up to 2"
- Easy to use and robust
- Radial die movement
- High crimping force
- Extensive range of dies to suit crimping of hydraulic hoses
- Easy set up and maintenance
- Fast and reliable
- Numerical micrometer
- Model shown equipped with SCE control panel
- Calliper option on SCE control panel
- Bluetooth as standard on SC and SCE control panels



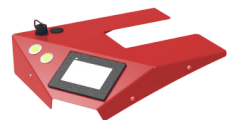
CONTROL OPTIONS AVAILABLE ON REQUEST



SC



SCE



SCS

TECHNICAL SPECIFICATIONS

| | | | |
|--------------------------|--|--------------------|-------------------------------------|
| CRIMP RANGE | 4 - 76 mm (0.157 - 2.992") | NOISE LEVEL | <70 dB A |
| CRIMP FORCE | 240 t | MOTOR | 4.0 kW |
| OPENING WITH DIES | +38 mm (+1.496") | VOLTAGES | 220/240 V, 3Ph, 50 Hz |
| COMPLETE OPENING | 118 mm (4.645") | | 380/415 V, 3Ph, 50 Hz |
| MASTER DIE LENGTH | 100 mm (3.937") | | 208/240 V, 3Ph, 60 Hz |
| STANDARD DIES | 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70 | | 380/415 V, 3Ph, 60 Hz |
| | | | Other voltages available on request |
| | | DIMENSIONS | 765 x 400 x 650 mm (30 x 16 x 26") |
| | | NET WEIGHT | 165 kg (364 lb) |

OPTIONAL



Maintenance Kit



Marking Dies



Die Storage Panel



Die Storage Table



Electrical Footswitch



Quick Change Gun



Aluminium Quick Change Gun



Mechanical Backstop



Die Sets for Brake & Air Conditioning Hoses



Die Storage Panel EVO

MB 240 EVO

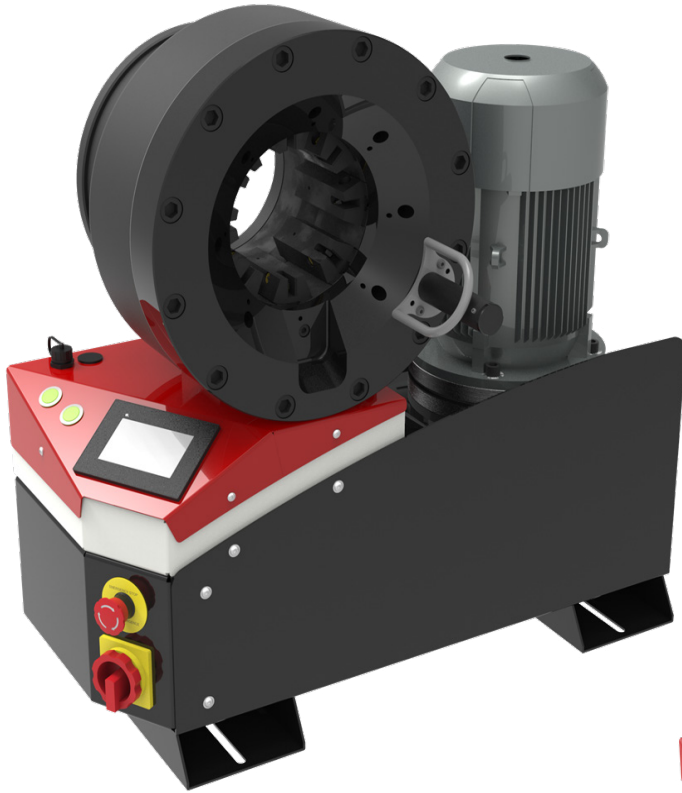
PROFESSIONAL WORKSHOP BENCHTOP

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 2" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 2" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 ¼" |
| 6 WIRE SPIRAL | MF2000 INTERLOCK PLUS; | 1" |

MB 350 EVO / MB 350 EVO L

FULL SERVICE WORKSHOP
BENCHTOP; VERY HIGH CRIMP FORCE

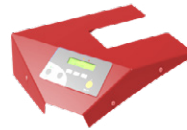


KEY FEATURES

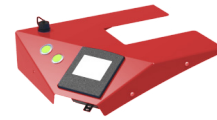
- Crimp force of up to 350 tonnes for hoses up to 3"
- Easy to use and robust
- Automatic maintenance alerts
- Groove for 90° long drop fittings
- Also available as S CRIMP 350 L with 4.0 kW motor
- Numerical micrometer
- Model shown equipped with SCS control panel
- Calliper option on SCE control panel
- Bluetooth as standard on SC and SCE control panels



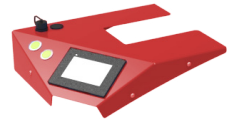
CONTROL OPTIONS AVAILABLE ON REQUEST



SC



SCE



SCS

TECHNICAL SPECIFICATIONS

| | |
|--|---|
| CRIMP RANGE | NOISE LEVEL |
| 4 - 130 mm (0.157 - 5.118") | <70 dB A |
| CRIMP FORCE | MOTOR |
| 350 t | 5.5 kW / 4 kW |
| OPENING WITH DIES | VOLTAGES |
| +54 mm (+2.125") | 220/240 V, 3Ph, 50 Hz |
| COMPLETE OPENING | 380/415 V, 3Ph, 50 Hz |
| 180 mm (7.086") | 208/240 V, 3Ph, 60 Hz |
| MASTER DIE LENGTH | 380/415 V, 3Ph, 60 Hz |
| 115 mm (4.523") | DIMENSIONS |
| STANDARD DIES | 765 x 400 x 750 mm |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76 | (30 x 16 x 30") |
| | NET WEIGHT |
| | 262 kg (578 lb) |
| | TECHNICAL FEATURES |
| | -Automatic maintenance alerts -Cylinder protection against dust - durable design -Also available as S CRIMP 350 EVO L with 4.0 kW Motor |

OPTIONAL



Maintenance Kit



Marking Dies



Die Storage Panel



Die Storage Table



Electrical Footswitch



Quick Change Gun



Aluminium Quick Change Gun



Mechanical Backstop



Die Sets for Brake & Air Conditioning Hoses



Die Storage Panel EVO

MB 350 EVO / MB 350 EVO L
**FULL SERVICE WORKSHOP
BENCHTOP; VERY HIGH CRIMP FORCE**
HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|------------------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 3" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF3000 OPK | 2" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 ½" |
| 6 WIRE SPIRALS (350 BAR / 5000psi) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 2" |
| 6 WIRE SPIRAL (420 BAR / 5000psi) | MF2000 INTERLOCK PLUS; MF2000 INTERLOCK SUPER | 1 ½" |
| 8 WIRE SPIRALS | MF2000 INTERLOCK PLUS | 1 ¼" |

GOLDENCRIMP 420 EVO

ASSEMBLING FOR FIELD REPAIR BENCHTOP CRIMP MACHINE



KEY FEATURES

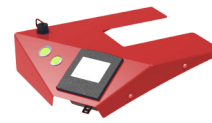
- High crimping force of 420 tonnes
- Robust design for transport and operation in harsh environments
- Protected cylinders for trouble-free operation in high dust environments
- Large opening suitable for large bore hoses
- Easy maintenance due to foam pads and dust collector
- Numerical micrometer
- Model shown equipped with SCS control panel
- Calliper option on SCE control panel
- Bluetooth as standard on SC and SCE control panels



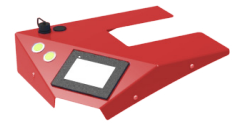
CONTROL OPTIONS AVAILABLE ON REQUEST



SC



SCE



SCS

TECHNICAL SPECIFICATIONS

CRIMP RANGE

4 - 130 mm (0.157 - 5.118")

CRIMP FORCE

420 t

OPENING WITH DIES

+48 mm (+1.9 inch)

COMPLETE OPENING

178 mm (7.0 inch)

MASTER DIE LENGTH

120 mm (4.724 inch)

STANDARD DIES

15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76

NOISE LEVEL

<70 dB A

MOTOR

5.5 kW

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

DIMENSIONS

765 x 500 x 800 mm

(30 x 20 x 32")

PACKAGING

745 x 1150 x 945 mm

(29 x 45 x 37")

NET WEIGHT

395 kg (871 lb)

OPTIONAL



Maintenance Kit



Marking Dies



Die Storage Panel



Die Storage Table



Electrical Footswitch



Quick Change Gun



Aluminium Quick Change Gun



Die Sets for Brake & Air Conditioning Hoses



Die Storage Panel EVO

561 MACHINES

GOLDENCRIMP 420 EVO

ASSEMBLING FOR FIELD REPAIR BENCHTOP CRIMP MACHINE

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 3" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 ½" |
| 6 WIRE SPIRALS | MF2000 INTERLOCK SUPER; MF2000 SPIRALFIT-GX; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 2" |
| 8 WIRE SPIRALS | MF2000 INTERLOCK SUPER | 1 ½" |

GOLDENCRIMP 450

ASSEMBLING FOR FIELD REPAIR BENCHTOP CRIMP MACHINE



KEY FEATURES

- High crimp force (450 tonnes)
- 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

STANDARD



Electrical Footswitch

OPTIONAL



Die Storage Panel



Die Storage Table



Die Sets for Brake & Air Conditioning Hoses



Quick Change Gun



Aluminium Quick Change Gun



Marking Dies

TECHNICAL SPECIFICATIONS

| | |
|--|--|
| CRIMP RANGE | NOISE LEVEL |
| 4 - 130 mm (0.157 - 5.118") | <65 dB A |
| CRIMP FORCE | MOTOR |
| 450 t | 5.5 kW |
| OPENING WITH DIES | VOLTAGES |
| +70 mm (+2.755") | 220/240 V, 3Ph, 50 Hz |
| COMPLETE OPENING | 380/415 V, 3Ph, 50 Hz |
| 197 mm (7.755") | 208/240 V, 3Ph, 60 Hz |
| MASTER DIE LENGTH | 380/415 V, 3Ph, 60 Hz |
| 140 mm (5.512") | DIMENSIONS |
| STANDARD DIES | 830 x 775 x 1450 mm (33 x 31 x 57") |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76 | PACKAGING |
| | 1120 x 1020 x 1770 mm (44 x 40 x 70") |
| | NET WEIGHT |
| | 720 kg (1587 lb) |

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|------------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 4" |
| 1 WIRE BRAID + 2 WIRE SPIRAL | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 3" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 1/4" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 1/2" |
| 6 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3" |
| 6 WIRE SPIRALS | MF2000 INTERLOCK SUPER; MF2000 SPIRALFIT-GX | 2" |
| 8 WIRE SPIRALS | MF2000 INTERLOCK SUPER | 1 1/2" |

MRV 137 EVO R

FIELD SERVICE & MOBILE WORKSHOP
MOBILE VAN

KEY FEATURES

- Ergonomically positioned adjustable crimping head
- Axis of crimping head oriented perpendicular to the operator
- Optional quick change tool for dies available in Plastic or Aluminium
- Compact design
- Range of standard dies available
- Optional die storage panel available

OPTIONAL



Maintenance Kit



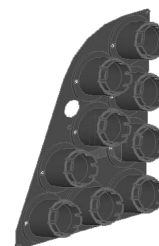
Die Storage Panel



Die Storage Table



Quick Change Gun



Die Storage Panel EVO R



Aluminium Quick Change Gun

TECHNICAL SPECIFICATIONS

CRIMP RANGE

6 - 56 mm (0.517 - 2.205")

CRIMP FORCE

137 t

OPENING WITH DIES

+28 mm (+1.102")

COMPLETE OPENING

100 mm (3.937")

MASTER DIE LENGTH

75 mm (2.952")

STANDARD DIES

15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51

NOISE LEVEL

70 dB A

MOTOR

1.5 kW (12V)

VOLTAGES

12 V

DIMENSIONS

470 x 630 x 644 mm
(19 x 25 x 25")

NET WEIGHT

89 kg (196 lb)

GROSS WEIGHT

105 kg (231 lb)

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 1/4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3/4" |

MV 137 L

FIELD SERVICE & MOBILE WORKSHOP MOBILE VAN



KEY FEATURES

- Robust and compact design
- Lightweight
- High crimping speed
- Suitable also for 90° elbow fittings
- Cylinder protection

OPTIONAL



Maintenance Kit



Quick Change Gun



Aluminium Quick Change Gun



Die Storage Panel



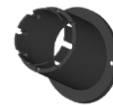
Battery & Charger



Marking Dies



Die Sets for Brake & Air Conditioning Hoses



Front Die Storage

TECHNICAL SPECIFICATIONS

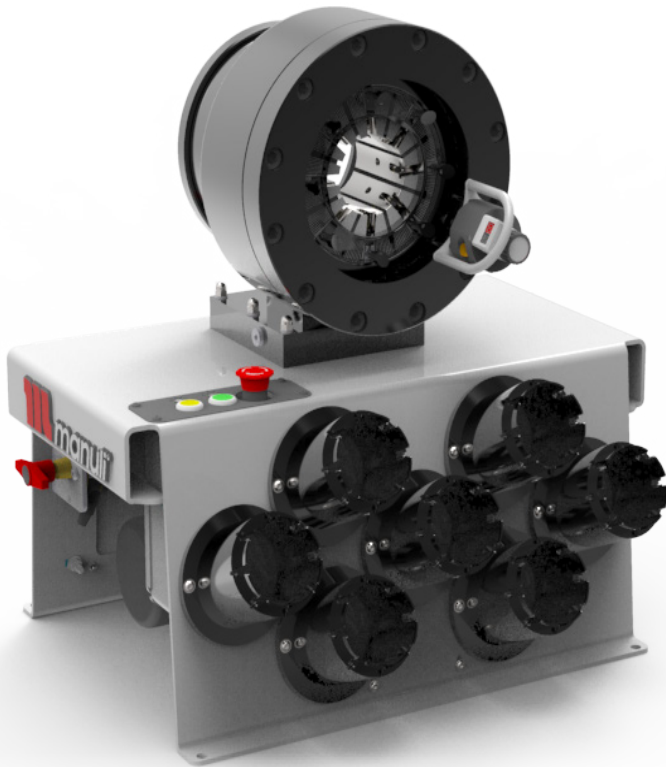
| | |
|--|--|
| CRIMP RANGE | MOTOR |
| 4 - 70 mm (0.157 - 2.756") | 2.0 kW |
| CRIMP FORCE | VOLTAGES |
| 137 t | 12 V |
| OPENING WITH DIES | 24 V |
| +28 mm (+1.102") | DIMENSIONS |
| COMPLETE OPENING | 250 x 320 x 300 mm |
| 100 mm (3.937") | (10 x 13 x 12") |
| MASTER DIE LENGTH | PACKAGING |
| 75 mm (2.952") | 800 x 600 x 830 mm |
| STANDARD DIES | (31 x 24 x 33") |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51 | NET WEIGHT |
| NOISE LEVEL | 86 kg (190 lb) |
| 72 dB A | GROSS WEIGHT |
| | 102 kg (225 lb) |
| | TECHNICAL FEATURES |
| | Dimensions of power pack: 440 x 320 x 320 mm (17 x 13 x 13") |

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | ¾" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | ¾" |

MV 240

FIELD SERVICE & MOBILE WORKSHOP MOBILE VAN



KEY FEATURES

- Robust design
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection
- Remote head mounting option possible

OPTIONAL



Maintenance Kit



Quick Change Gun



Aluminium Quick Change Gun



Die Storage Panel



Battery & Charger



Marking Dies



Die Sets for Brake & Air Conditioning Hoses



Front Die Storage

TECHNICAL SPECIFICATIONS

CRIMP RANGE

4 - 76 mm (0.157 - 2.992")

CRIMP FORCE

240 t

OPENING WITH DIES

+38 mm (+1.496")

COMPLETE OPENING

118 mm (4.646")

MASTER DIE LENGTH

100 mm (3.937")

STANDARD DIES

15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70

NOISE LEVEL

72 dB A

MOTOR

2.0 kW

VOLTAGES

12 V

24 V

220/240 V, 3Ph, 50 Hz

380/415 V, 3Ph, 50 Hz

208/240 V, 3Ph, 60 Hz

380/415 V, 3Ph, 60 Hz

DIMENSIONS

650 x 550 x 670 mm

(26 x 22 x 26")

PACKAGING

800 x 600 x 830 mm

(31 x 24 x 33")

NET WEIGHT

145 kg (320 lb)

GROSS WEIGHT

180 kg (397 lb)

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 2" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 2" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 1/4" |
| 6 WIRE SPIRAL | MF2000 INTERLOCK PLUS; | 1" |

MV 240 L

FIELD SERVICE & MOBILE WORKSHOP MOBILE VAN



KEY FEATURES

- Robust design
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection

OPTIONAL



Maintenance Kit



Quick Change Gun



Aluminium Quick Change Gun



Die Storage Panel



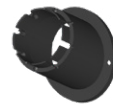
Battery & Charger



Marking Dies



Die Sets for Brake & Air Conditioning Hoses



Front Die Storage



Ergonomic Micrometer

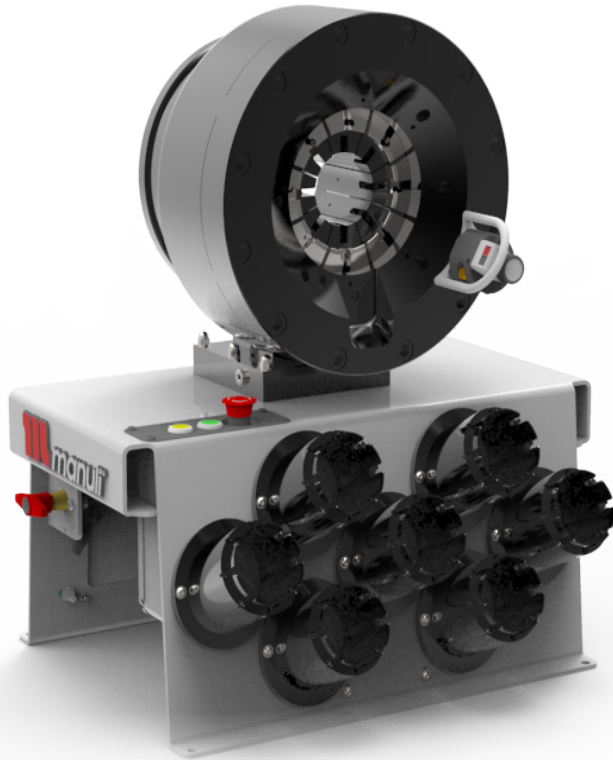
TECHNICAL SPECIFICATIONS

| | |
|--|-----------------------|
| CRIMP RANGE | MOTOR |
| 4 - 76 mm (0.157 - 2.992") | 2.0 kW |
| CRIMP FORCE | VOLTAGES |
| 240 t | 12 V |
| OPENING WITH DIES | 24 V |
| +38 mm (+1.496") | 220/240 V, 3Ph, 50 Hz |
| COMPLETE OPENING | 380/415 V, 3Ph, 50 Hz |
| 118 mm (4.646") | 208/240 V, 3Ph, 60 Hz |
| MASTER DIE LENGTH | 380/415 V, 3Ph, 60 Hz |
| 100 mm (3.937") | DIMENSIONS |
| STANDARD DIES | 320 x 360 x 350 mm |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70 | (13 x 13.5 x 14") |
| NOISE LEVEL | PACKAGING |
| 72 dB A | 800 x 600 x 830 mm |
| TECHNICAL FEATURES | (31 x 24 x 33") |
| Dimensions of power pack: 440 x 320 x 320 mm (17 x 13 x 13") | NET WEIGHT |
| | 130 kg (287 lb) |
| | GROSS WEIGHT |
| | 180 kg (397 lb) |

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 2" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 1/4" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 2" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1 1/4" |
| 6 WIRE SPIRAL | MF2000 INTERLOCK PLUS; | 1" |

MV 350

FIELD SERVICE & MOBILE / CONTAINER WORKSHOP
MOBILE VAN

KEY FEATURES

- Robust design
- Large opening
- High crimping force
- Ergonomic micrometer
- High crimping speed
- Radial movement of the dies
- Cylinder protection
- Remote head mounting option possible

TECHNICAL SPECIFICATIONS

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 (4.528")

STANDARD DIES

15, 18, 21, 24, 27, 30, 33,
36, 39, 42, 45, 48, 51, 57,
62, 66, 70, 73, 76

NOISE LEVEL

<65 dB A

MOTOR

2.0 kW

VOLTAGES

12 V

24 V

220/240 V, 3Ph, 50 Hz

380/415 V, 3Ph, 50 Hz

208/240 V, 3Ph, 60 Hz

380/415 V, 3Ph, 60 Hz

DIMENSIONS

650 x 550 x 750 mm

(26 x 22 x 30")

PACKAGING

800 x 600 x 830 mm

(31 x 24 x 33")

NET WEIGHT

210 kg (463 lb)

GROSS WEIGHT

260 kg (573 lb)

SAFETY REMARK

Possible limitations in case
of double elbow fittings

OPTIONAL



Maintenance Kit



Quick Change Gun



Aluminium Quick Change Gun



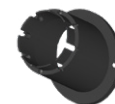
Die Storage Panel



Battery & Charger



Marking Dies

Die Sets for Brake & Air
Conditioning Hoses

Front Die Storage

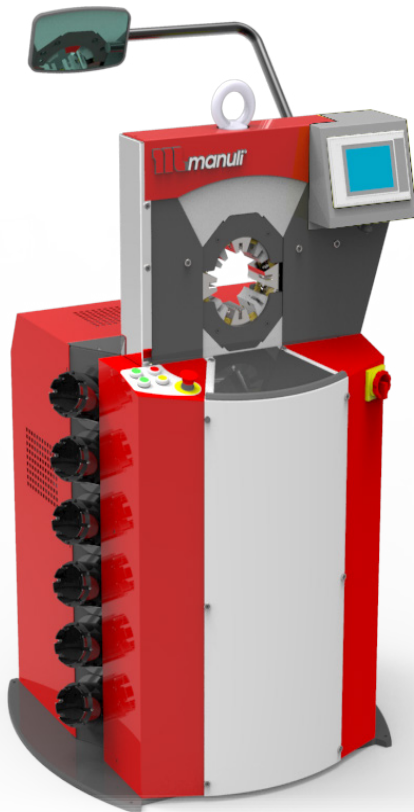
MV 350

FIELD SERVICE & MOBILE / CONTAINER WORKSHOP
MOBILE VAN

| HOSE AND FITTINGS SELECTION | | |
|-----------------------------|--|---------------|
| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 3" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF3000 OPK | 2" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 ½" |
| 6 WIRE SPIRAL | MF2000 INTERLOCK PLUS; MF2000 INTERLOCK SUPER; MF2000 SPIRALFIT | 1 ½" |

MS 140

ASSEMBLING FOR MASS PRODUCTION STAND TYPE CRIMP MACHINE, SCS SYSTEM



KEY FEATURES

- Safe Crimp System (SCS) control
- Large production capacity (small/medium bore)
- Low noise level
- Precise
- Robust
- Fast crimping
- Easy die set-up with ergonomic gun

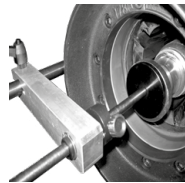
OPTIONAL



Aluminium Quick Change Gun



Electrical Footswitch



Mechanical Backstop



Mirror



Back View Camera

TECHNICAL SPECIFICATIONS

CRIMP RANGE

4 - 70 mm (0.157 - 2.756")

NOISE LEVEL

<69 dB A

CRIMP FORCE

140 t

MOTOR

5.5 kW

OPENING WITH DIES

+45 mm (+1.772")

VOLTAGES

220/240 V, 3Ph, 50 Hz

COMPLETE OPENING

125 mm (4.921")

380/415 V, 3Ph, 50 Hz

208/240 V, 3Ph, 60 Hz

MASTER DIE LENGTH

80 mm (3.150")

DIMENSIONS

890 x 810 x 1390 mm

STANDARD DIES

15, 18, 21, 24, 27, 30, 33,
36, 39, 42, 45, 48

(35 x 32 x 55")

PACKAGING

1120 x 1020 x 1770 mm

(44 x 40 x 70")

NET WEIGHT

675 kg (1488 lb)

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|---|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF3000 OPK | 1 ¼" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1" |
| 4 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 1" |

MS 320

ASSEMBLING FOR MASS PRODUCTION STAND TYPE CRIMP MACHINE, SCS SYSTEM



KEY FEATURES

- 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

STANDARD



Quick Change Gun



SCS Safe Crimp System



Electrical Footswitch



Die Storage



Mirror

TECHNICAL SPECIFICATIONS

| | |
|--|--------------------------------|
| CRIMP RANGE | MOTOR |
| 4 - 130 mm (0.157 - 5.118") | 5.5 kW / 7.5 kW (Fast Version) |
| CRIMP FORCE | VOLTAGES |
| 320 t | 220/240 V, 3Ph, 50 Hz |
| OPENING WITH DIES | 380/415 V, 3Ph, 50 Hz |
| +80 mm (+3.149") | 208/240 V, 3Ph, 60 Hz |
| COMPLETE OPENING | 380/415 V, 3Ph, 60 Hz |
| 207 mm (8.149") | DIMENSIONS |
| MASTER DIE LENGTH | 1240 x 995 x 1615 mm |
| 100 mm (3.937") | (49 x 39 x 64") |
| STANDARD DIES | PACKAGING |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76 | 1400 x 1100 x 1960 mm |
| NOISE LEVEL | (55 x 43 x 77") |
| <65 dB A | NET WEIGHT |
| | 2000 kg (4409 lb) |
| | GROSS WEIGHT |
| | 2300 kg (5071 lb) |

OPTIONAL



Die Storage Panel



Marking Dies



Back View Camera



Aluminium Quick Change Gun



Mechanical Backstop



Side Table & Pushing Panel



Die Sets for Brake & Air Conditioning Hoses



Automatic Central Greasing System

MS 320

ASSEMBLING FOR MASS PRODUCTION
STAND TYPE CRIMP MACHINE, SCS SYSTEM

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|--|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK; | 3" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF3000 OPK | 2" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 ½" |
| 6 WIRE SPIRALS (ROCKMASTER/13 - GOLDENISO/35 XTRAFLEX - SHIELDMASTER/35 - DIAMONDSPIR) | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 2" |
| 8 WIRE SPIRALS | MF2000 INTERLOCK PLUS | 1 ¼" |

MS 480

ASSEMBLING FOR MASS PRODUCTION STAND TYPE CRIMP MACHINE, SCS SYSTEM



KEY FEATURES

- 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

STANDARD



Quick Change Gun



SCS Safe Crimp System



Electrical Footswitch



Die Storage



Mirror

TECHNICAL SPECIFICATIONS

| | |
|--|-----------------------|
| CRIMP RANGE | MOTOR |
| 4 - 160 mm (0.157 - 6.299") | 5.5 kW |
| CRIMP FORCE | VOLTAGES |
| 480 t | 220/240 V, 3Ph, 50 Hz |
| OPENING WITH DIES | 380/415 V, 3Ph, 50 Hz |
| +85 mm (+3.346") | 208/240 V, 3Ph, 60 Hz |
| COMPLETE OPENING | 380/415 V, 3Ph, 60 Hz |
| 212 mm (8.346") | DIMENSIONS |
| MASTER DIE LENGTH | 1300 x 900 x 1700 mm |
| 125 mm (4.921") | (51 x 35 x 67") |
| STANDARD DIES | PACKAGING |
| 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76 | 1400 x 1100 x 1960 mm |
| NOISE LEVEL | (55 x 43 x 77") |
| <65 dB A | NET WEIGHT |
| | 2200 kg (4850 lb) |
| | GROSS WEIGHT |
| | 2430 kg (5357 lb) |

OPTIONAL



Die Storage Panel



Marking Dies



Back View Camera



Aluminium Quick Change Gun



Mechanical Backstop



Side Table & Pushing Panel



Die Sets for Brake & Air Conditioning Hoses



Automatic Central Greasing System

MS 480

ASSEMBLING FOR MASS PRODUCTION
STAND TYPE CRIMP MACHINE, SCS SYSTEM

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK; | 4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF3000 OPK | 4" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 1 ½" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 2" |
| 6 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT | 3" |
| 6 WIRE SPIRALS | MF2000 INTERLOCK SUPER; MF2000 SPIRALFIT-GX | 2" |
| 8 WIRE SPIRALS | MF2000 INTERLOCK SUPER | 1 ½" |

MS 800

ASSEMBLING FOR LARGE BORE HOSES STAND TYPE CRIMP MACHINE, SCS CONTROL



KEY FEATURES

- 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

STANDARD



Electrical Footswitch



SCS Safe Crimp System



Hose Support

TECHNICAL SPECIFICATIONS

| | |
|-----------------------------|---|
| CRIMP RANGE | MOTOR |
| 4 - 230 mm (0.157 - 9.055") | 7.5 kW |
| CRIMP FORCE | VOLTAGES |
| 800 t | 380/415 V, 3Ph, 50 Hz |
| OPENING WITH DIES | DIMENSIONS |
| +100 mm (+3.937") | 1400 x 1400 x 2060 mm (55 x 55 x 81") |
| COMPLETE OPENING | NET WEIGHT |
| 347 mm (13.661") | 4300 kg (9480 lb) |
| MASTER DIE LENGTH | GROSS WEIGHT |
| 180 mm (7.087") | 5000 kg (11023 lb) |
| NOISE LEVEL | TECHNICAL FEATURES |
| < 70 dB A | -Machine platform equipped with rollers to support the hose at working height (1100 mm) in order to handle large bore hoses more easily -Supplied as standard: Intermediate dies 250/130 |

OPTIONAL



Quick Change Gun



Die Storage Panel



Back View Camera

MS 800

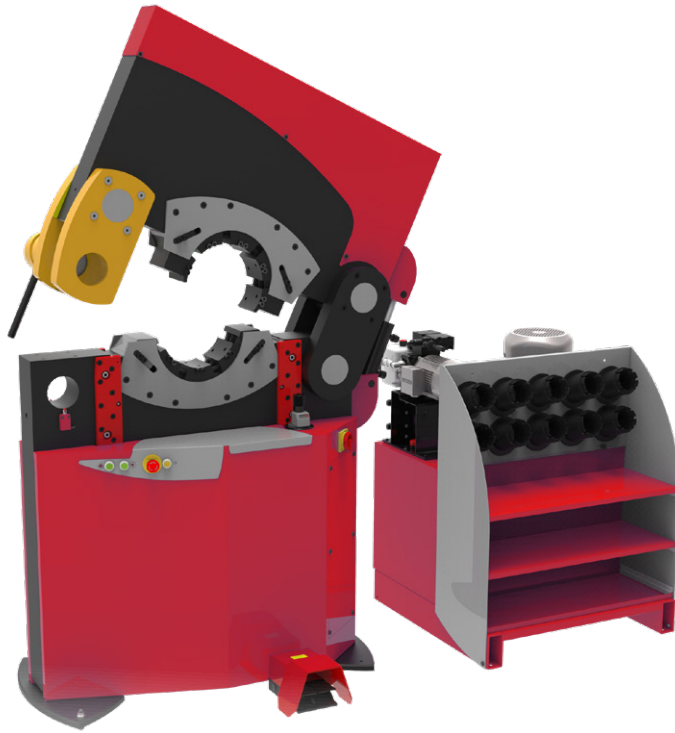
**ASSEMBLING FOR LARGE BORE HOSES
STAND TYPE CRIMP MACHINE, SCS CONTROL**

HOSE AND FITTINGS SELECTION

| HOSE TYPE | FITTING TYPE | MAX HOSE SIZE |
|-----------------------------|--|---------------|
| INDUSTRIAL TEXTILE HOSES | VARIOUS | 8" |
| 2 WIRE BRAID & TEXTILE | MF2000 MULTIFIT; MF3000 OPF; MF3000 OPK; | 4" |
| 3 WIRE (1 BRAID + 2 SPIRAL) | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; | 1 ¼" |
| 4 WIRE SPIRALS | MF2000 MULTIFIT; MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF3000 OPK | 4" |
| 5 WIRE (4 SPIRAL + 1 BRAID) | MF2000 INTERLOCK PLUS | 1 ¼" |
| 7 WIRE (6 SPIRAL + 1 BRAID) | MF2000 INTERLOCK SUPER | 3" |
| 6/8 WIRE SPIRALS | MF2000 INTERLOCK PLUS; MF2000 SPIRALFIT; MF2000 INTERLOCK SUPER | 3" |

MS 320 OPEN HEAD

XXL WORKSHOP



KEY FEATURES

- Unique on market
- Lateral opening
- No limit on end connection diameter
- Easy to use
- Separated power pack
- Integrated safety system

TECHNICAL SPECIFICATIONS

| | |
|-----------------------------|-----------------------------------|
| CAPACITY * | VOLTAGES |
| Industrial: 6" | 230 V, 3 Ph |
| CRIMP RANGE | 400 V, 3 Ph |
| 4 - 230 mm (0.157 - 9.055") | MACHINE DIMENSIONS |
| CRIMP FORCE | 1265 x 680 x 1800 mm |
| 320 t | (50 x 27 x 71") |
| OPENING WITH DIES | POWER PACK DIMENSIONS |
| +55 mm (+2.165 ") | 890 x 800 x 1050 mm |
| COMPLETE OPENING | (35 x 31 x 41") |
| 260 mm (10.236") | MACHINE WEIGHT |
| LATERAL OPENING | 1700 kg (3748 lb) |
| 247 mm (9.724") | POWER PACK WEIGHT |
| MASTER DIE LENGTH | 400 kg (882 lb) |
| 125 mm (4.921") | TECHNICAL FEATURES |
| MOTOR | -Die sizes available upon request |
| 5.5 kW | |

STANDARD



Electrical Footswitch



Die Storage

*Indicative capacities depending on hose and fitting type

MS 450-200

XXL WORKSHOP


KEY FEATURES

- High crimp force (450 tonnes)
- 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
- Separated crimping head allowing flexible workshop arrangements

TECHNICAL SPECIFICATIONS

CAPACITY *

Industrial: 4" & 6"

CRIMP RANGE

4 - 180 mm (0.157 - 7.087")

CRIMP FORCE

450 t

OPENING WITH DIES

+70 mm (+2.755")

COMPLETE OPENING

230 mm (9.055")

MASTER DIE LENGTH

125 mm (4.921")

STANDARD DIES

 15, 18, 21, 24, 27, 30, 33, 36, 39, 42, 45, 48, 51, 57, 62, 66, 70, 73, 76;
 Extra die sets: up to 180 mm;
 Die sizes available on request

MOTOR

5.5 kW

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

DIMENSIONS

830 x 775 x 1450 mm

(33 x 31 x 57")

PACKAGING

1120 x 1020 x 1770 mm

(44 x 40 x 70")

NET WEIGHT

450 kg (992 lb)

OPTIONAL



Die Storage Panel



Die Storage Table



Quick Change Gun



Marking Dies



Aluminium Quick Change Gun



Die Sets for Brake & Air Conditioning Hoses



Electrical Footswitch

*Indicative capacities depending on hose and fitting type

MS 550/MS 550-16

XXL WORKSHOP



KEY FEATURES

- Very large opening
- Fixed bottom die
- Long dies available
- High crimping force
- Symmetric machine
- Low working height
- Ergonomic
- Safe Crimp System (SCS)
- Step crimping capability with SCS

STANDARD



SCS Safe Crimp System



Die Storage

OPTIONAL



Back View Camera

TECHNICAL SPECIFICATIONS

| | MS 550 | MS 550-16 |
|-----------------------|--|--|
| CAPACITY * | Industrial: 12" | Industrial: 16" |
| CRIMP FORCE | 550 t | 550 t |
| COMPLETE OPENING | 490 mm (19.291") | 660 mm (25.984") |
| OPENING WITH DIES | +130 mm (+5.118 ") | +160 mm (6.299") |
| MASTER DIE LENGTH | 200 mm (7.874") | 200 mm (7.874") |
| MOTOR | 5.5 kW | 5.5 kW |
| VOLTAGES | 230 V, 3 Ph 400 V, 4 Ph | 230 V, 3 Ph 400 V, 4 Ph |
| MACHINE DIMENSIONS | 1300 x 1050 x 2230 mm (35 x 41 x 88") | 1450 x 1100 x 2300 mm (57 x 43 x 91") |
| POWER PACK DIMENSIONS | 800 x 790 x 1650 mm (31 x 31 x 65") | 800 x 790 x 1650 mm (31 x 31 x 65") |
| MACHINE WEIGHT | 4000 kg (8818 lb) | 4300 kg (9480 lb) |
| POWER PACK WEIGHT | 500 kg (1102 lb) | 500 kg (1102 lb) |
| TECHNICAL FEATURES | Die sizes available upon request | |

*Indicative capacities depending on hose and fitting type

ACCESSORIES AND TOOLS

SAFE CRIMP (SC) SMART CONTROL PANEL

A basic smart control panel, which includes maintenance functions essential for keeping the machine in good condition.

Maintenance functions include:

- **2 Counters:** 1 daily counter and 1 machine cycle 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, saving energy by reducing the cycle time.
- **Integrated Bluetooth:** Receive crimping data from the Manuli crimping app to reduce the risk of operator error



SAFE CRIMP ELECTRICAL PANEL (SCE)

A modern touch screen with electronic buttons, which includes maintenance functions essential for keeping the machine in good condition.

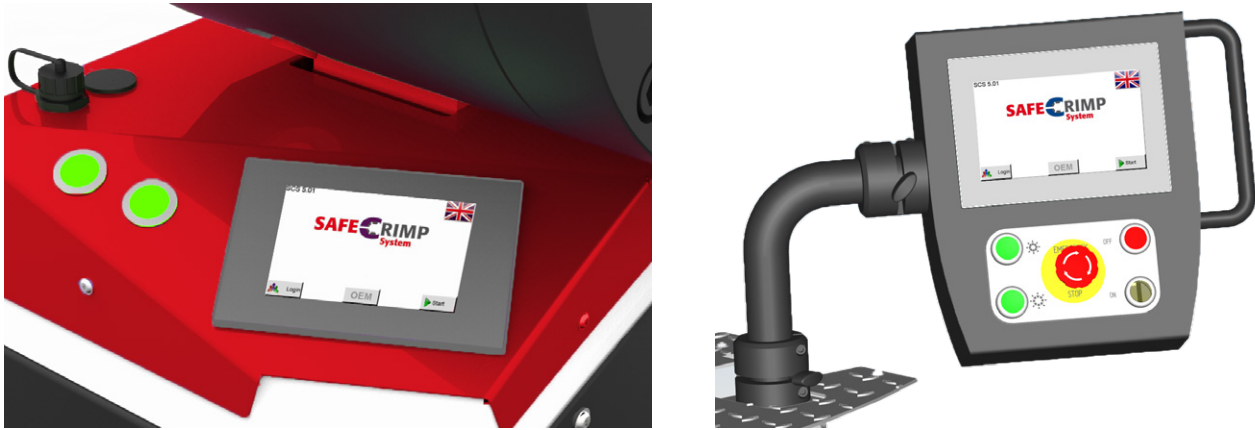
Maintenance functions include:

- **Functions of the Safe Crimp Panel**
- **Electronic micrometer** with automatic die selection and the ability to save up to 25 configurations
- **Integrated Bluetooth:** Receive crimping data from the Manuli crimping app to reduce the risk of operator error
- **Optional calliper control:** Integrated vernier caliper connected to the machine which allows automatic correction of crimping diameters based on measured values



ACCESSORIES AND TOOLS

SAFE CRIMP SYSTEM



Benefits of Safe Crimp System control for hose assembly activity:

- Friendly and easy setting of crimping parameters including:
 - ✓ Pre-set of crimp \emptyset calibration to compensate ferrule elastic rebound
 - ✓ Reminder of dies to be used
 - ✓ Easy automatic opening setting
- Storage of recurrent and customised crimp recipes: favourite crimp assemblies:
 - ✓ Short cuts for faster setting
 - ✓ No crimp \emptyset re-adjusting
 - ✓ Possibility to download your customised recipes by USB port and save on separate computer (CSV file)
- Production counter for batch quantity control:
 - ✓ Quality monitoring by: Automatic crimp \emptyset check (Only available on 7" screen)
 - ✓ Continuous crimp pressure measurement (Option on 4.5" screen)
 - ✓ Crimping pressure and count control for mistake proofing assembly (Option 4.5" screen)
- Operator identification (Log in / log out)
- Maintenance Warnings

MTB 2000 L

TEST BENCH, PROOF PRESSURE & CERTIFY STAND TYPE MACHINE

KEY FEATURES

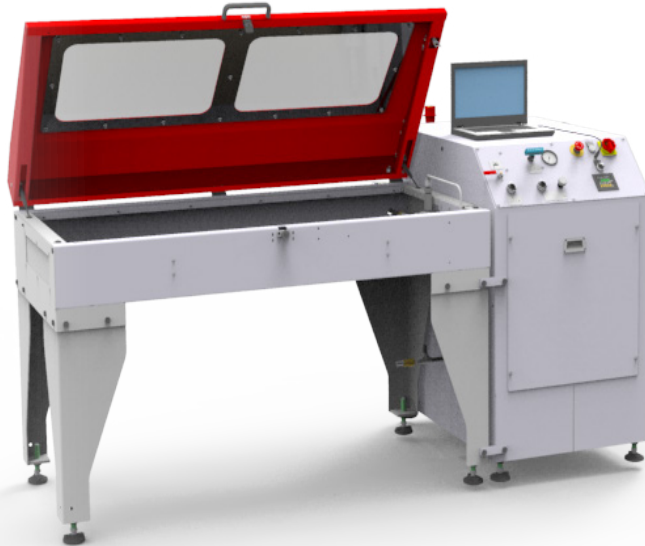
Easy to use and robust

Safe: Steel Compartment, polycarbonate transparent window and metal mesh

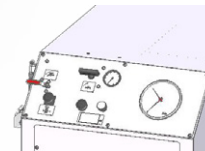
Large testing area for up to 6 hoses

Pallet loading with a forklift

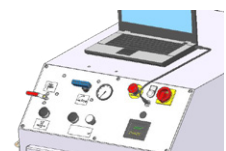
Variable pressure up to 2000 bar



STANDARD



Power Unit M



Power Unit E

TECHNICAL SPECIFICATIONS

INDICATIVE CAPACITY

1200 mm (48")

HOSE CONNECTION

6 maximum

AIR CONSUMPTION

100 NI/min

OPENING/CLOSING TIME

10-14 seconds

MAX PRESSURE

2000 bar (29000 psi)

INNER TANK CAPACITY

1700 x 790 x 200 mm
(67 x 31 x 8")

DIMENSIONS (PANEL)

700 x 1200 x 1220 mm
(28 x 47 x 48")

PACKAGING (TANK)

1600 x 1200 x 1280 mm
(63 x 47 x 50")

PACKAGING (PANEL)

1000 x 1200 x 1280 mm
(39 x 47 x 50")

WEIGHT

430 kg (948 lb)

NET WEIGHT

500 kg (1102 lb)

TECHNICAL FEATURES

-Minimum compressed air
input 8.5 bar (123 psi)

FEATURES AND OPTIONS

DISPLAY FEATURES

M Gauge measurement display

E Numerical measurement colour display with ethernet port for mirror link connection with computer

FURTHER OPTIONS

- Autonomous filling pump
- Air blowing system for both models
- Second tank available on all models

MTB 2000 XL

TEST BENCH, PROOF PRESSURE & CERTIFY STAND TYPE MACHINE

KEY FEATURES

Easy to use and robust

Safe: Steel Compartment, polycarbonate transparent window and metal mesh

Large testing area for up to 6 hoses

Pallet loading with a forklift

Variable pressure up to 2000 bar

Print test data directly to USB drive or printer

ISD model supplied with colour printer



Model shown XL ISD

TECHNICAL SPECIFICATIONS

INDICATIVE CAPACITY

1200 mm (48")

HOSE CONNECTION

6 maximum

AIR CONSUMPTION

100 NI/min

OPENING/CLOSING TIME

10-14 seconds

MAX PRESSURE

2000 bar (29000 psi)

INNER TANK CAPACITY

1400 x 900 x 600 mm
(55 x 35 x 24")

DIMENSIONS (PANEL)

700 x 1200 x 1220 mm
(28 x 47 x 48")

PACKAGING (TANK)

1600 x 1200 x 1280 mm

(63 x 47 x 50")

PACKAGING (PANEL)

1000 x 1200 x 1280 mm

(39 x 47 x 50")

WEIGHT

600 kg (1323 lb)

NET WEIGHT

500 kg (1102 lb)

TECHNICAL FEATURES

-Minimum compressed air input 8.5 bar (123 psi)
-Minimum test pressure 250 bar (3626 psi), with low pressure option 50 bar (725 psi) (only for XL ISD)

FEATURES AND OPTIONS

STANDARD OPTIONS

XL ISD:

- Light included
- Touch screen panel
- Printer

XL E:

- LED Light included
- Numerical measurement colour display with ethernet port for mirror link connection with computer

FURTHER OPTIONS

- Autonomous filling pump
- Air blowing system for both models
- Second tank available on all models
- Low pressure pump (50 bar - 300 bar) available on ISD model

MHP 80

PG.551

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 06 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 08 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-43 |
| KIT 6 DIES MHP80 (N.15 TO N.30) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MHP 110

PG.552

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 06 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 08 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-39 |
| KIT 6 DIES MHP110 (N.15 TO N.30) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MHP 137

PG.553

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-07 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 4 DIES MHP137 (N.15 TO N.33) | - | - |
| KIT 5 DIES MHP137 (N.15 TO N.39) | - | - |
| KIT 6 DIES MHP137 (N.15 TO N.39) | - | - |
| KIT 7 DIES MHP137 (N.15 TO N.39) | - | - |
| KIT 9 DIES MHP137 (N.15 TO N.45) | - | - |
| KIT 9 DIES MHP137 (N.15 TO N.48) | - | - |
| KIT 10 DIES MHP137 (N.15 TO N.48) | - | - |
| KIT 13 DIES HCRIMP137 (N.15 TO N.51) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MRB 137 EVO R

PG.554

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-07 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 4 DIES MRB137EVOR (N.15 TO N.33) | - | - |
| KIT 5 DIES MRB137EVOR (N.15 TO N.39) | - | - |
| KIT 6 DIES MRB137EVOR (N.15 TO N.39) | - | - |
| KIT 7 DIES MRB137EVOR (N.15 TO N.39) | - | - |
| KIT 9 DIES MRB137EVOR (N.15 TO N.45) | - | - |
| KIT 9 DIES MRB137EVOR (N.15 TO N.48) | - | - |
| KIT 10 DIES MRB137EVOR (N.15 TO N.48) | - | - |
| KIT 13 DIES MRB137EVOR (N.15 TO N.51) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MB 137 EVO

PG.555

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-07 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 4 DIES MB137EVO (N.15 TO N.33) | - | - |
| KIT 5 DIES MB137EVO (N.15 TO N.39) | - | - |
| KIT 6 DIES MB137EVO (N.15 TO N.39) | - | - |
| KIT 7 DIES MB137EVO (N.15 TO N.39) | - | - |
| KIT 9 DIES MB137EVO (N.15 TO N.45) | - | - |
| KIT 9 DIES MB137EVO (N.15 TO N.48) | - | - |
| KIT 10 DIES MB137EVO (N.15 TO N.48) | - | - |
| KIT 13 DIES MB137EVO (N.15 TO N.51) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MB 240 EVO

PG.557

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 100 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 100 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 72 - LENGTH 100 MM | 72 | 72-80 |
| KIT 9 DIES MB240EVO (N.15 TO N.51) | - | - |
| KIT 11 DIES MB240EVO (N.15 TO N.66) | - | - |
| KIT 12 DIES MB240EVO (N.15 TO N.66) | - | - |
| KIT 17 DIES MB240EVO (N.15 TO N.70) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MB 350 EVO / MB 350 EVO L

PG.559

| DESCRIPTION | N° | CRIMP RANGE |
|--|------------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 125 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 72 - LENGTH 100 MM | 72 | 72-73 |
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-76 |
| DIE SET N. 75 - LENGTH 125 MM | 75 | 75-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 99-109 |
| DIE SET N. 112 - LENGTH 125 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 125 MM | 122 | 122-127 |
| KIT 13 DIES MB350EVO/L (N.15 TO N.73) | - | - |
| KIT 19 DIES MB350EVO/L (N.15 TO N.76) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

GOLDENCRIMP 420 EVO

PG.561

| DESCRIPTION | N° | CRIMP RANGE |
|--|------------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 60-62 |
| DIE SET N. 62* - LENGTH 125 MM | 62* | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-76 |
| DIE SET N. 75 - LENGTH 125 MM | 75 | 75-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 76* - LENGTH 135 MM | 76* | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-82 |
| DIE SET N. 82 - LENGTH 135 MM | 82 | 82-90 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 86* - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 86* | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 95* - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 95* | 95-105 |
| KIT 13 DIE SET GOLDENCRIMP420EVO (15 TO 73) | - | - |
| KIT 19 DIE SET GOLDENCRIMP420EVO (15 TO 76) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

GOLDENCRIMP 450

PG.563

| DESCRIPTION | N° | CRIMP RANGE |
|---|------------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 62* - LENGTH 125 MM | 62* | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 73 - LENGTH 125-28 MM, REINFORCED PIN | 73 | 73-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 76* - LENGTH 135 MM | 76* | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-82 |
| DIE SET N. 82 - LENGTH 135 MM | 82 | 82-90 |
| DIE SET N. 86* - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 86* | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 95* | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 95-105 |
| DIE SET N. 105 - LENGTH 150 MM | 105 | 99-109 |
| DIE SET N. 112 - LENGTH 150 MM | 112 | 112-122 |
| DIE SET N. 117 - LENGTH 110 MM | 117 | 117-127 |
| DIE SET N. 122 - LENGTH 130 MM, REINFORCED PIN | 122 | 122-130 |
| KIT 13 DIE SET GOLDENCRIMP450EVO (15 TO 73) | - | - |
| KIT 19 DIE SET GOLDENCRIMP450EVO (15 TO 76) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MVB 137 EVO R

PG.564

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 4 DIES MVB137EVOR (N.15 TO N.33) | - | - |
| KIT 5 DIES MVB137EVOR (N.15 TO N.39) | - | - |
| KIT 6 DIES MVB137EVOR (N.15 TO N.39) | - | - |
| KIT 7 DIES MVB137EVOR (N.15 TO N.39) | - | - |
| KIT 9 DIES MVB137EVOR (N.15 TO N.45) | - | - |
| KIT 9 DIES MVB137EVOR (N.15 TO N.48) | - | - |
| KIT 10 DIES MVB137EVOR (N.15 TO N.48) | - | - |
| KIT 13 DIES MVB137EVOR (N.15 TO N.51) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MV 137 L

PG.565

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 56 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 56 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 56 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 4 DIES MV137L (N.15 TO N.33) | - | - |
| KIT 5 DIES MV137L (N.15 TO N.39) | - | - |
| KIT 6 DIES MV137L (N.15 TO N.39) | - | - |
| KIT 7 DIES MV137L (N.15 TO N.39) | - | - |
| KIT 9 DIES MV137L (N.15 TO N.45) | - | - |
| KIT 9 DIES MV137L (N.15 TO N.48) | - | - |
| KIT 10 DIES MV137L (N.15 TO N.48) | - | - |
| KIT 13 DIES MV137L (N.15 TO N.51) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MV 240

PG.566

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 17-18 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 100 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 100 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 100 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 100 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 72 - LENGTH 100 MM | 72 | 72-80 |
| KIT 9 DIES MV240 (N.15 TO N.51) | - | - |
| KIT 11 DIES MV240 (N.15 TO N.66) | - | - |
| KIT 12 DIES MV240 (N.15 TO N.66) | - | - |
| KIT 17 DIES MV240 (N.15 TO N.70) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MV 240 L

PG.567

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 100 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 62 - LENGTH 100 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 100 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| KIT 9 DIES MV240L (N.15 TO N.51) | - | - |
| KIT 11 DIES MV240L (N.15 TO N.66) | - | - |
| KIT 12 DIES MV240L (N.15 TO N.66) | - | - |
| KIT 17 DIES MV240L (N.15 TO N.70) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MV 350

PG.568

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 17-18 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 62 - LENGTH 100 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-76 |
| DIE SET N. 75 - LENGTH 125 MM | 75 | 75-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 99-109 |
| DIE SET N. 112 - LENGTH 125 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 125 MM | 122 | 122-127 |
| KIT 12 DIES MV350 (N.15 TO N.66) | - | - |
| KIT 17 DIES MV350 (N.15 TO N.70) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MV 350 L

PG.568

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 56 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 17-18 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 62 - LENGTH 100 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-76 |
| DIE SET N. 75 - LENGTH 125 MM | 75 | 75-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 99-109 |
| DIE SET N. 112 - LENGTH 125 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 125 MM | 122 | 122-127 |
| KIT 12 DIES MV350L (N.15 TO N.66) | - | - |
| KIT 17 DIES MV350L (N.15 TO N.70) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MS 140

PG.570

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 9 - LENGTH 56 MM | 9 | 09-10 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 70 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 70 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 70 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 70 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 70 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 70 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 70 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 70 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 70 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 70 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 75 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 70 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 70-28 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 70 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 70 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 75 MM | 51 | 51-57 |
| KIT 10 DIES MS140 (N.15 TO N.48) | - | - |
| KIT 12 DIES MS140 (N.15 TO N.48) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MS 320

PG.571

| DESCRIPTION | N° | CRIMP RANGE |
|---|-----------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 90 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 90 MM | 12 | 12-15 |
| DIE SET N. 14 - LENGTH 90 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 70 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 90 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 70 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 90 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 90 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 90 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 95 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 100 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 100 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 100 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 100 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 62 - LENGTH 125 MM | 62 | 62-66 |
| DIE SET N. 66 - LENGTH 100 MM | 66 | 66-70 |
| DIE SET N. 66 - LENGTH 125 MM | 66 | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 70 - LENGTH 125 MM | 70 | 70-72 |
| DIE SET N. 73 - LENGTH 120 MM | 73 | 73-76 |
| DIE SET N. 76 - LENGTH 120 MM | 76 | 76-86 |
| DIE SET N. 80 - LENGTH 100 MM | 80 | 80-86 |
| DIE SET N. 86 - LENGTH 100-65 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 100 MM, REINFORCED PIN | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 100 MM, REINFORCED PIN | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 100 MM | 99 | 99-109 |
| DIE SET N. 112 - LENGTH 100 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 100 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 100 MM | 122 | 122-127 |
| KIT 13 DIES MS320 (N.15 TO N.73) | - | - |
| KIT 19 DIES MS320 (N.15 TO N.76) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MS 480

PG.573

| DESCRIPTION | N° | CRIMP RANGE |
|---|------------|--------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 90 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 90 MM | 12 | 12-15 |
| DIE SET N. 14- LENGTH 90 MM | 14 | 14-15 |
| DIE SET N. 15 - LENGTH 90 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 90 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 90 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 90 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 90 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 90 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 100 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 62* - LENGTH 125 MM | 62* | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 110 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 73 - LENGTH 125-28 MM, REINFORCED PIN | 73 | 73-76 |
| DIE SET N. 76 - LENGTH 135 MM | 76 | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 82 - LENGTH 135 MM | 82 | 82-90 |
| DIE SET N. 86 - LENGTH 150 MM | 86 | 86-90 |
| DIE SET N. 86 - LENGTH 125-48 MM | 86 | |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 150 MM | 95 | 95-105 |
| DIE SET N. 95- LENGTH 125-48 MM | 95 | |
| DIE SET N. 99 - LENGTH 125 MM, REINFORCED PIN | 99 | 99-105 |
| DIE SET N. 105 - LENGTH 150 MM | 105 | 105-112 |
| DIE SET N. 112 - LENGTH 150 MM | 112 | 112-122 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 130 MM, REINFORCED PIN | 122 | 122 -130 |
| DIE SET N. 130 - LENGTH 145 MM | 130 | 130-140 |
| KIT 13 DIES MS480 (N.15 TO N.73) | - | - |
| KIT 19 DIES MS480 (N.15 TO N.76) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MS 800

PG.575

| DESCRIPTION | N° | CRIMP RANGE |
|---|------------|----------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 90 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 90 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 90 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 90 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 90 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 90 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 90 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 62* - LENGTH 125 MM | 62* | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 110 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 73 - LENGTH 125-28 MM, REINFORCED PIN | 73 | 73-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 76* - LENGTH 135 MM | 76* | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 82 - LENGTH 135 MM | 82 | 82-90 |
| DIE SET N. 86 - LENGTH 150 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 150 MM | 95 | 95-105 |
| DIE SET N. 105 - LENGTH 180 MM | 105 | 105-112 |
| DIE SET N. 112 - LENGTH 150 MM | 112 | 112-122 |
| DIE SET N. 130 - LENGTH 180 MM | 130 | 130-140 |
| KIT 13 DIES MS800 (N.15 TO N.73) | - | - |
| KIT 18 DIES MS800 (N.39 TO N.130) | - | - |

- REFERENCES IN **BOLD** ARE INCLUDED IN THE STANDARD DIE KIT (ALSO IN **BOLD**)

MS 320 OPEN HEAD

PG.577

| DESCRIPTION | N° | CRIMP RANGE |
|--------------------------------|-----|-------------|
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-80 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 84 - LENGTH 125 MM | 84 | 86-90 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 99-106 |
| DIE SET N. 106 - LENGTH 125 MM | 106 | 106-112 |
| DIE SET N. 112 - LENGTH 125 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 125 MM | 122 | 122-125 |
| DIE SET N.125 - LENGTH 125 MM | 125 | 125-128 |
| DIE SET N. 128 - LENGTH 125 MM | 128 | 128-130 |
| DIE SET N. 130 - LENGTH 125 MM | 130 | 130-140 |
| DIE SET N. 135 - LENGTH 125 MM | 135 | 135-145 |
| DIE SET N. 150 - LENGTH 125 MM | 150 | 150-160 |
| DIE SET N. 156 - LENGTH 125 MM | 156 | 156-166 |
| DIE SET N. 158 - LENGTH 125 MM | 158 | 158-168 |
| DIE SET N. 165 - LENGTH 125 MM | 165 | 165-185 |
| DIE SET N. 175 - LENGTH 125 MM | 175 | 175-195 |
| DIE SET N. 181 - LENGTH 125 MM | 181 | 181-201 |
| DIE SET N. 185 - LENGTH 125 MM | 185 | 185-205 |
| DIE SET N. 188 - LENGTH 125 MM | 188 | 188-208 |
| DIE SET N. 190 - LENGTH 125 MM | 190 | 190-210 |

- OTHER DIMENSIONS UPON REQUEST

MS 450-200

PG.578

| DESCRIPTION | N° | CRIMP RANGE |
|--|-----|-------------|
| DIE SET N. 4 - LENGTH 56 MM | 4 | 04-05 |
| DIE SET N. 6 - LENGTH 56 MM | 6 | 06-08 |
| DIE SET N. 7 - LENGTH 56 MM | 7 | 07-08 |
| DIE SET N. 8 - LENGTH 56 MM | 8 | 08-09 |
| DIE SET N. 10 - LENGTH 56 MM | 10 | 10-12 |
| DIE SET N. 12 - LENGTH 56 MM | 12 | 12-15 |
| DIE SET N. 15 - LENGTH 56 MM | 15 | 15-18 |
| DIE SET N. 17 - LENGTH 56 MM | 17 | 17-18 |
| DIE SET N. 18 - LENGTH 56 MM | 18 | 18-21 |
| DIE SET N. 20 - LENGTH 56 MM | 20 | 20-21 |
| DIE SET N. 21 - LENGTH 56 MM | 21 | 21-24 |
| DIE SET N. 24 - LENGTH 70 MM | 24 | 24-27 |
| DIE SET N. 27 - LENGTH 90 MM | 27 | 27-30 |
| DIE SET N. 30 - LENGTH 90 MM | 30 | 30-33 |
| DIE SET N. 33 - LENGTH 90 MM | 33 | 33-36 |
| DIE SET N. 36 - LENGTH 90 MM | 36 | 36-39 |
| DIE SET N. 39 - LENGTH 90 MM | 39 | 39-42 |
| DIE SET N. 42 - LENGTH 90 MM | 42 | 42-45 |
| DIE SET N. 45 - LENGTH 100 MM | 45 | 45-48 |
| DIE SET N. 48 - LENGTH 100 MM | 48 | 48-51 |
| DIE SET N. 51 - LENGTH 110 MM | 51 | 51-57 |
| DIE SET N. 54 - LENGTH 110 MM | 54 | 54-57 |
| DIE SET N. 57 - LENGTH 110 MM | 57 | 57-62 |
| DIE SET N. 60 - LENGTH 110 MM | 60 | 60-62 |
| DIE SET N. 62 - LENGTH 110 MM | 62 | 62-66 |
| DIE SET N. 62* - LENGTH 125 MM | 62* | 62-66 |
| DIE SET N. 66 - LENGTH 110 MM | 66 | 66-70 |
| DIE SET N. 66* - LENGTH 125 MM | 66* | 66-70 |
| DIE SET N. 70 - LENGTH 100 MM | 70 | 70-72 |
| DIE SET N. 70* - LENGTH 125 MM | 70* | 70-72 |
| DIE SET N. 73 - LENGTH 125-28 MM, REINFORCED PIN | 73 | 73-76 |
| DIE SET N. 76 - LENGTH 125 MM | 76 | 76-86 |
| DIE SET N. 76* - LENGTH 135 MM | 76* | 76-86 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-82 |
| DIE SET N. 82 - LENGTH 135 MM | 82 | 82-90 |
| DIE SET N. 86* - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 86* | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 150 MM (FOR DIAMONDSPIR 2½") | 95* | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 95-105 |
| DIE SET N. 105 - LENGTH 150 MM | 105 | 99-109 |
| DIE SET N. 112 - LENGTH 150 MM | 112 | 112-122 |
| DIE SET N. 117 - LENGTH 110 MM | 117 | 117-127 |
| DIE SET N. 122 - LENGTH 130 MM, REINFORCED PIN | 122 | 122-130 |
| KIT 13 DIE SET XLCRIMP450-200 (15 TO 73) | - | - |
| KIT 19 DIE SET XLCRIMP450-200(15 TO 76) | - | - |

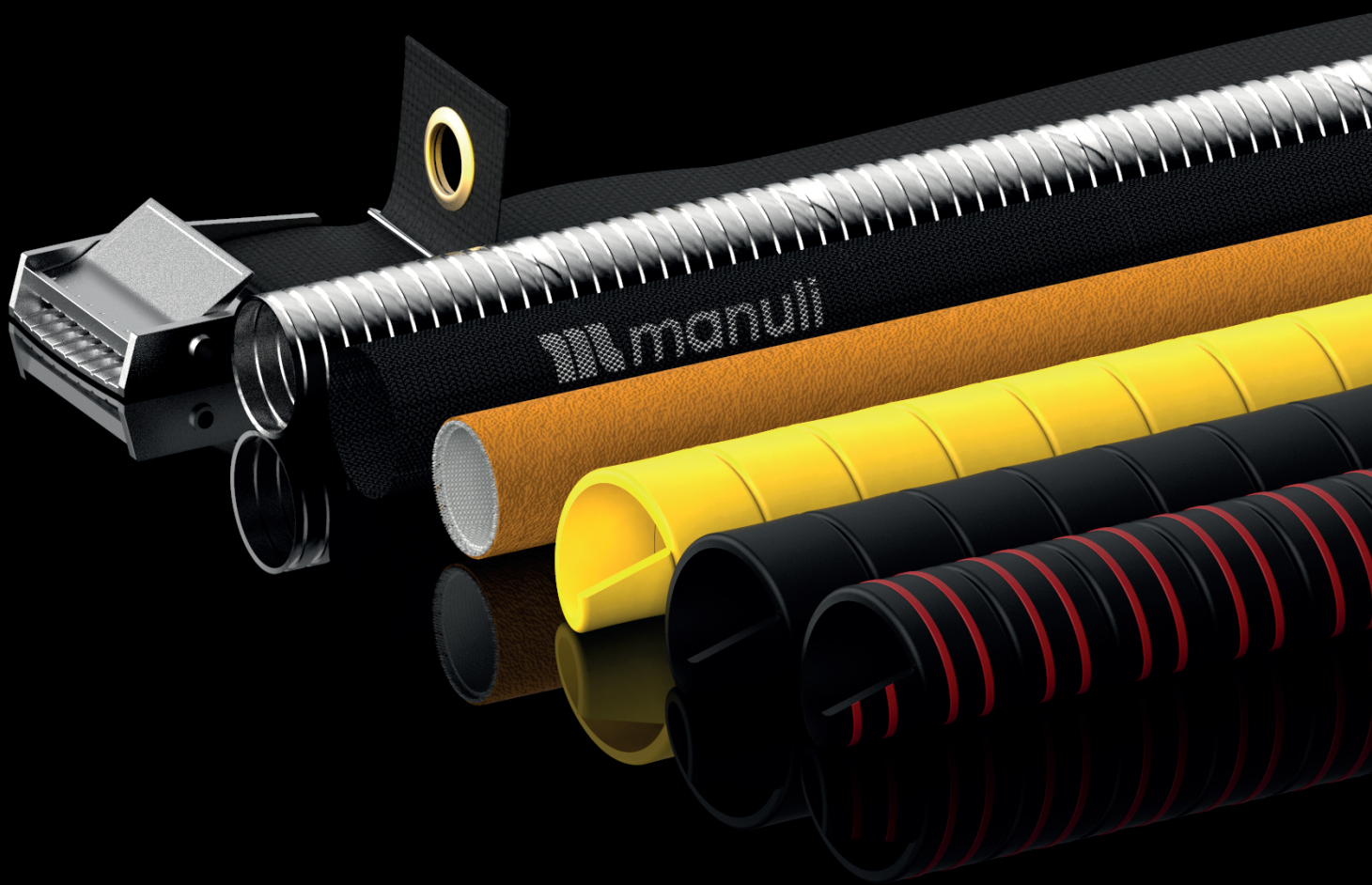
- OTHER DIMENSIONS UPON REQUEST

MS 550/MS 550-16

PG.579

| DESCRIPTION | N° | CRIMP RANGE |
|--------------------------------|-----|-------------|
| DIE SET N. 73 - LENGTH 125 MM | 73 | 73-80 |
| DIE SET N. 80 - LENGTH 125 MM | 80 | 80-86 |
| DIE SET N. 86 - LENGTH 125 MM | 86 | 86-90 |
| DIE SET N. 90 - LENGTH 125 MM | 90 | 90-95 |
| DIE SET N. 95 - LENGTH 125 MM | 95 | 95-105 |
| DIE SET N. 99 - LENGTH 125 MM | 99 | 99-112 |
| DIE SET N. 112 - LENGTH 125 MM | 112 | 112-117 |
| DIE SET N. 117 - LENGTH 125 MM | 117 | 117-122 |
| DIE SET N. 122 - LENGTH 125 MM | 122 | 122-130 |
| DIE SET N. 130 - LENGTH 200 MM | 130 | 130-140 |
| DIE SET N. 140 - LENGTH 200 MM | 140 | 140-150 |
| DIE SET N. 150 - LENGTH 200 MM | 150 | 150-160 |
| DIE SET N. 156 - LENGTH 200 MM | 156 | 156-166 |
| DIE SET N. 160 - LENGTH 200 MM | 160 | 160-180 |
| DIE SET N. 165 - LENGTH 200 MM | 165 | 165-185 |
| DIE SET N. 170 - LENGTH 200 MM | 170 | 170-190 |
| DIE SET N. 176 - LENGTH 200 MM | 176 | 176-196 |
| DIE SET N. 178 - LENGTH 200 MM | 178 | 178-198 |
| DIE SET N. 180 - LENGTH 200 MM | 180 | 180-200 |
| DIE SET N. 200 - LENGTH 200 MM | 200 | 200-220 |
| DIE SET N. 215 - LENGTH 200 MM | 215 | 215-235 |
| DIE SET N. 225 - LENGTH 200 MM | 225 | 225-245 |
| DIE SET N. 230 - LENGTH 200 MM | 230 | 230-250 |
| DIE SET N. 235 - LENGTH 200 MM | 235 | 235-255 |
| DIE SET N. 250 - LENGTH 200 MM | 250 | 250-270 |
| DIE SET N. 260 - LENGTH 200 MM | 260 | 260-280 |
| DIE SET N. 265 - LENGTH 200 MM | 265 | 265-285 |
| DIE SET N. 280 - LENGTH 200 MM | 280 | 280-300 |
| DIE SET N. 282 - LENGTH 200 MM | 282 | 282-302 |
| DIE SET N. 285 - LENGTH 200 MM | 285 | 285-305 |
| DIE SET N. 290 - LENGTH 200 MM | 290 | 290-310 |
| DIE SET N. 308 - LENGTH 200 MM | 308 | 308-328 |
| DIE SET N. 317 - LENGTH 200 MM | 317 | 317-337 |
| DIE SET N. 330 - LENGTH 200 MM | 330 | 330-350 |
| DIE SET N. 340 - LENGTH 200 MM | 340 | 340-360 |

- OTHER DIMENSIONS UPON REQUEST



HOSE PROTECTIONS

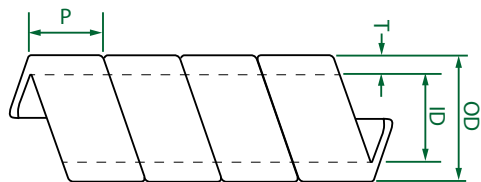
HOSE PROTECTIONS INDEX

The Manuli Hydraulics range of hose protections is the culmination of decades of experience in the hydraulic connectors industry. Our hose protections are designed to meet the most stringent of international safety standards, whilst also actively preventing hose damage and potential injury.

| PROTECTION TYPE | KEY FEATURES | | | | | | |
|---|--|------------|--------------------------|---------------------------------|--|---|----------|
| | Material | Size (mm) | Colour | Temperature Range | Specifications | Key Properties | Page No. |
|  <p>PROTECTION SPRING PS</p> | POLYETHYLENE | 9 - 84 | BLACK OR YELLOW | -40°C TO +90°C | MANULI® DESIGN | HIGH FLEXIBILITY; HIGH ABRASION RESISTANCE | 608 |
|  <p>MINING PROTECTION SPRING MPS</p> | POLYETHYLENE (ANTISTATIC) | 12 - 84 | BLACK WITH TWO RED LINES | -40°C TO +90°C | MANULI® DESIGN; FRAS; MSHA; ISO 6805 | HIGH ABRASION RESISTANCE; FLAME RETARDANT & ANTISTATIC PROPERTIES | 609 |
|  <p>HT PROTECTION SPRING HTPS</p> | POLYAMMIDE | 10 - 60 | BLACK | -40°C TO +120°C | MANULI® DESIGN; MSHA | HIGH TEMPERATURE AND ABRASION RESISTANCE; FLAME RETARDANT; VERY HIGH FLEXIBILITY | 610 |
|  <p>TEXTILE SLEEVE TSL</p> | POLYESTER FIBRES | 18 - 110 | BLACK | -50°C TO +100°C (PEAKS +140°C) | MANULI® DESIGN; FRAS; MSHA; MDG41 | FLUID ENERGY DIFFUSION; ANTI-ABRASIVE; FLAME RETARDANT & ANTISTATIC PROPERTIES | 611 |
|  <p>FIRE SLEEVE FSL</p> | SILICONE SLEEVE WITH GLASS FIBRE BRAID | 13 - 76 | ORANGE | -60°C TO +260°C (PEAKS +1500°C) | MANULI® DESIGN; NFF16-101 & P92-507 (CLASS FO & M2) | EXTREME HEAT RESISTANCE; EXTREME FLEXIBILITY AT LOW TEMPERATURES | 612 |
|  <p>HEAT SHRINKABLE SLEEVE HSSL</p> | POLYOLEFIN | 31 - 51 | BLACK | -55°C TO +125°C | UL224 VW-1 | SELF EXTINGUISHING FLAME RESISTANCE; LOW VOLTAGE ELECTRICAL INSULATION | 613 |
|  <p>STAINLESS STEEL ARMOUR GUARD SSAG</p> | STAINLESS STEEL | 10 - 51 | SILVER | - | API 16D FIRE TEST | HIGH ABRASION RESISTANCE; EXTREME HEAT RESISTANCE | 614 |
|  <p>TEXTILE CLINCH STRAP TCS</p> | POLYESTER FIBRES | 400 - 1500 | BLACK | -50°C TO +100°C | MANULI® DESIGN; FRAS; MSHA | FLAME RETARDANT & ANTISTATIC PROPERTIES | 615 |

PROTECTION SPRING

PS



| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | | | | | | | |
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|

| | | INTERNAL DIAMETER (ID) | | OUTSIDE DIAMETER (OD) | | WALL THICKNESS (T) | | PITCH (P) | | WRAPPING RANGE | | WEIGHT | | STANDARD PACK LENGTH | |
|----------------|--------------------------------|------------------------|------|-----------------------|------|--------------------|-------|-----------|------|----------------|-----------|--------|-------|----------------------|----|
| | | MM | IN | MM | IN | MM | IN | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP11B01009E099 | BLACK PROTECTION SPRING DN 9 | 9.0 | 0.35 | 13.0 | 0.51 | 2.00 | 0.079 | 11.0 | 0.43 | 9-13 | 0.35-0.51 | 50 | 0.03 | 20 | 66 |
| JP11B01012E099 | BLACK PROTECTION SPRING DN 12 | 12.0 | 0.47 | 16.5 | 0.65 | 2.25 | 0.089 | 13.0 | 0.51 | 12-17 | 0.47-0.66 | 60 | 0.04 | 20 | 66 |
| JP11B01015E099 | BLACK PROTECTION SPRING DN 15 | 15.0 | 0.59 | 20.0 | 0.79 | 2.50 | 0.098 | 15.5 | 0.61 | 15-22 | 0.59-0.86 | 90 | 0.06 | 20 | 66 |
| JP11B01019E099 | BLACK PROTECTION SPRING DN 19 | 19.0 | 0.75 | 24.5 | 0.96 | 2.75 | 0.108 | 19.0 | 0.75 | 19-28 | 0.74-1.1 | 150 | 0.10 | 20 | 66 |
| JP11B01023E099 | BLACK PROTECTION SPRING DN 23 | 23.0 | 0.91 | 30.0 | 1.18 | 3.50 | 0.138 | 23.0 | 0.91 | 23-33 | 0.9-1.29 | 225 | 0.15 | 20 | 66 |
| JP11B01031E099 | BLACK PROTECTION SPRING DN 31 | 30.5 | 1.20 | 39.0 | 1.54 | 4.25 | 0.167 | 29.0 | 1.14 | 30-44 | 1.18-1.73 | 350 | 0.24 | 20 | 66 |
| JP11B01038E099 | BLACK PROTECTION SPRING DN 38 | 38.0 | 1.50 | 46.5 | 1.83 | 4.25 | 0.167 | 36.0 | 1.42 | 38-65 | 1.49-2.55 | 400 | 0.27 | 20 | 66 |
| JP11B01047E099 | BLACK PROTECTION SPRING DN 47 | 47.0 | 1.85 | 58.0 | 2.28 | 5.50 | 0.217 | 39.5 | 1.56 | 47-70 | 1.85-2.75 | 600 | 0.40 | 20 | 66 |
| JP11B01061E099 | BLACK PROTECTION SPRING DN 61 | 61.0 | 2.40 | 73.0 | 2.87 | 6.00 | 0.236 | 44.0 | 1.73 | 61-90 | 2.4-3.54 | 950 | 0.64 | 20 | 66 |
| JP11B01071E099 | BLACK PROTECTION SPRING DN 71 | 70.5 | 2.78 | 84.5 | 3.33 | 7.00 | 0.276 | 51.0 | 2.01 | 70-150 | 2.75-5.9 | 1150 | 0.77 | 20 | 66 |
| JP11B01084E099 | BLACK PROTECTION SPRING DN 84 | 84.0 | 3.31 | 99.0 | 3.90 | 7.50 | 0.295 | 56.0 | 2.20 | 84-200 | 3.3-7.87 | 1500 | 1.01 | 10 | 33 |
| JP11Y01009E099 | YELLOW PROTECTION SPRING DN 9 | 9.0 | 0.35 | 13.0 | 0.51 | 2.00 | 0.079 | 11.0 | 0.43 | 9-13 | 0.35-0.51 | 50 | 0.03 | 20 | 66 |
| JP11Y01012E099 | YELLOW PROTECTION SPRING DN 12 | 12.0 | 0.47 | 16.5 | 0.65 | 2.25 | 0.089 | 13.0 | 0.51 | 12-17 | 0.47-0.66 | 60 | 0.04 | 20 | 66 |
| JP11Y01015E099 | YELLOW PROTECTION SPRING DN 15 | 15.0 | 0.59 | 20.0 | 0.79 | 2.50 | 0.098 | 15.5 | 0.61 | 15-22 | 0.59-0.86 | 90 | 0.06 | 20 | 66 |
| JP11Y01019E099 | YELLOW PROTECTION SPRING DN 19 | 19.0 | 0.75 | 24.5 | 0.96 | 2.75 | 0.108 | 19.0 | 0.75 | 19-28 | 0.74-1.1 | 150 | 0.10 | 20 | 66 |
| JP11Y01023E099 | YELLOW PROTECTION SPRING DN 23 | 23.0 | 0.91 | 30.0 | 1.18 | 3.50 | 0.138 | 23.0 | 0.91 | 23-33 | 0.9-1.29 | 225 | 0.15 | 20 | 66 |
| JP11Y01031E099 | YELLOW PROTECTION SPRING DN 31 | 30.5 | 1.20 | 39.0 | 1.54 | 4.25 | 0.167 | 29.0 | 1.14 | 30-44 | 1.18-1.73 | 350 | 0.24 | 20 | 66 |
| JP11Y01038E099 | YELLOW PROTECTION SPRING DN 38 | 38.0 | 1.50 | 46.5 | 1.83 | 4.25 | 0.167 | 36.0 | 1.42 | 38-65 | 1.49-2.55 | 400 | 0.27 | 20 | 66 |
| JP11Y01047E099 | YELLOW PROTECTION SPRING DN 47 | 47.0 | 1.85 | 58.0 | 2.28 | 5.50 | 0.217 | 39.5 | 1.56 | 47-70 | 1.85-2.75 | 600 | 0.40 | 20 | 66 |
| JP11Y01061E099 | YELLOW PROTECTION SPRING DN 61 | 61.0 | 2.40 | 73.0 | 2.87 | 6.00 | 0.236 | 44.0 | 1.73 | 61-90 | 2.4-3.54 | 950 | 0.64 | 20 | 66 |
| JP11Y01071E099 | YELLOW PROTECTION SPRING DN 71 | 70.5 | 2.78 | 84.5 | 3.33 | 7.00 | 0.276 | 51.0 | 2.01 | 70-150 | 2.75-5.9 | 1150 | 0.77 | 20 | 66 |
| JP11Y01084E099 | YELLOW PROTECTION SPRING DN 84 | 84.0 | 3.31 | 99.0 | 3.90 | 7.50 | 0.295 | 56.0 | 2.20 | 84-200 | 3.3-7.87 | 1500 | 1.01 | 10 | 33 |

KEY FEATURES

- High abrasion resistance
- High flexibility
- Resistant to water, oils, fuels and hydraulic fluids
- Easy to install, no clamps needed
- High ozone and external agents resistance

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

90 °C, 194 °F

MATERIAL

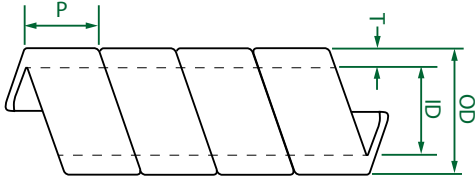
Polyethylene

APPLICABLE SPECS

Manuli® Design

MINING PROTECTION SPRING

MPS



| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | | | | | | | |
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|

| | | INTERNAL DIAMETER (ID) | | OUTSIDE DIAMETER (OD) | | WALL THICKNESS (T) | | PITCH (P) | | WRAPPING RANGE | | WEIGHT | | STANDARD PACK LENGTH | |
|----------------|--------------------------------|------------------------|------|-----------------------|------|--------------------|-------|-----------|------|----------------|-----------|--------|-------|----------------------|----|
| | | MM | IN | MM | IN | MM | IN | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP11B02012E099 | MINING PROTECTION SPRING DN 12 | 12.0 | 0.47 | 16.5 | 0.65 | 2.25 | 0.089 | 13.00 | 0.51 | 12-17 | 0.47-0.66 | 60 | 0.04 | 20 | 66 |
| JP11B02015E099 | MINING PROTECTION SPRING DN 15 | 15.0 | 0.59 | 20.0 | 0.79 | 2.50 | 0.098 | 15.50 | 0.61 | 15-22 | 0.59-0.86 | 90 | 0.06 | 20 | 66 |
| JP11B02019E099 | MINING PROTECTION SPRING DN 19 | 19.0 | 0.75 | 24.5 | 0.96 | 2.75 | 0.108 | 19.00 | 0.75 | 19-28 | 0.74-1.10 | 150 | 0.10 | 20 | 66 |
| JP11B02023E099 | MINING PROTECTION SPRING DN 23 | 23.0 | 0.91 | 30.0 | 1.18 | 3.50 | 0.138 | 23.00 | 0.91 | 23-33 | 0.91-1.29 | 225 | 0.15 | 20 | 66 |
| JP11B02031E099 | MINING PROTECTION SPRING DN 31 | 30.5 | 1.20 | 39.0 | 1.54 | 4.25 | 0.167 | 29.00 | 1.14 | 30-44 | 1.18-1.73 | 350 | 0.24 | 20 | 66 |
| JP11B02038E099 | MINING PROTECTION SPRING DN 38 | 38.0 | 1.50 | 46.5 | 1.83 | 4.25 | 0.167 | 36.00 | 1.42 | 38-65 | 1.49-2.55 | 400 | 0.27 | 20 | 66 |
| JP11B02047E099 | MINING PROTECTION SPRING DN 47 | 47.0 | 1.85 | 58.0 | 2.28 | 5.50 | 0.217 | 39.50 | 1.56 | 47-70 | 1.85-2.75 | 600 | 0.40 | 20 | 66 |
| JP11B02061E099 | MINING PROTECTION SPRING DN 61 | 61.0 | 2.40 | 73.0 | 2.87 | 6.00 | 0.236 | 44.00 | 1.73 | 61-90 | 2.40-3.54 | 950 | 0.64 | 20 | 66 |
| JP11B02071E099 | MINING PROTECTION SPRING DN 71 | 70.5 | 2.78 | 84.5 | 3.33 | 7.00 | 0.276 | 51.00 | 2.01 | 70-150 | 2.75-5.9 | 1150 | 0.77 | 20 | 66 |
| JP11B02084E099 | MINING PROTECTION SPRING DN 84 | 84.0 | 3.31 | 99.0 | 3.90 | 7.50 | 0.295 | 56.00 | 2.20 | 84-200 | 3.31-7.87 | 1500 | 1.01 | 10 | 33 |

KEY FEATURES

- High abrasion resistance
- High flexibility
- Flame retardant and antistatic properties
- Resistant to water, oils, fuels and hydraulic fluids
- Easy to install, no clamps needed
- High visibility in field due to red central lines

CONTINUOUS SERVICE TEMPERATURE RANGE

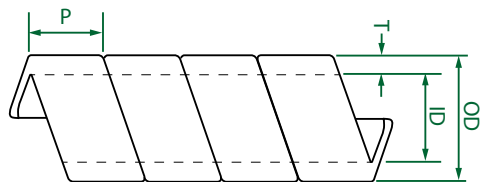
-40 °C, -40 °F
90 °C, 194 °F

MATERIAL

Polyethylene (antistatic)

APPLICABLE SPECS

Manuli® Design, MSHA, FRAS, ISO 6805



HIGH TEMPERATURE PROTECTION SPRING

HTPS

| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | | | | | | | |
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
|-----------|-------------|------------|--|--|--|--|--|--|--|--|--|--|--|--|--|

| | | INTERNAL DIAMETER (ID) | | OUTSIDE DIAMETER (OD) | | WALL THICKNESS (T) | | PITCH (P) | | WRAPPING RANGE | | WEIGHT | | STANDARD PACK LENGTH | |
|----------------|----------------------------|------------------------|------|-----------------------|------|--------------------|-------|-----------|------|----------------|-----------|--------|-------|----------------------|------|
| | | MM | IN | MM | IN | MM | IN | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP12B03010I099 | HT PROTECTION SPRING DN 10 | 9.5 | 0.37 | 11.5 | 0.45 | 1.00 | 0.039 | 6.9 | 0.27 | 9-13 | 0.35-0.51 | 27 | 0.02 | 24 | 79.2 |
| JP12B03011I099 | HT PROTECTION SPRING DN 11 | 11.0 | 0.43 | 13.0 | 0.51 | 1.00 | 0.039 | 6.9 | 0.27 | 11-13 | 0.43-0.52 | 35 | 0.025 | 24 | 78.7 |
| JP12B03013I099 | HT PROTECTION SPRING DN 13 | 12.7 | 0.50 | 16.3 | 0.64 | 1.80 | 0.071 | 13.0 | 0.51 | 13-17 | 0.51-0.67 | 45 | 0.03 | 24 | 79.2 |
| JP12B03014I099 | HT PROTECTION SPRING DN 14 | 14.0 | 0.55 | 17.6 | 0.69 | 1.80 | 0.071 | 13.0 | 0.51 | 14-17 | 0.55-0.67 | 50 | 0.035 | 24 | 78.7 |
| JP12B03016I099 | HT PROTECTION SPRING DN 16 | 16.0 | 0.63 | 19.6 | 0.77 | 1.80 | 0.071 | 13.0 | 0.51 | 16-22 | 0.63-0.87 | 55 | 0.04 | 24 | 79.2 |
| JP12B03019I099 | HT PROTECTION SPRING DN 19 | 19.0 | 0.75 | 23.6 | 0.93 | 2.30 | 0.091 | 16.0 | 0.63 | 19-28 | 0.75-1.10 | 100 | 0.07 | 24 | 79.2 |
| JP12B03025I099 | HT PROTECTION SPRING DN 25 | 25.4 | 1.00 | 30.0 | 1.18 | 2.30 | 0.091 | 16.0 | 0.63 | 25-40 | 0.98-1.57 | 110 | 0.07 | 24 | 79.2 |
| JP12B03028I099 | HT PROTECTION SPRING DN 28 | 28.0 | 1.10 | 35.2 | 1.39 | 3.60 | 0.142 | 25.0 | 0.98 | 28-48 | 1.10-1.89 | 225 | 0.15 | 24 | 79.2 |
| JP12B03035I099 | HT PROTECTION SPRING DN 35 | 35.0 | 1.38 | 42.2 | 1.66 | 3.60 | 0.142 | 25.0 | 0.98 | 35-50 | 1.38-1.97 | 270 | 0.18 | 24 | 79.2 |
| JP12B03050I099 | HT PROTECTION SPRING DN 50 | 50.0 | 1.97 | 60.0 | 2.36 | 5.00 | 0.197 | 35.0 | 1.38 | 50-70 | 1.97-2.76 | 540 | 0.36 | 12 | 39.6 |
| JP12B03060I099 | HT PROTECTION SPRING DN 60 | 60.0 | 2.36 | 70.0 | 2.76 | 5.00 | 0.197 | 35.0 | 1.38 | 60-80 | 2.36-3.15 | 640 | 0.43 | 12 | 39.6 |

KEY FEATURES

- High temperature resistance
- High abrasion resistance
- Very high flexibility
- Very low bend radius
- Flame retardant, MSHA approved
- Resistant to water, oils, fuels and hydraulic fluids
- Easy to install, no clamps needed

CONTINUOUS SERVICE TEMPERATURE RANGE

-40 °C, -40 °F

120 °C, 248 °F

MATERIAL

Polyamide

APPLICABLE SPECS

Manuli® Design, MSHA

TEXTILE SLEEVE

TSL



| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | |
|----------------|-----------------------|------------------------|------|--------------------------|------|--------|-------|----------------------|-----|
| | | INTERNAL DIAMETER (ID) | | EXTERNAL FLATTENED WIDTH | | WEIGHT | | STANDARD PACK LENGTH | |
| | | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP23B06018I099 | TEXTILE SLEEVE DN 18 | 18.0 | 0.71 | 32.0 | 1.26 | 2.0 | 4.4 | 50 | 165 |
| JP23B06023I099 | TEXTILE SLEEVE DN 23 | 23.0 | 0.91 | 40.0 | 1.57 | 2.2 | 4.8 | 50 | 165 |
| JP23B06029I099 | TEXTILE SLEEVE DN 29 | 29.0 | 1.14 | 49.0 | 1.93 | 2.5 | 5.5 | 50 | 165 |
| JP23B06036I099 | TEXTILE SLEEVE DN 36 | 36.0 | 1.42 | 56.0 | 2.20 | 3.0 | 6.6 | 50 | 165 |
| JP23B06040I099 | TEXTILE SLEEVE DN 40 | 40.0 | 1.57 | 63.0 | 2.48 | 3.2 | 7.0 | 50 | 165 |
| JP23B06056I099 | TEXTILE SLEEVE DN 56 | 56.0 | 2.20 | 88.0 | 3.46 | 4.0 | 8.8 | 50 | 165 |
| JP23B06063I099 | TEXTILE SLEEVE DN 63 | 63.0 | 2.48 | 105.0 | 4.13 | 5.0 | 11.0 | 50 | 165 |
| JP23B06071I099 | TEXTILE SLEEVE DN 71 | 70.0 | 2.80 | 115.0 | 4.53 | 5.5 | 12.1 | 50 | 165 |
| JP23B06093I099 | TEXTILE SLEEVE DN 93 | 93.0 | 3.66 | 146.0 | 5.75 | 7.2 | 15.8 | 50 | 165 |
| JP23B06110I099 | TEXTILE SLEEVE DN 110 | 110.0 | 4.33 | 176.0 | 6.93 | 8.5 | 18.7 | 50 | 165 |

KEY FEATURES

- High abrasion resistance
- Resistant to water, oils, fuels and hydraulic fluids
- Fluid energy diffusion in case of hose failure to prevent direct jetting
- Easy to install with simple clamps to extremities
- Flame retardant and antistatic properties

CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °C, -58 °F
100 °C, 212 °F

MAX. OPERATING TEMPERATURE

140 °C, 284 °F

MATERIAL

Polyester fibres

APPLICABLE SPECS

Manuli® Design, MSHA, FRAS, MDG41

FIRE SLEEVE

FSL



| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | |
|-----------|-------------|------------|--|--|--|--|--|--|--|
|-----------|-------------|------------|--|--|--|--|--|--|--|

| | DESCRIPTION | INTERNAL DIAMETER (ID) | | APPROX. WALL THICKNESS (T) | | WEIGHT | | STANDARD PACK LENGTH | |
|----------------|-------------------|------------------------|------|----------------------------|------|--------|-------|----------------------|-------|
| | | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP24A05013I099 | FIRE SLEEVE DN 13 | 13.0 | 0.51 | 4.0 | 0.16 | 200.0 | 0.13 | 50 | 165.0 |
| JP24A05016I099 | FIRE SLEEVE DN 16 | 16.0 | 0.63 | 4.0 | 0.16 | 220.0 | 0.15 | 50 | 165.0 |
| JP24A05019I099 | FIRE SLEEVE DN 19 | 19.0 | 0.75 | 4.0 | 0.16 | 240.0 | 0.16 | 50 | 165.0 |
| JP24A05022I099 | FIRE SLEEVE DN 22 | 22.0 | 0.87 | 4.0 | 0.16 | 260.0 | 0.17 | 50 | 165.0 |
| JP24A05025I099 | FIRE SLEEVE DN 25 | 25.0 | 0.98 | 4.0 | 0.16 | 290.0 | 0.19 | 50 | 165.0 |
| JP24A05032I099 | FIRE SLEEVE DN 32 | 32.0 | 1.26 | 4.0 | 0.16 | 380.0 | 0.26 | 50 | 165.0 |
| JP24A05038I099 | FIRE SLEEVE DN 38 | 38.0 | 1.50 | 4.0 | 0.16 | 440.0 | 0.30 | 50 | 165.0 |
| JP24A05045I099 | FIRE SLEEVE DN 45 | 45.0 | 1.77 | 4.0 | 0.16 | 490.0 | 0.33 | 25 | 82.5 |
| JP24A05051I099 | FIRE SLEEVE DN 51 | 51.0 | 2.01 | 4.0 | 0.16 | 540.0 | 0.36 | 25 | 82.5 |
| JP24A05064I099 | FIRE SLEEVE DN 64 | 64.0 | 2.52 | 4.0 | 0.16 | 680.0 | 0.46 | 20 | 66.0 |
| JP24A05076I099 | FIRE SLEEVE DN 76 | 76.0 | 2.99 | 4.0 | 0.16 | 880.0 | 0.59 | 20 | 66.0 |

KEY FEATURES

- Extreme heat resistance
- Extreme flexibility at low temperatures
- Designed to protect and insulate hydraulic hoses and bundles of hoses against flames, metal projections, melting glass etc.
- Easy to install, no clamps needed

CONTINUOUS SERVICE TEMPERATURE RANGE

-60 °C, -76 °F

260 °C, 500 °F

MAX. OPERATING TEMPERATURE

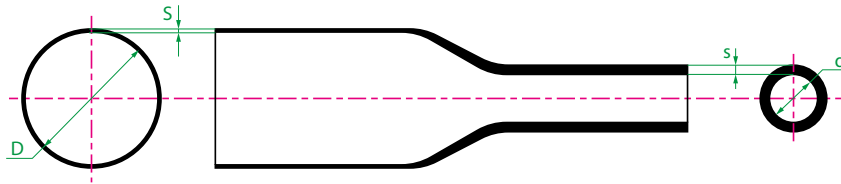
1100 °C, 2012 °F for 15 minutes; 1500 °C, 2732 °F for 1 minute;

MATERIAL

Silicone sleeve with glass-fibre braid

APPLICABLE SPECS

Manuli® Design, NFF16-101 and P92-507 (class FO and M2)



HEAT SHRINKABLE SLEEVE

HSSL

| PART. REF | DESCRIPTION | DIMENSIONS | | | | | | | | | | | |
|----------------|--------------------------------------|---------------------------------------|------|--|------|------------------------------------|-------|-------------------------------------|-------|--------|-------|----------------------|------|
| | | INTERNAL DIAMETER (D) - EXPANDED TUBE | | INTERNAL DIAMETER (d) - RECOVERED TUBE | | WALL THICKNESS (S) - EXPANDED TUBE | | WALL THICKNESS (s) - RECOVERED TUBE | | WEIGHT | | STANDARD PACK LENGTH | |
| | | MM | IN | MM | IN | MM | IN | MM | IN | G/M | LB/FT | M | FT |
| JP21B11076I099 | HEAT SHRINKABLE SLEEVE DN 31 / DN 38 | 76.2 | 3.00 | 38.1 | 1.50 | 0.6 | 0.024 | 2.0 | 0.079 | 310 | 0.21 | 15 | 49.2 |
| JP21B11102I099 | HEAT SHRINKABLE SLEEVE DN 51 | 101.6 | 4.00 | 50.8 | 2.00 | 1.0 | 0.039 | 2.5 | 0.098 | 520 | 0.35 | 15 | 49.2 |

KEY FEATURES

- Self extinguishing
- Low voltage electrical insulation
- Easy to install with simple hot air jetting
- Protects ferrule from dirt and moisture ingress

CONTINUOUS SERVICE TEMPERATURE RANGE

-55 °C, -67 °F

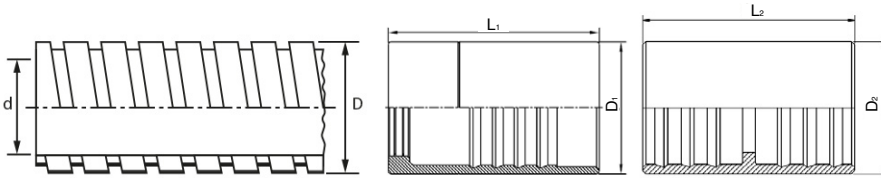
125 °C, 257 °F

MATERIAL

X-linked polyolefin heat shrinkable thin wall

APPLICABLE SPECS

UL 224 VW-1 for flame resistance



STAINLESS STEEL ARMOUR GUARD

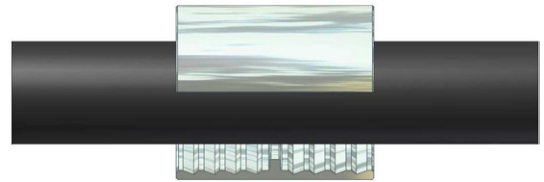
SSAG

| PART. REF | | DESCRIPTION | | DIMENSIONS | | | | | | METAL SLEEVE | | | ARMOUR JOINT | | |
|----------------|------------------------------------|-----------------------|--------|----------------------|------|------------------|-------|--------|-------|--------------|-------|-----|--------------|-------|-----|
| | | INTERNAL DIAMETER (d) | | OUTSIDE DIAMETER (D) | | MIN. BEND RADIUS | | WEIGHT | | PART. REF | D1 | L1 | PART. REF | D2 | L2 |
| | | MM | IN | MM | IN | MM | IN | G/M | LB/FT | | | | | | |
| JP45G090280099 | STAINLESS STEEL ARMOUR GUARD DN10 | 25 | 1" | 32.0 | 1.26 | 127 | 5.00 | 565 | 0.38 | IO2110-06GA | 40.5 | 60 | IO84210-06 | 40.5 | 65 |
| JP45G090320099 | STAINLESS STEEL ARMOUR GUARD DN 12 | 31 | 1.1/4" | 36.5 | 1.44 | 150 | 5.91 | 703 | 0.47 | IO2110-08GA | 46.8 | 75 | IO84210-08 | 46.8 | 65 |
| JP45G090400099 | STAINLESS STEEL ARMOUR GUARD DN 16 | 38 | 1.1/2" | 44.5 | 1.75 | 180 | 7.09 | 939 | 0.63 | IO2110-10GA | 53.2 | 90 | IO84210-10 | 53.2 | 65 |
| JP45G090450099 | STAINLESS STEEL ARMOUR GUARD DN 19 | 46 | 1.3/4" | 51.0 | 2.01 | 240 | 9.45 | 1,118 | 0.75 | IO2110-12GA | 59.5 | 105 | IO84210-12 | 59.5 | 70 |
| JP45G090500099 | STAINLESS STEEL ARMOUR GUARD DN 25 | 51 | 2" | 57.5 | 2.26 | 300 | 11.81 | 1,301 | 0.87 | IO2110-16GA | 66.0 | 120 | IO84210-16 | 66.0 | 75 |
| JP45G090650099 | STAINLESS STEEL ARMOUR GUARD DN 31 | 63 | 2.1/2" | 70.0 | 2.76 | 420 | 16.54 | 1,636 | 1.10 | IO2110-20GA | 78.6 | 135 | IO84210-20 | 78.6 | 95 |
| JP45G090750099 | STAINLESS STEEL ARMOUR GUARD DN 38 | 76 | 3" | 82.5 | 3.27 | 500 | 19.69 | 1,920 | 1.29 | IO2110-24GA | 91.5 | 150 | IO84210-24 | 91.5 | 105 |
| JP45G090900099 | STAINLESS STEEL ARMOUR GUARD DN 51 | 89 | 3.1/2" | 96.0 | 3.78 | 630 | 24.80 | 2,386 | 1.60 | IO2110-32GA | 106.5 | 165 | IO84210-32 | 106.5 | 115 |

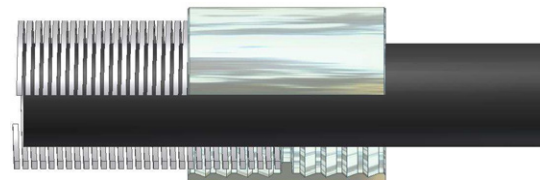
ARMOUR JOINING PROCEDURE

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

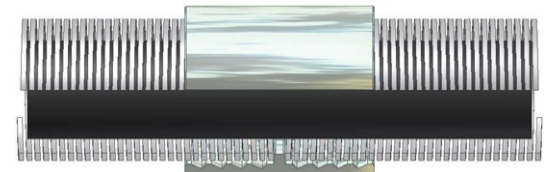
1. Slide the Armour Joint onto the hose.



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

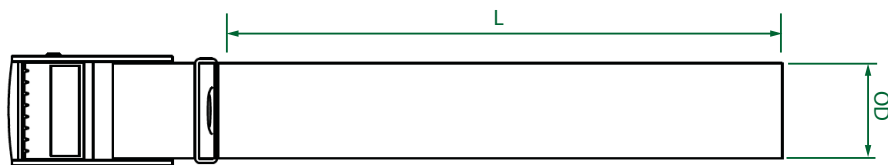


3. Insert the second piece of flexible armour into the other side of the Armour Joint until it also reaches the internal stop.



TEXTILE CLINCH STRAP

TCS



| PART. REF | LENGTH (Circumference of hose bundles) | STRAP WIDTH | STD. PACK |
|-----------|---|-------------|-----------|
|-----------|---|-------------|-----------|

| | MM | IN | MM | IN | QTY. | KG | LB |
|----------------|------|------|----|------|------|-----|------|
| JP33B10040T099 | 400 | 15.7 | 25 | 0.98 | 100 | 5.0 | 11.0 |
| JP33B10080T099 | 800 | 31.5 | 25 | 0.98 | 100 | 6.0 | 13.2 |
| JP33B10150T099 | 1500 | 59.1 | 25 | 0.98 | 100 | 7.5 | 16.5 |

KEY FEATURES

- High abrasion resistance
- Flame retardant, MSHA approved
- Resistant to water, oils, fuels and hydraulic fluids
- Easy to install, eyelets for hose bundle hanging purposes
- Metal buckle for robust fastening in any environment

CONTINUOUS SERVICE TEMPERATURE RANGE

-50 °C, -58 °F

100 °C, 212 °F

MATERIAL

Polyester fibres

APPLICABLE SPECS

Manuli® Design, MSHA, FRAS



APPENDICES



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® Multifit type
- IP MF2000® Interlock Plus type
- SP MF2000® Spiralfit type
- SPGX MF2000® Spiralfit GX type
- IS MF2000® Interlock Super type
- BL MF2000® Blastlock type
- PL MF2000® 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.

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.

| DASH SIZE | STANDARD HYDRAULIC HOSES | | SAE 100 R5 HOSES | |
|-----------|--------------------------|-------|------------------|---------|
| | DN | inch | DN | inch |
| -03 | 5 | 3/16 | - | - |
| -04 | 6 | 1/4 | 5 | 3/16 |
| -05 | 8 | 5/16 | 6 | 1/4 |
| -06 | 10 | 3/8 | 8 | 5/16 |
| -08 | 12 | 1/2 | 10 | 13/32 |
| -10 | 16 | 5/8 | 12 | 1/2 |
| -12 | 19 | 3/4 | 16 | 5/8 |
| -16 | 25 | 1 | 22 | 7/8 |
| -20 | 31 | 1 1/4 | 29 | 1 1/8 |
| -24 | 38 | 1 1/2 | 35 | 1 3/8 |
| -32 | 51 | 2 | 46 | 1 13/16 |
| -40 | 63 | 2 1/2 | 60 | 2 3/8 |
| -48 | 76 | 3 | - | - |
| -56 | 89 | 3 1/2 | - | - |
| -64 | 102 | 4 | - | - |

NUT TIGHTENING METHODS

NOTE: Torque values provided are always to be considered in DRY conditions - that is, when no oil or lubrication is used on the threads or sealing surfaces.

TORQUE WRENCH METHOD

If practicable the use of a suitable, calibrated torque wrench is strongly recommended

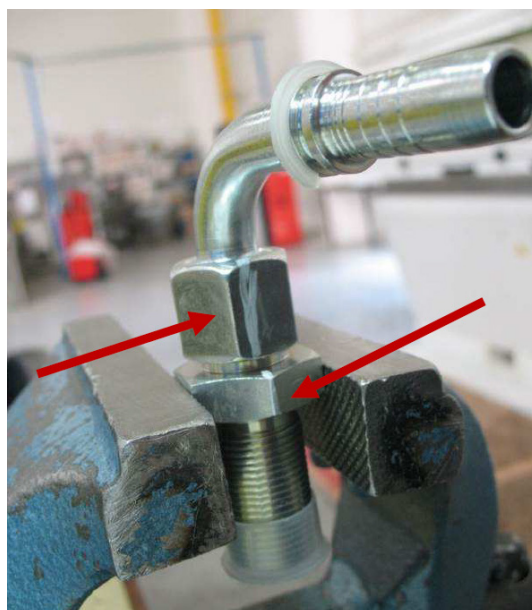
1. Screw the fitting by hand on the male fitting / adaptor
2. In the case of a straight fitting, whilst blocking the counter-hex with a standard wrench apply the required torque to the nut
3. In the case of an elbow fitting, block the tail of the fitting with a suitable tool and then apply the required torque to the nut



FLATS / ROTATION ANGLE METHOD

If the use of a torque wrench is not possible, the flat rule (or nut rotation angle rule) can be applied.

1. Screw the fitting by hand on the male adaptor until the metal to metal contact between the sealing surfaces is reached
2. Mark the relative position between the nut and the adapter
3. Apply the prescribed number of flats by blocking the counter-hex with a standard wrench (straight fitting) or the tail with a proper tool (elbow fitting)



WARNING

Result from flat rule method can be affected from the operator:

- During the start phase different hand tightening to achieve the metal to metal contact can change the start position
- During the final phase marks on nut and adaptor can be not very accurate and the final position can be misread

TORQUING METHODS

In the following tables the tightening values are given according to one or more of the following methods:

ASSEMBLY TORQUE - This is the preferred and most precise method, which should be used whenever possible. Value given is the torque in N.m to be applied using a suitable calibrated torque wrench

ROTATION ANGLE - Value is the number of degrees that the nut should be rotated through AFTER metal-to-metal contact is made from finger-tightening

NUMBER OF FLATS - Value is the number of flats that the nut should be rotated through AFTER metal-to-metal contact is made from finger-tightening

NUT TIGHTENING TORQUE VALUES FOR BSP FITTINGS

| Size | BSP Thread Size | MANULI BSP FITTINGS WITH O-RING (ISO STYLE A) | MANULI BSP FITTINGS WITHOUT O-RING (ISO STYLE B) |
|--------|-----------------|--|--|
| | | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ |
| 1/4" | G 1/4" -19 | 20 | 20 |
| 3/8" | G 3/8" -19 | 38 | 35 |
| 1/2" | G 1/2" -14 | 55 | 60 |
| 5/8" | G 5/8" -14 | 60 | 70 |
| 3/4" | G 3/4" -14 | 90 | 115 |
| 1" | G 1" -11 | 120 | 140 |
| 1 1/4" | G 1 1/4" -11 | 190 | 210 |
| 1 1/2" | G 1 1/2" -11 | 250 | 290 |
| 2" | G 2" -11 | 300 | 400 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

NUT TIGHTENING TORQUE VALUES FOR ORFS FITTINGS

| Size | ORFS Thread Size | MANULI ORFS FITTINGS | | |
|--------|------------------|--|-----------------------------|-------------------------|
| | | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ | Rotation Angle [degrees] | No. of Flats [Flats] |
| 1/4" | 9/16" -18 | 26 | 45° | 3/4 |
| 3/8" | 11/16" -16 | 42 | 45° | 3/4 |
| 1/2" | 13/16" -16 | 57 | 60° | 3/4 |
| 5/8" | 1" -14 | 85 | 45° | 1 |
| 3/4" | 1 3/16" -12 | 122 | 45° | 3/4 |
| 1" | 1 7/16" -12 | 156 | 45° | 3/4 |
| 1 1/4" | 1 11/16" -12 | 200 | 45° | 3/4 |
| 1 1/2" | 2" -12 | 256 | 45° | 3/4 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

NUT TIGHTENING TORQUE VALUES FOR JIC FITTINGS

| Size | JIC Thread Size | MANULI JIC CRIMPED BACK NUT FITTINGS | | | MANULI JIC SLIP-ON NUT & THRUST-WIRE FITTINGS |
|--------|-----------------|--|-----------------------------|-------------------------|--|
| | | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ | Rotation Angle [degrees] | No. of Flats [Flats] | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ |
| 1/4" | 7/16" -20 | 16 | 90° | 1 1/2 | 16 |
| 3/8" | 9/16" -18 | 28 | 90° | 1 1/2 | 28 |
| 1/2" | 3/4" -16 | 53 | 120° | 2 | 53 |
| 5/8" | 7/8" -14 | 85 | 120° | 2 | 85 |
| 3/4" | 1 1/16" -12 | 119 | 60° | 1 | 119 |
| 1" | 1 5/16" -12 | 147 | 60° | 1 | 147 |
| 1 1/4" | 1 5/8" -12 | 172 | 60° | 1 | 172 |
| 1 1/2" | 1 7/8" -12 | 215 | 60° | 1 | 215 |
| 2" | 2 1/2" - 12 | 332 | 60° | 1 | 332 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

NUT TIGHTENING TORQUE VALUES FOR METRIC FITTINGS

| Metric Thread Size | MANULI DKOL FITTINGS | | MANULI DKOS FITTINGS | |
|--------------------|----------------------|--|----------------------|--|
| | Pipe O.D [mm] | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ | Pipe O.D [mm] | Assembly Torque* [N.m] ⁺¹⁰ ₋₀ |
| M12 x 1.5 | 6L | 13 | | |
| M14 x 1.5 | 8L | 23 | 6S | 23 |
| M16 x 1.5 | 10L | 32 | 8S | 32 |
| M18 x 1.5 | 12L | 38 | 10S | 38 |
| M20 x 1.5 | | | 12S | 45 |
| M22 x 1.5 | 15L | 53 | 14S | 53 |
| M24 x 1.5 | | | 16S | 59 |
| M26 x 1.5 | 18L | 77 | | |
| M30 x 2 | 22L | 100 | 20S | 100 |
| M36 x 2 | 28L | 114 | 25S | 114 |
| M42 x 2 | | | 30S | 180 |
| M45 x 2 | 35L | 200 | | |
| M52 x 2 | 42L | 255 | 38S | 255 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

NUT TIGHTENING TORQUE VALUES FOR NPTF-NPSM FITTINGS

| NPTF-NPSM Thread Size | MANULI NPTF MALE MATED WITH NPTF PORT | MANULI NPTF MALE MATED WITH NPSM FEMALE |
|--------------------------|---------------------------------------|---|
| | Max. Assembly Torque* † [N.m] | Max. Assembly Torque* [N.m] |
| 1/8" -27 | 20 | 10 |
| 1/4" -18 | 30 | 15 |
| 3/8" -18 | 40 | 20 |
| 1/2" -14 | 55 | 27 |
| 3/4" -14 | 70 | 35 |
| 1" -11.5 | 90 | 45 |
| 1 1/4" -11 1/2 | 100 | 50 |
| 1 1/2" -11 1/2 | 120 | 60 |
| 2" - 11 1/2 | 150 | 75 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

† If thread sealant is used, maximum values show above should be decreased by 25%

XTRAFANGE TIGHTENING TORQUE VALUES

| Size | WP (bar) | Counter-Flange Code | O-Ring (NBR 90 ShA) | METRIC BOLT (CLASS 10.9) | | UNC BOLT (GRADE 8) | | Bolt Torque* [N.m] ^{+10 -0} |
|---------------------|-------------|------------------------|------------------------|--------------------------|-------------|--------------------|-------------|---|
| | | | | Thread | Length (mm) | Thread | Length (mm) | |
| XTRAFANGE/61 | | | | | | | | |
| 1" | 420 | O88407-16 | 32.92 x 3.53 | M10 | 45 | 3/8" -16 | 44 | 70 |
| 1 1/4" | 420 | O88407-20 | 37.69 x 3.53 | M10 | 45 | 7/16" -14 | 51 | 70 |
| 1 1/2" | 420 | O88407-24 | 47.22 x 3.53 | M12 | 55 | 1/2" -13 | 57 | 130 |
| 2" | 420 | O88407-32 | 56.74 x 3.53 | M12 | 55 | 1/2" -13 | 57 | 130 |
| 2 1/2" | 420 | O88407-40 | 69.44 x 3.53 | M12 | 65 | 1/2" -13 | 70 | 130 |

| XTRAFANGE/62 | | | | | | | | |
|---------------------|-------------|------------------------|------------------------|--------|-------------|-----------|-------------|---|
| Size | WP (bar) | Counter-Flange Code | O-Ring (NBR 90 ShA) | Thread | Length (mm) | Thread | Length (mm) | Bolt Torque* [N.m] ^{+10 -0} |
| 3/4" | 560 | O88507-12 | 24.99 x 3.53 | M10 | 45 | 3/8" -16 | 44 | 70 |
| 1" | 560 | O88507-16 | 32.92 x 3.53 | M12 | 50 | 7/16" -14 | 51 | 130 |
| 1 1/4" | 560 | O88507-20 | 37.69 x 3.53 | M14 | 65 | 1/2" -13 | 64 | 180 |
| 1 1/2" | 560 | O88507-24 | 47.22 x 3.53 | M16 | 75 | 5/8" -11 | 76 | 290 |
| 2" | 450 | O88507-32 | 56.74 x 3.53 | M20 | 95 | 3/4" -10 | 95 | 450 |
| 2 1/2" | 350 | O88507-40 | 69.44 x 3.53 | M24 | 110 ** | 1" -8 | 102 | 550 |
| 3" | 420 | O88507-48 | 85.32 x 3.53 | M30 | 100 | - | 102 | 650 |

* **IMPORTANT:** Recommended MRI Torque Values are only applicable for nut tightening in **DRY conditions** (no oil or lubrication on threads and sealing surfaces)

** Can be reduced to 100mm

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

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.

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.

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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

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.**

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

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.

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 death, personal injury or property damage.

LEGEND OF THE HOSE TYPES BY TUBE COMPOUNDS

| TUBE COMPOUND CATEGORIES | HOSE CATEGORIES | HOSE TYPES |
|--------------------------------|-------------------|---|
| NITRILE | STD WIRE BRAID | ROCKMASTER, HARVESTER/17, SHIELDMASTER, GOLDENISO, COVER, CRYOFLEX, TWINPOWER/4000, TWINPOWER/5000 |
| NITRILE | STD WIRE SPIRAL | ROCKMASTER, GOLDENISO, SHIELDMASTER, ANACONDA, FOREMASTER, CRYOFLEX, DIAMONDSPIR, XTRAFLOW/4WS, HYDROROPE, HERCULES |
| NITRILE | HI-PER WIRE BRAID | FOREMASTER, GOLDENISO/PILOT, ROCKMASTER/1SC, SYNERGY, INFINITY |
| NITRILE | TEXTILE REINF. | ASTRO, SPIRTEX, MULTITEX, PUSHFIT |
| CHLOROPRENE | | TWINPOWER/PLUS, GOLDENBLAST |
| CHLOROSULPHONATED POLYETHYLENE | | EQUATOR/1 (BLUE & BLACK), EQUATOR/2 (BLUE & BLACK), XTRAFLOW/HT |
| CHLORINATED POLYETHELENE | | MASTERTEX |
| POLYESTER | | HYDROPLAST, HYDROTWIN |

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.

FT = Field Test recommended - A field test is recommended to allow the end user to either validate the selection in the actual working conditions or to reject the selection. Results of compatibility from lab testing show 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. After the results of the recommended field test, if the end user decides to use the selected hoses under his validation, the end users assumes all responsibility with regard to any possible effects and consequences arising out of the using of hoses in the actual working conditions and Manuli Hydraulics cannot be held responsible for any claims in relation to or connected with the hoses for which it was recommended to perform a field test.

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.

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 death, personal injury or property damage.

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)

Part 99: General

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 death, personal injury or property damage.

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 |
|--------------------------|---------------------------------|--|--|--------------|
| HYDRAULIC SYSTEMS | HYDROSTATIC APPLICATIONS | (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 HM TYPE WITH IMPROVED VISCOSITY/TEMPERATURE PROPERTIES | HV |
| | | APPLICATIONS WHERE ENVIRONMENTALLY ACCEPTABLE FLUIDS ARE REQUESTED | TRIGLYCERIDES | HETG |
| | | | POLYGLYCOLS | HEPG |
| | | | SYNTHETIC ESTERS | HEES |
| | | | POLYALPAOLEFIN AND RELATED HYDROCARBON PRODUCTS | HEPR |
| | | HYDRAULIC SLIDE-WAY SYSTEMS | OILS OF HM TYPE WITH ANTI-STICK/SLIP PROPERTIES | HG |
| | | | OILS IN WATER EMULSION | HFAE |
| | | | CHEMICAL SOLUTION IN WATER | HFAS |
| | | | WATER IN OIL EMULSION | HFB |
| | | | WATER POLYMER SOLUTIONS | HFC |
| | | | SYNTHETIC FLUIDS CONTAINING NO WATER AND CONSISTING OF PHOSPHATE ESTERS | HFDR |
| | | | SYNTHETIC FLUIDS CONTAINING NO WATER AND OF OTHER COMPOSITION | HFDU |

XXX

GENERALLY GOOD COMPATIBILITY WITH HOSES, ANYWAY THE BEHAVIOUR OF THE PARTICULAR OIL FORMATION TO BE VERIFIED CASE BY CASE

HFAS & HFDR

NO COMPATIBILITY WITH MANULI HYDRAULICS HOSES. DEDICATED HOSES ARE REQUESTED

NOTE: ATF OILS ARE NOT CLASSIFIED AS HYDRAULIC OILS

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 death, personal injury or property damage.

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 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| ACT ECOSAFE FR 46 | HFDU | | E | E | FT | G | FT | G | - |
| ACT FR WG 200 D | HFC | | E | X | E | - | X | E | - |
| ADDINOL ÖKOSYNTH SUPER HEES 46 | HEES | | G | FT | G | G | FT | G | - |
| ADDINOL ÖKOSYNTH SUPER HEES 46 S | HEES | | G | FT | G | G | FT | G | - |
| AFTON HI-030728-40-02 | HM | | G | G | G | G | G | G | - |
| AGIP ARNICA 46 | HV | HVLP | E | G | G | G | E | G | - |
| AGIP ARNICA EXTRA PLUS | HEES | HVLP | G | G | G | G | FT | G | E |
| AGIP ARNICA PLUS | HEES | HVLP | E | E | G | G | FT | E | E |
| AGIP ARNICA S46 | HFDU | | E | E | G | G | FT | E | E |
| AGIP LHM SUPER | HV | | G | G | G | G | G | G | G |
| AGIP OSO 32 | HM | HLP | E | E | G | 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 | G | E | G | G | - |
| AGROL MENDO 46 | HEES | | G | FT | G | G | FT | - | - |
| AKZO FYRQUEL | HFDR | | X | X | X | X | - | X | - |
| AMBRA HITECH 46 | HL | HLP | E | E | G | G | G | E | G |
| ANDEROL 8768 (PAO) | HEPR | | G | G | FT | FT | FT | G | - |
| API HS 46 | HV | HVLP | E | G | G | G | E | - | - |
| ARAL VITAM DF TOP 46 | HV | HVLPD | E | E | G | G | G | G | G |
| ARAL VITAM EHF 46 | HEES | | E | E | G | G | G | G | G |
| ARAL VITAM GF 68 | HL | HLP | E | E | E | G | E | E | E |
| AVIA AVILUB HLP 546 | HM | HVLP | G | G | G | G | E | G | - |
| AVIA AVILUB SF 568 | HM | HLP | - | - | - | - | G | - | - |
| AVIA BIOFLUID BP 32 | HEES | | G | FT | G | E | X | G | - |
| AVIA FLUID RSL 32 | HS | | E | G | G | G | - | - | - |
| AVIA FLUID RSL 68 | HM | HLP | G | G | G | G | E | G | - |
| AVIA HVI 46 | HV | HVLPD | G | G | G | G | E | G | - |
| AVIA PB FLUID HV 40 | HV | HVLP | G | G | G | G | G | G | - |
| AVIA SYNTOFLUID F 46 | HEES | | E | G | E | G | G | G | E |
| AVIA SYNTOFLUID N 32 | HEES | | G | G | E | G | G | E | G |
| AVIA SYNTOFLUID N 46 | HEES | | E | E | G | 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 | - |
| BECHEM HYDROSTAR PM 46 | HH | | E | E | G | - | G | E | - |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|------------------------------------|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| BINOL HYDRA P 1146 | HETG | | E | E | G | G | - | G | - |
| BP A 0629L/028 | HS | | G | FT | 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 | G | FT | E | - |
| BP ENERGOL HLP 46 | HL | HLP | G | G | G | - | - | - | - |
| BREMER & LEGUIL RIVOLTA SBH 11 | HEES | | G | FT | E | G | X | G | G |
| BREMER & LEGUIL RIVOLTA SBH 23 | HEES | | E | G | E | G | G | G | E |
| BRUGAROLAS 98096 BESLUX H 540 | HV | HVLP | G | G | G | G | FT | G | - |
| CALTEX RANDO DSZ 46 | HV | HVLP | G | G | FT | G | G | FT | - |
| CALTEX RANDO HD | HM | HLP | E | G | G | G | G | G | G |
| CALTEX RANDO HD LVZ 46 | HV | HVLP | G | G | G | G | G | FT | - |
| CALTEX VOLVO GEN D/E (CG-4) 15W40 | HM | HLP | G | G | G | G | G | G | - |
| CASTROL AERO HF 585 B (MIL 56006H) | HH | HL | E | FT | G | - | FT | E | FT |
| CASTROL ANVOL SWX 68 (POE BASED) | HFDU | | E | FT | E | - | FT | G | - |
| CASTROL BIOBAR VG 68 | HEES | | E | FT | E | E | X | G | - |
| CASTROL BIOTECH ALPIN 22 | HETG | | E | E | E | - | FT | E | - |
| CASTROL BRAYCO 717 (MIL 17111C) | HS | | G | FT | G | - | FT | G | G |
| CASTROL BRAYCO MICRONIC 882 | HH | HL | G | G | G | G | G | G | G |
| CASTROL CARELUBE HTG | HETG | | E | FT | E | E | FT | E | G |
| CASTROL CARELUBE HY 46 | HEES | | G | G | G | G | FT | G | G |
| CASTROL HYPIN HDH 7000 | HM | | E | G | G | - | E | E | - |
| CASTROL HYPIN HLPD 46 | HM | HLP | - | E | G | G | G | G | G |
| CASTROL HYPIN HVI 46 D | HV | HLPD | E | G | G | G | G | G | G |
| CASTROL HYPIN ZZ32 | HM | HLP | G | G | G | G | E | G | G |
| CASTROL ILOCUT 546 MP | HM | | - | G | G | G | E | G | - |
| CASTROL LIFT OIL | HH | HL | G | G | G | G | G | G | G |
| CASTROL PERFORMANCE BIO HE 46 | HEES | | G | FT | G | G | FT | G | - |
| CASTROL PRODUCT L 320 | HH | HL | E | G | G | - | X | G | - |
| CASTROL PRODUCT L 571 | HH | HL | E | G | G | G | X | G | - |
| CASTROL TRIBOL HM 943-46 | HM | | G | G | G | G | G | - | - |
| CAT HYDO ADVANCE 10 | HM | | E | E | G | G | G | - | - |
| CENEX INDOL PREMIUM AW 4646 | HM | HLP | G | E | G | G | - | G | - |
| CEPSA HYDRAULICO HM 46 | HM | HLP | E | E | G | - | E | G | E |
| CHEVRON ETL 10328 | HV | HVLP | G | E | G | G | G | G | - |
| CHEVRON EXTRA HYD OIL VG 46 | HM | | G | G | G | G | FT | - | - |
| CHEVRON HYDRAULIC AW 46 | HM | HLP | E | G | G | G | E | G | - |
| CHEVRON HYDREX AW | HM | HLP | E | G | G | G | E | G | - |
| CHEVRON MACHINE OIL AW ISO 46 | HV | HLP | G | G | G | G | G | G | G |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|------------------------------|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| CHEVRON RANDO HD 68 | HM | HLP | G | G | G | G | G | G | - |
| CHEVRON RYCON MV | HM | | E | G | G | G | G | G | - |
| COAST OIL A/W 68 | HM | | G | G | G | - | G | - | - |
| CONDAT D 46 | HFDU | | E | FT | G | - | FT | G | - |
| CONOCO PHILLIPS ECOTERRA 46 | HM | HLP | G | G | FT | FT | G | - | - |
| DEA ECONA E 46 | HEES | | G | FT | E | G | FT | E | E |
| DOMUS FLUID 46 | HEES | | G | G | G | G | - | G | G |
| DOT 3 | HPG | | - | - | X | X | X | X | G |
| DOT 4 | HPG | | - | - | X | X | X | X | G |
| ELAN HYDRAULIC 46 | HV | HVLP | E | G | G | G | E | G | G |
| ESSO HYDRAULIKOEL HE 46 | HEES | | E | E | E | G | G | E | E |
| ESSO NUTO H46 | HM | HLP | G | G | G | G | E | G | E |
| EUROLUB HLP 46 | HM | | G | G | FT | G | G | - | - |
| EXXON HUMBLE H 46 | HM | HLP | E | G | G | G | E | G | - |
| EXXON RL 002775B | HM | | G | G | G | G | FT | - | - |
| EXXON UNIVIS N46 | HV | HVLP | E | G | G | G | E | G | - |
| FINKE AVIATICON HY HE | HEES | | G | G | E | - | - | E | G |
| FRAGOL HE 46 | HEES | | E | FT | G | - | FT | G | E |
| FUCHS AQUACENT LT 68 | HFB | | G | FT | G | G | FT | G | - |
| FUCHS ECO HYD 46S NWG | HEES | | G | FT | 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 | FT | E | G | FT | E | E |
| FUCHS PLANTOHYD N 46 | HETG | | G | FT | E | G | FT | E | E |
| FUCHS PLANTOHYD SUPER S 46 | HEES | | G | X | E | G | X | - | - |
| FUCHS PLANTOSYN 3268 ECO | HEES | | G | FT | E | G | G | E | G |
| FUCHS PLANTOSYN 46 HVI | HEES | | E | FT | G | - | FT | G | G |
| FUCHS RENOLIN B 46 HVI | HV | HVLP | E | G | G | G | E | G | G |
| FUCHS RENOLIN B15 VG46 | HM | HLP | G | G | G | - | - | - | - |
| FUCHS RENOLIN D15 VG 46 | HM | HLPD | E | G | G | G | - | G | - |
| FUCHS RENOLIN MINE AW 68 | HM | | G | G | FT | G | - | - | G |
| FUCHS RENOLIN MR 520 | HV | HVLPD | G | G | G | G | G | E | E |
| FUCHS RENOLIN XTREME TEMP 46 | HV | HVLP | G | G | G | G | G | G | G |
| FUCHS RENOLIN XTREME TEMP 68 | HV | HVLP | G | G | G | G | G | G | G |
| FUCHS SOLCENIC | HFA | | G | - | G | G | X | G | - |
| FUCHS TITAN H 46 | HV | HVLP | G | G | G | G | G | G | G |
| FUCHS TITAN HV 68 | HV | HVLP | G | G | G | G | G | G | G |
| GULF ARMONY AW 46 | HM | HLP | E | E | G | G | E | G | E |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|---|------------|-----------|--|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDRORPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| HOUGHTON COSMOLUBRIC HF 130 (POE BASED) | HFDU | | G | G | G | - | FT | G | - |
| HOUGHTON HYDRAVIS BC 84005 (60°C) | HFA | | E | G | E | G | FT | E | E |
| HOUGHTON ISOCORE E 68 PLUS | HFC | | E | G | E | - | FT | G | - |
| HOUGHTON SAFE 620 | HFA | | G | G | G | - | X | - | - |
| HOUGHTON SAFE OX 40 | HFC | | E | G | E | G | FT | E | E |
| HOUGHTON VITAL FLUID L46AL | HFDU | | G | G | E | G | FT | - | - |
| HOUGHTON-SAFE 273 CTF | HFC | | E | FT | E | G | X | E | E |
| IDEMITSU DAPHNE 46 | HH | HL | G | G | G | G | G | G | - |
| IDEMITSU SUPER HYDRO 28XT-B | HM | HLP | E | E | G | G | E | G | G |
| IGOL SONHYDRO ZNS 46 | HM | HLP | G | G | G | G | E | G | - |
| IGOL MARINE FLUID 46 | HV | HVLP | G | G | G | G | G | - | - |
| IGOL MATIC ZNS 46 | HV | HVLP | G | FT | G | G | FT | G | - |
| IGOL TICMA FLUID | HV | | E | G | G | - | E | G | - |
| IGOL TICMA FLUID BIO 46 | HEES | | G | G | G | - | FT | G | - |
| IRVING HYDRAULICS 46 | HM | HLP | G | G | G | - | E | G | - |
| JCB OPTIMUM PERFORMANCE HYD OIL 46 | HV | HVLP | G | E | G | G | G | G | G |
| JIANGSU GAOKE L-HM32 | HM | HLP | - | - | G | - | E | - | - |
| JOHN DEERE BIO GUARD II | HETG | | E | E | E | G | E | G | G |
| KENDALL HYKEN GLACIAL BLUE HYD FLUID | HV | | G | FT | G | G | FT | G | G |
| KLUBER KLUBERBIO LR 9 68 | HEES | | E | FT | G | G | X | G | - |
| KLUBERFOOD 4 NH1 46 | HM | HLP | G | FT | FT | - | FT | FT | - |
| KOMATSU GENUINE BIO 46 G4 | HEES | | E | G | G | G | G | G | E |
| KOMATSU KPO 10 POWERTRAIN TO 10 | HM | | E | E | G | E | 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 37 | HV | HVLP | E | G | G | G | - | G | - |
| LIEBHERR HYDRAULIC HVI | HV | HVLPD | E | G | G | G | - | G | - |
| LIEBHERR HYDRAULIC PLUS | HEPR | HVLPD | G | G | G | G | - | - | - |
| LIEBHERR HYDRAULIC PLUS ARCTIC | HEPR | HVLPD | E | E | G | - | - | - | - |
| LUKOIL GEYSER ST | HM | | E | G | G | G | E | G | G |
| LUKOIL GEYSER ZF | | HLP | G | G | G | G | E | G | G |
| MACDERMID OCEANIC BTC 181 | HS | | E | G | G | G | - | G | G |
| MAV SINT PLUS 2005 ISO46 (PAO+TRADITIONAL SDDITIVE) | HEPR | | G | G | FT | G | FT | G | - |
| METLUBE HFR 220 | HFDU | | G | G | G | G | E | FT | - |
| MICRO QUIMICA MICROCORTE 530 | HFB | | FT | X | FT | - | X | FT | - |
| MILLERS MILLFOOD 32 | HS | | G | G | G | - | E | G | E |
| MILLERS MILLMAX 22 | HM | | E | G | G | G | G | G | - |
| MOBIL AERO HF 46 (MIL 5606H) | HH | HL | E | G | G | - | FT | G | - |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|---|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| MOBIL DTE 10 EXCEL 15 | HV | HVLP | E | G | G | G | G | G | - |
| MOBIL DTE 10 EXCEL 46 | HV | HVLP | E | E | G | G | FT | G | - |
| MOBIL DTE 10 EXCEL 68 | HV | HVLP | E | G | G | G | FT | G | - |
| MOBIL DTE 13 | HV | HVLP | E | G | G | - | E | G | - |
| MOBIL DTE 24 | HV | HVLP | G | G | G | G | E | G | - |
| MOBIL DTE 25 | HV | HVLP | E | G | G | G | E | G | E |
| MOBIL DTE 25 ULTRA | HV | HVLP | G | E | G | E | G | G | G |
| MOBIL DTE 26 | HV | HVLP | G | G | G | - | E | FT | E |
| MOBIL DTE EXCEL 46 | HM | HLP | E | E | G | G | E | G | G |
| MOBIL DTE EXCEL 68 | HM | HLP | G | - | G | G | E | - | - |
| MOBIL DTE FM 32 | HM | | E | G | G | - | G | G | - |
| MOBIL EAL 224 H | HETG | | G | G | E | G | - | E | G |
| MOBIL HYDROFLUID HFDU | HFDU | | E | E | E | E | G | E | E |
| MOBIL SHC 524 | HM | | E | G | G | G | E | - | - |
| MOBIL SHC CIBUS 46 | HV | HVLP | G | G | G | G | G | G | - |
| MOBIL UNIVIS N 46 | HV | HVLP | E | G | G | G | G | G | G |
| MORRIS TRIAD 32 | HM | | - | G | G | G | G | - | - |
| MOTOREX ALPINE COREX POLAR S370 | HV | HVLP | G | G | G | G | G | G | - |
| MOTOREX COREX HV 22 | HM | | E | G | G | G | E | G | G |
| MOTOREX COREX HV 46 | HM | | G | E | G | G | G | - | - |
| MOTOREX COREX HW | HV | HVLP | E | G | G | E | E | E | G |
| MOTOREX OEKOSYNTH HEES 46 | HEES | | G | X | G | G | X | G | - |
| MOTUL SHOCK OIL VI 400 | HEES | | G | FT | G | G | X | G | - |
| NALCO VARIDOS FSK 40% | HFB | | E | G | E | E | FT | E | - |
| NESTE BIO HYDRAULI LONGLIFE 46 | HEES | | G | FT | G | G | FT | G | - |
| NESTE BIO HYDRAULI SE 46 | HEES | | G | FT | G | G | FT | G | - |
| NESTE BIO HYDRAULI SE 46 PLUS | HEES | | E | G | E | E | FT | G | G |
| NESTE HYDRAULI 32 SUPER | HV | HVLP | E | G | G | G | E | - | - |
| NESTE HYDRAULI 46 LL | HV | HVLP | E | G | G | G | G | G | - |
| NESTE HYDRAULI 46 SUPER | HV | HVLP | E | G | G | G | E | - | - |
| NESTE HYDRAULI 68 SUPER | HV | HVLP | G | E | G | G | E | G | E |
| NEW PROCESS AG NP HYD OIL PC HVI 46 | HV | HVLP | - | FT | FT | G | G | - | - |
| NOALOIL IDRO 32 | | HLP | E | G | G | - | E | G | G |
| NYCO HYDRAUNIC OIL FH 3 (MIL H 46170 C-1) | HH | HL | E | G | G | G | E | G | - |
| NYCO HYDRAUNIC OIL FH 51 (MIL 5606H) | HH | HL | E | G | G | G | FT | G | - |
| NYCO HYDRAUNIC OIL FH 6 (MIL 6083H) | HH | HL | G | G | E | - | FT | E | FT |
| OEST DOPP-SYNTH 60 | HV | HLP | G | X | FT | FT | X | G | - |
| OEST DOPP-SYNTH 70 | HV | HLP | G | X | FT | - | X | G | - |

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|--|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| 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 | FT | - | E | FT | - |
| OMV HLP M32 | HV | HVLP | G | G | G | E | - | G | - |
| OMV HYD HLP M15 | HV | HVLP | E | FT | G | G | - | G | - |
| PANOLIN GRO SYNTH 46 | HEES | | G | FT | G | G | FT | - | E |
| PANOLIN HLP SYNTH 15 | HEES | | G | X | X | X | X | G | - |
| PANOLIN HLP SYNTH 32 | HEES | | G | X | FT | FT | X | G | - |
| PANOLIN HLP SYNTH 46 | HEES | | E | FT | G | G | X | G | G |
| PANOLIN HLP SYNTH E 46 | HEES | | E | FT | G | G | X | G | E |
| PANOLIN HLP UNI 46 | HV | HVLP | E | G | G | G | G | G | - |
| PANOLIN ORCON HYD 46 | HV | HVLP | G | G | G | G | G | G | - |
| PANOLIN TRAFOSYNTH 2 | HEES | | G | X | G | - | X | G | - |
| PENTOSIN CHF 11 S (POWER STEERING) | HS | | E | G | G | G | E | G | - |
| PETROCANADA ENVIRON AW | | HLP | E | G | G | G | G | G | G |
| PETRO CANADA HYDREX AW 46 | HM | HLP | E | G | G | G | FT | FT | - |
| PETRO CANADA HYDREX MV 60 | HV | HVLP | E | E | G | G | FT | G | - |
| PETROCANADA HYDREX XV | HV | HVLP | G | G | FT | G | FT | - | - |
| PETROCANADA SYNTHETIC AW 46 | HM | HLP | G | G | FT | G | G | - | - |
| PETROFER ULTRA SAFE 620 | HFC | | G | G | E | G | X | E | - |
| PFINDER APRESOL | HH | | G | G | G | - | E | G | E |
| PONSSE LOGGER'S HYDRAULIC OIL 46 SUPER | HM | HLP | E | G | G | E | G | - | - |
| PRESTONE POWER STEERING FLUID | HM | | - | - | - | - | E | G | - |
| Q8 HANDEL 46 | HV | HVLP | E | G | G | E | G | E | - |
| Q8 HANDEL 68 | HV | HVLP | G | G | G | - | E | G | E |
| Q8 HAYDN 32 | HM | HLP | E | G | G | G | E | G | - |
| Q8 HAYDN 46 | HM | HLP | E | G | G | E | G | - | - |
| Q8 HELLER 46 | HV | HVLP | E | G | G | - | E | G | - |
| Q8 HINDEMITH LT | HV | HVLP | G | FT | G | G | FT | G | - |
| Q8 HOGARTH 46 | HV | HVLP | G | G | G | G | G | G | - |
| Q8 HOLBEIN ECO 46 | HV | HVLP | E | G | E | E | G | G | - |
| Q8 HOLBEIN NWG 32 | HEES | | G | FT | G | - | X | G | - |
| Q8 HUMMEL 46 | HM | HLP | E | E | G | - | G | - | - |
| QUAKER QUINTOLUBRIC 888 | HFDU | | G | G | G | G | FT | G | - |
| QUAKER QUINTOLUBRIC 888-46 | HFDU | | G | FT | G | G | FT | - | - |
| QUAKER QUINTOLUBRIC 888-68 | HFDU | | G | FT | G | - | FT | - | - |
| QUAKER QUINTOLUBRIC 914 | HFA | | G | - | G | G | - | G | - |
| QUAKER QUINTOLUBRIC N 822-300 | HFDU | | G | FT | G | - | - | G | - |

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| QUAKER QUINTOLUBRIC N 852 | HEES | | G | X | G | G | X | E | - |
| REPSOL HIDRAULICO SC 46 | HM | HLP | G | G | G | G | G | G | G |
| REPSOL HIDROLEO 46 | HV | HVLP | G | G | G | G | G | G | - |
| REPSOL TELEX 32 | HM | HLP | G | E | G | E | G | G | G |
| REPSOL TELEX HVLP 46 | HV | HVLP | G | G | G | G | G | G | G |
| ROLOIL ESTIN S46 | HFDU | | G | FT | G | G | X | G | - |
| ROSNEFT GIDROTECH HVLP 46 | HV | HVLP | E | G | G | G | G | G | G |
| SAFETY KLEEN PERFORMANCE PLUS AW 32 | HM | | G | G | FT | G | G | - | - |
| SHAEFFER 112 HTC | HM | HLP | G | G | G | G | E | - | - |
| SHAEFFER 112 NZ HTC 32 | HM | HLPD | G | G | FT | G | G | FT | - |
| SHAEFFER 254 SUPREME ISO 32 TH 220 | HM | HLP | G | FT | FT | G | G | FT | - |
| SHAEFFER 275 S DILEX SUPREME MEHF HYD | HV | HLPD | G | E | G | E | E | FT | - |
| SHELL AEROSHELL FLUID 41 (MIL 5606H) | HH | HL | E | G | G | - | FT | G | - |
| SHELL AEROSHELL FLUID 602 (MIL-PRF 87252C) | HEPR | | E | E | G | G | E | G | G |
| SHELL ASTRON HL 46 | HH | | E | E | G | G | G | - | - |
| SHELL HYDRAULIC OIL PW 46 | HV | HVLP | E | G | G | E | G | G | G |
| 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 | FT | G |
| SHELL MORLINA S2 BL10 | HL | HLP | G | X | G | G | X | G | G |
| SHELL MORLINA S2 BL5 | HL | HLP | G | X | G | G | X | G | G |
| SHELL NATURELLE HF-E15 | HEES | | E | FT | G | G | X | G | G |
| SHELL NATURELLE HF-E46 | HEES | | E | FT | G | G | X | E | G |
| SHELL PMO S3 M 220 | HM | | G | G | G | G | G | G | - |
| SHELL TARGON AL PLUS | HH | | E | FT | E | - | FT | G | - |
| 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 MX 46 | HM | HLP | G | G | G | G | G | 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 S2 VX 46 | HV | HVLP | G | G | G | G | G | G | G |
| SHELL TELLUS S3 M 46 (EX TELLUS S 46) | HM | | E | G | G | G | G | G | G |
| SHELL TELLUS S3 V 32 (EX TELLUS STX) | HV | HVLP | E | G | FT | G | E | G | G |
| SHELL TELLUS S3 V 46 (EX TELLUS STX) | HV | HVLP | E | G | FT | G | E | G | G |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|---|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| SHELL TELLUS S4 ME 46 (EX TELLUS EE 46) | HM | HLP | E | FT | - | - | - | - | - |
| SHELL TELLUS S4 VE 46 | HV | HVLP | G | G | FT | G | FT | G | - |
| SHELL TELLUS S4 VX 32 (EX TELLUS ARCTIC 32) | HV | HVLP | G | G | G | G | G | G | E |
| SHELL TELLUS TX 68 | HV | | G | FT | G | E | G | G | - |
| SHENYANG TELI AERONAUTIC HYDRAULIC OIL 10# | HV | | G | - | G | G | FT | - | - |
| SINCLAIR AW 46 | HM | | G | G | G | G | G | G | - |
| SINENG LHM 46 | HM | | G | G | - | - | - | - | - |
| SINOPEC L HM 32 | HM | HLP | E | - | G | - | G | - | - |
| SMALLMAN CROWNPRESS 46 | HH | | G | G | G | - | E | G | E |
| SOLUTIA SKYDROLL 500 | HFDR | | X | 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 HYDRAWAY HVXA 46 HP | HV | HVLP | E | G | G | G | E | G | - |
| STATOIL HYDROCOR CC44 | HFC | | E | G | E | E | FT | G | - |
| STUART ISOCORE E 68 PLUS | HPG | | E | G | G | G | FT | E | - |
| SUN GROWN RAPE SEEDS OIL | HETG | | E | FT | E | E | G | E | - |
| SUNOCO SUNVIS 746 | HM | HLP | E | G | G | G | E | FT | 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 | FT | G | G |
| TERRESOLVE GREENSCARE 46 | HETG | | G | G | G | G | G | G | - |
| TEXACO BIOSTAR HYDRAULIC 32 | HETG | | E | FT | E | G | FT | E | - |
| TEXACO HYDRA 46 | HEES | | E | FT | G | G | FT | G | G |
| TEXACO RANDO HD 46 | HM | HLP | E | G | G | G | G | FT | G |
| TEXACO RANDO HD LVZ 46 | HV | HVLP | G | G | G | G | G | FT | - |
| TEXACO RANDO HD VZ 46 | HV | HVLP | G | G | G | G | G | G | G |
| TEXACO RANDO HD VZ 68 | HV | HVLP | G | G | G | G | G | G | - |
| TEXACO RANDO HD Z 46 | HV | HVLP | E | G | G | G | G | G | - |
| TEXACO RANDO HD Z LT 32 | HM | HVLP | G | G | G | G | G | G | G |
| TEXACO RANDO WM 32 | HV | HVLP | G | FT | G | G | - | G | - |
| TEXACO SYNSTAR HT 68 | HFDU | | G | G | E | G | FT | E | G |
| TOTAL AZOLLA HZS 46 | HM | HLP | E | G | G | G | E | - | - |
| TOTAL AZOLLA ZS 46 | HM | HLP | E | G | G | G | E | G | G |
| TOTAL BIOHYDRAN SE 46 | HEES | | G | FT | G | G | X | E | G |
| TOTAL EQUIVIS ZS 46 | HV | HVLP | G | G | G | - | - | FT | - |
| TOTAL HYDRANSAFE HFDU 46 | HFDU | | E | - | G | - | - | - | - |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|-----------------------------------|------------|-----------|---|--------------------|--|--|------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| TOTAL LHM (BRAKE FLUID) | HS | | G | X | FT | FT | X | G | - |
| UKABIOL HY 46 HTG | HETG | | G | G | E | G | G | E | G |
| UNIL HFS 46 NAS 6 | HM | HLP | G | G | G | G | E | - | - |
| UNIL HYDRO S46 | HM | HLP | G | G | G | G | E | FT | G |
| UNIL OPAL HV 46 | HV | HVLP | G | G | G | G | E | - | - |
| UNIL OPAL HVB 46 | HV | HLPD | G | G | G | G | E | - | - |
| UNIL OPAL HVC 46 | HV | HVLP | E | G | G | G | G | - | - |
| UNIL OPAL PO 6 | HV | HVLP | E | G | G | G | G | G | G |
| UNIL UNIHVD ISO WG 46 | HV | HLPD | E | G | G | G | E | G | G |
| VALVOLINE ULTRAMAX HVLP 68 | HV | HVLP | G | E | G | G | E | - | - |
| WARREN OIL SERVICE PRO PREMIUM AW | HM | | G | G | FT | FT | G | - | - |
| VICKERS ECOSURE HSE 68 | HEES | | G | FT | G | G | X | FT | - |
| WISURA WM 3021 2,8% IN H2O | HFA | | E | E | E | - | X | E | E |
| WURTH TRIATHLON HLP 46 | HM | HLP | E | G | FT | G | - | - | - |
| YORK 777 | HEES | | G | FT | G | G | X | G | E |
| ZELLER+GMELIN DIVINOL DHG 46 | HL | HLP | E | G | G | G | E | G | G |
| ZELLER+GMELIN DIVINOL HE 46 | HEES | | E | FT | G | E | - | G | - |

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PART 2: HYDROKINETIC APPLICATIONS AND LUBRICANT OILS COMPATIBILITY CHART

(AUTOMATIC TRANSMISSION AND VARIOUS LUBRICATION SYSTEMS)

| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|-----------------|------------|-----------|---|--------------------|--|--|----------------------------|---|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/ HT | ASTRO SPIRTEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |

AUTOMATIC TRANSMISSION FLUID (ATF)

| | | | | | | | | | |
|--|----|--|----|----|----|----|----|----|---|
| AGIP ATF 2D GEAR (ATF DEXRON II, MERCON II SPEC) | HA | | G | G | FT | - | G | FT | E |
| AVIA FLUID ATF 86 | HA | | G | G | FT | 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 | G | G | E | - | E |
| CHEVRON DRIVETRAIN HD (ATF CATERPILLAR TO4) | HA | | G | G | FT | G | G | FT | - |
| CHEVRON HAVOLINE FULL SYNTH. MULTI VEHICLE ATF (ATF DEXRON VI) | HA | | G | G | G | G | G | G | - |
| CONOCO PHILLIPS POWERDRIVE 10W | HA | | G | FT | - | G | G | - | - |
| CONOCO PHILLIPS VERSATRANS LV ATF | HA | | - | G | FT | G | FT | FT | - |
| GOLDENWEST DEXRON III M | HA | | G | G | FT | G | E | - | - |
| MAG 1 FULLY SYNTHETIC ATF (ATF MERCON V, DEXRON III) | HA | | - | G | FT | - | G | - | - |
| MILLERS MILLERMATIC ATF UN (ATF DEXRON II) | HA | | - | FT | FT | - | G | - | - |
| MOBIL ATF 320 | HA | | G | G | FT | G | E | FT | G |
| PETROCANADA ATF D3M | HA | | G | G | G | G | E | - | G |
| Q8 AUTO 15 (ATF DEXRON III) | HA | | - | G | G | G | E | - | - |
| SHELL ATF III D (ATF DEXRON III) | HA | | G | FT | FT | G | E | - | - |
| SHELL DONAX ATF III (ATF DEXRON III) | HA | | E | G | FT | - | E | G | - |
| SHELL DONAX TA (TORQUE CONV. ALLISON C-3) | HM | | G | - | FT | FT | E | - | - |
| SHELL DONAX TX (ATF DEXRON III) | HA | | G | FT | FT | - | G | - | - |
| SHELL SPIRAX S2 ATF AX | HA | | G | - | FT | - | E | - | - |
| SHELL SPIRAX S6 ATF ZM | HA | | FT | G | X | - | FT | - | - |
| TAMOIL ATF II D (ATF DEXRON IID) - 100°C | HA | | G | G | G | - | E | - | - |
| TOTAL FLUID NA H3 | HA | | G | G | FT | G | E | - | - |
| VENTRAC HYDRO TORQ XL | HA | | G | G | G | G | G | - | - |

GEAR (MECHANICAL TRANSMISSION) FLUID

| | | | | | | | | | |
|---|---|--|---|----|----|----|----|----|---|
| AMSOIL PTN 320 (GEAR OIL) | C | | G | G | FT | FT | G | FT | - |
| CASTROL OPTIGEAR SYNTHETIC X320 (GEAR OIL) | C | | G | G | FT | FT | G | FT | - |
| CASTROL OPTIGEAR SYNTHETIC X320 WTO (GEAR OIL) | C | | - | G | - | - | G | - | - |
| CHEVRON MACHINE OIL AW 220 | C | | G | G | G | G | G | G | G |
| EXXON MOBIL 424 (GEAR OIL) | C | | G | G | G | - | G | - | - |
| FUCHS PENTOGEAR 320 WT (GESR OIL) | C | | G | - | G | G | E | - | - |
| FUCHS PLANTO HYDRAMOT SL 5W40 (STOU ENGINE OIL) | E | | G | G | FT | G | G | G | - |
| FUCHS PLANTO HYTRAC (UTTO GEAR OIL) | C | | G | FT | G | G | FT | G | - |
| FUCHS RENOLIN UNISYN CLP 320 (GEAR OIL) | C | | G | G | G | G | E | G | - |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|--|------------|-----------|--|----------------|---|--|---------------------|---------------------------------|--------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDROROPE HERCULES | TWINPOWER/PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/HT | ASTRO SPIRITEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| FUCHS RENOLIN UNISYN XT 320 (GEAR OIL) | C | | G | - | G | G | E | - | - |
| FUCHS RENOLIT CX FO 20 (GEAR GREASE) | C | | E | E | E | E | G | G | G |
| FUCHS RENOLIT CX SPS (GEAR GREASE) | C | | E | E | E | E | G | G | G |
| KLUBER KLUBERBIO EG 2-100 (HEES GEAR OIL) | C | | G | G | G | G | - | G | - |
| KLUBER KLUBERBIO EG 2-68 (HEES GEAR OIL) | C | | G | G | G | G | - | G | - |
| LIEBHERR GEAR BASIC 90 LS (GEARBOX OIL) | C | | G | G | G | - | - | G | - |
| MOBIL MOBILGEAR SHC XMP 320 (GEAR OIL) | C | | E | G | G | G | E | G | - |
| MOBIL SHC GEAR 320 WT (GEAR OIL) | C | | E | G | G | G | E | G | - |
| MOBIL SHC PM 320 (GEAR OIL) | C | | G | G | FT | - | E | - | - |
| PANOLIN EP GEAR SYNTH 30 VDT | C | | G | X | G | G | X | G | G |
| PENZOIL LONG LIFE GEARPLUS 75W 90 | C | | E | G | G | E | G | G | - |
| SHELL DONAX TD (UTTO GEAR OIL) | C | | E | G | G | G | E | - | - |
| SHELL OMALA HD 150 (GEAR OIL) | C | | G | G | FT | - | FT | G | G |
| SHELL OMALA RL 320 (GEAR OIL) | C | | G | G | FT | - | FT | FT | G |
| SHELL OMALA S5 WIND 320 (GEAR OIL) | C | | G | G | FT | G | G | G | - |
| SHELL SPIRAX ASX (GEAR OIL SAE 80W140) | C | | G | FT | FT | FT | FT | G | - |
| SHELL SPIRAX S4 TXM (UTTO GEAR OIL) | C | | E | G | G | G | E | - | - |
| SHELL TEGULA V32 (GEAR OIL) | C | | E | G | G | - | E | G | E |
| SINOPEC GREATWALL WT 320 (GEAR OIL) | C | | G | G | G | G | E | G | G |
| TEXACO TEXTRAN TDH PREMIUM (UTTO GEAR OIL) | C | | G | G | G | G | E | G | - |
| VALTRA TRANSMISSION OIL XT 60 (GEARBOX) | C | | G | G | FT | - | E | FT | - |
| COMPRESSOR OILS | | | | | | | | | |
| ANDEROL 497 (DI-ESTER BASED COMPRESSOR OIL) | D | | G | FT | G | - | FT | G | - |
| ATLAS COPCO HD ROTO FLUID PLUS | D | | - | - | - | - | G | - | - |
| ATLAS COPCO PAROIL S BULK (SYNT. ESTER/POLYOLEFINE COMPR. OIL) | D | | G | G | FT | - | FT | FT | - |
| ATLAS COPCO ROTO EXTREME DUTY FLUID | D | | - | - | - | - | FT | - | - |
| ATLAS COPCO ROTO FOODGRADE FLUID (SYNT BLEND COMPR. OIL) | D | | - | - | - | - | G | - | - |
| ATLAS COPCO ROTO H (MINERAL BASED COMPRESSOR OIL) | D | | G | G | FT | - | G | G | E |
| ATLAS COPCO ROTO INJECT FLUID PLUS (MINERAL BASED COMPR. OIL) | D | | G | G | FT | - | G | G | E |
| ATLAS COPCO ROTO INJECT FLUID (MINERAL BASED COMPR. OIL) | D | | E | G | G | - | G | G | E |
| ATLAS COPCO ROTO RS ULTRA (MINERAL BASED COMPR. OIL) | D | | - | - | - | - | G | - | - |
| ATLAS COPCO ROTO XTEND DUTY (PAO COMPR. OIL) | D | | - | - | - | - | G | - | - |
| ATLAS COPCO ROTO Z | D | | - | - | - | - | G | - | - |
| BARHAT PETROLEUM AIRLUBE XD | 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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|--|------------|-----------|---|--------------------|--|--|----------------------------|---|--------------------------------------|
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| FUCHS RENISO C85 E | D | | G | FT | G | G | - | G | - |
| FUCHS RENISO PAG 1234 | D | | G | G | G | G | - | G | G |
| INGERSOLL RAND SSR ULTRA PLUS COOLANT (POE BASED COMPR. OIL) | D | | G | G | G | - | E | G | G |
| INGERSOLL RAND SSR ULTRACOOLANT (POLYGLICOLE COMP. COOLANT) | D | | G | G | G | G | G | G | - |
| INGERSOLL RAND TECHTROL GOLD (POLYGLICOLE COMP. COOLANT) | D | | G | FT | G | G | G | G | - |
| ISAFLEX KOMPRESSOIL SE | D | | - | FT | G | G | FT | - | - |
| KLUBER SUMMIT HYSIN F 46 | D | | G | G | FT | G | - | - | - |
| KLUBER SUMMIT HYSYN FG 46 (SYNT HYDROCARBON COMP. OIL) | D | | G | G | FT | G | G | FT | - |
| LUBRIZOL EMKARATE RL 100S | D | | G | G | - | - | - | FT | G |
| MOBIL ARCTIC EAL 32 (POE BASED A/C COMP. OIL) | D | | - | FT | G | - | X | 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 | - | - | FT | E |
| SHELL CORENA D (COMPRESSOR OIL) | D | | G | G | FT | - | E | FT | 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 | FT | - |
| VALVOLINE VALCOMP SYNTH 68 COMP. OIL | D | | - | - | - | - | G | - | - |

ENGINE OILS

| ENGINE OILS | | | | | | | | | |
|--|---|--|---|---|----|---|----|---|---|
| AGIP RUSTIA C (ENGINE OIL 10W20) | E | | G | G | G | - | G | - | - |
| AGIP SINT 2000 (ENGINE OIL 10W40) | E | | G | G | G | - | G | E | G |
| AGIP TECSINT SL5W40 (ENGINE OIL 5W40) | E | | E | G | FT | - | G | - | - |
| ARAL TURBORAL (ENGINE OIL 15W40) | E | | E | G | - | - | - | - | - |
| BP VANELLUS C 5 (ENGINE OIL 15W40) | E | | E | G | G | G | G | - | - |
| CALTEX DELO 400 (DIESEL MULTIGRADE ENGINE FLUID) | E | | G | - | - | G | G | - | - |
| CHEVRON DELO 400LE (ENGINE OIL 15W40) | E | | G | G | FT | G | G | G | - |
| CHEVRON RPM 30 (ENGINE OIL) | E | | G | G | G | G | E | G | - |
| FUCHS TITAN GT 1 PRO C 2 (ENGINE OIL 5W30) | E | | G | G | G | - | FT | G | - |
| IGOL MARINE 15W-40 (ENGINE OIL) | E | | G | G | G | - | - | - | - |
| JB GERMAN OIL HIGHTEC TRUCK SAE 10W40 (ENGINE OIL) | E | | G | G | G | G | G | - | - |
| JCB ENGINE OIL EP (ENGINE OIL 15W40) | E | | E | G | G | - | G | G | G |
| MOBIL DELVAC MX (ENGINE OIL 15W40) | E | | E | G | - | - | - | - | - |
| MOBIL DELVAC 1310 (ENGINE OIL 10W20) | E | | E | G | G | - | G | E | G |
| Q8 T1000 (ENGINE OIL 15W40 - STUO) | E | | G | G | G | G | G | G | G |
| Q8 T720 (ENGINE OIL 15W40) | E | | E | G | G | - | E | G | - |
| Q8 T760 (ENGINE OIL 15W40) | E | | G | G | FT | G | G | G | 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 |

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| HYDRAULIC FLUID | TYPE | | WIRE SPIRAL | WIRE BRAID | | | | TEXTILE BRAID | TPE TEXTILE BRAID |
|---|------------|-----------|--|--------------------|--|--|----------------------------|--|--------------------------------------|
| | ISO 6743-4 | DIN 51524 | ROCKMASTER GOLDENISO SHIELDMASTER ANACONDA FOREMASTER CRYOFLEX DIAMONDSPIR XTRAFLOW/4WS HYDRORPE HERCULES | TWINPOWER/ PLUS | ROCKMASTER HARVESTER/17 SHIELDMASTER GOLDENISO COVER CRYOFLEX TWINPOWER/4000 TWINPOWER/5000 | FOREMASTER GOLDENISO/PILOT ROCKMASTER/1SC SYNERGY INFINITY | EQUATOR XTRAFLOW/ HT | ASTRO SPIRITEX MULTITEX PUSHFIT | THERMO-PLASTIC HOSE (TPE TUBE) |
| SHELL RIMULA R3 MV (ENGINE OIL) | E | | E | E | G | G | - | G | G |
| SHELL RIMULA R4 X (ENGINE OIL 15W40) | E | | E | G | - | - | - | - | - |
| 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 |
| SPEEDOL DIESEL ENGINE OIL SAE 15W40 | E | | G | FT | G | - | G | - | - |
| TOTAL IDO | E | | E | G | G | - | G | - | G |
| TURBINE OILS | | | | | | | | | |
| MOBIL JET OIL II | T | | E | FT | G | E | FT | E | - |
| NYCO TURBONICOIL TN 13 B | T | | G | X | X | FT | X | E | - |
| HEAT TRANSFER FLUIDS | | | | | | | | | |
| CHEVRON HAVOLINE XLC (FLUID COOLER) | Q | | E | G | G | - | X | G | - |
| CUMMINS FLEETGUARD ES COMPLEAT MEDIUM (COOLANT) | Q | | G | G | G | - | - | G | - |
| DOW DOWFROST HD (COOLANT) | Q | | G | G | G | G | - | 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 |
| METAL WORKING | | | | | | | | | |
| BUDEMEIM PHOSPHATHERM BLACK 948 | M | | E | E | E | - | X | E | - |
| CASTROL VARIOCUT G613 HC (CUTTING OIL) | M | | - | FT | - | FT | X | - | - |

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PART 3: BEHAVIOUR TO CHEMICALS FOR NON-HYDRAULIC APPLICATIONS

(GUIDELINES FROM LITERATURE)

| FLUID | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|--|---------|-------------|--------------------------------|--------------------------|-----------|
| ACETALDHEIDE | X | FT | X | FT | G |
| ACETIC ACID, 10% | X | FT | G | G | G |
| ACETIC ACID GLACIAL | X | X | FT | G | FT |
| ACETONE | FT | FT | X | G | G |
| AIR (60°C) | G | G | E | E | E |
| AIR (100°C) | FT | G | E | E | G |
| AIR (150°C) | X | X | G | G | X |
| AMMONIA, GASEOUS | FT | G | - | - | X |
| AMMONIA, LIQUID COLD | E | E | G | - | X |
| AMMONIA, LIQUID 70°C | X | FT | FT | - | X |
| AMMONIUM HYDROXIDE, 10% | G | G | E | E | - |
| AMMONIUM HYDROXIDE, CONC | FT | FT | FT | FT | - |
| AMMONIUM NITRATE (AQUEOUS SOLUTIONS) | G | G | G | G | G |
| AMMONIUM PHOSPHATE, MON-DI-TRI BASIC (AQ. SOL) | E | E | E | E | FT |
| AMMONIUM SULPHATE (AQUEOUS SOLUTION) | E | E | E | E | FT |
| ANILINE | X | FT | X | X | X |
| AQUA REGIA | FT | FT | X | FT | - |
| ASTM OIL N°1, 100°C | E | E | G | G | E |
| ASTM OIL N°2, 100°C | E | G | FT | FT | E |
| ASTM OIL N°3, 100°C | E | FT | FT | FT | E |
| BENZENE | X | X | X | FT | FT |
| BORIC ACID 10% 100°C | G | G | G | X | G |
| BRAKE FLUID (SAE J 1703D) | X | - | X | G | - |
| BRINE | E | FT | FT | G | G |
| BUTANOL | E | G | G | G | E |
| 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 | FT | FT | X | X | X |
| CITRIC ACID, 33% | G | G | G | - | E |
| CRUDE OIL | E | X | X | X | G |
| DETERGENT WATER SOLUTION | G | G | FT | G | G |
| DIBENZYL ETHER | X | X | X | X | - |
| DIETHYL PHTALATE (DEPH) | FT | X | X | X | E |
| EPICHLORHYDRINE | X | X | FT | X | X |
| ETHYL ACETATE | FT | X | FT | FT | FT |
| ETHYL ALCOHOL | E | E | E | E | E |

APPENDIX 642

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 death, personal injury or property damage.

| FLUID | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|---|---------|-------------|--------------------------------|--------------------------|-----------|
| ETHYL ETHER | G | FT | - | - | - |
| ETHYLENE | E | G | - | - | G |
| ETHYLENE GLYCOLE | E | E | G | G | E |
| ETHYLENE GLYCOLE (100°C) | E | G | G | G | G |
| FORMALDHEYDE | FT | G | FT | G | G |
| FORMIC ACID 23°C (SATURATED SOLUTION) | G | G | G | X | G |
| FORMIC ACID 75°C (SATURATED SOLUTION) | FT | G | FT | X | FT |
| GLYCERINE | E | E | E | E | E |
| HEPTANE | G | FT | X | FT | E |
| HYDRAULIC OILS (SEE DETAILED TABLE) | * | * | * | * | * |
| HYDROCHLORIC ACID, 10% | G | G | G | X | G |
| HYDROCHLORIC ACID, 37% | FT | FT | FT | X | X |
| HYDROCHLORIC ACID, 37% 70°C | X | X | X | X | X |
| HYDROCYANIC ACID 20% | FT | FT | - | - | - |
| HYDROGEN SULPHIDE | FT | G | FT | X | E |
| ISOBUTYL ALCOHOL | G | G | G | G | E |
| ISOPROPYL ALCOHOL | G | E | E | E | E |
| ISO-OCTANE | G | FT | X | FT | E |
| KEROSENE (AROMATICS 40%MAX, 70°C) | G | FT | X | FT | - |
| LEAD FREE PETROL | G | FT | X | FT | 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 | FT | X | FT | E |
| NITRIC ACID, CONCENTRATED 65% | X | X | X | X | X |
| NITRIC ACID, DILUTED 10% 50°C | FT | X | X | FT | X |
| NITRIC ACID FUMING | X | X | X | X | X |
| NITROGEN | E | E | E | E | E |
| OLEIC ACID | G | FT | FT | FT | E |
| OLEUM | X | X | X | X | X |
| OXALIC ACID 25% 80°C | G | E | G | X | - |
| OXYGEN (80°C) | FT | G | FT | G | E |
| PARAFFIN | E | E | FT | E | E |
| PENTANE | G | FT | X | FT | E |
| PETROL | E | FT | X | FT | E |
| PETROLEUM, 70°C | E | G | X | FT | E |
| PHENOL | X | X | X | X | FT |
| PHOSPHORIC ACID 20% | G | E | E | X | - |
| PHOSPHORIC ACID 60% 50°C | FT | G | FT | X | - |

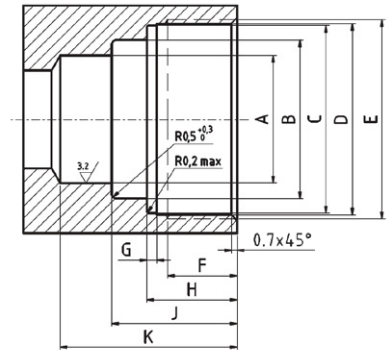
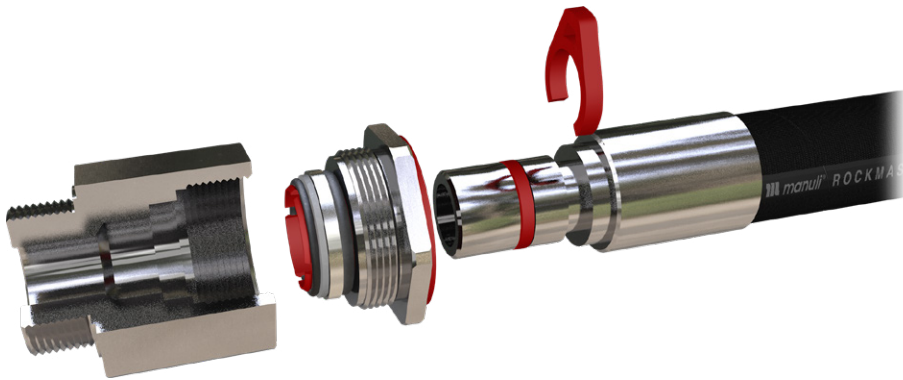
WARNING: Compatibility of hose and fittings with conveyed fluid is an essential factor in avoiding chemical reactions that may result in release of fluids or failure of the hose or connection. This chemical compatibility guide must not be used in conjunction with any other compatibility guides from previous or future catalogue editions, bulletins or publications. Incorrect use of these charts could result in death, personal injury or property damage.

| FLUID | NITRILE | CHLOROPRENE | CHLOROSULPHONATED POLYETHYLENE | CHLORINATED POLYETHYLENE | POLYESTER |
|--|---------|-------------|--------------------------------|--------------------------|-----------|
| PHOSPHORIC ACID 85% | FT | G | FT | X | - |
| PHOSPHOROUS TRI-CHLORIDE | X | X | X | X | - |
| PICRIC ACID 10% 100°C | FT | FT | G | G | - |
| 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 | FT | G | E |
| SOAPS | E | G | G | G | E |
| SODA CAUSTIC | FT | G | G | FT | G |
| SODIUM BICARBONATE | E | E | E | E | G |
| SODIUM CHLORIDE (AQUEOUS SOLUTION) | E | E | G | G | E |
| SODIUM HYDROXIDE | FT | G | G | FT | E |
| SODIUM HYDROXIDE 70°C (MEDIUM HIGH CONC.) | FT | G | G | FT | F |
| SODIUM HYPOCHLORITE (AQUEOUS SOLUTIONS) | FT | G | FT | 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 | FT | 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 | FT | FT | E |
| SULPHURIC ANHYDRIDE | X | FT | FT | FT | - |
| SULPHUROUS ACID | X | X | FT | FT | X |
| TANNIC ACID | G | G | G | X | E |
| TANNIN | E | E | E | E | E |
| TARTARIC ACID 20% | E | G | G | X | - |
| TETRAETHYL LEAD | G | FT | X | - | - |
| TOLUENE | X | X | X | X | E |
| TURPENTINE | G | X | X | X | - |
| UREA | E | E | G | G | - |
| VINYL ACETATE | FT | FT | FT | G | - |
| VINYL CHLORIDE | X | X | X | X | - |
| WATER | E | G | X | G | E |
| XYLENE | FT | X | X | X | G |
| ZINC CHLORIDE (AQUEOUS SOLUTIONS) | E | E | G | X | E |
| ZINC SULPHATE (AQUEOUS SOLUTIONS) | E | E | G | X | - |

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 death, personal injury or property damage.

DIRECT TO PORT CONCEPTS

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.

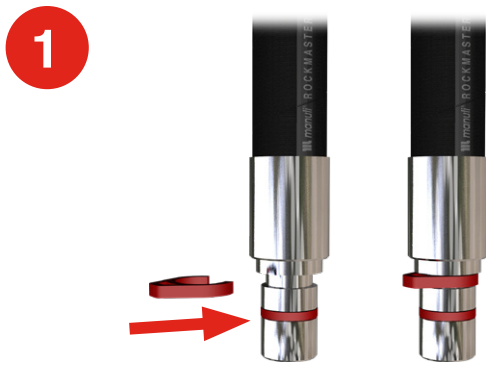


FEMALE PORT DESIGN

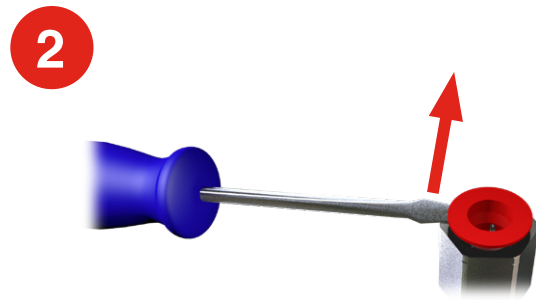
| SIZE | DIMENSIONS (MM) | | | | | RECOMMENDED TORQUE |
|------|-----------------|-------------|--------------|------------|-----------|--------------------|
| | A | B | C | D | E | |
| -04 | 10.03 + 0.08 | 12.75 + 0.1 | 16.55 + 0.07 | 17.0 + 0.1 | M18 X 1 | 23 - 35 NM |
| -06 | 13.03 + 0.08 | 16.9 + 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 | I | J | |
| -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 PROCEDURE



Fit the safety clip into the dedicated groove on the male fitting.



Use a flat-headed screwdriver, or similar tool, to remove the protective cap on the cartridge.



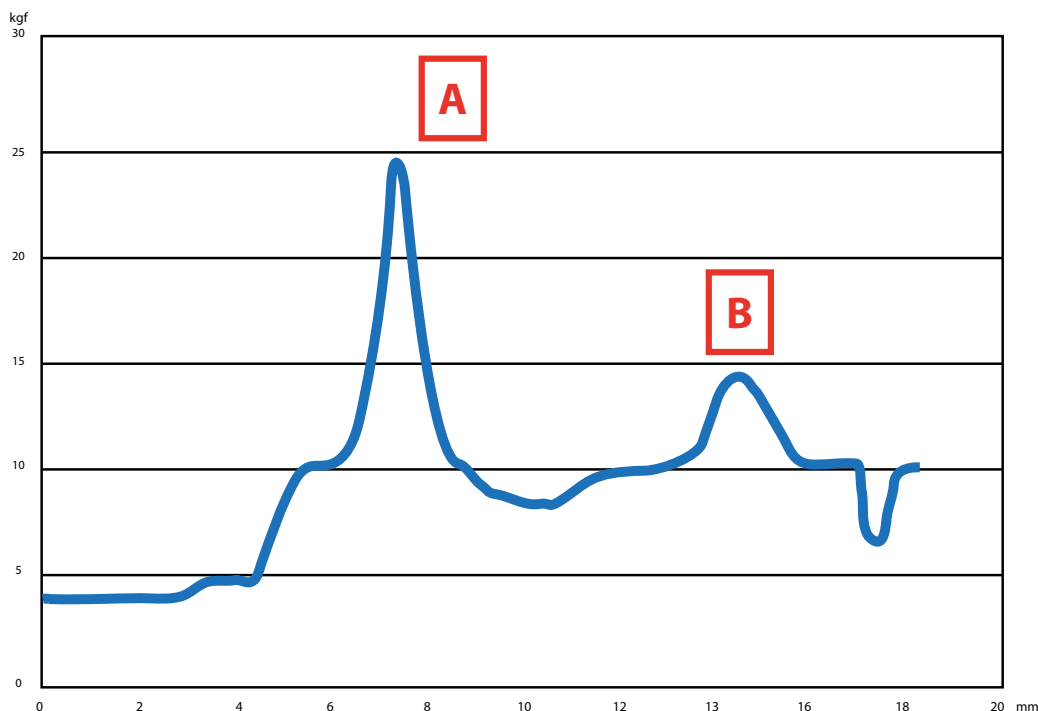
Connect the fitting by pushing it into the cartridge. The fitting is correctly locked and connected when the safety clip touches the cartridge.

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.



DIS-ASSEMBLING PROCEDURE



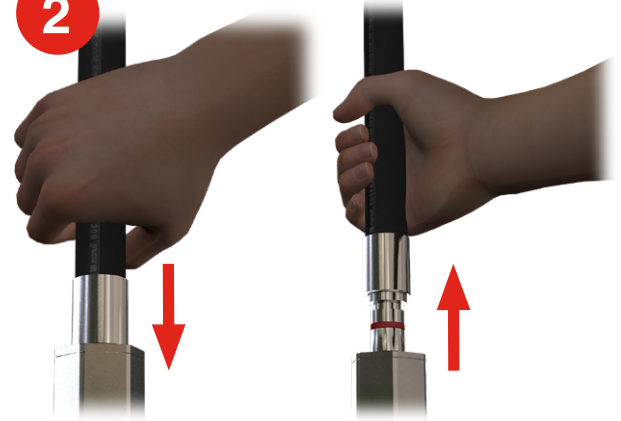
Before disconnection, ensure the system is not under pressure

1



Use a flat-headed screwdriver, or similar tool, to remove the safety clip.

2

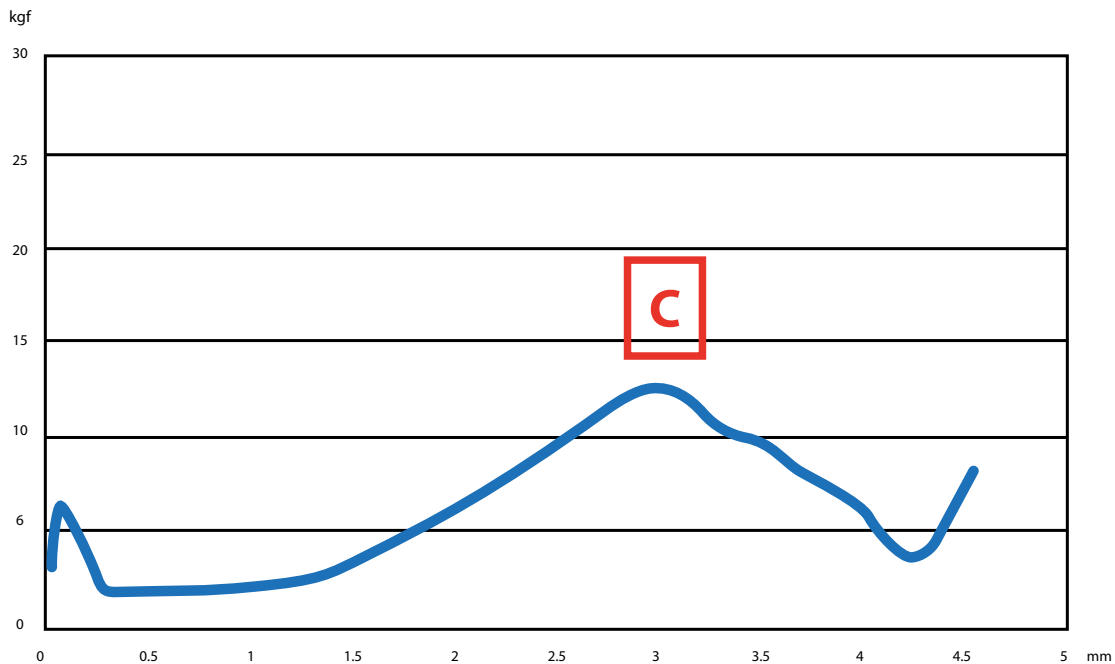


Push the fitting in until the collar touches the cartridge, then pull out to complete the disconnection process. Use a flat-headed screwdriver, or similar tool, to remove the protective cap on the cartridge.

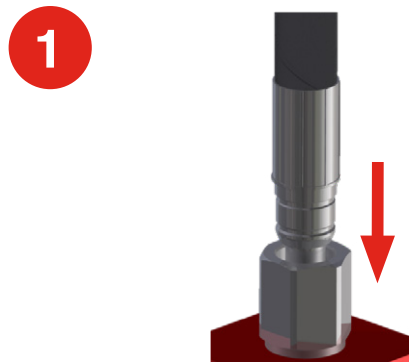
DIS-ASSEMBLING INSTRUCTIONS

The maximum axial force required to separate the components (after the initial “push”) is approximately 10 kgf for a -08 fitting - see graph opposite.

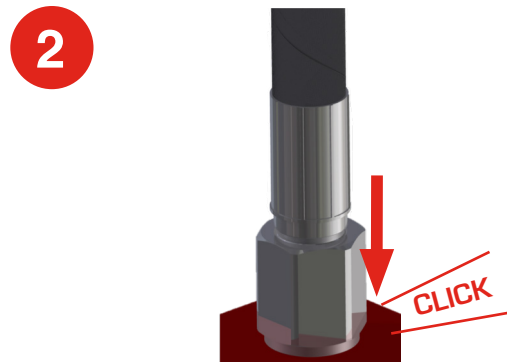
The peak (C) represents the force required to open the internal retaining ring to allow the withdrawal of the male fitting.



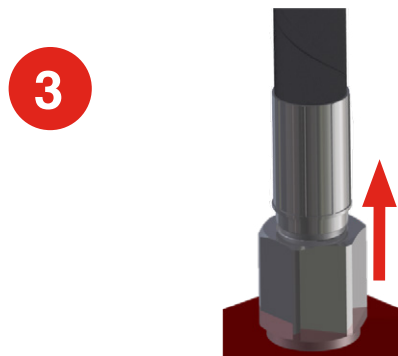
ASSEMBLING PROCEDURE



Put the male insert into the adaptor.

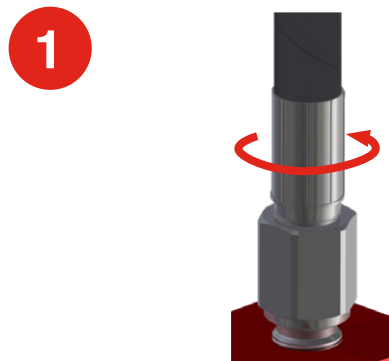


Push the male insert until a "click" is heard.



Pull the insert back slightly to check that the connection has been made successfully.

DIS-ASSEMBLING PROCEDURE



Unscrew the adaptor.

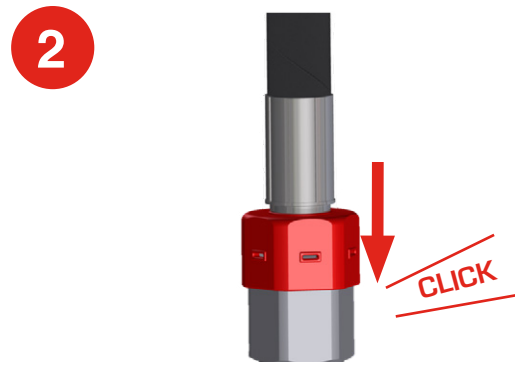


Remove the adaptor and insert as a single piece.

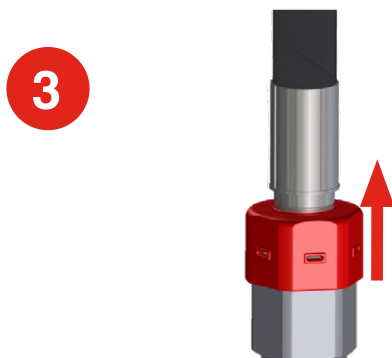
ASSEMBLING PROCEDURE



Put the male insert into the adaptor.

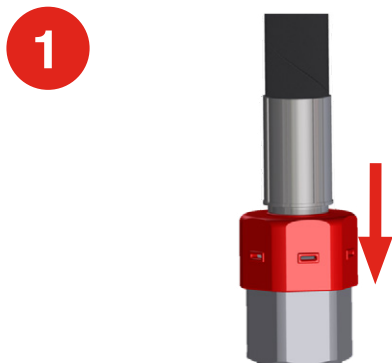


Push the male insert until a “click” is heard.

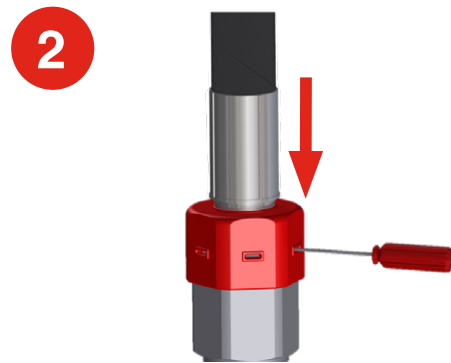


Pull the insert back slightly to check that the connection has been made successfully.

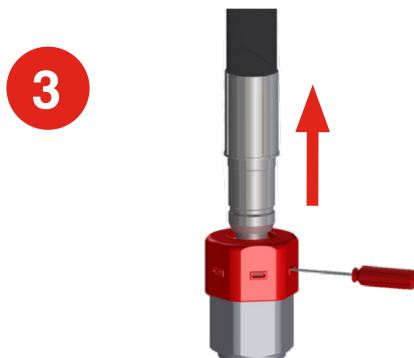
DIS-ASSEMBLING PROCEDURE



Push male insert against the internal stop

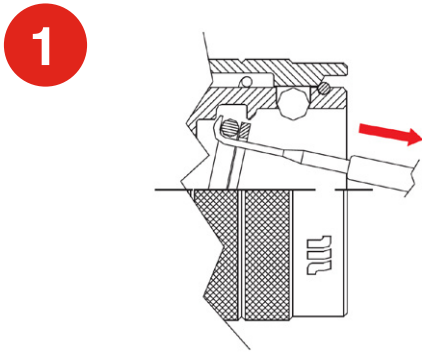


Insert a flat-headed screwdriver into one of the slots in the red sleeve to lock it in place.



Pull the male insert out of the adaptor.

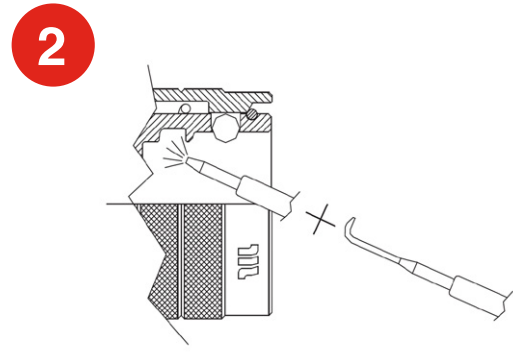
O-RING AND BACK-UP RING SEAL REPLACEMENT ON FEMALE COUPLINGS



Remove the damaged O-ring and back-up ring.



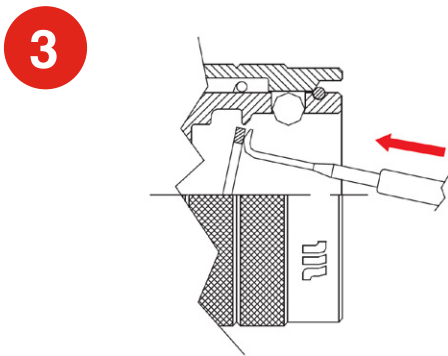
Do not use sharpened tools. Take care not to damage the components.



Clean the seal area.



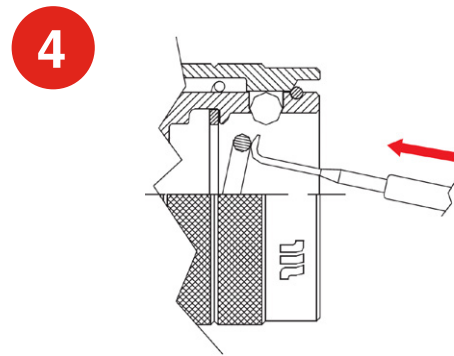
Remove all residual parts of damaged O-ring and back-up ring.



Insert the new back-up ring.



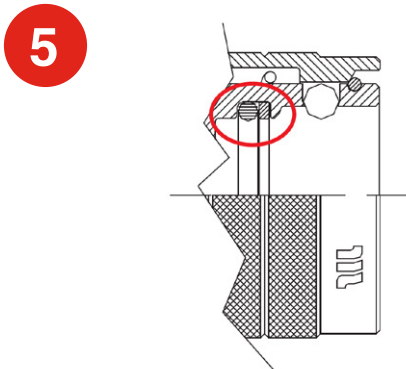
Take care not to deform or scratch the back-up ring. Ensure the back-up ring is correctly located in its seat.



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.



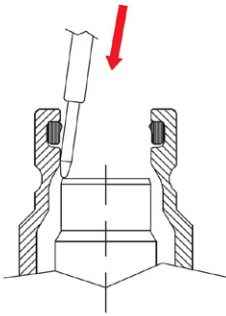
The replacement process is now complete.



Lubricate the seal system.

POLYURETHANE SEAL REPLACEMENT ON MALE FLAT-FACE COUPLINGS

1

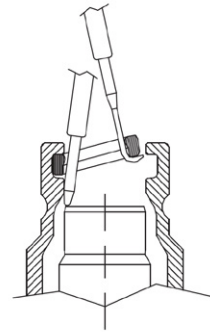


Use a suitable tool to pull back the valve and hold it in place.



Do not use sharpened tools. Take care not to damage the components.

2

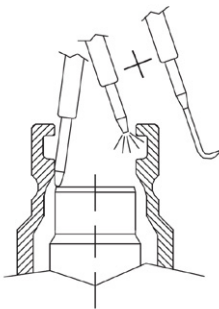


Remove the damaged seal.



Take care not to damage the components.

3

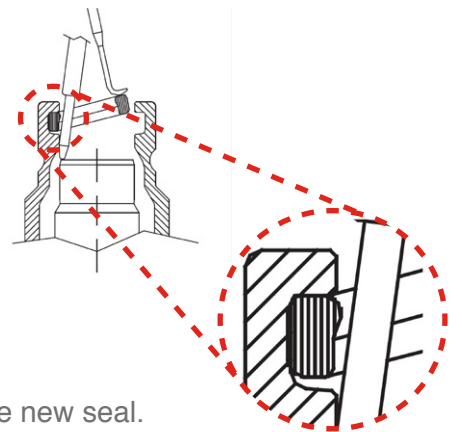


Clean the seal area.



Remove all residual parts of polyurethane seal.

4

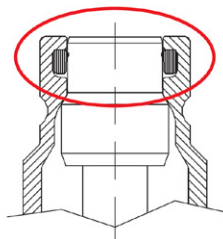


Insert the new seal.



Ensure the seal is correctly oriented. Lubricate the seal before inserting. Take care not to scratch the seal. Ensure the seal is correctly located in its seat.

5

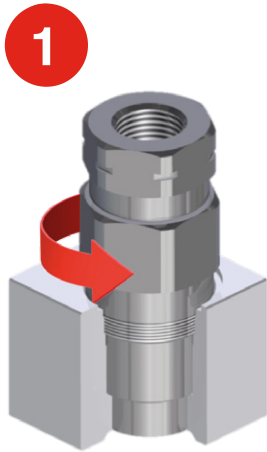


Release the valve to complete the replacement process.

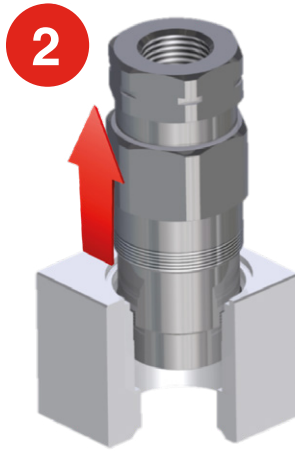


Lubricate the seal system.

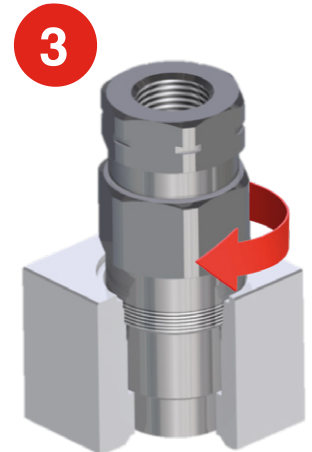
FEMALE MULTICONNECTOR REPLACEMENT INSTRUCTIONS



Use a wrench on the lower hexagon to unscrew the old coupling



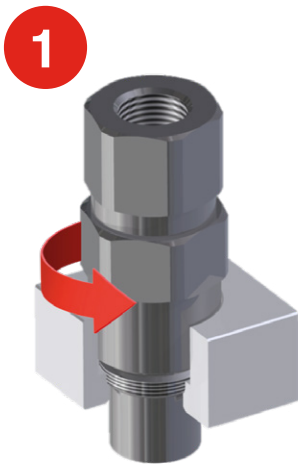
Lift out the old coupling and replace with the new part



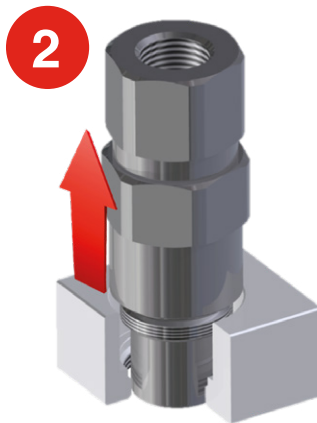
Use a wrench on the lower hexagon to tighten the new coupling to the torque listed below

| SIZE | | | HEX SIZE | TIGHTENING TORQUE |
|------|------|------|----------|-------------------|
| DN | Inch | Dash | mm (AF) | Nm |
| 10 | 3/8 | 06 | 30 | 60 |
| 12.5 | 1/2 | 08 | 36 | 90 |
| 19 | 3/4 | 12 | 41 | 150 |
| 25 | 1 | 16 | 50 | 250 |

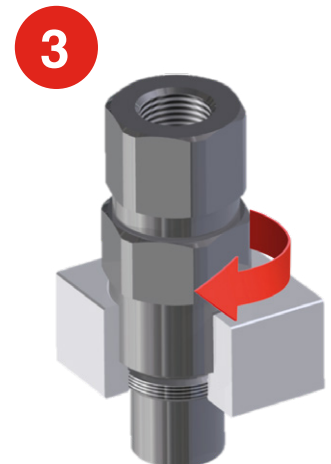
MALE MULTICONNECTOR REPLACEMENT INSTRUCTIONS



Use a wrench on the lower hexagon to unscrew the old coupling



Lift out the old coupling and replace with the new part

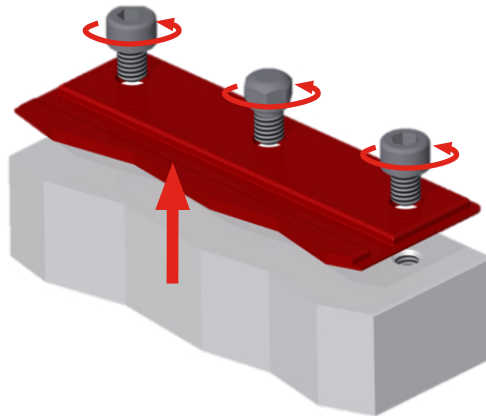


Use a wrench on the lower hexagon to tighten the new coupling to the torque listed below

| SIZE | | | HEX SIZE | TIGHTENING TORQUE |
|------|------|------|----------|-------------------|
| DN | Inch | Dash | mm (AF) | Nm |
| 10 | 3/8 | 06 | 30 | 60 |
| 12.5 | 1/2 | 08 | 36 | 100 |
| 19 | 3/4 | 12 | 42 | 150 |
| 25 | 1 | 16 | 50 | 250 |

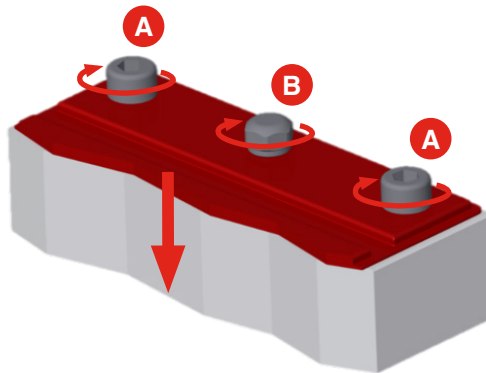
MULTICONNECTOR COVER REPLACEMENT INSTRUCTIONS

1



Unscrew the fixing screws and remove the old cover.

2

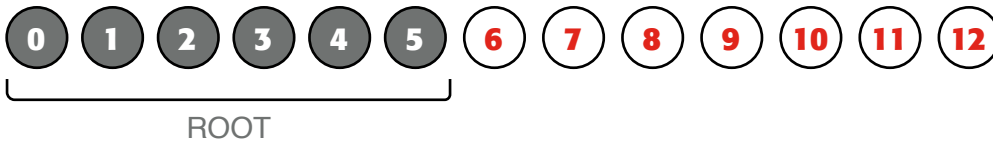


Place the new cover on the face of the fixed part and insert the screws into the positions shown.

Tighten each screw to the torque listed below.

| SCREW | HEX SIZE | SOCKET SIZE | TIGHTENING TORQUE |
|-------|----------|-------------|-------------------|
| | mm (AF) | mm (AF) | Nm |
| A | - | 5 | 5 |
| B | 9 | - | 5 |

HOSE



"H" letter always means "Hoses"



Family

"Five digit number" that defines a specific hose family - see "Hose Family Table".

| Digit "1" | Hose Type | Digits "1-2" | Hose Type |
|-----------|-----------------------|--------------|--------------------------|
| 0 | Hydraulic rubber hose | 10 | Hydraulic rubber hose |
| 2 | Thermoplastic hose | 16 | Textile braided - Traded |
| 3 | Traded hose | | |
| 7 | Oil & marine hose | | |
| 8 | Industrial hose | | |
| 9 | PTFE hose | | |



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



Diameter in millimetres

In case digit "6" is a number, the hose diameter in millimetres should be read including it.

HOSE (CONTINUED)

DIGIT "9" 0 1 2 3 4 5 6 7 8 9 10 11 12

| Value | Package | Marking Technology |
|-------|-----------------------|---------------------|
| O | 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 |

DIGIT "10" 0 1 2 3 4 5 6 7 8 9 10 11 12

| 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" 0 1 2 3 4 5 6 7 8 9 10 11 12

| Value | Special |
|------------|---|
| S, V, Z, Y | Special length |
| C | Branding without "Made in..." declaration |
| 9 | Manuli standard branding |
| O-8 | Private brand |
| 4 | Soft Seal Sleeve |

HOSE (CONTINUED)

DIGIT "12" 0 1 2 3 4 5 6 7 8 9 10 11 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

HOSE FAMILIES

| FIRST 6 DIGITS | PROD. TECH. | PROD. TECH. DESCRIPTIONS | FAMILY | FAMILY DESCRIPTION |
|----------------|-------------|--------------------------------|--------|------------------------|
| H01006 | 1 | WIRE BRAIDED | 6 | TRACTOR/1SN |
| H01007 | 1 | WIRE BRAIDED | 7 | ROCKMASTER/1SN |
| H01013 | 1 | WIRE BRAIDED | 13 | TRACTOR/1SC |
| 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 |
| 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 |

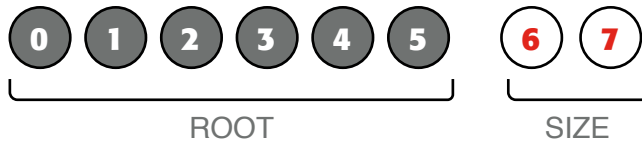
HOSE FAMILIES (CONTINUED)

| FIRST 6 DIGITS | PROD. TECH. | PROD. TECH. DESCRIPTIONS | FAMILY | FAMILY DESCRIPTION |
|----------------|-------------|---------------------------------|--------|--------------------------|
| 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 |
| 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 |
| H01154 | 1 | WIRE BRAIDED | 154 | SHIELDMASTER/21 |
| H01155 | 1 | "WIRE BRAIDED; WIRE SPIRALLED" | 155 | SHIELDMASTER/28 |
| H01157 | 1 | WIRE BRAIDED | 157 | FOREMASTER/28 |
| H01156 | 1 | WIRE BRAIDED | 156 | FOREMASTER/21 |
| H01158 | 1 | WIRE BRAIDED | 158 | CRYOFLEX/21 |
| H01159 | 1 | WIRE BRAIDED | 159 | CRYOFLEX/35 |
| 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 |

HOSE FAMILIES (CONTINUED)

| FIRST 6 DIGITS | PROD. TECH. | PROD. TECH. DESCRIPTIONS | FAMILY | FAMILY DESCRIPTION |
|----------------|-------------|--------------------------------|--------|------------------------|
| 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 |
| 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 |
| H10113 | 10 | WIRE SPIRALLED | 113 | SHIELDMASTER/17 WS |
| H10119 | 10 | "WIRE BRAIDED; WIRE SPIRALLED" | 119 | SHIELDMASTER/35 |
| H10120 | 10 | "WIRE BRAIDED; WIRE SPIRALLED" | 120 | SHIELDMASTER/42 |
| H10125 | 10 | WIRE SPIRALLED | 125 | HERCULES/HT |
| H10132 | 10 | WIRE SPIRALLED | 132 | ANACONDA |
| H10133 | 10 | WIRE SPIRALLED | 133 | FOREMASTER/35 |
| H10134 | 10 | WIRE SPIRALLED | 134 | FOREMASTER/42 |
| H30005 | 30 | TEXTILE, HELIX WIRE | 5 | SPIRTEX/K |
| H30010 | 30 | THERMOPLASTIC | 10 | HYDROPLAST |
| H30011 | 30 | THERMOPLASTIC | 11 | HYDROTWIN |

FERRULES



| Value | Ferrule Type |
|-------|----------------------|
| M | Ferrule MF2000 |
| C | Ferrule or clamp A/C |
| K | Reusable ferrule |



| Value | Description |
|-------|-------------|
| 0 | Always |



Refer to Ferrule Series table



| 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 |



| Value | Special |
|-------|--------------------|
| 0 | Standard |
| 1 | Customised version |
| 2 | Customised version |
| ... | ... |

FERRULES (CONTINUED)

DIGITS "6-7"



Hose bore size

FERRULE SERIES

| DIGITS | DESCRIPTION |
|--------|--|
| 1 | SKIVE FERRULE FOR W.B HOSES |
| 3 | NO-SKIVE FERRULE FOR TEXTILE BRAIDED HOSES / STAR-CRIMP FERRULE AC FOR REFRISTAR |
| 4 | REUSABLE STAR-FIT FERRULE AC FOR REFRISTAR |
| 7 | REFRIMASTER FERRULE AC |
| 8 | NO-SKIVE FERRULE FOR COMPACT HOSES |
| 9 | 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) |
| 19 | |
| 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 |
| 35 | |
| 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 |

TWO-PIECE HYDRAULIC FITTINGS



| Value | Description |
|-------|---|
| M | MF2000 Connector (Multifit, Interlock, Xtralock, ...) |
| O | Accessories (banjo, flange clamps, bolt, ...) |
| L | Push-Lock Connector |



| 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 Blastlock |
| 6 | Female or Flange type Blastlock |
| 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 |



The numbers in these positions specify the termination end or the second tail.

See "Termination Ends Type" table for coding details.

TWO-PIECE HYDRAULIC FITTINGS (CONTINUED)

DIGIT "4" (0) (1) (2) (3) (4) (5) – (6) (7) – (8) (9) (10) (11) (12)

Value Bending Angle

| | |
|---|-----------------------|
| 0 | Special Bending Angle |
| 1 | Straight |
| 2 | 22,5° Swept |
| 3 | 30° Swept |
| 4 | 45° Swept |
| 5 | Double connector |
| 6 | 60° Swept |
| 7 | 67,5° Swept |
| 8 | Compact type |
| 9 | 90° Swept |

DIGIT "5" (0) (1) (2) (3) (4) (5) – (6) (7) – (8) (9) (10) (11) (12)

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" (0) (1) (2) (3) (4) (5) – (6) (7) – (8) (9) (10) (11) (12)

Tail size

DIGITS "8-9" (0) (1) (2) (3) (4) (5) – (6) (7) – (8) (9) (10) (11) (12)

Termination end size

DIGITS "10-11-12" (0) (1) (2) (3) (4) (5) – (6) (7) – (8) (9) (10) (11) (12)

These digits specify various customisations related to dimensions, threads, drops, ...

ONE-PIECE HYDRAULIC FITTINGS



| Value | Description |
|-------|-------------------------------------|
| OPK | One-Piece (MF3000) No Skive Kompact |
| OPF | One-Piece (MF3000) No Skive Flat |



| Value | Description |
|-------|-----------------------|
| 1 | Male |
| 2 | Female or Flange type |



The numbers in these positions specify the termination end or the second tail.
 See "Termination Ends Type" table for coding details.



| Value | Bending Angle |
|-------|-----------------------|
| 0 | Special Bending Angle |
| 1 | Straight |
| 2 | 22,5° Swept |
| 3 | 30° Swept |
| 5 | 45° Swept |
| 6 | 60° Swept |
| 7 | 67,5° Swept |
| 8 | Compact type |
| 9 | 90° Swept |

ONE-PIECE HYDRAULIC FITTINGS (CONTINUED)



| 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 |



Tail size



Termination end size



These digits specify various customisations related to dimensions, threads, drops, ...

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 DIN 3852-2 FORM A | BSP FEMALE FLAT SEAT |
| 07 | 07 | | BSPT MALE | JIS B 8363 (BSP - NISSAN) SWIVEL FEMALE |
| 08 | 08 | 08 | - | 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 MALE FLAT FACE DIN 3852-1 FORM A | 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 | 19 | METRIC MALE ISO 6149-2 / DIN 3852-3 FORM F (ONLY FOR FITTINGS AND Q.SAFE) METRIC MALE WITH RETAINING RING (ADJUSTABLE + NON-ADJUSTABLE HEAVY) ISO 9974 PORT COMPATIBLE (ONLY FOR ADAPTORS) | 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 | METRIC FEMALE 24° METAL CONE (WITHOUT O-RING) |
| 24 | 24 | 24 | ORFS MALE ISO 8434-3 / SAE J1453 | ORFS FEMALE ISO 8434-3 / SAE J1453 |
| 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 MALE (45° CONE) SAE J512 | 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 (ADAPTORS) | 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 (ADAPTORS) | 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 |

TERMINATION END TYPES (CONTINUED)

| DIGIT | FITTINGS | Q.SAFE | DESCRIPTION (MALE END) | DESCRIPTION (FEMALE END) |
|-------|----------|--------|---|---|
| 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 J516 |
| 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 | | ORFS SWIVEL MALE | 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) |
| 58 | 58 | | GOST MALE | BSP PARALLEL THREAD O'RING 60° CONE BS5200 (ONLY FOR INTERLOCK/XTRALOCK TAIL) |
| 59 | 59 | | FLUSHFIT MALE LOW PRESSURE | FLUSHFIT FIXED FEMALE LOW PRESSURE |
| 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 |
| 66 | 66 | | METRIC MALE ISO 6149-2 / DIN 3852-3 FORM F (ONLY FOR ADAPTORS) | 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 | | ISO 6164 FLANGE TYPE 40 MPA WITHOUT O-RING GROOVE / EXPANSION VALVE SHORT PILOT (A/C) | ISO 6164 FLANGE TYPE 40 MPA WITH O-RING GROOVE / EXPANSION VALVE (A/C) |
| 77 | | 77 | DIN BULKHEAD MALE 24° CONE LIGHT TYPE ISO 8434-1 | ASME B16.5 RING JOINT TYPE FLANGE |
| 78 | 78 | | NPTF MALE 60° CONE SEAT SAE J476A (ONLY FOR INTERLOCK/BLASTLOCK/XTRALOCK) | SPO COMPACT FLANGE |
| 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 (ADAPTORS) | FLANGE ISO/SAE 61 (ISO 6162-1 / SAE J518 CODE 61) / 4-BOLTS FLANGE HEAD CODE 61 (ADAPTORS) |
| 84 | 84 | | | XTRAFRANGE 61 (ISO6162-1 / SAE J518 CODE 61 PORT COMPATIBLE) |
| 85 | 85 | | | XTRAFRANGE 62 (ISO 6162-2 / SAE J518 CODE 62 PORT COMPATIBLE) |
| 86 | 86 | | 4-BOLTS FLANGE HEAD CODE 62 WITHOUT O'RING (ADAPTORS) | FLANGE ISO/SAE 62 (ISO 6162-2 / SAE J518 CODE 62) - ONLY FOR XTRALOCK / 4-BOLTS FLANGE HEAD CODE 62 (ADAPTORS) |
| 87 | 87 | 87 | DIN BULKHEAD MALE 24° CONE HEAVY TYPE ISO 8434-1 | ASME B16.5 FLANGE / SDB COMPRESSOR (A/C) |
| 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 |
| GS | GS | | | GS HYDRO RETAINRING FLANGE |

TERMINATION END TYPES (CONTINUED)

| 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...) |
|--------|--------------------------------------|
| 02 | BSP BOLT |
| 03 | BSP BOLT DOUBLE HOLE |
| 08 | METRIC BOLT DIN 7643 |
| 20 | ANTI-KINK |
| 21 | METAL SLEEVE |
| 33 | CLAMPS FOR FLANGE ISO/SAE 61 |
| 36 | CLAMPS FOR FLANGE ISO/SAE 62 |
| 41 | 2 HOLES FLANGE CLAMP |
| 42 | ARMOUR - JOINT |
| 50 | DRILLING SAFETY CLAMP |
| 60 | DRILLING LIFT EYE |
| 81 | CLAMPS FOR MALE GROOVED |
| 84 | XTRAFRANGE/61 CLAMPS |
| 85 | XTRAFRANGE/62 CLAMPS |
| 2H | CARTRIDGE FOR EASY-FIT HIGH PRESSURE |

PRIORITY OF THE ENDS

The top-down list in each family follows this order:

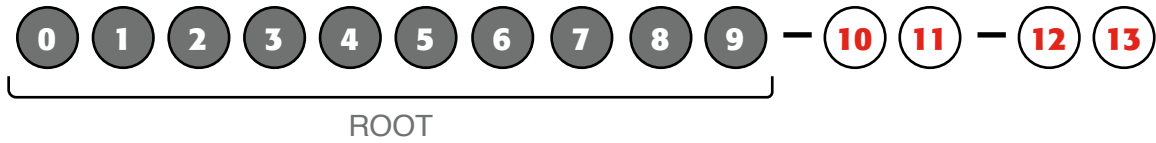
1. Standard Male
2. Bulkhead Male
3. Male for Port
4. Swivel Female
5. Fixed Female

| DIGITS | DESCRIPTION |
|-----------------------|--|
| METRIC DIN 24° | |
| 11 | METRIC MALE 24° CONE SEAT LIGHT TYPE DIN 3861 / ISO 8434-1 |
| 12 | METRIC MALE 24° CONE SEAT HEAVY TYPE DIN 3861 / ISO 8434-1 |
| 73 | METRIC MALE 24° CONE SEAT LL SERIE ISO 8434-1 |
| 77 | DIN BULKHEAD MALE 24° CONE LIGHT TYPE ISO 8434-1 |
| 87 | DIN BULKHEAD MALE 24° CONE HEAVY TYPE ISO 8434-1 |
| 15 | METRIC FEMALE 24° CONE O'RING LIGHT TYPE DIN 3865 / ISO 8434-1 |
| 16 | METRIC FEMALE 24° CONE O'RING HEAVY TYPE DIN 3865 / ISO 8434-1 |
| 20 | DIN METRIC STANDPIPE L.T. DIN 2353 |
| 21 | DIN METRIC STANDPIPE H.T. DIN 2353 |
| ORFS | |
| 24 | ORFS MALE ISO 8434-3 / SAE J1453 |
| 27 | ORFS BULKHEAD MALE ISO 8434-3 / SAE J1453 |
| 29 | ORFS MALE TYPE LONG SAE J1453 |
| 24 | ORFS FEMALE ISO 8434-3 / SAE J1453 |
| 44 | ORFS FEMALE LONG DROP ELBOW ISO 12151-1 / SAE J516 |
| JIC | |
| 25 | JIC MALE 37° CONE ISO 8434-2 / SAE J514 |
| 23 | JIC BULKHEAD MALE 37° CONE ISO 8434-2 / SAE J514 |
| 22 | JIC MALE LONG 37° CONE SAE J514 |
| 25 | JIC FEMALE 37° CONE ISO 8434-2 / SAE J514 |
| 47 | JIC 37° CONE FEMALE LONG DROP ELBOW ISO 12151-5/ SAE J516 |
| BSP | |
| 05 | BSP MALE 60° CONE SEAT BS5200 / ISO 8434-6 |
| 06 | BSP MALE FLAT FACE DIN 3852-2 FORM A |
| 07 | BSPT MALE |
| 64 | BSP MALE FRONT SEAL |
| 04 | BSP MALE BULKHEAD |
| 02 | BSP MALE TAPERED THREAD LONG |
| 01 | BSP MALE DIN 3852-11 - ISO 1179-2 HEAVY DUTY "FORM E" |
| 03 | BSP MALE PARALLEL THREAD O'R FLAT FACE ISO 1179-3 |
| 09 | BSP MALE O'RING BOSS ADJUSTABLE ISO 1179-3 |
| 44 | BSP MALE FLAT FACE BONDED WASHER |
| 71 | BSP MALE METAL SEALING EDGE DIN 3852-2 FORM B |
| 05 | BSP FEMALE 60° CONE BS5200 / ISO 8434-6 |
| 08 | BSP O-RING FEMALE 60° CONE BS5200 / ISO 8434-6 |
| 06 | BSP FEMALE FLAT FACE DIN 3852-2 FORM A |
| 01 | FIXED FEMALE GAS JIS B 2351 "TYPE O" |
| 04 | BSP FIXED FEMALE DIN 3852-2 "FORM X" / ISO 1179-1 |
| 02 | BSP FEMALE TAPERED |

| DIGITS | DESCRIPTION |
|--------------------------|--|
| SAE | |
| 26 | SAE MALE (45° CONE) SAE J512 |
| 30 | MALE O-RING BOSS TYPE SAE J1926-3 |
| 31 | MALE O-RING BOSS ADJUSTABLE LIGHT SAE J1926-3 |
| 32 | MALE O-RING BOSS (ADJUSTABLE + NON-ADJUSTABLE HEAVY) SAE J1926-2 |
| 26 | SAE FEMALE (45° CONE SEAT) SAE J512 |
| 30 | FEMALE PORT SAE J1926-1 |
| NPTF - NPT | |
| 28 | NPTF MALE 60° CONE SEAT SAE J476A |
| 35 | NPT MALE |
| 28 | NPSM SWIVEL FEMALE 60° CONE SAE J514 |
| 34 | NPTF FIXED FEMALE SAE J476A |
| 35 | NPT FIXED FEMALE |
| OTHER METRIC ENDS | |
| 10 | METRIC MALE 60° CONE SUPERLIGHT DIN 3863 |
| 13 | METRIC MALE FLAT FACE DIN 3852-1 FORM A |
| 37 | METRIC MALE 60° CONE SUPERLIGHT DIN 3863 BULKHEAD |
| 88 | MALE METRIC TAPERED THREAD |
| 14 | METRIC MALE DIN 3852-11 "FORM E" / ISO 9974-2 |
| 19 | METRIC MALE WITH RETAINING RING (ADJUSTABLE + NON-ADJUSTABLE HEAVY) ISO 9974 PORT COMPATIBLE |
| 66 | METRIC MALE ISO 6149-2 / DIN 3852-3 FORM F |
| 72 | METRIC MALE METAL SEALING EDGE DIN 3852-1 FORM B |
| 97 | METRIC MALE WITH 90° MALE CONE ISO 4038 |
| 7W | WELD-IN BULKHEAD L SERIE ISO 8434-1 (WDBHS TYPE) |
| 8W | WELD-IN BULKHEAD S SERIE ISO 8434-1 (WDBHS TYPE) |
| 10 | METRIC FEMALE 60° CONE SUPERLIGHT DIN 3863 |
| 13 | METRIC FEMALE MULTISEAL CONE DIN 3868 |
| 97 | METRIC FEMALE DIN 74225 |
| 14 | METRIC FIXED FEMALE DIN 3852-1 "FORM X" AND "FORM Y" |
| 19 | METRIC FIXED FEMALE ISO 6149-1 |
| FRENCH | |
| 17 | FRENCH MILLIMETRIC METRIC MALE 24° CONE SEAT |
| 18 | FRENCH GAZ METRIC MALE 24° CONE SEAT |
| 82 | FRENCH GAZ BULKHEAD METRIC MALE 24° CONE SEAT |
| 17 | FRENCH MILLIMETRIC METRIC FEMALE |
| 18 | FRENCH GAZ METRIC MALE 24° CONE SEAT |
| 71 | FRENCH MILLIMETRIC STANDPIPE |
| 81 | FRENCH GAZ STANDPIPE |
| JIS | |
| 57 | BSP MALE TAPERED THREAD - JIS B 8363 |
| 38 | JIS B8363 TOYOTA MALE |
| 40 | KOMATSU METRIC MALE 60° CONE SEAT |
| 07 | JIS B 8363 (BSP - NISSAN) SWIVEL FEMALE |
| 38 | JIS B 8363 TOYOTA MALE JIS B 8363 (TOYOTA) SWIVEL FEMALE |
| 40 | JIS B 8363 (KOMATSU) SWIVEL FEMALE |
| 33 | FLANGE HEAD ISO/SAE 61 (ISO 6162-1 / SAE J518 CODE 61) WITHOUT O-RING |
| 36 | FLANGE HEAD ISO/SAE 62 (ISO 6162-2 / SAE J518 CODE 62) WITHOUT O-RING |
| 83 | 4-BOLTS FLANGE HEAD CODE 61 WITHOUT O-RING |
| 86 | 4-BOLTS FLANGE HEAD CODE 62 WITHOUT O-RING |
| 33 | FLANGE ISO/SAE 61 (ISO 6162-1 / SAE J518 CODE 61) WITH O-RING |

| DIGITS | DESCRIPTION |
|--------------------------------|---|
| 36 | FLANGE ISO/SAE 62 (ISO 6162-2 / SAE J518 CODE 62) WITH O-RING |
| 83 | 4-BOLTS FLANGE HEAD CODE 61 WITH O-RING |
| 86 | 4-BOLTS FLANGE HEAD CODE 62 WITH O-RING |
| MINING | |
| 48 | STAPLE MALE SAE J1467 |
| 46 | SUPER STAPLE MALE |
| 59 | FLUSHFIT MALE LOW PRESSURE |
| 61 | FLUSHFIT MALE HIGH PRESSURE |
| 82 | STAPLE LOCK SWIVEL FEMALE |
| 72 | SUPERSTAPLE LOCK SWIVEL FEMALE |
| 62 | FLUSHFIT SWIVEL FEMALE LOW PRESSURE |
| 64 | FLUSHFIT SWIVEL FEMALE HIGH PRESSURE |
| 48 | STAPLE FIXED FEMALE SAE J1467 |
| 46 | SUPER STAPLE FIXED FEMALE |
| 59 | FLUSHFIT FIXED FEMALE LOW PRESSURE |
| 61 | FLUSHFIT FEMALE HIGH PRESSURE |
| OTHER ENDS | |
| 54 | AGRICULTURAL VALVE |
| 53 | BSP MALE FOR PRESSURE GAUGES |
| 95 | BRAZING PIPE |
| 49 | WASH CLEANING FEMALE |
| 95 | BRAZING SOCKET |
| EASY-FIT & FAST-FIT | |
| 2H | EASY-FIT HIGH PRESSURE |
| 3H | FAST-FIT |
| 4H | DISCONNECTABLE FAST-FIT |
| BANJO SWIVEL | |
| B1 | BSP MALE THREAD WITH EXTERNAL METALLIC SEALING RING (DKRA) |
| B2 | METRIC MALE THREAD WITH EXTERNAL METALLIC SEALING RING (DKRA) |
| B3 | BSP MALE THREAD WITH SUPPORT RING AND SOFTSEAL |
| B4 | METRIC MALE THREAD WITH SUPPORT RING AND SOFTSEAL |
| B5 | BSP MALE THREAD WITH PTFE RING |
| B6 | METRIC MALE THREAD WITH PTFE RING |
| B7 | BSP MALE THREAD WITH METAL SEALING EDGE DIN 3852-2 FORM B |
| B8 | METRIC MALE THREAD WITH METAL SEALING EDGE DIN 3852-1 FORM B |

HYDRAULIC QUICK COUPLINGS



DIGIT "0"



| Value | Description |
|-------|----------------|
| Q | Quick Coupling |

DIGIT "1"



| Value | Description |
|-------|-------------|
| 0 | Hydraulic |

DIGIT "2-3"



Quick Coupling Series - refer to "Quick Coupling Series" table

DIGIT "4"



| Value | Material |
|-------|-----------|
| 1 | Steel |
| 2 | AISI 316 |
| 3 | AISI 303 |
| 4 | Brass |
| 5 | Aluminium |

HYDRAULIC QUICK COUPLINGS (CONTINUED)



| 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 |



The numbers in these positions specify the termination end.
See "Termination Ends Type" table for coding details.



| Value | Description |
|-------|-------------|
| 0 | Male |
| 1 | Female |



A letter in this position indicates a customised version.

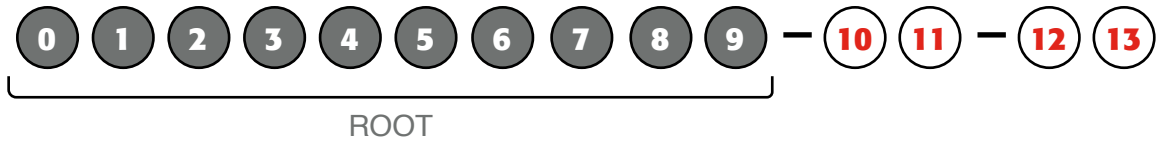


The numbers in this position indicate the Quick Coupling size.



The numbers in this position indicate the thread size.

HYDRAULIC QUICK COUPLING TAILS



DIGIT "0"



| Value | Description |
|-------|----------------|
| Q | Quick Coupling |

DIGIT "1"



| Value | Description |
|-------|-------------|
| 3 | Q.Tail |

DIGIT "2-3"



Quick Coupling Series - refer to "Quick Coupling Series" table

DIGIT "4"



| Value | Material |
|-------|-----------|
| 1 | Steel |
| 2 | AISI 316 |
| 3 | AISI 303 |
| 4 | Brass |
| 5 | Aluminium |

HYDRAULIC QUICK COUPLING TAILS (CONTINUED)

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 |
| B | Ethylene-Propylene 41B8 |

DIGIT "6-7" 0 1 2 3 4 5 6 7 8 9 – 10 11 – 12 13

| Value | Insert Type |
|-------|---------------|
| MF | Multifit type |

DIGIT "8" 0 1 2 3 4 5 6 7 8 9 – 10 11 – 12 13

| Value | Insert Angle |
|-------|--------------|
| 1 | Straight |

DIGIT "9" 0 1 2 3 4 5 6 7 8 9 – 10 11 – 12 13

A letter in this position indicates a customised version.

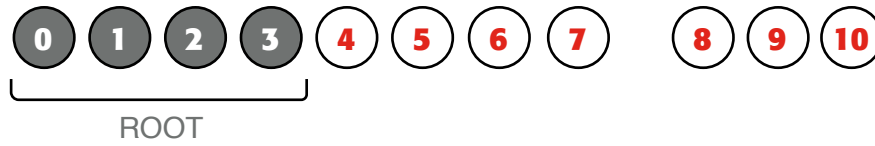
DIGITS "10-11" 0 1 2 3 4 5 6 7 8 9 – 10 11 – 12 13

The numbers in this position indicate the Quick Coupling size.

DIGITS "12-13" 0 1 2 3 4 5 6 7 8 9 – 10 11 – 12 13

The numbers in this position indicate the Insert size.

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) |

HYDRAULIC QUICK COUPLING PLUGS, SEALS & CARTRIDGES (CONTINUED)

DIGIT "5"

0 1 2 3 4 5 6 7 – 8 9 10

| 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"

0 1 2 3 4 5 6 7 – 8 9 10

| Value | Function |
|-------|---------------------------|
| 0 | Simple cap / plug |
| 1 | EcoCap (with oil recycle) |
| 2 | Automatic cap |
| 3 | Seal |
| 4 | Parking |
| 5 | Cartridge |

DIGIT "7"

0 1 2 3 4 5 6 7 – 8 9 10

| 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 |

HYDRAULIC QUICK COUPLING PLUGS, SEALS & CARTRIDGES (CONTINUED)

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.

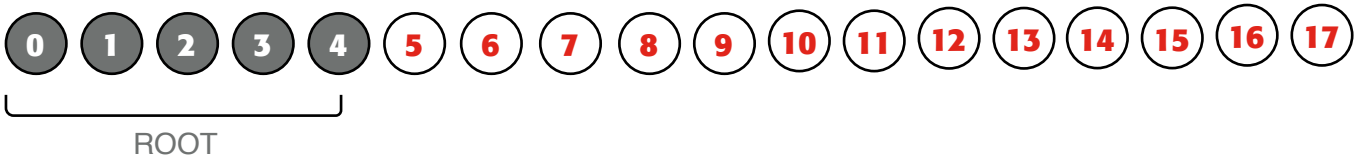
HYDRAULIC QUICK COUPLING SERIES

| 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 |
| 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 |

HYDRAULIC QUICK COUPLING SERIES (CONTINUED)

| QC SERIES | PLUG & SEALS SERIES | DESCRIPTION | |
|-----------|---------------------|--|---|
| 35 | A5 | 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 | |
| 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 | |

ASSEMBLY MACHINES



| Value | Description |
|-------|--------------------------|
| E | Always means "Equipment" |



| Value | Description |
|-------|-------------------|
| 0 | Assembly Machines |
| S | Spare Parts |



The letter in this position identifies the equipment type.

| Value | Equipment Type |
|-------|----------------|
| A | Assembly |
| C | Cutting |
| S | Skiving |
| L | Cleaning |
| M | Marking |
| I | Insert Pushing |
| T | Test Bench |
| F | Flushing |

ASSEMBLY MACHINES (CONTINUED)

DIGIT "3" 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

The number in this position identifies the supplier.

| Value | Supplier |
|-------|------------|
| 1 | Finnpower |
| 2 | Uniflex |
| 3 | Techmaflex |
| 4 | OP |
| 5 | Hydroscand |

DIGIT "4" 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

The number in this position identifies the platform.

| Value | Platform |
|-------|--|
| 1 | MRI 1 Portable machines |
| 2 | MRI 2 Small benchtop < 2" 2T |
| 3 | MRI 3 Benchtop for professional service >2" 2T |
| 4 | MRI 4 Production stand type machines |
| 5 | MRI 5 Top level stand type machines (Industrial, Special), eg. rotary hose crimper |
| 6 | MRI 6 Second hand machines |

DIGIT "5" 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17

The number in this position identifies the version.

| Value | Version |
|-------|---|
| 1 | Basic MRI except for mobile machines ('V' machines) |
| 2 | Medium MRI 2 and MRI 3 (Benchtop) |
| 3 | Top MRI 4 and some MRI 5 (XL) |
| 4 | Top Bis MRI 5 sup, at 100t |
| 5 | Mobile 'V' machines (12V, 24V) |

ASSEMBLY MACHINES (CONTINUED)

DIGIT "6" 0 1 2 3 4 5 **6** 7 8 9 10 11 12 13 14 15 16 17

The number or letter in this position identifies the power system.

| Value | Power System |
|-------|--|
| 0 | Manual |
| 1 | 12V |
| 2 | 24V |
| 3 | 220/240V 1PH 50HZ |
| 4 | 380/415V 3PH 50HZ |
| 5 | 110V 1PH 60 HZ |
| 6 | 208/240V 3PH 60HZ (to be associated with code 9) |
| 7 | 220/240V 3PH 50HZ |
| 8 | 220/240V 1PH 60HZ |
| 9 | 208/240V 3PH 60HZ |
| A | 220/240V 1PH 50HZ |
| B | 380/415V 3PH 60HZ |
| C | 208/240V 3PH 60HZ |
| D | 440V 3PH 50HZ |
| E | 220/240V 1PH 60HZ |
| F | 440/480V 3PH 60HZ |
| G | 200V 3PH 50HZ |
| H | 110V 1PH 50HZ |
| I | 240V 1PH 50HZ |
| K | 220/380/440V 3PH 50HZ |
| L | 208V 1PH 60HZ |

DIGIT "7" 0 1 2 3 4 5 6 **7** 8 9 10 11 12 13 14 15 16 17

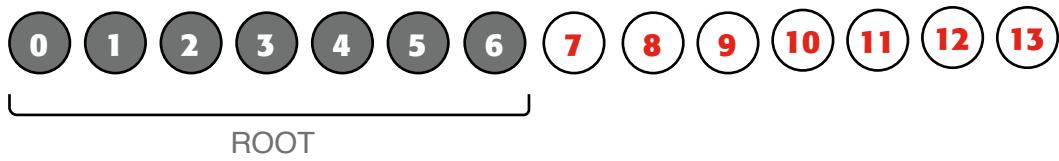
The letter in this position identifies the version.

| Value | Description |
|-------|-----------------------|
| S | Die sets included |
| N | Die sets not included |

DIGITS "8-17" 0 1 2 3 4 5 6 7 **8 9 10 11 12 13 14 15 16 17**

Free digits for special characteristics

HOSE PROTECTIONS



| Value | Description |
|-------|----------------------------|
| J | Always means "Accessories" |



| Value | Description |
|-------|---------------------------|
| P | Always means "Protection" |



| Value | Protection Type |
|-------|-----------------|
| 1 | Spring |
| 2 | Sleeve |
| 3 | Clinch |
| 4 | Flexible armour |



| Value | Material |
|-------|-----------------|
| 1 | Polyethylene |
| 2 | Polyamide |
| 3 | Polyester |
| 4 | Silicone |
| 5 | Stainless steel |
| 6 | Steel |

HOSE PROTECTIONS (CONTINUED)

DIGIT "4"



Value

Colour

| | |
|----------|--------|
| B | Black |
| Y | Yellow |
| A | Orange |
| G | Grey |
| M | Metal |
| T | Other |

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"



The numbers in these positions indicate the internal diameter in mm.

HOSE PROTECTIONS (CONTINUED)

DIGITS "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 |
|----------|---------|

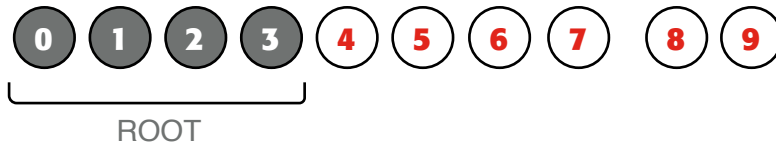
| Value | Packaging Information |
|-------|-----------------------|
|-------|-----------------------|

| | |
|----------|-------------------|
| 0 | Embossed/Embedded |
|----------|-------------------|

| Value | Branding |
|-------|----------|
|-------|----------|

| | |
|-----------|----------|
| 99 | Standard |
|-----------|----------|

RING & SEAL



DIGIT "0"



Value

Description

J Always means "Accessories"

DIGIT "1"



Value

Description

0 Always means "Rings"

DIGITS "2-3"



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 |

Value Description

| | |
|-----------|--|
| 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) |

RING & SEAL (CONTINUED)

DIGITS "4-5"

The numbers in these positions indicate the external diameter in mm.

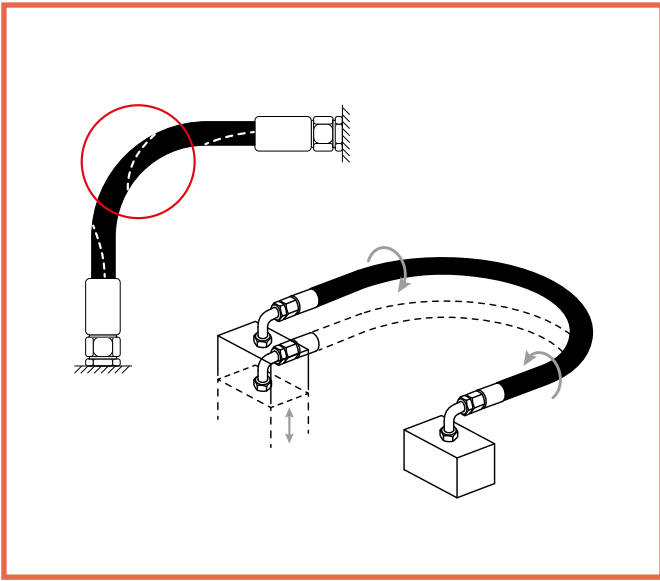
DIGITS "6-7"

The numbers in these positions indicate the internal diameter in mm.

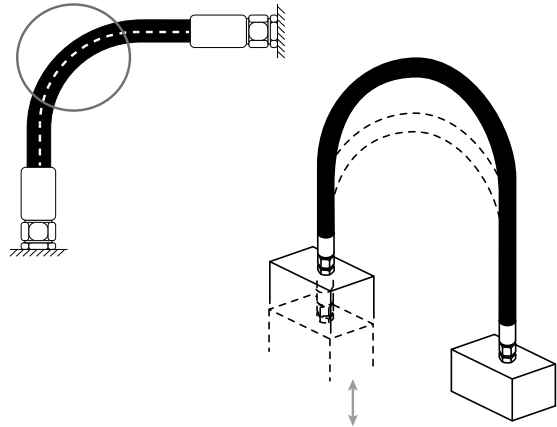
DIGITS "8-9"

The numbers in these positions indicate the axial thickness in mm.

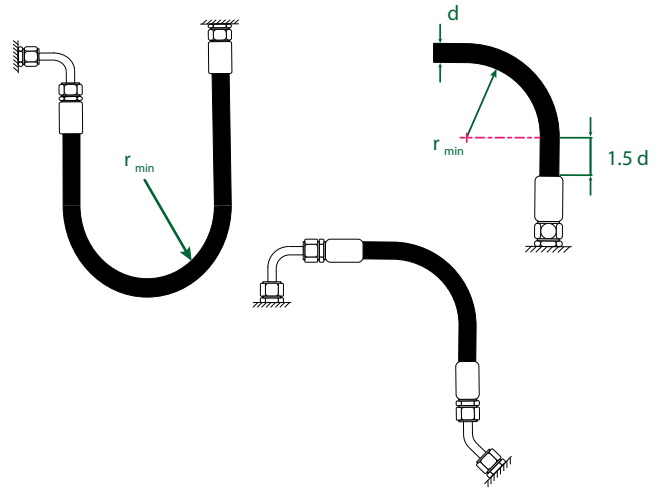
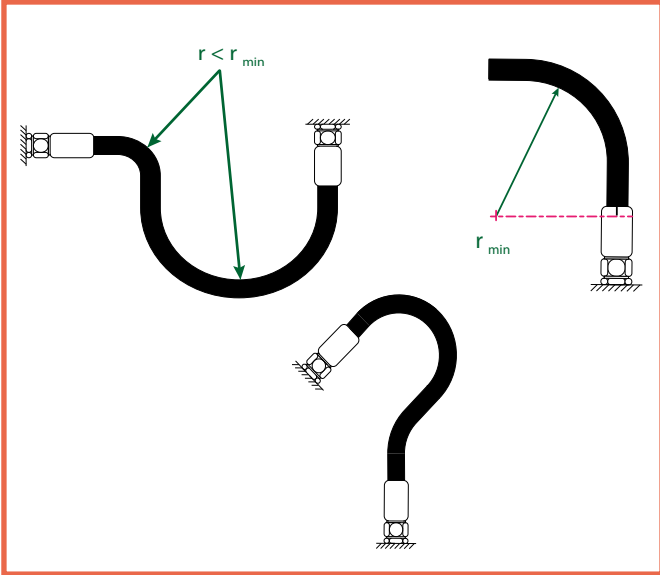
INCORRECT USE



CORRECT USE

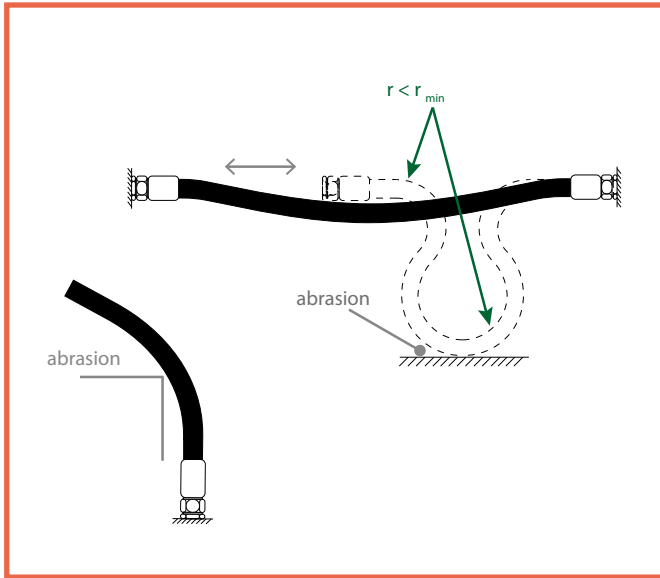


- Avoid twisting the hose assembly when installing.
- Avoid situations where moving parts will cause twisting effects on the hose assemblies after installation.

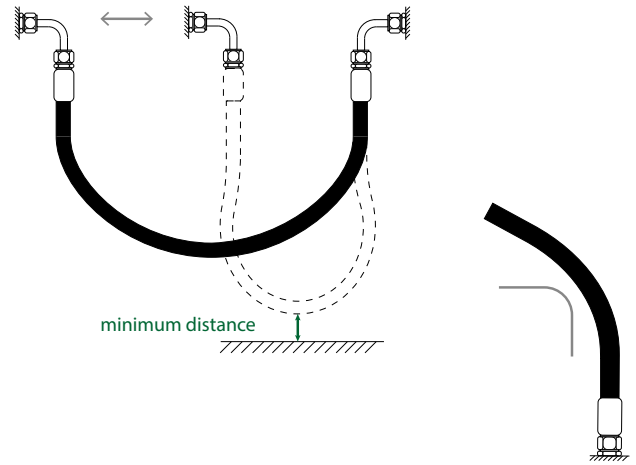


- Select the correct fittings to avoid tight bend radii.
- Ensure a minimum distance of 1.5 x "d" after the ferrule before hose bending.

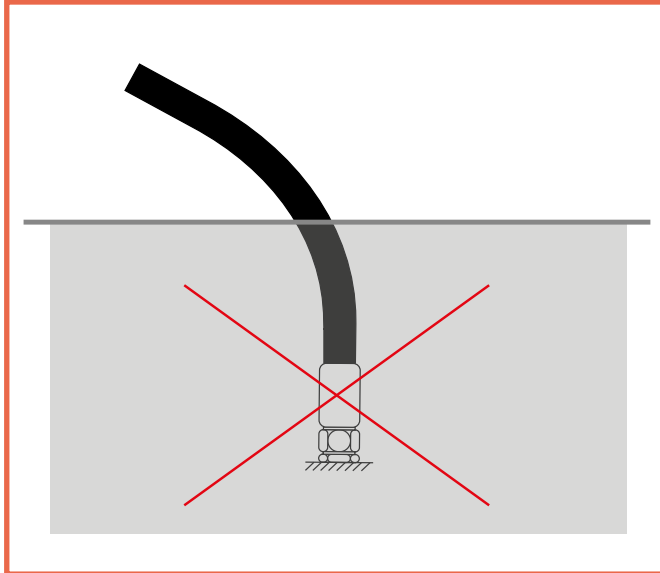
INCORRECT USE



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** and **ISO/TS 17165-2**. This document should be used as a guide when selecting, routing, fabricating, installing, replacing, maintaining and storing hose for hydraulic systems.

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](#) and [ISO/TS 17165-2](#).

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.

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