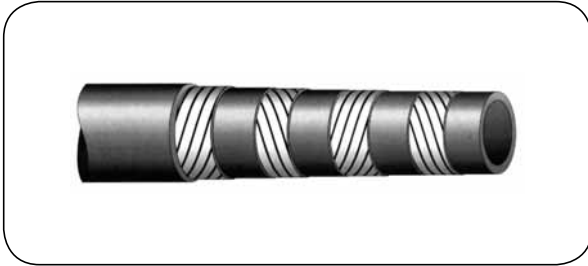


HIGH PRESSURE - UHP equipment

UHP (Ultra High Pressure) equipment includes hoses, hose assemblies, fittings, adapters and accessories designed to operate under pressure of 700 bar or above. The range comprises: WATERBLAST rubber hoses (working pressure from 700 to 1450 bar), thermoplastic hoses (working pressure 700 ÷ 800 bar), SPIR STAR® hoses (working pressure to 4000 bar). Depending on application, these working pressures values are obtained at different safety factors (WATERBLAST n = 2.5, hydraulics n = 4, gases n = 4 to 6). The selection of UHP fittings, adapters, quick release couplings and crimping method must always be determined by pressure in a particular application. Hose assemblies must always be pressure tested.

WATERBLAST hoses



WATERBLAST

Internal layer: Black oil-resistant synthetic rubber
Reinforcement: Four or six steel wire spirals
External layer: Black synthetic rubber resistant to oil and abrasion
Working temp.: From -10°C up to +70°C (temporary from -40°C up to +100°C)

Hose designed for water installations and high pressure equipment. Used in water jet cutting and water jet cleaning equipment. Application: cleaning of chemical and power supply installations, cleaning and cutting of concrete constructions, road surface, cleaning of steel surface, steelworks, tanks, vessels, mining installations, etc.

WATERBLAST hoses should not be used for oil hydraulics.

As high temperatures strongly affect the properties of rubber, the working pressure should be reduced down to about 80% of nominal pressure at a temperature above +70°C and to about 60% at a temperature of +90°C and above. Safety factor: about 2.5.

WATERBLAST 4

code	I.D.		O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]
	[inch]	[mm]					
SL-WBL4-10	3/8	9.5	21.3	850	2125	150	0.76
SL-WBL4-13	1/2	12.7	24.6	800	2000	180	0.89
SL-WBL4-19	3/4	19	32	750	1850	220	1.52
SL-WBL4-25	1	25.4	38.4	700	1700	300	2.10

WATERBLAST 4 PLUS

code	I.D.		O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]
	[inch]	[mm]					
SL-WBL4P-06	1/4	6.4	17.6	1250	3125	200	0.61
SL-WBL4P-10	3/8	9.5	21.4	1250	3125	210	0.88
SL-WBL4P-13	1/2	12.7	24.6	1100	2750	230	1.22
SL-WBL4P-19	3/4	19	32	1100	2750	250	1.83

WATERBLAST 6

code	I.D.		O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]
	[inch]	[mm]					
SL-WBL6-13	1/2	12.7	27.8	1450	3625	250	1.82

HIGH PRESSURE - UHP equipment

WATERBLAST hoses standard fittings

fitting	thread size	hose I.D.			
		1/4"	3/8"	1/2"	3/4"
BSP female thread (60° cone)	1/4"	TI-WBW110-04-04SL	-	-	-
	3/8"	-	TI-WBW110-06-06SL	-	-
	1/2"	-	-	TI-WBW110-08-08SL	-
BSP male thread (60° cone)	1/4"	TI-WBZ110-04-04SL	-	-	-
	3/8"	-	TI-WBZ110-06-06SL	-	-
	1/2"	-	-	TI-WBZ110-08-08SL	-
metric female thread (24° cone) O-ring, DKOL	M22x1.5	-	TI-WMW121-22-06SL	TI-WMW121-22-08SL	-
metric female thread (24° cone) O-ring, DKOS	M20x1.5	-	TI-WMW122-20-06SL	-	-
	M22x1.5	-	TI-WMW122-22-06SL	TI-WMW122-22-08SL	-
	M24x1.5	-	-	TI-WMW122-24-08SL	-
metric female thread (24° cone) without O-ring, DKL	M22x1.5	-	-	TI-WMW111-22-08SL	-
metric male thread (24° cone) CES	M24x1.5	-	-	TI-WMZ112-24-08SL	-
	M36x2	-	-	-	TI-WMW122-36-12SL

Fitting material: galvanized carbon steel.
Other types of fittings available on request.

Safety guidelines for operators of WATERBLAST hoses:

- High water pressure is dangerous - can cause death, body injury or property damage. Always wear protective clothing, glasses, gloves and shoes.
- Hose assemblies can only be operated by trained personnel.
- Operation area must be safe from third party and marked properly.
- Never use a hose above its working pressure and below its minimal bending radius.
- Always visually check an assembly before operation.
- Never use hoses with corroded, leaking, worn or damaged fittings. Such a hose must be removed from service immediately.
- Hose assemblies with blisters, cuts or exposed reinforcement must be removed from service.
- Do not use a hose with kinks, squeezes or other signs of damage. It must be removed from service.
- Do not use a hose that has been exposed to chemical attack or to high temperature. It must be removed from service.
- While in service, a hose should not be exposed to kinking, twisting, straining or contact with sharp edges.
- Hose may change in length by a few per cent when pressurized. Allowance should be made to provide slack to compensate for any changes in length.
- Several hose lengths can be joined up using high pressure couplings. It is not recommended to hang connected pieces or suspend a hose under its own weight.
- Always clean, drain and coil hoses after use.

Complete WATERBLAST hose assemblies



TUBES INTERNATIONAL® provides complete WATERBLAST hose assemblies. Each hose assembly is hydrostatically tested under pressure (150% of its working pressure) and is supplied with a quality certificate.

HIGH PRESSURE - UHP equipment

Thermoplastic hoses UHP (≥700 bar)

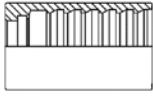
Thermoplastic hoses are designed for pressure not exceeding 800 bar. The external layer is made of abrasion resistant polyurethane, internal layer of polyester or polyamide reinforced by max 3 layers of steel or aramid fibre. Widely used in hydraulic systems, rescue equipment, lifts and pumps for hydraulic oil, paints, solvents, isocyanines and polyols. Working temperature ranges from -40 °C up to 100°C (for water and water-based liquids max. +70°C). Use P type ferrules (IT-142).

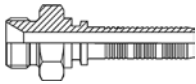
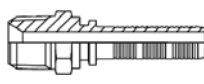
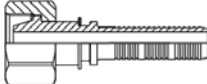
code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]	ferrule
1 type (STANDARD)	Hose intended for high pressure hydraulic systems. Internal layer: polyester. Reinforcement: aramid fibre layer + steel layer. External layer: black polyurethane. * - hose reinforced with two aramid fibre layers.						
UH-OL8M-06*	6.4	14.8	700	2800	50	15.90	**
UH-MTKH-06	6.4	14.5			40	26.00	
UH-0412-06	6.6	12.7			35	18.00	PSAF
UH-0414-10	9.8	18.7			90	33.00	
2 type (TWIN)	Twin hose comprises two STANDARD type hoses. Internal layer: polyester. Reinforcement: aramid fibre layer + steel layer. External layer: black polyurethane.						
UH-MTKHB-06	6.4	14.5	700	2800	40	52.00	**
UH-1412-06	6.6	12.7			35	36.00	PSAF
UH-1414-10	9.8	18.7			90	66.00	
3 type (NON CONDUCTIVE)	Non-conductive hose according to SAE 100 R8 standard less than 50 µA leakage when subjected to 246 kV/m for 5 min. used near electrical installations. Internal layer: polyester. Reinforcement: two aramid fibre layers. External layer: orange polyurethane.						
UH-0460-04	4	9.1	700	2800	25	6.00	PSAF
UH-OL8MNC-06	6.4	14.8			50	15.90	**
UH-0462-06	6.6	14			35	14.50	PSAF
4 type (MARINE)	Hose resistant to sea water. used in marine industry. Internal layer: polyester. Reinforcement: aramid fibre layer + steel layer. External layer: black polyurethane. * - hose reinforced with two aramid fibre layers.						
UH-OL8MMARINE-06*	6.4	14.8	700	2800	50	15.90	**
UH-MTKHMARINE-06	6.4	14.5			40	26.00	
UH-0402-06	6.6	12.7			35	18.00	PSAF
UH-0404-10	9.8	18.7			90	33.00	
5 type (CHEMICAL)	Hose used to transfer aggressive chemicals. such as paint. solvents. Internal layer: polyamide. Reinforcement: aramid fibre layer + steel layer. External layer: black polyurethane.						
UH-MTK-06	6.4	14.5	700	2800	40	25.40	**
UH-0482-06	6.6	12.7			35	18.00	PSAF
UH-MTKMMARINE-10	9.5	18.8			90	37.50	**
UH-0484-10	9.8	18.7			90	32.00	PSAF
6 type (ANTISTATIC)	Antistatic hose ($R < 3 \times 10^4 \Omega/m$) designed for non-conductive media transfer. Internal layer: polyamide. Reinforcement: two aramid fibre layers. External layer: blue polyurethane.						
UH-AS8M-06	6.4	14.8	700	2800	50	15.00	**
7 type (EXTRA)	Hose for hydraulic systems working under 800 bar pressure. Internal layer: polyester. Reinforcement: two aramid fibre layers + steel layer. External layer: black polyurethane.						
UH-0802-06	6.6	14.5	800	3200	35	24.50	PSAF

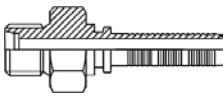
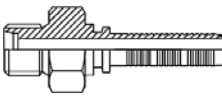
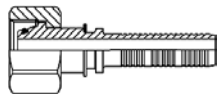
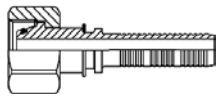
** - contact Technical Department of TUBES INTERNATIONAL®

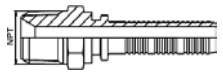
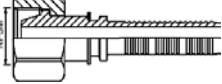
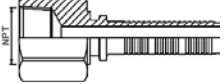
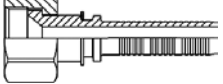
HIGH PRESSURE - UHP equipment

UHP (≥700 bar) fittings for thermoplastic hoses

TI-P (700, 800 bar)		Crimping ferrules			
hose I.D. [inch]		code	ferrule I.D.	-	-
		5/32	TI-PSAF-025-TO	9.8 mm	-
1/4		TI-PSAF-04-TO	15 mm	-	-
3/8		TI-PSAF-06-TO	20 mm	-	-

TI-P (700, 800 bar)		BSP (BSPT)thread, 60° cone			
thread size [inch]	hose I.D. [inch]	AGR	AGR-K	DKR	-
					
		code	code	code	-
1/4	5/32	TI-PBZ110-04-025-TO	-	TI-PBW110-04-025-TO	-
1/4	1/4	TI-PBZ110-04-04-TO	-	TI-PBW110-04-04-TO	-
3/8		TI-PBZ110-06-04-TO	TI-PBZ130-06-04-TO	-	-
3/8	3/8	TI-PBZ110-06-06-TO	-	TI-PBW110-06-06-TO	-

TI-P (700, 800 bar)		Metric thread - 24° cone			
thread size [inch]	hose I.D. [inch]	CEL	CES	DKOL	DKOS
					
		code	code	code	code
M14x1.5	1/4	TI-PMZ111-14-04-TO	-	TI-PMW121-14-04-TO	TI-PMW122-14-04-TO
M16x1.5		-	-	-	TI-PMW122-16-04-TO
M18x1.5		-	TI-PMZ112-18-04-TO	-	TI-PMW122-18-04-TO
M22x1.5		-	-	-	TI-PMW122-22-04-TO
M24x1.5		-	-	-	TI-PMW122-24-04-TO
M20x1.5	3/8	-	-	-	TI-PMW122-20-06-TO
M18x1.5		TI-PMZ111-18-06-TO	-	TI-PMW121-18-06-TO	-
M22x1.5		-	TI-PMZ112-22-06-TO	-	TI-PMW122-22-06-TO

TI-P (700, 800 bar)		NPTF (NPSM) thread, 60° cone		NPT thread	JIC, UNF thread, 74° cone
thread size [inch]	hose I.D. [inch]	AGN	DKN		DKJ
					
		code	code	code	code
1/4-18	1/4	TI-PNZ110-04-04-TO	TI-PNW110-04-04-TO	TI-PNWS110-04-04-TO	-
3/8-18		TI-PNZ110-06-04-TO	-	TI-PNWS110-06-04-TO	-
7/16-20		-	-	-	TI-PJW110-07-04-TO
1/2-20		-	-	-	TI-PJW110-08-04-TO
9/16-18	3/8	-	-	-	TI-PJW110-09-04-TO
3/8-18		TI-PNZ110-06-06-TO	-	-	-
9/16-18		-	-	-	TI-PJW110-09-06-TO
3/4-16		-	-	-	TI-PJW110-12-06-TO

HIGH PRESSURE - UHP equipment

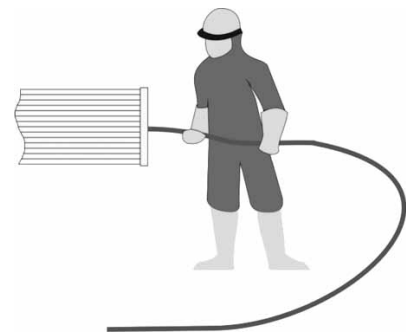
SPIR STAR® hoses

The internal layer of SPIR STAR® hoses is made of the highest quality thermoplastic materials such as polyoxymethylene (POM), polyamide (PA), polyvinylidene fluoride (PVDF), polytetrafluoroethylene - teflon (PTFE). There are up to 8 layers of high-tensile spring wire made of carbon or stainless steel (also acid resistant steel) spirally wrapped around the internal core.

The external layer is made of polyurethane, different kinds of polyamide or of PVDF depending on application.

Unique combination of the properties of materials that SPIR STAR® hoses are made of, allowed to obtain superior hose characteristics which outperform standard hoses:

- Ultrahigh pressure - up to 4000 bar for UHP type.
- Low volumetric expansion rate when under pressure - quick response of an executive part to a feed impulse.
- Smooth internal layer minimizes pressure drop.
- Reinforced with steel wire layers, which prevent kinking when the hose is bent and ensure long operation life in the most demanding applications.
- External layer resistant to wear and damage.
- Long lengths available - up to 4500 m.
- Small outside diameter - good proportion of size to high pressure operation capability - important when cleaning hard-to-reach places.
- Tailor-made assemblies are also available: twin hoses, bundles and other special-purpose systems.
- Excellent flow rate.
- Very good chemical resistance to detergents, chemicals and solvents.
- Low weight.
- Resistance to external pressure.
- Resistance to ultraviolet radiation, ozone and ageing.
- High stability in high temperatures (for HT series).
- Resistance to seawater.
- High resistance to impulse operation.
- Low medium permeability factor.



The main areas of SPIR STAR® application:

Waterblast technology

The main fields of application: hydro demolition and treatment of concrete, sewage system cleaning, water jet cutting, pipeline and heat exchanger cleaning, surface preparation - surface cleaning and degreasing with a pure medium (water) or medium with solids and abrasives added. A wide range of hose types combined with fittings of special structure e.g. Blast Pro type, allows to satisfy any application need.

High pressure hydraulics

SPIR STAR® hoses are widely applied wherever maximum flexibility and resistance to external damage are required. SPIR STAR® hoses are about 50% lighter than similar rubber hoses. Examples of application: hardening of metal surface with high pressure (autofrettage), hydroforming, lifesaving equipment and bolt tensioning.

Oil and gas mining industry - oil rigs

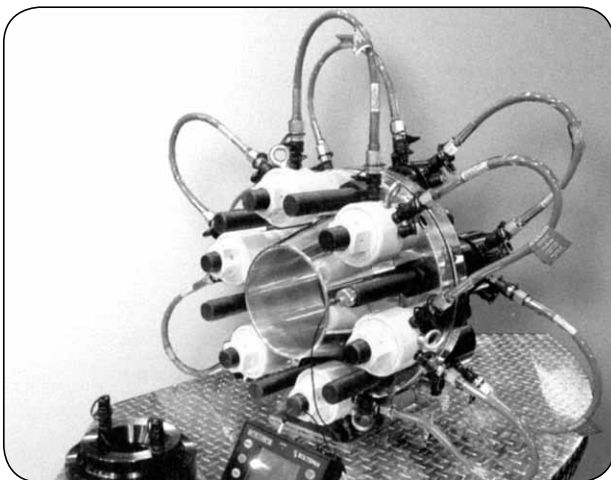
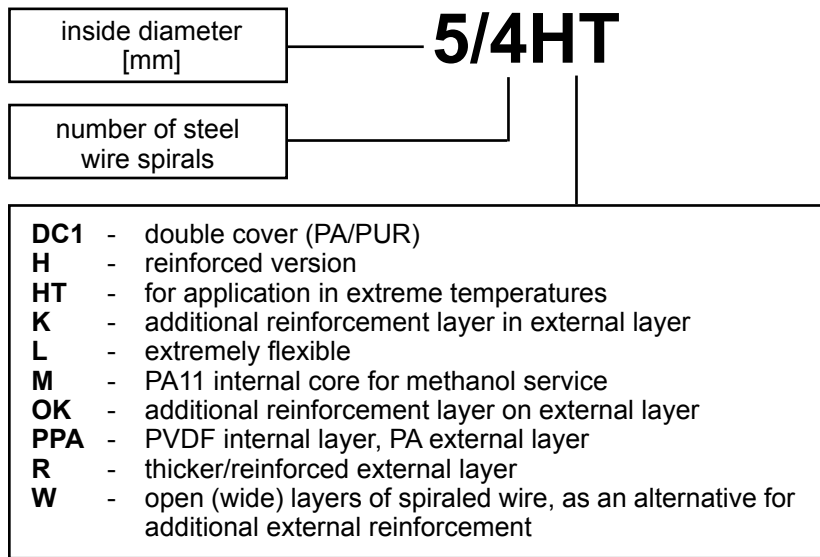
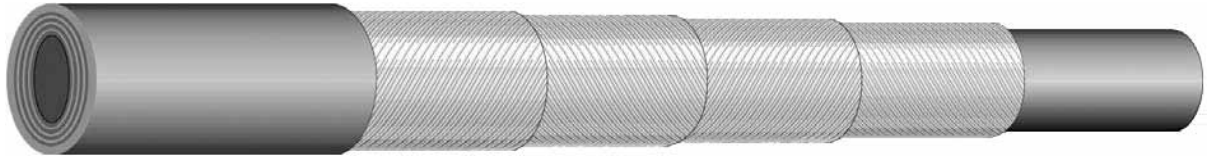
Confirmed applications in offshore projects on rigs of the North Sea and Gulf of Mexico. The main areas of application: hose bundles, methanol service, chemical injection, hydraulics and oilfield well hydraulic control. Other advantages of SPIR STAR hoses vital for this branch of industry: availability of long lengths up to 4500 m in one piece, resistance to external pressure and high temperature up to 150°C for some types of hoses.

Other branches of industry

Aircraft, military, chemical, automotive and shipbuilding industry, railway, local government, road infrastructure.

HIGH PRESSURE - UHP equipment

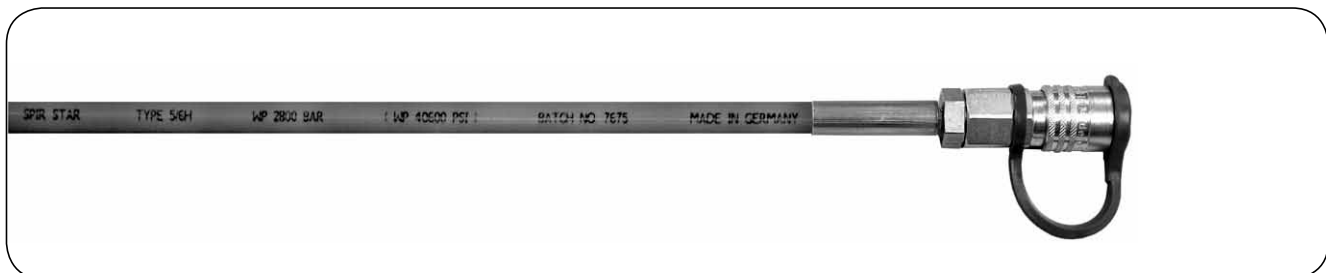
SPIR STAR® hoses



HIGH PRESSURE - UHP equipment

SPIR STAR® hoses

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	fitting I.D. [mm]	ferrule O.D. [mm]
2 type	Lightweight. flexible. 2 layer hose used mainly to clean heat exchangers. hose assemblies and piping systems. Internal layer: POM (polyoxymethylene). from 10 mm PA (polyamide). external layer: PA (polyamide).							
SS-NW-03-2	3.4	6.9	1000	2500	60	0.07	2	8.9
SS-NW-04-2	4	8	1200	3000	75	0.11	2.5	10
SS-NW-05-2	5	9.4	1040	2600	95	0.13	3	12.9
SS-NW-06-2	6.3	11.5	1000	2500	110	0.18	4	13.9
SS-NW-08-2	8.1	13.3	900	2250	130	0.20	5.5	17.8
SS-NW-10-2	10.1	15.5	690	1725	160	0.28	6.5	20.8
SS-NW-13-2	12.9	19.3	690	1725	200	0.44	8.5	26
SS-NW-20-2	19	26.2	520	1300	240	0.75	13	34.2
SS-NW-25-2	24.8	33.5	440	1100	300	0.95	16.5	40
2K type	Robust. flexible. 2 layer hose used mainly to clean heat exchangers. hose assemblies and piping systems. Internal layer: PA (polyamide). external layer: PUR (polyurethane).							
SS-NW-04-2K	4	9.8	1200	3000	65	0.19	2.5	13.1
SS-NW-06-2K	6.2	12.9	1120	2800	95	0.30	4	14.1
2OK type	Robust. flexible. 2 layer hose used mainly to clean heat exchangers. hose assemblies and piping systems. Internal layer: POM (polyoxymethylene). external layer: PA (polyamide) + additional stainless steel layer.							
SS-NW-05-2OK	5	10.8	1040	2600	95	0.22	3.5	13.3
SS-NW-06-2OK	6.2	13.1	1000	2500	110	0.31	4	15
2W type	Robust. flexible. kink-resistant hose mainly used for tightening screws. iron roughnecks. jacks. cutters and other devices. Internal layer: PA (polyamide). external layer: PUR (polyurethane). * - twin version (Twin Hose) available.							
SS-NW-04-2W	4	9.8	1400	3500	65	0.16	2.5	13.1
SS-NW-06-2W	6	12	1280	3200	95	0.23	4	15.4
SS-NW-06-2WL *	5.9	12	1200	3000	80	0.24	4	15.4
SS-NW-08-2W *	8	14.3	1040	2600	110	0.31	5.5	18.3
SS-NW-08-2WL	8	14	1000	2500	100	0.32	5.5	18.3
SS-NW-08-2WR	8	16	1040	2600	110	0.36	4.5	21.3
SS-NW-10-2W	10	17.2	1100	2760	125	0.43	6.5	21.5
SS-NW-13-2W	12.8	20.8	1040	2600	150	0.59	8.5	27.2
SS-NW-13-2WR	12.8	22.2	1040	2600	150	0.59	7.5	27.5
SS-NW-20-2W	18.8	29.5	760	1900	220	1.16	13	36.3
SS-NW-25-2W	25	35.6	640	1600	280	1.49	16.5	44
3 type	Lightweight. flexible. 3 layer hose used mainly to clean heat exchanger. hose assemblies and piping systems. Internal layer: POM (polyoxymethylene). external layer: PA (polyamide).							
SS-NW-05-3	5	10.3	1120	2800	95	0.22	3 (3.5)	12.9
SS-NW-06-3	6.1	12.3	1040	2600	110	0.28	4	14.1



HIGH PRESSURE - UHP equipment

SPIR STAR® hoses

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	fitting I.D. [mm]	ferrule O.D. [mm]
4 type	Robust. flexible, 4 layer hose used mainly for tightening screws, jacks, iron roughnecks, cutters, jacks, water jet cutting machines, pressure testing machines, and other devices. Internal layer: POM (polyoxymethylene), from 13 mm PA (polyamide), external layer: PA (polyamide).							
SS-NW-03-4	3.4	8	2000	5000	110	0.14	2	12.1
SS-NW-04-4	4	10.3	2200	5500	130	0.23	1.8	14.7
SS-NW-05-4	5	11.2	1800	4500	150	0.26	2.5	15
SS-NW-06-4	6.3	12.6	1500	3800	180	0.30	3.5	16.4
SS-NW-08-4	8	14.6	1500	3800	200	0.39	4.5	20.2
SS-NW-10-4	9.9	18.4	1500	3800	200	0.69	5.5	23
SS-NW-13-4	12.8	21.4	1300	3250	200	0.80	7.5	27.4
SS-NW-13-4H	12.8	22	1400	3500	200	0.88	7.5	29.5
SS-NW-16-4	16	25.5	1040	2600	250	1.00	10.5	32.7
SS-NW-20-4	18.8	28.8	1040	2600	250	1.35	13	36.9
SS-NW-25-4	24.8	36.3	900	2250	300	1.72	19	45.9
6 type	Robust. flexible, 6 layer hose used mainly for high pressure cleaning, water jet cutting, hydroforming, chemicals injection and lubrication under high pressure. Internal layer: POM (polyoxymethylene), from 13 mm PA (polyamide), external layer: PA (polyamide).							
SS-NW-03-6	3	9.1	2800	7000	150	0.23	1.8	15.3
SS-NW-04-6	4	11.5	2800	7000	175	0.37	1.8	17.1
SS-NW-05-6	4.8	13.2	2500	6250	200	0.45	2	17.8
SS-NW-05-6H	4.6	14.4	2800	7000	220	0.56	2.5	19.7
SS-NW-06-6H	5.9	16.4	2800	7000	250	0.75	3	21.4
SS-NW-08-6	8	16.4	2100	5250	250	0.64	4.5	21.6
SS-NW-08-6H	7.7	18.8	2500	6250	260	0.93	4.5	22.8
SS-NW-08-6UHP	7.6	19.3	2800	7000	300	1.06	4.5	23.7
SS-NW-08-6UHP-X	7.6	19.3	3035	7000	300	1.06	4.5	23.7
SS-NW-10-6	9.8	20.4	1920	4800	250	1.00	5.5	26.6
SS-NW-13-6	12.8	23.4	1800	4500	300	1.16	7.5	30.1
SS-NW-13-6H	12.7	24.8	2000	5000	300	1.20	7.5	30.2
SS-NW-16-6	15.9	27.7	1520	3800	320	1.48	10.5	35
SS-NW-20-6	18.8	32.8	1400	3500	350	2.17	13	37.2
SS-NW-25-6	24.8	39.8	1400	3000	600	2.80	17.5	49
8 type	Robust. flexible, 8 layer hose used mainly for high pressure water jet cutting, hydroforming and laboratory applications. Internal layer: POM (polyoxymethylene), from 13 mm PA (polyamide), external layer: PA (polyamide).							
SS-NW-04-8	4	12.8	3200	8000	175	0.54	1.8	19.5
SS-NW-05mmUHP	4.5	15.3	3200	8000	250	0.69	2.5	19.7
SS-NW-06mmUHP	5.8	18.6	3200	8000	280	1.06	3	23.7
SS-NW-08mmUHP	7.6	22	3200	7400	300	1.50	4.5	29.7
SS-NW-13mmUHP	12.8	27.7	2800	6000	350	2.09	7.5	31.6
SS-NW-16mmUHP	15.9	31.8	2000	5000	400	2.52	10.5	35
HDC1 type	Hose designed for cleaning of heat exchangers, surface preparation, ship hull cleaning and hydro demolition of concrete. Internal layer: POM (polyoxymethylene), external layer: PA (polyamide) + PUR (polyurethane).							
SS-NW-05-6HDC1	4.6	18.4	2800	7000	220	0.69	2.5	17.9
SS-NW-08-6HDC1	7.7	22.8	2500	6250	260	1.09	4.5	22.8

HIGH PRESSURE - UHP equipment

SPIR STAR® hoses

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	fitting I.D. [mm]	ferrule O.D. [mm]
HT type	Hose designed for hot chemicals injection. Working temp. up to +150°C. Internal and external layer: PVDF (polyvinylidene fluoride).							
SS-HT-05-4HT	5	11.2	1035	4140	250	0.28	2.5	15.4
SS-HT-06-2WHT	6.3	12.2	690	2760	150	0.27	3.5	17.5
SS-HT-06-4HT	6.3	12.6	1035	4140	280	0.32	3.5	17.5
SS-HT-08-2WHT	8	14.5	690	2760	250	0.40	4	20.7
SS-HT-08-4HT	8	14.6	1035	4140	300	0.41	4.5	20.2
SS-HT-10-4HT	9.9	18.4	1035	4140	300	0.70	5	24.9
SS-HT-13-4HHT	12.8	22	860	3450	300	1.00	7.5	29.5
M type	Hose designed for methanol injection. Internal layer: PA11 BOSNO P40 TLO polyamide, external layer: polyamide (PA).							
SS-M-06-2WM	6	12.2	1100	2760	95	0.24	4	16.8
SS-M-06-4WM	6	13	1035	4140	180	0.34	3	19.9
SS-M-08-2WM	8	14.3	1100	2760	110	0.31	5.5	19.7
SS-M-10-2WM	10	17.2	1100	2760	125	0.47	5	21.5
SS-M-13-2WM	12.7	20.8	1100	2760	150	0.63	8.5	27.8
SS-M-25-2KM	23.6	32.6	500	1250	280	1.20	16.5	42
PPA type	Hose designed especially for oil rig applications. Internal layer: PVDF (polyvinylidene fluoride), external layer: polyamide (PA).							
SS-PPA-05-4PPA	5	11.2	1285	4140	250	0.26	2.5	15
SS-PPA-06-2WPPA	6.3	12.2	915	2760	150	0.27	3.5	17.1
SS-PPA-06-4PPA	6.3	12.6	1180	4140	280	0.31	3.5	16.4
SS-PPA-08-2WPPA	8	14.5	790	2760	250	0.36	5.5	18.3
SS-PPA-08-4PPA	8	14.7	1085	4140	300	0.42	4.5	20.3
SS-PPA-10-4PPA	10	18.4	1180	4140	300	0.68	5.5	23.1
SS-PPA-13-2WPPA	12.8	20.8	790	2760	300	0.67	8.5	26.5
SS-PPA-13-4HPPA	12.8	22	1040	3450	300	1.00	7.5	29.5
SS-PPA-16-4PPA	16	25.5	790	2760	400	1.08	10.5	32.7
SS-PPA-20-4PPA	18.8	28.8	775	2760	500	1.35	13	36.9
SS-PPA-20-6PPA	18.8	32.8	1040	3450	600	2.17	13	43.1
SS-PPA-25-4PPA	24.8	36.3	690	2070	500	1.82	18	42.3

Working temperature range for SPIR STAR® hose types (working pressure depends on working temperature).

- HT type from -20°C up to +150°C
- PPA type from -20°C up to +80°C (PA from -30°C up to +60°C)
- KF type from -70°C up to +200°C
- other from -30°C up to +60°C

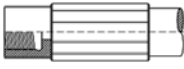
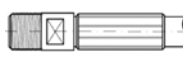
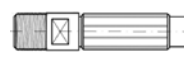
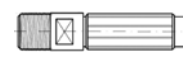
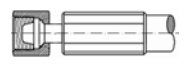
HIGH PRESSURE - UHP equipment

SPIR STAR® hoses - VIPER, MAMBA, COBRA type

VIPER, MAMBA and COBRA, a new type of hoses in SPIR-STAR line whose construction ensures high flexibility and tensile strength. Used in UHP hydraulics e.g. in bolt tensioners, jacks, control panels, etc.
Working temperature from -30°C up to +60°C.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]	fitting I.D. [mm]	ferrule O.D. [mm]
VIPER type	Internal layer: PA (polyamide). Reinforcement layer: multi layers of high- tensile steel wire. External layer: yellow fluorescent PUR (polyurethane).							
SS-HL-VIPER-06	6.1	12.5	700	1800	80	20.60	4	14.4
VIPER Twin type (double)	Internal layer: PA (polyamide). reinforcement layer: multi layers of high- tensile steel wire. External layer: yellow and purple fluorescent PUR (polyurethane).							
SS-HL-VIPER-06T	6.1	12.5	700	1800	80	41.2	4	14.4
MAMBA type	Internal layer: PA (polyamide). Reinforcement layer: multi layers of high- tensile steel wire. External layer: red PUR (polyurethane).							
SS-HL-MAMBA-06	5.9	12	1200	3000	80	23.70	4	15.4
MAMBA Twin type (double)	Internal layer: PA (polyamide). Reinforcement layer: multi layers of high- tensile steel wire. External layer: red and dark grey PUR (polyurethane).							
SS-HL-MAMBA-06T	5.9	12	1200	3000	80	47.40	4	15.4
COBRA type	Internal layer: POM (polyoxymethylene). Reinforcement layer: multi layers of high- tensile steel wire. External layer: dark blue PA (polyamide).							
SS-HL-COBRA-05	5	11.2	1800	4500	150	26.00	2.5	15

Basic fittings for VIPER, MAMBA, COBRA hoses

fitting					
hose type	NPTF female	NPTF male	BSP male (seal. ring)	BSP male (seal. 100° cone)	BSP female
VIPER VIPER Twin	1/4"-18	1/4"-18 3/8"-18	-	-	-
MAMBA MAMBA Twin	1/4"-18	1/4"-18 3/8"-18	1/4"	1/4"	1/4"
COBRA	-	-	1/4"	1/4"	1/4"


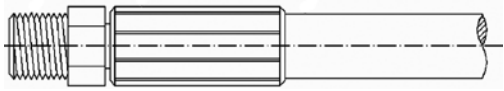
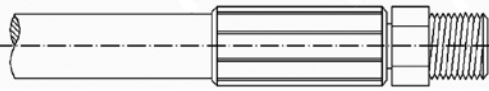
HIGH PRESSURE - UHP equipment

SPIR STAR® hose assemblies in 24 h - GREEN LINE


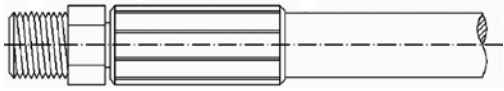
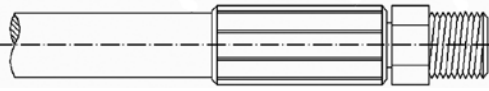
GREEN LINE is a system of fast production of SPIR STAR® hose assemblies, from the selected, most frequently used types of hoses and selected, most popular fittings. The hose assemblies are ready in 24 hours, considering the following conditions:

- a written order must be placed in the sales branch of TUBES INTERNATIONAL® and all technical and sales issues must be agreed upon before 11 a.m. on the day prior to the day when the particular hose assembly is to be ready for collection or dispatch,
- after all necessary agreements are made, the Customer should receive an order confirmation,
- any of the listed fittings can be freely matched with any hose length (allowing for the minimum technically possible length and the maximum available length of the hose),
- the quantity of ordered hose assemblies may be limited,
- the ordered hose assemblies are produced and tested according to the standard SPIR STAR® hose assembly production procedures.

To order your hose assemblies, please fill in the order form below (you can download this form from our website www.tubes-international.com.)


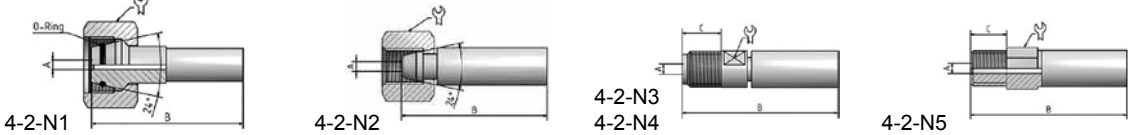
		SPIR STAR 24H – GREEN LINE – ORDER FORM		
<i>Customer: (company name, NIP, contact person and phone, e-mail):</i>				
 				
Left fitting	Hose	Right fitting	Complete length Lc [mm]	Quantity
Medium (substance)	Working pressure [bar]	Working temperature [°C]	Other conditions (external conditions, bending during work etc.)	
Name	Date	Signature	Notes	


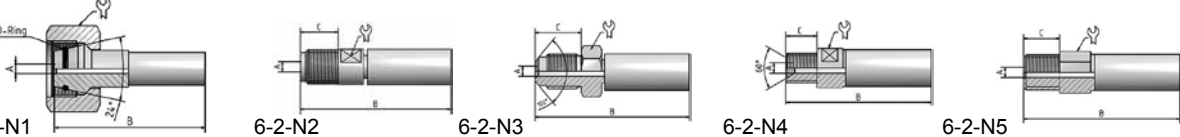
Example:

		SPIR STAR 24H – GREEN LINE – ORDER FORM		
<i>Customer: (company name, NIP, contact person and phone, e-mail):</i> Kowalski S.A., NIP 781-00-46-084, Jan Kowalski, tel. 669 111 570, kowalski@kowalski-sa.com				
 				
Left fitting	Hose	Right fitting	Complete length Lc [mm]	Quantity
4/2-N2	SS-NW-04-2	4/2-N3	6250	2
Medium (substance)	Working pressure [bar]	Working temperature [°C]	Other conditions (external conditions, bending during work etc.)	
water	1000	40	none	
Name	Date	Signature	Notes	
Jan Kowalski	10.05.2016	Kowalski	none	

HIGH PRESSURE - UHP equipment


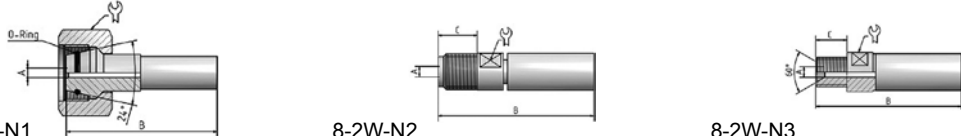
SPIR STAR® hose assemblies in 24 h - GREEN LINE


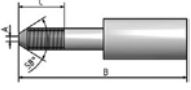
				<h3>SPIR STAR DN4 (4/2)</h3> <p>Internal layer: Polyoxymethylene (POM) Reinforcement: Two layers of steel wire External layer: Green polyamide (PA) Working temp.: From -30°C up to +60°C</p> <p>Lightweight, flexible hose used mainly to clean heat exchangers, hose assemblies and piping systems.</p>					
hose code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	ferrule code (carbon steel)	crimped ferrule code [mm]	crimped ferrule length [mm]
SS-NW-04-2	4	8	1200	3000	75	0.11	SS-10420102	10	34
									
fitting type	description		elements	code (carbon steel)	fitting I.D. A [mm]	fitting and ferrule length compl. B [mm]	thread length C [mm]	spanner size D [mm]	
4-2-N1	M24x1.5 female, 24° cone, o ring		insert	SS-20420042A	2.5	68	-	32	
			nut	SS-51321206					
4-2-N2	1/4" BSP female, 24°/60° cone		insert	SS-20430302A	2.5	48	-	19	
			nut	SS-50540301					
4-2-N3	1/8" BSP male, flat seal		-	SS-30420382A	2.5	55	13	9	
4-2-N4	M7x1 male, flat seal		-	SS-30420082A	2.5	52	11	7	
4-2-N5	1/4" BSP male, flat seal		-	SS-30420322A	2.5	55	12	11	

				<h3>SPIR STAR DN6 (6/2)</h3> <p>Internal layer: Polyoxymethylene (POM) Reinforcement: Two layers of steel wire External layer: Green polyamide (PA) Working temp.: From -30°C up to +60°C</p> <p>Lightweight, flexible hose used mainly for high pressure hydraulics (testing, hydraulic tools) and heat exchanger cleaning.</p>					
hose code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	ferrule code (carbon steel)	crimped ferrule code [mm]	crimped ferrule length [mm]
SS-NW-06-2	6.3	11.5	1000	2500	110	0.18	SS-10620101	13.9	42
									
fitting type	description		elements	code (carbon steel)	fitting I.D. A [mm]	fitting and ferrule length compl. B [mm]	thread length C [mm]	spanner size D [mm]	
6-2-N1	M24x1.5 female, 24° cone, o ring		insert	SS-20620042A	4	75	-	30	
			nut	SS-51060201					
6-2-N2	1/4" BSP male, flat seal		-	SS-30620381A	4	66	15	12	
6-2-N3	1/4" BSP male, 100° outer cone		-	SS-30620361A	4	67	18	17	
6-2-N4	3/8" BSP male, 60° outer cone		-	SS-30620321A	4	61	12	17	
6-2-N5	3/8" NPTF male		-	SS-30620451A	4	64	14	17	

HIGH PRESSURE - UHP equipment

SPIR STAR® hose assemblies in 24 h - GREEN LINE

				<h3>SPIR STAR DN8 (8/2W)</h3> <p>Internal layer: Polyamide (PA) Reinforcement: Two dense and two open layers of steel wire External layer: Black polyurethane (PUR) Working temp.: From -30°C up to +60°C</p> <p>Lightweight, flexible hose used mainly for high pressure hydraulics (testing, hydraulic tools) and heat exchanger cleaning.</p>					
hose code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	ferrule code (carbon steel)	crimped ferrule code [mm]	crimped ferrule length [mm]
SS-NW-08-2W	8	14.3	1040	2600	110	0.32	SS-10830191W	18.3	43
									
fitting type	description		elements	code (carbon steel)	fitting I.D. A [mm]	fitting and ferrule length compl. B [mm]	thread length C [mm]	spanner size D [mm]	
8/2W-N1	M24x1.5 female, 24° cone, o ring		insert	SS-20820042A	5.5	75	-	32	
			nut	SS-51321206					
8/2W-N2	1/4" BSP male, flat seal		-	SS-30820381A	5.5	70	15	12	
8/2W-N3	3/8" BSP male, 60° outer cone		-	SS-30820301A	5.5	65	12	17	

				<h3>SPIR STAR DN8 UHP (8/6UHP)</h3> <p>Internal layer: Polyoxymethylene (POM) Reinforcement: Six layers of steel wire External layer: Yellow polyamide (PA) Working temp.: From -30°C up to +60°C</p> <p>Robust hose suitable for ultra-high pressure waterjet cleaning and cutting.</p>					
hose code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/m]	ferrule code (carbon steel)	crimped ferrule code [mm]	crimped ferrule length [mm]
SS-NW-08-6UHP	7.6	19.3	2800	7000	300	1.1	SS-10860116	23.7	88
									
fitting type	description		elements	code (carbon steel)	fitting I.D. A [mm]	fitting and ferrule length compl. B [mm]	thread length C [mm]	spanner size D [mm]	
8/6UHP-N1	HP 9/16"- 18 UNF LH male		-	SS-40860204E	4.5	126	31	-	
8/6UHP-N2	HP M14x1.5 LH male		-	SS-40860104E	4.5	126	31	-	

HIGH PRESSURE - UHP equipment

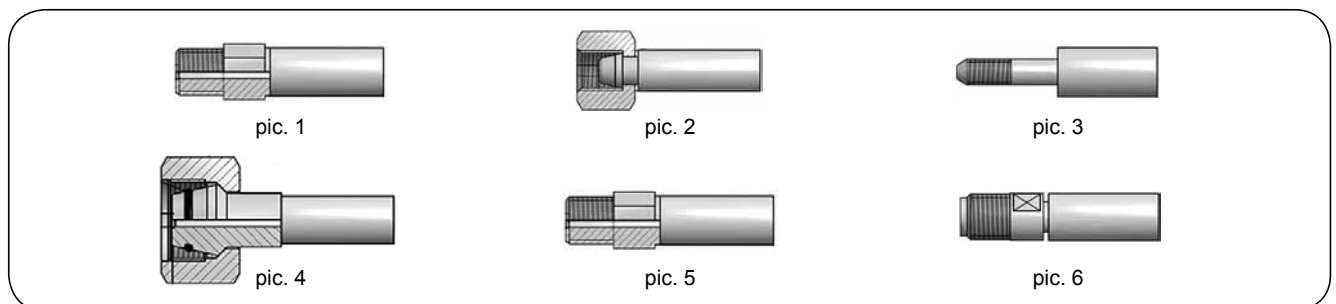
Complete UHP hose assemblies (SPIR STAR®, WATERBLAST) in 24 h

Complete, fully finished and tested UHP (ULTRA HIGH PRESSURE) hose assemblies produced from selected SPIR STAR® and WATERBLAST hoses in the most common lengths (Lc) and with selected, most popular fittings. The information on the parameters of these hoses is provided on the previous pages of the catalogue. The hose assemblies are ready in 24 hours, considering the following conditions:

- warehouse availability of the hose assembly must be confirmed;
- a written order must be placed in the sales branch of TUBES INTERNATIONAL® and all technical and sales issues must be agreed upon before 12 a.m. on the day prior to the day when the particular hose assembly is to be ready for collection or dispatch,
- the Customer should receive an order confirmation issued on the basis of the agreements.

hose assembly code	hose type	I.D. [mm]	working pressure [bar]	length complete [m]	fittings			
					left	pic.	right	pic.
hydraulics 700 bar								
HASS-06-001-L1M	SS-HL-VIPER-06	6.1	700	1	3/8" NPT	1	3/8" NPT	1
HASS-06-001-L2M	SS-HL-VIPER-06	6.1	700	2	3/8" NPT	1	3/8" NPT	1
HASS-06-001-L3M	SS-HL-VIPER-06	6.1	700	3	3/8" NPT	1	3/8" NPT	1
HASS-06-001-L5M	SS-HL-VIPER-06	6.1	700	5	3/8" NPT	1	3/8" NPT	1
HASS-06-001-L10M	SS-HL-VIPER-06	6.1	700	10	3/8" NPT	1	3/8" NPT	1
hydraulics 1800 bar								
HASS-05-002-L2M	SS-NW-05-4	5	1800	2	1/4" BSP	2	1/4" BSP	2
HASS-05-002-L3M	SS-NW-05-4	5	1800	3	1/4" BSP	2	1/4" BSP	2
HASS-05-002-L5M	SS-NW-05-4	5	1800	5	1/4" BSP	2	1/4" BSP	2
cleaning 1000 bar								
HAWB-13-001-L20M	SL-WBL4P-13	12.7	1100	20	M24x1.5	4	M24x1.5	4
HASS-08-003-L20M	SS-NW-08-2W	8	1040	20	M24x1.5	4	M24x1.5	4
HASS-03-004-L12M	SS-NW-03-2	3.4	1000	12	1/4" BSP	2	M7x1 flat	5
HASS-04-005-L12M	SS-NW-04-2	4	1200	12	M24x1.5	4	1/8" BSP flat	6
HASS-05-006-L12M	SS-NW-05-2	5	1040	12	M24x1.5	4	1/8" BSP flat	6
HASS-06-007-L12M	SS-NW-06-2	6.3	1000	12	M24x1.5	4	1/4" BSP flat	6
cleaning 2500 bar								
HASS-08-008-L20M	SS-NW-08-6H	7.7	2500	20	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-08-009-L20M	SS-NW-08-6H	7.7	2500	20	HPM14x1.5 LH	3	HPM14x1.5 LH	3
HASS-05-010-L5M	SS-NW-05-6	4.8	2500	5	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-05-011-L5M	SS-NW-05-6	4.8	2500	5	HPM14x1.5 LH	3	HPM14x1.5 LH	3
cleaning 2800 bar								
HASS-08-012-L20M	SS-NW-08-6UHP	7.6	2800	20	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-08-013-L20M	SS-NW-08-6UHP	7.6	2800	20	HPM14x1.5 LH	3	HPM14x1.5 LH	3
HASS-05-014-L5M	SS-NW-05-6H	4.8	2800	5	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-05-015-L5M	SS-NW-05-6H	4.8	2800	5	HPM14x1.5 LH	3	HPM14x1.5 LH	3
cleaning 3000 bar								
HASS-08-016-L20M	SS-NW-08-6UHP-X	7.6	3035	20	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-08-017-L20M	SS-NW-08-6UHP-X	7.6	3035	20	HPM14x1.5 LH	3	HPM14x1.5 LH	3
HASS-05-018-L5M	SS-NW-05-6UHP	4.5	3200	5	9/16"x18 UNF LG	3	9/16"x18 UNF LG	3
HASS-05-019-L5M	SS-NW-05-6UHP	4.5	3200	5	HPM14x1.5 LH	3	HPM14x1.5 LH	3

Fittings



HIGH PRESSURE - UHP equipment

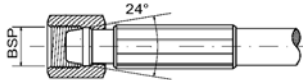
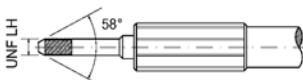
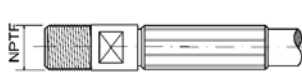
SPIR STAR® fittings

The most common combinations of fittings and basic types of SPIR STAR® hoses are marked with numerical codes e.g. for hose SS-NW-06/2. They are given in the tables below. The tables facilitate initial fitting selection for a particular hose type. The process of matching the fitting to the particular hose, the choice of sealing and thread size depends not only on the nominal diameter of the hose assembly but also on its maximum working pressure i.e. mainly on the number of reinforcement layers and fitting material. The standard combinations given in the tables below do not apply to special types of hoses - those marked with additional letters in the code of the hose type, e.g. NW-SS-06/2 WL.

The final confirmation of availability of hose-fitting connection must be based on the most recent catalogue cards from SPIR STAR® catalogue.

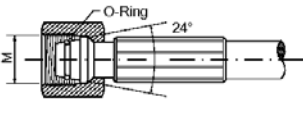
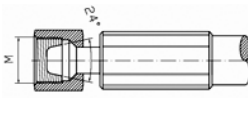
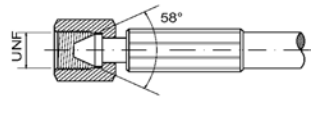
The procedure of initial standard hose assembly selection:

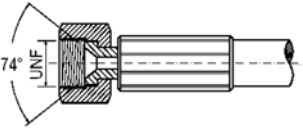


1. The selection of a hose according to such working parameters as medium, temperature, maximum working pressure and required nominal diameter are selected from the tables on SPIR STAR® hoses pages of this catalogue.
2. The selection of fittings from the tables below.
3. The verification of the selection by comparison to SPIR STAR® catalogue data.

fitting																
		BSP female					HP male (UNF LH) LH metric thread					NPTF / NPT male				
hose DN	hose type - number of reinf. layers															
	2	3	4	6	8											
3	•					1/4"					-				1/16"	
			•			-					1/4"-28				-	
				•		-					1/4"-28, 3/8"-24				-	
4	•					1/4"					1/4"-28				1/16", 1/8", 1/4", 5/16"	
			•			1/4"					1/4"-28, 3/8"-24, 9/16"-18				1/8"	
				•	•	-					1/4"-28, 3/8"-24, 9/16"-18				-	
5	•	•				1/4"					-				1/8", 1/4"	
			•			1/4"					1/4"-28, 3/8"-24, 9/16"-18				-	
				•	•	1/4"					1/4"-28, 3/8"-24, 9/16"-18, M14x1.5				-	
6	•	•				1/4"					9/16"-18				1/8", 1/4", 3/8"	
			•			1/4"					3/8"-24				1/4"	
				•	•	-					3/8"-24, 9/16"-18, M14x1.5				-	
8	•					3/8"					-				1/4", 3/8"	
			•			1/4"					9/16"-18				1/4", 3/8"	
				•	•	-					3/8"-24, 9/16"-18, M14x1.5, 3/4"-16				-	
10	•					1/2"					-				3/8", 1/2"	
			•	•		1/2"					9/16"-18				-	
13	•					1/2"					9/16"-18				1/2"	
			•	•	•	1/2"					9/16"-18, 3/4"-16, M18x1.5				-	
16			•			-					3/4"-16				3/4"	
				•	•	-					M18x1.5				-	
20	•					-					-				1"	
			•	•		-					1"-14				-	
25	•		•			-					-				1"	
				•		-					1"-14				-	

HIGH PRESSURE - UHP equipment

SPIR STAR® fittings

fitting																
		metric female. O-ring (DKOS *)					metric female (DKL or DKS *)					M type (UNF female) HP female (UNF or LH female)				
hose DN	hose type - number of reinf. layers															
	2	3	4	6	8											
3			•			-				M12x1.5 (DKL)					9/16"-18	
4	•					M24x1.5				-					9/16"-18	
			•	•	•	-				-					9/16"-18	
5	•	•				M24x1.5				M14x1.5 (DKL)					9/16"-18	
			•			M20x1.5				M14x1.5 (DKL)					9/16"-18	
				•	•	-				M14x1.5 (DKL)					9/16"-18	
6	•	•				M18x1.5, M22x1.5, M24x1.5				M14x1.5 (DKL), M16x1.5 (DKS)					9/16"-18	
			•			M18x1.5, M24x1.5				-					3/8"-24, 9/16"-18	
8				•	•	-				-					9/16"-18	
	•					M20x1.5, M24x1.5				-					3/4"-16	
			•			M20x1.5, M22x1.5, M24x1.5				-					3/4"-16	
10				•	•	M24x1.5				-					3/4"-16, 7/8"-14	
	•					M24x1.5, M22x1.5				-					3/4"-16	
			•			M22x1.5, M24x1.5				-					3/4"-16	
13				•		M22x1.5, M24x1.5				-					-	
	•					M22x1.5, M24x1.5				-					1"-12	
16			•	•	•	M24x1.5				-					1"-12	
20	•		•	•		M30x2				-					1.5/16"-12	
25	•			•		M36x2				-					1.5/16"-12	
			•			M42x2				-					-	
				•		M42x2				-					1.5/16"-12	




fitting																
		JIC female UNF					BSP male					BSP male / metric (flat sealing)				
hose DN	hose type - number of reinf. layers															
	2	3	4	6	8											
3	•					-				-					M6x1, M7x1	
4	•					-				1/8", 1/4"					1/8", M7, M8, M10	
			•			-				1/8", 1/4"					1/8", M7, M10	
5	•	•				-				1/4"					-	
			•			9/16"-18				-					-	
6	•	•				9/16"-18				1/8", 1/4", 3/8"					1/4"	
			•			9/16"-18				1/4"					M8	
8	•					9/16"-18				1/4", 3/8"					1/4"	
			•			3/4"-16				1/4", 3/8"					1/4"	
10	•		•			-				3/8"					-	
16			•			1.1/16"-12				-					-	
				•	•	1.5/16"-12				-					-	
20	•					1.5/16"-12				-					-	
25	•					1.5/16"-12				-					-	

* Note: Fittings with metric thread basically correspond to such familiar types as DKOS, DKL and DKS. However, due to dimension differences occurring in certain sizes, it is recommended to confirm the choice with TUBES INTERNATIONAL® Technical Department.

HIGH PRESSURE - UHP equipment

Accessories for SPIR STAR® hoses

Connectors for HP fittings - working pressure 4000 bar

picture	code	thread size	description	intended for
	SS-UHP-CLR-04-HP	1/4"-28 UNF LH fem.	abutment ring	GN-1/4-HP
	SS-UHP-GN-04-HP	9/16"-18 UNF male	nut	CLR-1/4-HP
	SS-UHP-CLR-06-HP	3/8"-24 UNF LH fem.	abutment ring	GN-3/8-HP
	SS-UHP-GN-12-HP	3/4"-16 UNF male	nut	CLR-3/8-HP
	SS-UHP-CLR-09-HP	9/16"-18 UNF LH fem.	abutment ring	GN-9/16-HP
	SS-UHP-GN-18-HP	1.1/8"-12 UNF male	nut	CLR-9/16-HP
	SS-UHP-CLR-04-HP-ME	1/4"-28 UNF LH fem.	abutment ring	GN-M16
	SS-UHP-GN-M16	M16x1.5 male	nut	CLR-1/4-HP-ME
	SS-UHP-CLR-06-HP-ME	3/8"-24 UNF LH fem.	abutment ring	GN-M20
	SS-UHP-GN-M20	M20x1.5 male	nut	CLR-3/8-HP-ME
	SS-UHP-CLR-09-HP-ME	9/16"-18 UNF LH fem.	abutment ring	GN-M30
	SS-UHP-CLR-M14	M14-1.5 LH fem.	abutment ring	GN-M30
	SS-UHP-GN-M30	M30x2 male	nut	CLR-M14. CLR-9/16-HP-ME
	SS-UHP-CLR-M18-M30	M18x1.5 LH fem.	abutment ring	GN-M30-M18
SS-UHP-GN-M30-M18	M30x2 male	nut	CLR-M18-M30	
	SS-UHP-HC-M16	2 x M16x1.5 fem.	straight HP connector (body)	GN-M16 + CLR-1/4-HP-ME
	SS-UHP-HC-M20	2 x M20x1.5 fem.		GN-M20 CLR-3/8-HP-ME
	SS-UHP-HC-M30	2 x M30x2 fem.		GN-M30 + CLR-M14 GN-M30 + CLR-9/16-HP-ME GN-M30-M18 + CLR-M18-M30
	SS-UHP-HC-HF4	HP 1/4"	straight HP connector (complete)	GN-1/4-HP + CLR-1/4-HP
	SS-UHP-HC-HF6	HP 3/8"		GN-3/8-HP + CLR-3/8-HP
	SS-UHP-HC-HF9	HP 9/16"		GN-9/16-HP + CLR-9/16-HP
	SS-UHP-HC-HF9-HF6	HP 9/16" / HP 3/8"	reducing connector HP (complete)	GN-9/16-HP + CLR-9/16-HP + GN-3/8-HP + CLR-3/8-HP

Other high pressure connectors

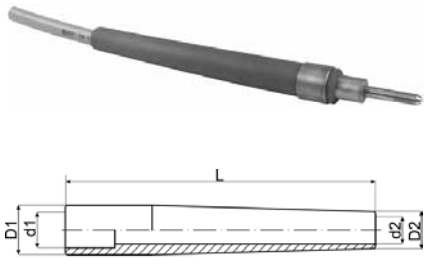
picture	code	pressure [bar]	threads	description	
	TI-HP-0303-04-04	1380	2 x 1/4"	DKR high pressure nipple.	
	SS-UHP-HMB4-MB4	2800			
	TI-HP-0303-06-06	1380	2 x 3/8"		
	SS-UHP-HMB6-MB6	2800			
	TI-HP-0303-08-08	1380	2 x 1/2"		
	SS-UHP-HMB8-MB8	2000			
	SS-UHP-HMB12-MB12	1000	2 x 3/4"	DKOS high pressure nipple.	
	SS-UHP-HMEM18-MEM18	1500	2 x M18x1.5		
	SS-UHP-HMEM20-MEM20	2800	2 x M20x1.5		
	TI-HP-4545-22-22	1380	2 x M22x1.5		
	SS-UHP-HMEM22-MEM22	2800			
	TI-HP-4545-24-24	1380	2 x M24x1.5		
	SS-UHP-HMEM24-MEM24	2800			
	SS-UHP-HMEM30-MEM30	2000	2 x M30x2		
	SS-UHP-HMEM36-MEM36	1400	2 x M36x2		
	SS-UHP-HMEM42-MEM42	2070	2 x M42x2		
	SS-UHP-HMEM42-MEM42-20K	1380	2 x M42x2		
	SS-UHP-HMEM22-MEM24	2800	M22x1.5 x M24x1.5		DKOS high pressure reducing nipple.
	SS-UHP-HMEM24-MEM36	1400	M24x1.5 x M36x2		
	SS-UHP-HMEM30-MEM36	1400	M30x2 x M36x2		
SS-UHP-HMEM36-MEM42	480	M36x2 x M42x2			

HIGH PRESSURE - UHP equipment

Accessories for SPIR STAR® hoses


Hose bend restrictors (assembled behind sleeve)

Polyurethane restrictors raise working safety level and extend hose service life. They are very lightweight and easy to assemble. Intended for hoses operating under highest pressure (see the table). For hoses with lower working pressure and other applications e.g. for hose 6/2 WL, standard rubber restrictors should be used (see CLEANING AND WASHING - code EM-KK... or EM-GK...). Please contact TUBES INTERNATIONAL® Technical Department to confirm your selection.

picture	code	dimensions [mm]					hose type
		L	D1	d1	D2	d2	
	SS-BR-PUR-01	250	30	18	23	16	5/6
	SS-BR-PUR-02	250	30	19.5	23	16	4/8, 5/6H
	SS-BR-PUR-03	250	30	20.5	23	16	5mmUHP
	SS-BR-PUR-04	250	40	22.5	30	22.5	6/6H, 8/6
	SS-BR-PUR-05	250	40	26.5	30	26.5	6mmUHP, 8/6H, 8/6HDC1, 8/6UHP, 8/6UHP-X
	SS-BR-PUR-06	250	40	30	30	22.5	8mmUHP
	SS-BR-PUR-07	350	50	35.3	40	32	13mmUHP
	SS-BR-PUR-08	350	52	38.3	44	35	16/6, 16mmUHP
	SS-BR-PUR-09	450	55	43.3	45	37	20/6

Hose securing grips

Steel securing grips used to protect a hose operator against the effects of connection failure e.g. pulling a fitting out from the hose. Very easy to install, even when the systems is on - requires disconnection of the hose from the system only at one side for assembly time. In emergency situation, when the hose-fitting connection breaks or the fitting is pulled out from the installation, the grip shrinks and tightens on the hose so the hose slows down and stops.

picture	code	hose O.D. [mm]	strength [kN]
	SS-CG-01	10 ÷ 15	10.2
	SS-CG-02	15 ÷ 20	20.4
	SS-CG-03	20 ÷ 30	24.3
	SS-CG-04	30 ÷ 40	35.1
	SS-CG-05	40 ÷ 50	48
	SS-CG-06	50 ÷ 60	48

Protective hose covers

In order to protect the external hose layer, another hose - LUISIANA and CRISTALLO (see "INDUSTRIAL HOSES - food") can be used by sliding the protective hose over the one to be protected. LUISIANA hose cover (reinforced with spiral) secures SPIR STAR® hoses in WATERBLAST applications where high surface friction occurs. CRISTALLO hose cover (without reinforcement) secures high pressure hydraulic hoses in applications where friction is smaller but maximum flexibility is crucial.

Selection of a protective hose cover: the outside diameter of the ferrule of SPIR STAR® hose after crimping must be smaller than the inside diameter of the protective hose.

HIGH PRESSURE - UHP equipment

UHP accessories



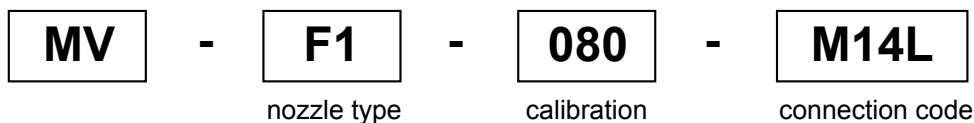
Monro Jet® nozzle

Material: Stainless steel
Water flow: From 3 l/min up to 230 l/min
Working press.: From 200 bar up to 2500 bar
Working temp.: Up to +100°C

Monro Jet rotary nozzle enables spreading a high pressure stream of water over a large area. Designed to be assembled on lances and spray guns for ultra-high pressure, operated manually or by robots. Used in construction, rust and scale removal industry, cleaning of castings, drilling rigs, ships and tanks, roads and runways, pipes and hose assemblies, building facades, cutting off roots, removing and cleaning of concrete constructions, removing paint, tar, asphalt and bituminous coverings. Selection made on the basis of pressure and water consumption of supply device. Please contact TUBES INTERNATIONAL® Technical Department to confirm your selection.

type	working press. [bar]	dimensions [mm]		weight [kg]	rotor calibration	connections
		length	width			
F1 (22°)	1500	134.9	49	1.25	0.6 ÷ 2.8	9/16"-18 UNF LH (RH) M14x1.5 LH M24x1.5 RH
F2 (22°)	1000	134.9	49	1.25	0.6 ÷ 2.8	1/4" BSP 3/8" BSP (NPT) 1/2" BSP (NPT)
F3 (22°)	800	134.9	49	0.67	0.6 ÷ 2.8	1/4" BSP 3/8" BSP (NPT) 1/2" BSP (NPT) 9/16"-18 UNF LH (RH) M14x1.5 LH M24x1.5 RH
F4 (22°)	500	109	43	0.64	0.6 ÷ 2.8	1/4" BSP 3/8" BSP (NPT) 1/2" BSP (NPT) 9/16"-18 UNF LH (RH) M14x1.5 LH
F6 (30°)	500	109	43	0.64	0.6 ÷ 1.65	1/4" BSP 3/8" BSP (NPT) 1/2" BSP (NPT) 9/16"-18 UNF LH (RH) M14x1.5 LH
F25 (22°)	2500	134.9	49	1.3	0.4 ÷ 1.2	9/16"-18 UNF LH (RH) M14x1.5 LH
F25BE (22°)	2500	149	49	1.3	0.6 ÷ 1.55	9/16"-18 UNF LH (HD) M14x1.5 LH (HD)

Code structure of Monro Jet® nozzle



connection	1/4" BSP	3/8" BSP	3/8" NPT	1/2" BSP	1/2" NPT	M14x1.5 LH	M24x1.5 RH	9/16"-18 UNF LH	9/16"-18 UNF RH
connection code	14B	38B	38N	12B	12N	M14L	M14R	916L	916R

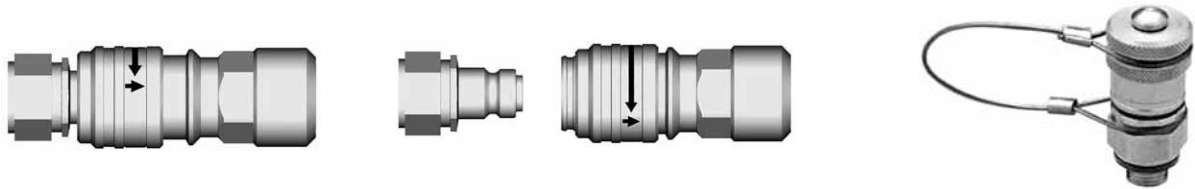
HIGH PRESSURE - UHP equipment

Quick release couplings

The series is specially designed for ultra-high pressure. The diversity of this product range enables using the couplings even in the most demanding applications. These couplings are made of hardened steel to ensure longer service life. They are compact and easy to connect. The unique design of these couplings minimizes possible fluid leakage and prevents air inclusion so that it enables keeping the coupling clean. Blank plugs that are provided with the couplings as a standard provide additional protection from dirt. Versions with a safety locking ring preventing accidental disconnection are available on request.

Flat-Face series

The Flat-face, dry-brake series has been developed to meet the rigorous demands of ultrahigh pressure hydraulic applications. It is easier to control the cleanliness of a connecting surface as it is flat. Moreover the series is designed for one hand operation. It is enough to push the plug into the socket without any positioning. The plug is automatically locked in the socket. In order to disconnect the socket turn the locking sleeve by 30° and then pull it backwards to release the plug. The unique blank plug design with an integrated pressure eliminator is a solution to a problem of residual pressure that is sometimes present on the plug side, making it difficult to connect with the socket. By pressing the button on the blank plug, the internal pressure can be easily relieved and the plug can be pushed in into the socket without any problems.



Sealing for threaded connection of a coupling with hose assembly or hydraulic system

type of sealing	application
metal - metal sealing 120° cone	For the pressure of 700 bar and above, the use of 120° cone sealing is recommended. The cone allows to achieve very good sealing properties at low tightening torque so the quick release couplings can be reassembled many times without any risk of damage to the sealing surfaces.
rubber - metal seals	Rubber - metal seals can be used for parallel thread or other components with appropriate sealing surface (flat surface). Rubber - metal seals are not recommended for pressures above 1000 bar.
liquid sealant or paste sealant	It is recommended to use liquid or paste sealant for NPT or BSPT threads. Sealing tape (e.g. PTFE tape) should be avoided as it may damage components during tightening or cause system malfunction if it accidentally enters the hydraulic system.

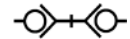
Proper selection and handling of a quick release coupling

In order to choose a quick release coupling properly for certain application and to be sure that it is going to function faultlessly, we should:

- Account for the working pressure of a quick release coupling, flow rate and pressure drop as well as the type of sealing.
- Consider protection against accidental disconnection.
- Do not connect couplings under pressure.
- Keep the quick release coupling clean (wipe off the surface of the socket and plug before each connection).
- Use blank plugs and caps whenever the socket and plug are separated as they protect the quick release couplings against dirt and debris. It is important to wipe the socket and plug clean each time before putting the blank plugs and caps on. The blank plug and cap should be connected whenever the coupling is connected.
- Check the condition of the plug, socket and sealing on regular basis - replace them, if necessary.

HIGH PRESSURE - UHP equipment





Quick release couplings



CEJN 115 series TEMA 1000 series

Material: Hardened, zinc-plated steel
Seal: NBR
Flow rate: 6 l/min. ($\Delta p = 4$ bar)
Nominal diam.: 2.5 mm
Working press.: 1000 bar (connected coupling)
Bursting press.: 2600 bar (CEJN)
 3000 bar (TEMA)
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. Used in crimping machines, rescue equipment, jacks, cutters, etc. The socket is available with a safety locking ring preventing accidental disconnection as an option. Both sockets and plugs are supplied with blank plugs and caps as a standard.

picture	CEJN code	TEMA code	thread size	sealing	spanner [mm]	L [mm] (± 2 mm)	D [mm] (± 2 mm)	
	CJ-HP-101151102	-	1/4" BSPT	-	24	59	28	
	CJ-HP-101151104	-	3/8" BSPT	-		61		
	CJ-HP-101151201	-	1/8" BSP	1)		54		
	CJ-HP-101151202	TA-H-HP10104131	1/4" BSP	4)		60		
	CJ-HP-101151204	TA-H-HP10104171	3/8" BSP	3)		61		
	CJ-HP-101151222*	TA-H-HP10104132*	1/4" BSP	4)		60		
	-	TA-H-HP10104172*	3/8" BSP	3)		59	27	
	CJ-HP-101151401	-	1/8" NPT	-		54	28	
	CJ-HP-101151402	TA-H-HP10105131	1/4" NPT(F)	-		59		
	CJ-HP-101151404	TA-H-HP10105171	3/8" NPT(F)	-		60		
	CJ-HP-101151422*	TA-H-HP10105132*	1/4" NPT(F)	-		59		27
	-	TA-H-HP10105172*	3/8" NPT(F)	-		59		
-	-	-	-	59				
	CJ-HP-101151252	-	1/4" BSP	2)	24	61	28	
	CJ-HP-101151254	-	3/8" BSP	3)		62		
	CJ-HP-101151452	-	1/4" NPT	-		62		
	CJ-HP-101151454	-	3/8" NPT	-		62		
	CJ-HP-101156102	-	1/4" BSPT	-	22	37	25	
	CJ-HP-101156104	-	3/8" BSPT	-	24	38	28	
	CJ-HP-101156201	-	1/8" BSP	1)	17	33	20	
	CJ-HP-101156202	TA-H-HP1020413	1/4" BSP	4)	22	38	26	
	CJ-HP-101156204	TA-H-HP1020417	3/8" BSP	3)	24			
	CJ-HP-101156401	-	1/8" NPT	-	17	33	20	
	CJ-HP-101156402	TA-H-HP1020513	1/4" NPT(F)	-	22	36	26	
	CJ-HP-101156404	TA-H-HP1020517	3/8" NPT(F)	-	24	37		
	CJ-HP-101156152	-	1/4" BSPT	-	22	63	26	
	CJ-HP-101156154	-	3/8" BSPT	-		50		
	CJ-HP-101156212	-	1/4" BSP	2)		52		
	CJ-HP-101156272**	-	1/4" BSP	2)		52		
	CJ-HP-101156452	-	1/4" NPT	-		62		
	CJ-HP-101156454	-	3/8" NPT	-		62		

*) with safety locking ring

**) with safety valve

1) metal-rubber seal CJ-HP-199500061

2) metal-rubber seal CJ-HP-199500062

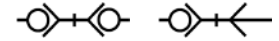
3) metal-rubber seal CJ-HP-199500064

4) cone 120°

CEJN code	TEMA code	description	colour
CJ-HP-091151005	TA-H-HP16	socket blank plug PVC	blue
CJ-HP-091151057	TA-H-HP26	plug blank cap PVC	
CJ-HP-091151004	-	socket blank plug PVC	black
CJ-HP-091151055	-	plug blank cap PVC	
CJ-HP-091151002	-	socket blank plug PVC	red
CJ-HP-091151053	-	plug blank cap PVC	

HIGH PRESSURE - UHP equipment




Quick release couplings



CEJN 116 series TEMA 1500 series

Material: Hardened, zinc-plated steel
Seal: NBR
Flow rate: 6 l/min. ($\Delta p = 4$ bar)
Nominal diam.: 2.5 mm
Working press.: 1500 bar (connected coupling)
Bursting press.: 3000 bar (CEJN)
 3500 bar (TEMA)
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. Used in crimping machines, rescue equipment, jacks, cutters, etc. The socket is available with a safety locking ring preventing accidental disconnection as an option. Both socket and plugs are supplied with blank plugs and caps as a standard.

picture	CEJN code	TEMA code	thread size	sealing	spanner [mm]	L [mm] (± 2 mm)	D [mm] (± 2 mm)	
	CJ-HP-101161201	-	1/8" BSP	1)	24	54	28	
	CJ-HP-101161202	TA-H-HP15104131	1/4" BSP	5)		60		
	CJ-HP-101161222 a)	TA-H-HP15104132 a)	1/4" BSP	5)		60		
	CJ-HP-101161230 c)	-	1/4" BSP	2)	28	67	35	
	CJ-HP-101161246 a) b)	-	1/4" BSP	2)	24	61	28	
	CJ-HP-101161250 c), f)	-	1/4" BSP	5)	22	66		
	CJ-HP-101161280 b)	-	1/4" BSP	5)	24	61		
	-	TA-H-HP15104171	3/8" BSP	3)		59		28
	-	TA-H-HP15104172 a)	3/8" BSP	3)				
	CJ-HP-101161402	TA-H-HP15105131	1/4" NPT(F)	-	24	59		
	CJ-HP-101161422 a)	TA-H-HP15105132 a)	1/4" NPT(F)	-				
	-	TA-H-HP15105171	3/8" NPT(F)	-				
	-	TA-H-HP15105172 a)	3/8" NPT(F)	-	-	-	-	
	CJ-HP-101166201	-	1/8" BSP	1)	17	33	20	
	CJ-HP-101166202	TA-H-HP1520413	1/4" BSP	5)	22	38	25	
	CJ-HP-101166241 d)	-	1/4" BSP	5)		37		
	CJ-HP-101166402	TA-H-HP1520513	1/4" NPT(F)	-				
	CJ-HP-101165252 e)	-	1/4" BSP	4)	22	41	25	

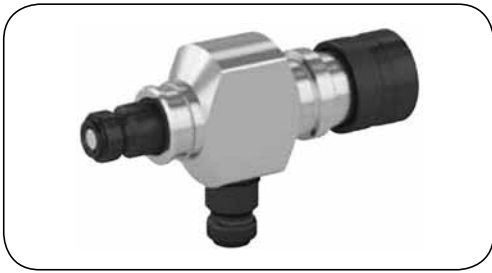
- a) with safety locking ring
- b) made of stainless steel
- c) with angular connection
- d) valve made of stainless steel
- e) plug without valve
- f) 360° rotation

- 1) metal-rubber seal CJ-HP-199500061
- 2) metal-rubber seal CJ-HP-199500083
- 3) metal-rubber seal CJ-HP-199500064
- 4) copper washer CJ-HP-099504600
- 5) 120° cone seal

CEJN code	TEMA code	description	colour
CJ-HP-091151005	TA-H-HP16	socket blank plug PVC	blue
CJ-HP-091151057	TA-H-HP26	plug blank cap PVC	
CJ-HP-091151004	-	socket blank plug PVC	black
CJ-HP-091151055	-	plug blank cap PVC	
CJ-HP-091151002	-	socket blank plug PVC	red
CJ-HP-091151053	-	plug blank cap PVC	

HIGH PRESSURE - UHP equipment

Quick release couplings



CEJN 116 series - adapters

Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 6 l/min. ($\Delta p = 4$ bar)
DN: 2.5 mm
Working press.: 1500 bar
Working temp.: From -30°C up to +100°C

Hydraulic adapters intended for ultra-high pressure installations. 116 series quick release coupling is designed to be the core of the construction. Particularly recommended for bolt tensioners, actuators and other applications that require connection of several hose assemblies simultaneously. The application of adapters reduces the risk of leakage and facilitates installation, compared to standard solutions (a combination of porting blocks, washers, threaded adapters and quick release couplings). Safety factor 2:1.

picture	code	L [mm]	D [mm]	picture	code	L [mm]	D [mm]
	CJ-HP-101163166	103	62		CJ-HP-101163111	149	89
	CJ-HP-101163116	121	89		CJ-HP-101163616	94	89
	CJ-HP-101163161	149	62		CJ-HP-101163666	94	62



CEJN 115 FF series

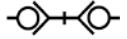
Material: Hardened zinc-plated steel, aluminium
Seal: NBR
Flow rate: 5.3 l/min. ($\Delta p = 4$ bar)
Working press.: 800 bar (connected coupling)
Bursting press.: 2800 bar
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. For one hand operation. The unique flat surface face between socket and plug ensures dry-brake disconnection and prevents air inclusion. Lightweight design makes it a perfect choice for applications where weight is of highest importance. Highly recommended for rescue equipment, hydraulic tools and testing equipment. The 115 FF type socket can be connected to the standard 115 series type plug.

picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
Socket - female thread 	CJ-HP-101151200	2.5	1/4" BSP	rubber-metal seal	24	70.1	30	170

HIGH PRESSURE - UHP equipment




Quick release couplings



CEJN 115 FF series - high flow

Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 11 l/min. ($\Delta p = 4$ bar)
Working press.: 800 bar
Bursting press.: 2400 bar
Working temp.: From -30°C up to +100°C

Double shut-off, hydraulic quick release coupling designed for ultra-high pressure systems. Designed for one hand operation. The unique flat surface of a face between a socket and a plug ensures dry-brake disconnection and prevents air inclusion. Highly recommended for hydraulic tools demanding high flow rates. supplied with dust caps as a standard.



picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]
Socket - female thread 	CJ-HP-101152202	4	BSP 1/4"	120° cone	24	75.8	30
	CJ-HP-101152402		NPT 1/4"	-		72.8	
Socket - male thread 	CJ-HP-101152452		NPT 1/4"	-		74.3	
Plug - female thread 	CJ-HP-101157002		BSP 1/4"	120° cone	22	38	24.7
	CJ-HP-101157402	NPT 1/4"	-	35.7			



CEJN 116 FF series

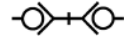
Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 5.3 l/min. ($\Delta p = 4$ bar)
Working press.: 1500 bar - 1/4", 1000 bar - 3/8"
 (connected coupling)
Bursting press.: 3000 bar
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. For one hand operation. The unique flat surface face between socket and plug ensures dry-brake disconnection and prevents air inclusion. Widely used in cylinders, hydraulic tools and testing equipment. The 116 FF type socket can be connected to the standard 116 series type plug.

picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
Socket - female thread 	CJ-HP-101161219	2.5	1/4" BSP	120° cone	24	72.1	30	215
	CJ-HP-101161229		3/8" BSP	rubber metal seal		72.6		225
	CJ-HP-101161419		1/4" NPT	-		69.1		225
	CJ-HP-101161429		3/8" NPT	-		70.6		220
Socket - male thread 	CJ-HP-101161269		1/4" BSP	rubber metal seal	24	70.6	30	205
	CJ-HP-101161279		3/8" BSP	rubber metal seal				210
	CJ-HP-101161469		1/4" NPT	-				200
	CJ-HP-101161479		3/8" NPT	-				210

HIGH PRESSURE - UHP equipment




Quick release couplings



CEJN 117 series

Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 6 l/min. ($\Delta p = 4$ bar)
Working press.: 1000 bar (connected coupling)
Bursting press.: 2600 bar
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. Although the 117 series is a sister coupling to 115 series and has the same working parameters, they are not compatible. The two series are widely used in rescue tools. CEJN 117 couplings are supplied with plastic blank plugs and caps as a standard.



picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
Coupling - female thread 	CJ-HP-101171202	2.5	1/4" BSP	120° cone	24	61.3	28	165
	CJ-HP-101171232*		1/4" BSP	120° cone		170		
	CJ-HP-101171404		3/8" NPT	-		60.3		165
	CJ-HP-101171434*		3/8" NPT	-		170		
Coupling - male thread 	CJ-HP-101171254		3/8" BSP	rubber metal seal	24	60.8	28	155
	CJ-HP-101171454		3/8" NPT	-		62.3		
Plug - female thread 	CJ-HP-101176202		1/4" BSP	120° cone	22	38	25.4	60
	CJ-HP-101176404		3/8" NPT	-	24	37	27.7	65



CEJN 218 series

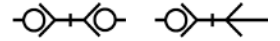
Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 15 l/min. ($\Delta p = 4$ bar)
Working press.: 1000 bar (connected coupling)
Bursting press.: 2800 bar
Working temp.: From -30°C up to +100°C

Double shut-off hydraulic quick release coupling designed for ultra-high pressure systems. The socket equipped with a safety locking ring preventing accidental disconnection. Developed for application where high flow rates are required. CEJN 218 couplings are supplied with plastic plugs and caps as a standard.

picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
Coupling - female thread 	CJ-HP-102181234	4.5	3/8" BSP	rubber metal seal	30	73.4	34.6	340
	CJ-HP-102181434		3/8" NPT	-				330
Plug - female thread 	CJ-HP-102186204		3/8" BSP	rubber metal seal	24	50.5	27.7	115
	CJ-HP-102186404		3/8" NPT	-		49		110

HIGH PRESSURE - UHP equipment




Quick release couplings



CEJN 125 series

Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 5.8 l/min. ($\Delta p = 4$ bar)
Working press.: 2500 bar (connected coupling)
Bursting press.: 5000 bar
Working temp.: From -30°C up to +100°C

Hydraulic quick release coupling designed for ultra-high pressure systems. Available as a double or single shut-off version (there is no valve in the plug with male thread). Widely used for bolt tensioners, bearing pullers, etc. Supplied with plastic blank plugs and caps as a standard.



picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
 Socket - female thread	CJ-HP-101251203	2.5	1/4" BSP	120° cone	24	64.3	30	210
 Plug - female thread	CJ-HP-101256203		1/4" BSP	120° cone	22	38	25.4	60
 Plug - female (without valve)	CJ-HP-101255252		1/4" BSP	cooper washer	22	42.5	25.4	65



CEJN 135 series

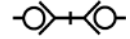
Material: Hardened zinc-plated steel
Seal: NBR
Flow rate: 4.6 l/min. ($\Delta p = 4$ bar)
Working press.: 3000 bar (disconnected or connected)
Bursting press.: 6000 bar
Working temp.: From -20°C up to +80°C

Double shut-off hydraulic quick release coupling for ultra-high pressure systems. The socket equipped with a safety locking ring preventing accidental disconnection. Widely used in hydraulic tools and testing equipment. The series enables connection even under high pressure. CEJN 135 couplings are supplied with blank plugs and caps as a standard. Swiveling of the plug in the socket can cause its wear and damage that is why quick release couplings with standard (swiveling) plugs (CJ-101351505) can only be exposed to 1000 cycles up to the maximum working pressure, whereas the couplings with non-swivel plugs (CJ-101356506) - 5000 cycles.

picture	code	DN [mm]	thread size	thread seal	spanner [mm]	L [mm]	D [mm]	weight [g]
 Socket - female thread	CJ-HP-101351505	2.5	M16x1.5	60° cone	22	64	30	210
 Plug - female thread	CJ-HP-101356505		M16x1.5	60° cone	22	55.3	25	125
	CJ-HP-101356506		M16x1.5	60° cone	22	55.3	25	125

HIGH PRESSURE - UHP equipment

Quick release couplings



CEJN 230 series DNP PVS series HQ HPA series

Material: Galvanized steel
Seal: NBR
Flow rate: 1/4" - 16.4 l/min; ($\Delta p = 4$ bar)
 3/8" - 21.3 l/min; ($\Delta p = 4$ bar)
Working press.: 700 bar
Bursting press.: 1/4" - 2100 bar (connected coupling)
 3/8" - 1850 bar (connected coupling)
 1/4" - 1800 bar (disconnected socket)
 3/8" - 1850 bar (disconnected socket)
 1/4" - 1490 bar (disconnected plug)
 3/8" - 1500 bar (disconnected plug)
Working temp.: From -25°C up to +100°C

Double shut-off, screw-to-connect, hydraulic quick release couplings designed for ultra-high pressure installations exposed to high mechanical loads. Widely used in hydraulic presses, rescue equipment, jacks, cutters, etc. Couplings can be connected/disconnected with residual pressure in the system. Steel or aluminium dust caps must be ordered separately.

picture	CEJN	DNP	HQ	size [inch]	thread size
	CJ-HP-102301452	DP-PVS3-0606022	HQ-HPA06-F-04NM	1/4	1/4" NPT male
	CJ-HP-102301484	DP-PVS3-1010022	HQ-HPA10-F-06NM	3/8	3/8" NPT male
	CJ-HP-102306402	DP-PVS1-0606013	HQ-HPA06-M-04N	1/4	1/4" NPT female
	CJ-HP-102306434	DP-PVS1-1010013	HQ-HPA10-M-06N	3/8	3/8" NPT female

CEJN	DNP	HQ	description	material	
				CEJN, HQ	DNP
CJ-HP-102304101	DP-SPVS-06102	HQ-HPA06-F-PLUG	1/4" socket cap	galvanized steel	aluminium
CJ-HP-102304103	DP-SPVS-10102C	HQ-HPA10-F-PLUG	3/8" socket cap		
CJ-HP-102304100	DP-SPVS-06103	HQ-HPA06-M-CAP	1/4" plug cap		
CJ-HP-102304102	DP-SPVS-10103C	HQ-HPA10-M-CAP	3/8" plug cap		

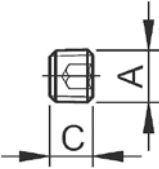
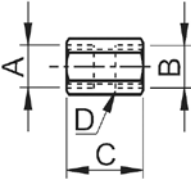
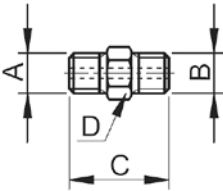
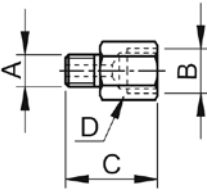
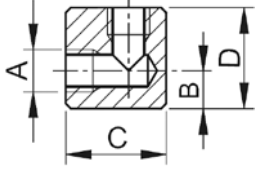
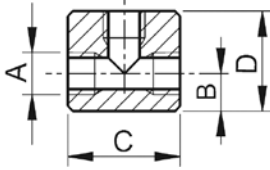
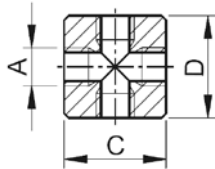
picture	code	size [inch]	working pressure [bar]	description
	CJ-HP-199500061	1/8	1000	1) rubber-metal seal
	CJ-HP-199500062	1/4		
	CJ-HP-199500064	3/8		
	CJ-HP-199500083	1/4	1500	2) rubber-metal seal
	CJ-HP-099504600	1/4	2000	3) copper washer

HIGH PRESSURE - UHP equipment

Connectors

Adapters intended to connect quick release couplings with UHP hoses and to connect to UHP porting blocks. Made of black zinc-plated steel.

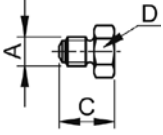
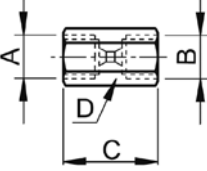
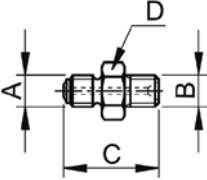
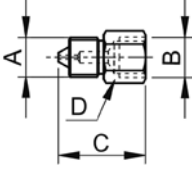
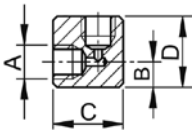
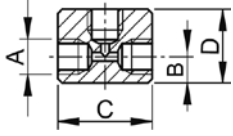
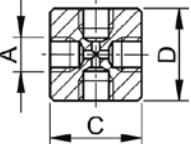
Working pressure: 700 bar at safety factor 4:1, 1000 bar at safety factor 2.8:1.

picture	code	description	dimensions			
			A	B	C	D
	EU-RC14	dust plug	1/4" NPT	-	10.5	-
	EU-RC38		3/8" NPT	-		-
	EU-RS14	straight connector with female thread	1/4" NPT	1/4" NPT	32	19
	EU-RS38		3/8" NPT	3/8" NPT	34	24
	EU-RS52		1/4" NPT			
	EU-RN14	straight connector with male thread	1/4" NPT	1/4" NPT	39	17
	EU-RN38		3/8" NPT	3/8" NPT	41	
	EU-RN381				70	
	EU-RN382				120	
	EU-RN52				1/4" NPT	
	EU-RR23	straight connector with male/female thread	1/4" BSP 120°	3/8" NPT	41	24
	EU-RR24		1/4" NPT		40	
	EU-RR52		3/8" NPT	1/4" NPT	19	
	EU-RR02		1/2" BSP		22	
	EU-RR26		1/4" NPT		40	30
	EU-RR501		3/8" NPT	1/2" BSP		
			EU-RE14	elbow connector	1/4" NPT	15
EU-RE38		3/8" NPT	15		40	40
	EU-RT14	tee connector	1/4" NPT	12.5	40	35
	EU-RT38		3/8" NPT	15	45	40
	EU-RX14	cross connector	1/4" NPT	-	45	45
	EU-RX38		3/8" NPT	-		

HIGH PRESSURE - UHP equipment

Connectors

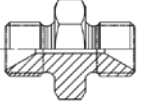
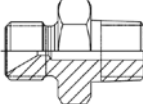
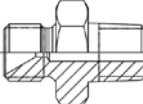
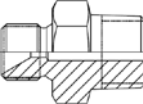
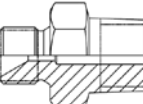
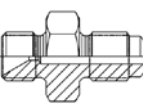
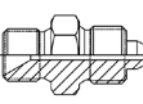
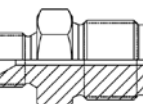
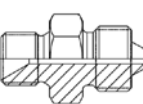
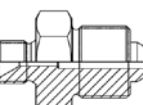
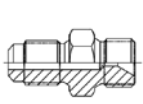
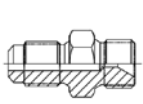
Adapters intended to connect quick release couplings with UHP hoses and to connect to UHP porting blocks. Made of black zinc-plated steel.

picture	code	description	dimensions				press. [bar]
			A	B	C	D	
	EU-RC15	dust plug	1/4" BSP 120°	-	28	22	2000
	EU-RC34		3/4"-16 UNF 60°	-	32	22	3000
	EU-RS15	straight connector with female thread	1/4" BSP 120°	1/4" BSP 120°	40	19	2000
	EU-RS34		3/4"-16 UNF 60°	3/4"-16 UNF 60°	42	27	3000
	EU-RN15	straight connector with male thread	1/4" BSP 120°	1/4" BSP 120°	46	22	2000
	EU-RN29			1/4" NPT	43		
	EU-RN53			3/8" NPT	45		
	EU-RN17		1/4" BSP 60°	1/4" BSP 60°	34		
	EU-RN31			1/4" NPT	37		
	EU-RN55			3/8" NPT	39		
	EU-RN32		1/4" BSP 120°	1/4" BSP 60°	40	22	3000
	EU-RN33		M16X1.5 60°		39		
	EU-RN28		1/2" BSP	44			
	EU-RN34		3/4"-16 UNF 60°	3/4"-16 UNF 60°	54		
	EU-RN34O			3/4"-16 UNF 60°	63		
	EU-RN49			1/4" BSP 120°	50		
	EU-RN51			1/4" BSP 60°	44		
	EU-RN50		M16X1.5 60°	50			
	EU-RR49	straight connector with male/female thread	3/4"-16 UNF 60°	1/4" BSP 120°	42	22	2000
	EU-RR51O		3/8" BSP 60°	1/2" BSP	53	27	3000
	EU-RE15	elbow connector	1/4" BSP 120°	12.5	35	35	2000
	EU-RE34		3/4"-16 UNF 60°	12.5	40	40	3000
	EU-RT15	tee connector	1/4" BSP 120°	12.5	40	40	2000
	EU-RT34		3/4"-16 UNF 60°	12.5	45	35	3000
	EU-RX15	cross connector	1/4" BSP 120°	-	45	45	2000
	EU-RX34		3/4"-16 UNF 60°	-	55	55	3000

HIGH PRESSURE - UHP equipment

Connectors

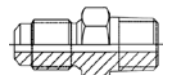
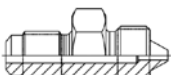
Adapters enable connection of quick release couplings with Ultra High Pressure (UHP) hoses as well as connection of the assemblies with UHP porting blocks. Made of black zinc-plated steel.

picture	code	A1 thread	seal	A2 thread	seal	L [mm]	span. [mm]	press. [bar]
	CJ-HP-199501622	BSP 1/4"	60° inner cone	BSP 1/4"	60° inner cone	31.5	21	2500
	CJ-HP-199501623	BSP 1/4"	60° inner cone	NPT 1/4"	on thread	32	21	1500
	CJ-HP-199501621	BSP 1/4"	60° inner cone	BSPT 1/4"	on thread	33	21	
	CJ-HP-199501603	BSP 1/4"	60° inner cone	NPT 3/8"	on thread	34	21	
	CJ-HP-199501604	BSP 1/4"	60° inner cone	BSPT 3/8"	on thread	35	21	
	CJ-HP-199501602	BSP 1/4"	60° inner cone	BSP 1/4"	120° outer cone	39	21	
	CJ-HP-199501605	BSP 1/4"	60° inner cone	UNF 9/16"-18	60° outer cone	37	17	2500
	CJ-HP-199501606	BSP 1/4"	60° inner cone	UNF 3/4"-16	60° outer cone	42	21	
	CJ-HP-199501607	BSP 1/4"	60° inner cone	M16x1.5	60° outer cone	37	19	
	CJ-HP-199501608	BSP 1/4"	60° inner cone	M22x1.5	60° outer cone	48	27	
	CJ-HP-199500028	BSP 1/4"	120° outer cone	M14x1.5	60° inner cone	37.5	17	
	CJ-HP-199500029	BSP 1/4"	120° outer cone	UNF 9/16"-18	60° inner cone	37.5	17	

HIGH PRESSURE - UHP equipment

Connectors

UHP adapters - continued:

picture	code	A1 thread	seal	A2 thread	seal	L [mm]	span. [mm]	press. [bar]
	CJ-HP-199501601	BSP 1/4"	120° outer cone	BSP 1/4"	120° outer cone	45	17	3000
	CJ-HP-199501404	BSP 1/4"	120° outer cone	NPT 3/8"	on thread	40	19	1500
	CJ-HP-199501611	BSP 1/4"	120° outer cone	UNF 3/4"-16	60° outer cone	48.5	21	3000
	CJ-HP-199501610	BSP 1/4"	120° outer cone	M16x1.5	60° outer cone	44	22	
	CJ-HP-199501609	BSP 1/4"	120° outer cone	M22x1.5	60° outer cone	54.5	27	
	CJ-HP-199500022	BSP 1/4"	120° outer cone	UNF 9/16"-18	60° outer cone	43.5	17	
	CJ-HP-199501613	UNF 9/16"-18	60° outer cone	M16x1.5	60° outer cone	44.2	19	
	CJ-HP-199501612	M16x1.5	60° outer cone	M16x1.5	60° outer cone	43	19	
	CJ-HP-199501614	UNF 9/16"-18	60° inner cone	M16x1.5	60° outer cone	38.2	19	
	CJ-HP-199500016	BSP 1/8"	rubber-metal seal	-	-	22	4	1500
	CJ-HP-199500015	BSP 1/4"	rubber-metal seal	-	-	26±0.1	5	
	CJ-HP-199501600	BSP 1/4"	120° outer cone	-	-	27	17	3000

HIGH PRESSURE - UHP equipment

Connectors

Porting blocks enable to connect several pressure hoses to one pump as well as to connect a pressure gauge. Made of black zinc-plated steel. Flow diameter 5 mm (3/16").

picture	code	description	thread	seal	press. [bar]
	CJ-HP-199501680	4-way porting block (supplied with one blank plug CJ-HP-199501600)	4 x 1/4" BSP	120° inner cone	3000
				rubber-metal seal	1000
	CJ-HP-199501681	3-way pressure gauge block	2 x 1/4" BSP 1 x 1/2" BSP	120° inner cone	2000
				rubber-metal seal	1000
	CJ-HP-199501682	3-way porting block	3 x 1/4" BSP	120° inner cone	3000
				rubber-metal seal	1000
	CJ-HP-199501683	5-way porting block	5 x 1/4" BSP	120° inner cone	3000
				rubber-metal seal	1000
	CJ-HP-199501684	2-way angular block	2 x 1/4" BSP	120° inner cone	3000
				rubber-metal seal	1000
	CJ-HP-199501600	blank plug	1/4" BSP	120° outer cone	3000

HIGH PRESSURE - UHP equipment

Connectors - porting blocks

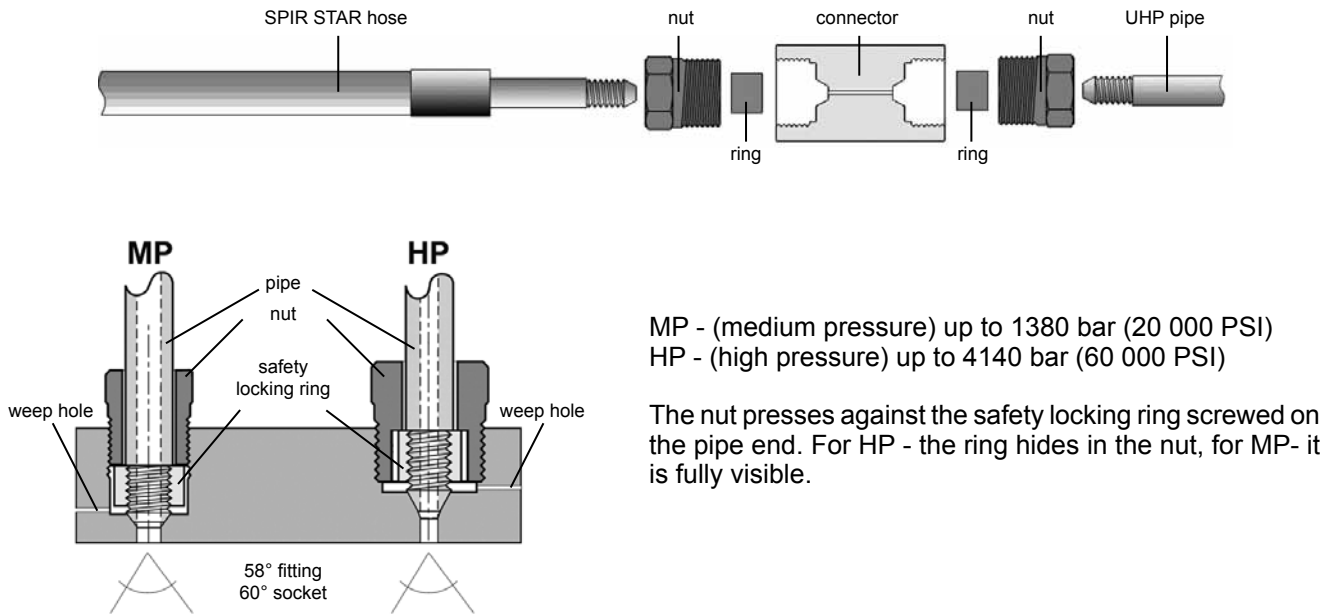
Made of black zinc-plated steel.

Working pressure: 700 bar at safety factor 4:1, 1000 bar at safety factor 2.8:1.

picture	code	description	thread	dimensions	
				A	B
	EU-RB386	multi-level porting block	6 x 3/8" NPT 1 x 1/4" NPT	-	-
	EU-RM387	one level porting block	7 x 3/8" NPT 1 x 1/4" NPT	260	110
	EU-RM389		9 x 3/8" NPT 1 x 1/4" NPT	400	180
	EU-RK383	radial porting block	3 x 3/8" NPT 1 x 1/4" NPT	45	-
	EU-RK385		5 x 3/8" NPT 1 x 1/4" NPT	55	-
	EU-RK387		7 x 3/8" NPT 1 x 1/4" NPT	65	-

HIGH PRESSURE - UHP equipment

Information on high pressure connections



MP - (medium pressure) up to 1380 bar (20 000 PSI)
 HP - (high pressure) up to 4140 bar (60 000 PSI)

The nut presses against the safety locking ring screwed on the pipe end. For HP - the ring hides in the nut, for MP- it is fully visible.

High pressure connections are available in several types, but most of them derive from the Autoclave standard. For MP, HP and HP Waterblast, there is 58° cone at the end of a pipe, and 60° cone in the body of a socket. Metal-to-metal sealing is obtained by interfaces of the cones. HP Waterblast is a derivative of the HP system.

Procedure for the connection described above:

On properly prepared pipe (58° cone + left-hand thread of appropriate length) a nut must be inserted and a safety locking ring screwed. The correct position of the locking ring is reached when one or two threads are visible from the cone side. Once the pipe is ready, it should be placed in the socket, tightened by hand and then with a torque spanner according to working pressure and pipe size requirements.

Table of safety locking ring thread sizes, nuts and recommended tightening torques.

characteristic	MP					HP			HP WATERBLAST		
	1/4"	3/8"	9/16"	3/4"	1"	1/4"	3/8"	9/16"	1/4"	3/8"	9/16"
thread on the pipe	1/4"-28 UNF LH	3/8"-24 UNF LH	9/16"-18 UNF LH	3/4"x16 UNF LH	1"x14 UNF LH	1/4"-28 UNF LH	3/8"-24 UNF LH	9/16"-18 UNF LH	1/4"-28 UNF LH	3/8"-24 UNF LH	9/16"-18 UNF LH or M14x1.5 LH
nut thread	7/16"-20 UNF	9/16"-18 UNF	13/16"-16 UNF	3/4"-14 NPSM	1.3/8"-14 NPSM	9/16"-18 UNF	3/4"-16 UNF	1.1/8"-12 UNF	M16x1.5	M20x1.5	M30x2 or M26x1.5
max. work. pressure [bar]	1380	1380	1380	1380	1380	4140	4140	4140	3200	3200	3200
tightening torque [Nm]	30	40	75	145	310	34	68	102	34	68	102

Always wear protective clothing while working close to high pressure devices without housing. Always check the connection. If possible, the start-up of installation should be done at relatively low pressure. Do it for your own safety. In case of faulty connection, leakage of medium through weep hole takes place - see picture above.

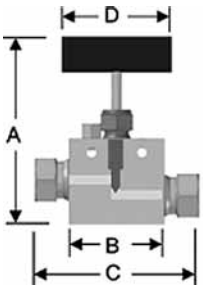
HIGH PRESSURE - UHP equipment

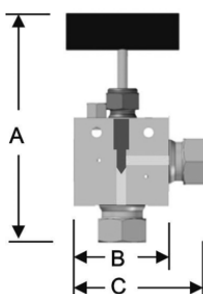
Connectors

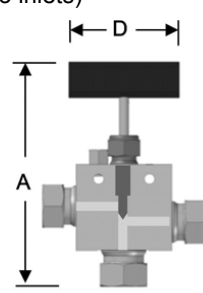
High-pressure (HP) connectors allow to build rigid pipe installations and to attach high pressure hose assemblies. All elements are designed to work under pressure in three ranges: 1380 bar, 2070 bar and 4140 bar. Made of AISI 316L steel, designed to work with liquid and gaseous media.

Working temperature from -73°C up to +315°C.

HP pipe connection with 58° cone and left-hand imperial thread.

picture	code	pipe [inch]	A [mm]	B [mm]	C [mm]	D [mm]	thickn. [mm]	DN [mm]	working pressure	
 <p>Two way straight needle valve</p>	SM-S20V01T01	1/4	123	38.1	70	80	15.88	3.2	20000 PSI 1380 bar	
	SM-S20V01T02	3/8	123	50.8	76	80	19.05	5.5		
	SM-S20V01T03	9/16	160	63.5	96	100	25.4	8		
	SM-S30V01T01	1/4	124	34.93	80	80	25.4	2.4	30000 PSI 2070 bar	
		SM-S30V01T02	3/8	128	44.45	88	80	25.4		3.2
		SM-S30V01T03	9/16	135	66.68	121	80	38.1		3.2
	SM-S60V01T01	1/4	124	34.93	80	80	25.4	1.6	60000 PSI 4140 bar	
		SM-S60V01T02	3/8	128	44.45	88	80	25.4		1.6
		SM-S60V01T03	9/16	135	66.68	121	80	38.1		2

picture	code	pipe [inch]	A [mm]	B [mm]	C [mm]	D [mm]	thickn. [mm]	DN [mm]	working pressure	
 <p>Two way 90° needle valve</p>	SM-S20V02T01	1/4	123	38.1	60	80	15.88	3.2	20000 PSI 1380 bar	
	SM-S20V02T02	3/8	123	50.8	63	80	19.05	5.5		
	SM-S20V02T03	9/16	160	63.5	80	100	25.4	8		
	SM-S30V02T01	1/4	124	34.93	65	80	25.4	2.4	30000 PSI 2070 bar	
		SM-S30V02T02	3/8	128	44.45	69	80	25.4		3.2
		SM-S30V02T03	9/16	135	66.68	94	80	38.1		3.2
	SM-S60V02T01	1/4	124	34.93	65	80	25.4	1.6	60000 PSI 4140 bar	
		SM-S60V02T02	3/8	128	44.45	69	80	25.4		1.6
		SM-S60V02T03	9/16	135	66.68	94	80	38.1		2

picture	code	pipe [inch]	A [mm]	B [mm]	C [mm]	D [mm]	thickn. [mm]	DN [mm]	working pressure	
 <p>Three way needle valve (two inlets)</p>	SM-S20V03T01	1/4	132	38.1	70	80	15.88	3.2	20000 PSI 1380 bar	
	SM-S20V03T02	3/8	136	50.8	76	80	19.05	5.5		
	SM-S20V03T03	9/16	177	63.5	98	100	25.4	8		
	SM-S30V03T01	1/4	138	34.93	80	80	25.4	2.4	30000 PSI 2070 bar	
		SM-S30V03T02	3/8	147	44.45	88	80	25.4		3.2
		SM-S30V03T03	9/16	162	66.68	121	80	38.1		3.2
	SM-S60V03T01	1/4	138	34.93	80	80	25.4	1.6	60000 PSI 4140 bar	
		SM-S60V03T02	3/8	147	44.45	88	80	25.4		1.6
		SM-S60V03T03	9/16	162	66.68	121	80	38.1		2

HIGH PRESSURE - UHP equipment

Connectors

picture	code	pipe [inch]	A [mm]	B [mm]	C [mm]	D [mm]	thickn. [mm]	DN [mm]	working pressure
<p>Three way needle valves (one inlet)</p>	SM-S20V04T01	1/4	132	38.1	70	80	15.88	3.2	20000 PSI 1380 bar
	SM-S20V04T02	3/8	136	50.8	76	80	19.05	5.5	
	SM-S20V04T03	9/16	177	63.5	98	100	25.4	8	
	SM-S30V04T01	1/4	138	34.93	80	80	25.4	2.4	30000 PSI 2070 bar
	SM-S30V04T02	3/8	147	44.45	88	80	25.4	3.2	
	SM-S30V04T03	9/16	162	66.68	121	80	38.1	3.2	
	SM-S60V04T01	1/4	138	34.93	80	80	25.4	1.6	60000 PSI 4140 bar
	SM-S60V04T02	3/8	147	44.45	88	80	25.4	1.6	
	SM-S60V04T03	9/16	162	66.68	121	80	38.1	2	

picture	code	pipe [inch]	A [mm]	B [mm]	working pressure
<p>Ring</p>	SM-S20F12T01	1/4	9.5	5.6	20000 PSI 1380 bar
	SM-S20F12T02	3/8	12.4	6.3	
	SM-S20F12T03	9/16	18.4	8	
	SM-S60F12T01	1/4	9.5	9.5	60000 PSI 4140 bar
	SM-S60F12T02	3/8	12.7	13.5	
	SM-S60F12T03	9/16	20.64	20.64	

picture	code	pipe [inch]	A [mm]	span. B [mm]	working pressure
<p>Nut</p>	SM-S20F13T01	1/4	14.5	12.7	20000 PSI 1380 bar
	SM-S20F13T02	3/8	19	15.87	
	SM-S20F13T03	9/16	25.5	22.2	
	SM-S60F13T01	1/4	22	15.88	60000 PSI 4140 bar
	SM-S60F13T02	3/8	30	20.64	
	SM-S60F13T03	9/16	40	30.16	

HIGH PRESSURE - UHP equipment

Connectors

picture	code	pipe [inch]	A [mm]	B [mm]	working pressure
<p>Blank plug</p>	SM-S20F11T01	1/4	23.5	9.5	20000 PSI 1380 bar
	SM-S20F11T02	3/8	30.5	12.4	
	SM-S20F11T03	9/16	40	18.3	
	SM-S60F11T01	1/4	28	9.5	60000 PSI 4140 bar
	SM-S60F11T02	3/8	37	12.7	
	SM-S60F11T03	9/16	50	20.64	

picture	code	pipe [inch]	A [mm]	span. B [mm]	working pressure
<p>Cap</p>	SM-S20F10T01	1/4	21	20	20000 PSI 1380 bar
	SM-S20F10T02	3/8	29	26	
	SM-S20F10T03	9/16	35	35	
	SM-S60F10T01	1/4	22.23	16	60000 PSI 4140 bar
	SM-S60F10T02	3/8	31.75	20	
	SM-S60F10T03	9/16	38.1	26	

picture	code	pipe [inch]	A [mm]	B [mm]	span. C [mm]	span. D [mm]	working pressure
<p>Straight connector</p>	SM-S20F08T01	1/4	9.22	44.5	13	26	20000 PSI 1380 bar
	SM-S20F08T02	3/8	12.78	50.8	16	26	
	SM-S20F08T03	9/16	17.12	60.33	23	35	
	SM-S60F08T01	1/4	14.63	41	16	16	60000 PSI 4140 bar
	SM-S60F08T02	3/8	18.68	45	21	20	
	SM-S60F08T03	9/16	26.93	54	31	16	

HIGH PRESSURE - UHP equipment

Connectors

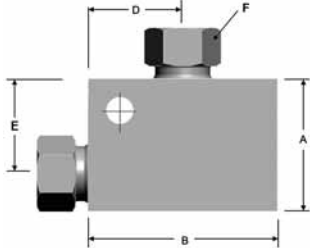
picture	code	pipe [inch]	A [mm]	B [mm]	C [mm]	D [mm]	E [mm]	J [mm]	span. F [mm]	working pressure
	SM-S20F09T01	1/4	20	48	13.5	25.4	9.22	10	13	20000 PSI 1380 bar
	SM-S20F09T02	3/8	23	55	16	34.9	12.78	10	16	
	SM-S20F09T03	9/16	30	64	19	34.9	17.12	10	23	
	SM-S30F09T01	1/4	23	50	12.7	25.4	14.63	10	16	30000 PSI 2070 bar
	SM-S30F09T02	3/8	30	60.33	19	34.9	18.68	10	21	
	SM-S30F09T03	9/16	43	69.85	25.4	47.63	26.93	10	31	
	SM-S60F09T01	1/4	23	50.8	12.7	25.4	14.63	10	16	60000 PSI 4140 bar
	SM-S60F09T02	3/8	30	60.33	19	34.9	18.68	10	21	
	SM-S60F09T03	9/16	43	69.85	25.4	47.63	26.93	10	31	

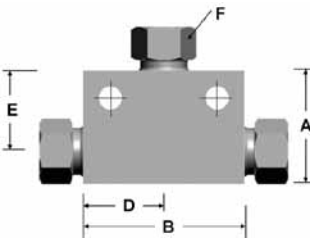
picture	code	pipe [inch]	A [mm]	span. B [mm]	span. C [mm]	working pressure
	SM-S20F14T01	1/4	32.01	16	13	20000 PSI 1380 bar
	SM-S20F14T02	3/8	37.21	20	16	
	SM-S20F14T03	9/16	47.19	26	23	
	SM-S60F14T01	1/4	22	16	-	60000 PSI 4140 bar
	SM-S60F14T02	3/8	30	21	-	
	SM-S60F14T03	9/16	40	31	-	

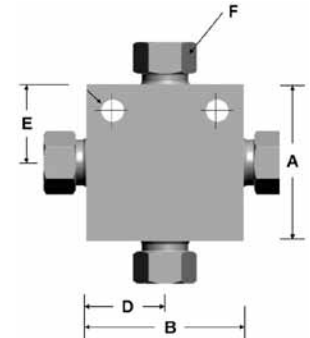
picture	code	pipe [inch]	length [mm/inch]							working pressure
			69.85 2.3/4	76.2 3	101.6 4	152.4 6	203.2 8	254 10	305 12	
	SM-S20F16T01-...	1/4	A	B	C	D	E	F	G	20000 PSI 1380 bar
	SM-S20F16T02-...	3/8	-	-	C	D	E	F	G	
	SM-S20F16T03-...	9/16	-	-	-	D	E	F	G	
	SM-S60F16T01-...	1/4	A	B	C	D	E	F	G	60000 PSI 4140 bar
	SM-S60F16T02-...	3/8	-	-	C	D	E	F	G	
	SM-S60F16T03-...	9/16	-	-	-	D	E	F	G	

HIGH PRESSURE - UHP equipment

Connectors

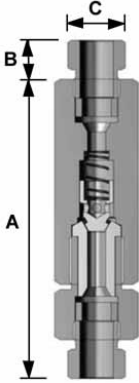
picture	code	pipe [inch]	A [mm]	B [mm]	D [mm]	E [mm]	thickn. [mm]	span. F [mm]	working pressure
	SM-S20F04T01	1/4	28.45	38.1	19.05	19.05	15.88	13	20000 PSI 1380 bar
	SM-S20F04T02	3/8	35.05	50.8	25.4	25.4	19.05	16	
	SM-S20F04T03	9/16	44.45	63.5	31.75	31.75	25.4	23	
	SM-S60F04T01	1/4	38.1	34.93	22.23	25.4	25.4	16	60000 PSI 4140 bar
	SM-S60F04T02	3/8	38.1	44.45	31.75	25.4	25.4	21	
	SM-S60F04T03	9/16	47.63	66.68	47.63	28.58	38.1	31	

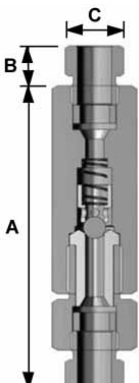
picture	code	pipe [inch]	A [mm]	B [mm]	D [mm]	E [mm]	thickn. [mm]	span. F [mm]	working pressure
	SM-S20F05T01	1/4	28.45	38.1	19.05	19.05	15.88	13	20000 PSI 1380 bar
	SM-S20F05T02	3/8	35.05	50.8	25.4	25.4	19.05	16	
	SM-S20F05T03	9/16	44.45	63.5	31.75	31.75	25.4	23	
	SM-S60F05T01	1/4	34.93	50.8	22.23	22.23	25.4	16	60000 PSI 4140 bar
	SM-S60F05T02	3/8	39.69	50.8	26.99	26.99	25.4	21	
	SM-S60F05T03	9/16	53.98	66.68	34.93	34.93	38.1	31	

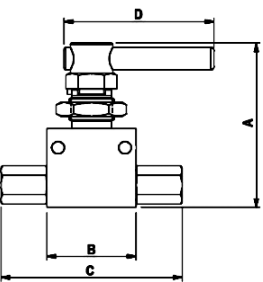
picture	code	pipe [inch]	A [mm]	B [mm]	D [mm]	E [mm]	thickn. [mm]	span. F [mm]	working pressure
	SM-S20F06T01	1/4	38.1	38.1	19.05	19.05	15.88	13	20000 PSI 1380 bar
	SM-S20F06T02	3/8	50.8	50.8	25.4	25.4	19.05	16	
	SM-S20F06T03	9/16	63.5	63.5	31.75	31.75	25.4	23	
	SM-S60F06T01	1/4	38.1	50.8	25.4	19.05	25.4	16	60000 PSI 4140 bar
	SM-S60F06T02	3/8	50.8	53.98	26.99	25.4	25.4	21	
	SM-S60F06T03	9/16	66.68	69.85	34.93	33.34	38.1	31	

HIGH PRESSURE - UHP equipment

Connectors

picture	code	pipe [inch]	A [mm]	B [mm]	span. C [mm]	working pressure
	SM-S20F01T01	1/4	75	9.22	13	20000 PSI 1380 bar
	SM-S20F01T02	3/8	80	12.78	16	
	SM-S20F01T03	9/16	114	17.12	23	
	SM-S30F01T01	1/4	86	14.63	16	30000 PSI 2070 bar
	SM-S30F01T02	3/8	97	18.68	21	
	SM-S30F01T03	9/16	117	26.93	31	
	SM-S60F01T01	1/4	86	14.63	16	60000 PSI 4140 bar
	SM-S60F01T02	3/8	97	18.68	21	
	SM-S60F01T03	9/16	117	26.93	31	

picture	code	pipe [inch]	A [mm]	B [mm]	span. C [mm]	working pressure
	SM-S20F02T01	1/4	75	10	13	20000 PSI 1380 bar
	SM-S20F02T02	3/8	80	12	16	
	SM-S20F02T03	9/16	114	13.5	23	
	SM-S30F02T01	1/4	86	14.63	16	30000 PSI 2070 bar
	SM-S30F02T02	3/8	97	18.68	21	
	SM-S30F02T03	9/16	117	26.93	31	
	SM-S60F02T01	1/4	86	14.63	16	60000 PSI 4140 bar
	SM-S60F02T02	3/8	97	18.68	21	
	SM-S60F02T03	9/16	117	26.93	31	

picture	code	thread / pipe	A [mm]	B [mm]	C [mm]	D [mm]	thickn. [mm]	DN [mm]	working pressure
	SM-B15V01T11	1/4" NPT	96	50.5	103.3	70	25.4	6.4	15000 PSI 1034 bar
	SM-B15V01T12	3/8" NPT	96	50.5	103.3	70	25.4	6.4	
	SM-B15V01T13	1/2" NPT	104	76.2	137.7	115	34.9	9.5	
	SM-B20V01T01	1/4"	96	50.5	103.3	70	25.4	2.8	20000 PSI 1380 bar
	SM-B20V01T02	3/8"	96	50.5	103.3	70	25.4	5.2	
	SM-B20V01T03	9/16"	104	76.2	143.9	115	34.9	9	

- For SM-B15 type, connections with NPT female thread; for SM-B20 type, high pressure connections MP.
- Working temperature from -30° C up to +150° C

HIGH PRESSURE - UHP equipment



CEJN pressure gauges 940 series

Case:	AISI 316 or AISI 304 steel
Dial:	Aluminium
Needle:	Aluminium or stainless steel
Seal:	Polychloroprene
Filling:	98% glycerine
Working temp.:	From -15°C up to +65°C
Internal protection:	IP 65
Accuracy:	Ø 63: ±1.6% of scale Ø 100, Ø 150: ±1% of scale
Versions:	Bottom connection Back connection

CEJN pressure gauges are designed for ultra-high pressure applications. A measuring range should be selected according to working pressure so as not to exceed 75% of the maximum measuring range. A dual measuring scale - in PSI and BAR standard. Available with bottom or back (panel mounting) connection. The pressure gauges can be mounted using CEJN porting blocks.

code	diameter [mm]	thread size [inch]	pressure [bar / PSI]	version
CJ-HP-199402120	63	BSP 1/4"	1000 / 14500	bottom connection
CJ-HP-199402121		NPT 1/4"	1000 / 14500	
CJ-HP-199403120	100	BSP 1/2"	1000 / 14500	
CJ-HP-199403140		NPT 1/2"	1000 / 14500	
CJ-HP-199403121		BSP 1/2"	1600 / 23200	
CJ-HP-199403122		BSP 1/2"	2060 / 20870	
CJ-HP-199404120	150	BSP 1/2"	1000 / 14500	
CJ-HP-199404121		BSP 1/2"	1600 / 23200	
CJ-HP-199404122		BSP 1/2"	2060 / 29870	
CJ-HP-199402320	63	BSP 1/4"	1000 / 14500	
CJ-HP-199402321		NPT 1/4"	1000 / 14500	
CJ-HP-199403320	100	BSP 1/2"	1000 / 14500	
CJ-HP-199403321		BSP 1/2"	1600 / 23200	
CJ-HP-199403322		BSP 1/2"	2060 / 29870	
CJ-HP-199404320	150	BSP 1/2"	1000 / 14500	
CJ-HP-199404321		BSP 1/2"	1600 / 23200	
CJ-HP-199404322		BSP 1/2"	2060 / 29870	