



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.

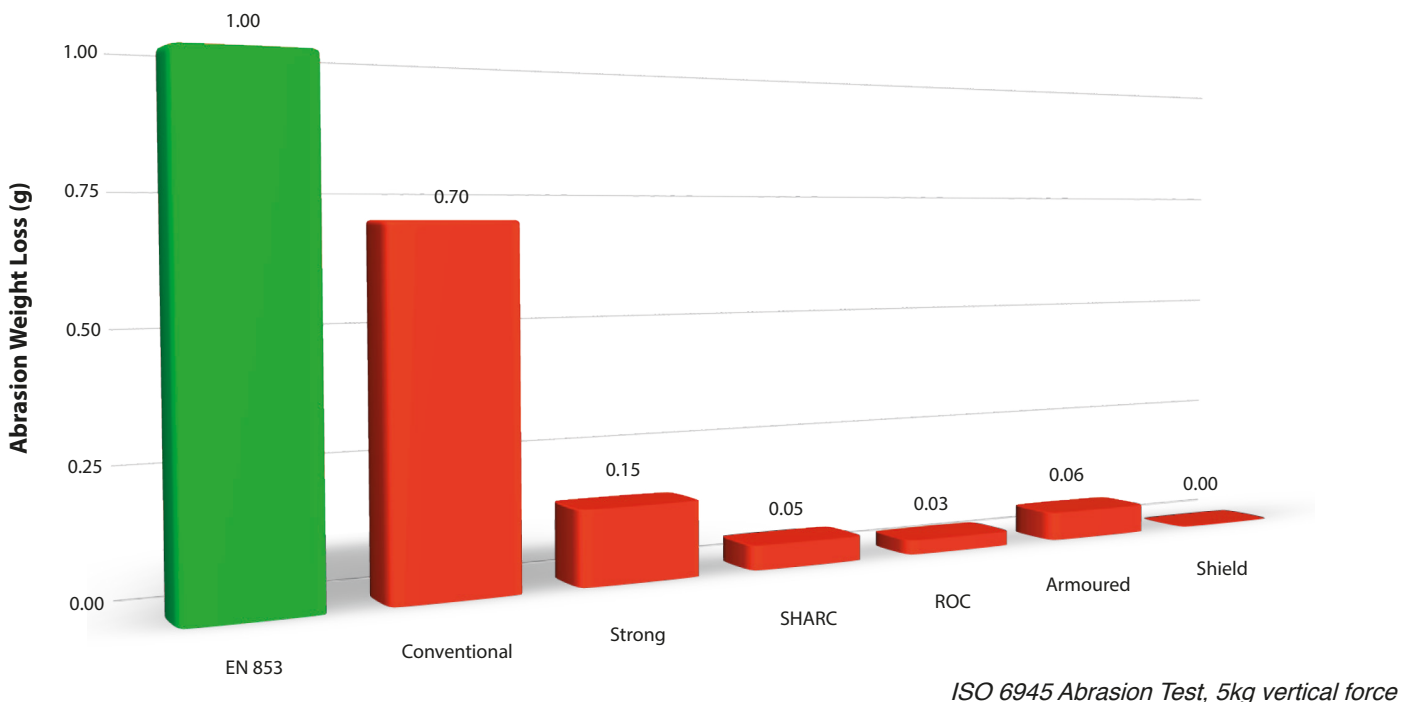
However, most experts agree that the hose cover is the singular most important part of a hose's construction, as wear of the cover due to environmental factors is the primary cause of hose failure. It is therefore critical that the hose cover be as robust and long-lasting as it can be, whilst also meeting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

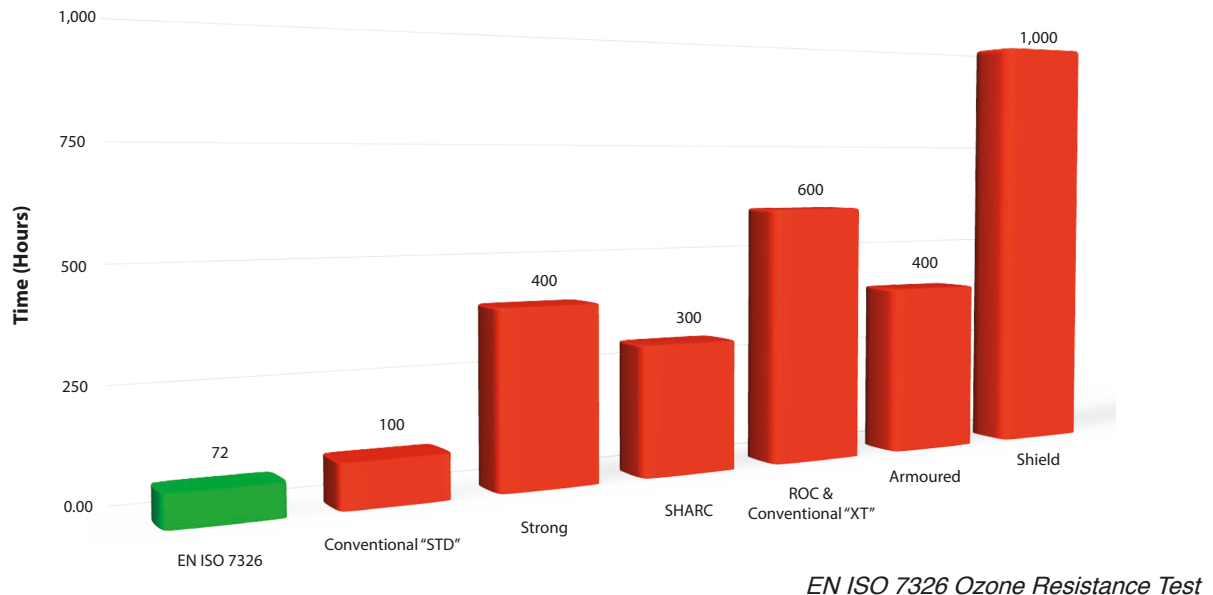
The relative abrasion resistance performance of each of these cover types compared to EN 853 can be assessed from the below graph:





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, as well as **Pilot** and **Eternity/2**, 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

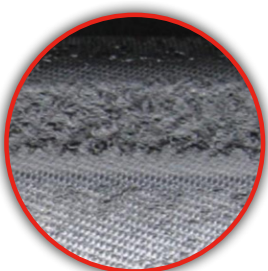
The Armoured Cover is currently used on the higher pressure hose lines within the **ForeMaster** range of hoses.

### Putting it to the test

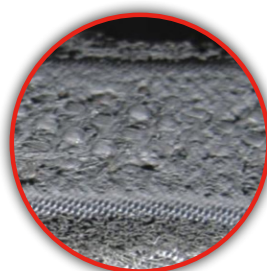
In standard ISO 6945 abrasion tests a reciprocating 5kg load is used to create wear on the hose cover. The test lasts for 2,000 cycles and measures the mass of material lost. The lower the result, the better the performance.

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)*

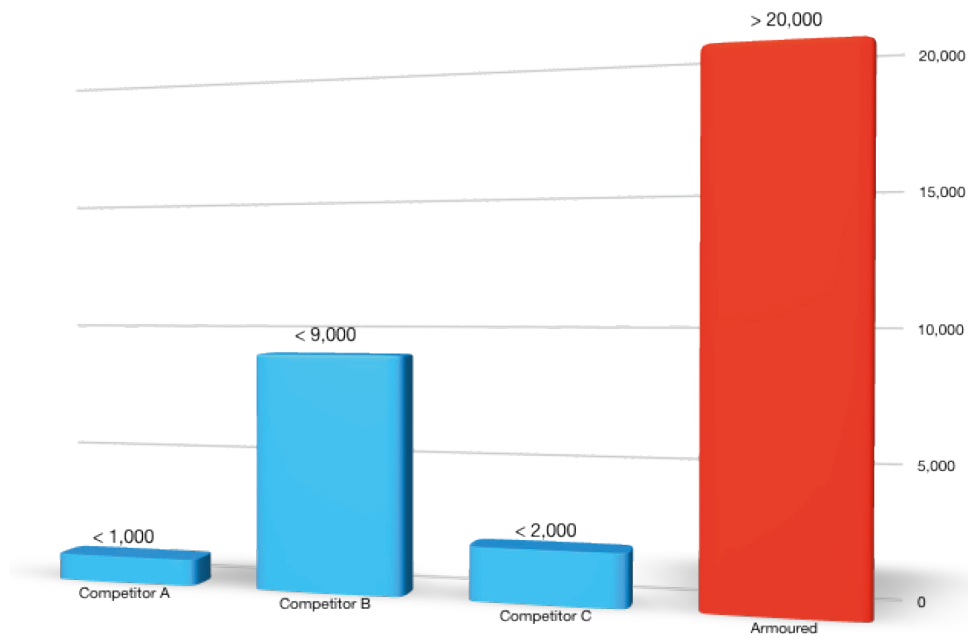


*20,000 cycles (10kg)*



*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 |     |     |     |     |     |     |    |     |     |     |     |
| TRACTOR/1SC                |    |     | STD | STD | STD | STD |     |     |     |     |     |     |    |     |     |     |     |
| TRACTOR/2SC                |    |     | 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  |    |     |     |     |     |
| ETERNITY/2                 |    |     | SD  | SD  | 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  | 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  | SD |     |     |     |     |
| ROCKMASTER/4SH             |    |     |     |     |     |     |     | SD  | SD  | SD  | SD  | SD  | SD |     |     |     |     |
| ROCKMASTER/4SP             |    |     | SD  |     | 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  | 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  | SC |     |     |     |     |
| GOLDENISO/35 XTRAFLEX      |    |     |     |     | SC  | 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  | SC  |     |     |     |    |     |     |     |     |
| GOLDENISO/21 ANTIWEAR      |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| GOLDENISO/28 ANTIWEAR      |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| XTRAFLOW/2WB               |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| XTRAFLOW/4WS               |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| XTRAFLOW/HT                |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     | XT  | XT  |
| ROCKMASTER/2 PLUS SUPER-AW |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| FOREMASTER/21              |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| FOREMASTER/28              |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| FOREMASTER/35              |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| FOREMASTER/42              |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| SHIELDMASTER/21            |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| SHIELDMASTER/28            |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| SHIELDMASTER/35            |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |
| SHIELDMASTER/42            |    |     |     |     |     |     |     |     |     |     |     |     |    |     |     |     |     |

CONVENTIONAL STD / XT     
 STRONG SD / SC     
 SHARC   
 ROC      
 ARMURED      
 SHIELD

| RANGE                 | HOSE         | HOSE STRUCTURE       | NORM                                     | KEY PERFORMANCE                 | PAGE |
|-----------------------|--------------|----------------------|--|---------------------------------|------|
| GLOBAL STANDARD HOSES | TRACTOR/1SN  | WIRE BRAIDED         | EN 853, ISO 1436-1SN, SAE J517-100R1AT   | STANDARD HYDRAULIC APPLICATIONS | 16   |
|                       | TRACTOR/2SN  | WIRE BRAIDED         | EN 853, ISO 1436-2SN, SAE J517-100R-2AT  | STANDARD HYDRAULIC APPLICATIONS | 17   |
|                       | TRACTOR/1SC  | WIRE BRAIDED         | EN 857 1SC, ISO 11237 1SC                | STANDARD HYDRAULIC APPLICATIONS | 18   |
|                       | TRACTOR/2SC  | WIRE BRAIDED         | EN 857 2SC, ISO 11237 2SC, SAE 100 R16   | STANDARD HYDRAULIC APPLICATIONS | 19   |
|                       | LYTE-FLEX    | WIRE BRAIDED         | MANULI DESIGN (COMPACT WIRE BRAIDED)     | HIGH FLEXIBILITY                | 20   |
|                       | HARVESTER/17 | WIRE BRAIDED         | SAE J517-100R17, ISO 11237-R17           | LIGHT AND COMPACT STRUCTURE     | 21   |
|                       | COVER        | WIRE BRAIDED         | SAE J517-100 R5                          | GENERAL PURPOSE HOSE            | 22   |
|                       | SPIRTEX      | TEXTILE / HELIX WIRE | SAE J517-100 R4                          | HIGH QUALITY R4 SUCTION HOSE    | 23   |
|                       | MULTITEX     | TEXTILE              | SAE J517-100 R6, EN 854, ISO 4079 R6/1TE | UNIVERSAL LOW PRESSURE SOLUTION | 24   |
|                       | ASTRO/2      | TEXTILE              | EN 854, ISO 4079-2TE                     | MEDIUM PRESSURE SOLUTION        | 25   |
|                       | ASTRO/3      | TEXTILE              | EN 854, ISO 4079-3TE                     | MEDIUM PRESSURE SOLUTION        | 26   |

| RANGE                   | HOSE                  | HOSE STRUCTURE             | NORM   | KEY PERFORMANCE                                  | PAGE |
|-------------------------|-----------------------|----------------------------|--|--|------|
| HI-GRADE ISOBARIC HOSES | GOLDENISO/14 PILOT    | WIRE BRAIDED               | ISO 18752-C  | COMPACTNESS & FLEXIBILITY                        | 28   |
|                         | GOLDENISO/21 ANTIWEAR | WIRE BRAIDED               | ISO 18752-A,<br>ISO 11237-R17,<br>SAE J517-100R17      | EXTREME ABRASION RESISTANCE                      | 29   |
|                         | GOLDENISO/28 ANTIWEAR | WIRE BRAIDED               | ISO 18752-A,<br>ISO 11237-R19,<br>SAE J517-100R19      | EXTREME ABRASION RESISTANCE                      | 30   |
|                         | GOLDENISO/21 XTRAFLEX | WIRE SPIRALLED             | ISO 18752-C/D,<br>JIS K6349                            | EXTREME FLEXIBILITY                              | 31   |
|                         | GOLDENISO/28 XTRAFLEX | WIRE SPIRALLED             | ISO 18752-C/D,<br>JIS K6349                            | EXTREME FLEXIBILITY                              | 32   |
|                         | GOLDENISO/35 XTRAFLEX | WIRE SPIRALLED             | ISO 18752-C/D,<br>JIS K6349                            | EXTREME FLEXIBILITY                              | 33   |
|                         | GOLDENISO/42 XTRAFLEX | WIRE SPIRALLED             | ISO 18752-C/C PLUS                                     | EXTREME FLEXIBILITY                              | 34   |
|                         | GOLDENISO/38 LONGLIFE | WIRE SPIRALLED             | ISO 18752-C/D  | HIGH FATIGUE RESISTANCE                          | 35   |
|                         | GOLDENISO/45 LONGLIFE | WIRE SPIRALLED             | ISO 18752-D EXT.,<br>ISO 11237-R15,<br>SAE J517-100R15 | HIGH FATIGUE RESISTANCE                          | 36   |
|                         | SHIELDMASTER/21       | WIRE BRAIDED               | ISO 18752-B  | OUTSTANDING WEAR RESISTANCE                      | 37   |
|                         | SHIELDMASTER/28       | WIRE BRAIDED AND SPIRALLED | ISO 18752-B  | OUTSTANDING WEAR RESISTANCE                      | 38   |
|                         | SHIELDMASTER/35       | WIRE BRAIDED AND SPIRALLED | ISO 18752-B  | OUTSTANDING WEAR RESISTANCE                      | 39   |
|                         | SHIELDMASTER/42       | WIRE BRAIDED AND SPIRALLED | ISO 18752-B  | OUTSTANDING WEAR RESISTANCE                      | 40   |
|                         | DIAMONDSPIR/14        | WIRE SPIRALLED             | MANULI DESIGN,<br>ISO 18752-C EXT.                     | HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE | 41   |
|                         | DIAMONDSPIR/17        | WIRE SPIRALLED             | MANULI DESIGN,<br>ISO 18752-C EXT.                     | HIGH FLOW RATES, OUTSTANDING POWER TRANSMISSION  | 42   |
|                         | DIAMONDSPIR/21        | WIRE SPIRALLED             | MANULI DESIGN,<br>ISO 18752-C EXT.                     | VERY HIGH HYDRAULIC POWER TRANSMISSION           | 43   |
|                         | DIAMONDSPIR/35        | WIRE SPIRALLED             | MANULI DESIGN,<br>ISO 18752-C EXT.                     | VERY HIGH HYDRAULIC POWER TRANSMISSION           | 44   |
|                         | MASTERTEX             | TEXTILE                    | EXCEEDS SAE 100 R6,<br>ISO 4079 R6/1TE                 | LOW PRESSURE, HIGH TEMPERATURE                   | 45   |



| RANGE                      | HOSE                              | HOSE STRUCTURE             | NORM   | KEY PERFORMANCE                                  | PAGE |
|----------------------------|-----------------------------------|----------------------------|--|--|------|
| HI-GRADE TRADITIONAL HOSES | ROCKMASTER/1SC                    | WIRE BRAIDED               | EN 857, ISO 11237-1SC  | ABRASION, WEATHER & HEAT RESISTANCE              | 46   |
|                            | ROCKMASTER/2SC                    | WIRE BRAIDED               | EN 857, ISO 11237-2SC, SAE J517-100R16   | ABRASION, WEATHER & HEAT RESISTANCE              | 47   |
|                            | ROCKMASTER/1SN                    | WIRE BRAIDED               | EN 853, ISO 1436-1SN, SAE J517-100R1AT   | ABRASION, WEATHER & HEAT RESISTANCE              | 48   |
|                            | ROCKMASTER/2SN                    | WIRE BRAIDED               | EN 853, ISO 1436-2SN, SAE J517-100R2AT   | ABRASION, WEATHER & HEAT RESISTANCE              | 49   |
|                            | ROCKMASTER/2ST                    | WIRE BRAIDED               | EN 853, ISO 1436-2ST   | ABRASION, WEATHER & HEAT RESISTANCE              | 50   |
|                            | ROCKMASTER/2 PLUS SUPER ANTI-WEAR | WIRE BRAIDED               | MANULI DESIGN, EN 853-2SN; SAE J517 TYPE 100R2AT. PERFORMANCE BCS 174; ISO 6805 TYPE 4 | ABRASION, WEATHER & HEAT RESISTANCE              | 51   |
|                            | ROCKMASTER/4SH                    | WIRE SPIRALLED             | EN 856, ISO 3862-4SH   | ABRASION, WEATHER & HEAT RESISTANCE              | 52   |
|                            | ROCKMASTER/4SP                    | WIRE SPIRALLED             | EN 856, ISO 3862-4SP   | ABRASION, WEATHER & HEAT RESISTANCE              | 53   |
|                            | ROCKMASTER/12                     | WIRE SPIRALLED             | EN 856, ISO 3862-R12, SAE J517-100R12  | ABRASION, WEATHER & HEAT RESISTANCE              | 54   |
|                            | ROCKMASTER/13                     | WIRE SPIRALLED             | EN 856, ISO 3862-R13, SAE J517-100R13  | ABRASION, WEATHER & HEAT RESISTANCE              | 55   |
|                            | ROCKMASTER/15                     | WIRE SPIRALLED             | ISO 3862-R15, SAE J517-100R15  | ABRASION, WEATHER & HEAT RESISTANCE              | 56   |
|                            | EQUATOR/1 (BLACK)                 | WIRE BRAIDED               | EN 853, ISO 1436-1SN, SAE J517-100R1AT   | EXTREME TEMPERATURE                              | 57   |
|                            | EQUATOR/1 (BLUE)                  | WIRE BRAIDED               | EN 853, ISO 1436-1SN, SAE J517-100R1AT   | EXTREME TEMPERATURE                              | 58   |
|                            | EQUATOR/2 (BLACK)                 | WIRE BRAIDED               | EN 853, ISO 1436-2SN, SAE J517-100R2AT   | EXTREME TEMPERATURE                              | 59   |
|                            | EQUATOR/2 (BLUE)                  | WIRE BRAIDED               | EN 853, ISO 1436-2SN, SAE J517-100R2AT   | EXTREME TEMPERATURE                              | 60   |
|                            | INFINITY                          | WIRE BRAIDED               | EN 857 2SC; ISO 11237-2SC; SAE J517 TYPE 100 R16                                       | HIGH SERVICE LIFE & RELIABILITY                  | 61   |
|                            | DIAMONDSPIR                       | WIRE SPIRALLED             | MANULI DESIGN, EXCEEDS ISO 3862-R15, SAE J517-100R15                                   | VERY HIGH PRESSURE RATING                        | 62   |
|                            | SYNERGY                           | WIRE BRAIDED AND SPIRALLED | MANULI DESIGN EXCEEDS 4SP PERFORMANCE  | HIGH PRESSURE HYDRAULICS                         | 63   |
|                            | XTRAFLOW/2WB                      | WIRE BRAIDED               | EXT. EN 857-2SC, ISO 11237-2SC   | HIGH FLOW RATES, LOW PRESSURE DROPS              | 64   |
|                            | XTRAFLOW/4WS                      | WIRE SPIRALLED             | MANULI DESIGN  | HIGH FLOW RATES, OUTSTANDING ABRASION RESISTANCE | 65   |
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|               | FOREMASTER/28    | WIRE BRAIDED                              | ISO 18752-C, EXCEEDS SAE J517 TYPE 100R19 & ISO 11237-R19                            | OUTSTANDING ABRASION RESISTANCE                              | 72   |
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| 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 | -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 |     |     |     |     |     |     |     |     |     |     |     |
| SHIELDMASTER/35             |                        | 350 | 350 | 350 | 350 | 350 | 350 |     | 350 |     | 350 |     | 350 |     |     |     |     |     |     |     |
| SHIELDMASTER/42             |                        | 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 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TRACTOR/1SC                 |                        | 225 | 215 | 180 | 160 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |
| TRACTOR/2SC                 |                        | 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                 |   | *  |     | *      | *   |                  |      | *   | *  | *                            |            |      |    |   | *     |
| TRACTOR/1SC                 |   |    |     | *      |     |                  |      | *   |    |                              |            |      |    |   | *     |
| TRACTOR/2SC                 |   |    |     | *      |     | *                |      | *   |    | *                            |            |      |    |   | *     |
| 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)

# TRACTOR/1SC

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        |
| H01013006* | 6         | -4   | 1/4"  | 10,2  | 0,40 | 12,0 | 0,47 | 225      | 3260 | 1050  | 15220 | 50        | 1,97 | 185    | 0,12  | MF+M03300-04 | MF+M00120-04 |
| H01013008* | 8         | -5   | 5/16" | 11,5  | 0,45 | 13,6 | 0,54 | 215      | 3110 | 1000  | 14500 | 55        | 2,17 | 215    | 0,14  | MF+M03300-05 | MF+M00120-05 |
| H01013010* | 10        | -6   | 3/8"  | 13,6  | 0,54 | 15,5 | 0,61 | 180      | 2610 | 850   | 12320 | 60        | 2,36 | 265    | 0,18  | MF+M03300-06 | MF+M00120-06 |
| H01013012* | 12        | -8   | 1/2"  | 17,1  | 0,67 | 18,9 | 0,74 | 160      | 2320 | 660   | 9570  | 70        | 2,76 | 335    | 0,23  | MF+M00820-08 | MF+M00120-08 |

### KEY FEATURES

- High flexibility and excellent bend radius
- Low weight
- Flame retardant property of the cover compound, MSHA approved
- Halogen-Free hose line
- Vacuum resistance with SAE 100 R4 performance

### APPLICATIONS & FLUIDS

- Hydraulics: low-medium pressure lines with installation constraints, pilot lines, return lines, 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

One high tensile steel braid

### COVER

Weather resistant synthetic rubber

### APPLICABLE SPECS

EN 857 1SC; ISO 11237 1SC

### TYPE APPROVALS

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

# TRACTOR/2SC

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  |
| H01025006* | 6         | -4   | 1/4"  | 11,3  | 0,44 | 13,1 | 0,52 | 400      | 5800 | 1850  | 26830 | 45        | 1,77 | 280    | 0,19  | MF+M03400-04 | OPF-04 |
| H01025008* | 8         | -5   | 5/16" | 12,9  | 0,51 | 14,7 | 0,58 | 350      | 5070 | 1700  | 24650 | 55        | 2,17 | 330    | 0,22  | MF+M03400-05 | OPF-05 |
| H01025010* | 10        | -6   | 3/8"  | 15,0  | 0,59 | 16,8 | 0,66 | 330      | 4780 | 1500  | 21750 | 65        | 2,56 | 395    | 0,27  | MF+M03400-06 | OPF-06 |
| H01025012* | 12        | -8   | 1/2"  | 18,5  | 0,73 | 20,3 | 0,80 | 275      | 3980 | 1220  | 17690 | 80        | 3,15 | 510    | 0,34  | MF+M03400-08 | OPF-08 |

### KEY FEATURES

- High flexibility and excellent bend radius
- Low weight
- Flame retardant property of the cover compound, MSHA approved
- Halogen-Free hose line
- Vacuum resistance with SAE 100 R4 performance

### APPLICATIONS & FLUIDS

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

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

### TYPE APPROVALS

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

# LYTE-FLEX

COMPACT WIRE BRAID, 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  |
| 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

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  |
| 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



HOSES 23

| 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 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 |
| 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



HOSES 25

| 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

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 |
| 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





**GHP**  
GLOBAL STD. • HI-GRADE • PREMIUM

# GOLDENISO/14 PILOT

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        |
| 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 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  |
| 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

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  |
| 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  
31

| 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

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        |
| 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 6-31). 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

### TYPE APPROVALS

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

# GOLDENISO/42 XTRAFLEX

COMPACTNESS AND FLEXIBILITY



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            |
| 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  | 550    | 0.37  | 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  | 1,915  | 1.29  | 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

Four high tensile steel spirals (DN 6-25). 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-C (Grade C "Plus" approved 1 Mil impulse cycles with Interlock Plus fittings)

### TYPE APPROVALS

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

# GOLDENISO/38 LONGLIFE

HIGH FATIGUE 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 |
| 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

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 |
| 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 16-25). 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 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   |
| 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 | OPF-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-010 |
| 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 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  |
| 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 39

| 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

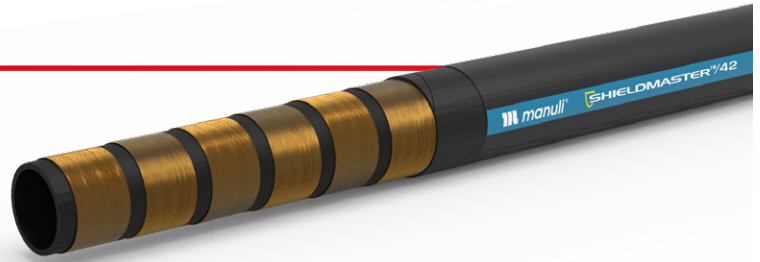


- Applications with material projections or winding on low bend radius pulley systems should be field tested before use; high abrasion resistant rubber cover hoses are appropriate in most cases



# SHIELDMASTER/42

OUTSTANDING WEAR RESISTANCE



HOSES  
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            |
| 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+M01600-20 | 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  
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 |
| 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 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        |
| 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

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        |
| 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+M00820-08 |
| 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



# ROCKMASTER/2SC

ABRASION, WEATHER & HEAT RESISTANCE



HOSES  
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| 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+M03400-03 | 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+M03400-04 | 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+M03400-05 | 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+M03400-06 | 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+M03400-08 | 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)



# ROCKMASTER/1SN

ABRASION, WEATHER & HEAT RESISTANCE



HOSES

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## 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



## 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

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 |
| 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 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        |
| 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

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  |
| 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

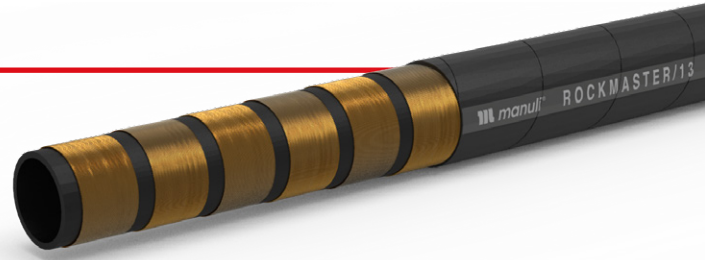
### TYPE APPROVALS

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



# ROCKMASTER/13

ABRASION, WEATHER & HEAT RESISTANCE



HOSES 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        |
| 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

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        |
| 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



| 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 - BLACK VERSION



HOSES

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## 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



HOSES 59

| 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)

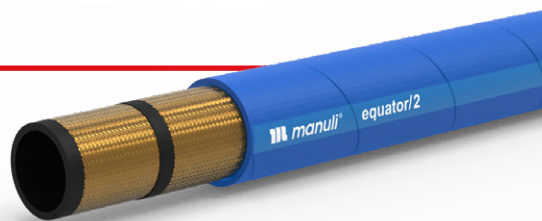
## REMARKS



- 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

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  |
| 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

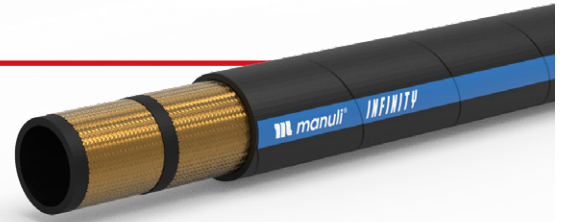
### REMARKS



- 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 | 390    | 0.26  | 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

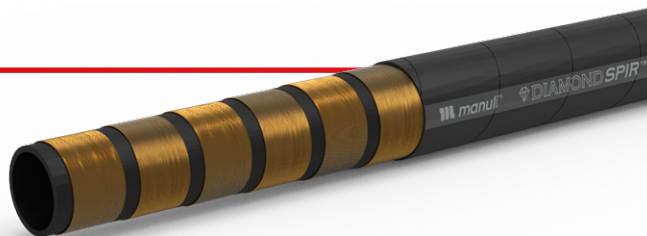
Exceed EN 857 2SC, SAE 100R16, ISO 11237-2SC

### TYPE APPROVALS

MSHA; CU-TR; FRAS; B

# DIAMONDSPIR

VERY HIGH PRESSURE



HOSES

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## 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  | 474    | 0,32  | MF+M00910-04 |                |
| H10137010* | 10        | -6   | 3/8"   | 16,2  | 0,64 | 18,2 | 0,72 | 450      | 6525   | 1800  | 26100 | 125       | 4,92  | 530    | 0,36  | MF+M03500-06 | MF+M00910-06   |
| H10137012* | 12        | -8   | 1/2"   | 20,2  | 0,80 | 23,8 | 0,94 | 420      | 6090   | 1680  | 24360 | 160       | 6,30  | 880    | 0,59  | MF+M03500-08 | MF+M00910-08   |
| H10137019* | 19        | -12  | 3/4"   | 28,2  | 1,11 | 31,3 | 1,23 | 365      | 5292,5 | 1460  | 21170 | 240       | 9,45  | 1340   | 0,90  | SP+M05400-12 | MF+M00920-12GX |
| H10137025* | 25        | -16  | 1"     | 35,2  | 1,39 | 37,8 | 1,49 | 300      | 4350   | 1200  | 17400 | 340       | 13,39 | 1800   | 1,21  | 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 | 2300   | 1,54  | 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

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 |
| 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



HOSES  
65

| 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

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 |
| 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

68

## 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 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  |
| 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

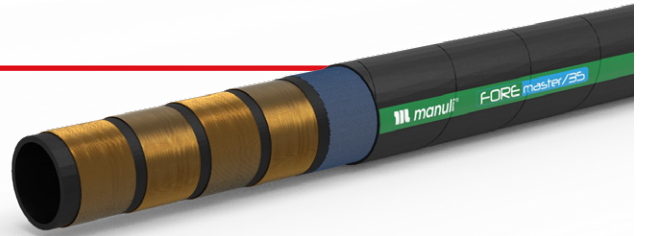
ISO 18752-C; Exceeds SAE J517 Type 100R19 & ISO 11237-R19

## 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        |
| 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

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

### APPLICABLE SPECS

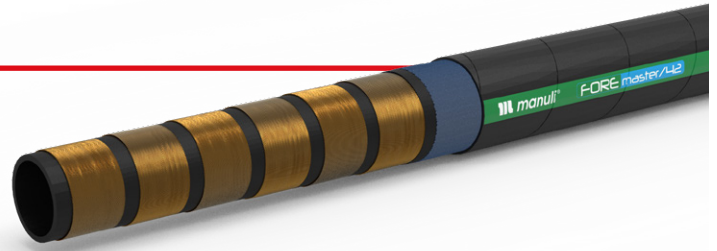
Manuli® Design, ref. ISO 18752-C

### TYPE APPROVALS

MSHA; CU-TR

# FOREMASTER/42

EXTREME SCRATCHING RESISTANCE



HOSES  
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            |
| 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 |                  |
| 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

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 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        |
| 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). 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

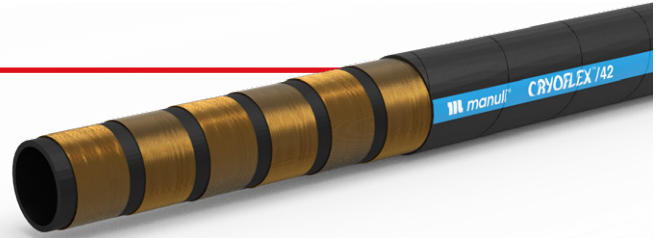
ISO 18752-B Ext.

## 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 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        |
| 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

# 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

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 |
| H10136025*  | 25        | -16  | 1      | 38.2  | 1.50 | 41.4  | 1.63 | 420      | 6,090 | 1,680 | 24,360 | 350       | 13.78 | 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 | 400       | 15.51 | 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 | 450       | 17.72 | 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 | 450       | 17.72 | 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 | 550       | 21.65 | 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 | 800       | 31.50 | 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, DN 38 Compact) and six (DN 38, DN 76) high tensile steel spirals + One high

### COVER

STRONG - TYPE "SC"

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

### APPLICABLE SPECS

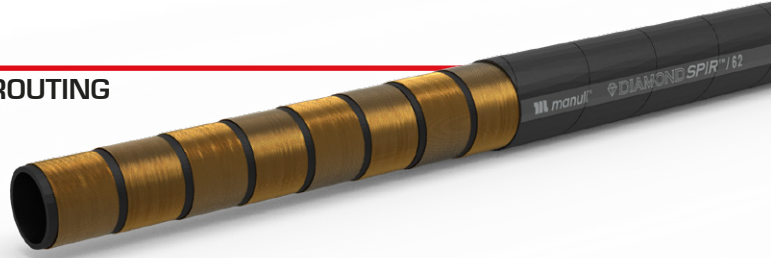
Manuli® Design

### 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 82

| 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



HOSES 83

| 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 84

| 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



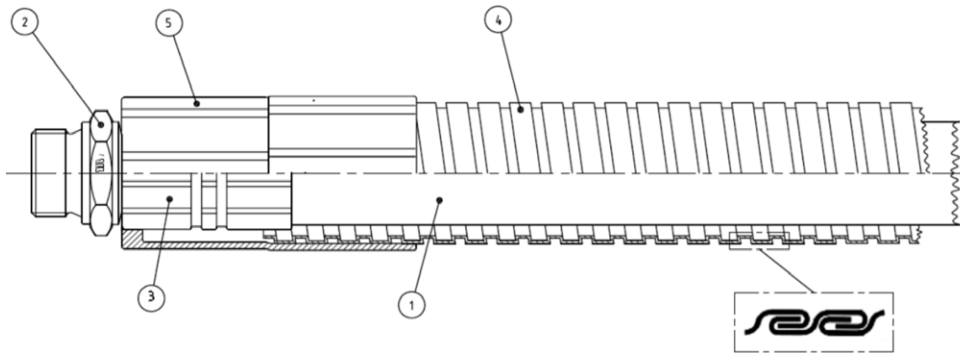
- Refer to Golden Armour assembling instructions and crimp chart for the correct assembly of the hose
- Hose Assembly Branding: The Golden Armour assembly must report at least the following information in the hose brand:
  - - inch size - WP 5,000 psi (on the metal sleeve)
  - assembling date - assembler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

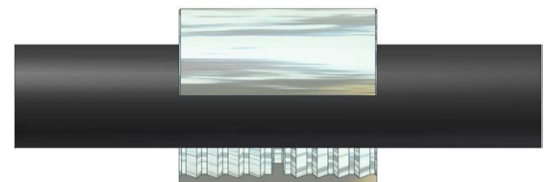
### ACCESSORIES TECHNICAL DATA

| 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  |
| DN               | dash              | inch | mm          | inch | mm     | inch | mm        | inch | g/m    | lb/ft | mm           | mm          | mm    | mm           | mm         |       |     |
| JP45G090280099   | 10                | -6   | 3/8"        | 25   | 1"     | 32.0 | 1.26      | 127  | 5.00   | 565   | 0.38         | IO2110-06GA | 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         | IO2110-08GA | 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         | IO2110-10GA | 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         | IO2110-12GA | 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         | IO2110-16GA | 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         | IO2110-20GA | 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         | IO2110-24GA | 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         | IO2110-32GA | 106.5 | 165          | IO84210-32 | 106.5 | 115 |

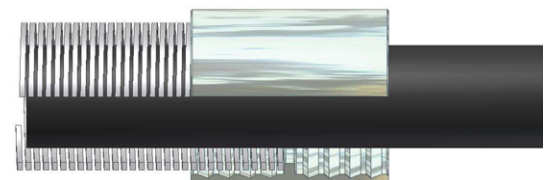
### ARMOUR JOINING PROCEDURE

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:

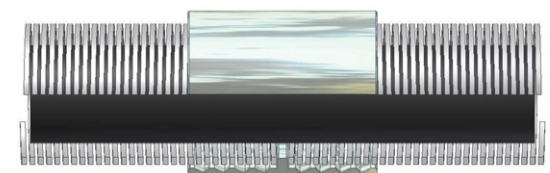
1. Slide the Armour Joint onto the hose.



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

86

## 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



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 |
| 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 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 |
| 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 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  |
| 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 94

| 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

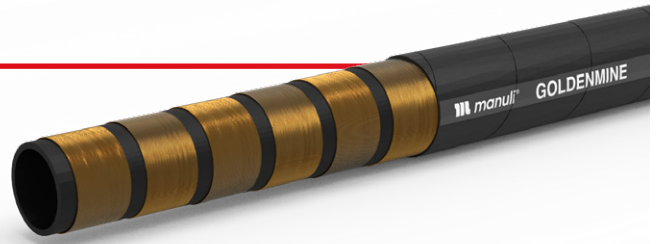
## REMARKS



- 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

