

Technical Data

Technical Specifications
Dimensions & Standards



INTERPUMP
FLUID SOLUTIONS

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Manufacturing overview and catalogue guide



The Production

Interpump Fluid Solutions is a multinational company that designs, manufactures and distributes hydraulic hoses, hose fittings and adaptors, as well as related assemblies and assembly machinery.

With over 35 years of expertise and a strong focus on technological innovation, IFS is a global leader in fluid connection systems. High technological standards and continuous investment in process and material quality have strengthened our core competencies. We manufacture 70 million products and 35 million metres of hose each year, with consolidated turnover exceeding €120 million.

Our manufacturing facilities cover over 80,000 square metres and include more than 500 machines and assembly systems.

The Group's Strengths

Our core strengths include:

- Certified and field-proven quality;
- Excellent reliability;
- Flexibility and continuous improvement;
- Innovation;
- Product integration for comprehensive solutions.

IFS delivers high-performance, customer-focused solutions aligned with market requirements and compliant with ISO, SAE, EN and JIS construction standards, as applicable. A market-in approach and dedicated product development enable us to create customer-specific solutions and deliver significant added value.

Evidence of technical specifications

Fitting Solutions

IFS supplies fittings in both two-piece and one-piece configurations, including stainless steel versions for demanding applications.

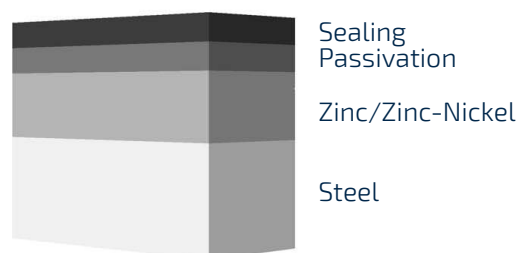
Surface treatments

Interpump Fluid Solutions uses its own in-house facilities to carry out surface treatments such as standard zinc and zinc-nickel coatings, ensuring the high quality and performance standards required by the market.



Our systems ensure a low environmental impact by complying with the most stringent environmental and safety standards.

Hexavalent chromium-free passivation ensures a low environmental impact. In addition to enhancing product performance, a dedicated sealer is applied to maintain a low and controlled coefficient of friction.



Pure Zinc coating according to ISO 2081 Fe/Zn8/C/T2

The pure zinc coating, with a minimum zinc layer thickness of 8 µm and white passivation, ensures resistance to red rust exceeding standard market requirements. The finish has a matte metallic appearance.



Samples after 400h tested according to ISO 9227 NSS

Finishing	Thickness	Minimum resistance red rust
Pure zinc-plating, passivated CrVI free, with sealer	>8µm	>400 h

Zinc–nickel coating according to ISO 19598 Fe/ZnNi8/An/T2

The zinc–nickel coating (Zn–Ni alloy, Ni 12–16%, thickness 8–12 µm) has a grey-blue finish with slight iridescence. It is recommended when high corrosion resistance is required under severe exposure conditions.



Samples after 720h tested according to ISO 9227 NSS

Finishing	Thickness	Minimum resistance red rust
Gray-blue Zn–Ni plating, passivated CrVI free with sealer	>8µm	>720 h

Product Qualification

All our products are qualified to the relevant construction standards and technical specifications. All required tests are carried out in our test laboratory using the latest-generation equipment. Working closely with the market, we provide dedicated testing solutions for customer projects.



Certifications and Markets

Alongside certified Environmental, Quality and Safety Management Systems, we also obtain type approvals, including certifications from international organisations for specific products. This supports targeted specialisation in markets such as mining, marine, offshore and automotive.

Supported by a strong team and wide-reaching distribution channels, we supply products and services to industries requiring fluid line components and hose fittings through our global network of centres.

- Direct retail sales
- Express delivery
- Sales and after-sales support
- Hose fittings centre
- Testing and reporting services



your hydraulic partner

Safety, reliability and high performance level are recognized by certifying bodies such as DNV, Bureau Veritas, Lloyd's Register, RINA, Korean Register and Nippon Kaiji Kyokai (ClassNK), which have issued the related approvals and product certifications following dedicated audits and successfully witnessed tests.

Interpump Fluid Solutions is a member of UNI (Italian National Standardization Body) and ASSOFLUID (Italian Association of Hydraulics and Pneumatics Operators and Manufacturers). This is a consistent value added in order to always be updated and informed about standards, applications and solutions.

Management System		Certifying Body
Quality	ISO 9001:2015	DNV-GL
Environment	ISO 14001:2015	DNV-GL
Health and Safety	ISO 45001 – 2018	DNV-GL

Type Approvals	
DNV-GL	Hypress 2SC MSHA, Hypress 4SH, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, Hipac 2SC/LongLife 2SC, Longlife 2SC MSHA, LongLife 1SC, LongLife 2SC, Marathon, Marathon MSHA
ABS	Hypress 1SC, Hypress 2SC MSHA, Hypress 4SH, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, Kaizen 2SN MSHA, Hipac 2SC/LongLife 2SC, Longlife 2SC MSHA, LongLife 2SC, Marathon MSHA
LLOYD's Register	Hypress 2SC MSHA, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, Hipac 2SC/LongLife 2SC, Hipac/Longlife 2SC MSHA, LongLife 2SC, Marathon MSHA
RINA	Kaizen 2CS, Hipac 2SC / LongLife 2SC, LongLife 2SC
Bureau Veritas	Hypress 2SC MSHA, Hypress 4SH, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, Hipac/LongLife 1SC, Hipac 2SC/LongLife 2SC, LongLife 2SC MSHA, LongLife 1SC, LongLife 2SC, Marathon MSHA
KR	Hypress 2SC MSHA, Hypress 4SH, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, LongLife 1SC, Hipac 2SC/LongLife 2SC, Hipac/LongLife 2SC MSHA, LongLife 1SC, LongLife 2SC, Marathon MSHA
NKK	Hypress 2SC MSHA, Hypress 4SH, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, LongLife 1SC, Hipac 2SC/LongLife 2SC, LongLife 1SC, LongLife 2SC, Marathon MSHA
CCS	Hypress 1SC, Hypress 2SC MSHA, Hypress 4SP, Hypress R17 MSHA, HyGreen 4SH, HyGreen R13, HyGreen R15, Kaizen 2SN, LongLife 1SC, Hipac 2SC/LongLife 2SC, LongLife 1SC, LongLife 2SC, Marathon MSHA

Special Certification	
MSHA	Cover Compound
LAPI – EN 45545-2	HyRail hose
CO2	LongLife 1SC, LongLife 2SC

Marine Equipment Directive	
MED-D	Hypress 2SC MSHA, Hypress 4SP, Hypress R17, HyGreen 4SH, HyGreen R13, HyGreen R15, Marathon MSHA



Sheet hose legend

INTERPUMP HySOpress 6K WS¹

TISM042³



APPLICATIONS⁵



TYPE APPROVAL :

MED, DNV - GL, ABS, LR, CCS, BV, KR.

⁶

APPLICABLE SPECS. :

EXCEEDS ISO 18752/CC

⁴

High Flexibility and Half Bend Radius. Qualification according ISO 18752/CC. MSHA cover.

²

Internal tube : Synthetic rubber, extruded whole without joints, of uniform thickness

Reinforcement: 4-6 High tensile steel spirals (4 spirals up to 1", 6 spirals from 1 ¼")

Coverage: Anti-abrasive synthetic rubber, resistant to oils, fuels and atmospheric conditions.

Recommended fluids: Mineral and biological oils, water, water based fluid, lubricants.

Operating temperature: from -40 to +120°C from -40 to +70° C for water based fluids, from 0 to +70°C water.

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Part number	ID		Dim.	OD	Max WP		Min BP		Min BR		Weight		One piece	Ferrule	
	in	mm	Dash size		bar	psi	bar	psi	mm	inch	kg/m	lb/ft	Fitting series	Two piece s no skive	Two pieces skive
THE002K-06	3/8"	9.5	06	19.7	420	6090	1680	24360	65	2.559	0.662	0.445	N	001C-06	0514-06
THE002K-08	1/2"	12.7	08	22.5	420	6090	1680	24360	90	3.543	0.772	0.518	N	001C-08	0514-08
THE002K-10	5/8"	15.9	10	26.2	420	6090	1680	24360	100	3.937	0.938	0.630	N	001C-10	

Available also with MSHA cover. In case of order use code TISM042.

MARKING: Available also embossed brand version. In case of order use TFW0085N.1

⁸



INTERPUMP



HySOpress 6K WS

ISO 18752/CC - DN 6 I.D. 1/4" - W.P. 42,0 MPa/6000 psi

⁹

¹ Type description	⁵ Applications	⁹ Marking	¹³ Min. bursting pressure
² Features and recommendations	⁶ Type Approval	¹⁰ Internal diameter	¹⁴ Min. banding radius
³ Product code	⁷ Order code	¹¹ External diameter	¹⁵ Hose weight per meter
⁴ Applicable Specs.	⁸ Note	¹² Working pressure	¹⁶ Recommended fitting/ferrule

The information contained on this catalogue page is provided for illustrative purposes only and does not constitute a binding specification.



IFS quality certificate & assurance



Hose certification chart

Hose reference		Type approval								Specific Qualification & Certification			
Hose	Code	DNV-GL	ABS	LLOYDs REGI-STER	CCS	BV	KR	NKK	RINA	EN 81-20	CO2	Railway EN45545-2	MED
Hypress 1SC	TFE201K		X		X								
Hypress 2SC MSHA	TFEM02K / TFEY02K	X	X	X	X	X	X	X					X
Hypress 4SH	TFDM4SH	X	X			X	X	X					
Hypress 4SP	TFDM4SP	X	X	X	X	X	X	X					X
Hypress R17 MSHA	TFSM017 / TFSY017	X	X	X	X	X	X	X					X
HyGreen 4SH	TFDR4SH	X	X	X	X	X	X	X					X
HyGreen R13	TFDR013	X	X	X	X	X	X	X					X
HyGreen R15	TFDR015	X	X	X	X	X	X	X					X
KAIZEN 2SN	THD0021	X	X	X	X	X	X	X	X				X
KAIZEN 2SN MSHA	THDM0021	X	X										X
Hipac 2SC / LongLife 2SC	THE002K / THE202K	X	X	X	X	X	X	X	X				X
Hipac / LongLife 2SC MSHA	THEM02K / THEY02K	X	X	X		x	x						X
LongLife 1SC	THEY02K	X			X	X	X	X			X		
LongLife 2SC	THE202K	X	X	X	X	X	X	X	X		X		
Marathon	THE2M2K	X											
Marathon MSHA	THEMM2K / THEYM2K	X	X	X	X	X	X	X					X
Power Lift 1SC	THE0L1K									X			
Power Lift 2SC	THE0L2K									X			
HyRail	TFDE011											X	



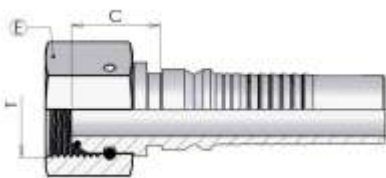
Sheet fitting legend

2

0050H

BSP Female 60° cone thrust wire

1



3

4

5

Part number	Hose I.D.		Dimension			
	in	mm	dash size	threadT	hex E	cut-off C
0050-03-02	3/16	4.8	03	1/8-28	14	15
0050-03-04	3/16	4.8	03	1/4-19	19	17
0050-04-02	1/4	6.4	04	1/8-28	14	15
0050-04-04	1/4	6.4	04	1/4-19	19	17
0050-04-06	1/4	6.4	04	3/8-19	22	19
0050-04-08	1/4	6.4	04	1/2-14	27	22
0050-05-04	5/16	7.9	05	1/4-19	19	17
0050-05-06	5/16	7.9	05	3/8-19	22	19
0050-05-08	5/16	7.9	05	1/2-14	27	22
0050-06-04	3/8	9.5	06	1/4-19	19	17
0050-06-06	3/8	9.5	06	3/8-19	22	19
0050-06-08	3/8	9.5	06	1/2-14	27	22
0050-08-06	1/2	12.7	08	3/8-19	22	20
0050-08-08	1/2	12.7	08	1/2-14	27	23
0050-08-10	1/2	12.7	08	5/8-14	30	20
0050-08-12	1/2	12.7	08	3/4-14	32	27
0050-10-08	5/8	15.9	10	1/2-14	27	23
0050-10-10	5/8	15.9	10	5/8-14	30	20
0050-10-12	5/8	15.9	10	3/4-14	32	25
0050-12-08	3/4	19	12	1/2-14	27	24
0050-12-12	3/4	19	12	3/4-14	32	25
0050-12-16	3/4	19	12	1-11	38	26

6



O-Ring

1

Type description

4

Internal hose diameter

2

Product code

5

Main dimension

3

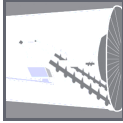
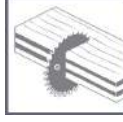
Order code

6

Note

The information contained on this catalogue page is provided for illustrative purposes only and does not constitute a binding specification.

Symbols legend

	Agriculture		Food Industry		Lifts
	Automatic Machines		Foundry-Steel Industry		Marine/Off Shore
	Biological Oil		Ground movement		Mining & Drilling
	Chemistry		HVAC & Refrigeration		Oil-Gas
	Cleaning		Hydraulic rams		Railway
	Compressors		Hydraulic tools		Sewer system
	Cranes/Lifting		Industry		Swaging Machines
	Elevators		Jet Grouting		Telehandler
	Energy		Lift truck		Test Benches
	System subject to normal temperatures				Truck
	System subject to low temperatures				Vehicles
	System subject to high temperatures				Wood Industry

Technical Info



How to order

Use the following rules to define the correct part number.

- Carbon steel fittings are manufactured according to ASTM A105
- Stainless steel fittings according to AISI 316L
- Stainless steel versions: add prefix "X" to the standard code

An example order code is shown in the table below.

Type		Hose dash size		Thread dash size	Note	Part number
0051	-	06	-	08	Standard	0051-06-08
0051	N	06	-	08	No Skive HySopress Spiral hose	0051N06-08
0050	H	20	-	24	Inter-lock	0050H20-24
0051	G	06	-	08	One Piece wired hoses	0051G06-08
0050	N	16	Q	20	One Piece 4 spiral HySopress hoses	0050N16Q20
0050	N	20	S	24	One Piece 6 spiral HySopress hoses	0050N20S24
1260	X	32	-	32	One Piece SAE/EN spiral hoses	1260X32-32
0084	Y	08	-	24	Waterblast	0084Y08-24
0084	M	06	-	20	Multispiral	0084M06-20
X0051	-	06	-	08	Stainless steel	X0051-06-08

Note: in the case of an order with zinc-nickel (Zn-Ni) coating, add the suffix "NI" to the standard code, e.g. 0051N06-08NI.

Sealing features

- Sealing thread: in this case the seal is ensured by the flattening of the thread edges when the male fitting is screwed into the female fitting.
- With O-ring: this type of connection, suitable for high-pressure applications, is ensured by the compression of the seal in the corresponding component.
- Metal-to-metal: the two angled faces are wedged into one another by tightening the threaded nut, ensuring sealing.
- Angle combined with O-ring: the seal is positioned on the angled sealing face of the fitting and is deformed at the same time as the angled faces are wedged together.

On the following page, the main connection types are shown together with the corresponding standards.

The choice of the correct connection type depends on several factors such as the combination type, working pressure, temperature, chemical compatibility, corrosion resistance and the presence of vibration.

Metric Connections (1)

Known as DIN or metric fittings, they ensure sealing through angled sealing faces (metal-to-metal) or through a combination of metal-to-metal and an O-ring seal. The sealing face angle is 24° with or without an O-ring.

60° conical connections (2)

Known as BSP (British Standard Pipe) connections, also referred to as Whitworth threads, they can be parallel (BSPP) or tapered (BSPT). Sealing is ensured by angled metal faces, with or without an O-ring, with a 60° cone angle for both types.

BSPT Connections (3)

Sealing is ensured by the thread itself. As sealing relies on thread deformation, the use of a sealing material is recommended. The difference compared with an NPT tapered connection lies in the thread profile, which has a 55° angle.

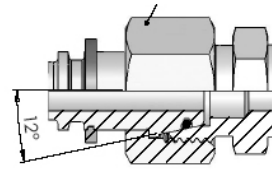
Cone 37° - SAE J514 (4)

Known as JIC fittings, they ensure sealing through a metal-to-metal connection with a 37° flare sealing surface, without deformation of the individual components. The threads are UNF straight.

Flat sealing with O-ring - SAE J1435 (5)

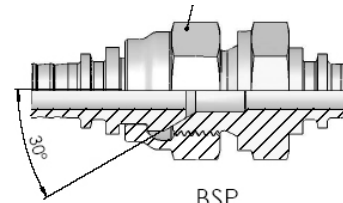
This type of connection provides excellent sealing at high pressures. Sealing is ensured by compression of the O-ring on the male fitting against the flat face of the female fitting. The thread provides the mechanical connection.

(1)



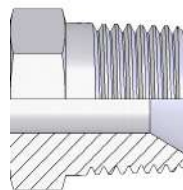
DKOL/DKOS

(2)

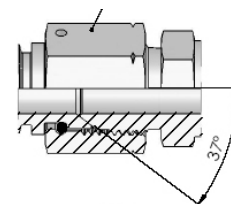


BSP

(3)

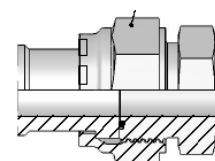


(4)



JIC

(5)



ORFS

SAE with O-ring – SAE J516 type BOSS

Male fitting with UNF straight threads, a flat sealing surface and an O-ring. Sealing is ensured by compression of the O-ring on the male fitting against the sealing surface of the female fitting. It is compatible only with BOSS fittings: SAE J1926.

NPTF/NPSM - SAE J516

Sealing is ensured by the tapered thread. The sealing faces are 30° angled and the thread has a 60° profile, unlike BSPT connections.

24° Gas cone - French series

These fittings feature a 24° seal support face with straight metric threads. Similar to DIN fittings, they have a finer thread.

JIS (Japanese Industrial Standard)

Metal-to-metal sealing is achieved through 30° conical faces. They can be divided into:

- JIS Toyota: female cone inverted compared with BSP connections; BSPP thread;
- JIS Komatsu: as Toyota connections, but with a metric thread;
- JIS Nissan: similar to BSP connections, except for some differences in cone dimensions.

Safety Indicators, attention and notes

This section shows important safety indicators. Three categories of indicators are used, listed in decreasing order of importance.



WARNING: used to highlight potentially hazardous situations and/or procedures that may endanger the operator's health or life.



ATTENTION: used to highlight situations and/or procedures that may damage the product or affect its functionality.



NOTE: used to highlight important information or references to international standards.

guidance for the correct selection, installation and maintenance of assemblies, in order to ensure a long service life.

Safety warnings



WARNING: The following may be dangerous to people's safety and health:

- an incorrect product selection;
- incorrect assembly or installation;
- damage to hoses

Appropriate training is essential to prevent potential hazards. This handbook is intended to be one of the tools for operators, maintenance staff and anyone working with hose assemblies.

This handbook refers to SAE J1273 and ISO/TR 17165-2, "Practical recommendations for the use of hose assemblies". In particular, Section 4 lists hazards related to hydraulic systems and pressurised connections.

Hose assembly selection



NOTE: SAE J1273 clearly states that "fittings from one manufacturer are not generally compatible with hoses supplied by another manufacturer".

Normative reference: ISO 17165-2, SAE J1273, EN 982. An assembled hose is defined as the complete assembly consisting of the hydraulic hose, fittings and connectors.

The characteristics of a hose assembly shall be:

- Flexibility: resistance to bending and torsional stresses generated by machinery;
- Stability: low volumetric expansion and minimal hose breathing are required to ensure correct power transmission and flow control;
- Minimal flow resistance: correct selection of hose assemblies (hoses and fittings) and layout must ensure maximum hydraulic circuit efficiency.

The purpose of this handbook is to provide useful



WARNING: Hydraulic fluid under pressure is hazardous and may cause serious injury.

Guidelines for Correct Hose Selection

The following aspects must be clearly defined:

- Type of application (high-pressure line, suction line, pilot line, etc.);
- Installation conditions (installation difficulty, presence of heat sources, external mechanical loads, delivery pump, etc.);
- Type of machinery (pressure peaks, vibrations, flexibility requirements, etc.);
- Special performance requirements (electrical conductivity, abrasion resistance, flame retardancy, etc.);
- Required connections and thread types;
- Type of fluid and chemical compatibility;
- Temperature and environmental conditions (salt water, chemical agents, prolonged exposure to sunlight, etc.);
- Applicable standards and/or local regulations

For severe applications, the IFS High Performance range often represents the optimal solution to ensure long service life of the assembly.

Typical Hydraulic Circuit Applications

Pressure lines

- Working pressure up to and above 420 bar;
- High fluid velocity up to 8 m/s;
- Severe operating conditions with possible pressure peaks (especially at delivery pumps) and vibrations;
- Medium- to high-pressure hoses generally required.

Return lines

- Working pressure up to 50–70 bar; Moderate fluid velocity of approximately 3.0–4.0 m/s.

Suction lines

- Primary requirement: vacuum resistance;
- Large-diameter hoses used to reduce pressure

losses;

- Low pressure, maximum 10 bar;
- Moderate fluid velocity to avoid cavitation, approximately 1.5 m/s;
- Required vacuum resistance down to –0.8/–0.9 bar;
- Optimal solution: hose with steel spiral reinforcement (ref. SAE 100 R4).

Pilot lines

- Medium pressure up to 100 bar;
- Medium to high fluid velocity, approximately 5 m/s;
- Compactness and high flexibility are essential for installation.

The IFS Pilot range meets all these requirements, offering extremely lightweight hoses with a reduced bending radius.

Hose size and flow rate

Component dimensions must be selected to ensure a regular fluid flow rate, in order to reduce pressure losses and avoid excessive fluid velocity or turbulence. For hose diameter selection, reference can be made to the nomogram provided in Appendix "A". It is sufficient to know the maximum allowable fluid velocity and the flow rate.

The recommended maximum fluid velocities depend on the application:

- Suction lines: 0.5–1.5 m/s
- Return lines: 1.5–3.5 m/s
- Pressure lines: 3.0–8.0 m/s
- Pilot lines: approximately 5.0 m/s

The hose diameter to be considered is the internal diameter of the flexible hose.

There are different ways of indicating the internal diameter:

Dash size	SAE Dimensions	Diameter	EN DN
This is the I.D. in 1/16"			
-3	3/16	4,8	5
-8	1/2	12,7	12
-10	5/8	15,8	16

Pressure

To correctly select the flexible hose and the fitting, the maximum working pressure of these components shall be equal to or higher than the maximum system pressure.

Both static working pressure and so-called pulsing pressure shall be considered whenever pressure variations occur in the system. SAE J1927 provides a method for estimating hose life reduction for specific hydraulic applications, particularly in relation to pressure peaks and pulsing frequency.



WARNING: Selection shall be made according to the maximum pressure reached by the system.

Pressure surges and peaks can only be verified using dedicated instrumentation capable of recording short-duration surges. However, an initial selection can be made by checking the system relief valve setting to ensure protection against potential surges and peaks.

Hydraulic systems can be classified according to the following pressure ranges:

- Low pressure: up to 70–110 bar (1500 psi)
- Medium-high pressure: 210–245 bar (3000–5000 psi)
- High/very high pressure: up to and above 420 bar (6000 psi)

Fluid to convey

Fluid type: chemical identification, concentration, temperature, etc.

Flexible hose selection shall consider the chemical compatibility of the conveyed fluid. The summary table provided gives information on the compounds used for hose manufacture, allowing verification of compatibility with different fluid types. The chemical resistance table provides compatibility information for various substances.

Special attention is required for applications involving hazardous and aggressive fluids and/or safety-critical conditions. Consider the use of pin-pricked covers where fluid permeation through the

Appendix “A”

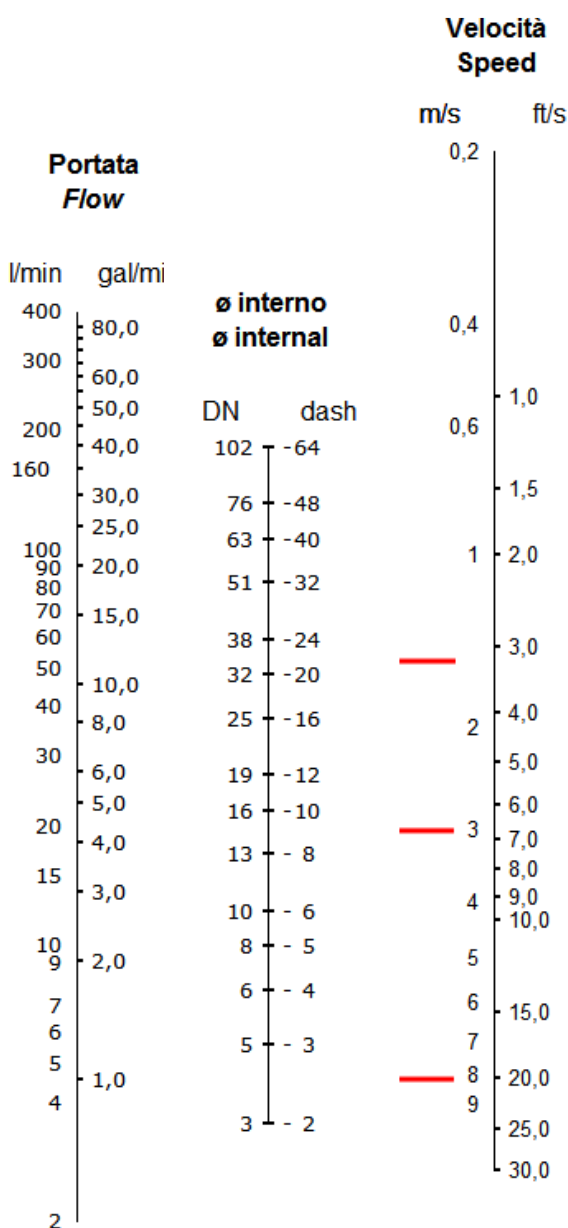
Recommended line speed:

Pressure lines: 3 - 8 m/s

Return line: 1,5 - 3 m/s

Suction lines: 0,5 - 1,5 m/s

Pilot lines: max 5 m/s



hose may occur.

Temperature

The internal temperature of the conveyed fluid shall not exceed the recommended temperature range stated in the product data sheet. Temperatures above the stated range affect rubber mechanical properties, accelerating ageing and reducing hose service life. Temperatures below the recommended range can significantly reduce flexibility, increasing rubber brittleness and the risk of cracking.

In general, most compounds operate within a range of -40°C to $+100^{\circ}\text{C}$, with possible peaks up to $+125^{\circ}\text{C}$. Service variables may significantly affect the expected service life. Special rubber compounds can extend the operating temperature range.



ATTENTION: Continuous operation at temperatures close to the specified limits reduces hose life (SAE J1273, DIN 20066, etc.).

For extreme temperatures, refer to the T product lines "High/Low Temperature".



NOTE: As detailed in the following paragraphs, external ambient temperature significantly influences assembly service life. Avoid installing hose assemblies near heat sources or provide suitable heat shielding. An increase of 10°C above the maximum temperature may halve hose life. Cracks can also be caused by flexing, especially at excessively low temperatures.

Connection types

To ensure long service life, connections must be correctly selected. Follow the information in this catalogue to choose the appropriate connection. For each hose, the recommended couplings (ferrule + insert) and related swaging information are provided. These combinations are validated by IFS through laboratory testing using dedicated test benches.

IFS does not guarantee combinations of flexible hoses and fittings that do not follow the recommendations

in this catalogue and/or are not supplied by IFS.

SAE J1273 clearly states that components from different manufacturers are not usually compatible with each other.

When selecting the correct connections, remember to verify:

- Sealing capability at the required working pressure;
- Corrosion resistance;
- Presence of vibration (flanges and O-rings are recommended in case of high vibration);
- O-ring operating temperature (a specific material may be required for the sealing O-ring);
- Resistance to the conveyed fluid and environmental conditions.

Further advices

External environment

Ozone, UV radiation, heat and chemical agents can damage hoses and fittings, reducing service life. Evaluate external conditions (temperature, ozone, chemical agents and/or solvents) to select the appropriate outer cover.

In demanding operating conditions, special product lines (e.g. Long Life, MARATHON) may be recommended to ensure improved performance.

For specific requirements such as fire resistance and electrical conductivity, where catalogue information is not sufficient for selection, contact IFS Technical Service for support.

Vibrations

Vibration can also reduce hose service life. Where necessary, carry out vibration tests to assess amplitude and frequency. If required, use clamps, collars or similar systems to minimise the effect.

Hose assembly preparation

Hose assembly length

Hose cutting shall be carried out correctly and using suitable equipment in order to obtain:

- A square cut surface, perpendicular to the hose axis;
- No damage to the reinforcement.



ATTENTION: An improperly cut hose will always cause:

- Lack of sealing and leakage of the assembly;
- Irregular rubber compression during swaging and possible ferrule breakage

As a general recommendation, a lower cutting speed is advised for spiral hoses compared with braided hoses (in terms of blade rotation and cutting speed).

The hose assembly length shall be calculated in accordance with the following guidelines (ref. SAE J517 – Section 10):



Several standards (DIN 20066, EN 853–857, etc.) define hose assembly length tolerances according to hose size and total assembly length.

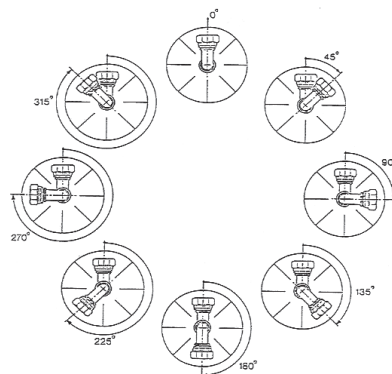
In accordance with DIN 20066, EN 853, EN 856 and the equivalent ISO standards, the following guidelines apply.

Lenght	up to DN25
up to 630 mm	+7 / -3
631-1250 mm	+12 / -4
1251-2500 mm	+20 / -6
2501-8000 mm	+1,5% / -0,5%
more than 8000 mm	+3% / -1%

Lenght	from DN 32 to DN 50
up to 630 mm	+12 / -4
631-1250 mm	+20 / -6
1251-2500 mm	+25 / -6
2501-8000 mm	
more than 8000 mm	

Lenght	from DN 60 to DN 100
up to 630 mm	+25 / -6
631-1250 mm	+25 / -6
1251-2500 mm	+25 / -6
2501-8000 mm	
more than 8000 mm	

Refer to the illustration below to define the correct fitting orientation.



Keep the far end straight and rotate the nearest end clockwise to the required angle.



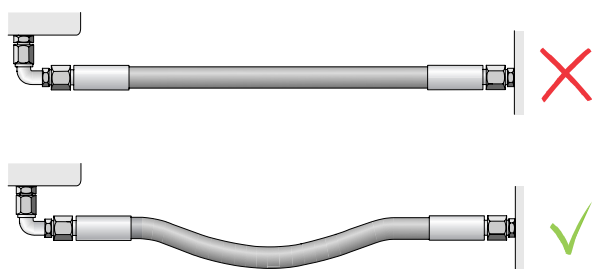
NOTE: Always consider the natural hose bend in order to avoid mechanical stress on the hose.

Routings

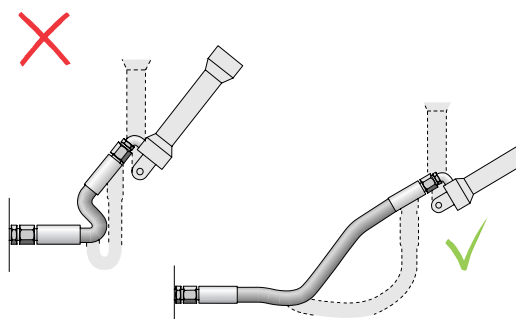
Follow these precautions when installing hose assemblies in order to avoid hose damage and compromised sealing:

1-Hose assembly length

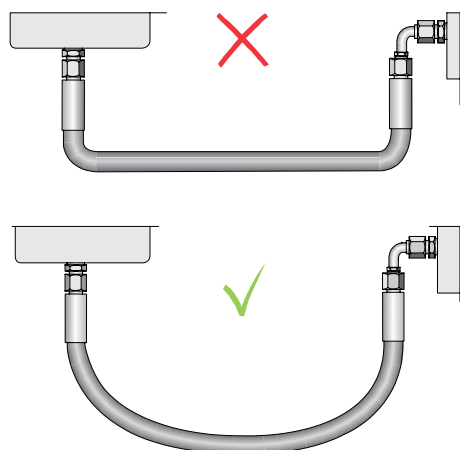
Provide the correct length for the assembly. Excess length may cause additional pressure loss, while insufficient length may result in hose tension. Always allow some slack to accommodate hose shortening or elongation.



Hose length shall follow the machine movement in order to avoid kinks and stress.



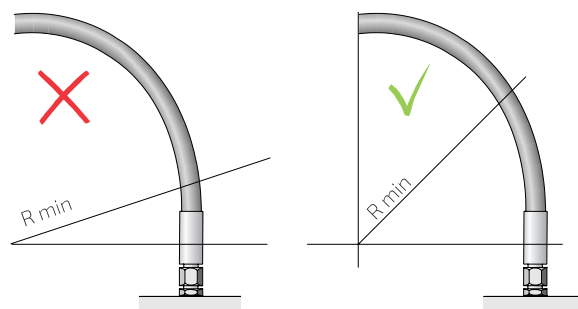
Consider hose length variation and determine the correct length and the appropriate clamping position to secure the assembly.



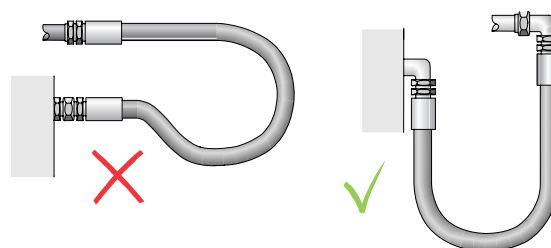
2-Minimum bend radius

Always observe the recommended minimum bend radius and provide sufficient hose so that it is not pulled or stressed. Installation with a tighter bend will reduce hose life.

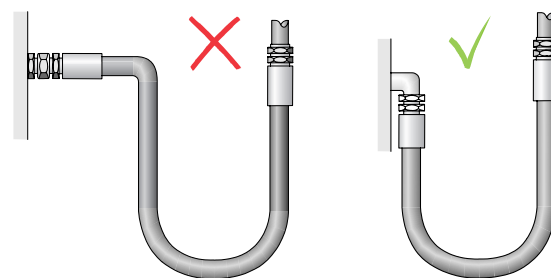
A minimum straight length of 1.5 times the hose outside diameter (D) shall be maintained between the hose fittings and the start of the bend.



Use suitable adaptors and hose fitting terminations to avoid tight bends.

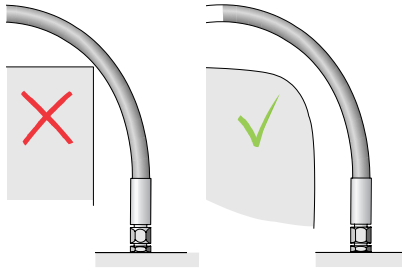


An excessively tight bend may kink the hose, restrict or stop fluid flow, or damage the hose reinforcement.



3-Hose protection

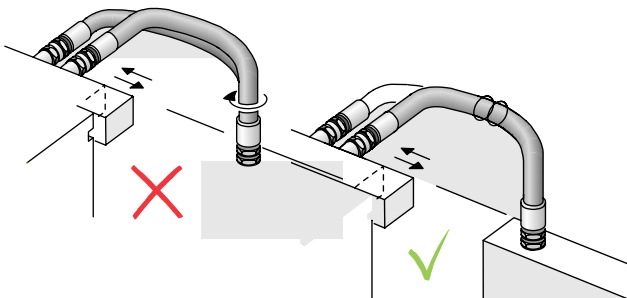
Protect the hose against damage and abrasion and avoid contact with sharp or hard parts.



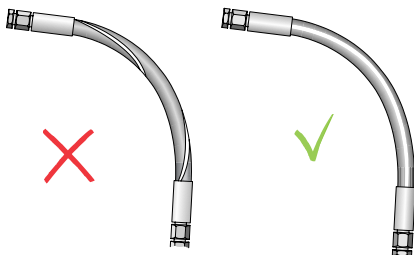
Insulate the hose assembly from heat sources by using shields, fire sleeves or metal protection.

4-Hose movement

Take into consideration the relative movement between the two connected parts. Avoid hose torsion: during operation the hose shall flex in a single plane



Do not install the hose with a twist. Always consider the use of the correct adaptor to avoid twisting (swivel nut, swivel adaptors, etc.). To avoid torsion, use the layline as a straight reference guide.

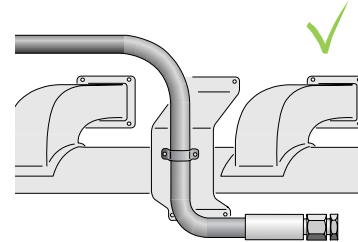
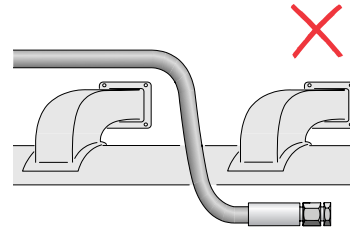


5-Routing

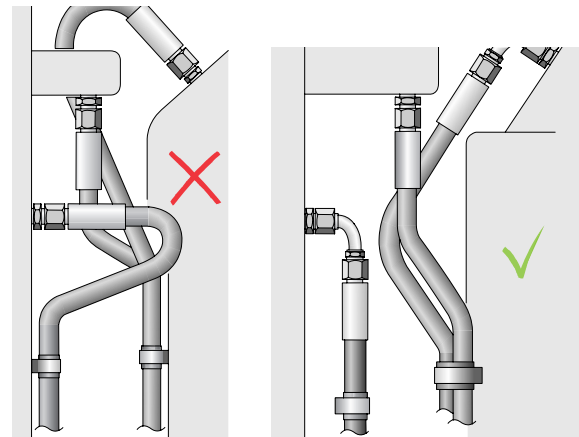
When the hose connects two different planes, secure the assembly at the change of plane in order to allow flexing in one plane only.

Always use clamps and wrap to support long hose assemblies.

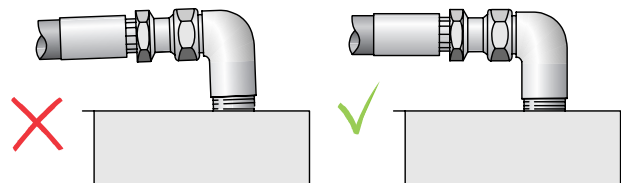
Secure long hose assemblies properly with suitable clamps in order to avoid hose whipping and stress on fitting ends.



Always consider the use of 90° or 45° adaptors to achieve a better layout. The system will be easier to install, maintain and check for leakage.



Misalignment between the sealing cone and the thread may cause leakage.



In addition to the above warnings, always remember during tightening:

- Hand-tighten the end first, without forcing;
- Rotate the hose according to its natural bend;
- Tighten the end avoiding hose twisting;
- Fit the ends without damaging the thread (follow the recommended tightening torque to avoid thread damage);
- Always verify that the surfaces are dry;

- Verify the cleanliness of the sealing surfaces;
- Verify the presence of the O-ring where required.
- 5–8 years: full testing required;
- Over 8 years: hose must be scrapped.

Testing and inspection and cleaning

Inspect hoses for cuts, abrasion and wear. Perform tests if required (ref. ISO 1402). Clean assemblies using "PIG"s or flushing systems to achieve the required cleanliness level. After installation, vent air, gradually increase pressure to working level and check sealing.



WARNING: Do not touch the system during pressure testing; Keep clear of hazardous areas; Fully depressurise the system before tightening connections.

Assemblies may be cleaned using sponge projectiles or filtered flushing fluids to achieve high cleanliness levels (ref. NAS 1638, ISO 4406, SAE 479, BS 5540/4).



NOTE: Protect all assemblies with suitable caps to prevent contamination.

Handling and storage

Store hoses according to FIFO (first-in, first-out). Refer to ISO 2230, ISO 8331, BS 5244, SAE J1273, DIN 7716, DIN 20066.

Recommended conditions

- Temperature: 5–25°C (max. 38°C), humidity ≤65%;
- Protect from sunlight, UV, ozone and heat sources;
- Avoid contact with oils, solvents and corrosive agents;
- Store without bending or mechanical stress;
- Protect from insects and rodents.

According to BS 5244

- Up to 3 years: no additional tests required;
- 3–5 years: proof pressure test;

	Maximum hose storage period before assembling (in years)	Hose assembling storage (in years)	Hose assembling service life (in years)
ISO 8331	4	2	No reference
DIN 20066	4	2 - 6	
SAE J1273	10	2	No reference
BS 5244*	3 / 3-5 / 5-8		Scrap

Preventive maintenance - according SAE J1273

Preventive maintenance improves system reliability and safety.

Environmental factors such as UV, temperature, ozone, chemicals, abrasion and salt water shall be considered.

Visual inspection

Check for:

- Leakage;
- Cover damage or exposed reinforcement;
- Excessive bending or torsion;;
- Hardened or blistered cover;
- Damaged or corroded fittings;
- Improper tightening.

Replace assemblies if non-conformities are detected. Check also system cleanliness, fluid condition and sealing integrity.

Functional test

Verify correct system operation at normal working pressure according to manufacturer instructions.

Guidance safety - SAE J1273 (summary)



WARNING: Improper selection, assembly, installation or maintenance may cause serious injury or property damage.

Main risks include:

- Fluid injection: pressurised fluid can penetrate skin – seek immediate medical attention;
- Whipping hose: use guards and restraints where risk exists;
- Fire/explosion: escaping fluids may ignite;
- Static electricity: use conductive hoses where required;
- Electrical shock: select conductive or non-conductive hoses as appropriate.

Always:

Mechanisms controlled by fluid Power

- Install protective shields;
- Avoid working near pressurised systems;
- Use proper PPE;
- Ensure personnel are trained;
- Implement a maintenance programme suited to the application.

Hose Fittings and assembly

Select only hose fittings compatible with the hose and application.

Personnel assembling hose assemblies shall be trained and follow manufacturer instructions.

Components from different manufacturers are not usually compatible.



ATTENTION: IFS recommends using only IFS hoses and fittings. IFS guarantees declared performance only when assemblies are made according to IFS data sheets and approved swaging parameters. For alternative solutions, contact the manufacturer.

Unilock

Assembly instructions



Cut the hose square (at right angles) using a sharp knife. If necessary, a lubricant may be used to facilitate assembly (water/soap solution: 5% soap and 95% water).



Insert the fitting into the hose until the first barb is inside the hose. Place the end of the fitting against a flat surface (bench, door, wall), grip the hose approximately 2 centimetres from the end and push with steady force until the end of the hose is fully covered by the red plastic collar.



During assembly, please remember that UniLock fittings may be used only after full insertion, when the cut end of the hose is completely concealed by the plastic collar.

Unilock

Disassembly Instructions



Cut lengthwise at approximately 2 centimetres from the end, at a 20° angle to the hose centreline. Take care not to nick the fitting barbs when cutting the hose.



Grip the hose and give a sharp downward pull to release the fitting.



During disassembly, please remember that the fitting must not be damaged and the hose must be replaced after removal.

Cover solutions

The hose cover is a critical element in meeting customer requirements and application needs. IFS provides a complete range of cover solutions for specific applications.

Abrasion-Resistant Cover Options

Standard cover



A competitive and reliable solution for general hydraulic applications. The IFS Standard Cover delivers performance exceeding standard market requirements and typical competitor products, ensuring reliability and long service life in the field.

Extra & MSHA cover



The Extra Cover is designed for highly demanding applications. Its excellent abrasion and ozone resistance allows reliable operation in the presence of:

- Continuous flexing with small bend radii combined with high abrasion (e.g. forklift masts, telescopic arms);
- Direct exposure to sunlight (hydraulic lines mounted outside the machine structure);
- Hose bundles subjected to flexing and different pressure levels (e.g. excavator arms);
- Hose-to-hose and hose-to-metal abrasion, as well as impact with external objects.

The MSHA Cover is ideal for mining and other severe environments, maximising abrasion and ozone resistance to extend service life in harsh conditions.



Low temperature cover

The special blend of polymers and additives allows this rubber compound to operate at ambient temperatures down to -50°C , providing reliable performance even in extreme cold conditions.



High temperature cover

A dedicated solution for hoses exposed to ambient temperatures above 100°C .

The HT cover is recommended for:

- Applications in truck engine compartments (e.g. power steering systems);
- Injection moulding heating circuits;
- Foundry applications.



The high-temperature compound is not recommended in environments with high ozone concentration and/or prolonged sunlight exposure. In foundry applications, the HT cover does not replace fibreglass and/or silicone protective sleeves.

Mega cover



A composite solution with an external UHMWPE layer, offering outstanding resistance to abrasion and aggressive environments. This cover effectively eliminates hose-to-hose and hose-to-external body abrasion.

In many cases, the Mega Cover allows replacement of additional external protections such as PU sleeves, thermoplastic sleeves or steel wire springs, resulting in significant cost savings.



Excellent chemical stability, ozone and UV resistance, and water resistance make this cover suitable for demanding environments such as subsea applications, in-oil applications and snow gun systems.

The Mega Cover is MSHA approved.

Plus cover



High-performance thermoplastic cover, designed for demanding applications. It provides excellent resistance to abrasion, ozone, cutting and mechanical stress, ensuring extended service life.

Ideal for forklifts, telescopic handlers (telehandlers) and hoses installed inside cable carrier chains, where high wear resistance and mechanical protection are required.

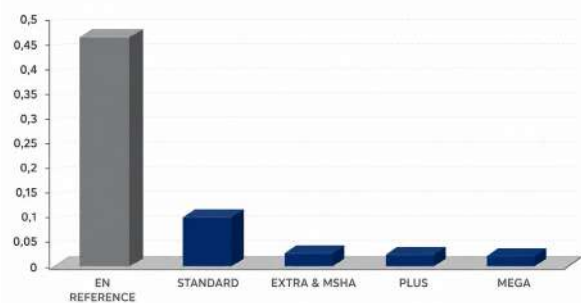
Not recommended for applications in engine compartments.

IFS cover key features

Abrasion Resistance according to ISO 6945 (F = 25 N – 2000 cycles):

- Usual Standard requirement: max 0,50 g lost
- IFS Standard cover: 0,10 g lost
- IFS Extra cover: 0,01g lost
- IFS MSHA cover: 0,005g lost
- IFS Mega cover: 0,0000g

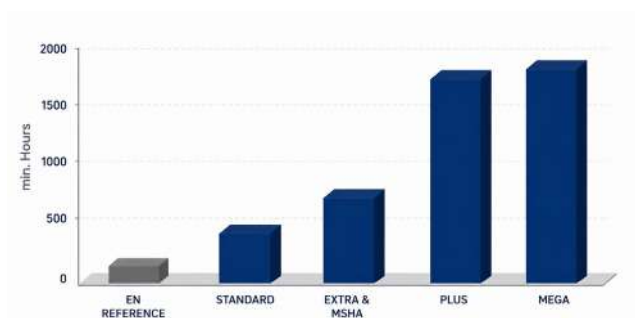
g loss (25N-2000 c.)



Ozone resistance according to ISO 7326 (50 pphm – T=40°)

- Usual Standard Requirement: min. 70h
- IFS Standard cover: 400h
- IFS Extra cover: 720h
- IFS MSHA cover: higher than 800h
- IFS Mega cover: higher than 1000h

min. Hours



Manufacturing Standards

Description	Standards
BSP	BS 5200 ; ISO 8434-6 ; ISO 12151-6
Metric 24°	DIN 3861; DIN 3865 ; ISO 8434-1 ; ISO 8434-4 ; ISO12151-2
Metric 60°	DIN 7631; DIN 3863
ORFS	SAE J1453 ; ISO 8434-3 ; ISO12151-1
NPT	SAE J514
JIC 37°	SAE J514 ; ISO 8434-2 ; ISO 12151-5
SAE Flange 3000 Series	SAE J518 ; ISO 6162-1 ; ISO 12151-3
SAE Flange 6000 Series	SAE J518 ; ISO 6162-2 ; ISO 15151-3
Banjós	DIN 7642
JIS	JIS B 8363



Technical Reference Tables

Thread Diameter

Type	thread	dash size	male (mm)		female (mm)	
			max	min	max	min
BSP	1/8-28	02	9,7	9,5	8,8	8,6
Metric	M10x1	10	9,9	9,8	9,1	8,9
UNF	7/16-20	04	11,0	10,9	10,0	9,7
Metric	M12x1,5	12	11,9	11,7	10,6	10,4
UNF	1/2-20	05	12,6	12,5	11,6	11,3
BSP	1/4-19	04	13,1	12,9	11,8	11,4
Metric	M14x1,5	14	13,9	13,7	12,6	12,4
UNF	9/16-18	06	14,2	14,0	13,0	12,8
UNF	5/8-18	07	15,8	15,6	14,6	14,4
Metric	M16x1,5	16	15,9	15,7	14,6	14,4
BSP	3/8-19	06	16,6	16,4	15,3	15,0
UN	11/16-16	09	17,4	17,2	16,1	15,7
Metric	M18x1,5	18	17,9	17,7	16,6	16,4
UNF	3/4-16	08	19,0	18,8	17,6	17,3
Metric	M20x1,5	20	19,9	19,7	18,6	18,4
UN	13/16-16	11	20,5	20,4	19,2	18,9
BSP	1/2-14	08	20,9	20,7	19,1	18,6
Metric	M22x1,5	22	21,9	21,7	20,6	20,4
UNF	7/8-14	10	22,1	21,9	20,6	20,3
BSP	5/8-14	10	22,9	22,6	21,1	20,6
UNS	1-14	13	25,3	25,1	23,8	23,4
Metric	M26x1,5	26	25,9	25,7	24,6	24,4
BSP	3/4-14	12	26,4	26,2	24,6	24,1
UN	1.1/16-12	12	26,9	26,7	25,1	24,7
Metric	M30x1,5	30	29,9	29,7	28,6	28,4
Metric	M30x2	30	29,9	29,7	28,2	27,8
UN	1.3/16-12	14	30,1	29,8	28,3	27,9
UN	1.5/16-12	16	33,2	33,0	31,4	31,0
BSP	1-11	16	33,2	32,9	30,9	30,3
Metric	M36x2	36	35,9	35,7	34,2	33,8
UN	1.7/16-12	15	36,4	36,2	34,6	34,2
Metric	M38x1,5	38	37,9	37,7	36,6	36,4
UN	1.5/8-12	20	41,2	40,9	39,4	39,0
BSP	1.1/4-11	20	41,9	41,6	39,5	39,0
Metric	M42x2	42	41,9	41,7	40,2	39,8
UN	1.11/16-12	21	42,8	42,5	41,0	40,6
Metric	M45x1,5	45	44,9	44,7	43,6	43,4
Metric	M45x2	45	44,9	44,7	43,2	42,8
UN	1.7/8-12	24	47,5	47,3	48,7	45,3
BSP	1.1/2-11	24	47,8	47,4	45,4	44,8
UN	2-12	32	50,7	50,5	48,9	48,5
Metric	M52x2	52	51,9	51,7	50,2	49,8
BSP	2-11	32	59,6	59,3	57,2	56,7
UN	2.1/2-12	32	63,4	63,2	61,6	61,2



Recommended installation torque

BSPP 60°

inch	dash	with o-ring		without o-ring	
		Nm	Lb.ft	Nm	Lb.ft
	size				
1/8	02			10	7
1/4	04	20	15	20	15
3/8	06	35	26	35	26
1/2	08	50	38	60	44
5/8	10	60	45	70	52
3/4	12	85	64	115	85
1	16	115	86	140	103
1 1/4	20	190	143	210	155
1 1/2	24	240	180	290	214
2	32	300	225	400	295

JIC 37°

inch	dash	Nm	Nm	Lb.ft	Lb.ft
	size	min	max	min	max
7/16	04	15	17	11	12
1/2	05	19	21	14	16
9/16	06	24	26	18	20
3/4	08	49	54	37	40
7/8	10	77	85	58	64
1 1/16	12	107	118	80	88
1 5/16	16	147	162	110	121
1 5/8	20	172	189	129	142
1 7/8	24	215	237	161	177
2 1/2	32	332	365	249	274

SAE J518

Code 61 Flange Half Bolt					
inch	dash	Nm	Nm	Lb.ft	Lb.ft
	size	min	max	min	max
1/2	08	32	35	24	26
3/4	12	60	66	44	49
1	16	60	66	44	49
1 1/4	20	92	101	68	75
1 1/2	24	150	165	111	122
2	32	150	165	111	122
2 1/2	40	150	165	111	122

Metric screws of property class 10.9
Coefficient of friction 0,17

SAE J518

Code 62 Flange Half Bolt					
inch	dash	Nm	Nm	Lb.ft	Lb.ft
	size	min	max	min	max
1/2	08	32	35	23	26
3/4	12	70	77	51	56
1	16	130	143	95	105
1 1/4	20	130	143	95	105
1 1/2	24	295	325	216	238
2	32	550	605	403	444

Metric screws of property class 10.9
Coefficient of friction 0,17

Metric 60°

mm	dash	Nm	Lb.ft
	size		
M10-1	10	10	8
M12-1.5	12	11	8
M14-1.5	14	26	20
M16-1.5	16	30	23
M18-1.5	18	33	25
M22-1.5	22	44	33
M24-1.5	24	55	41
M26-1.5	26	63	47
M30-2	30	77	58
M36-2	36	74	56
M42-2	42	151	113
M45-2	45	184	138
M52-2	52	199	149

JIS 60°

inch	dash	Nm	Lb.ft
	size		
1/4	04	25	18
3/8	06	34	25
1/2	08	59	44
5/8	10	85	63
3/4	12	118	87
1	16	137	101
1 1/4	20	167	123
1 1/2	24	206	152
2	32	245	181

ORFS

inch	dash	Nm	Lb.ft
	size		
9/16	06	25	19
11/16	09	40	30
13/16	11	55	41
1	13	60	45
1 3/16	14	90	68
1 7/16	15	125	94
1 11/16	21	170	128
2	32	200	150

SAE Seal-Lok

inch	dash	Nm	Lb.ft
	size		
1/4	04	10	12
3/8	06	18	20
1/2	08	32	35
5/8	10	46	50
3/4	12	65	70
1	16	92	100
1 1/4	20	125	140
1 1/2	24	130	165



Metric 24°	without cutting ring	L Series			S Series		
mm	dash	Tube OD mm	Nm 0 +10%	Lb.ft	Tube OD mm	Nm 0 +10%	Lb.ft
M12-1.5	12	6	14	10			
M14-1.5	14	8	18	13	6	18	13
M16-1.5	16	10	23	17	8	20	15
M18-1.5	18	12	37	27	10	26	19
M20-1.5	20				12	40	30
M22-1.5	22	15	50	37	14	53	39
M24-1.5	24				16	66	49
M26-1.5	26	18	64	47			
M30-2	30	22	120	90	20	100	74
M36-2	36	28	160	120	25	120	89
M42-2	42				30	270	203
M45-2	45	35	250	188			
M52-2	52	42	380	285	38	400	300



Conversion unit

unit	from	to	coeff.
length	m meters	ft foot	3.281
length	mm millimeters	n inch	0.03934
area	m ² square meter	in ² square inch	1550
volume	l liters	gal gallon (UK)	0.264
mass	kg kilogramme	lb pound	2.205
torque	N·m newton/meters	lb/ft pound/foot	0.7374
speed	m/s meters/second	ft/s feet per second	3.281
flow rate	l/min liters per minute	gal/min gallon per minute	0.264
pressure	bar (105N/m ²)	psi pound/square inch	14.503
temperature	°C celsius	°F fahrenheit	°C(9/5)+32

Pressure Conversion Table

METRIC TO PSI			
1 kPa = 0.145 psi			
bar	Mpa	kPa	psi
40	4	4000	580
50	5	5000	725
60	6	6000	870
70	7	7000	1015
80	8	8000	1160
90	9	9000	1305
100	10	10000	1450
200	20	20000	2900
300	30	30000	4350
400	40	40000	5800
500	50	50000	7250
600	60	60000	8700
700	70	70000	10150
800	80	80000	11600
900	90	90000	13050
1000	100	100000	14500
2000	200	200000	29000
3000	300	300000	43500

PSI TO METRIC			
1 psi = 6.89 kPa			
psi	kPa	Mpa	bar
500	3445	3,4	34
600	4134	4,1	41
700	4823	4,8	48
800	5512	5,5	55
900	6201	6,2	62
1000	6890	6,9	69
2000	13780	13,8	138
3000	20670	20,7	207
4000	27560	27,6	276
5000	34450	34,5	345
6000	41340	41,3	413
7000	48230	48,2	482
8000	55120	55,1	551
9000	62010	62,0	620
10000	68900	68,9	689
20000	137800	137,8	1378
30000	206700	206,7	2067
40000	275600	275,6	2756



Thread codes

	BSP	Metric		Jic SAE / UN UNF	ORFS UN UNF UNS	NPTF
02	1/8"-28					1/8"-27
04	1/4"-19			7/16"-20		1/4"-18
05				1/2"-20		
06	3/8"-19			9/16"-18	9/16"-18	3/8"-18
07				5/8"-18		
08	1/2"-14			3/4"-16		1/2"-14
09					11/16"-16	
10	5/8"-14	M10x1	M10x1,5	7/8"-14		
11					13/16"-16	
12	3/4"-14	M12x1.5		1.1/16"-12		3/4"-14
13					1"-14	
14		M14x1.5		1.3/16"-12	1.3/16"-12	
15					1.7/16"-12	
16	1"-11	M16x1.5		1.5/16"-12		1"-11.1/2
18		M18x1.5				
20	1.1/4"-11	M20x1.5		1.5/8"-12		1.1/4"-11.1/2
21					1.11/16"-12	
22		M22x1.5				
24	1.1/2"-11	M24x1.5		1.7/8"-12		1.1/2"-11.1/2
26		M26x1.5				
30		M30x1.5	M30x2			
32	2"-11			2.1/2"-12	2"-12	2"-11.1/2
36		M36x1.5	M36x2			
38		M38x1.5				
40	2.1/2"-11					
42		M42x2				
45		M45x1.5	M45x2			
52		M52x1.5	M52x2			



Hose size identification (ID)

SAE	ISO ref		R5	
	dash	mm inches	mm inches	
-2	3,2	1/8	-	-
-3	5	3/16	-	-
-4	6,4	1/4	4,8	3/16
-5	8	5/16	6,4	1/4
-6	10	3/8	7,9	5/16
-	-	13/32	-	-
-8	12,5	1/2	10,3	13/32
-10	16	5/8	12,7	1/2
-12	19	3/4	15,9	5/8
-14	-	7/8	-	-
-16	25	1	22,2	7/8
-	-	1,1/8	-	-
-20	31,5	1,1/4	28,6	1,1/8
-	-	1,3/8	-	-
-24	38	1,1/2	34,9	1,3/8
-	-	1,13/16	-	-
-32	51	2	46	1,3/16
-36	-	2,1/4	-	-
-40	64	2,1/2	60,3	2,3/8
-48	76	3	-	-
-56	89	3,1/2	-	-
-64	102	4	-	-

Polymer-based compound

NBR	TFD2012-TFD2022-TFE201K-TFE202K-TFA201KI-TFA202KI-TFS0017-TSR04SP-TFS0006I-TFE02TEI-TFE03TEI-TFS0004-TFS0005-TFDH011-TFDH021-TFDL011-TFDL021-TFE2P15-TFE2PF2-THE201K-TFE202K-THE0T3K-THE2M2K-TFDG4SH-TFDG013-TFDG015-TIS0021-TIS0028-TIS0035-TIS0042-THL201K-THL202K-T2E101K-T2E102K-TFDE011-THE2J2K-TTRK200-TTRK300-TTRK300-THEMMDR-THS00JG-THE0G1K-TSG0042-THD0500-TFN201K-TFB201K-TFN202K-TFB202K-TFW0070-TFW0085-TFW0110-TFW0125-TFW0145
CR	TFDM4SP
EPDM	TEB0E28-TEN0E28-TEB0E42-TEN0E42-TCB0E28-TCN0E28-TCB0E42-TCN0E42
POLYESTER	TF50007-TF50008-TF500H1-TF500H2-TF500HP-TF50018-TF500MP-TF500CP
P.T.E.	TF000T1-TF00LTC



Chemical resistance table

Resistance Property / Chemical name	NBR	CR	NBR/PVC	PTFE
Petroleum-based oil	1	3	2	1
Diesel fuel	1	2	2	1
Water-glycol emulsions	1	1	1	1
Phosphate esters	5	4	4	1
Gas permeation	3	3	3	3
Weathering	5	2	2	1
Ozone	3	1	2	1
Heat	3	3	3	1
Low temperature	4	3	3	3
Flame resistance	5	1	2	1
Bio-oil	1	5	4	1

Legend:

- 1- Excellent
- 2- Very good
- 3- Good
- 4- Fair
- 5- Poor

These values are for guidance only and refer to the hose tube (liner). Operating conditions may affect hose service life; for fluid-specific details, please contact the IFS Technical Department.

The hose cover is intended to protect the reinforcement from mechanical influences and is not designed for the same chemical resistance as the tube. IFS hoses are generally not intended for immersion in the service fluid; if prolonged exposure or immersion is expected, consult IFS to assess cover compatibility and identify suitable hose types and additional external protection.

For further information, please contact Interpump Fluid Solutions.

Reference standard	Max Working Pressure of main connections/ Pressione Max di esercizio delle principali connessioni (design factor 4:1)											
	Thread Size	1/8	1/4		3/8	1/2	5/8	3/4	1	1.1/4	1.1/2	2
ISO 8434-6	BSP 60° cone with o-ring		400		400	350	350	315	250	200	160	125
	BSP 60° cone without o-ring	MAX WP	350	350	350	315	315	250	200	160	125	80
ISO 8434-2	37° flared (JIC)	Thread size	7/16-20	1/2-20	9/16-18	3/4-16	7/8-14	1.1/16-12	1.5/16-12	1.5/8-12	1.7/8-12	2-1/2-12
	MAX WP		350	350	350	310	240	240	210	170	140	105
ISO 8434-3	O-ring face seal (ORFS)	Thread size	9/16-18	5/8-18	11/16-16	13/16-16	1-14	1.3/16-12	1.7/16-12	1.11/16-12	2-12	
	MAX WP		630	630	630	630	400	400	400	250	250	
ISO 8434-1	24° cone light series	Thread size	M12X1.5 (6L)	M14X1.5 (8L)	M16X1.5 (10L)	M18X1.5 (12L)	M22X1.5 (15L)	M26X1.5 (18L)	M30X2 (22L)	M36X2 (28L)	M45X2 (35L)	M52X2 (42L)
		MAX WP	415	400	350	330	275	250	215	165	125	100
	24° cone heavy series	Thread size	M16X1.5 (8S)	M18X1.5 (10S)	M20X1.5 (12S)	M22X1.5 (14S)	M24X1.5 (16S)	M30X2 (20S)	M36X2 (25S)	M42X2 (30S)	M52X2 (38S)	
		MAX WP	630	630	630	630	420	420	420	420	420	
SAE J518 ISO 6162-1 ISO 6162-2	Flanged 3000 PSI (Code 61)	Flange size					1/2	3/4	1	1.1/4	1.1/2	2
		MAX WP					350	350	350	350	280	210
	Flanged 6000 PSI (Code 62)	MAX WP					420	420	420	420	420	420
SAE J514	NPTF (dry seal pipe)	Thread size	1/8	1/4	3/8	1/2	5/8	3/4	1	1.1/4	1.1/2	2
		MAX WP	345	275	275	240	240		210	170	150	140
JIS B 8363	BSP 60° inverted cone (Toyota)	Thread size		1/4		3/8	1/2	5/8	1	1.1/4	1.1/2	
		MAX WP		345	345	345	275	275	205	170	105	
	BSP 60° inverted cone (Komatsu)	Thread size		M14X1.5	M16X1.5	M18X1.5	M22X1.5	M24X1.5	M30X1.5	M33X1.5	M36X1.5	M42X1.5
		MAX WP		345	345	345	345	280	280	205	170	105



Reference standard	Max Working Pressure of main connections/Pressione Max di esercizio delle principali connessioni (design factor 4:1)													
	Metric Standpipe (L)	Thread size	(6L)	(8L)	(10L)	(12L)	(15L)	(18L)	(22L)	(28L)	(35L)	(42L)		
		MAX WP	250	250	250	250	250	160	160	100	100	100		
	Metric Standpipe (S)	Thread size		(8S)	(10S)	(12S)	(14S)	(16S)	(20S)	(25S)	(30S)	(38S)		
		MAX WP		630	630	630	630	400	400	400	250	250		
	Metric banjo + banjo bolt	Thread size	M10x1	M12X1.5	M14X1.5	M16X1.5	M18X1.5	M20X1.5	M22X1.5	M26X1.5	M30X1.5			
		MAX WP	200	200	200	200	200	200	200	200	200			
	BSP banjo + banjo bolt	Thread size	1/8	1/4		3/8	1/2	5/8	3/4	1				
		MAX WP	200	200		200	200	200	200	200				



Hose reference			Size	03	04	05	06	08	10	12	16	20	24	32	40	48	Cover (Abrasion Resistance Level)	Hose operating teperature
			DN	5	6	8	10	12	16	19	25	31	38	51	63	78		Temp Range [°C]
Hose	Code	Reference Standard	Max working pressure [bar]															
International standards	Hypress OneSN	TFD2012	EN 853-SAE 100R1AT- ISO 1436	250	225	215	180	160	130	105	88	63	50	40				-40 ÷ 100
	Hypress TwoSN	TFD2022	EN 853-SAE 100R2AT- ISO 1436	415	400	350	330	275	250	215	165	125	90	80				-40 ÷ 100
	Hypress 1SC	TFE201K	EN 857-ISO 11237		225	215	180	160	130	105	88							-40 ÷ 120
	Hypress 2SC	TFE202K	EN 857-SAE 100R16-ISO 11237		400	350	330	275	250	215	165							-40 ÷ 120
	EASY K 1SC	TFA201KI	EN 857-ISO 11237		225	215	180	160	130	105	88							-40 ÷ 100
	EASY K 2SC	TFA202KI	EN 857-ISO 11237		400	350	330	275	250	215	165							-40 ÷ 100
	Hypress R17	TF50017	ISO 11237-SAE 10017	210	210	210	210	210	210	210								-40 ÷ 100
	Hypress FourSP	TSR04SP	IMM - Exceeding EN 856				445	415	350	350	280	210	185					-40 ÷ 100
	Hypress 4SP	TFDM4SP	EN 856-ISO 3862		450		445	415	350	350	280	210	185	165				-40 ÷ 100
	Unilock	TF50006	SAE 100R6 - EN 854	34	28	28	28	28	24	280	20							-40 ÷ 100
	Hypress 2TE	TFD02TEI	EN 854	80	75	68	63	58	50	45	40							-40 ÷ 100
	Hypress 3TE	TFD03TEI	EN 854	160	145	130	110	93	80	70	55							-40 ÷ 100
	Hy-VACUUM	TF50004	SAE 100 R4							21	17	14	11	7	4	4		-40 ÷ 100
	SAE 100R5	TF50005	SAE 100R5		210	210	157	140	122	105	56	43	35	24				-40 ÷ 100
High performance	HyCelsius 1SN	TFDH011B	EN 853-SAE 100R1AT- ISO 1436		225	215	180	160	130	105	88	63	50	40	30			-40 ÷ 135
	HyCelsius 2SN	TFDH021B	EN 853-SAE 100R2AT- ISO 1436		400	350	330	275	250	215	165	125	90	80				-40 ÷ 135
	HyFreeze 1SN	TFDL011	EN 853-SAE 100R1AT- ISO 1436		225	215	180	160	130	105	88	63	50	40				-50 ÷ 100
	HyFreeze 2SN	TFDL021	EN 853-SAE 100R2AT- ISO 1436		400	350	330	275	250	215	165	125	90	80				-50 ÷ 100
	Pilot Plus 150	TFE2P15	IMM Specs	150	150	150	150	150										-40 ÷ 120
	Pilot Flex 120	TFE2PF2	IMM Specs	120	120	120												-40 ÷ 100
	LongLife 1SC	THE201K	EN 857-ISO 11237		250	250	250	200	150	150	110	100	90	75	50	40		-40 ÷ 120
	LongLife 2SC	THE202K	EN 857-SAE 100R16-ISO 11237		430	400	350	310	290	240	210	160	150	100	80	65		-40 ÷ 120
	TREEATHLON	THE0T3K	IMM Specs				500	475	420	380	315							-40 / 100
	Marathon	THE2M2K	EN 857-SAE 100R16-ISO 11237		450	420	385	350	350	280	250							-40 ÷ 120
	HyGreen 4SH	TFDR4SH	EN 856-ISO 3862							420	385	350	300	250				-40 ÷ 120
	HyGreen R13	TFDR013	SAE 100R13 ISO 3862							350	350	350	350	350				-40 ÷ 121
	HyGreen R15	TFDR015	SAE 100R15 ISO 3862						420	420	420	420	420	420				-40 ÷ 121
	HySOpress 3K WB	TIB2021	ISO 18752		210	210	210	210	210	210								-40 ÷ 120
	HySOpress 4K WB	TIB2028	ISO 18752		280	280	280	280	290	280								-40 ÷ 120
HySOpress 5K WB	TIB2035	ISO 18752		350	350	350	350	350									-40 ÷ 120	
HySOpress 6K WB	TIB2042	ISO 18752		420													-40 ÷ 120	
HySOpress 3K WS	TISM021	ISO 18752										210	210	210			-40 ÷ 120	
HySOpress 4K WS	TISM028	ISO 18752					280	280	280	280	280	280	280				-40 ÷ 120	
HySOpress 5K WS	TISM035	ISO 18752					350	350	350	350	350	350	350				-40 ÷ 120	
HySOpress 6K WS	TISM042	ISO 18752					420	420	420	420	420	420					-40 ÷ 120	

Hose reference		Size	03	04	05	06	08	10	12	16	20	24	32	40	48	Cover (Abrasion Resistance Level)	Hose operating teperature
		DN	5	6	8	10	12	16	19	25	31	38	51	63	78		
Hose	Code	Reference Standard	Max working pressure [bar]														Temp Range [°C]
Solutions for applications	COMPRESSOR 15N	TFDC011B	EN 853 - SAE 100R1AT - ISO 1436	225	215	180	160	130	105	88	63	50	40			I	-40 ÷ 135
	LongLift 15C	THL201K	EN 857 - ISO 11237		250	250	250	200	150	150	110					II	-40 ÷ 120
	LongLift 25C	THL202K	EN 857 - SAE 100R16 - ISO 11237	430	400	350	310	280	240	210						II	-40 ÷ 120
	LongLife Dual 15C	T2E101K	EN 857 - ISO 11237		250	250	250	200								II	-40 ÷ 120
	LongLife Dual 25C	T2E102K	EN 857 - SAE 100R16 - ISO 11237	430	400	350	310									II	-40 ÷ 120
	LongLift 15C Plus	THEU01K	EN 857 - ISO 11237		250	250	250	200	150	150	110					III	-40 ÷ 100
	Marathon 25C Plus	THEUM2K	EN 857 - SAE 100R16 - ISO 11237	450	420	385	350	290	280	210						III	-40 ÷ 100
	HYRail	TFDE011	EN 853 - SAE 100R1AT - ISO 1436	225	215	180	160	130	105	88							-40 ÷ 100
	HyJack	THEZJ2K	IMM Specs	760		725										II	-40 ÷ 100
	Hytruck 200	TTRK200	IMM Specs						200	200						I	-40 ÷ 100
	Hytruck 250	TTRK250	IMM Specs						250	250						I	-40 ÷ 100
	Hytruck 350	TTRK300	IMM Specs						350	350						I	-40 ÷ 100
	MegaDrill	THEMMDR	ISO 3862 R13 - IMM SPEC.						350	"350 210"						II	-40 ÷ 100
	MegaJet	THS00JG	IMM Specs							600	550	500	480			II	-40 ÷ 100
	HyGEAR 15C	THE0G1K	EN 857 - ISO 11237						105	88	82	82	68	35		II	-40 ÷ 100
	HyTRAKTION	TSG0042	SAE 100 R15 - IMM SPEC.								420	420				II	-40 ÷ 121
	HySpir 500	THD0500	IMM SPEC. - Exceed SAE 100 R15						500	500	500					II	-40 ÷ 100
	Hypress Jet 15C	"TFN001K TFB001K"	IMM Specs - ISO 7751		250	250	250	250								I	-40 ÷ 135
	Hypress Jet 25C	"TFN002K TFB002K"	IMM Specs - ISO 7751	400	400	400	400									I	-40 ÷ 135
	HyWASHER 4K	"TEB0E28 TEN0E28"	IMM Specs - ISO 7751		280	280	280	280									+155 /+163
	HyWASHER 6K	"TEB0E42 TEN0E42"	IMM Specs - ISO 7751		420	420	420	420									+155 /+163
	HyWASHER PLUS 4K	"TCB0E28 TCN0E28"	IMM Specs - ISO 7751		280	280	280	280									+155 /+163
	HyWASHER PLUS 6K	"TCB0E42 TCN0E42"	IMM Specs - ISO 7751		420	420	420	420									+155 /+163
	Hyblast 10k	TFW0070	IMM Specs - ISO 7751							700						II	-10 ÷ 70
	Hyblast 12k	TFW0085	IMM Specs - ISO 7751		850		850	850		850	850					II	-10 ÷ 70
	Hyblast 15k	TFW0110	IMM Specs - ISO 7751		1100		1100	1100								II	-10 ÷ 70
	Hyblast 18k	TFW0125	IMM Specs - ISO 7751				1250	1200								II	-10 ÷ 70
	Hyblast 20k	TFW0145	IMM Specs - ISO 7751				1450	1450		1350						II	-10 ÷ 70

Hose reference		Size	03	04	05	06	08	10	12	16	20	24	32	40	48	Cover (Abrasion Resistance Level)	Hose operating teperature
		DN	5	6	8	10	12	16	19	25	31	38	51	63	78		
Hose	Code	Reference Standard	Max working pressure [bar]														Temp Range [°C]
Thermoplastic & PTFE	Hypress R7	TFS0007	SAE 100R7 - ISO 3949 R7	210	210	190	160	140	105	90	70						-40 ÷ 100
	Hypress R8	TFS0008	SAE 100R8 - ISO 3949 R8	350	350	300	280	245	200	165	140						-40 ÷ 100
	Hypress R8	TFS0008	SAE 100R8 - ISO 3949 R8	350	350	300	280	245	200	165	140						-40 ÷ 100
	TP One Steel Braid	TFS00H1		350	310	250	225	190	140	115	95						-40 ÷ 100
	TP Two Steel Braid	TFS00H2			400		330	260	220	150							-40 ÷ 120
	HyUltra	TFS00HP			700		700										-40 ÷ 120
	R18 Low Temp	TFS0018	SAE 100R18	210	210	210	210										-55 ÷ 100
	Mini-Flexible	TFS00MP	"Size [inch] WP [bar]"	5/6 4 630	1/8 630"	5/3 2 630											-40 ÷ 100
	P.T.F.E. T1	TF000T1	WP according to SAE 100R14	200	175	150	135	120	100	90	65						-70 ÷ 260

1. Refer to the dedicated product section for specific information on the operating temperature range.
2. UHMWPE cover available upon request (Mega Cover).
3. Contact the Technical Department for alternative cover configurations.



Interpump Fluid Solutions, powered by IMM Hydraulics,
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