Group 1
Hydraulic Hoses
INDEX

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Symbol Key

<table>
<thead>
<tr>
<th>Part No</th>
<th>Inside Diameter</th>
<th>Out. Diam.</th>
<th>Working Pressure</th>
<th>Burst Pressure</th>
<th>Bend Radius</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>1SN-04</td>
<td>6.3 mm</td>
<td>1/4 inch</td>
<td>13.4 mm bar</td>
<td>225 psi</td>
<td>900 bar</td>
<td>100 mm</td>
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</table>

Available for rental

For information on safe hose assembly, see chapter 20
# Applications:
High-pressure hose for petroleum-based hydraulic oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).
The combination of high temperature and high pressure reduces the hose’s lifespan.
Hoses and swaged couplings are also available with type approvals from a number of classification societies.

### Type EN853 1SN / ISO 1436
1 Layer Hydraulic Hose

**Construction:**
- **Covering:** Black synthetic rubber
- **Reinforcement:** 1 layer steel wire braid
- **Internal:** Nitrile rubber [NBR]

**Temperature Range:**
- -40°C to +100°C for hydraulic oils
- -40°C to +85°C for water
- -40°C to +70°C for air

## Part No | mm | inch | dash | mm | psi | bar | psi | bar | psi | mm | kg/m | Fitting Series
---|---|---|---|---|---|---|---|---|---|---|---|---
1SN-04 | 6.3 | 1/4 | -04 | 13.4 | 3260 | 225 | 2100 | 900 | 1300 | 100 | 0.24 | 002SC
1SN-06 | 9.5 | 3/8 | -06 | 17.4 | 2610 | 180 | 1200 | 720 | 1040 | 130 | 0.34 | 002AT
1SN-08 | 12.7 | 1/2 | -08 | 20.7 | 2320 | 150 | 920 | 640 | 928 | 180 | 0.43 | 002AT
1SN-10 | 15.9 | 5/8 | -10 | 23.9 | 1880 | 130 | 520 | 520 | 750 | 200 | 0.49 | 002AT
1SN-12 | 19.0 | 3/4 | -12 | 27.8 | 1530 | 105 | 420 | 400 | 610 | 240 | 0.63 | 002AT
1SN-16 | 25.4 | 1 | -16 | 35.8 | 1270 | 88 | 352 | 352 | 510 | 300 | 0.94 | 002AT
1SN-20 | 31.8 | 1.1/4 | -20 | 44.8 | 910 | 63 | 252 | 252 | 365 | 420 | 1.19 | 002AT
1SN-24 | 38.1 | 1.1/2 | -24 | 51.1 | 725 | 50 | 200 | 200 | 290 | 500 | 1.49 | 002AT
1SN-32 | 50.8 | 2 | -32 | 64.7 | 580 | 40 | 160 | 160 | 2300 | 630 | 2.23 | 002AT

## Part No | mm | inch | dash | mm | psi | bar | psi | bar | psi | mm | kg/m | Fitting Series
---|---|---|---|---|---|---|---|---|---|---|---|---
2SN-04 | 6.3 | 1/4 | -04 | 15.0 | 5800 | 400 | 3200 | 1600 | 2320 | 100 | 0.39 | 002AT
2SN-06 | 9.5 | 3/8 | -06 | 19.0 | 4775 | 330 | 2750 | 1320 | 1910 | 130 | 0.55 | 002AT
2SN-08 | 12.7 | 1/2 | -08 | 22.2 | 4000 | 275 | 1900 | 1100 | 1600 | 180 | 0.67 | 002AT
2SN-10 | 15.9 | 5/8 | -10 | 25.4 | 3600 | 250 | 1600 | 1000 | 1450 | 200 | 0.77 | 002AT
2SN-12 | 19.0 | 3/4 | -12 | 29.3 | 3100 | 215 | 1240 | 860 | 1240 | 240 | 1.00 | 002AT
2SN-16 | 25.4 | 1 | -16 | 38.1 | 2400 | 165 | 960 | 660 | 960 | 300 | 1.49 | 002AT
2SN-20 | 31.8 | 1.1/4 | -20 | 47.5 | 1800 | 125 | 720 | 500 | 720 | 420 | 1.73 | 002AT
2SN-24 | 38.1 | 1.1/2 | -24 | 55.0 | 1300 | 90 | 520 | 360 | 520 | 500 | 2.14 | 002AT
2SN-32 | 50.8 | 2 | -32 | 67.0 | 1150 | 80 | 460 | 320 | 460 | 630 | 2.96 | 002AT

See Chapter 3 for couplings for these hoses.

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### Applications:

High-pressure hose for petroleum-based hydraulic oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).

The combination of high temperature and high pressure reduces the hose’s lifespan.

### Applications:

High-pressure hose for petroleum-based hydraulic oils, biodegradable oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).

The combination of high temperature and high pressure reduces the hose’s lifespan.

### Specifications:

#### Type EN857 2SC / ISO 11237 2SC

**2 Layer Compact Hose**

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
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<td>5075</td>
<td>1400</td>
<td>0.42</td>
</tr>
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<td>-08</td>
<td>20.4</td>
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<td>4495</td>
<td>1240</td>
<td>0.52</td>
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<td>5/8</td>
<td>-10</td>
<td>23.9</td>
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<td>4060</td>
<td>1120</td>
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<td>0.86</td>
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<td>3045</td>
<td>840</td>
<td>1.17</td>
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<td>2495</td>
<td>688</td>
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#### Hydraulic Hose

**2 Layer Compact Hose SAE100R16**

**High-temperature Hose**

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<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
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<td>2000</td>
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#### Construction:

- **Covering:** Black synthetic rubber
- **Reinforcement:** 2 layers steel wire braid
- **Internal:** Nitrile rubber [NBR]

#### Temperature Range:

-40°C to +100°C for hydraulic oils
-40°C to +85°C for water
-40°C to +70°C for air

SEE CHAPTER 3 FOR COUPLINGS FOR THESE HOSES

Flexible Solutions
### APPLICATIONS:
High-pressure hose with synthetic, heat-resistant internal rubber; 2 layers steel wire braid, blue synthetic rubber cover, lightweight, very flexible. Synthetic, oil- and weather-resistant covering. Special hose for hot-water high-pressure washers. The combination of high temperature and high pressure reduces the hose’s lifespan.

### CONSTRUCTION:
**Covering:** Blue synthetic rubber  
**Reinforcement:** 2 layers steel wire braid  
**Internal:** Synthetic rubber  
**TEMPERATURE RANGE:** -40°C to +120°C

### Table 1: HIGH PRESSURE HOSE Type Active Wash Compact

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
<th>Fitting Series</th>
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<tr>
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<td>7.9</td>
<td>5/16</td>
<td>-05</td>
<td>15.0</td>
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<td>5800</td>
<td>1200</td>
<td>17400</td>
<td>75</td>
<td>0.31</td>
<td>46</td>
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<tr>
<td>2SC-06W</td>
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<td>3/8</td>
<td>-06</td>
<td>17.4</td>
<td>400</td>
<td>5800</td>
<td>1200</td>
<td>17400</td>
<td>90</td>
<td>0.38</td>
<td>0025C</td>
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<tr>
<td>2SC-08W</td>
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<td>1/2</td>
<td>-08</td>
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### Table 2: HIGH PRESSURE HOSE Type Active Wash 400

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<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
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<tr>
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<td>1100</td>
<td>15950</td>
<td>180</td>
<td>0.65</td>
</tr>
</tbody>
</table>

See Chapter 3 for couplings for these hoses.

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### 3 Layer Hydraulic Hose

**Type 372 4SP**

**APPLICATIONS:**
3-wire braid compact hose with 4SP working pressures. General high pressure small bending radii hydraulic applications. No-skive hose construction. Nitrile (NBR) inner tube for extended fluid compatibility.

**RECOMMENDED FLUIDS**
Petroleum and water-glycol based fluids, lubricating oils, air and water. For air above 1.7 MPa, the hose cover must be pin-pricked.

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
<th>Fitting Series</th>
</tr>
</thead>
<tbody>
<tr>
<td>372 -06</td>
<td>9.5</td>
<td>3/8</td>
<td>-06</td>
<td>21.4</td>
<td>445</td>
<td>6500</td>
<td>1800</td>
<td>25800</td>
<td>120</td>
<td>0.73</td>
<td>70</td>
</tr>
<tr>
<td>372 -08</td>
<td>12.7</td>
<td>1/2</td>
<td>-08</td>
<td>24.6</td>
<td>415</td>
<td>6000</td>
<td>1660</td>
<td>24000</td>
<td>160</td>
<td>0.90</td>
<td>70</td>
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<td>372 -10</td>
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<td>5/8</td>
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<td>28.2</td>
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<td>5000</td>
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<td>1.09</td>
<td>70</td>
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### Type EN856 4SP / ISO 3862-1 4SP

**4 Layer Hydraulic Hose**

**APPLICATIONS:**
High-pressure hose for petroleum-based hydraulic oils, *water-glycol and water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-pricked for air and gas applications over 17 bar (250psi).
The combination of high temperature and high pressure reduces the hose’s lifespan. The hose is not suitable for constant immersion in oil. Hoses and couplings are also available with type approvals from a number of classification societies.

**CONSTRUCTION:**
Covering: Black synthetic rubber
Reinforcement: 4 layers steel wire spirals
Internal: Synthetic rubber
**TEMPERATURE RANGE:**
-40°C to +100°C for hydraulic oils
-40°C to +85°C for water
-40°C to +70°C for air

**SUPPLIED WITH TOUGH COVER OUTSIDE COATING ON REQUEST**

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
<th>Fitting Series</th>
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<td>6000</td>
<td>1660</td>
<td>24000</td>
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<td>1004</td>
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<td>5000</td>
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SEE CHAPTER 3 FOR COUPLINGS FOR THESE HOSES
## HYDRAULIC HOSES

### Type EN856 4SH / ISO 3862-1 4SH

#### 4 Layer Hydraulic Hose

**Application:**
High-pressure hose for petroleum-based hydraulic oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).
The combination of high temperature and high pressure reduces the hose’s lifespan. The hose is not suitable for constant immersion in oil. Hoses and swaged couplings are also available with type approvals from a number of classification societies.

**Construction:**
- **Covering:** Black synthetic rubber
- **Reinforcement:** 4 layers steel wire spirals
- **Internal:** Synthetic rubber

**Temperature Range:**
-40°C to +100°C for hydraulic oils
-40°C to +85°C for water
-40°C to +70°C for air

### Table: Specifications

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
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**Supplied with tough cover outside coating on request**

### Type EN856 R13 / ISO 3862-1 R13

#### 4/6 Layer Hydraulic Hose

**Application:**
High-pressure hose for petroleum-based hydraulic oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).
The combination of high temperature and high pressure reduces the hose’s lifespan. The hose is not suitable for constant immersion in oil. Hoses and swaged couplings are also available with type approvals from a number of classification societies.

**Construction:**
- **Covering:** Black synthetic rubber
- **Reinforcement:** 4 or 6 layers steel wire spirals
- **Internal:** Synthetic rubber

**Temperature Range:**
-40°C to +100°C for hydraulic oils
-40°C to +85°C for water
-40°C to +70°C for air

### Table: Specifications

<table>
<thead>
<tr>
<th>Part No</th>
<th>mm</th>
<th>inch</th>
<th>dash</th>
<th>mm</th>
<th>bar</th>
<th>psi</th>
<th>mm</th>
<th>psi</th>
<th>mm</th>
<th>kg/m</th>
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**See Chapter 3 for couplings for these hoses**

www.fluidcontrol.no
**Type R13 PUR ORANGE**
4 Layer Hydraulic Hose

**CONSTRUCTION:**
- Covering: Orange environment resistant synthetic cover rubber
- Reinforcement: Four high tensile steel spirals
- Internal: Oil resistant synthetic rubber
- Cover Colour Identification: Orange

**A HOSE DEVELOPMENT FOR A SPECIFIC APPLICATION**
The hose and fitting that offers extended life, improved performance and total sealing capability.

* Approximate outside diameter – extruded cover thickness – 1.6/2.0mm

---

**Type R15 / ISO 3862-1 R15**
4/6 Layer Hydraulic Hose

**CONSTRUCTION:**
- Covering: Black synthetic rubber
- Reinforcement: 4 or 6 layers steel wire spirals
- Internal: Synthetic rubber

**TEMPERATURE RANGE:**
- -40°C to +100°C
- -40°C to +85°C
- -40°C to +70°C

**APPLICATIONS:**
High-pressure hose for petroleum-based hydraulic oils, *water-glycol and *water-oil hydraulic emulsions, grease, lubricants, crude oil, diesel, air and water. The hose must be pin-prickled for air and gas applications over 17 bar (250psi).
The combination of high temperature and high pressure reduces the hose’s lifespan. The hose is not suitable for constant immersion in oil. Hoses and swaged couplings are also available with type approvals from a number of classification societies.

---

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* Approximate outside diameter – extruded cover thickness – 1.6/2.0mm

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### Part No

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<th>mm</th>
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**SEE CHAPTER 3 FOR COUPLINGS FOR THESE HOSES**
BLOWOUT PREVENTER CONTROL HOSE

Fire rated hydraulic hose with permanently attached couplings.

CONSTRUCTION:
Covering: Extruded protective polyurethane (PU) sheath
Reinforcement: Four or six high tensile steel spirals
Internal: Synthetic, swelling resistant rubber tube

TEMPERATURES:
Service temperature range (°C): -40 to 121
Fire rating: Flame temperature
1,100°C for 5 minutes (API)

APPLICATIONS:
Flexible hose for hydraulic systems using mineral oils, glycols and aqueous emulsion oils in fire safety critical areas and for Blowout Preventer control.

SPECIFIED STANDARDS
• API 16D 1st Edition - Control Systems for Drilling Well Control Equipment
• Lloyd’s Register’s Fire Tests for Flexible Hoses on Offshore Installations, OD 1000/499

The Firemaster 16D Hydraulic Hose System is the latest addition to the Hydrasun range of Fire Rated Hose Assemblies.

Developed primarily to address the stringent requirements demanded for Blowout Prevention and well control applications, the Firemaster 16D is also ideally suited for any high pressure hydraulic applications where there is a need for hoses to be Fire Rated and capable of working in extreme heat in the event of an emergency.

In addition to satisfying the requirements of the Lloyd’s Register Fire Test for Flexible Hoses on Offshore Installations - OD1000/499 which calls for the pressurised Hose Assembly to withstand temperatures of 1000 degrees C for 5 minutes, the Firemaster 16D also conforms with the API16D standard for Control Systems for Drilling Well Control Equipment.

Other key design features of the product include a heavy-duty cover that affords resistance to abrasion an weathering thus maximizing the life expectancy of the product. Additionally our specially designed integral fittings which are available in a range of materials and thread types provide a complete system solution that delivers the highest levels of technical integrity and reliability.

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<th>mm</th>
<th>inch</th>
<th>mm</th>
<th>psi</th>
<th>bar</th>
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<th>mm</th>
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ASK US ABOUT COUPLING OPTIONS. HOSE AND COUPLINGS ARE ONLY SUPPLIED PREASSEMBLED.
We offer fast track turnaround and delivery of finished product due to our extensive stockholding of specialist hydraulic control line hoses, combined with our in-house capability to manufacture bespoke or specialist end connections in both standard and exotic materials such as Monel, Inconel, 6MO, Super Duplex etc. All Hydrasun’s manufacturing operations are approved to BS EN ISO 9001:2000 by LRQA.

A particular area in which we specialise is the short-length Umbilical market offering a custom-engineered service encompassing design, engineering, manufacturing, testing and installation together with back-up support and after-sales service that the medium/large manufacturers can not match.

Our Extrusion and Coatings service encompasses the encapsulation of both single hose and hose bundles with a Polymer or Elastomer cover that significantly increases hose service life whilst assuring operational reliability.

The hose and fitting that offers extended life, improved performance with total sealing capability.

Cover Colour Identification : Blue & Yellow (Green available to special order)

**Typical Applications for Hydrasun Umbilicals and Jumpers**

- IWOC Work over umbilicals
- Topside control umbilicals
- In field well head jumpers
- ROV fly to place jumpers
- Hydraulic control umbilicals
- Water jetting umbilicals
- Test tree control umbilicals
- Abandonment system umbilicals
- Service lines
- Gas umbilicals
- Wire line umbilicals
- Jacket Submergence umbilicals
- Chemical injection lines
- Calm Buoy umbilicals
- Subsea Umbilicals
- Subsea Jumpers
- Hydraulic Flying Leads

**Construction:**

- Tube: Service compatible resistant synthetic tube.
- Reinforcement: Four high tensile steel spirals.
- Cover: Synthetic rubber cover.
- Extra Extruded Cover: Thermoplastic Polyurethane.

**Elastomer Extrusion - which offers:**

- Excellent wear resistance.
- Total assembly encapsulation with the prevention of sea water ingress, particularly from external pressure in deep water operation.
- Corrosion elimination.
- Resistance against microbial attack.
- Withstands repeated flexing.
- Flame-proof - halogen free.

**Colour Code:**

- Part number suffixed with Y = Yellow.
- Part number suffixed with B = Blue.

---

**Test Pressure**

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<th>Part No</th>
<th>inch</th>
<th>mm</th>
<th>inch</th>
<th>mm</th>
<th>psi</th>
<th>bar</th>
<th>inch</th>
<th>mm</th>
<th>psi</th>
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*Approximate outside diameter - extruded cover thickness - 1.6/2.0mm
** This size is made to special order due to market demand.
We are able to provide hoses for Drag Chain applications both low- and high pressure covering all services. Over the years we have established good relationships towards international manufactures of hoses and Drag Chains for offshore installations.

Hoses for Drag Chain applications are not standard and are made to order. It is extremely important to avoid elongation when hoses are pressurized and measure accurate length between hose connections. The most standard end connections are flanges or Weco unions. Various materials of hose couplings can be proposed upon request.

**MOST FREQUENT SERVICES IN DRAG CHAIN:**

- Mud
- Sea Water
- Fresh Water
- Instrument Air
- Heating Water
- Potable Water
- Cement
- Plant Air
- Completion Fluid
- Base Oil
- Hydraulic Oil
- Other services on request

**Inspection of hoses in Drag Chain performed by one of our service technicians.**
**Construction:** Synthetic rubber inside. Resistant to corrosion, wear and oil-containing drilling mud. Reinforced with several layers textile and steel wire, with high tensile strength. Synthetic rubber covering resistant to oils, ozone and wear and tear.

**Temp. range:** Operating temperature +45°C to +82°C.

**Applications:** Rotary hoses are available in lengths up to 90 feet (27.5 m) over all length with built-in fittings with male API threads as default. Outside diameter of the fittings are virtually the same as the outside diameter of the hose. The inside connection between hose and fittings is plane.

**Pressure load:** Hoses installed offshore cannot be pressure loaded higher than 1.25 x maximum working pressure. Other fittings available on request.

**API Grade C**

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<th>PSI</th>
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<th>Bend Radius mm</th>
<th>Weight kg/m</th>
<th>Weight kg/fittings pair</th>
<th>API Flange</th>
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<th>Weight kg/fittings pair</th>
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<th>Weight kg/m</th>
<th>Weight kg/fittings pair</th>
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**PROTECTIVE SPIRALS**

**Construction:**
Spiral made yellow polyethylene HDPE in dimensions 54 mm - 160 mm. Yellow polyethylene MDPE in dimension 32 mm.

**Temperature range:**
-30°C to +180°C.

**Applications:**
Wrap around hoses and cables to protect and keep them together.

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**PROTECTIVE STRAPS**

**Construction:**
Spiral made yellow polyethylene HDPE in dimensions 54 mm - 160 mm. Yellow polyethylene MDPE in dimension 32 mm.

**Temperature range:**
-30°C to +180°C.

**Applications:**
Wrap around hoses and cables to protect and keep them together.

<table>
<thead>
<tr>
<th>Part No</th>
<th>ID/OD mm</th>
<th>Std. length meter</th>
<th>Spiral thickness mm</th>
<th>For OD mm</th>
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<td>13 / 16</td>
<td>20</td>
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<td>12 - 18</td>
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<td>SSW-20</td>
<td>16 / 20</td>
<td>20</td>
<td>1.7</td>
<td>16 - 26</td>
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<td>20</td>
<td>2.1</td>
<td>20 - 27</td>
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<td>27 - 35</td>
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<td>20</td>
<td>2.8</td>
<td>35 - 60</td>
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<td>44 / 50</td>
<td>20</td>
<td>3</td>
<td>35 - 75</td>
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<td>4.3</td>
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<td>5</td>
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</tbody>
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**HOSE STRAPS**

**“FLUID CONTROL”**

**Construction:**
Sturdy, black polyester with zinc-plated chromated safety lock. Width 25 mm. Thickness approx. 1.5 mm.

**Tensile strength:**
250 kg.

**Applications:**
Used for attachment of hoses and cables etc.

- Length 500 mm Part No REIM-0500
- Length 750 mm Part No REIM-0750
- Length 1000 mm Part No REIM-1000
- Length 1500 mm Part No REIM-1500
- Length 2000 mm Part No REIM-2000

Also available in red and green.
SUBSEA

- Umbilical
- Thermo-plastic Hoses
- High Pressure Fittings
- Kevlar Hoses
- MQC Plates
- ROV Couplings
- Walther Couplings
- Inspection Hoses
- Instrument Fittings
- Needle Valves
- Block & Bleed Valves
- Pressure Gauges
- Flying Leads
- Multitube