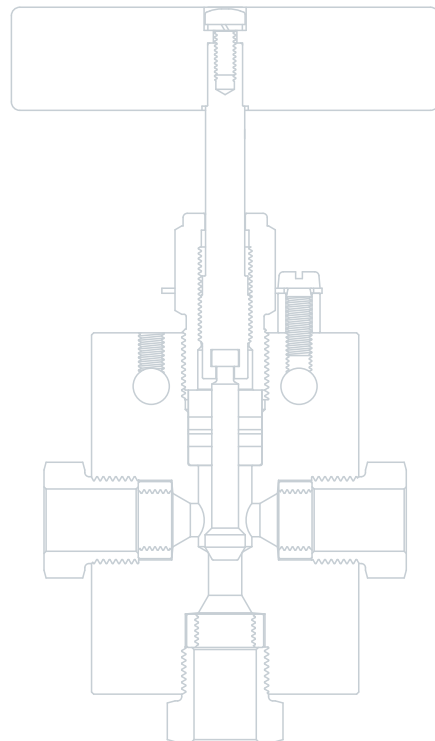
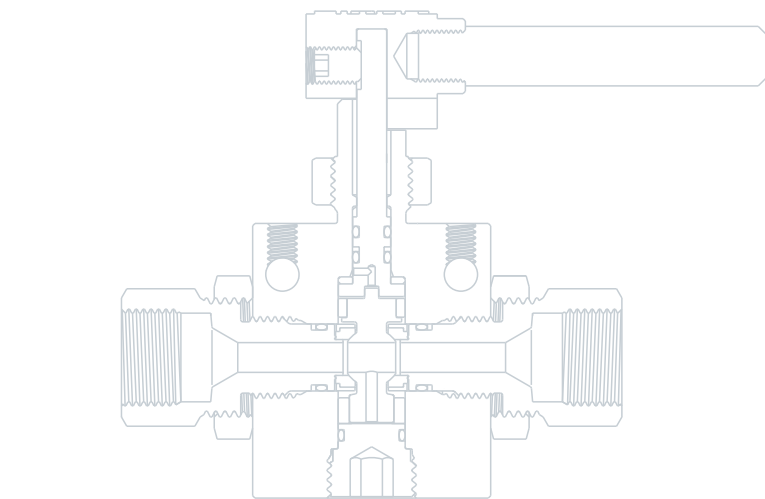
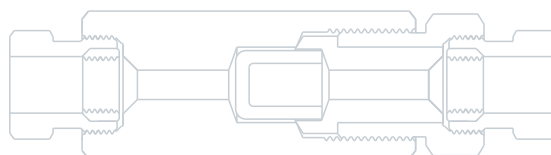
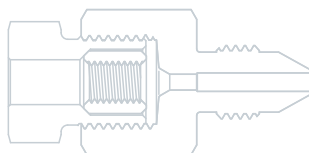
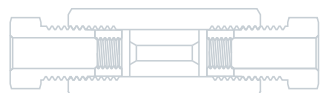
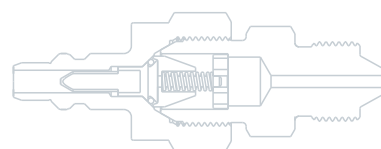
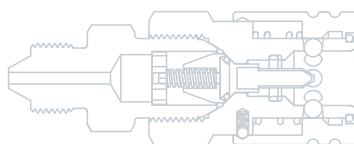
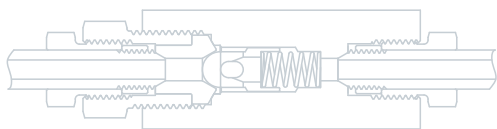


FITOK

**Full Technical Catalog
For Medium & High Pressure**



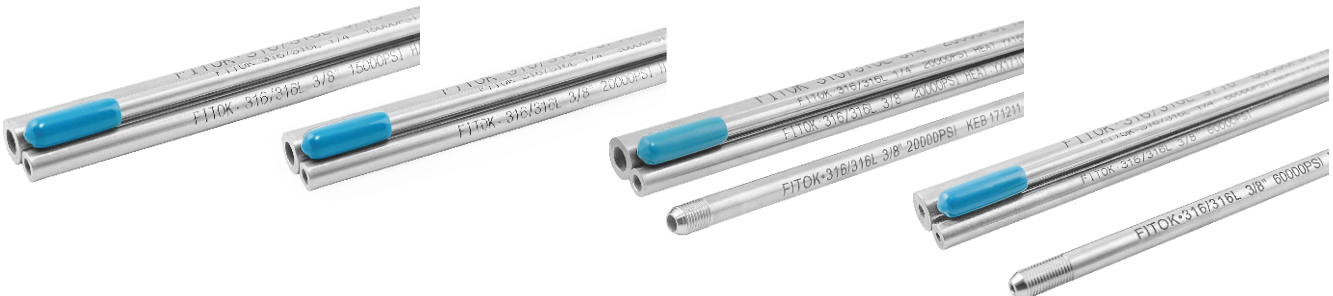
FITOK Full Technical Catalog

For Medium & High Pressure

Fittings



Tubing



Quick Couplings

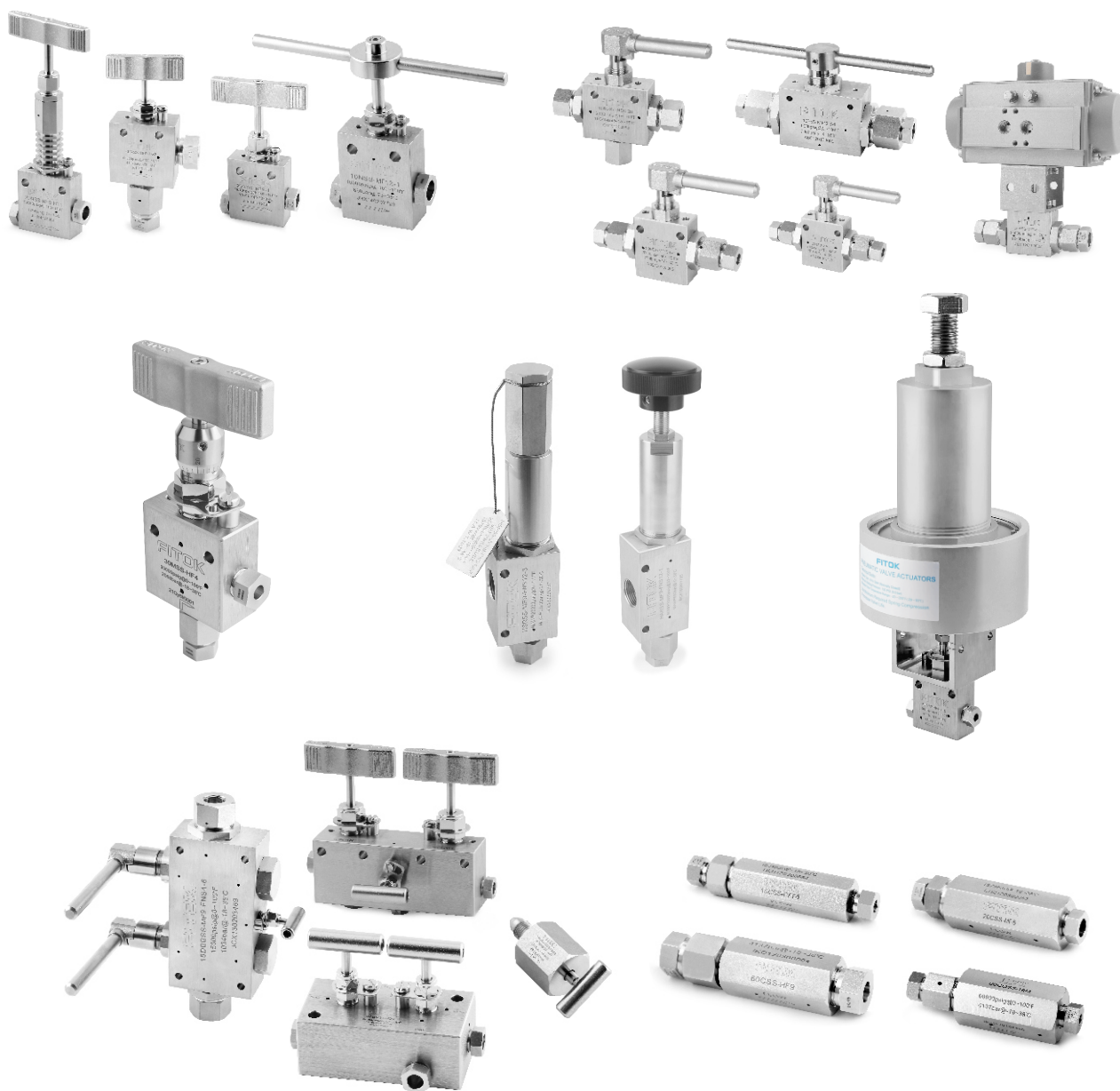


Line Filters



FITOK

Valves



Sour Service Products



Subsea Valves



Tools



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Fittings

Technical Information

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20D Series Tube Fittings



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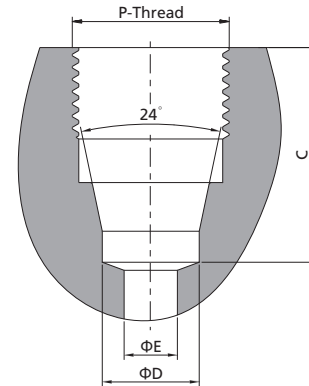
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Connection Information

20D Series Tube Fitting Connections

Dimensions of Female 20D Series Connections (DFF)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)			
		P	C	D	E
1/8 (3.18)	DFF2	3/8-24	0.63 (15.9)	0.13 (3.2)	0.09 (2.4)
1/4 (6.35)	DFF4	1/2-20	0.85 (21.7)	0.25 (6.4)	0.19 (4.8)
3/8 (9.53)	DFF6	5/8-18	0.89 (22.5)	0.38 (9.5)	0.25 (6.4)
1/2 (12.7)	DFF8	13/16-16	0.96 (24.4)	0.50 (12.7)	0.37 (9.5)
9/16 (14.3)	DFF9	15/16-14	1.20 (30.6)	0.56 (14.3)	0.41 (10.4)
3/4 (19.1)	DFF12	1 1/4-12	1.54 (39.2)	0.75 (19.1)	0.56 (14.2)
1 (25.4)	DFF16	1 1/2-16	2.03 (51.6)	1.00 (25.4)	0.69 (17.5)

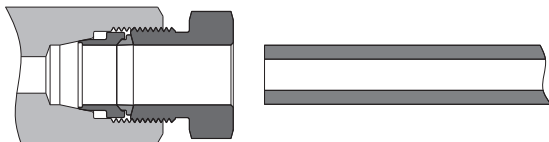


Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
2. All threads are manufactured to class 2A or 2B fit.

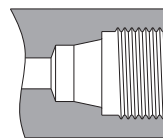
Types of 20D Series Connections

a. Female 20D Series (DFF)

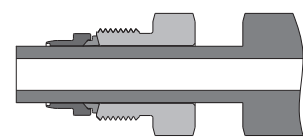
T15A or T20D
Series Tubing



b. Female 20D Series
(Without Double
Ferrules and Nut)

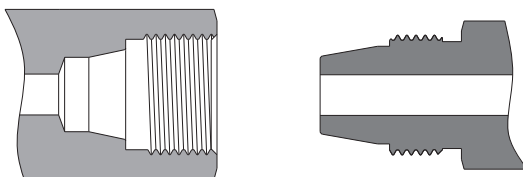


20D Series Tube Stub with
Double Ferrules and Nut (DFT)



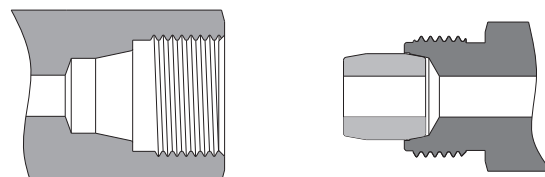
c. Female 20D Series
(Without Double
Ferrules and Nut) (DFF)

Male 20D Series
(One-Piece) (DFM)



d. Female 20D Series
(Without Double
Ferrules and Nut) (DFF)

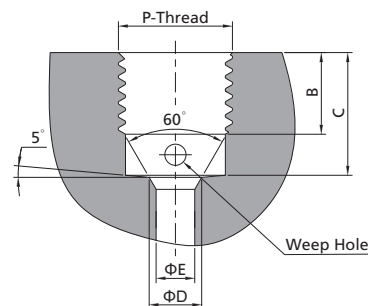
Male 20D Series
(Two-Piece) (DCP)



20M Series Medium Pressure Coned and Threaded Connections

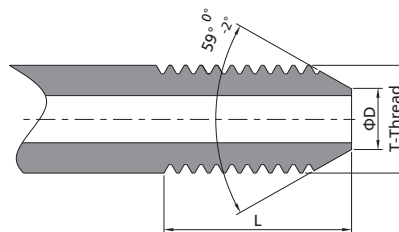
Dimensions of Female Medium Pressure Connections (MF)

Tube O.D. in. (mm)	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4 (6.35)	MF4	7/16-20	0.29 (7.3)	0.50 (12.7)	0.19 (4.8)	0.11 (2.8)
3/8 (9.53)	MF6	9/16-18	0.39 (10.0)	0.63 (16.0)	0.31 (7.9)	0.20 (5.2)
9/16 (14.3)	MF9	13/16-16	0.44 (11.2)	0.75 (19.1)	0.50 (12.7)	0.31 (7.9)
3/4 (19.1)	MF12	3/4-14 NPSM	0.51 (13.0)	0.94 (23.9)	0.63 (15.9)	0.44 (11.1)
1 (25.4)	MF16	1 3/8-12	0.83 (21.0)	1.31 (33.3)	0.88 (22.4)	0.56 (14.3)
1 1/2 (38.1)	MF24	1 7/8-12	1.00 (25.4)	1.59 (40.5)	1.38 (35.0)	0.94 (23.8)



Dimensions of Medium Pressure Coned and Threaded Tubing Connections

Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)		
		T (Left Hand)	D	L
1/4 x 0.109	MF4	1/4-28	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	MF6	3/8-24	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	MF9	9/16-18	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	MF12	3/4-16	0.56 (14.3)	0.63 (15.9)
1 x 0.562	MF16	1-14	0.72 (18.3)	0.78 (19.8)
1 1/2 x 0.937	MF24	1 1/2-12	1.06 (27.0)	1.00 (25.4)



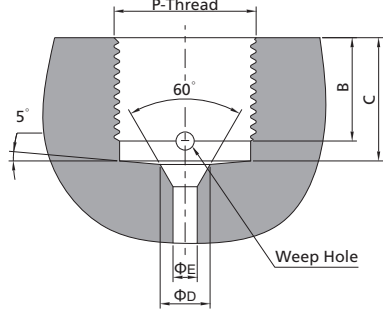
Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
2. All threads are manufactured to class 2A or 2B fit.

Types of Medium Pressure Connections

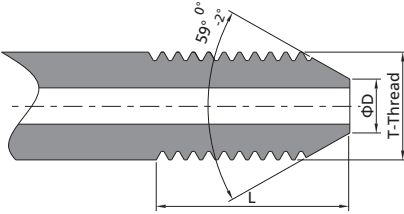
- a. Female Medium Pressure (MF) T20M Series Coned and Threaded Tubing b. Female Medium Pressure (MF) Medium Pressure Coned and Threaded Nipples (MCT)
- c. Female Medium Pressure (Without Collar and Gland) (MF) Male Medium Pressure (One-Piece) (MM) d. Female Medium Pressure (Without Collar and Gland) (MF) Male Medium Pressure (Two-Piece) (MCP)

60H Series High Pressure Coned and Threaded Connections

Dimensions of Female High Pressure Connections (HF)

Tube O.D. in.(mm)	Connection	Dimensions, in. (mm)					
		P	B	C	D	E	
1/4 (6.35)	HF4	9/16-18	0.39 (9.8)	0.45 (11.4)	0.17 (4.3)	0.09 (2.4)	
3/8 (9.53)	HF6	3/4-16	0.54 (13.6)	0.64 (16.3)	0.26 (6.6)	0.13 (3.2)	
9/16 (14.3)	HF9	1 1/8-12	0.63 (16.0)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	

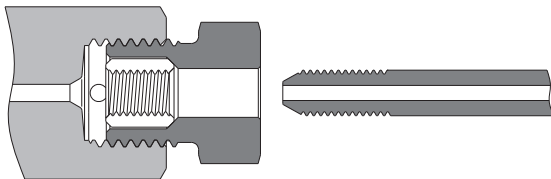
Dimensions of High Pressure Coned and Threaded Tubing Connections

Tube O.D. x I.D. in.	Connection	Dimensions, in. (mm)			
		T (Left Hand)	D	L	
1/4 x 0.083	HF4	1/4-28	0.13 (3.2)	0.56 (14.3)	
3/8 x 0.125	HF6	3/8-24	0.22 (5.6)	0.75 (19.1)	
9/16 x 0.188	HF9	9/16-18	0.28 (7.1)	0.94 (23.8)	

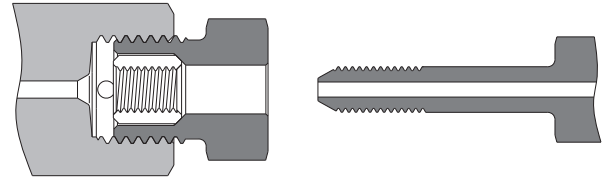
Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
2. All threads are manufactured to class 2A or 2B fit.
3. API 6A, Specification for Wellhead and Christmas Tree Equipment, references high pressure coned and threaded fittings, and specifically outlines the dimensions for 9/16 inch fittings. FITOK 9/16 inch high pressure coned and threaded connections comply with the mechanical sealing dimensions called out in this specification. No other sizes or styles of cone and thread fittings or tubing are referenced in API 6A.

Types of High Pressure Connections

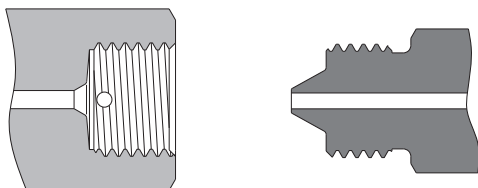
a. Female High Pressure (HF) T60H Series Coned and Threaded Tubing



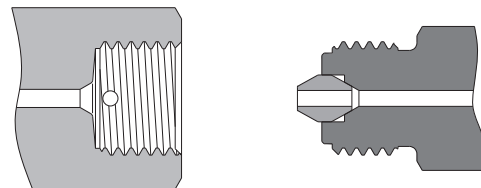
b. Female High Pressure (HF) High Pressure Coned and Threaded Nipples (HCT)



c. Female High Pressure (Without Collar and Gland) (HF) Male High Pressure (One-Piece) (HM)



d. Female High Pressure (Without Collar and Gland) (HF) Male High Pressure (Two-Piece) (HCP)



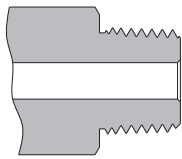
Thread Ends

Thread Specifications

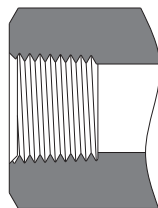
Connection Type	Designator	Thread Type	Thread Specification
Male NPT	NS	NPT	ASME B1.20.1, SAE AS71051
Female NPT	FNS		
Male ISO Tapered Thread	RT	ISO Tapered	ISO 7-1, BS EN 10226-1, DIN EN 10226-1, JIS B0203
Female ISO Tapered Thread	FRT		
Male JIC	JM	SAE/MS	ASME B1.1
Female JIC	JF		
Male SAE O-Ring	SH		
Female SAE O-Ring	US		
Male ISO Parallel Thread	HBP	ISO Parallel	ISO 228-1, DIN ISO 228-1, JIS B0202, BS2779
Female ISO Parallel Thread	SBP, HSBP		

Types of Thread Ends

Male NPT (NS)

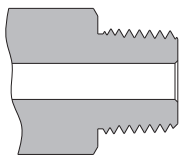


Female NPT (FNS)

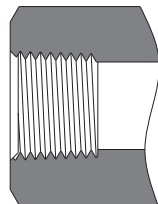


- ☐ 60° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of roots and crests is flat
- ☐ Taper 1:16
- ☐ Type of sealing: thread sealant

Male ISO Tapered Thread (RT)

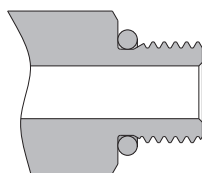


Female ISO Tapered Thread (FRT)

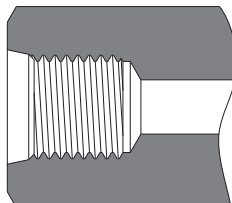


- ☐ 55° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of roots and crests is rounded
- ☐ Taper 1:16
- ☐ Type of sealing: thread sealant

Male SAE O-Ring (SH)

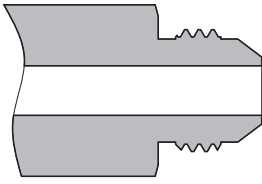


Female SAE O-Ring (US)

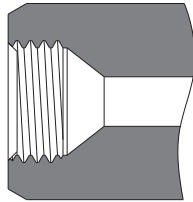


- ☐ 60° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of roots and crests is flat
- ☐ SH complies with SAE J1926-2, ISO 11926-2
- ☐ US complies with SAE J1926-1/ISO 11926-1

Male JIC (JM)

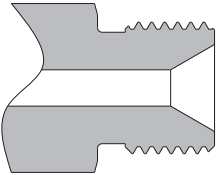


Female JIC (JF)

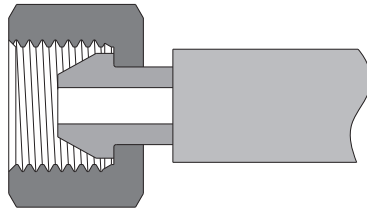


- ☐ 60° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of roots and crests is flat
- ☐ 74° coned connections

Male Type "M" (TM)

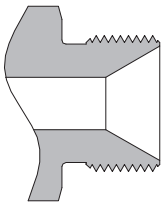


Type "M" Swivel Hose Fitting

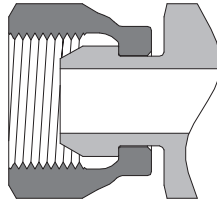


- ☐ 60° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of root and crest is flat
- ☐ 60° coned connections

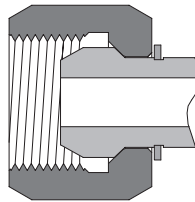
Male ISO Parallel Thread (HBP)



Female ISO Parallel Thread (SBP, HSBP)



SBP



HSBP

- ☐ 55° thread angle
- ☐ Pitch measured in inch
- ☐ Truncation of roots and crests is round
- ☐ 60° coned connections

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

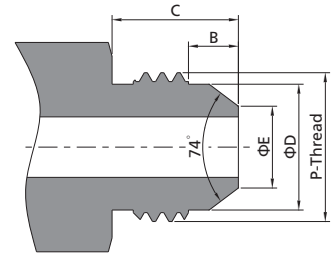
Subsea Valves

Part Number Crossover Charts

Dimensions of Thread Ends

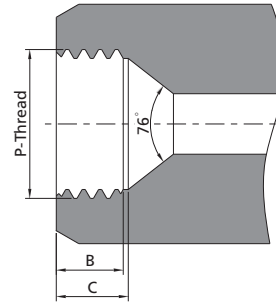
Male JIC (JM)

Description	Connection	Dimensions, in. (mm)				
		P	B	C	D	E
1/4" JIC	JM4	7/16-20	0.20 (5.1)	0.55 (14.0)	0.36 (9.2)	0.19 (4.9)
3/8" JIC	JM6	9/16-18	0.20 (5.2)	0.56 (14.1)	0.48 (12.1)	0.32 (8.1)
1/2" JIC	JM8	3/4-16	0.26 (6.6)	0.66 (16.7)	0.65 (16.6)	0.43 (10.8)
5/8" JIC	JM10	7/8-14	0.28 (7.0)	0.76 (19.3)	0.77 (19.5)	0.54 (13.7)
3/4" JIC	JM12	1 1/16-12	0.32 (8.2)	0.86 (21.9)	0.94 (23.9)	0.67 (16.9)
1" JIC	JM16	1 5/16-12	0.32 (8.2)	0.91 (23.1)	0.19 (30.2)	0.91 (23.2)



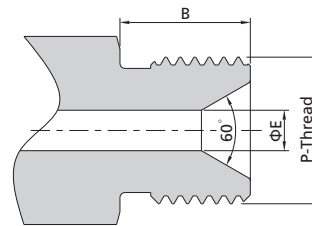
Female JIC (JF)

Description	Connection	Dimensions, in. (mm)		
		P	B	C
1/4" JIC	JF4	7/16-20	0.28 (7.1)	0.33 (8.3)
3/8" JIC	JF6	9/16-18	0.29 (7.4)	0.34 (8.7)
1/2" JIC	JF8	3/4-16	0.31 (7.9)	0.37 (9.5)
5/8" JIC	JF10	7/8-14	0.40 (10.2)	0.47 (11.9)
3/4" JIC	JF12	1 1/16-12	0.42 (10.7)	0.50 (12.7)
1" JIC	JF16	1 5/16-12	0.48 (12.3)	0.56 (14.3)



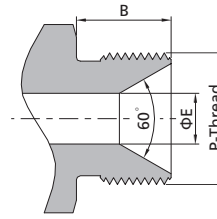
Male Type "M" (TM)

Connection	Dimensions, in. (mm)		
	P	B	E
TM9	9/16-18	0.50 (12.7)	0.09 (2.4)
TM12	3/4-16	0.63 (16.0)	0.29 (7.4)
TM14	7/8-14	0.76 (19.2)	0.15 (3.8)
TM16	1-12	0.64 (16.3)	0.39 (10.0)
TM21	1 5/16-12	0.62 (15.7)	0.69 (17.5)



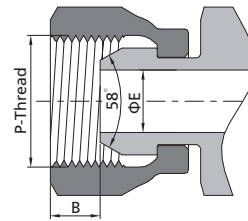
Male ISO Parallel Thread (HBP)

Connection	Dimensions, in. (mm)		
	P	B	E
HBP4	G1/4A	0.43 (11.0)	0.15 (3.8)
HBP6	G3/8A	0.47 (12.0)	0.25 (6.4)
HBP8	G1/2A	0.55 (14.0)	0.37 (9.5)
HBP12	G3/4A	0.63 (16.0)	0.50 (12.7)
HBP16	G1A	0.75 (19.0)	0.63 (15.9)



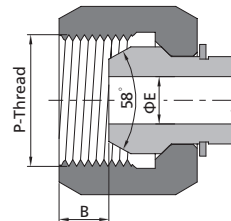
Female ISO Parallel Thread (SBP)

Connection	Dimensions, in. (mm)		
	P	B	E
SBP4	G1/4	0.18 (4.5)	0.19 (4.7)
SBP6	G3/8	0.25 (6.3)	0.31 (7.9)
SBP8	G1/2	0.28 (7.0)	0.44 (11.1)
SBP12	G3/4	0.35 (9.0)	0.66 (16.7)
SBP16	G1	0.43 (10.8)	0.87 (22.2)



Female ISO Parallel Thread (HSBP)

Connection	Dimensions, in. (mm)		
	P	B	E
HSBP4	G1/4	0.18 (4.5)	0.15 (3.8)
HSBP6	G3/8	0.25 (6.3)	0.24 (6.0)
HSBP8	G1/2	0.28 (7.0)	0.31 (8.0)
HSBP12	G3/4	0.35 (9.0)	0.43 (11.0)
HSBP16	G1	0.43 (10.8)	0.55 (14.0)



- Notes: 1. All dimensions are shown for reference only and should not be considered as actual machining dimensions.
2. All threads, except ISO parallel threads, are manufactured to a class 2A or 2B fit.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

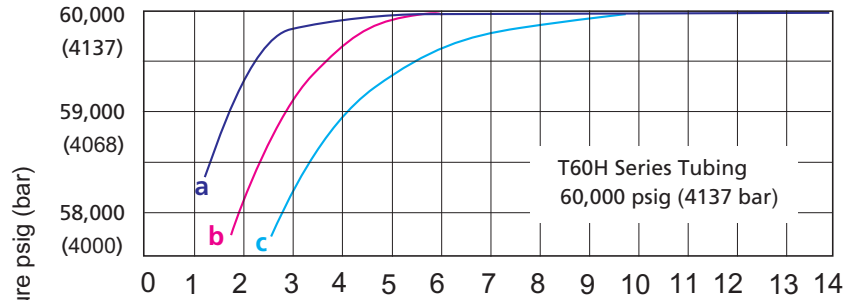
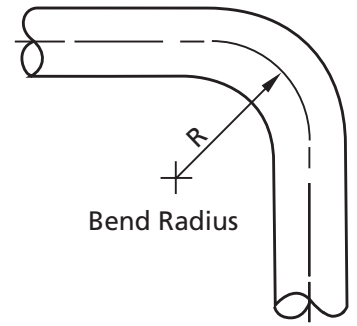
Sour Service Products

Subsea Valves

Part Number Crossover Charts

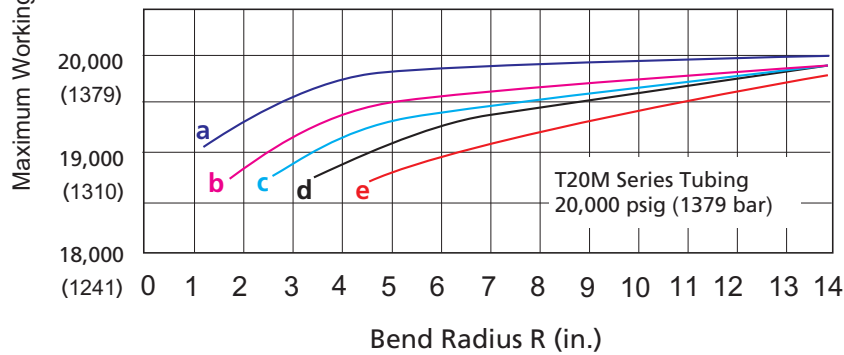
Working Pressure vs. Bend Radius Curve

T20D, T20M and T60H Series Tubing (316/316L SS)



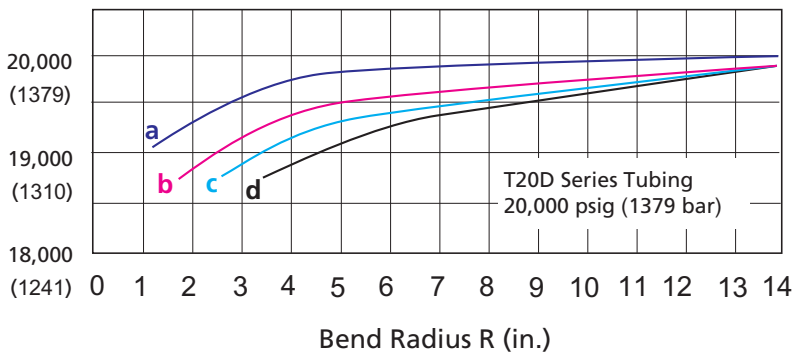
T60H Series Tubing
60,000 psig (4137 bar)

	Tube O.D. x I.D. in.	R (min.) in. (mm)
a	1/4 x 0.083	1.25 (31.8)
b	3/8 x 0.125	1.75 (44.5)
c	9/16 x 0.188	2.63 (66.7)



T20M Series Tubing
20,000 psig (1379 bar)

	Tube O.D. x I.D. in.	R (min.) in. (mm)
a	1/4 x 0.109	1.25 (31.8)
b	3/8 x 0.203	1.75 (44.5)
c	9/16 x 0.312	2.63 (66.7)
d	3/4 x 0.438	3.50 (88.9)
e	1 x 0.562	4.63 (117.5)

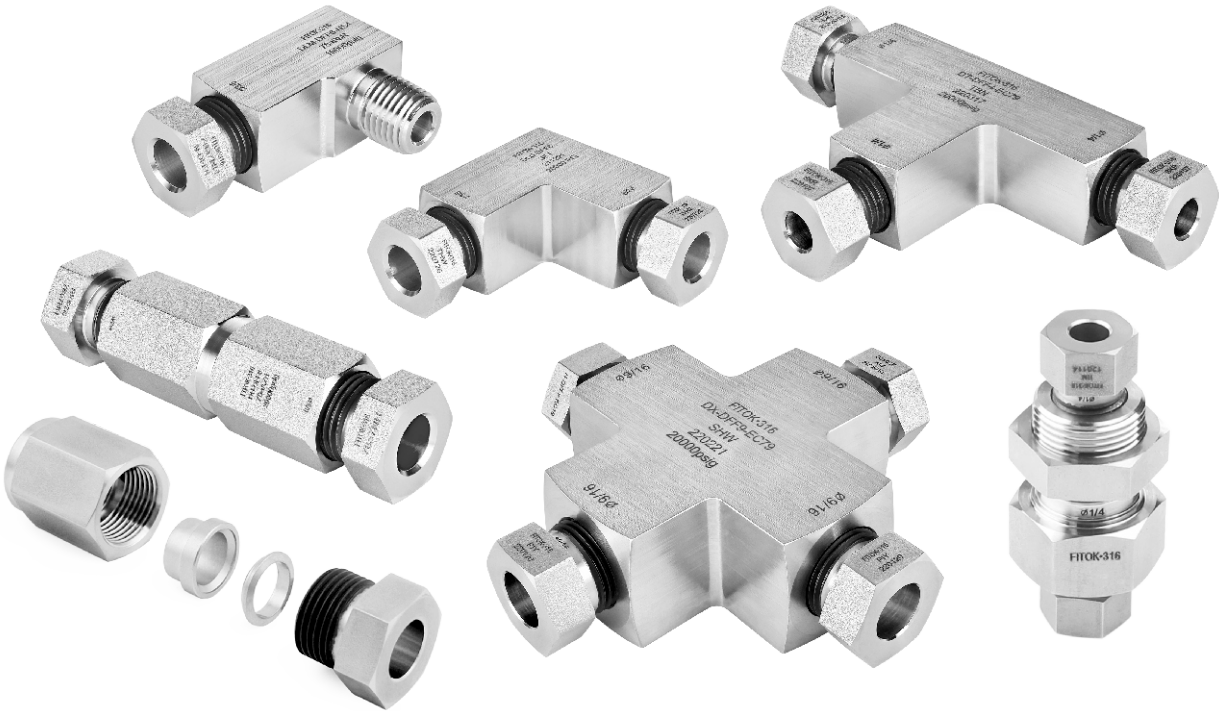


T20D Series Tubing
20,000 psig (1379 bar)

	Tube O.D. x W.T. in.	R (min.) in. (mm)
a	1/4 x 0.065	1.25 (31.8)
b	3/8 x 0.083	1.75 (44.5)
c	1/2 x 0.109	2.63 (66.7)
d	3/4 x 0.165	3.50 (88.9)

20D Series Tube Fittings

20,000 psig (1379 bar)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Contents

Nuts - N



A-13

Front Ferrules - FF



A-14

Rear Ferrules - RF



A-14

Nut-Ferrule Sets - NFS



A-14

Ferrule Sets - FRS



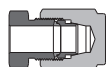
A-14

Plugs - DTP



A-14

Caps - DTC



A-15

Unions - DU



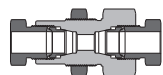
A-15

Reducing Unions - DU



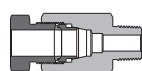
A-15

Bulkhead Unions - DBU



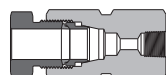
A-16

Male Connectors - DCM



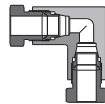
A-16

Female Connectors - DCF



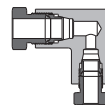
A-17

Union Elbows - DLU



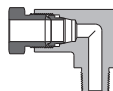
A-17

Union Reducing Elbows - DLU



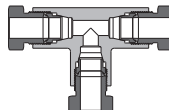
A-18

Male Elbows - DLM



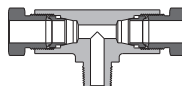
A-18

Union Tees - DT



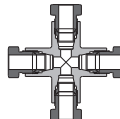
A-19

Male Branch Tees - DT



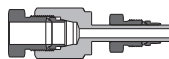
A-19

Union Crosses - DX



A-19

Reducers - DR



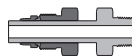
A-20

Port Connectors - DP



A-20

Adapters - DAM



A-20

Installation Instructions

A-110

Connection Information

A-02

Ordering Number Description

A-21

Features

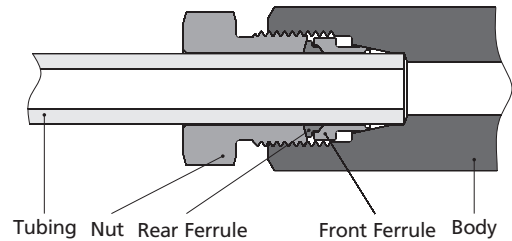
- Working pressure up to 20,000 psig (1379 bar)
- Easy and quick connection to T15A, T20D and T20M series tubing, tubing sizes available in 1/8", 1/4", 3/8", 1/2", 9/16", 3/4" and 1"
- High tensile 316 stainless steel as standard, with Super Duplex 2507, Alloy 625, and Alloy 825 available
- Nut threads coated with molybdenum disulfide-based lubricant to minimize the friction
- Long tube-support area to improve vibration resistance and line loads
- Every fitting marked with size, material and trace ID
- EC-79 type approval for 70 MPa hydrogen system application

Standard Materials of Construction

Component	Material/Standard			
	316 SS	Super Duplex 2507	Alloy 625	Alloy 825
Body	316 SS/ A479	Super Duplex 2507/ A479	Alloy 625/ B446	Alloy 825/ B425
Front Ferrule	316 SS/ A479	Super Duplex 2507 ^① / A479	Alloy 625 ^① / B446	Alloy 825 ^① / B425
Rear Ferrule	316 SS/ A479	6 Mo/ A479	Alloy 625/ B446	Alloy 825/ B425
Nut	316 SS/ A479	Super Duplex 2507/ A479	Alloy 625/ B446	Alloy 825/ B425

① Silver-plated.

Note: Wetted components are listed in italics.



Working Pressure

- Working pressure is determined by the lowest working pressure of the ends.

316 SS Medium Pressure Fittings and Compatible Tubing - Working Pressure Ratings

Working pressures are calculated in accordance with ASME B31.3 Chapter IX High Pressure Piping.

Fitting Series	Tubing Series	Tube O.D. & Working Pressure, psig					
		1/4 in.	3/8 in.	1/2 in.	9/16 in.	3/4 in.	1 in.
20D Series Tube Fittings	T20D Series Tubing	20,000	20,000	20,000	/	20,000	15,000
	T20M Series Tubing			/	20,000	16,000	20,000

Alloy Tube Fittings and Compatible Tubing - Working Pressure Ratings

Working pressures for Super Duplex 2507 tubing are calculated in accordance with ASME B31.3 Chapter IX High Pressure Piping.

Working pressures for Alloy 625 and Alloy 825 tubing are calculated in accordance with ASME B31.3.

Fitting Material	Tubing Data			Working Pressure, psig
	Material	O.D., in.	Wall Thickness, in.	
Super Duplex 2507	Super Duplex 2507	1/4	0.049	22,500
		1/2	0.095	22,500
Alloy 625	Alloy 625 Grade 1	1/4	0.035	11,200
			0.065	15,000
		3/8	0.049	10,300
			0.083	15,000
Alloy 825	Alloy 825	1/4	0.065	10,000
		3/8	0.083	10,000

Male SAE O-Ring Ends

Working pressure of male SAE O-ring end connections listed in this catalog is 10,000 psig (690 bar).

NPT Ends

NPT Size in.	Working Pressure psig (bar)
1/8	15,000 (1,034)
1/4	
3/8	
1/2	
3/4	10,000 (690)
1	

Working Temperature

The working temperatures listed below apply only to 316 or 316L stainless steel tubing.

Connection Type	Working Temperature Range, °F (°C)
Tube Ends	-325 to 800 (-198 to 427)
Male SAE O-Ring Ends	0 to 400 (-17.8 to 204) ^①
NPT Ends	-325 to 400 (-198 to 204) ^{②③}

① The ends are supplied with a FKM O-ring as standard, other materials of O-rings available.

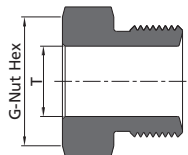
② Always use proper thread sealants on tapered pipe threads.

③ The data are based on the working temperature range of the thread sealants. For the working temperature above 400°F (204°C), please contact FITOK Group or our authorized distributors.

Ordering Information and Dimensions

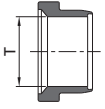
Dimensions are for reference only and are subject to change.

Nuts



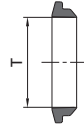
Tube		
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)
		G
1/8	-N-DFF2	0.37 (9.5)
1/4	-N-DFF4	0.63 (15.9)
3/8	-N-DFF6	0.75 (19.1)
1/2	-N-DFF8	0.94 (23.8)
9/16	-N-DFF9	1.06 (27.0)
3/4	-N-DFF12	1.38 (34.9)
1	-N-DFF16	1.75 (44.5)

Front Ferrules



Tube	
T - Tube O.D. in.	Ordering Number
1/8	-FF-DFF2
1/4	-FF-DFF4
3/8	-FF-DFF6
1/2	-FF-DFF8
9/16	-FF-DFF9
3/4	-FF-DFF12
1	-FF-DFF16

Rear Ferrules



Tube	
T - Tube O.D. in.	Ordering Number
1/8	-RF-DFF2
1/4	-RF-DFF4
3/8	-RF-DFF6
1/2	-RF-DFF8
9/16	-RF-DFF9
3/4	-RF-DFF12
1	-RF-DFF16

Nut-Ferrule Sets



Figure above shows the nut-ferrule set with an arbor. One arbor holds 1 nut-ferrule set. The nut-ferrule set contains 1 nut, 1 rear ferrule and 1 front ferrule.

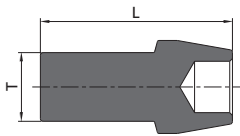
Tube	
T - Tube O.D. in.	Ordering Number
1/8	-NFS-DFF2
1/4	-NFS-DFF4
3/8	-NFS-DFF6
1/2	-NFS-DFF8
9/16	-NFS-DFF9
3/4	-NFS-DFF12
1	-NFS-DFF16

Ferrule Sets



Figure above shows the nut-ferrule sets with an arbor. One arbor holds 5 ferrule sets. The ferrule set contains 1 rear ferrule and 1 front ferrule. Please order ferrule sets in multiples of 5.

Tube	
T - Tube O.D. in.	Ordering Number
1/8	-FRS-DFF2
1/4	-FRS-DFF4
3/8	-FRS-DFF6
1/2	-FRS-DFF8
9/16	-FRS-DFF9
3/4	-FRS-DFF12
1	-FRS-DFF16

Plugs^①

Tube		
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)
		L
1/8	-DTP-DFF2	0.95 (24.2)
1/4	-DTP-DFF4	1.20 (30.4)
3/8	-DTP-DFF6	1.19 (30.2)
1/2	-DTP-DFF8	1.36 (34.6)
9/16	-DTP-DFF9	1.73 (44.0)
3/4	-DTP-DFF12	2.30 (58.3)
1	-DTP-DFF16	2.64 (67.0)

^① When using plug, ferrules are not required.

Fittings

Tubing

Quick Couplings

Line Filters

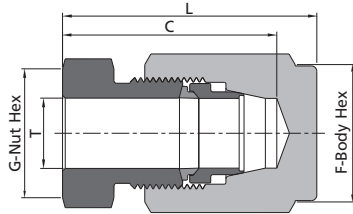
Valves

Sour Service Products

Subsea Valves

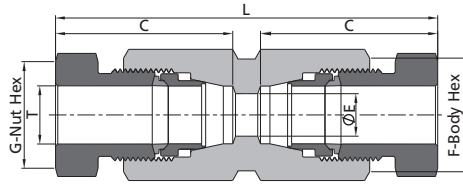
Part Number Crossover Charts

Caps



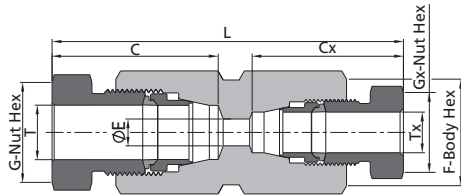
Tube		Dimensions, in. (mm)			
T - Tube O.D. in.	Ordering Number	L	C	F	G
1/8	-DTC-DFF2	1.22 (31.1)	1.07 (27.2)	0.50 (12.7)	0.37 (9.5)
1/4	-DTC-DFF4	1.70 (43.1)	1.38 (35.2)	0.63 (15.9)	0.63 (15.9)
3/8	-DTC-DFF6	1.76 (44.8)	1.42 (36.1)	0.75 (19.1)	0.75 (19.1)
1/2	-DTC-DFF8	1.85 (47.0)	1.56 (39.6)	1.00 (25.4)	0.94 (23.8)
9/16	-DTC-DFF9	2.46 (62.6)	1.93 (49.0)	1.13 (28.6)	1.06 (27.0)
3/4	-DTC-DFF12	3.22 (81.9)	2.49 (63.3)	1.50 (38.1)	1.38 (34.9)
1	-DTC-DFF16	4.06 (103.2)	3.24 (82.3)	1.75 (44.5)	1.75 (44.5)

Unions



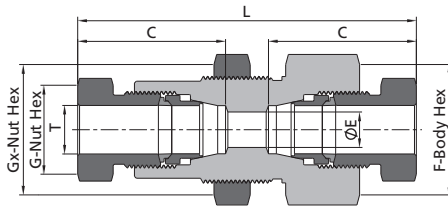
Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	-DU-DFF2	2.45 (62.2)	1.07 (27.2)	0.09 (2.4)	0.50 (12.7)	0.37 (9.5)
1/4	-DU-DFF4	3.00 (76.2)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	-DU-DFF6	3.07 (77.9)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	-DU-DFF8	3.36 (85.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	-DU-DFF9	4.11 (104.4)	1.93 (49.0)	0.41 (10.4)	1.13 (28.6)	1.06 (27.0)
3/4	-DU-DFF12	5.38 (136.7)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
1	-DU-DFF16	7.06 (179.3)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)

Reducing Unions



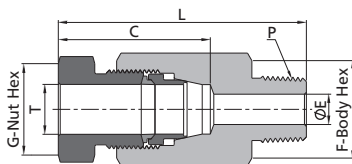
Tube			Dimensions, in. (mm)						
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	C	Cx	E	F	G	Gx
1/4	1/8	-DU-DFF4-DFF2	2.73 (69.4)	1.39 (35.2)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.63 (15.9)	0.37 (9.5)
3/8	1/8	-DU-DFF6-DFF2	2.77 (70.3)	1.42 (36.1)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.75 (19.1)	0.37 (9.5)
3/8	1/4	-DU-DFF6-DFF4	3.06 (77.6)	1.42 (36.1)	1.39 (35.2)	0.19 (4.8)	0.75 (19.1)	0.75 (19.1)	0.63 (15.9)
1/2	1/4	-DU-DFF8-DFF4	3.35 (85.1)	1.56 (39.6)	1.39 (35.2)	0.19 (4.8)	1.00 (25.4)	0.94 (23.8)	0.63 (15.9)
1/2	3/8	-DU-DFF8-DFF6	3.32 (84.3)	1.56 (39.6)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	0.75 (19.1)
9/16	1/2	-DU-DFF9-DFF8	4.04 (102.5)	1.93 (49.0)	1.56 (39.6)	0.37 (9.5)	1.13 (28.6)	1.06 (27.0)	0.94 (23.8)
3/4	1/2	-DU-DFF12-DFF8	4.73 (120.2)	2.49 (63.3)	1.56 (39.6)	0.37 (9.5)	1.50 (38.1)	1.38 (34.9)	0.94 (23.8)
1	1/2	-DU-DFF16-DFF8	5.35 (135.9)	3.24 (82.3)	1.56 (39.6)	0.37 (9.5)	1.75 (44.5)	1.75 (44.5)	0.94 (23.8)

Bulkhead Unions



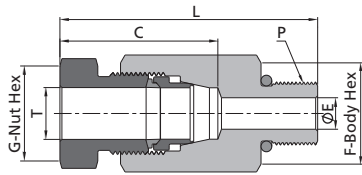
Tube		Dimensions, in. (mm)							
T - Tube O.D. in.	Ordering Number	L	C	E	F	G	Gx	Panel Hole Size	Maximum Panel Thickness
1/8	-DBU-DFF2	2.95 (75.0)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.37 (9.5)	0.81 (20.6)	0.69 (17.5)	0.38 (9.7)
1/4	-DBU-DFF4	3.27 (83.1)	1.38 (35.2)	0.19 (4.8)	1.00 (25.4)	0.63 (15.9)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
3/8	-DBU-DFF6	3.21 (81.6)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.75 (19.1)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
1/2	-DBU-DFF8	3.93 (99.8)	1.56 (39.6)	0.37 (9.5)	1.38 (34.9)	0.94 (23.8)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
9/16	-DBU-DFF9	4.64 (117.8)	1.93 (49.0)	0.41 (10.4)	1.63 (41.3)	1.06 (27.0)	1.63 (41.3)	1.33 (33.7)	0.38 (9.7)
3/4	-DBU-DFF12	5.82 (147.9)	2.49 (63.3)	0.56 (14.2)	1.87 (47.6)	1.38 (34.9)	1.87 (47.6)	1.64 (41.7)	0.38 (9.7)
1	-DBU-DFF16	7.45 (189.3)	3.24 (82.3)	0.69 (17.5)	2.13 (54.0)	1.75 (44.5)	2.13 (54.0)	1.89 (48.0)	0.38 (9.7)

Male Connectors



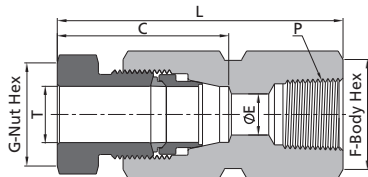
Tube			NPT Thread					
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)					
			L	C	E	F	G	
1/8	1/8	-DCM-DFF2-NS2	1.60 (40.6)	1.07 (27.2)	0.09 (2.4)	0.50 (12.7)	0.37 (9.5)	
1/8	1/4	-DCM-DFF2-NS4	1.72 (43.8)	1.07 (27.2)	0.09 (2.4)	0.56 (14.3)	0.37 (9.5)	
1/8	3/8	-DCM-DFF2-NS6	1.72 (43.8)	1.07 (27.2)	0.09 (2.4)	0.69 (17.5)	0.37 (9.5)	
1/4	1/8	-DCM-DFF4-NS2	1.95 (49.5)	1.39 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
1/4	1/4	-DCM-DFF4-NS4	2.08 (52.8)	1.39 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
1/4	3/8	-DCM-DFF4-NS6	2.08 (52.8)	1.39 (35.2)	0.19 (4.8)	0.69 (17.5)	0.63 (15.9)	
1/4	1/2	-DCM-DFF4-NS8	2.32 (59.0)	1.39 (35.2)	0.19 (4.8)	0.87 (22.2)	0.63 (15.9)	
3/8	1/4	-DCM-DFF6-NS4	2.17 (55.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	3/8	-DCM-DFF6-NS6	2.17 (55.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	1/2	-DCM-DFF6-NS8	2.30 (58.3)	1.42 (36.1)	0.25 (6.4)	0.87 (22.2)	0.75 (19.1)	
1/2	1/4	-DCM-DFF8-NS4	2.53 (64.3)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	
1/2	3/8	-DCM-DFF8-NS6	2.53 (64.3)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)	
1/2	1/2	-DCM-DFF8-NS8	2.65 (67.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	
1/2	3/4	-DCM-DFF8-NS12	2.53 (64.3)	1.56 (39.6)	0.37 (9.5)	1.06 (27.0)	0.94 (23.8)	
9/16	1/4	-DCM-DFF9-NS4	3.03 (77.0)	1.93 (49.0)	0.25 (6.4)	1.13 (28.6)	1.06 (27.0)	
9/16	1/2	-DCM-DFF9-NS8	3.11 (79.1)	1.93 (49.0)	0.38 (9.6)	1.13 (28.6)	1.06 (27.0)	
3/4	1/2	-DCM-DFF12-NS8	3.74 (95.1)	2.49 (63.3)	0.38 (9.6)	1.50 (38.1)	1.38 (34.9)	
3/4	3/4	-DCM-DFF12-NS12	3.74 (95.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	
3/4	1	-DCM-DFF12-NS16	3.83 (97.4)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	
1	1/2	-DCM-DFF16-NS8	4.46 (113.2)	3.24 (82.3)	0.38 (9.6)	1.75 (44.5)	1.75 (44.5)	
1	3/4	-DCM-DFF16-NS12	4.46 (113.2)	3.24 (82.3)	0.58 (14.8)	1.75 (44.5)	1.75 (44.5)	
1	1	-DCM-DFF16-NS16	4.65 (118.1)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)	

A-17 20D Series Tube Fittings



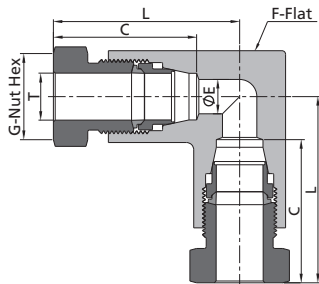
Tube			Male SAE O-Ring				
T - Tube O.D. in.	P - SAE/MS Thread Size	Ordering Number	Dimensions, in. (mm)				
			L	C	E	F	G
1/8	7/16-20	-DCM-DFF2-SH7	1.60 (40.6)	1.07 (27.2)	0.09 (2.4)	0.56 (14.3)	0.37 (9.5)
1/8	9/16-18	-DCM-DFF2-SH9	1.66 (42.2)	1.07 (27.2)	0.09 (2.4)	0.69 (17.5)	0.37 (9.5)
1/4	7/16-20	-DCM-DFF4-SH7	2.04 (51.7)	1.39 (35.2)	0.18 (4.5)	0.63 (15.9)	0.63 (15.9)
1/4	9/16-18	-DCM-DFF4-SH9	2.07 (52.7)	1.39 (35.2)	0.19 (4.8)	0.69 (17.5)	0.63 (15.9)
3/8	7/16-20	-DCM-DFF6-SH7	2.09 (53.0)	1.42 (36.1)	0.18 (4.5)	0.75 (19.1)	0.75 (19.1)
3/8	9/16-18	-DCM-DFF6-SH9	2.13 (54.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	7/16-20	-DCM-DFF8-SH7	2.49 (63.3)	1.56 (39.6)	0.18 (4.5)	1.00 (25.4)	0.94 (23.8)
1/2	9/16-18	-DCM-DFF8-SH9	2.49 (63.3)	1.56 (39.6)	0.30 (7.5)	1.00 (25.4)	0.94 (23.8)

Female Connectors



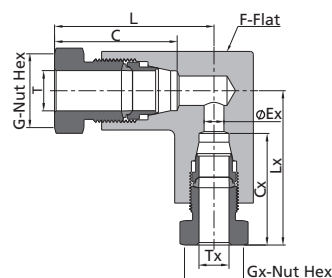
Tube			NPT Thread				
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)				
			L	C	E	F	G
1/8	1/8	-DCF-DFF2-FNS2	1.97 (50.1)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/8	1/4	-DCF-DFF2-FNS4	2.01 (53.3)	1.07 (27.2)	0.09 (2.4)	0.94 (23.8)	0.37 (9.5)
1/4	1/4	-DCF-DFF4-FNS4	2.33 (59.1)	1.38 (35.2)	0.19 (4.8)	0.94 (23.8)	0.63 (15.9)
3/8	1/4	-DCF-DFF6-FNS4	2.29 (58.1)	1.42 (36.1)	0.25 (6.4)	0.94 (23.8)	0.75 (19.1)
1/2	1/4	-DCF-DFF8-FNS4	2.78 (70.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
1/2	1/2	-DCF-DFF8-FNS8	3.03 (77.0)	1.56 (39.6)	0.37 (9.5)	1.38 (34.9)	0.94 (23.8)
3/4	1/2	-DCF-DFF12-FNS8	3.85 (97.8)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
1	1	-DCF-DFF16-FNS16	4.75 (120.7)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)

Union Elbows



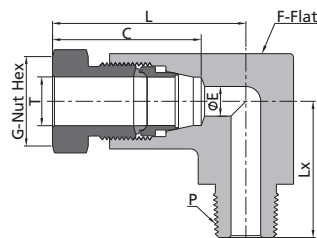
Tube						
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		L	C	E	F	G
1/8	-DLU-DFF2	1.29 (32.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	-DLU-DFF4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	-DLU-DFF6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	-DLU-DFF8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	-DLU-DFF9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	-DLU-DFF12	3.11 (79.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
1	-DLU-DFF16	4.14 (105.2)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)

Union Reducing Elbows



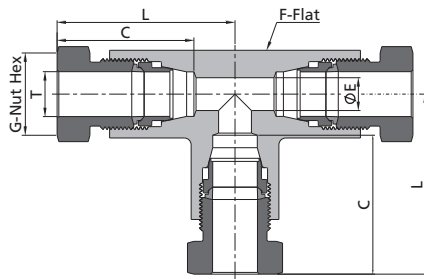
Tube			Dimensions, in. (mm)							
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	Lx	C	Cx	Ex	F	G	Gx
1/4	1/8	-DLU-DFF4-DFF2	1.70 (43.1)	1.37 (34.7)	1.38 (35.2)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.63 (15.9)	0.37 (9.5)
3/8	1/8	-DLU-DFF6-DFF2	1.67 (42.4)	1.33 (33.7)	1.42 (36.1)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.75 (19.1)	0.37 (9.5)
3/8	1/4	-DLU-DFF6-DFF4	1.67 (42.4)	1.70 (43.1)	1.42 (36.1)	1.38 (35.2)	0.19 (4.8)	0.75 (19.1)	0.75 (19.1)	0.63 (15.9)
1/2	1/4	-DLU-DFF8-DFF4	2.03 (51.6)	1.95 (49.5)	1.56 (39.6)	1.38 (35.2)	0.19 (4.8)	0.94 (23.8)	1.00 (25.4)	0.63 (15.9)
1/2	3/8	-DLU-DFF8-DFF6	2.03 (51.6)	1.96 (49.8)	1.56 (39.6)	1.42 (36.1)	0.25 (6.4)	0.94 (23.8)	1.00 (25.4)	0.75 (19.1)
9/16	1/2	-DLU-DFF9-DFF8	2.43 (61.8)	2.37 (60.2)	1.93 (49.0)	1.56 (39.6)	0.37 (9.5)	1.38 (34.9)	1.06 (27.0)	0.94 (23.8)
3/4	1/2	-DLU-DFF12-DFF8	3.11 (79.1)	2.49 (63.3)	2.49 (63.3)	1.56 (39.6)	0.37 (9.5)	1.50 (38.1)	1.38 (34.9)	0.94 (23.8)
1	1/2	-DLU-DFF16-DFF8	4.14 (105.2)	2.47 (62.8)	3.24 (82.3)	1.56 (39.6)	0.37 (9.5)	1.75 (44.5)	1.75 (44.5)	0.94 (23.8)
1	9/16	-DLU-DFF16-DFF9	4.14 (105.2)	2.82 (71.6)	3.24 (82.3)	1.93 (49.0)	0.41 (10.4)	1.75 (44.5)	1.75 (44.5)	1.06 (27.0)
1	3/4	-DLU-DFF16-DFF12	4.14 (105.2)	3.45 (87.6)	3.24 (82.3)	2.49 (63.3)	0.56 (14.2)	1.75 (44.5)	1.75 (44.5)	1.38 (34.9)

Male Elbows



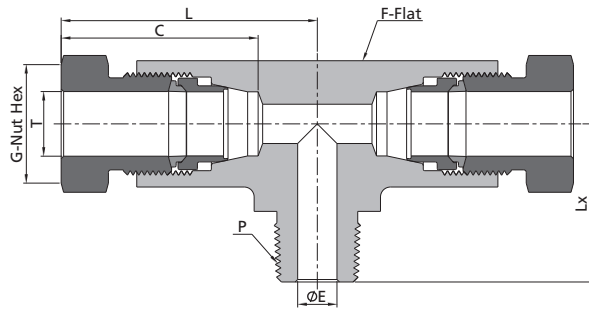
Tube			NPT Thread						
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)						
			L	Lx	C	E	F	G	
1/8	1/8	-DLM-DFF2-NS2	1.29 (32.7)	0.79 (20.0)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/8	1/4	-DLM-DFF2-NS4	1.39 (35.3)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)	
1/8	3/8	-DLM-DFF2-NS6	1.47 (37.4)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.75 (19.1)	0.37 (9.5)	
1/4	1/4	-DLM-DFF4-NS4	1.70 (43.1)	0.94 (23.8)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	
1/4	3/8	-DLM-DFF4-NS6	1.70 (43.1)	1.00 (25.4)	1.38 (35.2)	0.19 (4.8)	0.75 (19.1)	0.63 (15.9)	
1/4	1/2	-DLM-DFF4-NS8	1.70 (43.1)	1.38 (34.9)	1.38 (35.2)	0.19 (4.8)	1.00 (25.4)	0.63 (15.9)	
3/8	1/4	-DLM-DFF6-NS4	1.67 (42.4)	1.00 (25.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	3/8	-DLM-DFF6-NS6	1.67 (42.4)	1.06 (27.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	
3/8	1/2	-DLM-DFF6-NS8	1.67 (42.4)	1.38 (34.9)	1.42 (36.1)	0.25 (6.4)	1.00 (25.4)	0.75 (19.1)	
1/2	1/4	-DLM-DFF8-NS4	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)	
1/2	3/8	-DLM-DFF8-NS6	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)	
1/2	1/2	-DLM-DFF8-NS8	2.03 (51.6)	1.38 (34.9)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	
9/16	1/2	-DLM-DFF9-NS8	2.43 (61.8)	1.56 (39.5)	1.93 (49.0)	0.38 (9.6)	1.38 (34.9)	1.06 (27.0)	
3/4	1/2	-DLM-DFF12-NS8	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.38 (9.6)	1.50 (38.1)	1.38 (34.9)	
3/4	3/4	-DLM-DFF12-NS12	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)	
1	1/2	-DLM-DFF16-NS8	4.14 (105.2)	2.06 (52.4)	3.24 (82.3)	0.38 (9.6)	1.75 (44.5)	1.75 (44.5)	
1	3/4	-DLM-DFF16-NS12	4.14 (105.2)	2.06 (52.4)	3.24 (82.3)	0.58 (14.8)	1.75 (44.5)	1.75 (44.5)	
1	1	-DLM-DFF16-NS16	4.14 (105.2)	2.25 (57.2)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)	

Union Tees



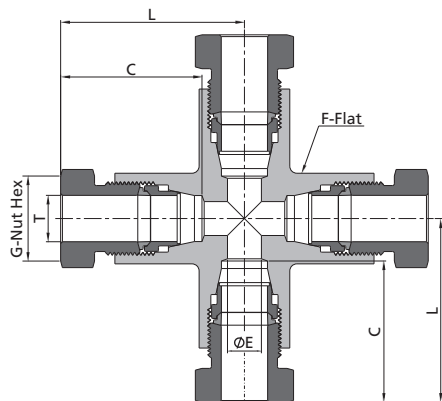
Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	-DT-DFF2	1.37 (34.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	-DT-DFF4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	-DT-DFF6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	-DT-DFF8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	-DT-DFF9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	-DT-DFF12	3.11 (79.1)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
1	-DT-DFF16	4.14 (105.2)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)

Male Branch Tees



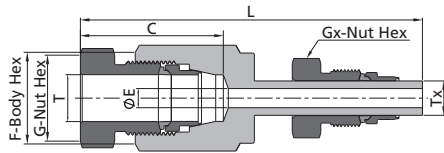
Tube			NPT Thread					
T - Tube O.D. in.	P - NPT Size in.	Ordering Number	Dimensions, in. (mm)					
			L	Lx	C	E	F	G
1/8	1/8	-DT-DFF2-DFF2-NS2	1.37 (34.7)	0.79 (20.0)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/8	1/4	-DT-DFF2-DFF2-NS4	1.37 (34.7)	1.00 (25.4)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	1/8	-DT-DFF4-DFF4-NS2	1.70 (43.1)	0.81 (20.6)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
1/4	1/4	-DT-DFF4-DFF4-NS4	1.70 (43.1)	1.00 (25.4)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	1/4	-DT-DFF6-DFF6-NS4	1.67 (42.4)	1.06 (27.0)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	1/4	-DT-DFF8-DFF8-NS4	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.25 (6.4)	1.00 (25.4)	0.94 (23.8)
1/2	3/8	-DT-DFF8-DFF8-NS6	2.03 (51.6)	1.19 (30.2)	1.56 (39.6)	0.31 (7.9)	1.00 (25.4)	0.94 (23.8)
3/4	3/4	-DT-DFF12-DFF12-NS12	3.11 (79.1)	1.73 (44.0)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)
1	1/2	-DT-DFF16-DFF16-NS8	4.14 (105.2)	2.06 (52.4)	3.24 (82.3)	0.38 (9.6)	1.75 (44.5)	1.75 (44.5)
1	3/4	-DT-DFF16-DFF16-NS12	4.14 (105.2)	2.06 (52.4)	3.24 (82.3)	0.58 (14.8)	1.75 (44.5)	1.75 (44.5)
1	1	-DT-DFF16-DFF16-NS16	4.14 (105.2)	2.25 (57.2)	3.24 (82.3)	0.69 (17.5)	1.75 (44.5)	1.75 (44.5)

Union Crosses



Tube		Dimensions, in. (mm)				
T - Tube O.D. in.	Ordering Number	L	C	E	F	G
1/8	-DX-DFF2	1.37 (34.7)	1.07 (27.2)	0.09 (2.4)	0.63 (15.9)	0.37 (9.5)
1/4	-DX-DFF4	1.70 (43.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)
3/8	-DX-DFF6	1.67 (42.4)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)
1/2	-DX-DFF8	2.03 (51.6)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)
9/16	-DX-DFF9	2.43 (61.8)	1.93 (49.0)	0.41 (10.4)	1.38 (34.9)	1.06 (27.0)
3/4	-DX-DFF12	3.01 (76.4)	2.49 (63.3)	0.56 (14.2)	1.50 (38.1)	1.38 (34.9)

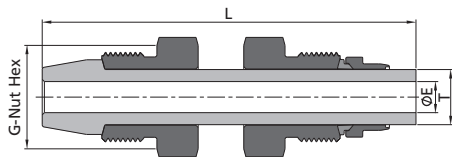
Reducers^①



Tube			Dimensions, in. (mm)						
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	L	C	E	F	G	Gx	
1/4	3/8	-DR-DFF4-DFT6	3.20 (82.1)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	0.75 (19.1)	Tubing
1/4	1/2	-DR-DFF4-DFT8	3.37 (85.5)	1.38 (35.2)	0.19 (4.8)	0.63 (15.9)	0.63 (15.9)	0.94 (23.8)	
3/8	1/2	-DR-DFF6-DFT8	3.43 (87.1)	1.42 (36.1)	0.25 (6.4)	0.75 (19.1)	0.75 (19.1)	0.94 (23.8)	
1/2	3/8	-DR-DFF6-DFT6	3.53 (89.7)	1.56 (39.6)	0.21 (5.3)	1.00 (25.4)	0.94 (23.8)	0.75 (19.1)	
1/2	3/4	-DR-DFF8-DFT12	5.13 (130.4)	1.56 (39.6)	0.37 (9.5)	1.00 (25.4)	0.94 (23.8)	1.38 (34.9)	
9/16	3/4	-DR-DFF9-DFT12	5.32 (135.1)	1.93 (49.0)	0.41 (10.4)	1.13 (28.6)	1.06 (27.0)	1.38 (34.9)	Quick Couplings
3/4	9/16	-DR-DFF12-DFT9	5.46 (138.6)	2.49 (63.3)	0.31 (7.9)	1.50 (38.1)	1.38 (34.9)	1.06 (27.0)	
1	3/4	-DR-DFF16-DFT12	6.92 (175.7)	3.24 (82.3)	0.42 (10.7)	1.75 (44.5)	1.75 (44.5)	1.38 (34.9)	

① The right ends of reducers will be preassembled with ferrules before shipping. Please follow the Reinstallation Instructions in A-111 when installing the reducers.

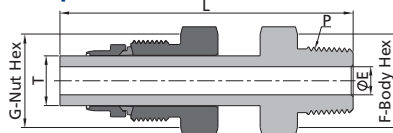
Port Connectors^①



① The port connectors will be preassembled with ferrules before shipping. Please follow the Reinstallation Instructions in A-111 when installing the port connectors.

Tube			Dimensions, in. (mm)		
T - Tube O.D. in.	Ordering Number		L	E	G
1/8	-DP-DFF2		2.06 (52.2)	0.06 (1.6)	0.37 (9.5)
1/4	-DP-DFF4		2.66 (67.5)	0.12 (3.0)	0.63 (15.9)
3/8	-DP-DFF6		2.72 (69.0)	0.21 (5.3)	0.75 (19.1)
1/2	-DP-DFF8		3.04 (77.3)	0.28 (7.1)	0.94 (23.8)
9/16	-DP-DFF9		3.80 (96.5)	0.31 (7.9)	1.06 (27.0)
3/4	-DP-DFF12		4.83 (122.8)	0.42 (10.7)	1.38 (34.9)
1	-DP-DFF16		5.98 (152.0)	0.66 (16.7)	1.75 (44.5)

Adapters^①



Tube			NPT Thread			
T - Tube O.D. in.	P - NPT Size	Ordering Number	Dimensions, in. (mm)			
			L	E	F	G
1/4	1/4	-DAM-DFT4-NS4	2.30 (58.5)	0.12 (3.0)	0.56 (14.3)	0.63 (15.9)
3/8	1/4	-DAM-DFT6-NS4	2.38 (60.4)	0.21 (5.3)	0.56 (14.3)	0.75 (19.1)
3/8	1/2	-DAM-DFT6-NS8	2.67 (67.9)	0.21 (5.3)	0.87 (22.2)	0.75 (19.1)
1/2	1/4	-DAM-DFT8-NS4	2.55 (64.8)	0.25 (6.4)	0.56 (14.3)	0.94 (23.8)
1/2	1/2	-DAM-DFT8-NS8	2.84 (72.2)	0.28 (7.1)	0.87 (22.2)	0.94 (23.8)
9/16	1/2	-DAM-DFT9-NS8	3.64 (92.4)	0.31 (7.9)	0.87 (22.2)	1.06 (27.0)
3/4	3/4	-DAM-DFT12-NS12	4.39 (111.6)	0.42 (10.7)	1.06 (27.0)	1.38 (34.9)
1	1	-DAM-DFT16-NS16	5.43 (137.9)	0.66 (16.7)	1.38 (34.9)	1.75 (44.5)

① The adapters will be preassembled with ferrules before shipping. Please follow the Reinstallation Instructions in A-111 when installing the adapters.

Installation Instructions

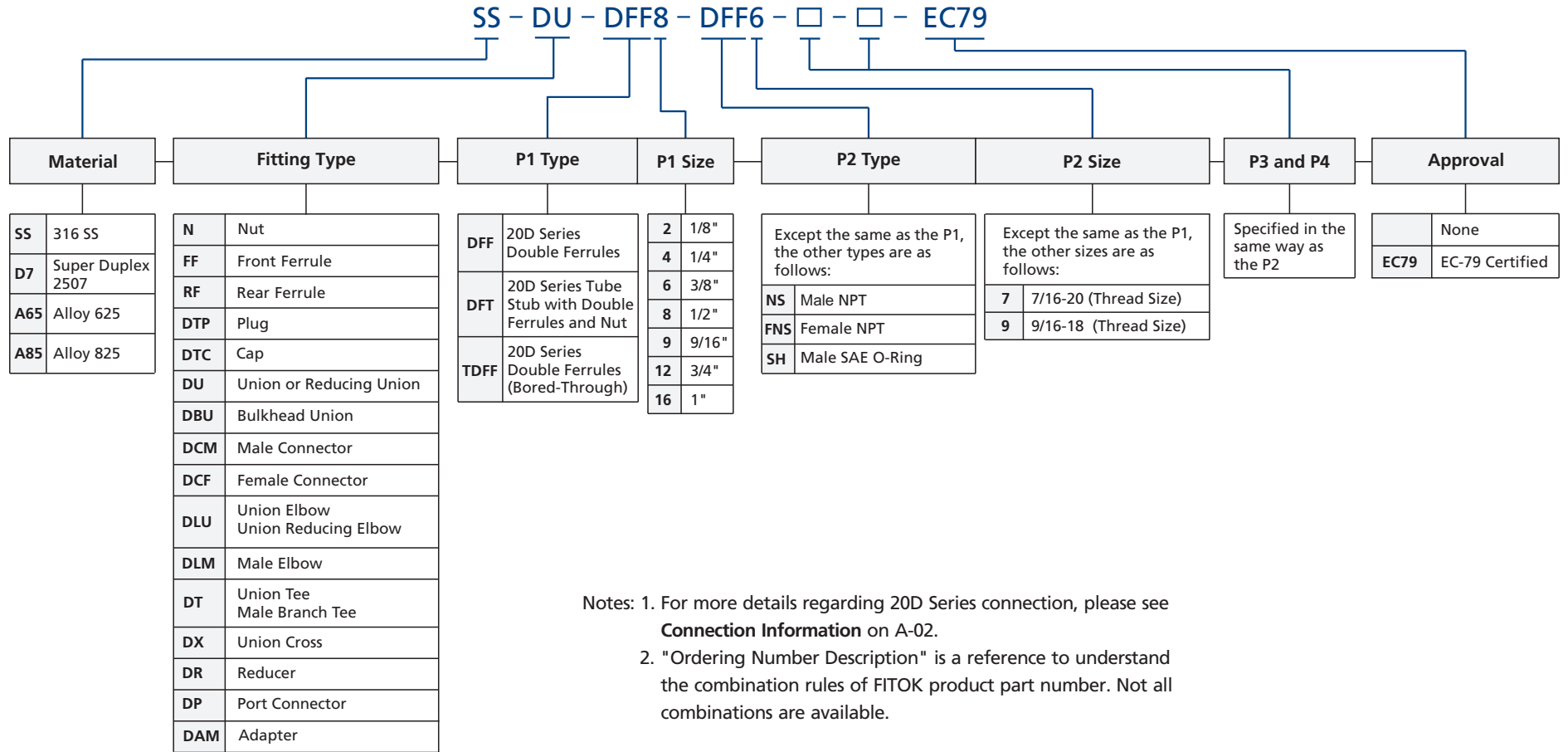
Please see A-110.

Connection Information

Please see A-02.

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Ordering Number Description



20M Series Medium Pressure Fittings

20,000 psig (1379 bar)



Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Contents

Glands - MG



A-24

Collars - MCO



A-24

Plugs - MTP



A-25

Caps - MTC



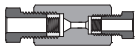
A-25

Unions - MU



A-25

Reducing Unions - MU



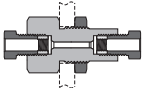
A-26

Unions (Slip Type) - MSU



A-26

Bulkhead Unions - MBU



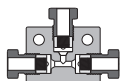
A-27

Union Elbows - MLU



A-27

Union Tees - MT



A-28

Union Crosses - MX



A-28

Anti-vibration Gland Assemblies - MAV



A-29

Installation Instructions

A-112

Connection Information

A-02

Ordering Number Description

A-29

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

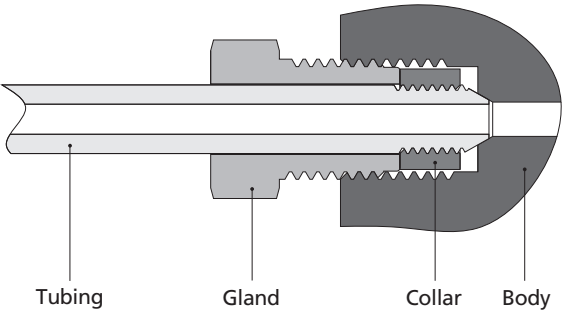
Subsea Valves

Part Number Crossover Charts

Features

- Working pressure up to 20,000 psig (1379 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Use with T20M series tubing as standard, tubing sizes available in 1/4", 3/8", 9/16", 3/4", 1" and 1 1/2"
- High tensile 316 stainless steel material
- Every fitting marked with size, material and trace ID

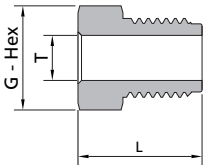
Construction



Ordering Information and Dimensions

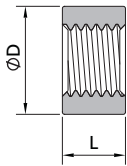
Dimensions are for reference only and are subject to change.

Glands



Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		G	L
1/4	SS-MG-MF4	0.50 (12.7)	0.58 (14.7)
3/8	SS-MG-MF6	0.63 (15.9)	0.73 (18.5)
9/16	SS-MG-MF9	0.94 (23.8)	0.88 (22.4)
3/4	SS-MG-MF12	1.19 (30.2)	1.00 (25.4)
1	SS-MG-MF16	1.38 (34.9)	1.38 (35.1)
1 1/2	SS-MG-MF24	1.87 (47.6)	2.00 (51.0)

Collars

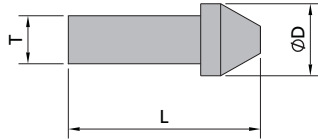


Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-MCO-MF4	0.38 (9.7)	0.22 (5.6)
3/8	SS-MCO-MF6	0.47 (11.9)	0.25 (6.4)
9/16	SS-MCO-MF9	0.72 (18.3)	0.31 (7.9)
3/4	SS-MCO-MF12	0.94 (23.8)	0.37 (9.4)
1	SS-MCO-MF16	1.25 (31.8)	0.50 (12.7)
1 1/2	SS-MCO-MF24	1.75 (44.5)	0.48 (12.2)

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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A-25 20M Series Medium Pressure Fittings

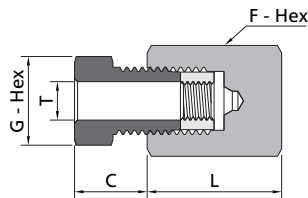
Plugs^①



Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-MTP-MF4	0.38 (9.7)	0.94 (23.8)
3/8	SS-MTP-MF6	0.47 (11.9)	1.18 (30.0)
9/16	SS-MTP-MF9	0.72 (18.3)	1.40 (35.6)
3/4	SS-MTP-MF12	0.94 (23.8)	1.69 (42.9)
1	SS-MTP-MF16	1.25 (31.8)	2.20 (55.9)
1 1/2	SS-MTP-MF24	1.75 (44.5)	3.01 (76.5)

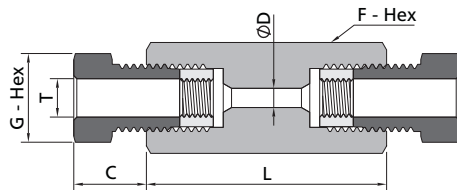
① When using plug, collar is not required.

Caps



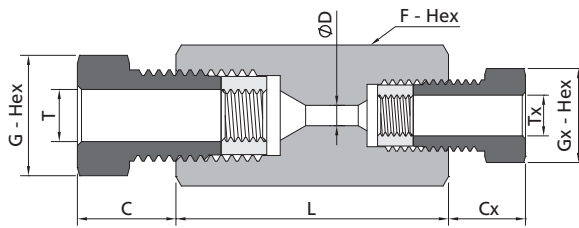
Tube					
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)			
		L	C	G	F
1/4	SS-MTC-MF4	0.81 (20.6)	0.38 (9.7)	0.50 (12.7)	0.63 (15.9)
3/8	SS-MTC-MF6	1.13 (28.6)	0.44 (11.2)	0.63 (15.9)	0.75 (19.1)
9/16	SS-MTC-MF9	1.38 (34.9)	0.55 (14.0)	0.94 (23.8)	1.00 (25.4)
3/4	SS-MTC-MF12	1.75 (44.5)	0.60 (15.2)	1.19 (30.2)	1.38 (34.9)
1	SS-MTC-MF16	2.25 (57.2)	0.74 (18.7)	1.38 (34.9)	1.75 (44.5)
1 1/2	SS-MTC-MF24	3.09 (78.5)	1.12 (28.5)	1.87 (47.6)	2.25 (57.2)

Unions



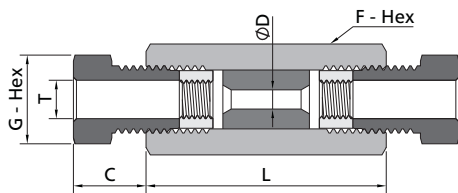
Tube						
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		L	C	D	G	F
1/4	SS-MU-MF4	1.62 (41.1)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	0.63 (15.9)
3/8	SS-MU-MF6	1.75 (44.5)	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	0.75 (19.1)
9/16	SS-MU-MF9	2.14 (54.3)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.00 (25.4)
3/4	SS-MU-MF12	2.50 (63.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.38 (34.9)
1	SS-MU-MF16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	1.75 (44.5)
1 1/2	SS-MU-MF24	5.00 (127.0)	1.12 (28.5)	0.94 (23.8)	1.87 (47.6)	2.25 (57.2)

Reducing Unions



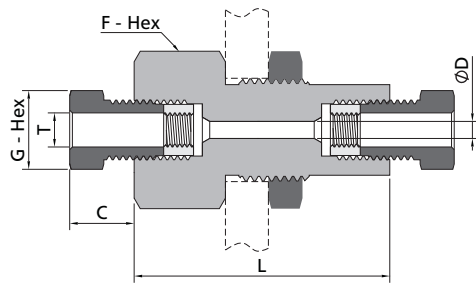
Tube									
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)						
			L	C	Cx	D	G	Gx	F
3/8	1/4	SS-MU-MF6-MF4	1.75 (44.5)	0.44 (11.2)	0.38 (9.7)	0.11 (2.8)	0.63 (15.9)	0.50 (12.7)	0.75 (19.1)
9/16	1/4	SS-MU-MF9-MF4	2.00 (50.8)	0.55 (14.0)	0.38 (9.7)	0.11 (2.8)	0.94 (23.8)	0.50 (12.7)	1.00 (25.4)
9/16	3/8	SS-MU-MF9-MF6	2.00 (50.8)	0.55 (14.0)	0.44 (11.2)	0.20 (5.2)	0.94 (23.8)	0.63 (15.9)	1.00 (25.4)
3/4	1/4	SS-MU-MF12-MF4	2.25 (57.2)	0.60 (15.2)	0.38 (9.7)	0.11 (2.8)	1.19 (30.2)	0.50 (12.7)	1.38 (34.9)
3/4	3/8	SS-MU-MF12-MF6	2.25 (57.2)	0.60 (15.2)	0.44 (11.2)	0.20 (5.2)	1.19 (30.2)	0.63 (15.9)	1.38 (34.9)
3/4	9/16	SS-MU-MF12-MF9	2.50 (63.5)	0.60 (15.2)	0.55 (14.0)	0.31 (7.9)	1.19 (30.2)	0.94 (23.8)	1.38 (34.9)
1	1/4	SS-MU-MF16-MF4	2.75 (69.9)	0.74 (18.7)	0.38 (9.7)	0.11 (2.8)	1.38 (34.9)	0.50 (12.7)	1.75 (44.5)
1	3/8	SS-MU-MF16-MF6	2.88 (73.0)	0.74 (18.7)	0.44 (11.2)	0.20 (5.2)	1.38 (34.9)	0.63 (15.9)	1.75 (44.5)
1	9/16	SS-MU-MF16-MF9	3.00 (76.2)	0.74 (18.7)	0.55 (14.0)	0.31 (7.9)	1.38 (34.9)	0.94 (23.8)	1.75 (44.5)
1	3/4	SS-MU-MF16-MF12	3.00 (76.2)	0.74 (18.7)	0.60 (15.2)	0.44 (11.1)	1.38 (34.9)	1.19 (30.2)	1.75 (44.5)

Unions (Slip Type)



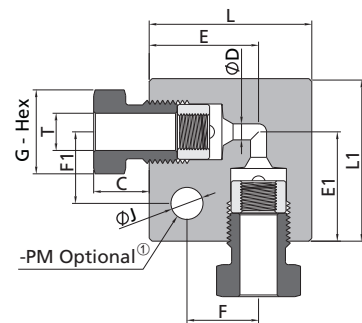
Tube						
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		L	C	D	G	F
1/4	SS-MSU-MF4	1.62 (41.1)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	0.63 (15.9)
3/8	SS-MSU-MF6	1.75 (44.5)	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	0.75 (19.1)
9/16	SS-MSU-MF9	2.14 (54.3)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.00 (25.4)
3/4	SS-MSU-MF12	2.50 (63.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.38 (34.9)
1	SS-MSU-MF16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	1.75 (44.5)

Bulkhead Unions



Tube		Dimensions, in. (mm)						
T - Tube O.D. in.	Ordering Number	L	C	D	G	F	Panel Hole Size	Max. Panel Thickness
1/4	SS-MBU-MF4	1.88 (47.8)	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.00 (25.4)	0.81 (20.6)	0.38 (9.7)
3/8	SS-MBU-MF6	2.00 (50.8)	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
9/16	SS-MBU-MF9	2.38 (60.5)	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
3/4	SS-MBU-MF12	2.62 (66.5)	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	1.88 (47.6)	1.69 (42.9)	0.38 (9.7)
1	SS-MBU-MF16	3.50 (88.9)	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	2.13 (54.0)	1.94 (49.3)	0.38 (9.7)

Union Elbows

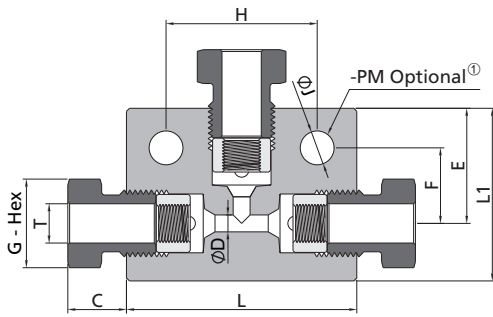


Tube		Dimensions, in. (mm)							
T - Tube O.D. in.	Ordering Number	C	D	G	L	E	L1	E1	F ^②
1/4	SS-MLU-MF4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.12 (28.4)	0.75 (19.1)	1.12 (28.4)	0.75 (19.1)	0.49 (12.5)
3/8	SS-MLU-MF6	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	1.38 (34.9)	1.00 (25.4)	1.38 (34.9)	1.00 (25.4)	0.63 (16.0)
9/16	SS-MLU-MF9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	1.75 (44.5)	1.25 (31.8)	1.75 (44.5)	1.25 (31.8)	0.84 (21.3)
3/4	SS-MLU-MF12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	2.25 (57.2)	1.50 (38.1)	2.25 (57.2)	1.50 (38.1)	1.00 (25.4)
1	SS-MLU-MF16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	3.00 (76.2)	2.06 (52.3)	3.00 (76.2)	2.06 (52.3)	1.38 (35.0)
1 1/2	SS-MLU-MF24	1.12 (28.5)	0.94 (23.8)	1.87 (47.6)	4.00 (101.6)	2.87 (73.0)	4.00 (101.6)	2.87 (73.0)	1.97 (50.0)
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)							
		F1 ^②	J ^②	Thickness					
1/4	SS-MLU-MF4	0.49 (12.5)	0.22 (5.6)	0.63 (15.9)					
3/8	SS-MLU-MF6	0.63 (16.0)	0.26 (6.6)	0.75 (19.1)					
9/16	SS-MLU-MF9	0.84 (21.3)	0.33 (8.4)	1.00 (25.4)					
3/4	SS-MLU-MF12	1.00 (25.4)	0.35 (8.9)	1.38 (34.9)					
1	SS-MLU-MF16	1.38 (35.0)	0.53 (13.5)	1.75 (44.5)					
1 1/2	SS-MLU-MF24	1.97 (50.0)	0.73 (18.6)	2.25 (57.2)					

① To order a fitting with a mounting hole, add "-PM" to ordering number.

② Applicable only to "-PM" models.

Union Tees

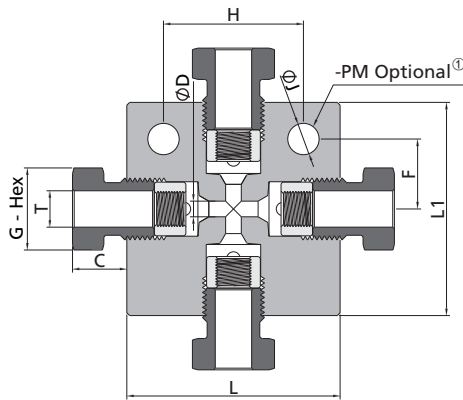


Tube		Dimensions, in. (mm)					
T - Tube O.D. in.	Ordering Number	C	D	G	L	L1	
1/4	SS-MT-MF4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.50 (38.1)	1.12 (28.4)	
3/8	SS-MT-MF6	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	2.00 (50.8)	1.38 (34.9)	
9/16	SS-MT-MF9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	2.50 (63.5)	1.75 (44.5)	
3/4	SS-MT-MF12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	3.00 (76.2)	2.25 (57.2)	
1	SS-MT-MF16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	4.12 (104.6)	3.00 (76.2)	
1 1/2	SS-MT-MF24	1.12 (28.5)	0.94 (23.8)	1.87 (47.6)	5.75 (146.0)	4.00 (101.6)	
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)					
		E	F ^②	H ^②	J ^②	Thickness	
1/4	SS-MT-MF4	0.75 (19.1)	0.49 (12.5)	0.98 (25.0)	0.22 (5.6)	0.63 (15.9)	
3/8	SS-MT-MF6	1.00 (25.4)	0.63 (16.0)	1.26 (32.0)	0.26 (6.6)	0.75 (19.1)	
9/16	SS-MT-MF9	1.25 (31.8)	0.84 (21.3)	1.68 (42.6)	0.33 (8.4)	1.00 (25.4)	
3/4	SS-MT-MF12	1.50 (38.1)	1.00 (25.4)	2.00 (50.8)	0.35 (8.9)	1.38 (34.9)	
1	SS-MT-MF16	2.06 (52.3)	1.38 (35.0)	2.76 (70.0)	0.53 (13.5)	1.75 (44.5)	
1 1/2	SS-MT-MF24	2.87 (73.0)	1.97 (50.0)	3.94 (100.0)	0.73 (18.6)	2.25 (57.2)	

① To order a fitting with a mounting hole, add "-PM" to ordering number.

② Applicable only to "-PM" models.

Union Crosses



Tube		Dimensions, in. (mm)								
T - Tube O.D. in.	Ordering Number	C	D	G	L	L1	F ^②	H ^②	J ^②	Thickness
1/4	SS-MX-MF4	0.38 (9.7)	0.11 (2.8)	0.50 (12.7)	1.50 (38.1)	1.50 (38.1)	0.49 (12.5)	0.98 (25.0)	0.22 (5.6)	0.63 (15.9)
3/8	SS-MX-MF6	0.44 (11.2)	0.20 (5.2)	0.63 (15.9)	2.00 (50.8)	2.00 (50.8)	0.63 (16.0)	1.26 (32.0)	0.26 (6.6)	0.75 (19.1)
9/16	SS-MX-MF9	0.55 (14.0)	0.31 (7.9)	0.94 (23.8)	2.50 (63.5)	2.50 (63.5)	0.84 (21.3)	1.68 (42.6)	0.33 (8.4)	1.00 (25.4)
3/4	SS-MX-MF12	0.60 (15.2)	0.44 (11.1)	1.19 (30.2)	3.00 (76.2)	3.00 (76.2)	1.00 (25.4)	2.00 (50.8)	0.35 (8.9)	1.38 (34.9)
1	SS-MX-MF16	0.74 (18.7)	0.56 (14.3)	1.38 (34.9)	4.12 (104.6)	4.12 (104.6)	1.38 (35.0)	2.76 (70.0)	0.53 (13.5)	1.75 (44.5)
1 1/2	SS-MX-MF24	1.12 (28.5)	0.94 (23.8)	1.87 (47.6)	5.75 (146.0)	5.75 (146.0)	1.97 (50.0)	3.94 (100.0)	0.73 (18.6)	2.25 (57.2)

① To order a fitting with a mounting hole, add "-PM" to ordering number.

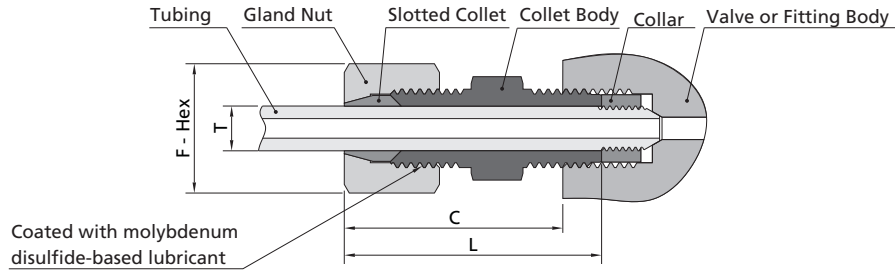
② Applicable only to "-PM" models.

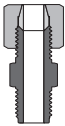
Anti-Vibration Gland Assemblies

Working pressure: 20,000 psig (1379 bar)

Tubing systems may be subject to extreme vibration or shock. In such applications, these assemblies provide the same reliable connection as standard FITOK glands to essentially prolong vibrational fatigue life.

A complete ordering number for anti-vibration gland assembly (for example: SS-MAV-MF4) includes gland nut, slotted collet and collet body. To order components with anti-vibration gland assemblies, add "-AV" to ordering number.



Tube					
Anti-Vibration Gland Assemblies	T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)		
			L	C	F
	1/4	SS-MAV-MF4	1.24 (31.6)	1.05 (26.7)	0.63 (15.9)
	3/8	SS-MAV-MF6	1.50 (38.1)	1.22 (30.9)	0.81 (20.6)
	9/16	SS-MAV-MF9	1.78 (45.2)	1.42 (36.0)	0.94 (23.8)
	3/4	SS-MAV-MF12	2.00 (50.8)	1.61 (40.8)	1.38 (34.9)
	1	SS-MAV-MF16	2.38 (60.5)	1.74 (44.3)	1.50 (38.1)

Installation Instructions

Please see A-112.

Connection Information

Please see A-02.

Ordering Number Description

Material		Fitting Type		P1 Type		P1 Size		P2, P3 and P4	Mounting Hole	
SS	316 SS	MG	Gland	MF	Female Medium Pressure	4	1/4"	Specified in the same way as the P1		None
		MCO	Collar			6	3/8"		PM	Mounting Hole (For elbows, tees, and crosses only)
		MTP	Plug			9	9/16"			
		MTC	Cap			12	3/4"			
		MU	Union or Reducing Union			16	1"			
		MSU	Union (Slip Type)			24	1 1/2"			
		MBU	Bulkhead Union							
		MLU	Union Elbow							
		MT	Union Tee							
		MX	Union Cross							
		MAV	Anti-vibration Gland Assembly							

Anti-vibration Gland	
	None
AV	Anti-vibration Gland

Notes: 1. For more details regarding Medium Pressure connection, please see **Connection Information** on A-02.

2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

60H Series High Pressure Fittings

60,000 psig (4137 bar)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Contents

Glands - HG



A-32

[Installation Instructions](#)

A-112

Collars - HCO



A-32

[Connection Information](#)

A-02

Plugs - HTP



A-32

[Ordering Number Description](#)

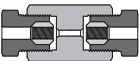
A-36

Caps - HTC



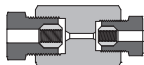
A-33

Unions - HU



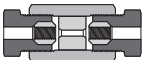
A-33

Reducing Unions - HU



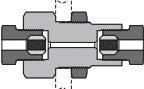
A-33

Unions (Slip Type) - HSU



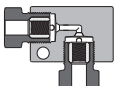
A-33

Bulkhead Unions - HBU



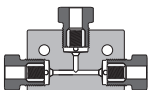
A-34

Union Elbows - HLU



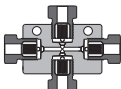
A-34

Union Tees - HT



A-35

Union Crosses - HX



A-35

Anti-vibration Gland Assemblies - HAV

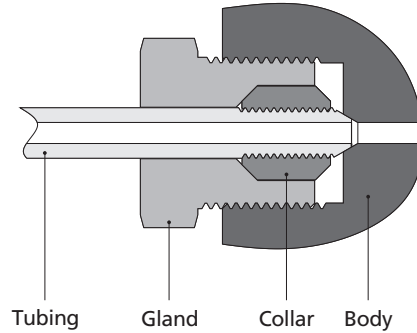


A-36

Features

- Working pressure: 60,000 psig (4137 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Use with T60H series tubing as standard, tubing sizes available in 1/4", 3/8" and 9/16"
- High tensile 316 stainless steel material
- Every fitting marked with size, material and trace ID

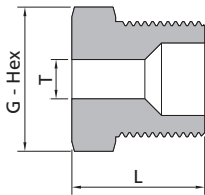
Construction



Ordering Information and Dimensions

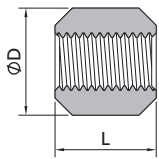
Dimensions are for reference only and are subject to change.

Glands



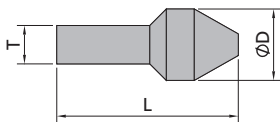
Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		G	L
1/4	SS-HG-HF4	0.63 (15.9)	0.82 (20.8)
3/8	SS-HG-HF6	0.81 (20.6)	1.13 (28.7)
9/16	SS-HG-HF9	1.19 (30.2)	1.50 (38.1)

Collars



Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-HCO-HF4	0.38 (9.6)	0.38 (9.6)
3/8	SS-HCO-HF6	0.50 (12.7)	0.54 (13.7)
9/16	SS-HCO-HF9	0.81 (20.6)	0.62 (15.8)

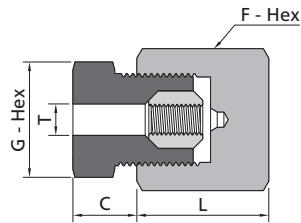
Plugs^①



Tube			
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)	
		D	L
1/4	SS-HTP-HF4	0.38 (9.6)	1.04 (26.4)
3/8	SS-HTP-HF6	0.50 (12.7)	1.35 (34.3)
9/16	SS-HTP-HF9	0.81 (20.6)	1.89 (48.0)

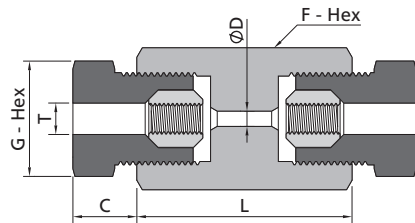
^① When using plug, collar is not required.

Caps



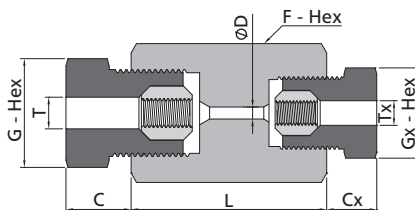
Tube					
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)			
		L	C	G	F
1/4	SS-HTC-HF4	0.75 (19.1)	0.47 (11.9)	0.63 (15.9)	0.75 (19.1)
3/8	SS-HTC-HF6	1.13 (28.6)	0.61 (15.6)	0.81 (20.6)	1.00 (25.4)
9/16	SS-HTC-HF9	1.38 (34.9)	0.95 (24.1)	1.19 (30.2)	1.38 (34.9)

Unions



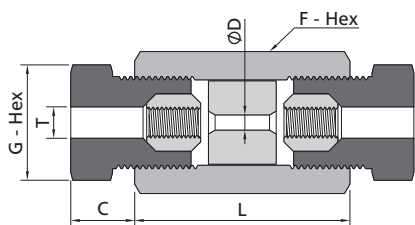
Tube						
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		L	C	D	G	F
1/4	SS-HU-HF4	1.38 (34.9)	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	0.75 (19.1)
3/8	SS-HU-HF6	1.75 (44.5)	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	1.00 (25.4)
9/16	SS-HU-HF9	2.19 (55.6)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.38 (34.9)

Reducing Unions



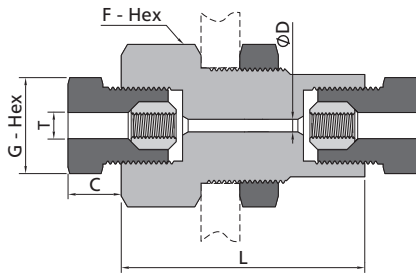
Tube									
T - Tube O.D. in.	Tx - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)						
			L	C	Cx	D	G	Gx	F
3/8	1/4	SS-HU-HF6-HF4	1.63 (41.3)	0.61 (15.6)	0.47 (11.9)	0.09 (2.4)	0.81 (20.6)	0.63 (15.9)	1.00 (25.4)
9/16	1/4	SS-HU-HF9-HF4	1.75 (44.5)	0.95 (24.1)	0.47 (11.9)	0.09 (2.4)	1.19 (30.2)	0.63 (15.9)	1.38 (34.9)
9/16	3/8	SS-HU-HF9-HF6	2.00 (50.8)	0.95 (24.1)	0.61 (15.6)	0.13 (3.2)	1.19 (30.2)	0.81 (20.6)	1.38 (34.9)

Unions (Slip Type)



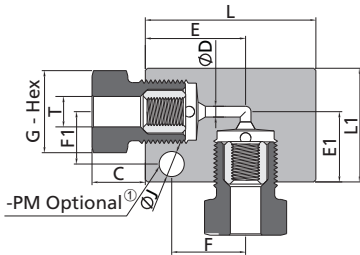
Tube						
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		L	C	D	G	F
1/4	SS-HSU-HF4	1.38 (34.9)	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	0.75 (19.1)
3/8	SS-HSU-HF6	1.75 (44.5)	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	1.00 (25.4)
9/16	SS-HSU-HF9	2.19 (55.6)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.38 (34.9)

Bulkhead Unions



Tube								
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)						
		L	C	D	G	F	Panel Hole Size	Max. Panel Thickness
1/4	SS-HBU-HF4	1.88 (47.8)	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	1.06 (27.0)	0.94 (23.9)	0.38 (9.7)
3/8	SS-HBU-HF6	2.38 (60.5)	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	1.38 (34.9)	1.13 (28.6)	0.38 (9.7)
9/16	SS-HBU-HF9	2.75 (69.9)	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	1.88 (47.6)	1.69 (42.9)	0.38 (9.7)

Union Elbows



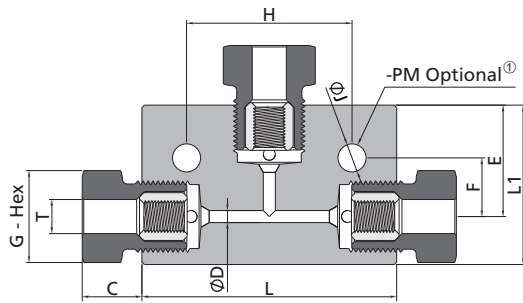
Tube 管							
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)					
		C	D	G	L	E	L1
1/4	SS-HLU-HF4	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	1.50 (38.1)	0.88 (22.4)	1.00 (25.4)
3/8	SS-HLU-HF6	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	2.00 (50.8)	1.25 (31.8)	1.50 (38.1)
9/16	SS-HLU-HF9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	1.88 (47.8)	1.88 (47.8)

T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		E1	F ^②	F1 ^②	J ^②	Thickness
1/4	SS-HLU-HF4	0.62 (15.7)	0.65 (16.5)	0.46 (11.7)	0.22 (5.6)	0.75 (19.1)
3/8	SS-HLU-HF6	1.00 (25.4)	0.69 (17.5)	0.72 (18.3)	0.26 (6.6)	1.00 (25.4)
9/16	SS-HLU-HF9	1.12 (28.4)	0.94 (24.0)	0.83 (21.1)	0.33 (8.4)	1.50 (38.1)

① To order a fitting with a mounting hole, add "-PM" to ordering number.

② Applicable only to "-PM" models.

Union Tees



Tube

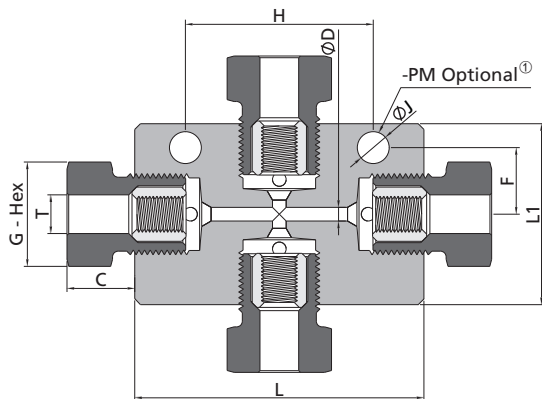
T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		C	D	G	L	L1
1/4	SS-HT-HF4	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	2.00 (50.8)	1.25 (31.8)
3/8	SS-HT-HF6	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	2.00 (50.8)	1.56 (39.6)
9/16	SS-HT-HF9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	2.12 (53.8)

T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)				
		E	F ^②	H ^②	J ^②	Thickness
1/4	SS-HT-HF4	0.88 (22.4)	0.46 (11.7)	1.30 (33.0)	0.22 (5.6)	0.75 (19.1)
3/8	SS-HT-HF6	1.06 (26.9)	0.72 (18.3)	1.38 (35.0)	0.26 (6.6)	1.00 (25.4)
9/16	SS-HT-HF9	1.38 (35.0)	0.83 (21.1)	1.89 (48.0)	0.33 (8.4)	1.50 (38.1)

① To order a fitting with a mounting hole, add "-PM" to ordering number.

② Applicable only to "-PM" models.

Union Crosses



Tube

T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)								
		C	D	G	L	L1	F ^②	H ^②	J ^②	Thickness
1/4	SS-HX-HF4	0.47 (11.9)	0.09 (2.4)	0.63 (15.9)	2.00 (50.8)	1.25 (31.8)	0.46 (11.7)	1.30 (33.0)	0.22 (5.6)	0.75 (19.1)
3/8	SS-HX-HF6	0.61 (15.6)	0.13 (3.2)	0.81 (20.6)	2.00 (50.8)	2.12 (53.8)	0.72 (18.3)	1.38 (35.0)	0.26 (6.6)	1.00 (25.4)
9/16	SS-HX-HF9	0.95 (24.1)	0.19 (4.8)	1.19 (30.2)	2.62 (66.5)	2.75 (69.9)	0.83 (21.1)	1.89 (48.0)	0.33 (8.4)	1.50 (38.1)

① To order a fitting with a mounting hole, add "-PM" to ordering number.

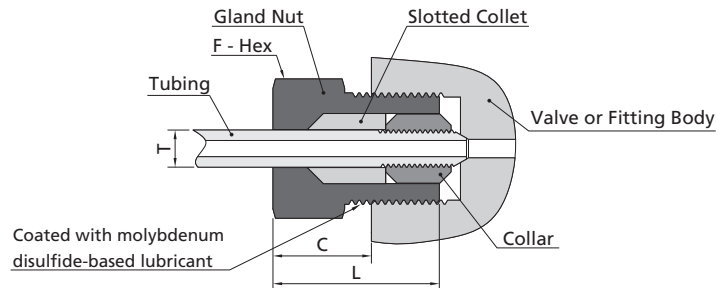
② Applicable only to "-PM" models.

Anti-Vibration Gland Assemblies

Working pressure: 60,000 psig (4137 bar)

Tubing systems may be subject to extreme vibration or shock. In such applications, these assemblies provide the same reliable connection as standard FITOK glands to essentially prolong vibrational fatigue life.

A complete ordering number for anti-vibration gland assembly (for example: SS-HAV-HF4) includes gland nut and slotted collet. To order components with anti-vibration gland assemblies, add "-AV" to ordering number.



Tube					
Anti-vibration Gland Assemblies	T - Tube O.D. in.	Ordering Number	Dimensions, in. (mm)		
			L	C	F
	1/4	SS-HAV-HF4	0.81 (20.6)	0.47 (11.9)	0.63 (15.9)
	3/8	SS-HAV-HF6	1.12 (28.4)	0.61 (15.6)	0.81 (20.6)
	9/16	SS-HAV-HF9	1.50 (38.1)	0.95 (24.1)	1.19 (30.2)

Installation Instructions

Please see A-112.

Connection Information

Please see A-02.

Ordering Number Description

Material		Fitting Type		P1 Type	P1 Size	P2, P3 and P4	Mounting Hole
SS	316 SS	HG	Gland	HF	Female High Pressure	4 1/4"	None
		HCO	Collar			6 3/8"	PM
		HTP	Plug			9 9/16"	Mounting Hole (For elbows, tees, and crosses only)
		HTC	Cap				
		HU	Union or Reducing Union				
		HSU	Union (Slip Type)				
		HBU	Bulkhead Union				
		HLU	Union Elbow				
		HT	Union Tee				
		HX	Union Cross				
		HAV	Anti-vibration Gland Assembly				

SS - HU - HF6 - ☐ - ☐ - ☐ - PM - AV	
Material	SS
Fitting Type	HU
P1 Type	HF6
P1 Size	4
P2, P3 and P4	PM
Mounting Hole	AV

Notes: 1. For more details regarding High Pressure connection, please see **Connection Information** on A-02.

2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

PMH Series Pipe Fittings

Fittings

Tubing

Quick Couplings

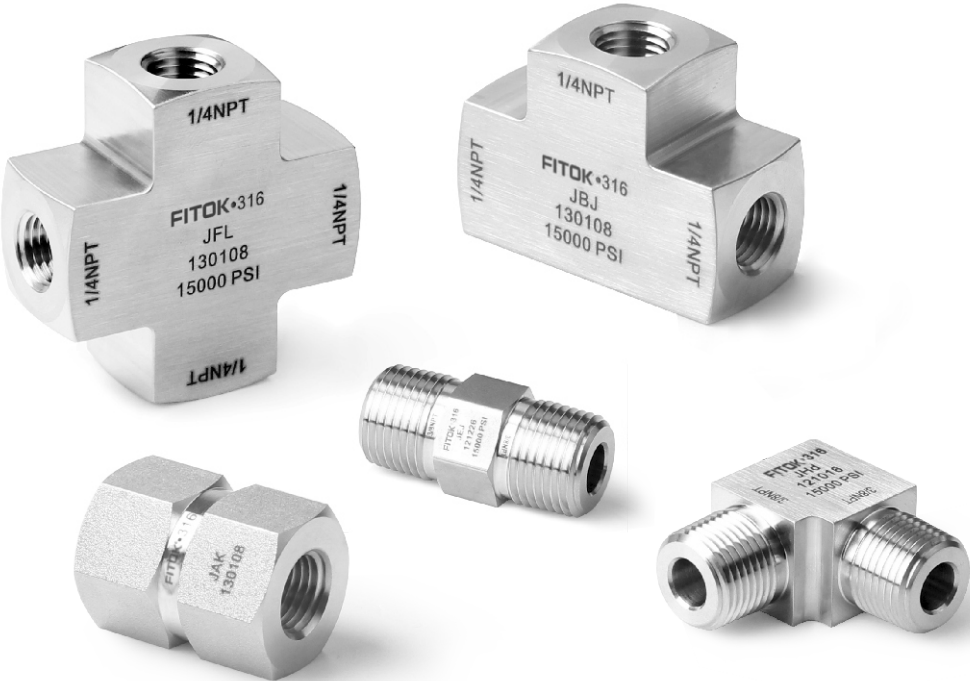
Line Filters

Valves

Sour Service
Products

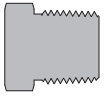
Subsea Valves

Part Number
Crossover Charts



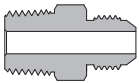
Contents

Pipe Plugs - HPP



A-40

Hex Nipples - HPN



A-41

Hex Long Nipples - HPL



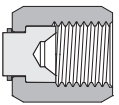
A-48

Pipe Caps - HPC



A-49

Pipe Cap Assemblies (Moveable Insert) - HMC



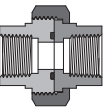
A-50

Hex Couplings - HPG



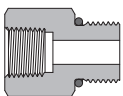
A-52

Zero-Clearance Unions - HPZ



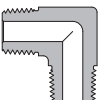
A-55

Adapters - HPA



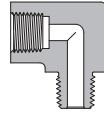
A-56

Male Elbows - HPE



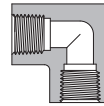
A-63

Street Elbows - HPE



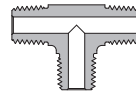
A-64

Female Elbows - HPE



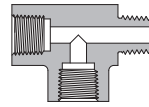
A-65

Male Tees - HPT



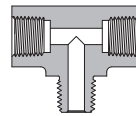
A-66

Male Street Tees - HPT



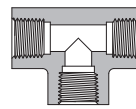
A-66

Male Branch Tees - HPT



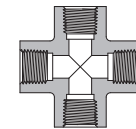
A-67

Female Tees - HPT



A-67

Female Crosses - HPX



A-68

Connection Information

A-02

Ordering Number Description

A-69

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Features

- ⦿ High tensile 316 stainless steel as standard material, other materials available upon request
- ⦿ The hardened threads with smooth surface finishing avoid galling and help to extend the fitting service life
- ⦿ Radius junction design for elbows provides smooth flow path
- ⦿ Every fitting marked with size, material and trace ID

Thread Specifications

Connection Type	Designator	Thread Type	Thread Specification
Male NPT	NS	NPT	ASME B1.20.1, SAE AS71051
Female NPT	FNS		
Male ISO Tapered Thread	RT	ISO Tapered	ISO 7-1, BS EN 10226-1, DIN EN 10226-1, JIS B0203
Female ISO Tapered Thread	FRT		
Male JIC	JM	SAE/MS	ASME B1.1
Female JIC	JF		
Male SAE O-Ring	SH		
Female SAE O-Ring	US		
Male Type "M"	TM	ISO Parallel	ISO 228-1, DIN ISO 228-1, JIS B0202, BS2779
Male ISO Parallel Thread	HBP		
Female ISO Parallel Thread	SBP, HSBP		

① For more information, please refer to **Technical Information** on Page A-02.

Working Pressure

The working pressures of pipe fittings are shown in the "**Ordering Information and Dimensions**".

Working Temperature

Connection Type	Working Temperature Range
Male or Female NPT	-325°F to 400°F (-198°C to 204°C)①
Male or Female ISO Tapered Thread	-325°F to 400°F (-198°C to 204°C)①
Male or Female JIC	-423°F to 1200°F (-252°C to 649°C)
Male SAE O-Ring	0°F to 400°F (-17.8°C to 204°C)②
Female SAE O-Ring	-50°F to 550°F (-45°C to 288°C)
Male Type "M"	-423°F to 1200°F (-252°C to 649°C)
ISO Parallel Thread	-423°F to 1200°F (-252°C to 649°C)

① The data are based on the working temperature range of the thread sealants. For the working temperature above 400°F (204°C), please contact FITOK Group or our authorized distributors.

② The ends are supplied with a FKM O-ring as standard, other materials of O-rings available.

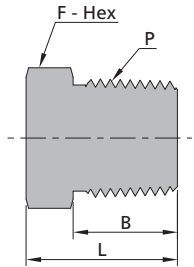
Cautions

- ⦿ Do not loosen or tighten fittings when the system is pressurized.
- ⦿ Always use proper thread sealants on tapered pipe threads. FITOK PTFE thread seal tapes are available. For more details, see Page A-90 of the **6D Series Tube Fittings** catalog.

Ordering Information and Dimensions

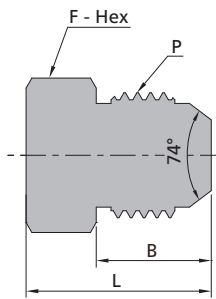
Dimensions are for reference only and are subject to change.

Pipe Plugs

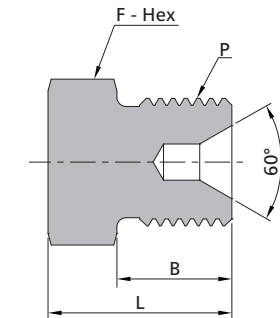


Male NPT Threads					
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/8	SS-HPP-NS2	0.63 (16.0)	0.44 (11.1)	0.38 (9.7)	15000 (1034)
1/4	SS-HPP-NS4	0.87 (22.2)	0.56 (14.3)	0.56 (14.2)	15000 (1034)
3/8	SS-HPP-NS6	0.93 (23.6)	0.69 (17.5)	0.56 (14.2)	15000 (1034)
1/2	SS-HPP-NS8	1.16 (29.5)	0.87 (22.2)	0.75 (19.1)	15000 (1034)
3/4	SS-HPP-NS12	1.25 (31.8)	1.06 (27.0)	0.75 (19.1)	10000 (690)
1	SS-HPP-NS16	1.55 (39.3)	1.37 (34.9)	0.94 (23.9)	10000 (690)

Male ISO Tapered Threads					
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/8	SS-HPP-RT2	0.63 (16.0)	0.44 (11.1)	0.38 (9.7)	15000 (1034)
1/4	SS-HPP-RT4	0.87 (22.2)	0.56 (14.3)	0.56 (14.2)	15000 (1034)
3/8	SS-HPP-RT6	0.93 (23.6)	0.69 (17.5)	0.56 (14.2)	15000 (1034)
1/2	SS-HPP-RT8	1.16 (29.5)	0.87 (22.2)	0.75 (19.1)	15000 (1034)
3/4	SS-HPP-RT12	1.25 (31.8)	1.06 (27.0)	0.75 (19.1)	10000 (690)
1	SS-HPP-RT16	1.55 (39.3)	1.37 (34.9)	0.94 (23.9)	10000 (690)

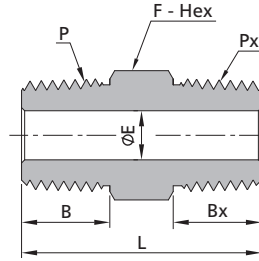


Male JIC					
P-JIC Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/4	SS-HPP-JM4	0.83 (21.0)	0.50 (12.7)	0.55 (14.0)	20000 (1379)
3/8	SS-HPP-JM6	0.89 (22.7)	0.63 (15.9)	0.56 (14.1)	20000 (1379)
1/2	SS-HPP-JM8	1.05 (26.7)	0.81 (20.6)	0.66 (16.7)	20000 (1379)
5/8	SS-HPP-JM10	1.19 (30.3)	0.94 (23.8)	0.76 (19.3)	20000 (1379)
3/4	SS-HPP-JM12	1.37 (34.9)	1.13 (28.6)	0.86 (21.9)	15000 (1034)
1	SS-HPP-JM16	1.51 (38.3)	1.37 (34.9)	0.91 (23.1)	15000 (1034)



Male Type "M"					
P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
9/16-18	SS-HPP-TM9	0.84 (21.3)	0.63 (15.9)	0.50 (12.7)	60000 (4137)
3/4-16	SS-HPP-TM12	1.01 (25.6)	0.75 (19.1)	0.63 (16.0)	30000 (2068)
7/8-14	SS-HPP-TM14	1.21 (30.8)	1.00 (25.4)	0.76 (19.2)	50000 (3447)
1-12	SS-HPP-TM16	1.10 (27.9)	1.00 (25.4)	0.64 (16.3)	30000 (2068)
1 5/16-12	SS-HPP-TM21	1.22 (30.9)	1.37 (34.9)	0.62 (15.7)	20000 (1379)

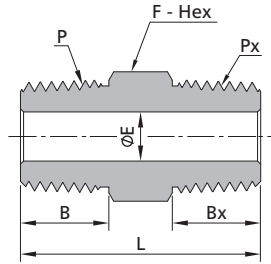
Hex Nipples



Male NPT Threads

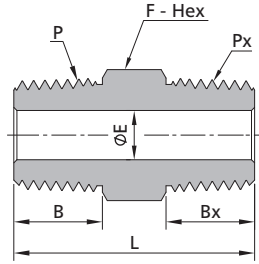
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPN-NS2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/8	SS-HPN-NS4-NS2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPN-NS4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	1/8	SS-HPN-NS6-NS2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
3/8	1/4	SS-HPN-NS6-NS4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPN-NS6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/8	SS-HPN-NS8-NS2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/2	1/4	SS-HPN-NS8-NS4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPN-NS8-NS6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPN-NS8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	1/8	SS-HPN-NS12-NS2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)
3/4	1/4	SS-HPN-NS12-NS4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)
3/4	3/8	SS-HPN-NS12-NS6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)
3/4	1/2	SS-HPN-NS12-NS8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPN-NS12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1/8	SS-HPN-NS16-NS2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)
1	1/4	SS-HPN-NS16-NS4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)
1	3/8	SS-HPN-NS16-NS6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)
1	1/2	SS-HPN-NS16-NS8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPN-NS16-NS12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPN-NS16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Hex Nipples



Male NPT Threads			Male ISO Tapered Threads					
P-NPT Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPN-NS2-RT2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/8	SS-HPN-NS4-RT2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPN-NS4-RT4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	1/8	SS-HPN-NS6-RT2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
3/8	1/4	SS-HPN-NS6-RT4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPN-NS6-RT6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/8	SS-HPN-NS8-RT2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/2	1/4	SS-HPN-NS8-RT4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPN-NS8-RT6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPN-NS8-RT8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	1/8	SS-HPN-NS12-RT2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)
3/4	1/4	SS-HPN-NS12-RT4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)
3/4	3/8	SS-HPN-NS12-RT6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)
3/4	1/2	SS-HPN-NS12-RT8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPN-NS12-RT12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1/8	SS-HPN-NS16-RT2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)
1	1/4	SS-HPN-NS16-RT4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)
1	3/8	SS-HPN-NS16-RT6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)
1	1/2	SS-HPN-NS16-RT8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPN-NS16-RT12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPN-NS16-RT16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

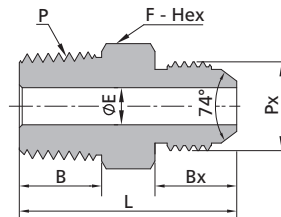
Hex Nipples



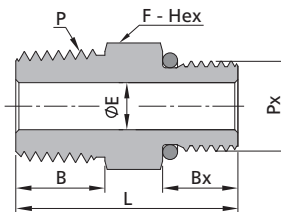
Male ISO Tapered Threads

P-ISO Thread Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPN-RT2	1.05 (26.6)	0.44 (11.1)	0.38 (9.7)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/8	SS-HPN-RT4-RT2	1.30 (32.9)	0.56 (14.3)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPN-RT4	1.47 (37.4)	0.56 (14.3)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	1/8	SS-HPN-RT6-RT2	1.34 (34.1)	0.69 (17.5)	0.56 (14.2)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
3/8	1/4	SS-HPN-RT6-RT4	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPN-RT6	1.52 (38.6)	0.69 (17.5)	0.56 (14.2)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/8	SS-HPN-RT8-RT2	1.58 (40.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/2	1/4	SS-HPN-RT8-RT4	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPN-RT8-RT6	1.76 (44.7)	0.87 (22.2)	0.75 (19.1)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPN-RT8	1.95 (49.6)	0.87 (22.2)	0.75 (19.1)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	1/8	SS-HPN-RT12-RT2	1.67 (42.4)	1.06 (27.0)	0.75 (19.1)	0.38 (9.7)	0.22 (5.5)	10000 (690)
3/4	1/4	SS-HPN-RT12-RT4	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.28 (7.1)	10000 (690)
3/4	3/8	SS-HPN-RT12-RT6	1.85 (46.9)	1.06 (27.0)	0.75 (19.1)	0.56 (14.2)	0.38 (9.6)	10000 (690)
3/4	1/2	SS-HPN-RT12-RT8	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPN-RT12	2.04 (51.8)	1.06 (27.0)	0.75 (19.1)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1/8	SS-HPN-RT16-RT2	1.96 (49.8)	1.37 (34.9)	0.94 (23.9)	0.38 (9.7)	0.22 (5.5)	10000 (690)
1	1/4	SS-HPN-RT16-RT4	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.28 (7.1)	10000 (690)
1	3/8	SS-HPN-RT16-RT6	2.14 (54.3)	1.37 (34.9)	0.94 (23.9)	0.56 (14.2)	0.38 (9.6)	10000 (690)
1	1/2	SS-HPN-RT16-RT8	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPN-RT16-RT12	2.33 (59.2)	1.37 (34.9)	0.94 (23.9)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPN-RT16	2.52 (64.0)	1.37 (34.9)	0.94 (23.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Hex Nipples



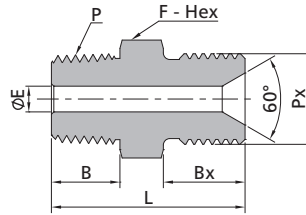
Male NPT Threads			Male JIC					
P-NPT Size, in.	Px-JIC Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/4	SS-HPN-NS2-JM4	1.23 (31.3)	0.50 (12.7)	0.38 (9.7)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/8	3/8	SS-HPN-NS2-JM6	1.31 (33.4)	0.63 (15.9)	0.38 (9.7)	0.56 (14.1)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPN-NS4-JM4	1.46 (37.2)	0.56 (14.3)	0.56 (14.2)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/4	3/8	SS-HPN-NS4-JM6	1.49 (37.9)	0.63 (15.9)	0.56 (14.2)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
1/4	1/2	SS-HPN-NS4-JM8	1.65 (41.9)	0.81 (20.6)	0.56 (14.2)	0.66 (16.7)	0.25 (6.4)	15000 (1034)
3/8	1/4	SS-HPN-NS6-JM4	1.52 (38.4)	0.69 (17.5)	0.56 (14.2)	0.55 (14.0)	0.17(4.4)	15000 (1034)
3/8	3/8	SS-HPN-NS6-JM6	1.52 (38.4)	0.69 (17.5)	0.56 (14.2)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	1/2	SS-HPN-NS6-JM8	1.62 (41.1)	0.81 (20.6)	0.56 (14.2)	0.66 (16.7)	0.31 (7.9)	15000 (1034)
1/2	1/4	SS-HPN-NS8-JM4	1.75 (44.5)	0.87 (22.2)	0.75 (19.1)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/2	3/8	SS-HPN-NS8-JM6	1.75 (44.6)	0.87 (22.2)	0.75 (19.1)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
1/2	1/2	SS-HPN-NS8-JM8	1.86 (47.2)	0.87 (22.2)	0.75 (19.1)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	5/8	SS-HPN-NS8-JM10	1.98 (50.4)	0.94 (23.8)	0.75 (19.1)	0.76 (19.3)	0.37 (9.4)	15000 (1034)
3/4	1/2	SS-HPN-NS12-JM8	1.94 (49.4)	1.06 (27.0)	0.75 (19.1)	0.66 (16.7)	0.39 (9.9)	10000 (690)
3/4	5/8	SS-HPN-NS12-JM10	2.05 (52.0)	1.06 (27.0)	0.75 (19.1)	0.76 (19.3)	0.48 (12.3)	10000 (690)
3/4	3/4	SS-HPN-NS12-JM12	2.17 (55.0)	1.13 (28.6)	0.75 (19.1)	0.86 (21.9)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPN-NS12-JM16	2.30 (58.4)	1.37 (34.9)	0.75 (19.1)	0.91 (23.1)	0.58 (14.8)	10000 (690)
1	3/4	SS-HPN-NS16-JM12	2.44 (62.0)	1.37 (34.9)	0.94 (23.9)	0.86 (21.9)	0.61 (15.5)	10000 (690)
1	1	SS-HPN-NS16-JM16	2.49 (63.2)	1.37 (34.9)	0.94 (23.9)	0.91 (23.1)	0.79 (20.0)	10000 (690)

Hex Nipples^①

Male NPT Threads								Male SAE O-Ring
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/4	7/16-20	SS-HPN-NS4-SH7	1.35 (34.2)	0.56 (14.3)	0.56 (14.2)	0.43 (11.0)	0.18 (4.5)	10000 (690)
1/4	9/16-18	SS-HPN-NS4-SH9	1.43 (36.4)	0.69 (17.5)	0.56 (14.2)	0.47 (12.0)	0.28 (7.1)	10000 (690)
3/8	7/16-20	SS-HPN-NS6-SH7	1.39 (35.4)	0.69 (17.5)	0.56 (14.2)	0.43 (11.0)	0.18 (4.5)	10000 (690)
3/8	9/16-18	SS-HPN-NS6-SH9	1.43 (36.4)	0.69 (17.5)	0.56 (14.2)	0.47 (12.0)	0.30 (7.5)	10000 (690)
3/8	3/4-16	SS-HPN-NS6-SH12	1.56 (39.6)	0.87 (22.2)	0.56 (14.2)	0.55 (14.0)	0.38 (9.6)	10000 (690)
1/2	9/16-18	SS-HPN-NS8-SH9	1.67 (42.5)	0.87 (22.2)	0.75 (19.1)	0.47 (12.0)	0.30 (7.5)	10000 (690)
1/2	3/4-16	SS-HPN-NS8-SH12	1.75 (44.5)	0.87 (22.2)	0.75 (19.1)	0.55 (14.0)	0.39 (10.0)	10000 (690)
1/2	7/8-14	SS-HPN-NS8-SH14	1.88 (47.7)	1.00 (25.4)	0.75 (19.1)	0.63 (16.0)	0.47 (11.9)	10000 (690)
3/4	9/16-18	SS-HPN-NS12-SH9	1.76 (44.7)	1.06 (27.0)	0.75 (19.1)	0.47 (12.0)	0.30 (7.5)	10000 (690)
3/4	3/4-16	SS-HPN-NS12-SH12	1.84 (46.7)	1.06 (27.0)	0.75 (19.1)	0.55 (14.0)	0.39 (10.0)	10000 (690)
3/4	7/8-14	SS-HPN-NS12-SH14	1.92 (48.7)	1.06 (27.0)	0.75 (19.1)	0.63 (16.0)	0.49 (12.5)	10000 (690)
1	3/4-16	SS-HPN-NS16-SH12	2.13 (54.1)	1.37 (34.9)	0.94 (23.9)	0.55 (14.0)	0.39 (10.0)	10000 (690)
1	7/8-14	SS-HPN-NS16-SH14	2.21 (56.1)	1.37 (34.9)	0.94 (23.9)	0.63 (16.0)	0.49 (12.5)	10000 (690)

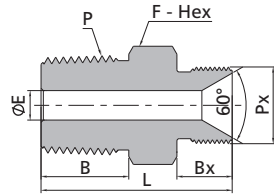
① Male SAE O-ring Ends are supplied with a FKM O-ring as standard, other materials of O-rings available.

Hex Nipples



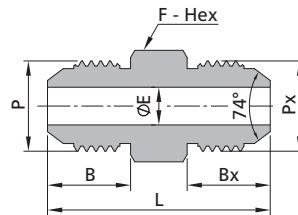
Male NPT Threads					Male Type "M"				
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
1/8	9/16-18	SS-HPN-NS2-TM9	1.22 (31.0)	0.63 (15.9)	0.38 (9.7)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/8	3/4-16	SS-HPN-NS2-TM12	13.9 (35.3)	0.75 (19.1)	0.38 (9.7)	0.63 (16.0)	0.19 (4.8)	15000 (1034)	
1/4	9/16-18	SS-HPN-NS4-TM9	1.40 (35.5)	0.63 (15.9)	0.56 (14.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/4	3/4-16	SS-HPN-NS4-TM12	1.57 (39.8)	0.75 (19.1)	0.56 (14.2)	0.63 (16.0)	0.25 (6.4)	15000 (1034)	
1/4	7/8-14	SS-HPN-NS4-TM14	1.77 (45.0)	1.00 (25.4)	0.56 (14.2)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
3/8	9/16-18	SS-HPN-NS6-TM9	1.42 (36.1)	0.69 (17.5)	0.56 (14.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
3/8	3/4-16	SS-HPN-NS6-TM12	1.57 (39.8)	0.75 (19.1)	0.56 (14.2)	0.63 (16.0)	0.29 (7.4)	15000 (1034)	
3/8	7/8-14	SS-HPN-NS6-TM14	1.96 (49.9)	1.00 (25.4)	0.56 (14.2)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
1/2	9/16-18	SS-HPN-NS8-TM9	1.66 (42.2)	0.87 (22.2)	0.75 (19.1)	0.50 (12.7)	0.09 (2.4)	15000 (1034)	
1/2	3/4-16	SS-HPN-NS8-TM12	1.79 (45.5)	0.87 (22.2)	0.75 (19.1)	0.63 (16.0)	0.29 (7.4)	15000 (1034)	
1/2	7/8-14	SS-HPN-NS8-TM14	1.96 (49.9)	1.00 (25.4)	0.75 (19.1)	0.76 (19.2)	0.15 (3.8)	15000 (1034)	
1/2	1-12	SS-HPN-NS8-TM16	1.85 (47.0)	1.00 (25.4)	0.75 (19.1)	0.64 (16.3)	0.38 (9.6)	15000 (1034)	
3/4	9/16-18	SS-HPN-NS12-TM9	1.75 (44.4)	1.06 (27.0)	0.75 (19.1)	0.50 (12.7)	0.09 (2.4)	10000 (690)	
3/4	3/4-16	SS-HPN-NS12-TM12	1.88 (47.7)	1.06 (27.0)	0.75 (19.1)	0.63 (16.0)	0.29 (7.4)	10000 (690)	
3/4	7/8-14	SS-HPN-NS12-TM14	2.00 (50.9)	1.06 (27.0)	0.75 (19.1)	0.76 (19.2)	0.15 (3.8)	10000 (690)	
3/4	1-12	SS-HPN-NS12-TM16	1.89 (48.0)	1.06 (27.0)	0.75 (19.1)	0.64 (16.3)	0.39 (10.0)	10000 (690)	
1	1-12	SS-HPN-NS16-TM16	2.18 (55.4)	1.37 (34.9)	0.94 (23.9)	0.64 (16.3)	0.39 (10.0)	10000 (690)	
1	1 5/16-12	SS-HPN-NS16-TM21	2.16 (54.8)	1.37 (34.9)	0.94 (23.9)	0.62 (15.7)	0.69 (17.5)	10000 (690)	

Hex Nipples



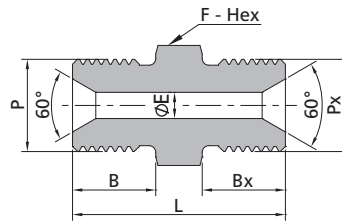
Male NPT Threads			Male ISO Parallel Threads					
P-NPT Size, in.	Px-ISO Parallel Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/4	SS-HPN-NS2-HBP4	1.15 (29.3)	0.63 (15.9)	0.38 (9.7)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
1/8	3/8	SS-HPN-NS2-HBP6	1.25 (31.7)	0.81 (20.6)	0.38 (9.7)	0.47 (12.0)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPN-NS4-HBP4	1.33 (33.8)	0.63 (15.9)	0.56 (14.2)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
1/4	3/8	SS-HPN-NS4-HBP6	1.43 (36.2)	0.81 (20.6)	0.56 (14.2)	0.47 (12.0)	0.25 (6.4)	15000 (1034)
1/4	1/2	SS-HPN-NS4-HBP8	1.56 (39.7)	1.00 (25.4)	0.56 (14.2)	0.55 (14.0)	0.25 (6.4)	15000 (1034)
3/8	1/4	SS-HPN-NS6-HBP4	1.35 (34.4)	0.69 (17.5)	0.56 (14.2)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
3/8	3/8	SS-HPN-NS6-HBP6	1.39 (35.4)	0.81 (20.6)	0.56 (14.2)	0.47 (12.0)	0.25 (6.4)	15000 (1034)
3/8	1/2	SS-HPN-NS6-HBP8	1.56 (39.7)	1.00 (25.4)	0.56 (14.2)	0.55 (14.0)	0.31 (7.9)	15000 (1034)
1/2	1/4	SS-HPN-NS8-HBP4	1.59 (40.5)	0.87 (22.2)	0.75 (19.1)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
1/2	3/8	SS-HPN-NS8-HBP6	1.63 (41.5)	0.87 (22.2)	0.75 (19.1)	0.47 (12.0)	0.25 (6.4)	15000 (1034)
1/2	1/2	SS-HPN-NS8-HBP8	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.55 (14.0)	0.37 (9.5)	15000 (1034)
1/2	3/4	SS-HPN-NS8-HBP12	1.95 (49.6)	1.25 (31.8)	0.75 (19.1)	0.63 (16.0)	0.38 (9.6)	15000 (1034)
1/2	1	SS-HPN-NS8-HBP16	2.11 (53.6)	1.50 (38.1)	0.75 (19.1)	0.75 (19.0)	0.38 (9.6)	15000 (1034)
3/4	1/2	SS-HPN-NS12-HBP8	1.80 (45.6)	1.06 (27.0)	0.75 (19.1)	0.55 (14.0)	0.37 (9.5)	10000 (690)
3/4	3/4	SS-HPN-NS12-HBP12	1.95 (49.6)	1.25 (31.8)	0.75 (19.1)	0.63 (16.0)	0.50 (12.7)	10000 (690)
3/4	1	SS-HPN-NS12-HBP16	2.11 (53.7)	1.50 (38.1)	0.75 (19.1)	0.75 (19.0)	0.58 (14.8)	10000 (690)
1	3/4	SS-HPN-NS16-HBP12	2.16 (54.9)	1.37 (34.9)	0.94 (23.9)	0.63 (16.0)	0.50 (12.7)	10000 (690)
1	1	SS-HPN-NS16-HBP16	2.30 (58.5)	1.50 (38.1)	0.94 (23.9)	0.75 (19.0)	0.63 (15.9)	10000 (690)

Hex Nipples



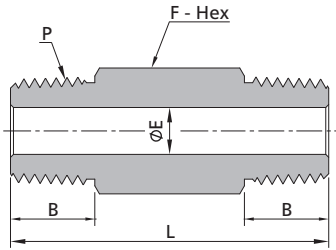
Male JIC			Dimensions, in. (mm)					Working Pressure psig (bar)
P-JIC Size, in.	Px-JIC Size, in.	Ordering Number	L	F	B	Bx	E	
1/4	1/4	SS-HPN-JM4	1.40 (35.6)	0.50 (12.7)	0.55 (14.0)	0.55 (14.0)	0.17 (4.4)	20000 (1379)
3/8	1/4	SS-HPN-JM6-JM4	1.48 (37.7)	0.63 (15.9)	0.56 (14.1)	0.55 (14.0)	0.17 (4.4)	20000 (1379)
3/8	3/8	SS-HPN-JM6	1.49 (37.8)	0.63 (15.9)	0.56 (14.1)	0.56 (14.1)	0.23 (5.8)	20000 (1379)
1/2	3/8	SS-HPN-JM8-JM6	1.65 (41.8)	0.81 (20.6)	0.66 (16.7)	0.56 (14.1)	0.23 (5.8)	20000 (1379)
1/2	1/2	SS-HPN-JM8	1.75 (44.4)	0.81 (20.6)	0.66 (16.7)	0.66 (16.7)	0.31 (8.0)	20000 (1379)
5/8	3/8	SS-HPN-JM10-JM6	1.79 (45.4)	0.94 (23.8)	0.76 (19.3)	0.56 (14.1)	0.23 (5.8)	20000 (1379)
5/8	1/2	SS-HPN-JM10-JM8	1.89 (48.0)	0.94 (23.8)	0.76 (19.3)	0.66 (16.7)	0.31 (8.0)	20000 (1379)
5/8	5/8	SS-HPN-JM10	1.99 (50.6)	0.94 (23.8)	0.76 (19.3)	0.76 (19.3)	0.37 (9.4)	20000 (1379)
3/4	1/2	SS-HPN-JM12-JM8	2.07 (52.6)	1.13 (28.6)	0.86 (21.9)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
3/4	5/8	SS-HPN-JM12-JM10	2.17 (55.2)	1.13 (28.6)	0.86 (21.9)	0.76 (19.3)	0.37 (9.4)	15000 (1034)
3/4	3/4	SS-HPN-JM12	2.28 (57.8)	1.13 (28.6)	0.86 (21.9)	0.86 (21.9)	0.46 (11.6)	15000 (1034)
1	5/8	SS-HPN-JM16-JM10	2.31 (58.6)	1.37 (34.9)	0.91 (23.1)	0.76 (19.3)	0.37 (9.4)	15000 (1034)
1	3/4	SS-HPN-JM16-JM12	2.41 (61.2)	1.37 (34.9)	0.91 (23.1)	0.86 (21.9)	0.46 (11.6)	15000 (1034)
1	1	SS-HPN-JM16	2.46 (62.4)	1.37 (34.9)	0.91 (23.1)	0.91 (23.1)	0.57 (14.6)	15000 (1034)

Hex Nipples



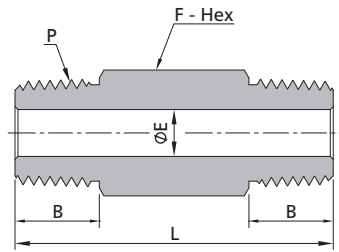
Male Type "M"					Male Type "M"				
Px-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)	
			L	F	B	Bx	E		
9/16-18	9/16-18	SS-HPN-TM9	1.34 (34.0)	0.63 (15.9)	0.50 (12.7)	0.50 (12.7)	0.09 (2.4)	60000 (4137)	
3/4-16	9/16-18	SS-HPN-TM12-TM9	1.51 (38.3)	0.75 (19.1)	0.63 (16.0)	0.50 (12.7)	0.09 (2.4)	30000 (2068)	
3/4-16	3/4-16	SS-HPN-TM12	1.64 (41.6)	0.75 (19.1)	0.63 (16.0)	0.63 (16.0)	0.29 (7.4)	30000 (2068)	
7/8-14	9/16-18	SS-HPN-TM14-TM9	1.71 (43.5)	1.00 (25.4)	0.76 (19.2)	0.50 (12.7)	0.09 (2.4)	50000 (3447)	
7/8-14	3/4-16	SS-HPN-TM14-TM12	1.84 (46.8)	1.00 (25.4)	0.76 (19.2)	0.63 (16.0)	0.15 (3.8)	30000 (2068)	
7/8-14	7/8-14	SS-HPN-TM14	1.97 (50.0)	1.00 (25.4)	0.76 (19.2)	0.76 (19.2)	0.15 (3.8)	50000 (3447)	
1-12	9/16-18	SS-HPN-TM16-TM9	1.60 (40.6)	1.00 (25.4)	0.64 (16.3)	0.50 (12.7)	0.09 (2.4)	30000 (2068)	
1-12	3/4-16	SS-HPN-TM16-TM12	1.73 (43.9)	1.00 (25.4)	0.64 (16.3)	0.63 (16.0)	0.29 (7.4)	30000 (2068)	
1-12	7/8-14	SS-HPN-TM16-TM14	1.85 (47.1)	1.00 (25.4)	0.64 (16.3)	0.76 (19.2)	0.15 (3.8)	30000 (2068)	
1-12	1-12	SS-HPN-TM16	1.74 (44.2)	1.00 (25.4)	0.64 (16.3)	0.64 (16.3)	0.39 (10.0)	30000 (2068)	
1 5/16-12	1-12	SS-HPN-TM21-TM16	1.86 (47.2)	1.37 (34.9)	0.62 (15.7)	0.64 (16.3)	0.39 (10.0)	20000 (1379)	
1 5/16-12	1 5/16-12	SS-HPN-TM21	1.83 (46.6)	1.37 (34.9)	0.62 (15.7)	0.62 (15.7)	0.69 (17.5)	20000 (1379)	

Hex Long Nipples



Male NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	F	B	E	
1/8	SS-HPL-NS2-1.5	1.50 (38.1)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-NS2-2	2.00 (50.8)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-NS2-2.5	2.50 (63.5)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-NS2-3	3.00 (76.2)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	SS-HPL-NS4-2	2.00 (50.8)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-NS4-2.5	2.50 (63.5)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-NS4-3	3.00 (76.2)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-NS4-4	4.00 (101.6)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	SS-HPL-NS6-2	2.00 (50.8)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-NS6-2.5	2.50 (63.5)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-NS6-3	3.00 (76.2)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-NS6-4	4.00 (101.6)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	SS-HPL-NS8-3	3.00 (76.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPL-NS8-4	4.00 (101.6)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPL-NS8-6	6.00 (152.4)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	SS-HPL-NS12-3	3.00 (76.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-NS12-4	4.00 (101.6)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-NS12-6	6.00 (152.4)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-NS12-8	8.00 (203.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	SS-HPL-NS16-3	3.00 (76.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-NS16-4	4.00 (101.6)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-NS16-6	6.00 (152.4)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-NS16-8	8.00 (203.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

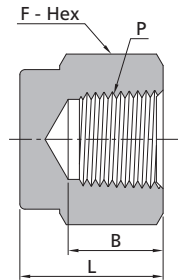
Hex Long Nipples



Male ISO Tapered Threads

P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	F	B	E	
1/8	SS-HPL-RT2-1.5	1.50 (38.1)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-RT2-2	2.00 (50.8)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-RT2-2.5	2.50 (63.5)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	SS-HPL-RT2-3	3.00 (76.2)	0.44 (11.1)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	SS-HPL-RT4-2	2.00 (50.8)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-RT4-2.5	2.50 (63.5)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-RT4-3	3.00 (76.2)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	SS-HPL-RT4-4	4.00 (101.6)	0.56 (14.3)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	SS-HPL-RT6-2	2.00 (50.8)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-RT6-2.5	2.50 (63.5)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-RT6-3	3.00 (76.2)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	SS-HPL-RT6-4	4.00 (101.6)	0.69 (17.5)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	SS-HPL-RT8-3	3.00 (76.2)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPL-RT8-4	4.00 (101.6)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	SS-HPL-RT8-6	6.00 (152.4)	0.87 (22.2)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/4	SS-HPL-RT12-3	3.00 (76.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-RT12-4	4.00 (101.6)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-RT12-6	6.00 (152.4)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	SS-HPL-RT12-8	8.00 (203.2)	1.06 (27.0)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	SS-HPL-RT16-3	3.00 (76.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-RT16-4	4.00 (101.6)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-RT16-6	6.00 (152.4)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	SS-HPL-RT16-8	8.00 (203.2)	1.37 (34.9)	0.94 (23.9)	0.79 (20.0)	10000 (690)

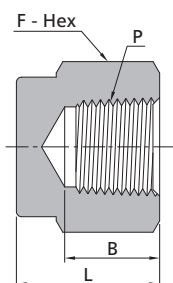
Pipe Caps



Female NPT Threads

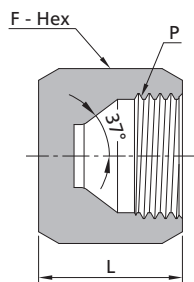
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/8	SS-HPC-FNS2	0.75 (19.1)	0.63 (15.9)	0.41 (10.4)	15000 (1034)
1/4	SS-HPC-FNS4	0.91 (23.1)	0.94 (23.8)	0.59 (15.0)	15000 (1034)
3/8	SS-HPC-FNS6	1.03 (26.2)	1.13 (28.6)	0.59 (15.0)	15000 (1034)
1/2	SS-HPC-FNS8	1.34 (34.0)	1.37 (34.9)	0.78 (19.8)	15000 (1034)
3/4	SS-HPC-FNS12	1.62 (36.6)	1.50 (38.1)	0.81 (20.6)	10000 (690)
1	SS-HPC-FNS16	1.62 (41.1)	44.5 (1.75)	1.00 (25.4)	10000 (690)

Pipe Caps



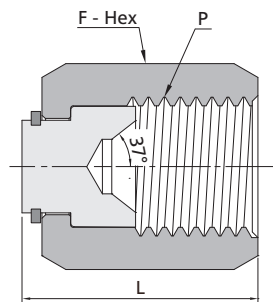
Female ISO Tapered Threads					
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
		L	F	B	
1/8	SS-HPC-FRT2	0.75 (19.1)	0.63 (15.9)	0.41 (10.4)	15000 (1034)
1/4	SS-HPC-FRT4	0.91 (23.1)	0.94 (23.8)	0.59 (15.0)	15000 (1034)
3/8	SS-HPC-FRT6	1.03 (26.2)	1.13 (28.6)	0.59 (15.0)	15000 (1034)
1/2	SS-HPC-FRT8	1.34 (34.0)	1.37 (34.9)	0.78 (19.8)	15000 (1034)
3/4	SS-HPC-FRT12	1.62 (36.6)	1.50 (38.1)	0.81 (20.6)	10000 (690)
1	SS-HPC-FRT16	1.62 (41.1)	1.75 (44.5)	1.00 (25.4)	10000 (690)

Pipe Caps



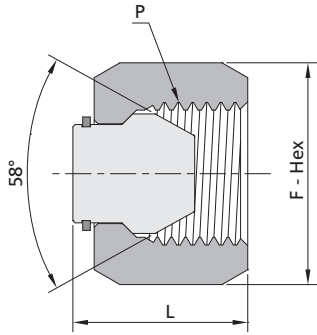
Female JIC				
P-JIC Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
1/4	SS-HPC-JF4	0.63 (16.1)	0.56 (14.3)	20000 (1379)
3/8	SS-HPC-JF6	0.72 (18.3)	0.69 (17.5)	20000 (1379)
1/2	SS-HPC-JF8	0.85 (21.6)	0.87 (22.2)	20000 (1379)
5/8	SS-HPC-JF10	0.98 (24.9)	1.00 (25.4)	20000 (1379)
3/4	SS-HPC-JF12	1.06 (26.8)	1.25 (31.8)	15000 (1034)
1	SS-HPC-JF16	1.18 (30.0)	1.50 (38.1)	15000 (1034)

Pipe Cap Assemblies (Moveable Insert)



Moveable Insert Female JIC				
P-JIC Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
1/4	SS-HMC-JF4	0.70 (17.8)	0.56 (14.3)	20000 (1379)
3/8	SS-HMC-JF6	0.81 (20.5)	0.69 (17.5)	20000 (1379)
1/2	SS-HMC-JF8	0.94 (23.9)	0.87 (22.2)	20000 (1379)
5/8	SS-HMC-JF10	1.07 (27.1)	1.00 (25.4)	20000 (1379)
3/4	SS-HMC-JF12	1.24 (31.6)	1.25 (31.8)	15000 (1034)
1	SS-HMC-JF16	1.29 (32.8)	1.50 (38.1)	15000 (1034)

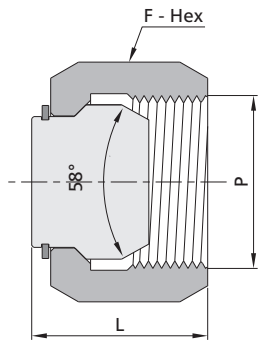
Pipe Cap Assemblies (Moveable Insert)



Moveable Insert Female Type "M"

P-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
9/16-18	SS-HMC-TM9	0.85 (21.6)	0.69 (17.5)	60000 (4137)
3/4-16	SS-HMC-TM12	0.91 (23.1)	1.00 (25.4)	30000 (2068)
7/8-14	SS-HMC-TM14	1.28 (32.5)	1.19 (30.2)	50000 (3447)
1-12	SS-HMC-TM16	1.25 (31.8)	1.25 (31.8)	30000 (2068)
1 5/16-12	SS-HMC-TM21	1.18 (30.0)	1.50 (38.1)	20000 (1379)

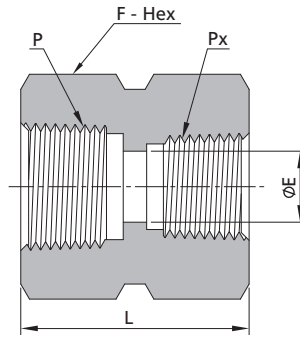
Pipe Cap Assemblies (Moveable Insert)



Moveable Insert/Female ISO Parallel Threads

P-ISO Parallel Thread Size, in.	Ordering Number	Dimensions, in. (mm)		Working Pressure psig (bar)
		L	F	
1/4	SS-HMC-HSBP4	0.70 (17.8)	0.63 (15.9)	20000 (1379)
3/8	SS-HMC-HSBP6	0.78 (19.8)	0.81 (20.6)	20000 (1379)
1/2	SS-HMC-HSBP8	0.94 (23.9)	1.00 (25.4)	20000 (1379)
3/4	SS-HMC-HSBP12	1.06 (26.9)	1.25 (31.8)	20000 (1379)
1	SS-HMC-HSBP16	1.33 (33.8)	1.50 (38.1)	20000 (1379)

Hex Couplings



Female NPT Threads						
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPG-FNS2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPG-FNS4-FNS2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPG-FNS4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPG-FNS6-FNS2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPG-FNS6-FNS4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPG-FNS6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPG-FNS8-FNS2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPG-FNS8-FNS4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPG-FNS8-FNS6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPG-FNS8	1.72 (43.8)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	1/8	SS-HPG-FNS12-FNS2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPG-FNS12-FNS4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPG-FNS12-FNS6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPG-FNS12-FNS8	1.79 (45.4)	1.50 (38.1)	0.67 (17.0)	10000 (690)
3/4	3/4	SS-HPG-FNS12	1.84 (46.7)	1.50 (38.1)	0.88 (22.3)	10000 (690)
1	1/8	SS-HPG-FNS16-FNS2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPG-FNS16-FNS4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPG-FNS16-FNS6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPG-FNS16-FNS8	1.96 (49.7)	1.75 (44.5)	0.67 (17.0)	10000 (690)
1	3/4	SS-HPG-FNS16-FNS12	2.00 (50.7)	1.75 (44.5)	0.88 (22.3)	10000 (690)
1	1	SS-HPG-FNS16	2.19 (55.5)	1.75 (44.5)	1.11 (28.1)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

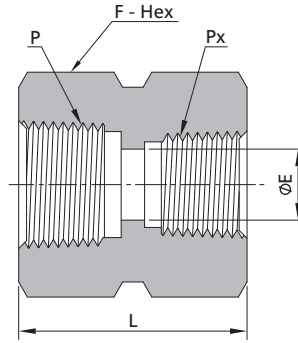
Valves

Sour Service
Products

Subsea Valves

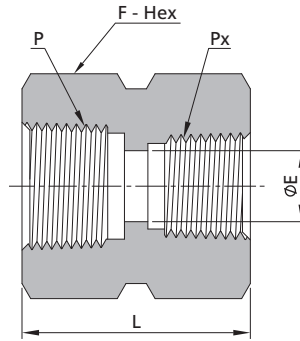
Part Number
Crossover Charts

Hex Couplings



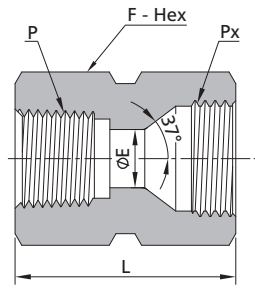
Female NPT Threads				Female ISO Tapered Threads		
P-NPT Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPG-FNS2-FRT2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPG-FNS4-FRT2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPG-FNS4-FRT4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPG-FNS6-FRT2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPG-FNS6-FRT4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPG-FNS6-FRT6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPG-FNS8-FRT2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPG-FNS8-FRT4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPG-FNS8-FRT6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPG-FNS8-FRT8	1.72 (43.8)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	1/8	SS-HPG-FNS12-FRT2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPG-FNS12-FRT4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPG-FNS12-FRT6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPG-FNS12-FRT8	1.79 (45.4)	1.50 (38.1)	0.69 (17.4)	10000 (690)
3/4	3/4	SS-HPG-FNS12-FRT12	1.84 (46.7)	1.50 (38.1)	0.88 (22.3)	10000 (690)
1	1/8	SS-HPG-FNS16-FRT2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPG-FNS16-FRT4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPG-FNS16-FRT6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPG-FNS16-FRT8	1.96 (49.7)	1.75 (44.5)	0.69 (17.4)	10000 (690)
1	3/4	SS-HPG-FNS16-FRT12	2.00 (50.7)	1.75 (44.5)	0.90 (22.8)	10000 (690)
1	1	SS-HPG-FNS16-FRT16	2.19 (55.5)	1.75 (44.5)	1.11 (28.1)	10000 (690)

Hex Couplings



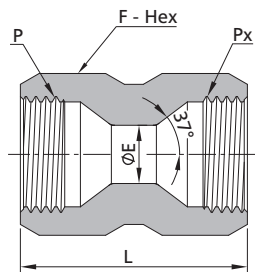
Female ISO Tapered Threads						
P-ISO Thread Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/8	SS-HPG-FRT2	0.94 (23.8)	0.63 (15.9)	0.31 (8.0)	15000 (1034)
1/4	1/8	SS-HPG-FRT4-FRT2	1.14 (28.9)	0.94 (23.8)	0.31 (8.0)	15000 (1034)
1/4	1/4	SS-HPG-FRT4	1.32 (33.5)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	1/8	SS-HPG-FRT6-FRT2	1.14 (28.9)	1.13 (28.6)	0.31 (8.0)	15000 (1034)
3/8	1/4	SS-HPG-FRT6-FRT4	1.32 (33.5)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
3/8	3/8	SS-HPG-FRT6	1.32 (33.5)	1.13 (28.6)	0.54 (13.8)	15000 (1034)
1/2	1/8	SS-HPG-FRT8-FRT2	1.35 (34.2)	1.37 (34.9)	0.31 (8.0)	15000 (1034)
1/2	1/4	SS-HPG-FRT8-FRT4	1.53 (38.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
1/2	3/8	SS-HPG-FRT8-FRT6	1.53 (38.8)	1.37 (34.9)	0.54 (13.8)	15000 (1034)
1/2	1/2	SS-HPG-FRT8	1.72 (43.8)	1.37 (34.9)	0.69 (17.4)	15000 (1034)
3/4	1/8	SS-HPG-FRT12-FRT2	1.40 (35.5)	1.50 (38.1)	0.31 (8.0)	10000 (690)
3/4	1/4	SS-HPG-FRT12-FRT4	1.58 (40.1)	1.50 (38.1)	0.41 (10.4)	10000 (690)
3/4	3/8	SS-HPG-FRT12-FRT6	1.58 (40.1)	1.50 (38.1)	0.54 (13.8)	10000 (690)
3/4	1/2	SS-HPG-FRT12-FRT8	1.79 (45.4)	1.50 (38.1)	0.69 (17.4)	10000 (690)
3/4	3/4	SS-HPG-FRT12	1.84 (46.7)	1.50 (38.1)	0.90 (22.8)	10000 (690)
1	1/8	SS-HPG-FRT16-FRT2	1.59 (40.5)	1.75 (44.5)	0.31 (8.0)	10000 (690)
1	1/4	SS-HPG-FRT16-FRT4	1.76 (44.8)	1.75 (44.5)	0.41 (10.4)	10000 (690)
1	3/8	SS-HPG-FRT16-FRT6	1.76 (44.8)	1.75 (44.5)	0.54 (13.8)	10000 (690)
1	1/2	SS-HPG-FRT16-FRT8	1.96 (49.7)	1.75 (44.5)	0.69 (17.4)	10000 (690)
1	3/4	SS-HPG-FRT16-FRT12	2.00 (50.7)	1.75 (44.5)	0.90 (22.8)	10000 (690)
1	1	SS-HPG-FRT16	2.19 (55.5)	1.75 (44.5)	1.13 (28.7)	10000 (690)

Hex Couplings

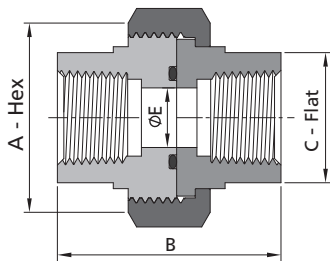


Female NPT Threads			Female JIC			
P-NPT Size, in.	Px-JIC Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/8	1/4	SS-HPG-FNS2-JF4	1.12 (28.4)	0.63 (15.9)	0.17 (4.3)	15000 (1034)
1/4	1/4	SS-HPG-FNS4-JF4	1.33 (33.7)	0.94 (23.8)	0.17 (4.3)	15000 (1034)
1/4	3/8	SS-HPG-FNS4-JF6	1.36 (34.5)	0.94 (23.8)	0.30 (7.5)	15000 (1034)
3/8	1/4	SS-HPG-FNS6-JF4	1.33 (33.7)	1.13 (28.6)	0.17 (4.3)	15000 (1034)
3/8	3/8	SS-HPG-FNS6-JF6	1.36 (34.5)	1.13 (28.6)	0.30 (7.5)	15000 (1034)
3/8	1/2	SS-HPG-FNS6-JF8	1.44 (36.5)	1.13 (28.6)	0.39 (9.9)	15000 (1034)
1/2	3/8	SS-HPG-FNS8-JF6	1.56 (39.7)	1.37 (34.9)	0.30 (7.5)	15000 (1034)
1/2	1/2	SS-HPG-FNS8-JF8	1.64 (41.7)	1.37 (34.9)	0.39 (9.9)	15000 (1034)
1/2	5/8	SS-HPG-FNS8-JF10	1.74 (44.1)	1.37 (34.9)	0.48 (12.3)	15000 (1034)

Hex Couplings



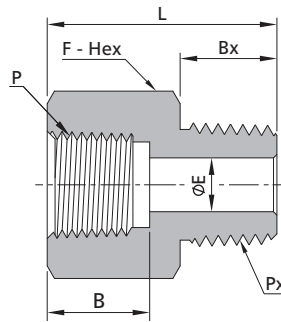
Female JIC						
P-JIC Size, in.	Px-JIC Size, in.	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
1/4	1/4	SS-HPG-JF4	1.24 (31.5)	0.56 (14.3)	0.17 (4.3)	20000 (1379)
3/8	1/4	SS-HPG-JF6-JF4	1.27 (32.3)	0.69 (17.5)	0.17 (4.3)	20000 (1379)
3/8	3/8	SS-HPG-JF6	1.33 (33.8)	0.69 (17.5)	0.30 (7.5)	20000 (1379)
1/2	3/8	SS-HPG-JF8-JF6	1.39 (35.4)	0.87 (22.2)	0.30 (7.5)	20000 (1379)
1/2	1/2	SS-HPG-JF8	1.48 (37.6)	0.87 (22.2)	0.39 (9.9)	20000 (1379)
5/8	1/2	SS-HPG-JF10-JF8	1.57 (40.0)	1.00 (25.4)	0.39 (9.9)	20000 (1379)
5/8	5/8	SS-HPG-JF10	1.68 (42.6)	1.00 (25.4)	0.48 (12.3)	20000 (1379)
3/4	5/8	SS-HPG-JF12-JF10	1.74 (44.1)	1.37 (34.8)	0.48 (12.3)	15000 (1034)
3/4	3/4	SS-HPG-JF12	1.80 (45.8)	1.25 (31.8)	0.61 (15.5)	15000 (1034)
1	3/4	SS-HPG-JF16-JF12	1.89 (48.1)	1.50 (38.1)	0.61 (15.5)	15000 (1034)
1	1	SS-HPG-JF16	1.97 (50.1)	1.50 (38.1)	0.84 (21.4)	15000 (1034)

Zero-Clearance Unions^①

Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		A	B	C	E	
1/8	SS-HPZ-FNS2	1.06 (27.0)	1.75 (44.5)	0.62 (15.8)	0.31 (8.0)	15000 (1034)
1/4	SS-HPZ-FNS4	1.50 (38.1)	2.00 (50.8)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
3/8	SS-HPZ-FNS6	1.75 (44.5)	2.25 (57.2)	1.12 (28.5)	0.54 (13.8)	15000 (1034)
1/2	SS-HPZ-FNS8	2.00 (50.8)	2.50 (63.5)	1.37 (34.9)	0.67 (17.0)	15000 (1034)
3/4	SS-HPZ-FNS12	2.25 (57.2)	2.75 (69.9)	1.50 (38.1)	0.88 (22.3)	10000 (690)

① Working temperature range with FKM O-rings: 0°F to 400°F (-17.8°C to 204°C), other materials of O-rings available.

Adapters



Female NPT Threads			Male NPT Threads					
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-FNS2-NS2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-FNS2-NS4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-FNS2-NS6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-FNS2-NS8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-FNS2-NS12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-FNS4-NS2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-FNS4-NS4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-FNS4-NS6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-FNS4-NS8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-FNS4-NS12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-FNS4-NS16	1.62 (41.1)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-FNS6-NS4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-FNS6-NS6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-FNS6-NS8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-FNS6-NS12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-FNS6-NS16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-FNS8-NS4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-FNS8-NS6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-FNS8-NS8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-FNS8-NS12	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-FNS8-NS16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.67 (17.0)	10000 (690)
3/4	1/2	SS-HPA-FNS12-NS8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-FNS12-NS12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-FNS12-NS16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-FNS16-NS8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-FNS16-NS12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-FNS16-NS16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

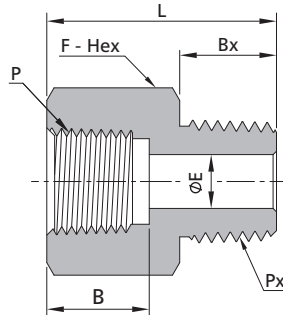
Valves

Sour Service
Products

Subsea Valves

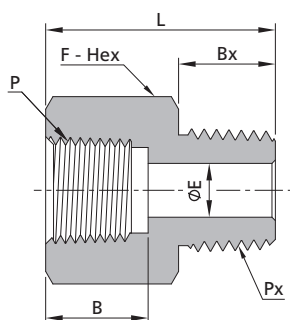
Part Number
Crossover Charts

Adapters



Female NPT Threads			Male ISO Tapered Threads					
P-NPT Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-FNS2-RT2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-FNS2-RT4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-FNS2-RT6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-FNS2-RT8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-FNS2-RT12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-FNS4-RT2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-FNS4-RT4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-FNS4-RT6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-FNS4-RT8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-FNS4-RT12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-FNS4-RT16	1.62 (41.1)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-FNS6-RT4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-FNS6-RT6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-FNS6-RT8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-FNS6-RT12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-FNS6-RT16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-FNS8-RT4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-FNS8-RT6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-FNS8-RT8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-FNS8-RT12	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-FNS8-RT16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.67 (17.0)	10000 (690)
3/4	1/2	SS-HPA-FNS12-RT8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-FNS12-RT12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-FNS12-RT16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-FNS16-RT8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-FNS16-RT12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-FNS16-RT16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Adapters



Female ISO Tapered Threads			Male ISO Tapered Threads					
P-ISO Thread Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-FRT2-RT2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-FRT2-RT4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-FRT2-RT6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-FRT2-RT8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-FRT2-RT12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-FRT4-RT2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-FRT4-RT4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-FRT4-RT6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-FRT4-RT8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-FRT4-RT12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-FRT4-RT16	1.62 (41.1)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-FRT6-RT4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-FRT6-RT6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-FRT6-RT8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-FRT6-RT12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-FRT6-RT16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-FRT8-RT4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-FRT8-RT6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-FRT8-RT8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-FRT8-RT12	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-FRT8-RT16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.69 (17.4)	10000 (690)
3/4	1/2	SS-HPA-FRT12-RT8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-FRT12-RT12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-FRT12-RT16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-FRT16-RT8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-FRT16-RT12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-FRT16-RT16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

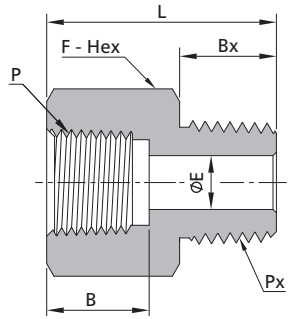
Valves

Sour Service
Products

Subsea Valves

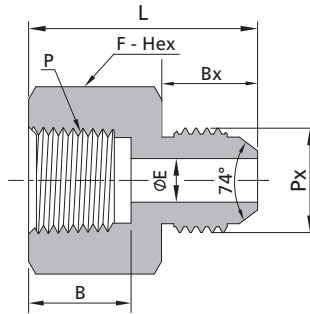
Part Number
Crossover Charts

Adapters

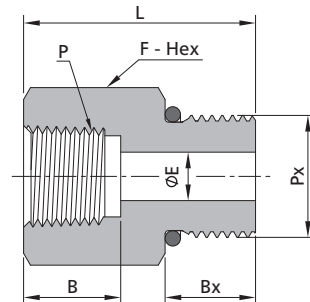


Female ISO Tapered Threads								Male NPT Threads
P-ISO Thread Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/8	SS-HPA-FRT2-NS2	0.96 (24.5)	0.63 (15.9)	0.41 (10.4)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/8	1/4	SS-HPA-FRT2-NS4	1.13 (28.8)	0.63 (15.9)	0.41 (10.4)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/8	3/8	SS-HPA-FRT2-NS6	1.14 (29.0)	0.69 (17.5)	0.41 (10.4)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/8	1/2	SS-HPA-FRT2-NS8	1.08 (27.4)	0.87 (22.2)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	15000 (1034)
1/8	3/4	SS-HPA-FRT2-NS12	1.08 (27.4)	1.06 (27.0)	0.41 (10.4)	0.75 (19.1)	0.31 (8.0)	10000 (690)
1/4	1/8	SS-HPA-FRT4-NS2	1.25 (31.8)	0.94 (23.8)	0.59 (15.0)	0.38 (9.7)	0.19 (4.8)	15000 (1034)
1/4	1/4	SS-HPA-FRT4-NS4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/4	3/8	SS-HPA-FRT4-NS6	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/4	1/2	SS-HPA-FRT4-NS8	1.58 (40.1)	0.94 (23.8)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/4	3/4	SS-HPA-FRT4-NS12	1.34 (34.1)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.41 (10.4)	10000 (690)
1/4	1	SS-HPA-FRT4-NS16	1.62 (41.1)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.41 (10.4)	10000 (690)
3/8	1/4	SS-HPA-FRT6-NS4	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
3/8	3/8	SS-HPA-FRT6-NS6	1.42 (36.0)	1.13 (28.6)	0.59 (15.0)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
3/8	1/2	SS-HPA-FRT6-NS8	1.61 (41.0)	1.13 (28.6)	0.59 (15.0)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
3/8	3/4	SS-HPA-FRT6-NS12	1.61 (41.0)	1.06 (27.0)	0.59 (15.0)	0.75 (19.1)	0.54 (13.8)	10000 (690)
3/8	1	SS-HPA-FRT6-NS16	1.47 (37.3)	1.37 (34.9)	0.59 (15.0)	0.94 (23.9)	0.54 (13.8)	10000 (690)
1/2	1/4	SS-HPA-FRT8-NS4	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.25 (6.4)	15000 (1034)
1/2	3/8	SS-HPA-FRT8-NS6	1.72 (43.1)	1.37 (34.9)	0.78 (19.8)	0.56 (14.2)	0.31 (7.9)	15000 (1034)
1/2	1/2	SS-HPA-FRT8-NS8	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.38 (9.6)	15000 (1034)
1/2	3/4	SS-HPA-FRT8-NS12	1.89 (48.0)	1.37 (34.9)	0.78 (19.8)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1/2	1	SS-HPA-FRT8-NS16	2.08 (52.8)	1.37 (34.9)	0.78 (19.8)	0.94 (23.9)	0.69 (17.4)	10000 (690)
3/4	1/2	SS-HPA-FRT12-NS8	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.47 (11.9)	10000 (690)
3/4	3/4	SS-HPA-FRT12-NS12	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.1)	0.58 (14.8)	10000 (690)
3/4	1	SS-HPA-FRT12-NS16	2.08 (52.9)	1.50 (38.1)	0.81 (20.6)	0.94 (23.9)	0.79 (20.0)	10000 (690)
1	1/2	SS-HPA-FRT16-NS8	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.47 (11.9)	10000 (690)
1	3/4	SS-HPA-FRT16-NS12	2.10 (53.3)	1.75 (44.5)	1.00 (25.4)	0.75 (19.1)	0.58 (14.8)	10000 (690)
1	1	SS-HPA-FRT16-NS16	2.29 (58.1)	1.75 (44.5)	1.00 (25.4)	0.94 (23.9)	0.79 (20.0)	10000 (690)

Adapters



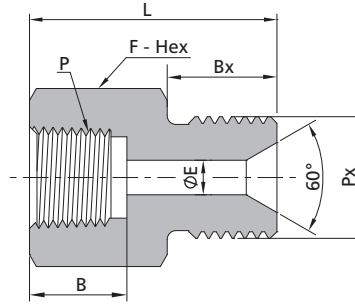
Female NPT Threads			Dimensions, in. (mm)					Male JIC
P-NPT Size, in.	Px-JIC Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/8	1/4	SS-HPA-FNS2-JM4	1.09 (27.8)	0.63 (15.9)	0.41 (10.4)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/4	1/4	SS-HPA-FNS4-JM4	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.55 (14.0)	0.17 (4.4)	15000 (1034)
1/4	3/8	SS-HPA-FNS4-JM6	1.32 (33.5)	0.94 (23.8)	0.59 (15.0)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	3/8	SS-HPA-FNS6-JM6	1.37 (34.8)	1.13 (28.6)	0.59 (15.0)	0.56 (14.1)	0.23 (5.8)	15000 (1034)
3/8	1/2	SS-HPA-FNS6-JM8	1.47 (37.4)	1.13 (28.6)	0.59 (15.0)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	1/2	SS-HPA-FNS8-JM8	1.72 (43.6)	1.37 (34.9)	0.78 (19.8)	0.66 (16.7)	0.31 (8.0)	15000 (1034)
1/2	5/8	SS-HPA-FNS8-JM10	1.82 (46.2)	1.37 (34.9)	0.78 (19.8)	0.76 (19.3)	0.41 (10.4)	15000 (1034)
1/2	3/4	SS-HPA-FNS8-JM12	1.92 (48.8)	1.37 (34.9)	0.78 (19.8)	0.86 (21.9)	0.46 (11.6)	15000 (1034)
3/4	3/4	SS-HPA-FNS12-JM12	1.89 (47.9)	1.50 (38.1)	0.81 (20.6)	0.86 (21.9)	0.61 (15.5)	10000 (690)
1	1	SS-HPA-FNS16-JM16	2.18 (55.3)	1.75 (44.5)	1.00 (25.4)	0.91 (23.1)	0.84 (21.4)	10000 (690)

Adapters^①

Female NPT Threads			Dimensions, in. (mm)					Male SAE O-Ring
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	L	F	B	Bx	E	Working Pressure psig (bar)
1/4	7/16-20	SS-HPA-FNS4-SH7	1.20 (30.5)	0.75 (19.1)	0.59 (15.0)	0.43 (11.0)	0.18 (4.5)	10000 (690)
3/8	9/16-18	SS-HPA-FNS6-SH9	1.29 (32.7)	0.94 (23.8)	0.59 (15.0)	0.47 (12.0)	0.30 (7.5)	10000 (690)
1/2	3/4-16	SS-HPA-FNS8-SH12	1.61 (40.9)	1.19 (30.2)	0.78 (19.8)	0.55 (14.0)	0.39 (10.0)	10000 (690)
3/4	7/8-14	SS-HPA-FNS12-SH14	1.67 (42.5)	1.50 (38.1)	0.81 (20.6)	0.63 (16.0)	0.49 (12.5)	10000 (690)

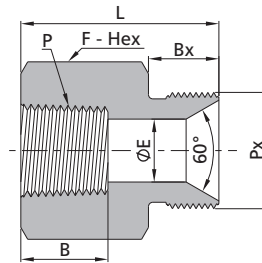
^① Male SAE O-ring Ends are supplied with a FKM O-ring as standard, other materials of O-rings available.

Adapters

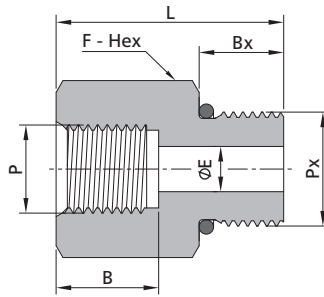


Female NPT Threads								Male Type "M"
P-NPT Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	9/16-18	SS-HPA-FNS2-TM9	1.13 (28.6)	0.63 (15.9)	0.41 (10.4)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/4	9/16-18	SS-HPA-FNS4-TM9	1.37 (34.9)	0.94 (23.8)	0.59 (15.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/4	3/4-16	SS-HPA-FNS4-TM12	1.50 (38.1)	0.94 (23.8)	0.59 (15.0)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
3/8	9/16-18	SS-HPA-FNS6-TM9	1.44 (36.5)	1.13 (28.6)	0.59 (15.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
3/8	3/4-16	SS-HPA-FNS6-TM12	1.56 (39.7)	1.13 (28.6)	0.59 (15.0)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
1/2	9/16-18	SS-HPA-FNS8-TM9	1.63 (41.3)	1.37 (34.9)	0.78 (19.8)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
1/2	3/4-16	SS-HPA-FNS8-TM12	1.75 (44.4)	1.37 (34.9)	0.78 (19.8)	0.63 (16.0)	0.29 (7.4)	15000 (1034)
1/2	7/8-14	SS-HPA-FNS8-TM14	1.87 (47.6)	1.37 (34.9)	0.78 (19.8)	0.76 (19.2)	0.15 (3.8)	15000 (1034)
3/4	1-12	SS-HPA-FNS12-TM16	1.87 (47.6)	1.50 (38.1)	0.81 (20.6)	0.64 (16.3)	0.39 (10.0)	10000 (690)
1	1 5/16-12	SS-HPA-FNS16-TM21	2.06 (52.4)	1.75 (44.5)	1.00 (25.4)	0.62 (15.7)	0.69 (17.5)	10000 (690)

Adapters



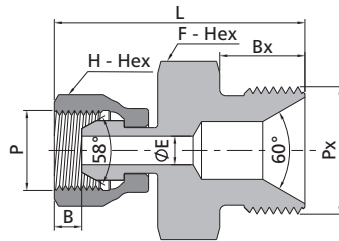
Female NPT Threads			Male ISO Parallel Threads					
P-NPT Size, in.	Px-ISO Parallel Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
1/8	1/4	SS-HPA-FNS2-HBP4	1.07 (27.1)	0.63 (15.9)	0.41 (10.4)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
1/4	1/4	SS-HPA-FNS4-HBP4	1.25 (31.7)	0.94 (23.8)	0.59 (15.0)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
1/4	3/8	SS-HPA-FNS4-HBP6	1.29 (32.7)	0.94 (23.8)	0.59 (15.0)	0.47 (12.0)	0.25 (6.4)	15000 (1034)
1/4	1/2	SS-HPA-FNS4-HBP8	1.32 (33.5)	1.00 (25.4)	0.59 (15.0)	0.55 (14.0)	0.37 (9.5)	15000 (1034)
3/8	1/4	SS-HPA-FNS6-HBP4	1.31 (33.2)	1.13 (28.6)	0.59 (15.0)	0.43 (11.0)	0.15 (3.8)	15000 (1034)
3/8	3/8	SS-HPA-FNS6-HBP6	1.31 (33.4)	1.13 (28.6)	0.59 (15.0)	0.47 (12.0)	0.25 (6.4)	15000 (1034)
3/8	1/2	SS-HPA-FNS6-HBP8	1.43 (36.2)	1.13 (28.6)	0.59 (15.0)	0.55 (14.0)	0.37 (9.5)	15000 (1034)
1/2	1/2	SS-HPA-FNS8-HBP8	1.69 (43.0)	1.37 (34.9)	0.78 (19.8)	0.55 (14.0)	0.37 (9.5)	15000 (1034)
1/2	3/4	SS-HPA-FNS8-HBP12	1.77 (45.0)	1.37 (34.9)	0.78 (19.8)	0.63 (16.0)	0.50 (12.7)	15000 (1034)
1/2	1	SS-HPA-FNS8-HBP16	1.89 (48.0)	1.50 (38.1)	0.78 (19.8)	0.75 (19.0)	0.63 (15.9)	15000 (1034)
3/4	3/4	SS-HPA-FNS12-HBP12	1.78 (45.1)	1.50 (38.1)	0.81 (20.6)	0.63 (16.0)	0.50 (12.7)	10000 (690)
3/4	1	SS-HPA-FNS12-HBP16	1.89 (48.1)	1.50 (38.1)	0.81 (20.6)	0.75 (19.0)	0.63 (15.9)	10000 (690)
1	1	SS-HPA-FNS16-HBP16	2.20 (56.0)	1.75 (44.5)	1.00 (25.4)	0.75 (19.0)	0.63 (15.9)	10000 (690)

Adapters^①

Female SAE O-Ring								Male SAE O-Ring
P-SAE/MS Thread Size, in.	Px-SAE/MS Thread Size, in.	Ordering Number	Dimensions, in. (mm)					Working Pressure psig (bar)
			L	F	B	Bx	E	
7/16-20	9/16-18	SS-HPA-US7-SH9	1.25 (31.8)	0.81 (20.6)	0.55 (14.0)	0.47 (12.0)	0.18 (4.5)	10000 (690)
7/16-20	3/4-16	SS-HPA-US7-SH12	1.25 (31.8)	0.87 (22.2)	0.55 (14.0)	0.55 (14.0)	0.18 (4.5)	10000 (690)
9/16-18	3/4-16	SS-HPA-US9-SH12	1.42 (36.0)	1.00 (25.4)	0.61 (15.5)	0.55 (14.0)	0.30 (7.5)	10000 (690)
9/16-18	7/8-14	SS-HPA-US9-SH14	1.42 (36.0)	1.00 (25.4)	0.61 (15.5)	0.63 (16.0)	0.30 (7.5)	10000 (690)
3/4-16	7/8-14	SS-HPA-US12-SH14	1.65 (41.8)	1.19 (30.2)	0.69 (17.5)	0.63 (16.0)	0.39 (10.0)	10000 (690)

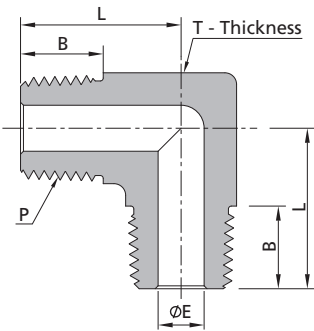
① Male SAE O-ring Ends are supplied with a FKM O-ring as standard, other materials of O-rings available.

Adapters



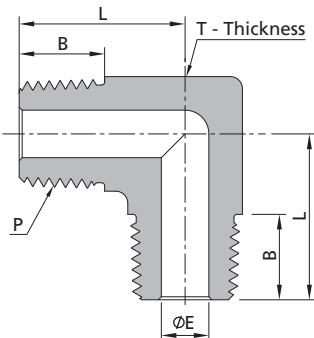
Female ISO Parallel Threads			Male ISO Parallel Threads						
P-ISO Parallel Thread Size, in.	Px-ISO Parallel Thread Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
			L	F	B	H	Bx	E	
1/4	1/4	SS-HPA-SBP4-HBP4	1.42 (36.0)	0.63 (15.9)	0.18 (4.5)	0.63 (15.9)	0.43 (11.0)	0.15 (3.8)	10000 (690)
1/4	3/8	SS-HPA-SBP4-HBP6	1.54 (39.0)	0.81 (20.6)	0.18 (4.5)	0.63 (15.9)	0.47 (12.0)	0.19 (4.7)	10000 (690)
1/4	1/2	SS-HPA-SBP4-HBP8	1.62 (41.2)	1.00 (25.4)	0.18 (4.5)	0.63 (15.9)	0.55 (14.0)	0.19 (4.7)	10000 (690)
3/8	1/4	SS-HPA-SBP6-HBP4	1.57 (40.0)	0.81 (20.6)	0.25 (6.3)	0.81 (20.6)	0.43 (11.0)	0.15 (3.8)	10000 (690)
3/8	3/8	SS-HPA-SBP6-HBP6	1.61 (41.0)	0.81 (20.6)	0.25 (6.3)	0.81 (20.6)	0.47 (12.0)	0.25 (6.4)	10000 (690)
3/8	1/2	SS-HPA-SBP6-HBP8	1.75 (44.5)	1.00 (25.4)	0.25 (6.3)	0.81 (20.6)	0.55 (14.0)	0.31 (7.9)	10000 (690)
1/2	1/2	SS-HPA-SBP8-HBP8	1.82 (46.2)	1.00 (25.4)	0.28 (7.0)	1.00 (25.4)	0.55 (14.0)	0.37 (9.5)	10000 (690)
1/2	3/4	SS-HPA-SBP8-HBP12	1.98 (50.2)	1.25 (31.8)	0.28 (7.0)	1.00 (25.4)	0.63 (16.0)	0.44 (11.1)	10000 (690)
3/4	1/2	SS-HPA-SBP12-HBP8	2.02 (51.2)	1.25 (31.8)	0.35 (9.0)	1.37 (34.9)	0.55 (14.0)	0.37 (9.5)	10000 (690)
3/4	3/4	SS-HPA-SBP12-HBP12	2.19 (55.5)	1.25 (31.8)	0.35 (9.0)	1.37 (34.9)	0.63 (16.0)	0.50 (12.7)	10000 (690)
3/4	1	SS-HPA-SBP12-HBP16	2.34 (59.5)	1.50 (38.1)	0.35 (9.0)	1.37 (34.9)	0.75 (19.0)	0.63 (15.9)	10000 (690)
1	3/4	SS-HPA-SBP16-HBP12	2.50 (63.5)	1.50 (38.1)	0.43 (10.8)	1.75 (44.5)	0.63 (16.0)	0.50 (12.7)	10000 (690)
1	1	SS-HPA-SBP16-HBP16	2.62 (66.5)	1.50 (38.1)	0.43 (10.8)	1.75 (44.5)	0.75 (19.0)	0.63 (15.9)	10000 (690)

Male Elbows



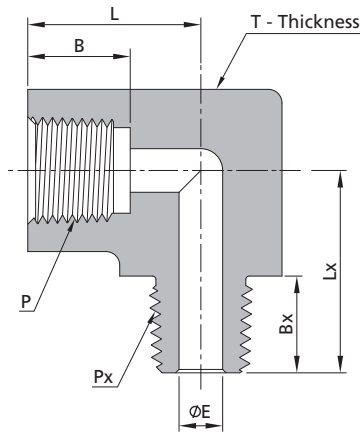
Male NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-NS2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPE-NS4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPE-NS6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPE-NS8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPE-NS12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPE-NS16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Male Elbows



Male ISO Tapered Pipe Threads						
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-RT2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPE-RT4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPE-RT6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPE-RT8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPE-RT12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPE-RT16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Street Elbows



Female NPT Threads			Male NPT Threads						
P-NPT Size, in.	Px-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
			L	B	E	Lx	Bx	T	
1/8	1/8	SS-HPE-FNS2-NS2	0.75 (19.1)	0.41 (10.4)	0.19 (4.8)	0.75 (19.1)	0.38 (9.7)	0.63 (15.9)	15000 (1034)
1/8	1/4	SS-HPE-FNS2-NS4	0.78 (19.8)	0.41 (10.4)	0.25 (6.4)	1.00 (25.4)	0.56 (14.2)	0.63 (15.9)	15000 (1034)
1/8	3/8	SS-HPE-FNS2-NS6	0.95 (24.2)	0.41 (10.4)	0.31 (7.9)	1.07 (27.2)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/4	SS-HPE-FNS4-NS4	1.00 (25.4)	0.59 (15.0)	0.25 (6.4)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	3/8	SS-HPE-FNS4-NS6	1.00 (25.4)	0.59 (15.0)	0.31 (7.9)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/2	SS-HPE-FNS4-NS8	1.15 (29.1)	0.59 (15.0)	0.38 (9.6)	1.40 (35.5)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/8	SS-HPE-FNS6-NS6	1.20 (30.6)	0.59 (15.0)	0.31 (7.9)	1.20 (30.6)	0.56 (14.2)	1.00 (25.4)	15000 (1034)
3/8	1/2	SS-HPE-FNS6-NS8	1.20 (30.6)	0.59 (15.0)	0.38 (9.6)	1.38 (35.0)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/4	SS-HPE-FNS6-NS12	1.23 (31.2)	0.59 (15.0)	0.54 (13.8)	1.56 (39.6)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1/2	SS-HPE-FNS8-NS8	1.50 (38.1)	0.78 (19.8)	0.38 (9.6)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	15000 (1034)
1/2	3/4	SS-HPE-FNS8-NS12	1.43 (36.2)	0.78 (19.8)	0.58 (14.8)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1	SS-HPE-FNS8-NS16	1.45 (36.9)	0.78 (19.8)	0.67 (17.0)	1.86 (47.3)	0.94 (23.9)	1.37 (34.9)	10000 (690)
3/4	3/4	SS-HPE-FNS12-NS12	1.50 (38.1)	0.81 (20.6)	0.58 (14.8)	1.77 (44.9)	0.75 (19.1)	1.50 (38.1)	10000 (690)
3/4	1	SS-HPE-FNS12-NS16	1.63 (41.4)	0.81 (20.6)	0.79 (20.0)	1.86 (47.3)	0.94 (23.9)	1.50 (38.1)	10000 (690)
1	1	SS-HPE-FNS16-NS16	1.91 (48.5)	1.00 (25.4)	0.79 (20.0)	2.07 (52.5)	0.94 (23.9)	1.75 (44.5)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

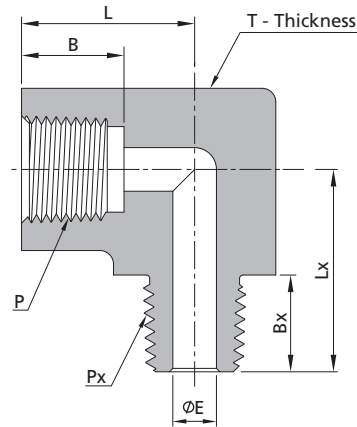
Valves

Sour Service
Products

Subsea Valves

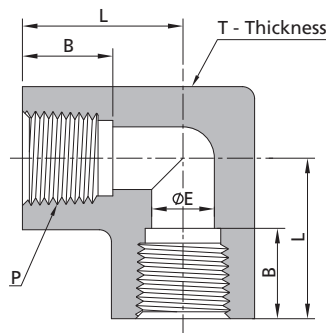
Part Number
Crossover Charts

Street Elbows



Female ISO Tapered Pipe Threads			Male ISO Tapered Threads						
P-ISO Thread Size, in.	Px-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
			L	B	E	Lx	Bx	T	
1/8	1/8	SS-HPE-FRT2-RT2	0.75 (19.1)	0.41 (10.4)	0.19 (4.8)	0.75 (19.1)	0.38 (9.7)	0.63 (15.9)	15000 (1034)
1/8	1/4	SS-HPE-FRT2-RT4	0.78 (19.8)	0.41 (10.4)	0.25 (6.4)	1.00 (25.4)	0.56 (14.2)	0.63 (15.9)	15000 (1034)
1/8	3/8	SS-HPE-FRT2-RT6	0.95 (24.2)	0.41 (10.4)	0.31 (7.9)	1.07 (27.2)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/4	SS-HPE-FRT4-RT4	1.00 (25.4)	0.59 (15.0)	0.25 (6.4)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	3/8	SS-HPE-FRT4-RT6	1.00 (25.4)	0.59 (15.0)	0.31 (7.9)	1.06 (27.0)	0.56 (14.2)	0.75 (19.1)	15000 (1034)
1/4	1/2	SS-HPE-FRT4-RT8	1.15 (29.1)	0.59 (15.0)	0.38 (9.6)	1.40 (35.5)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/8	SS-HPE-FRT6-RT6	1.20 (30.6)	0.59 (15.0)	0.31 (7.9)	1.20 (30.6)	0.56 (14.2)	1.00 (25.4)	15000 (1034)
3/8	1/2	SS-HPE-FRT6-RT8	1.20 (30.6)	0.59 (15.0)	0.38 (9.6)	1.38 (35.0)	0.75 (19.1)	1.00 (25.4)	15000 (1034)
3/8	3/4	SS-HPE-FRT6-RT12	1.23 (31.2)	0.59 (15.0)	0.54 (13.8)	1.56 (39.6)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1/2	SS-HPE-FRT8-RT8	1.50 (38.1)	0.78 (19.8)	0.38 (9.6)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	15000 (1034)
1/2	3/4	SS-HPE-FRT8-RT12	1.43 (36.2)	0.78 (19.8)	0.58 (14.8)	1.61 (40.8)	0.75 (19.1)	1.37 (34.9)	10000 (690)
1/2	1	SS-HPE-FRT8-RT16	1.45 (36.9)	0.78 (19.8)	0.67 (17.0)	1.86 (47.3)	0.94 (23.9)	1.37 (34.9)	10000 (690)
3/4	3/4	SS-HPE-FRT12-RT12	1.50 (38.1)	0.81 (20.6)	0.58 (14.8)	1.77 (44.9)	0.75 (19.1)	1.50 (38.1)	10000 (690)
3/4	1	SS-HPE-FRT12-RT16	1.63 (41.4)	0.81 (20.6)	0.79 (20.0)	1.86 (47.3)	0.94 (23.9)	1.50 (38.1)	10000 (690)
1	1	SS-HPE-FRT16-RT16	1.91 (48.5)	1.00 (25.4)	0.79 (20.0)	2.07 (52.5)	0.94 (23.9)	1.75 (44.5)	10000 (690)

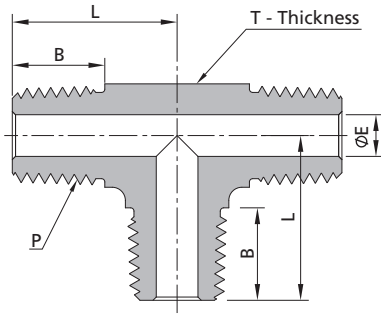
Female Elbows



Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-FNS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPE-FNS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPE-FNS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPE-FNS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPE-FNS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPE-FNS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

Female ISO Tapered Threads						
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPE-FRT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPE-FRT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPE-FRT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPE-FRT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPE-FRT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPE-FRT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

Male Tees



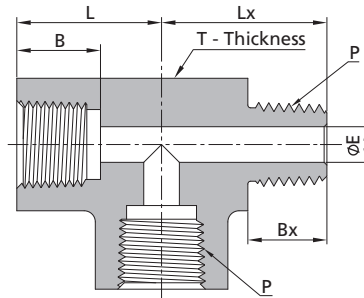
Male NPT Threads

P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-NS2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPT-NS4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPT-NS6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPT-NS8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPT-NS12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPT-NS16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Male ISO Tapered Threads

P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-RT2	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.50 (12.7)	15000 (1034)
1/4	SS-HPT-RT4	1.00 (25.4)	0.56 (14.2)	0.25 (6.4)	0.63 (15.9)	15000 (1034)
3/8	SS-HPT-RT6	1.10 (28.0)	0.56 (14.2)	0.31 (7.9)	0.75 (19.1)	15000 (1034)
1/2	SS-HPT-RT8	1.44 (36.6)	0.75 (19.1)	0.38 (9.6)	1.00 (25.4)	15000 (1034)
3/4	SS-HPT-RT12	1.56 (39.6)	0.75 (19.1)	0.58 (14.8)	1.37 (34.9)	10000 (690)
1	SS-HPT-RT16	1.89 (48.0)	0.94 (23.9)	0.79 (20.0)	1.50 (38.1)	10000 (690)

Male Street Tees



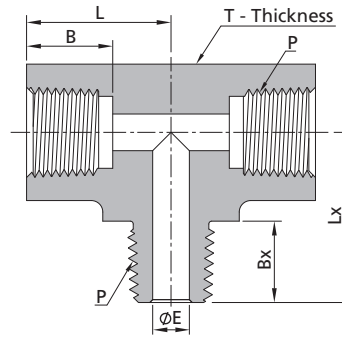
NPT Threads

P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPT-FNS2-NS2-FNS2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FNS4-NS4-FNS4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FNS6-NS6-FNS6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FNS8-NS8-FNS8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FNS12-NS12-FNS12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-FNS16-NS16-FNS16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

ISO Tapered Pipe Threads

P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPT-FRT2-RT2-FRT2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FRT4-RT4-FRT4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FRT6-RT6-FRT6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FRT8-RT8-FRT8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FRT12-RT12-FRT12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-FRT16-RT16-FRT16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

Male Branch Tees



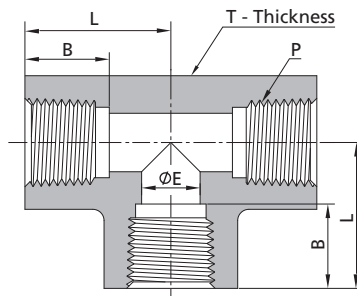
NPT Threads

P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPT-FNS2-FNS2-NS2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FNS4-FNS4-NS4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FNS6-FNS6-NS6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FNS8-FNS8-NS8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FNS12-FNS12-NS12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-FNS16-FNS16-NS16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

ISO Tapered Pipe Threads

P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)						Working Pressure psig (bar)
		L	B	Lx	Bx	E	T	
1/8	SS-HPT-FRT2-FRT2-RT2	0.75 (19.1)	0.41 (10.4)	0.75 (19.1)	0.38 (9.7)	0.19 (4.8)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FRT4-FRT4-RT4	1.00 (25.4)	0.59 (15.0)	1.06 (27.0)	0.56 (14.2)	0.25 (6.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FRT6-FRT6-RT6	1.20 (30.6)	0.59 (15.0)	1.20 (30.6)	0.56 (14.2)	0.31 (7.9)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FRT8-FRT8-RT8	1.50 (38.1)	0.78 (19.8)	1.61 (40.8)	0.75 (19.1)	0.38 (9.6)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FRT12-FRT12-RT12	1.50 (38.1)	0.81 (20.6)	1.77 (44.9)	0.75 (19.1)	0.58 (14.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-FRT16-FRT16-RT16	1.91 (48.5)	1.00 (25.4)	2.07 (52.5)	0.94 (23.9)	0.79 (20.0)	1.75 (44.5)	10000 (690)

Female Tees

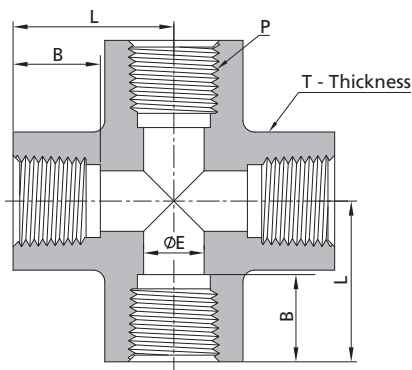


Female NPT Threads

P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-FNS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FNS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FNS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FNS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FNS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPT-FNS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

Female ISO Tapered Pipe Threads						
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPT-FRT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPT-FRT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPT-FRT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPT-FRT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPT-FRT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPT-FRT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

Female Crosses



Female NPT Threads						
P-NPT Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPX-FNS2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPX-FNS4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPX-FNS6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPX-FNS8	1.50 (38.1)	0.78 (19.8)	0.67 (17.0)	1.37 (34.9)	15000 (1034)
3/4	SS-HPX-FNS12	1.50 (38.1)	0.81 (20.6)	0.88 (22.3)	1.50 (38.1)	10000 (690)
1	SS-HPX-FNS16	1.91 (48.5)	1.00 (25.4)	1.11 (28.1)	1.75 (44.5)	10000 (690)

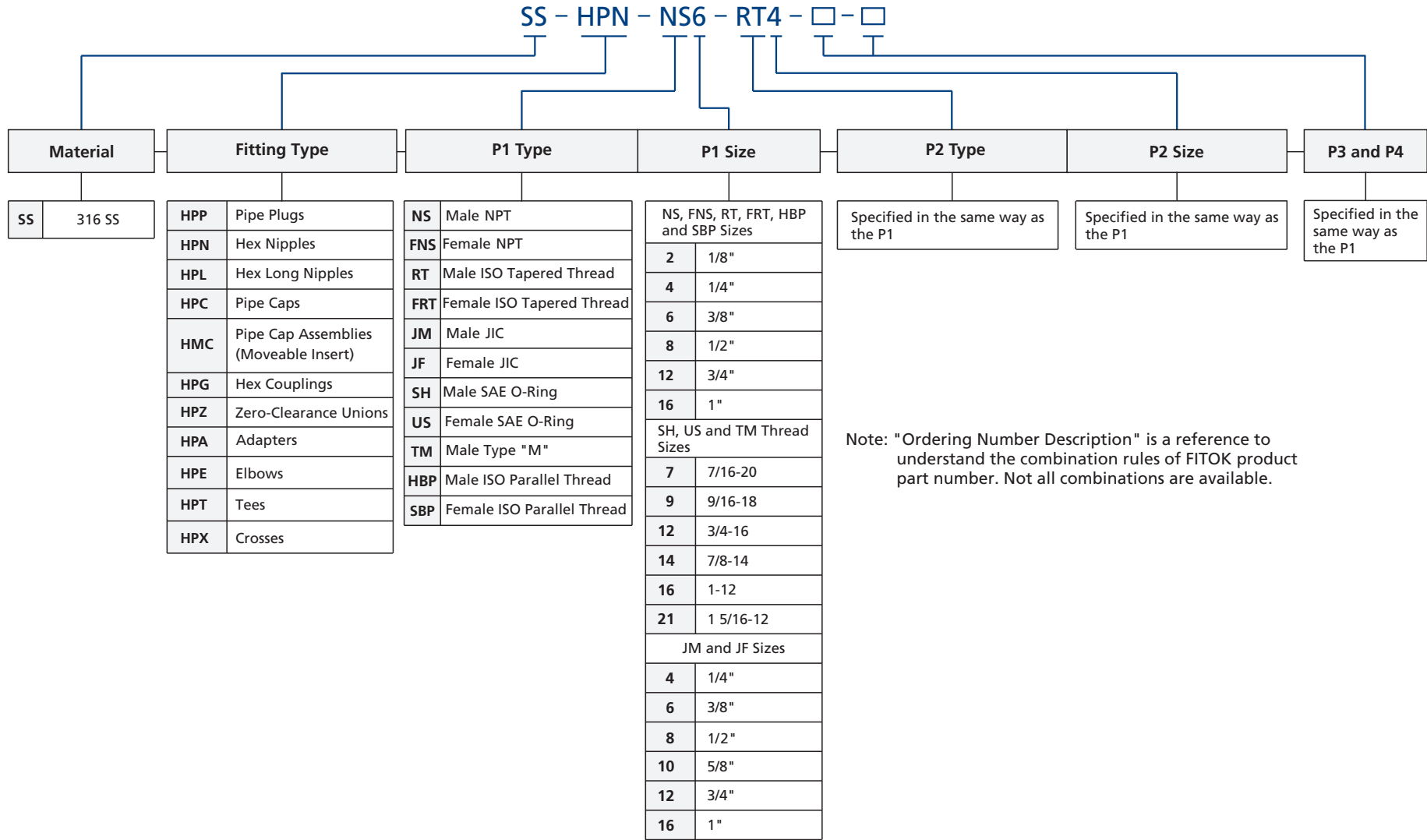
Female ISO Tapered Pipe Threads						
P-ISO Thread Size, in.	Ordering Number	Dimensions, in. (mm)				Working Pressure psig (bar)
		L	B	E	T	
1/8	SS-HPX-FRT2	0.75 (19.1)	0.41 (10.4)	0.31 (8.0)	0.63 (15.9)	15000 (1034)
1/4	SS-HPX-FRT4	1.00 (25.4)	0.59 (15.0)	0.41 (10.4)	0.75 (19.1)	15000 (1034)
3/8	SS-HPX-FRT6	1.20 (30.6)	0.59 (15.0)	0.54 (13.8)	1.00 (25.4)	15000 (1034)
1/2	SS-HPX-FRT8	1.50 (38.1)	0.78 (19.8)	0.69 (17.4)	1.37 (34.9)	15000 (1034)
3/4	SS-HPX-FRT12	1.50 (38.1)	0.81 (20.6)	0.90 (22.8)	1.50 (38.1)	10000 (690)
1	SS-HPX-FRT16	1.91 (48.5)	1.00 (25.4)	1.13 (28.7)	1.75 (44.5)	10000 (690)

Note: All dimensions are for reference only and subject to change.

Connection Information

Please see A-02.

Ordering Number Description



AMH Series Adapter Fittings



Fittings		Tubing		Quick Couplings		Line Filters		Valves		Sour Service Products		Subsea Valves		Part Number Crossover Charts	
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Contents

Fittings

Tubing

Quick Couplings

Line Filters

Valves

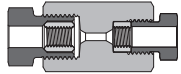
Sour Service Products

Subsea Valves

Part Number Crossover Charts

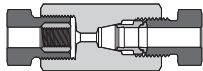
Female to Female - FFC

Female High Pressure to Female Medium Pressure



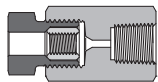
A-73

Female High Pressure to Female 20D Series



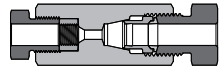
A-74

Female High Pressure to Female NPT



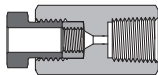
A-74

Female Medium Pressure to Female 20D Series



A-75

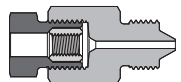
Female Medium Pressure to Female NPT



A-76

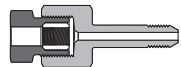
Female to Male - FMA

Female High Pressure to Male High Pressure



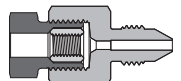
A-77

Female High Pressure to T60H Series Coned and Threaded Nipples



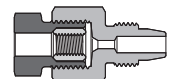
A-77

Female High Pressure to Male Medium Pressure



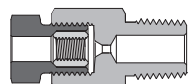
A-78

Female High Pressure to Male 20D Series



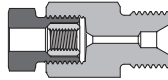
A-78

Female High Pressure to Male NPT



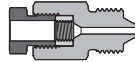
A-79

Female High Pressure to Male Type "M"



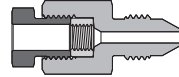
A-79

Female Medium Pressure to Male High Pressure



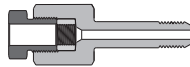
A-80

Female Medium Pressure to Male Medium Pressure



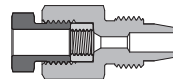
A-81

Female Medium Pressure to Medium Pressure Coned and Threaded Nipples



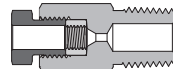
A-82

Female Medium Pressure to Male 20D Series



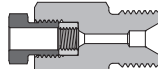
A-83

Female Medium Pressure to Male NPT



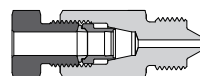
A-84

Female Medium Pressure to Male Type "M"



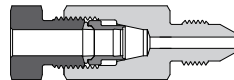
A-85

Female 20D Series to Male High Pressure



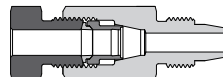
A-85

Female 20D Series to Male Medium Pressure



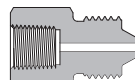
A-86

Female 20D Series to Male 20D Series



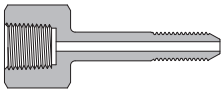
A-87

Female NPT to Male High Pressure



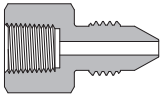
A-88

Female NPT to T60H Series Coned and Threaded Nipples



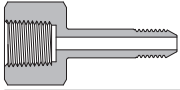
A-89

Female NPT to Male Medium Pressure



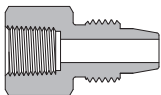
A-90

Female NPT to T20M Series Coned and Threaded Nipples



A-91

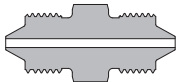
Female NPT to Male 20D Series



A-92

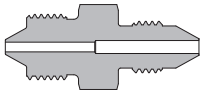
Male to Male - MMA

Male High Pressure to Male High Pressure



A-93

Male High Pressure to Male Medium Pressure



A-93

Male High Pressure to Male 20D Series



A-94

Male High Pressure to Male NPT



A-94

Male High Pressure to Male JIC



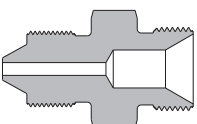
A-95

Male High Pressure to Male Type "M"



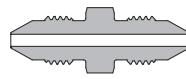
A-96

Male High Pressure to Male ISO Parallel



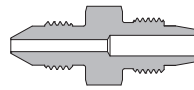
A-96

Male Medium Pressure to Male Medium Pressure



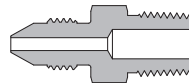
A-97

Male Medium Pressure to Male 20D Series



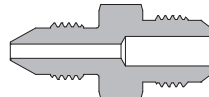
A-98

Male Medium Pressure to Male NPT



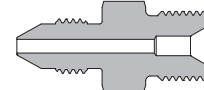
A-99

Male Medium Pressure to Male JIC



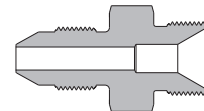
A-100

Male Medium Pressure to Male Type "M"



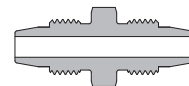
A-101

Male Medium Pressure to Male ISO Parallel



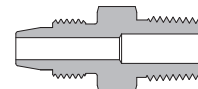
A-102

Male 20D Series to Male 20D Series



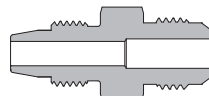
A-102

Male 20D Series to Male NPT



A-103

Male 20D Series to Male JIC



A-104

Male 20D Series to Male Type "M"



A-105

Ordering Number Description

A-106

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number
Crossover Charts

Features

- ⦿ High tensile 316 stainless steel as standard material, other materials available upon request
- ⦿ Every fitting marked with size, material and trace ID

Working Pressure

The working pressure of AMH series adapter fittings is shown in the "Ordering Information and Dimensions".

Connection Information

Please see A-02.

Cautions

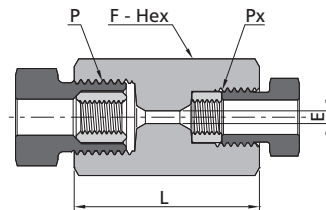
- ⦿ Do not loosen or tighten fittings when the system is pressurized
- ⦿ Always use proper thread sealants on tapered pipe threads

Ordering Information and Dimensions

Dimensions are for reference only and are subject to change.

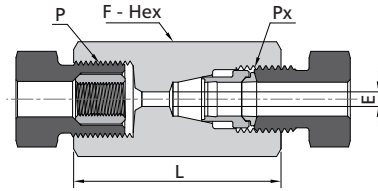
Female to Female - FFC

Female High Pressure to Female Medium Pressure



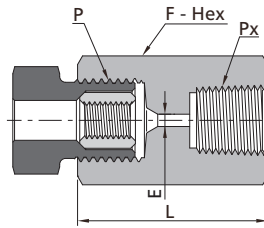
Female High Pressure				Female Medium Pressure		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	MF4	SS-FFC-HF4-MF4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	MF6	SS-FFC-HF4-MF6	1.56 (39.7)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	MF9	SS-FFC-HF4-MF9	1.81 (46.0)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
HF4	MF12	SS-FFC-HF4-MF12	2.06 (52.4)	1.37 (34.9)	0.09 (2.4)	20000 (1379)
HF4	MF16	SS-FFC-HF4-MF16	2.56 (65.1)	1.75 (44.5)	0.09 (2.4)	20000 (1379)
HF6	MF4	SS-FFC-HF6-MF4	1.63 (41.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
HF6	MF6	SS-FFC-HF6-MF6	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	MF9	SS-FFC-HF6-MF9	2.06 (52.4)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	MF12	SS-FFC-HF6-MF12	2.31 (58.7)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
HF6	MF16	SS-FFC-HF6-MF16	2.81 (71.4)	1.75 (44.5)	0.13 (3.2)	20000 (1379)
HF9	MF4	SS-FFC-HF9-MF4	1.81 (46.0)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
HF9	MF6	SS-FFC-HF9-MF6	1.94 (49.2)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MF9	SS-FFC-HF9-MF9	2.25 (57.2)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MF12	SS-FFC-HF9-MF12	2.44 (61.9)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MF16	SS-FFC-HF9-MF16	3.00 (76.2)	1.75 (44.5)	0.19 (4.8)	20000 (1379)

Female High Pressure to Female 20D Series



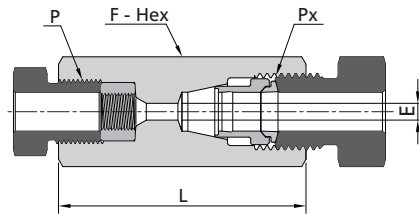
Female High Pressure			Female 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	DFF2	SS-FFC-HF4-DFF2	1.35(34.2)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	DFF4	SS-FFC-HF4-DFF4	1.67(42.3)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	DFF6	SS-FFC-HF4-DFF6	1.76(44.7)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	DFF8	SS-FFC-HF4-DFF8	1.93(49.1)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
HF6	DFF2	SS-FFC-HF6-DFF2	1.66(42.1)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
HF6	DFF4	SS-FFC-HF6-DFF4	1.92(48.7)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	DFF6	SS-FFC-HF6-DFF6	1.94(49.4)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	DFF8	SS-FFC-HF6-DFF8	2.18(55.4)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF9	DFF2	SS-FFC-HF9-DFF2	1.85(46.9)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
HF9	DFF4	SS-FFC-HF9-DFF4	2.04(51.8)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	DFF6	SS-FFC-HF9-DFF6	2.13(54.2)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	DFF8	SS-FFC-HF9-DFF8	2.31(58.6)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

Female High Pressure to Female NPT



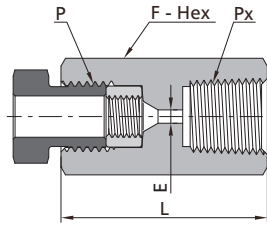
Female High Pressure			Female NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	FNS2	SS-FFC-HF4-FNS2	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	FNS4	SS-FFC-HF4-FNS4	1.63 (41.3)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
HF4	FNS6	SS-FFC-HF4-FNS6	1.63 (41.3)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
HF4	FNS8	SS-FFC-HF4-FNS8	2.00 (50.8)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
HF4	FNS12	SS-FFC-HF4-FNS12	2.00 (50.8)	1.50 (38.1)	0.09 (2.4)	10000 (690)
HF4	FNS16	SS-FFC-HF4-FNS16	2.37 (60.3)	1.75 (44.5)	0.09 (2.4)	10000 (690)
HF6	FNS2	SS-FFC-HF6-FNS2	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	FNS4	SS-FFC-HF6-FNS4	1.87 (47.6)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	FNS6	SS-FFC-HF6-FNS6	1.87 (47.6)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
HF6	FNS8	SS-FFC-HF6-FNS8	2.13 (54.0)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
HF6	FNS12	SS-FFC-HF6-FNS12	2.13 (54.0)	1.50 (38.1)	0.13 (3.2)	10000 (690)
HF6	FNS16	SS-FFC-HF6-FNS16	2.25 (57.2)	1.75 (44.5)	0.13 (3.2)	10000 (690)
HF9	FNS2	SS-FFC-HF9-FNS2	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	FNS4	SS-FFC-HF9-FNS4	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	FNS6	SS-FFC-HF9-FNS6	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	FNS8	SS-FFC-HF9-FNS8	2.37 (60.3)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	FNS12	SS-FFC-HF9-FNS12	2.37 (60.3)	1.50 (38.1)	0.19 (4.8)	10000 (690)
HF9	FNS16	SS-FFC-HF9-FNS16	2.50 (63.5)	1.75 (44.5)	0.19 (4.8)	10000 (690)

Female Medium Pressure to Female 20D Series



Female Medium Pressure				Female 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
			L	F	E		
MF4	DFF2	SS-FFC-MF4-DFF2	1.41(35.8)	0.63 (15.9)	0.09 (2.4)	15000 (1034)	
MF4	DFF4	SS-FFC-MF4-DFF4	1.67(42.3)	0.63 (15.9)	0.11 (2.8)	20000 (1379)	
MF4	DFF6	SS-FFC-MF4-DFF6	1.76(44.7)	0.75 (19.1)	0.11 (2.8)	20000 (1379)	
MF4	DFF8	SS-FFC-MF4-DFF8	1.93(49.1)	1.00 (25.4)	0.11 (2.8)	20000 (1379)	
MF6	DFF2	SS-FFC-MF6-DFF2	1.59(40.5)	0.75 (19.1)	0.09 (2.4)	15000 (1034)	
MF6	DFF4	SS-FFC-MF6-DFF4	1.85(47.1)	0.75 (19.1)	0.19 (4.8)	20000 (1379)	
MF6	DFF6	SS-FFC-MF6-DFF6	1.89(47.9)	0.75 (19.1)	0.20 (5.2)	20000 (1379)	
MF6	DFF8	SS-FFC-MF6-DFF8	2.06(52.2)	1.00 (25.4)	0.20 (5.2)	20000 (1379)	
MF9	DFF2	SS-FFC-MF9-DFF2	1.85(46.9)	1.00 (25.4)	0.09 (2.4)	15000 (1034)	
MF9	DFF4	SS-FFC-MF9-DFF4	2.04(51.8)	1.00 (25.4)	0.19 (4.8)	20000 (1379)	
MF9	DFF6	SS-FFC-MF9-DFF6	2.07(52.6)	1.00 (25.4)	0.25 (6.4)	20000 (1379)	
MF9	DFF8	SS-FFC-MF9-DFF8	2.24(57.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)	
MF12	DFF6	SS-FFC-MF12-DFF6	2.39(60.6)	1.37 (34.9)	0.25 (6.4)	20000 (1379)	
MF12	DFF8	SS-FFC-MF12-DFF8	2.43(61.8)	1.37 (34.9)	0.37 (9.5)	20000 (1379)	
MF16	DFF8	SS-FFC-MF16-DFF8	2.99(76.0)	1.75 (44.5)	0.37 (9.5)	20000 (1379)	

Female Medium Pressure to Female NPT



Female Medium Pressure			Female NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	FNS2	SS-FFC-MF4-FNS2	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
MF4	FNS4	SS-FFC-MF4-FNS4	1.63 (41.3)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
MF4	FNS6	SS-FFC-MF4-FNS6	1.63 (41.3)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
MF4	FNS8	SS-FFC-MF4-FNS8	2.00 (50.8)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
MF6	FNS2	SS-FFC-MF6-FNS2	1.50 (38.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
MF6	FNS4	SS-FFC-MF6-FNS4	1.75 (44.5)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
MF6	FNS6	SS-FFC-MF6-FNS6	1.81 (46.0)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
MF6	FNS8	SS-FFC-MF6-FNS8	2.13 (54.0)	1.37 (34.9)	0.20 (5.2)	15000 (1034)
MF6	FNS12	SS-FFC-MF6-FNS12	2.25 (57.2)	1.50 (38.1)	0.20 (5.2)	10000 (690)
MF9	FNS2	SS-FFC-MF9-FNS2	1.63 (41.3)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
MF9	FNS4	SS-FFC-MF9-FNS4	2.00 (50.8)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
MF9	FNS6	SS-FFC-MF9-FNS6	2.00 (50.8)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
MF9	FNS8	SS-FFC-MF9-FNS8	2.25 (57.2)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
MF9	FNS12	SS-FFC-MF9-FNS12	2.25 (57.2)	1.50 (38.1)	0.31 (7.9)	10000 (690)
MF9	FNS16	SS-FFC-MF9-FNS16	2.63 (66.7)	1.75 (44.5)	0.31 (7.9)	10000 (690)
MF12	FNS2	SS-FFC-MF12-FNS2	1.75 (44.5)	1.37 (34.9)	0.32 (8.1)	15000 (1034)
MF12	FNS4	SS-FFC-MF12-FNS4	2.00 (50.8)	1.37 (34.9)	0.41 (10.4)	15000 (1034)
MF12	FNS6	SS-FFC-MF12-FNS6	2.37 (60.3)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
MF12	FNS8	SS-FFC-MF12-FNS8	2.63 (66.7)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
MF12	FNS12	SS-FFC-MF12-FNS12	2.63 (66.7)	1.50 (38.1)	0.44 (11.1)	10000 (690)
MF12	FNS16	SS-FFC-MF12-FNS16	2.63 (66.7)	1.75 (44.5)	0.44 (11.1)	10000 (690)
MF16	FNS4	SS-FFC-MF16-FNS4	2.37 (60.3)	1.75 (44.5)	0.41 (10.4)	15000 (1034)
MF16	FNS6	SS-FFC-MF16-FNS6	2.50 (63.5)	1.75 (44.5)	0.55 (13.9)	15000 (1034)
MF16	FNS8	SS-FFC-MF16-FNS8	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	15000 (1034)
MF16	FNS12	SS-FFC-MF16-FNS12	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)
MF16	FNS16	SS-FFC-MF16-FNS16	3.00 (76.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

Valves

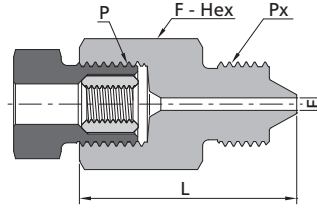
Sour Service Products

Subsea Valves

Part Number Crossover Charts

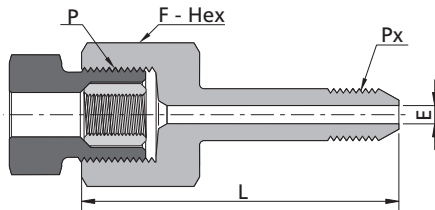
Female to Male - FMA

Female High Pressure to Male High Pressure



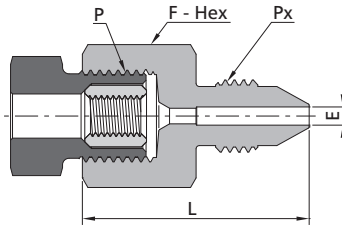
Female High Pressure			Male High Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	HM4	SS-FMA-HF4-HM4	1.44 (36.5)	0.75 (19.1)	0.08 (2.1)	60000 (4137)
HF4	HM6	SS-FMA-HF4-HM6	1.69 (42.9)	0.81 (20.6)	0.09 (2.4)	60000 (4137)
HF4	HM9	SS-FMA-HF4-HM9	1.75 (44.5)	1.19 (30.2)	0.09 (2.4)	60000 (4137)
HF6	HM4	SS-FMA-HF6-HM4	1.75 (44.5)	1.00 (25.4)	0.08 (2.1)	60000 (4137)
HF6	HM6	SS-FMA-HF6-HM6	2.00 (50.8)	1.00 (25.4)	0.13 (3.2)	60000 (4137)
HF6	HM9	SS-FMA-HF6-HM9	2.13 (54.0)	1.19 (30.2)	0.13 (3.2)	60000 (4137)
HF9	HM4	SS-FMA-HF9-HM4	2.06 (52.4)	1.37 (34.9)	0.08 (2.1)	60000 (4137)
HF9	HM6	SS-FMA-HF9-HM6	2.37 (60.3)	1.37 (34.9)	0.13 (3.2)	60000 (4137)
HF9	HM9	SS-FMA-HF9-HM9	2.50 (63.5)	1.37 (34.9)	0.19 (4.8)	60000 (4137)

Female High Pressure to T60H Series Coned and Threaded Nipples



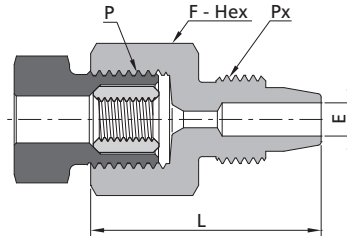
Female High Pressure			T60H Series Coned and Threaded Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	HCT4	SS-FMA-HF4-HCT4	1.93 (49.0)	0.75 (19.1)	0.08 (2.1)	60000 (4137)
HF4	HCT6	SS-FMA-HF4-HCT6	2.32 (59.0)	0.75 (19.1)	0.09 (2.4)	60000 (4137)
HF4	HCT9	SS-FMA-HF4-HCT9	2.91 (74.0)	0.75 (19.1)	0.09 (2.4)	60000 (4137)
HF6	HCT4	SS-FMA-HF6-HCT4	2.20 (56.0)	1.00 (25.4)	0.08 (2.1)	60000 (4137)
HF6	HCT6	SS-FMA-HF6-HCT6	2.60 (66.0)	1.00 (25.4)	0.13 (3.2)	60000 (4137)
HF6	HCT9	SS-FMA-HF6-HCT9	3.19 (81.0)	1.00 (25.4)	0.13 (3.2)	60000 (4137)
HF9	HCT4	SS-FMA-HF9-HCT4	2.48 (63.0)	1.38 (34.9)	0.08 (2.1)	60000 (4137)
HF9	HCT6	SS-FMA-HF9-HCT6	2.87 (73.0)	1.38 (34.9)	0.13 (3.2)	60000 (4137)
HF9	HCT9	SS-FMA-HF9-HCT9	3.46 (88.0)	1.38 (34.9)	0.19 (4.8)	60000 (4137)

Female High Pressure to Male Medium Pressure



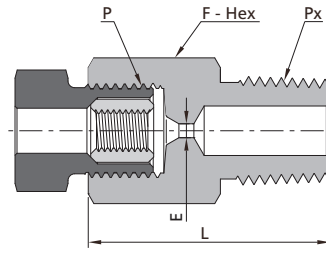
Female High Pressure			Male Medium Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	MM4	SS-FMA-HF4-MM4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	MM6	SS-FMA-HF4-MM6	1.50 (38.1)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	MM9	SS-FMA-HF4-MM9	1.69 (42.9)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
HF4	MM12	SS-FMA-HF4-MM12	1.75 (44.5)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
HF4	MM16	SS-FMA-HF4-MM16	2.37 (60.3)	1.50 (38.1)	0.09 (2.4)	20000 (1379)
HF6	MM4	SS-FMA-HF6-MM4	1.67 (42.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
HF6	MM6	SS-FMA-HF6-MM6	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	MM9	SS-FMA-HF6-MM9	1.94 (49.2)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	MM12	SS-FMA-HF6-MM12	2.13 (54.0)	1.19 (30.2)	0.13 (3.2)	20000 (1379)
HF6	MM16	SS-FMA-HF6-MM16	2.50 (63.5)	1.50 (38.1)	0.13 (3.2)	20000 (1379)
HF9	MM4	SS-FMA-HF9-MM4	1.87 (47.6)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
HF9	MM6	SS-FMA-HF9-MM6	2.00 (50.8)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MM9	SS-FMA-HF9-MM9	2.19 (55.6)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MM12	SS-FMA-HF9-MM12	2.37 (60.3)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	MM16	SS-FMA-HF9-MM16	2.81 (71.4)	1.50 (38.1)	0.19 (4.8)	20000 (1379)

Female High Pressure to Male 20D Series



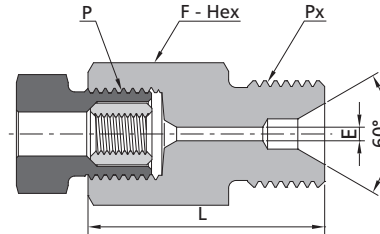
Female High Pressure			Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	DFM2	SS-FMA-HF4-DFM2	1.31 (33.2)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	DFM4	SS-FMA-HF4-DFM4	1.43 (36.3)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	DFM6	SS-FMA-HF4-DFM6	1.46 (37.0)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
HF4	DFM8	SS-FMA-HF4-DFM8	1.54 (39.0)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
HF6	DFM2	SS-FMA-HF6-DFM2	1.56 (39.5)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
HF6	DFM4	SS-FMA-HF6-DFM4	1.68 (42.7)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	DFM6	SS-FMA-HF6-DFM6	1.71 (43.4)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF6	DFM8	SS-FMA-HF6-DFM8	1.85 (47.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HF9	DFM2	SS-FMA-HF9-DFM2	1.87 (47.5)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
HF9	DFM4	SS-FMA-HF9-DFM4	1.87 (47.5)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	DFM6	SS-FMA-HF9-DFM6	1.89 (48.1)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
HF9	DFM8	SS-FMA-HF9-DFM8	2.04 (51.7)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

Female High Pressure to Male NPT



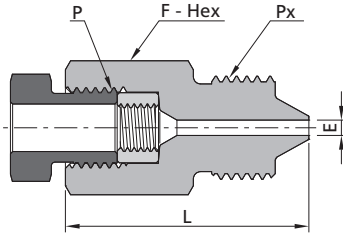
Female High Pressure				Male NPT		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	NS2	SS-FMA-HF4-NS2	1.25 (31.8)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	NS4	SS-FMA-HF4-NS4	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	NS6	SS-FMA-HF4-NS6	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
HF4	NS8	SS-FMA-HF4-NS8	1.50 (38.1)	0.87 (22.2)	0.09 (2.4)	15000 (1034)
HF4	NS12	SS-FMA-HF4-NS12	1.75 (44.5)	1.06 (27.0)	0.09 (2.4)	10000 (690)
HF6	NS2	SS-FMA-HF6-NS2	1.50 (38.1)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	NS4	SS-FMA-HF6-NS4	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	NS6	SS-FMA-HF6-NS6	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	NS8	SS-FMA-HF6-NS8	1.75 (44.5)	1.00 (25.4)	0.13 (3.2)	15000 (1034)
HF6	NS12	SS-FMA-HF6-NS12	2.00 (50.8)	1.06 (27.0)	0.13 (3.2)	10000 (690)
HF6	NS16	SS-FMA-HF6-NS16	2.00 (50.8)	1.37 (34.9)	0.13 (3.2)	10000 (690)
HF9	NS2	SS-FMA-HF9-NS2	1.63 (41.3)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	NS4	SS-FMA-HF9-NS4	1.75 (44.5)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	NS6	SS-FMA-HF9-NS6	1.75 (44.5)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	NS8	SS-FMA-HF9-NS8	1.87 (47.6)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
HF9	NS12	SS-FMA-HF9-NS12	2.13 (54.0)	1.37 (34.9)	0.19 (4.8)	10000 (690)
HF9	NS16	SS-FMA-HF9-NS16	2.25 (57.2)	1.37 (34.9)	0.19 (4.8)	10000 (690)

Female High Pressure to Male Type "M"



Female High Pressure				Male Type "M"		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HF4	TM9	SS-FMA-HF4-TM9	1.25 (31.8)	0.75 (19.1)	0.09 (2.4)	60000 (4137)
HF4	TM12	SS-FMA-HF4-TM12	1.38 (35.0)	0.75 (19.1)	0.09 (2.4)	30000 (2068)
HF4	TM14	SS-FMA-HF4-TM14	1.56 (39.7)	1.00 (25.4)	0.09 (2.4)	50000 (3447)
HF4	TM16	SS-FMA-HF4-TM16	1.37 (34.9)	1.00 (25.4)	0.09 (2.4)	30000 (2068)
HF6	TM9	SS-FMA-HF6-TM9	1.50 (38.1)	1.00 (25.4)	0.09 (2.4)	60000 (4137)
HF6	TM12	SS-FMA-HF6-TM12	1.63 (41.3)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
HF6	TM14	SS-FMA-HF6-TM14	1.81 (46.0)	1.00 (25.4)	0.13 (3.2)	50000 (3447)
HF6	TM16	SS-FMA-HF6-TM16	1.64 (41.6)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
HF6	TM21	SS-FMA-HF6-TM21	1.56 (39.7)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
HF9	TM14	SS-FMA-HF9-TM14	2.00 (50.8)	1.37 (34.9)	0.15 (3.8)	50000 (3447)
HF9	TM16	SS-FMA-HF9-TM16	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	30000 (2068)
HF9	TM21	SS-FMA-HF9-TM21	1.81 (46.0)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

Female Medium Pressure to Male High Pressure



Female Medium Pressure			Male High Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	HM4	SS-FMA-MF4-HM4	1.31 (33.3)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
MF4	HM6	SS-FMA-MF4-HM6	1.50 (38.1)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
MF4	HM9	SS-FMA-MF4-HM9	1.63 (41.3)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
MF6	HM4	SS-FMA-MF6-HM4	1.50 (38.1)	0.75 (19.1)	0.08 (2.1)	20000 (1379)
MF6	HM6	SS-FMA-MF6-HM6	1.69 (42.9)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
MF6	HM9	SS-FMA-MF6-HM9	1.75 (44.5)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
MF9	HM4	SS-FMA-MF9-HM4	1.81 (46.0)	1.00 (25.4)	0.08 (2.1)	20000 (1379)
MF9	HM6	SS-FMA-MF9-HM6	2.13 (54.0)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
MF9	HM9	SS-FMA-MF9-HM9	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
MF12	HM4	SS-FMA-MF12-HM4	2.25 (57.2)	1.37 (34.9)	0.08 (2.1)	20000 (1379)
MF12	HM6	SS-FMA-MF12-HM6	2.50 (63.5)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
MF12	HM9	SS-FMA-MF12-HM9	2.50 (63.5)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
MF16	HM4	SS-FMA-MF16-HM4	2.94 (74.6)	1.75 (44.5)	0.08 (2.1)	20000 (1379)
MF16	HM6	SS-FMA-MF16-HM6	3.13 (79.4)	1.75 (44.5)	0.13 (3.2)	20000 (1379)
MF16	HM9	SS-FMA-MF16-HM9	3.19 (81.0)	1.75 (44.5)	0.19 (4.8)	20000 (1379)

Fittings

Tubing

Quick Couplings

Line Filters

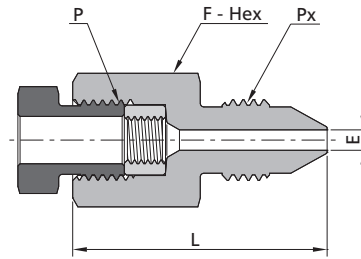
Valves

Sour Service Products

Subsea Valves

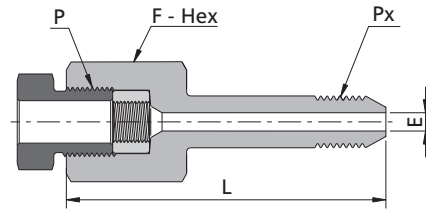
Part Number Crossover Charts

Female Medium Pressure to Male Medium Pressure



Female Medium Pressure			Male Medium Pressure			
P- Connection	Px- Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	MM4	SS-FMA-MF4-MM4	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MF4	MM6	SS-FMA-MF4-MM6	1.50 (38.1)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MF4	MM9	SS-FMA-MF4-MM9	1.63 (41.3)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
MF4	MM12	SS-FMA-MF4-MM12	1.75 (44.5)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
MF4	MM16	SS-FMA-MF4-MM16	2.37 (60.3)	1.50 (38.1)	0.11 (2.8)	20000 (1379)
MF6	MM4	SS-FMA-MF6-MM4	1.69 (42.9)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
MF6	MM6	SS-FMA-MF6-MM6	1.69 (42.9)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
MF6	MM9	SS-FMA-MF6-MM9	1.87 (47.6)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
MF6	MM12	SS-FMA-MF6-MM12	1.94 (49.2)	1.19 (30.2)	0.20 (5.2)	20000 (1379)
MF6	MM16	SS-FMA-MF6-MM16	2.37 (60.3)	1.50 (38.1)	0.20 (5.2)	20000 (1379)
MF9	MM4	SS-FMA-MF9-MM4	1.94 (49.2)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MF9	MM6	SS-FMA-MF9-MM6	2.06 (52.4)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
MF9	MM9	SS-FMA-MF9-MM9	2.13 (54.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MF9	MM12	SS-FMA-MF9-MM12	2.25 (57.2)	1.19 (30.2)	0.31 (7.9)	20000 (1379)
MF9	MM16	SS-FMA-MF9-MM16	2.50 (63.5)	1.50 (38.1)	0.31 (7.9)	20000 (1379)
MF12	MM4	SS-FMA-MF12-MM4	2.19 (55.6)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
MF12	MM6	SS-FMA-MF12-MM6	2.31 (58.7)	1.37 (34.9)	0.20 (5.2)	20000 (1379)
MF12	MM9	SS-FMA-MF12-MM9	2.44 (61.9)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
MF12	MM12	SS-FMA-MF12-MM12	2.56 (65.1)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
MF12	MM16	SS-FMA-MF12-MM16	2.94 (74.6)	1.50 (38.1)	0.44 (11.1)	20000 (1379)
MF16	MM9	SS-FMA-MF16-MM9	3.06 (77.8)	1.75 (44.5)	0.31 (7.9)	20000 (1379)
MF16	MM12	SS-FMA-MF16-MM12	3.19 (81.0)	1.75 (44.5)	0.44 (11.1)	20000 (1379)
MF16	MM16	SS-FMA-MF16-MM16	3.50 (88.9)	1.75 (44.5)	0.56 (14.3)	20000 (1379)

Female Medium Pressure to Medium Pressure Coned and Threaded Nipples



Female Medium Pressure			Medium Pressure Coned and Threaded Nipples			
P- Connection	Px- Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	MCT4	SS-FMA-MF4-MCT4	1.63 (41.4)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MF4	MCT6	SS-FMA-MF4-MCT6	1.88 (47.8)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MF4	MCT9	SS-FMA-MF4-MCT9	2.09 (53.1)	0.63 (17.5)	0.11 (2.8)	20000 (1379)
MF6	MCT4	SS-FMA-MF6-MCT4	1.89 (48.0)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
MF6	MCT6	SS-FMA-MF6-MCT6	2.14 (54.4)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
MF6	MCT9	SS-FMA-MF6-MCT9	2.35 (59.7)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
MF9	MCT4	SS-FMA-MF9-MCT4	2.20 (56.0)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MF9	MCT6	SS-FMA-MF9-MCT6	2.46 (62.4)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
MF9	MCT9	SS-FMA-MF9-MCT9	2.67 (67.7)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MF9	MCT12	SS-FMA-MF9-MCT12	2.91 (74.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MF9	MCT16	SS-FMA-MF9-MCT16	3.45 (87.6)	1.13 (28.6)	0.31 (7.9)	20000 (1379)
MF12	MCT9	SS-FMA-MF12-MCT9	2.94 (74.7)	1.38 (34.9)	0.31 (7.9)	20000 (1379)
MF12	MCT12	SS-FMA-MF12-MCT12	3.19 (81.0)	1.38 (34.9)	0.44 (11.1)	20000 (1379)
MF12	MCT16	SS-FMA-MF12-MCT16	3.72 (94.6)	1.38 (34.9)	0.44 (11.1)	20000 (1379)
MF16	MCT9	SS-FMA-MF16-MCT9	3.49 (88.7)	1.75 (44.5)	0.31 (7.9)	20000 (1379)
MF16	MCT12	SS-FMA-MF16-MCT12	3.74 (95.0)	1.75 (44.5)	0.44 (11.1)	20000 (1379)
MF16	MCT16	SS-FMA-MF16-MCT16	4.28 (108.6)	1.75 (44.5)	0.56 (14.3)	20000 (1379)

Fittings

Tubing

Quick Couplings

Line Filters

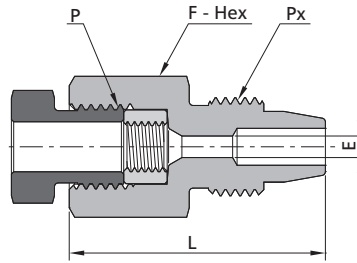
Valves

Sour Service
Products

Subsea Valves

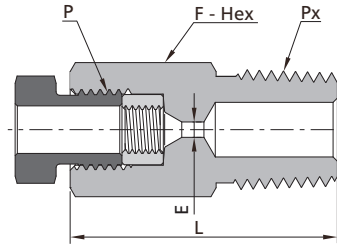
Part Number
Crossover Charts

Female Medium Pressure to Male 20D Series



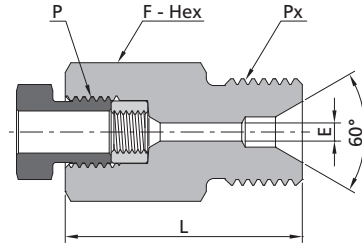
Female Medium Pressure				Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
			L	F	E		
MF4	DFM2	SS-FMA-MF4-DFM2	1.31 (33.2)	0.63 (15.9)	0.09 (2.4)	15000 (1034)	
MF4	DFM4	SS-FMA-MF4-DFM4	1.43 (36.3)	0.63 (15.9)	0.11 (2.8)	20000 (1379)	
MF4	DFM6	SS-FMA-MF4-DFM6	1.46 (37.0)	0.75 (19.1)	0.11 (2.8)	20000 (1379)	
MF4	DFM8	SS-FMA-MF4-DFM8	1.47 (37.4)	0.94 (23.8)	0.11 (2.8)	20000 (1379)	
MF6	DFM2	SS-FMA-MF6-DFM2	1.62 (41.1)	0.75 (19.1)	0.09 (2.4)	15000 (1034)	
MF6	DFM4	SS-FMA-MF6-DFM4	1.62 (41.1)	0.75 (19.1)	0.19 (4.8)	20000 (1379)	
MF6	DFM6	SS-FMA-MF6-DFM6	1.65 (41.8)	0.75 (19.1)	0.20 (5.2)	20000 (1379)	
MF6	DFM8	SS-FMA-MF6-DFM8	1.72 (43.8)	0.94 (23.8)	0.20 (5.2)	20000 (1379)	
MF9	DFM2	SS-FMA-MF9-DFM2	1.87 (47.5)	1.00 (25.4)	0.09 (2.4)	15000 (1034)	
MF9	DFM4	SS-FMA-MF9-DFM4	1.99 (50.6)	1.00 (25.4)	0.19 (4.8)	20000 (1379)	
MF9	DFM6	SS-FMA-MF9-DFM6	2.02 (51.3)	1.00 (25.4)	0.25 (6.4)	20000 (1379)	
MF9	DFM8	SS-FMA-MF9-DFM8	2.04 (51.7)	1.00 (25.4)	0.31 (7.9)	20000 (1379)	
MF12	DFM2	SS-FMA-MF12-DFM2	2.18 (55.4)	1.37 (34.9)	0.09 (2.4)	15000 (1034)	
MF12	DFM4	SS-FMA-MF12-DFM4	2.31 (58.6)	1.37 (34.9)	0.19 (4.8)	20000 (1379)	
MF12	DFM6	SS-FMA-MF12-DFM6	2.27 (57.7)	1.37 (34.9)	0.25 (6.4)	20000 (1379)	
MF12	DFM8	SS-FMA-MF12-DFM8	2.41 (61.3)	1.37 (34.9)	0.37 (7.9)	20000 (1379)	
MF16	DFM2	SS-FMA-MF16-DFM2	2.74 (69.7)	1.75 (44.5)	0.09 (2.4)	15000 (1034)	
MF16	DFM4	SS-FMA-MF16-DFM4	2.87 (72.9)	1.75 (44.5)	0.19 (4.8)	20000 (1379)	
MF16	DFM6	SS-FMA-MF16-DFM6	2.89 (73.5)	1.75 (44.5)	0.25 (6.4)	20000 (1379)	
MF16	DFM8	SS-FMA-MF16-DFM8	2.97 (75.5)	1.75 (44.5)	0.37 (9.5)	20000 (1379)	

Female Medium Pressure to Male NPT



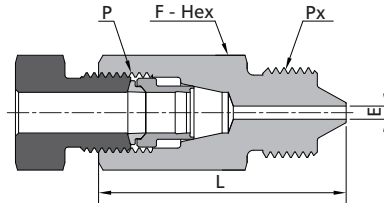
Female Medium Pressure			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	NS2	SS-FMA-MF4-NS2	1.19 (30.2)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
MF4	NS4	SS-FMA-MF4-NS4	1.37 (34.9)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
MF4	NS6	SS-FMA-MF4-NS6	1.37 (34.9)	0.69 (17.5)	0.11 (2.8)	15000 (1034)
MF4	NS8	SS-FMA-MF4-NS8	1.37 (34.9)	0.87 (22.2)	0.11 (2.8)	15000 (1034)
MF4	NS12	SS-FMA-MF4-NS12	1.75 (44.5)	1.06 (27.0)	0.11 (2.8)	10000 (690)
MF6	NS2	SS-FMA-MF6-NS2	1.37 (34.9)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
MF6	NS4	SS-FMA-MF6-NS4	1.50 (38.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
MF6	NS6	SS-FMA-MF6-NS6	1.50 (38.1)	0.75 (19.1)	0.20 (5.2)	15000 (1034)
MF6	NS8	SS-FMA-MF6-NS8	1.63 (41.3)	0.87 (22.2)	0.20 (5.2)	15000 (1034)
MF6	NS12	SS-FMA-MF6-NS12	1.75 (44.5)	1.06 (27.0)	0.20 (5.2)	10000 (690)
MF6	NS16	SS-FMA-MF6-NS16	2.00 (50.8)	1.37 (34.9)	0.20 (5.2)	10000 (690)
MF9	NS2	SS-FMA-MF9-NS2	1.75 (44.5)	1.00 (25.4)	0.19 (4.8)	15000 (1034)
MF9	NS4	SS-FMA-MF9-NS4	1.75 (44.5)	1.00 (25.4)	0.25 (6.4)	15000 (1034)
MF9	NS6	SS-FMA-MF9-NS6	1.75 (44.5)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
MF9	NS8	SS-FMA-MF9-NS8	1.94 (49.2)	1.00 (25.4)	0.31 (7.9)	15000 (1034)
MF9	NS12	SS-FMA-MF9-NS12	2.00 (50.8)	1.06 (27.0)	0.31 (7.9)	10000 (690)
MF9	NS16	SS-FMA-MF9-NS16	2.25 (57.2)	1.37 (34.9)	0.31 (7.9)	10000 (690)
MF12	NS4	SS-FMA-MF12-NS4	2.00 (50.8)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
MF12	NS6	SS-FMA-MF12-NS6	2.00 (50.8)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
MF12	NS8	SS-FMA-MF12-NS8	2.19 (55.6)	1.37 (34.9)	0.38 (9.6)	15000 (1034)
MF12	NS12	SS-FMA-MF12-NS12	2.25 (57.2)	1.37 (34.9)	0.44 (11.1)	10000 (690)
MF12	NS16	SS-FMA-MF12-NS16	2.63 (66.7)	1.37 (34.9)	0.44 (11.1)	10000 (690)
MF16	NS4	SS-FMA-MF16-NS4	2.87 (73.0)	1.75 (44.5)	0.25 (6.4)	15000 (1034)
MF16	NS6	SS-FMA-MF16-NS6	2.87 (73.0)	1.75 (44.5)	0.31 (7.9)	15000 (1034)
MF16	NS8	SS-FMA-MF16-NS8	2.87 (73.0)	1.75 (44.5)	0.38 (9.6)	15000 (1034)
MF16	NS12	SS-FMA-MF16-NS12	2.87 (73.0)	1.75 (44.5)	0.56 (14.3)	10000 (690)
MF16	NS16	SS-FMA-MF16-NS16	3.06 (77.8)	1.75 (44.5)	0.56 (14.3)	10000 (690)

Female Medium Pressure to Male Type "M"



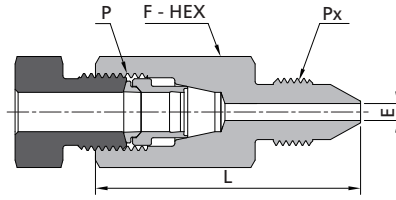
Female Medium Pressure				Male Type "M"		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MF4	TM9	SS-FMA-MF4-TM9	1.19 (30.2)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
MF4	TM12	SS-FMA-MF4-TM12	1.31 (33.3)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
MF4	TM14	SS-FMA-MF4-TM14	1.50 (38.1)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MF6	TM9	SS-FMA-MF6-TM9	1.37 (34.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
MF6	TM12	SS-FMA-MF6-TM12	1.50 (38.1)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
MF6	TM14	SS-FMA-MF6-TM14	1.63 (41.3)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
MF6	TM16	SS-FMA-MF6-TM16	1.63 (41.3)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
MF9	TM9	SS-FMA-MF9-TM9	1.69 (42.9)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
MF9	TM12	SS-FMA-MF9-TM12	1.81 (46.0)	1.00 (25.4)	0.29 (7.4)	20000 (1379)
MF9	TM14	SS-FMA-MF9-TM14	1.94 (49.2)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
MF9	TM16	SS-FMA-MF9-TM16	1.81 (46.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MF9	TM21	SS-FMA-MF9-TM21	1.81 (46.0)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
MF12	TM14	SS-FMA-MF12-TM14	2.19 (55.6)	1.37 (34.9)	0.15 (3.8)	20000 (1379)
MF12	TM16	SS-FMA-MF12-TM16	2.13 (54.0)	1.37 (34.9)	0.39 (10.0)	20000 (1379)
MF12	TM21	SS-FMA-MF12-TM21	2.00 (50.8)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
MF16	TM21	SS-FMA-MF16-TM21	2.56 (65.1)	1.75 (44.5)	0.56 (14.3)	20000 (1379)

Female 20D Series to Male High Pressure



Female 20D Series				Male High Pressure		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFF2	HM4	SS-FMA-DFF2-HM4	1.22(31.0)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
DFF2	HM6	SS-FMA-DFF2-HM6	1.47(37.3)	0.81 (20.6)	0.09 (2.4)	15000 (1034)
DFF2	HM9	SS-FMA-DFF2-HM9	1.78(45.3)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
DFF4	HM4	SS-FMA-DFF4-HM4	1.54(39.1)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
DFF4	HM6	SS-FMA-DFF4-HM6	1.73(43.9)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
DFF4	HM9	SS-FMA-DFF4-HM9	1.79(45.5)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
DFF6	HM4	SS-FMA-DFF6-HM4	1.70(43.1)	0.75 (19.1)	0.08 (2.1)	20000 (1379)
DFF6	HM6	SS-FMA-DFF6-HM6	1.89(47.9)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
DFF6	HM9	SS-FMA-DFF6-HM9	1.76(44.7)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
DFF8	HM4	SS-FMA-DFF8-HM4	1.87(47.5)	1.00 (25.4)	0.08 (2.1)	20000 (1379)
DFF8	HM6	SS-FMA-DFF8-HM6	2.06(52.2)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
DFF8	HM9	SS-FMA-DFF8-HM9	2.06(52.2)	1.19 (30.2)	0.19 (4.8)	20000 (1379)

Female 20D Series to Male Medium Pressure



Female 20D Series			Male Medium Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFF2	MM4	SS-FMA-DFF2-MM4	1.35(34.2)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DFF2	MM6	SS-FMA-DFF2-MM6	1.41(35.8)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DFF2	MM9	SS-FMA-DFF2-MM9	1.66(42.1)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DFF2	MM12	SS-FMA-DFF2-MM12	1.91(48.5)	1.19 (30.2)	0.09 (2.4)	15000 (1034)
DFF2	MM16	SS-FMA-DFF2-MM16	2.53(64.3)	1.50 (38.1)	0.09 (2.4)	15000 (1034)
DFF4	MM4	SS-FMA-DFF4-MM4	1.67(42.3)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
DFF4	MM6	SS-FMA-DFF4-MM6	1.79(45.5)	0.63 (15.9)	0.19 (4.8)	20000 (1379)
DFF4	MM9	SS-FMA-DFF4-MM9	1.73(43.9)	0.94 (23.8)	0.19 (4.8)	20000 (1379)
DFF4	MM12	SS-FMA-DFF4-MM12	1.92(48.7)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
DFF4	MM16	SS-FMA-DFF4-MM16	2.54(64.5)	1.50 (38.1)	0.19 (4.8)	20000 (1379)
DFF6	MM4	SS-FMA-DFF6-MM4	1.82(46.3)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
DFF6	MM6	SS-FMA-DFF6-MM6	1.89(47.9)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
DFF6	MM9	SS-FMA-DFF6-MM9	1.94(49.4)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
DFF6	MM12	SS-FMA-DFF6-MM12	2.01(51.0)	1.19 (30.2)	0.25 (6.4)	20000 (1379)
DFF6	MM16	SS-FMA-DFF6-MM16	2.51(63.7)	1.50 (38.1)	0.25 (6.4)	20000 (1379)
DFF8	MM4	SS-FMA-DFF8-MM4	1.93(49.1)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
DFF8	MM6	SS-FMA-DFF8-MM6	2.12(53.8)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
DFF8	MM9	SS-FMA-DFF8-MM9	2.24(57.0)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
DFF8	MM12	SS-FMA-DFF8-MM12	2.24(57.0)	1.19 (30.2)	0.37 (9.5)	20000 (1379)
DFF8	MM16	SS-FMA-DFF8-MM16	2.68(68.1)	1.50 (38.1)	0.37 (9.5)	20000 (1379)

Fittings

Tubing

Quick Couplings

Line Filters

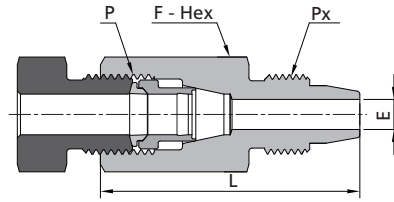
Valves

Sour Service
Products

Subsea Valves

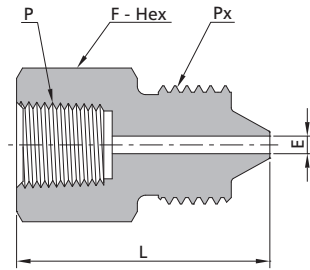
Part Number
Crossover Charts

Female 20D Series to Male 20D Series



Female 20D Series			Male 20D Series			
P- Connection	Px- Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFF2	DFM2	SS-FMA-DFF2-DFM2	1.34(34.0)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DFF2	DFM4	SS-FMA-DFF2-DFM4	1.40(35.6)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DFF2	DFM6	SS-FMA-DFF2-DFM6	1.37(34.7)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DFF2	DFM8	SS-FMA-DFF2-DFM8	1.63(41.4)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
DFF4	DFM2	SS-FMA-DFF4-DFM2	1.72(43.7)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
DFF4	DFM4	SS-FMA-DFF4-DFM4	1.78(45.3)	0.63 (15.9)	0.19 (4.8)	20000 (1379)
DFF4	DFM6	SS-FMA-DFF4-DFM6	1.75(44.4)	0.75 (19.1)	0.19 (4.8)	20000 (1379)
DFF4	DFM8	SS-FMA-DFF4-DFM8	1.83(46.4)	0.94 (23.8)	0.19 (4.8)	20000 (1379)
DFF6	DFM2	SS-FMA-DFF6-DFM2	1.81(46.1)	0.75 (19.1)	0.09 (2.4)	15000 (1034)
DFF6	DFM4	SS-FMA-DFF6-DFM4	1.94(49.3)	0.75 (19.1)	0.19 (4.8)	20000 (1379)
DFF6	DFM6	SS-FMA-DFF6-DFM6	1.91(48.4)	0.75 (19.1)	0.25 (6.4)	20000 (1379)
DFF6	DFM8	SS-FMA-DFF6-DFM8	1.92(48.8)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
DFF8	DFM2	SS-FMA-DFF8-DFM2	1.93(48.9)	1.00 (25.4)	0.09 (2.4)	15000 (1034)
DFF8	DFM4	SS-FMA-DFF8-DFM4	2.05(52.1)	1.00 (25.4)	0.19 (4.8)	20000 (1379)
DFF8	DFM6	SS-FMA-DFF8-DFM6	2.07(52.7)	1.00 (25.4)	0.25 (6.4)	20000 (1379)
DFF8	DFM8	SS-FMA-DFF8-DFM8	2.15(54.7)	1.00 (25.4)	0.37 (9.5)	20000 (1379)

Female NPT to Male High Pressure



Female NPT			Male High Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
FNS2	HM4	SS-FMA-FNS2-HM4	1.19 (30.2)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
FNS2	HM6	SS-FMA-FNS2-HM6	1.37 (34.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
FNS2	HM9	SS-FMA-FNS2-HM9	1.63 (41.3)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
FNS4	HM4	SS-FMA-FNS4-HM4	1.37 (34.9)	0.94 (23.8)	0.08 (2.1)	15000 (1034)
FNS4	HM6	SS-FMA-FNS4-HM6	1.63 (41.3)	0.94 (23.8)	0.13 (3.2)	15000 (1034)
FNS4	HM9	SS-FMA-FNS4-HM9	1.75 (44.5)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
FNS6	HM4	SS-FMA-FNS6-HM4	1.44 (36.5)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
FNS6	HM6	SS-FMA-FNS6-HM6	1.69 (42.9)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
FNS6	HM9	SS-FMA-FNS6-HM9	1.81 (46.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
FNS8	HM4	SS-FMA-FNS8-HM4	1.69 (42.9)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
FNS8	HM6	SS-FMA-FNS8-HM6	1.94 (49.2)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
FNS8	HM9	SS-FMA-FNS8-HM9	2.13 (54.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
FNS12	HM4	SS-FMA-FNS12-HM4	1.75 (44.5)	1.50 (38.1)	0.08 (2.1)	10000 (690)
FNS12	HM6	SS-FMA-FNS12-HM6	2.00 (50.8)	1.50 (38.1)	0.13 (3.2)	10000 (690)
FNS12	HM9	SS-FMA-FNS12-HM9	2.19 (55.6)	1.50 (38.1)	0.19 (4.8)	10000 (690)
FNS16	HM4	SS-FMA-FNS16-HM4	2.00 (50.8)	1.75 (44.5)	0.08 (2.1)	10000 (690)
FNS16	HM6	SS-FMA-FNS16-HM6	2.25 (57.2)	1.75 (44.5)	0.13 (3.2)	10000 (690)
FNS16	HM9	SS-FMA-FNS16-HM9	2.44 (61.9)	1.75 (44.5)	0.19 (4.8)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

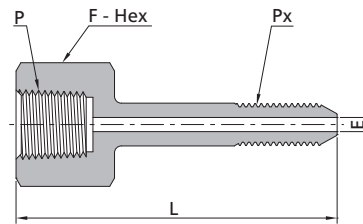
Valves

Sour Service
Products

Subsea Valves

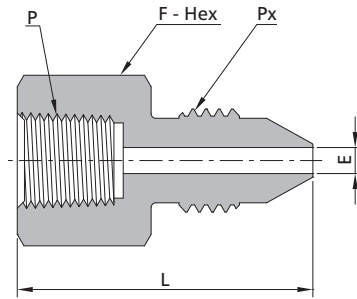
Part Number
Crossover Charts

Female NPT to T60H Series Coned and Threaded Nipples



Female NPT			T60H Series Coned and Threaded Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
FNS2	HCT4	SS-FMA-FNS2-HCT4	1.87 (47.6)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
FNS2	HCT6	SS-FMA-FNS2-HCT6	2.19 (55.6)	0.63 (15.9)	0.13 (3.2)	15000 (1034)
FNS4	HCT4	SS-FMA-FNS4-HCT4	2.13 (54.0)	0.94 (23.8)	0.08 (2.1)	15000 (1034)
FNS4	HCT6	SS-FMA-FNS4-HCT6	2.50 (63.5)	0.94 (23.8)	0.13 (3.2)	15000 (1034)
FNS4	HCT9	SS-FMA-FNS4-HCT9	3.06 (77.8)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
FNS6	HCT4	SS-FMA-FNS6-HCT4	2.13 (54.0)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
FNS6	HCT6	SS-FMA-FNS6-HCT6	2.50 (63.5)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
FNS6	HCT9	SS-FMA-FNS6-HCT9	3.13 (79.4)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
FNS8	HCT4	SS-FMA-FNS8-HCT4	2.37 (60.3)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
FNS8	HCT6	SS-FMA-FNS8-HCT6	2.75 (69.9)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
FNS8	HCT9	SS-FMA-FNS8-HCT9	3.31 (84.2)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
FNS12	HCT4	SS-FMA-FNS12-HCT4	2.44 (61.9)	1.50 (38.1)	0.08 (2.1)	10000 (690)
FNS12	HCT6	SS-FMA-FNS12-HCT6	2.81 (71.4)	1.50 (38.1)	0.13 (3.2)	10000 (690)
FNS12	HCT9	SS-FMA-FNS12-HCT9	3.38 (85.8)	1.50 (38.1)	0.19 (4.8)	10000 (690)
FNS16	HCT4	SS-FMA-FNS16-HCT4	2.69 (68.3)	1.75 (44.5)	0.08 (2.1)	10000 (690)
FNS16	HCT6	SS-FMA-FNS16-HCT6	3.10 (78.8)	1.75 (44.5)	0.13 (3.2)	10000 (690)
FNS16	HCT9	SS-FMA-FNS16-HCT9	3.69 (93.8)	1.75 (44.5)	0.19 (4.8)	10000 (690)

Female NPT to Male Medium Pressure



Female NPT			Male Medium Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
FNS2	MM4	SS-FMA-FNS2-MM4	1.25 (31.8)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
FNS2	MM6	SS-FMA-FNS2-MM6	1.37 (34.9)	0.63 (15.9)	0.20 (5.2)	15000 (1034)
FNS2	MM9	SS-FMA-FNS2-MM9	1.50 (38.1)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
FNS2	MM12	SS-FMA-FNS2-MM12	1.75 (44.5)	1.19 (30.2)	0.31 (7.9)	15000 (1034)
FNS2	MM16	SS-FMA-FNS2-MM16	2.37 (60.3)	1.50 (38.1)	0.31 (7.9)	15000 (1034)
FNS4	MM4	SS-FMA-FNS4-MM4	1.50 (38.0)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
FNS4	MM6	SS-FMA-FNS4-MM6	1.63 (41.3)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
FNS4	MM9	SS-FMA-FNS4-MM9	1.75 (44.5)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
FNS4	MM12	SS-FMA-FNS4-MM12	1.87 (47.6)	1.19 (30.2)	0.41 (10.4)	15000 (1034)
FNS4	MM16	SS-FMA-FNS4-MM16	2.37 (60.3)	1.50 (38.1)	0.41 (10.4)	15000 (1034)
FNS6	MM4	SS-FMA-FNS6-MM4	1.50 (38.1)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
FNS6	MM6	SS-FMA-FNS6-MM6	1.69 (42.9)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
FNS6	MM9	SS-FMA-FNS6-MM9	1.81 (46.0)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
FNS6	MM12	SS-FMA-FNS6-MM12	2.00 (50.8)	1.19 (30.2)	0.44 (11.1)	15000 (1034)
FNS6	MM16	SS-FMA-FNS6-MM16	2.37 (60.3)	1.50 (38.1)	0.56 (14.3)	15000 (1034)
FNS8	MM4	SS-FMA-FNS8-MM4	1.75 (44.5)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
FNS8	MM6	SS-FMA-FNS8-MM6	1.87 (47.6)	1.37 (34.9)	0.20 (5.2)	15000 (1034)
FNS8	MM9	SS-FMA-FNS8-MM9	2.06 (52.4)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
FNS8	MM12	SS-FMA-FNS8-MM12	2.19 (55.6)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
FNS8	MM16	SS-FMA-FNS8-MM16	2.56 (65.1)	1.50 (38.1)	0.56 (14.3)	15000 (1034)
FNS12	MM4	SS-FMA-FNS12-MM4	1.81 (46.0)	1.50 (38.1)	0.11 (2.8)	10000 (690)
FNS12	MM6	SS-FMA-FNS12-MM6	1.94 (49.2)	1.50 (38.1)	0.20 (5.2)	10000 (690)
FNS12	MM9	SS-FMA-FNS12-MM9	2.13 (54.0)	1.50 (38.1)	0.31 (7.9)	10000 (690)
FNS12	MM12	SS-FMA-FNS12-MM12	2.31 (58.7)	1.50 (38.1)	0.44 (11.1)	10000 (690)
FNS12	MM16	SS-FMA-FNS12-MM16	2.75 (69.9)	1.50 (38.1)	0.56 (14.3)	10000 (690)
FNS16	MM4	SS-FMA-FNS16-MM4	2.06 (52.4)	1.75 (44.5)	0.11 (2.8)	10000 (690)
FNS16	MM6	SS-FMA-FNS16-MM6	2.19 (55.6)	1.75 (44.5)	0.20 (5.2)	10000 (690)
FNS16	MM9	SS-FMA-FNS16-MM9	2.44 (61.9)	1.75 (44.5)	0.31 (7.9)	10000 (690)
FNS16	MM12	SS-FMA-FNS16-MM12	2.56 (63.5)	1.75 (44.5)	0.44 (11.1)	10000 (690)
FNS16	MM16	SS-FMA-FNS16-MM16	3.06 (77.8)	1.75 (44.5)	0.56 (14.3)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

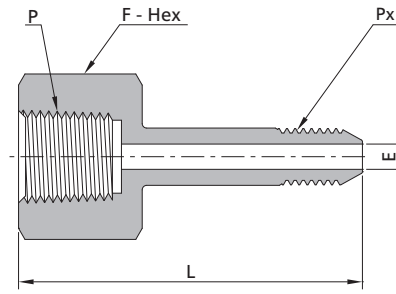
Valves

Sour Service Products

Subsea Valves

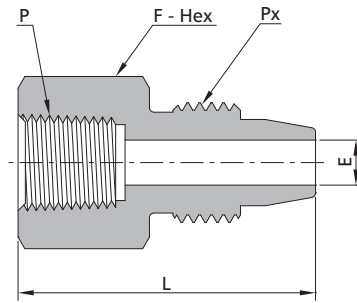
Part Number Crossover Charts

Female NPT to T20M Series Coned and Threaded Nipples



Female NPT			T20M Series Coned and Threaded Nipples			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
FNS2	MCT4	SS-FMA-FNS2-MCT4	1.50 (38.1)	0.63 (15.9)	0.11 (2.8)	15000 (1034)
FNS2	MCT6	SS-FMA-FNS2-MCT6	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	15000 (1034)
FNS2	MCT9	SS-FMA-FNS2-MCT9	1.94 (49.2)	0.63 (15.9)	0.31 (7.9)	15000 (1034)
FNS2	MCT12	SS-FMA-FNS2-MCT12	2.13 (54.0)	0.87 (22.2)	0.31 (7.9)	15000 (1034)
FNS2	MCT16	SS-FMA-FNS2-MCT16	2.81 (71.4)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
FNS4	MCT4	SS-FMA-FNS4-MCT4	1.75 (44.5)	0.94 (23.8)	0.11 (2.8)	15000 (1034)
FNS4	MCT6	SS-FMA-FNS4-MCT6	2.00 (50.8)	0.94 (23.8)	0.20 (5.2)	15000 (1034)
FNS4	MCT9	SS-FMA-FNS4-MCT9	2.19 (55.6)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
FNS4	MCT12	SS-FMA-FNS4-MCT12	2.44 (61.9)	0.94 (23.8)	0.41 (10.4)	15000 (1034)
FNS4	MCT16	SS-FMA-FNS4-MCT16	2.94 (74.6)	1.13 (28.6)	0.41 (10.4)	15000 (1034)
FNS6	MCT6	SS-FMA-FNS6-MCT6	2.06 (52.4)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
FNS6	MCT9	SS-FMA-FNS6-MCT9	2.25 (57.2)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
FNS6	MCT12	SS-FMA-FNS6-MCT12	2.50 (63.5)	1.13 (28.6)	0.44 (11.1)	15000 (1034)
FNS6	MCT16	SS-FMA-FNS6-MCT16	3.00 (76.2)	1.13 (28.6)	0.56 (14.3)	15000 (1034)
FNS8	MCT9	SS-FMA-FNS8-MCT9	2.50 (63.5)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
FNS8	MCT12	SS-FMA-FNS8-MCT12	2.75 (69.9)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
FNS8	MCT16	SS-FMA-FNS8-MCT16	3.25 (82.6)	1.37 (34.9)	0.56 (14.3)	15000 (1034)
FNS12	MCT9	SS-FMA-FNS12-MCT9	2.56 (65.1)	1.50 (38.1)	0.31 (7.9)	10000 (690)
FNS12	MCT12	SS-FMA-FNS12-MCT12	2.81 (71.4)	1.50 (38.1)	0.44 (11.1)	10000 (690)
FNS12	MCT16	SS-FMA-FNS12-MCT16	3.39 (86.0)	1.50 (38.1)	0.56 (14.3)	10000 (690)
FNS16	MCT12	SS-FMA-FNS16-MCT12	3.13 (79.4)	1.75 (44.5)	0.44 (11.1)	10000 (690)
FNS16	MCT16	SS-FMA-FNS16-MCT16	3.63 (92.2)	1.75 (44.5)	0.56 (14.3)	10000 (690)

Female NPT to Male 20D Series



Female NPT			Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
FNS2	DFM2	SS-FMA-FNS2-DFM2	1.24 (31.6)	0.63 (15.9)	0.09 (2.4)	15000 (1034)
FNS2	DFM4	SS-FMA-FNS2-DFM4	1.37 (34.7)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
FNS2	DFM6	SS-FMA-FNS2-DFM6	1.39 (35.4)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
FNS2	DFM8	SS-FMA-FNS2-DFM8	1.47 (37.4)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
FNS4	DFM2	SS-FMA-FNS4-DFM2	1.43 (36.3)	0.94 (23.8)	0.09 (2.4)	15000 (1034)
FNS4	DFM4	SS-FMA-FNS4-DFM4	1.62 (41.1)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
FNS4	DFM6	SS-FMA-FNS4-DFM6	1.65 (41.8)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
FNS4	DFM8	SS-FMA-FNS4-DFM8	1.72 (43.8)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
FNS6	DFM2	SS-FMA-FNS6-DFM2	1.56 (39.5)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
FNS6	DFM4	SS-FMA-FNS6-DFM4	1.68 (42.7)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
FNS6	DFM6	SS-FMA-FNS6-DFM6	1.71 (43.4)	1.13 (28.6)	0.25 (6.4)	15000 (1034)
FNS6	DFM8	SS-FMA-FNS6-DFM8	1.85 (47.0)	1.13 (28.6)	0.37 (9.5)	15000 (1034)
FNS8	DFM2	SS-FMA-FNS8-DFM2	1.74 (44.3)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
FNS8	DFM4	SS-FMA-FNS8-DFM4	1.87 (47.5)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
FNS8	DFM6	SS-FMA-FNS8-DFM6	1.96 (49.7)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
FNS8	DFM8	SS-FMA-FNS8-DFM8	2.04 (51.7)	1.37 (34.9)	0.37 (9.5)	15000 (1034)
FNS12	DFM2	SS-FMA-FNS12-DFM2	1.81 (45.9)	1.50 (38.1)	0.09 (2.4)	10000 (690)
FNS12	DFM4	SS-FMA-FNS12-DFM4	1.99 (50.6)	1.50 (38.1)	0.19 (4.8)	10000 (690)
FNS12	DFM6	SS-FMA-FNS12-DFM6	2.02 (51.3)	1.50 (38.1)	0.25 (6.4)	10000 (690)
FNS12	DFM8	SS-FMA-FNS12-DFM8	2.10 (53.3)	1.50 (38.1)	0.37 (9.5)	10000 (690)
FNS16	DFM2	SS-FMA-FNS16-DFM2	2.12 (53.8)	1.75 (44.5)	0.09 (2.4)	10000 (690)
FNS16	DFM4	SS-FMA-FNS16-DFM4	2.24 (57.0)	1.75 (44.5)	0.19 (4.8)	10000 (690)
FNS16	DFM6	SS-FMA-FNS16-DFM6	2.27 (57.7)	1.75 (44.5)	0.25 (6.4)	10000 (690)
FNS16	DFM8	SS-FMA-FNS16-DFM8	2.35 (59.7)	1.75 (44.5)	0.37 (9.5)	10000 (690)

Fittings

Tubing

Quick Couplings

Line Filters

Valves

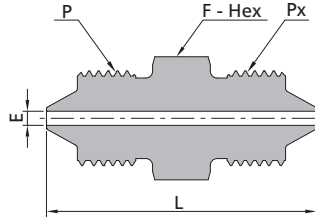
Sour Service Products

Subsea Valves

Part Number Crossover Charts

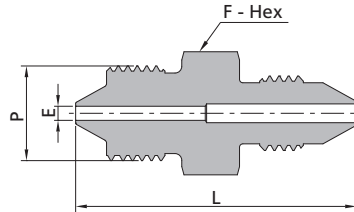
Male to Male - MMA

Male High Pressure to Male High Pressure



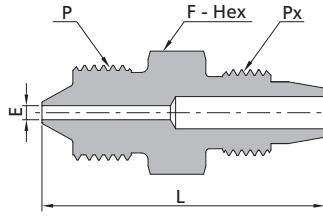
Male High Pressure			Male High Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	HM4	SS-MMA-HM4	1.63 (41.3)	0.63 (15.9)	0.08 (2.1)	60000 (4137)
HM6	HM4	SS-MMA-HM6-HM4	1.94 (49.2)	0.81 (20.6)	0.08 (2.1)	60000 (4137)
HM6	HM6	SS-MMA-HM6	2.19 (55.6)	0.81 (20.6)	0.13 (3.2)	60000 (4137)
HM9	HM4	SS-MMA-HM9-HM4	2.19 (55.6)	1.19 (30.2)	0.08 (2.1)	60000 (4137)
HM9	HM6	SS-MMA-HM9-HM6	2.50 (63.5)	1.19 (30.2)	0.13 (3.2)	60000 (4137)
HM9	HM9	SS-MMA-HM9	2.63 (66.7)	1.19 (30.2)	0.19 (4.8)	60000 (4137)

Male High Pressure to Male Medium Pressure



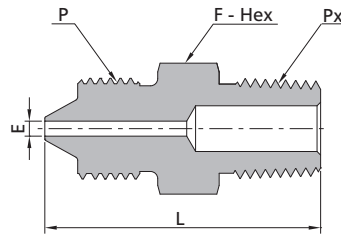
Male High Pressure			Male Medium Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	MM4	SS-MMA-HM4-MM4	1.69 (42.9)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	MM6	SS-MMA-HM4-MM6	1.81 (46.0)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	MM9	SS-MMA-HM4-MM9	2.06 (52.4)	0.94 (23.8)	0.08 (2.1)	20000 (1379)
HM4	MM12	SS-MMA-HM4-MM12	2.37 (60.3)	1.19 (30.2)	0.08 (2.1)	20000 (1379)
HM4	MM16	SS-MMA-HM4-MM16	2.94 (74.6)	1.50 (38.1)	0.08 (2.1)	20000 (1379)
HM6	MM4	SS-MMA-HM6-MM4	2.00 (50.8)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
HM6	MM6	SS-MMA-HM6-MM6	2.13 (54.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	MM9	SS-MMA-HM6-MM9	2.37 (60.3)	0.94 (23.8)	0.13 (3.2)	20000 (1379)
HM6	MM12	SS-MMA-HM6-MM12	2.63 (66.7)	1.19 (30.2)	0.13 (3.2)	20000 (1379)
HM6	MM16	SS-MMA-HM6-MM16	3.13 (79.4)	1.50 (38.1)	0.13 (3.2)	20000 (1379)
HM9	MM4	SS-MMA-HM9-MM4	2.25 (57.2)	1.19 (30.2)	0.11 (2.8)	20000 (1379)
HM9	MM6	SS-MMA-HM9-MM6	2.44 (61.9)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	MM9	SS-MMA-HM9-MM9	2.63 (66.7)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	MM12	SS-MMA-HM9-MM12	2.80 (71.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	MM16	SS-MMA-HM9-MM16	3.31 (84.2)	1.50 (38.1)	0.19 (4.8)	20000 (1379)

Male High Pressure to Male 20D Series



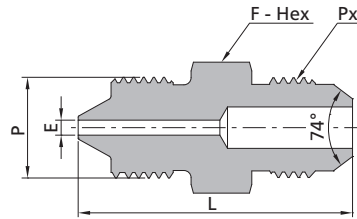
Male High Pressure			Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	DFM2	SS-MMA-HM4-DFM2	1.60 (40.6)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	DFM4	SS-MMA-HM4-DFM4	1.75 (44.5)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	DFM6	SS-MMA-HM4-DFM6	1.81 (45.9)	0.75 (19.1)	0.08 (2.1)	20000 (1379)
HM4	DFM8	SS-MMA-HM4-DFM8	2.02 (51.2)	0.94 (23.8)	0.08 (2.1)	20000 (1379)
HM6	DFM2	SS-MMA-HM6-DFM2	1.93 (49.0)	0.81 (20.6)	0.09 (2.4)	20000 (1379)
HM6	DFM4	SS-MMA-HM6-DFM4	2.08 (52.9)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	DFM6	SS-MMA-HM6-DFM6	2.10 (53.3)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	DFM8	SS-MMA-HM6-DFM8	2.37 (60.1)	0.94 (23.8)	0.13 (3.2)	20000 (1379)
HM9	DFM2	SS-MMA-HM9-DFM2	2.24 (56.8)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
HM9	DFM4	SS-MMA-HM9-DFM4	2.39 (60.7)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	DFM6	SS-MMA-HM9-DFM6	2.41 (61.1)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	DFM8	SS-MMA-HM9-DFM8	2.54 (64.4)	1.19 (30.2)	0.19 (4.8)	20000 (1379)

Male High Pressure to Male NPT



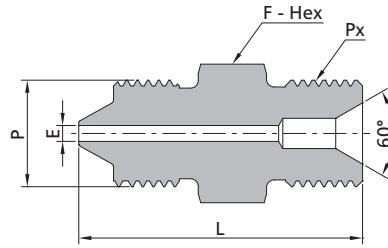
Male High Pressure			Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	NS2	SS-MMA-HM4-NS2	1.37 (34.9)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
HM4	NS4	SS-MMA-HM4-NS4	1.56 (39.7)	0.63 (15.9)	0.08 (2.1)	15000 (1034)
HM4	NS6	SS-MMA-HM4-NS6	1.56 (39.7)	0.69 (17.5)	0.08 (2.1)	15000 (1034)
HM4	NS8	SS-MMA-HM4-NS8	1.81 (46.0)	0.87 (22.2)	0.08 (2.1)	15000 (1034)
HM4	NS12	SS-MMA-HM4-NS12	1.87 (47.6)	1.06 (27.0)	0.08 (2.1)	10000 (690)
HM4	NS16	SS-MMA-HM4-NS16	2.19 (55.6)	1.37 (34.9)	0.08 (2.1)	10000 (690)
HM6	NS2	SS-MMA-HM6-NS2	1.69 (42.9)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
HM6	NS4	SS-MMA-HM6-NS4	1.87 (47.6)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
HM6	NS6	SS-MMA-HM6-NS6	1.87 (47.6)	0.81 (20.6)	0.13 (3.2)	15000 (1034)
HM6	NS8	SS-MMA-HM6-NS8	2.06 (52.4)	0.87 (22.2)	0.13 (3.2)	15000 (1034)
HM6	NS12	SS-MMA-HM6-NS12	2.13 (54.0)	1.06 (27.0)	0.13 (3.2)	10000 (690)
HM6	NS16	SS-MMA-HM6-NS16	2.44 (61.9)	1.37 (34.9)	0.13 (3.2)	10000 (690)
HM9	NS2	SS-MMA-HM9-NS2	2.00 (50.8)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
HM9	NS4	SS-MMA-HM9-NS4	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
HM9	NS6	SS-MMA-HM9-NS6	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
HM9	NS8	SS-MMA-HM9-NS8	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
HM9	NS12	SS-MMA-HM9-NS12	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	10000 (690)
HM9	NS16	SS-MMA-HM9-NS16	2.63 (66.7)	1.37 (34.9)	0.19 (4.8)	10000 (690)

Male High Pressure to Male JIC



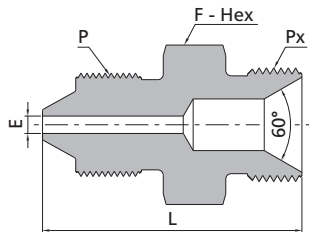
Male High Pressure				Male JIC		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	JM4	SS-MMA-HM4-JM4	1.51 (38.4)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	JM6	SS-MMA-HM4-JM6	1.56 (39.7)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	JM8	SS-MMA-HM4-JM8	1.69 (42.9)	0.81 (20.6)	0.08 (2.1)	20000 (1379)
HM4	JM10	SS-MMA-HM4-JM10	1.81 (46.0)	0.94 (23.8)	0.08 (2.1)	20000 (1379)
HM4	JM12	SS-MMA-HM4-JM12	2.00 (50.8)	1.13 (28.6)	0.08 (2.1)	15000 (1034)
HM4	JM16	SS-MMA-HM4-JM16	2.13 (54.0)	1.37 (34.9)	0.08 (2.1)	15000 (1034)
HM6	JM4	SS-MMA-HM6-JM4	1.81 (46.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	JM6	SS-MMA-HM6-JM6	1.81 (46.0)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	JM8	SS-MMA-HM6-JM8	1.94 (49.2)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	JM10	SS-MMA-HM6-JM10	2.06 (52.4)	0.94 (23.8)	0.13 (3.2)	20000 (1379)
HM6	JM12	SS-MMA-HM6-JM12	2.25 (57.2)	1.13 (28.6)	0.13 (3.2)	15000 (1034)
HM6	JM16	SS-MMA-HM6-JM16	2.37 (60.3)	1.37 (34.9)	0.13 (3.2)	15000 (1034)
HM9	JM4	SS-MMA-HM9-JM4	2.13 (54.0)	1.19 (30.2)	0.17 (4.4)	20000 (1379)
HM9	JM6	SS-MMA-HM9-JM6	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	JM8	SS-MMA-HM9-JM8	2.25 (57.2)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	JM10	SS-MMA-HM9-JM10	2.37 (60.3)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	JM12	SS-MMA-HM9-JM12	2.44 (61.9)	1.19 (30.2)	0.19 (4.8)	15000 (1034)
HM9	JM16	SS-MMA-HM9-JM16	2.56 (65.0)	1.37 (34.9)	0.19 (4.8)	15000 (1034)

Male High Pressure to Male Type "M"



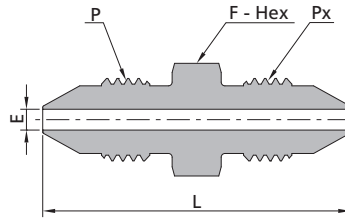
Male High Pressure			Male Type "M"			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	TM9	SS-MMA-HM4-TM9	1.46 (37.1)	0.63 (15.9)	0.08 (2.1)	60000 (4137)
HM4	TM12	SS-MMA-HM4-TM12	1.63 (41.4)	0.75 (19.1)	0.08 (2.1)	30000 (2068)
HM4	TM14	SS-MMA-HM4-TM14	1.83 (46.6)	1.00 (25.4)	0.08 (2.1)	50000 (3447)
HM4	TM16	SS-MMA-HM4-TM16	1.72 (43.7)	1.00 (25.4)	0.08 (2.1)	30000 (2068)
HM4	TM21	SS-MMA-HM4-TM21	1.84 (46.7)	1.37 (34.9)	0.08 (2.1)	20000 (1379)
HM6	TM9	SS-MMA-HM6-TM9	1.77 (44.9)	0.81 (20.6)	0.09 (2.4)	60000 (4137)
HM6	TM12	SS-MMA-HM6-TM12	1.90 (48.2)	0.81 (20.6)	0.13 (3.2)	30000 (2068)
HM6	TM14	SS-MMA-HM6-TM14	2.09 (53.0)	1.00 (25.4)	0.13 (3.2)	50000 (3447)
HM6	TM16	SS-MMA-HM6-TM16	1.97 (50.1)	1.00 (25.4)	0.13 (3.2)	30000 (2068)
HM6	TM21	SS-MMA-HM6-TM21	2.09 (53.1)	1.37 (34.9)	0.13 (3.2)	20000 (1379)
HM9	TM9	SS-MMA-HM9-TM9	2.07 (52.6)	1.19 (30.2)	0.09 (2.4)	60000 (4137)
HM9	TM12	SS-MMA-HM9-TM12	2.20 (55.9)	1.19 (30.2)	0.19 (4.8)	30000 (2068)
HM9	TM14	SS-MMA-HM9-TM14	2.33 (59.1)	1.19 (30.2)	0.15 (3.8)	50000 (3447)
HM9	TM16	SS-MMA-HM9-TM16	2.21 (56.2)	1.19 (30.2)	0.19 (4.8)	30000 (2068)
HM9	TM21	SS-MMA-HM9-TM21	2.26 (57.4)	1.37 (34.9)	0.19 (4.8)	20000 (1379)

Male High Pressure to Male ISO Parallel



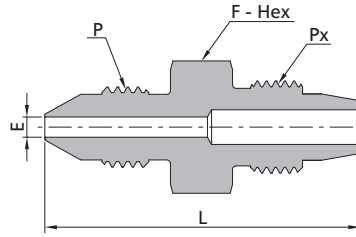
Male High Pressure			Male ISO Parallel			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
HM4	HBP4	SS-MMA-HM4-HBP4	1.37 (34.8)	0.63 (15.9)	0.08 (2.1)	20000 (1379)
HM4	HBP6	SS-MMA-HM4-HBP6	1.49 (37.8)	0.81 (20.6)	0.08 (2.1)	20000 (1379)
HM4	HBP8	SS-MMA-HM4-HBP8	1.63 (41.4)	1.00 (25.4)	0.08 (2.1)	20000 (1379)
HM6	HBP4	SS-MMA-HM6-HBP4	1.70 (43.2)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	HBP6	SS-MMA-HM6-HBP6	1.74 (44.2)	0.81 (20.6)	0.13 (3.2)	20000 (1379)
HM6	HBP8	SS-MMA-HM6-HBP8	1.88 (47.7)	1.00 (25.4)	0.13 (3.2)	20000 (1379)
HM9	HBP4	SS-MMA-HM9-HBP4	2.00 (50.9)	1.19 (30.2)	0.15 (3.8)	20000 (1379)
HM9	HBP6	SS-MMA-HM9-HBP6	2.05 (52.0)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	HBP8	SS-MMA-HM9-HBP8	2.12 (53.9)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
HM9	HBP12	SS-MMA-HM9-HBP12	2.24 (57.0)	1.25 (31.8)	0.19 (4.8)	20000 (1379)
HM9	HBP16	SS-MMA-HM9-HBP16	2.41 (61.1)	1.50 (38.1)	0.19 (4.8)	20000 (1379)

Male Medium Pressure to Male Medium Pressure



Male Medium Pressure				Male Medium Pressure			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
			L	F	E		
MM4	MM4	SS-MMA-MM4	1.63 (41.3)	0.50 (12.7)	0.11 (2.8)	20000 (1379)	
MM6	MM4	SS-MMA-MM6-MM4	1.87 (47.6)	0.63 (15.9)	0.11 (2.8)	20000 (1379)	
MM6	MM6	SS-MMA-MM6	2.00 (50.8)	0.63 (15.9)	0.20 (5.2)	20000 (1379)	
MM9	MM4	SS-MMA-MM9-MM4	2.13 (54.0)	0.94 (23.8)	0.11 (2.8)	20000 (1379)	
MM9	MM6	SS-MMA-MM9-MM6	2.31 (58.7)	0.94 (23.8)	0.20 (5.2)	20000 (1379)	
MM9	MM9	SS-MMA-MM9	2.50 (63.5)	0.94 (23.8)	0.31 (7.9)	20000 (1379)	
MM12	MM4	SS-MMA-MM12-MM4	2.44 (61.9)	1.19 (30.2)	0.11 (2.8)	20000 (1379)	
MM12	MM6	SS-MMA-MM12-MM6	2.56 (65.1)	1.19 (30.2)	0.20 (5.2)	20000 (1379)	
MM12	MM9	SS-MMA-MM12-MM9	2.75 (69.9)	1.19 (30.2)	0.31 (7.9)	20000 (1379)	
MM12	MM12	SS-MMA-MM12	2.94 (74.6)	1.19 (30.2)	0.44 (11.1)	20000 (1379)	
MM16	MM4	SS-MMA-MM16-MM4	3.00 (76.2)	1.50 (38.1)	0.11 (2.8)	20000 (1379)	
MM16	MM6	SS-MMA-MM16-MM6	3.13 (79.4)	1.50 (38.1)	0.20 (5.2)	20000 (1379)	
MM16	MM9	SS-MMA-MM16-MM9	3.31 (84.2)	1.50 (38.1)	0.31 (7.9)	20000 (1379)	
MM16	MM12	SS-MMA-MM16-MM12	3.44 (87.4)	1.50 (38.1)	0.44 (11.1)	20000 (1379)	
MM16	MM16	SS-MMA-MM16	3.94 (100.2)	1.50 (38.1)	0.56 (14.3)	20000 (1379)	

Male Medium Pressure to Male 20D Series



Male Medium Pressure			Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MM4	DFM2	SS-MMA-MM4-DFM2	1.62(41.2)	0.50 (12.7)	0.09 (2.4)	20000 (1379)
MM4	DFM4	SS-MMA-MM4-DFM4	1.81(46.1)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MM4	DFM6	SS-MMA-MM4-DFM6	1.87(47.5)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
MM4	DFM8	SS-MMA-MM4-DFM8	2.08(52.8)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
MM6	DFM2	SS-MMA-MM6-DFM2	1.81(45.9)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
MM6	DFM4	SS-MMA-MM6-DFM4	1.96(49.8)	0.63 (15.9)	0.19 (4.8)	20000 (1379)
MM6	DFM6	SS-MMA-MM6-DFM6	2.02(51.2)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
MM6	DFM8	SS-MMA-MM6-DFM8	2.22(56.5)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
MM9	DFM2	SS-MMA-MM9-DFM2	2.11(53.7)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
MM9	DFM4	SS-MMA-MM9-DFM4	2.27(57.6)	0.94 (23.8)	0.19 (4.8)	20000 (1379)
MM9	DFM6	SS-MMA-MM9-DFM6	2.28(58.0)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
MM9	DFM8	SS-MMA-MM9-DFM8	2.41(61.3)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
MM12	DFM2	SS-MMA-MM12-DFM2	2.38(60.5)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
MM12	DFM4	SS-MMA-MM12-DFM4	2.54(64.4)	1.19 (30.2)	0.19 (4.8)	20000 (1379)
MM12	DFM6	SS-MMA-MM12-DFM6	2.55(64.8)	1.19 (30.2)	0.25 (6.4)	20000 (1379)
MM12	DFM8	SS-MMA-MM12-DFM8	2.68(68.1)	1.19 (30.2)	0.37 (9.5)	20000 (1379)
MM16	DFM2	SS-MMA-MM16-DFM2	2.93(74.3)	1.50 (38.1)	0.09 (2.4)	20000 (1379)
MM16	DFM4	SS-MMA-MM16-DFM4	3.08(78.2)	1.50 (38.1)	0.19 (4.8)	20000 (1379)
MM16	DFM6	SS-MMA-MM16-DFM6	3.09(78.6)	1.50 (38.1)	0.37 (9.5)	20000 (1379)
MM16	DFM8	SS-MMA-MM16-DFM8	3.22(81.9)	1.50 (38.1)	0.37 (9.5)	20000 (1379)

Fittings

Tubing

Quick Couplings

Line Filters

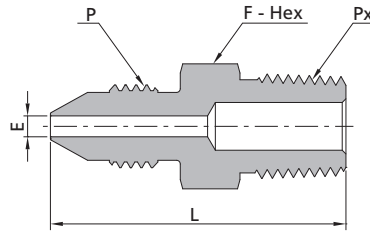
Valves

Sour Service
Products

Subsea Valves

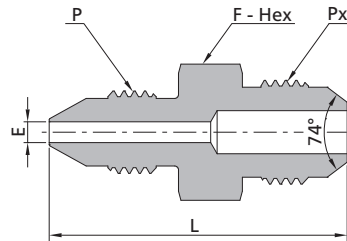
Part Number
Crossover Charts

Male Medium Pressure to Male NPT



Male Medium Pressure				Male NPT			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)	
			L	F	E		
MM4	NS2	SS-MMA-MM4-NS2	1.37 (34.9)	0.50 (12.7)	0.11 (2.8)	15000 (1034)	
MM4	NS4	SS-MMA-MM4-NS4	1.56 (39.7)	0.56 (14.3)	0.11 (2.8)	15000 (1034)	
MM4	NS6	SS-MMA-MM4-NS6	1.63 (41.3)	0.69 (17.5)	0.11 (2.8)	15000 (1034)	
MM4	NS8	SS-MMA-MM4-NS8	1.87 (47.6)	0.87 (22.2)	0.11 (2.8)	15000 (1034)	
MM4	NS12	SS-MMA-MM4-NS12	1.94 (49.2)	1.06 (27.0)	0.11 (2.8)	10000 (690)	
MM4	NS16	SS-MMA-MM4-NS16	2.25 (57.2)	1.37 (34.9)	0.11 (2.8)	10000 (690)	
MM6	NS2	SS-MMA-MM6-NS2	1.56 (39.7)	0.63 (15.9)	0.19 (4.8)	15000 (1034)	
MM6	NS4	SS-MMA-MM6-NS4	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	15000 (1034)	
MM6	NS6	SS-MMA-MM6-NS6	1.75 (44.5)	0.69 (17.5)	0.20 (5.2)	15000 (1034)	
MM6	NS8	SS-MMA-MM6-NS8	2.00 (50.8)	0.87 (22.2)	0.20 (5.2)	15000 (1034)	
MM6	NS12	SS-MMA-MM6-NS12	2.06 (52.4)	1.06 (27.0)	0.20 (5.2)	10000 (690)	
MM6	NS16	SS-MMA-MM6-NS16	2.37 (60.3)	1.37 (34.9)	0.20 (5.2)	10000 (690)	
MM9	NS2	SS-MMA-MM9-NS2	1.87 (47.6)	0.94 (23.8)	0.19 (4.8)	15000 (1034)	
MM9	NS4	SS-MMA-MM9-NS4	2.06 (52.4)	0.94 (23.8)	0.25 (6.4)	15000 (1034)	
MM9	NS6	SS-MMA-MM9-NS6	2.06 (52.4)	0.94 (23.8)	0.31 (7.9)	15000 (1034)	
MM9	NS8	SS-MMA-MM9-NS8	2.25 (57.2)	0.94 (23.8)	0.31 (7.9)	15000 (1034)	
MM9	NS12	SS-MMA-MM9-NS12	2.31 (58.7)	1.06 (27.0)	0.31 (7.9)	10000 (690)	
MM9	NS16	SS-MMA-MM9-NS16	2.56 (65.1)	1.37 (34.9)	0.31 (7.9)	10000 (690)	
MM12	NS2	SS-MMA-MM12-NS2	2.13 (54.0)	1.19 (30.2)	0.19 (4.8)	15000 (1034)	
MM12	NS4	SS-MMA-MM12-NS4	2.31 (58.7)	1.19 (30.2)	0.25 (6.4)	15000 (1034)	
MM12	NS6	SS-MMA-MM12-NS6	2.31 (58.7)	1.19 (30.2)	0.31 (7.9)	15000 (1034)	
MM12	NS8	SS-MMA-MM12-NS8	2.50 (63.5)	1.19 (30.2)	0.38 (9.6)	15000 (1034)	
MM12	NS12	SS-MMA-MM12-NS12	2.50 (63.5)	1.19 (30.2)	0.44 (11.1)	10000 (690)	
MM12	NS16	SS-MMA-MM12-NS16	2.75 (69.9)	1.37 (34.9)	0.44 (11.1)	10000 (690)	
MM16	NS2	SS-MMA-MM16-NS2	2.69 (68.3)	1.50 (38.1)	0.19 (4.8)	15000 (1034)	
MM16	NS4	SS-MMA-MM16-NS4	2.81 (71.4)	1.50 (38.1)	0.25 (6.4)	15000 (1034)	
MM16	NS6	SS-MMA-MM16-NS6	2.81 (71.4)	1.50 (38.1)	0.31 (7.9)	15000 (1034)	
MM16	NS8	SS-MMA-MM16-NS8	3.06 (77.8)	1.50 (38.1)	0.38 (9.6)	15000 (1034)	
MM16	NS12	SS-MMA-MM16-NS12	3.06 (82.6)	1.50 (38.1)	0.56 (14.3)	10000 (690)	
MM16	NS16	SS-MMA-MM16-NS16	3.25 (82.6)	1.50 (38.1)	0.56 (14.3)	10000 (690)	

Male Medium Pressure to Male JIC



Male Medium Pressure			Male JIC			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MM4	JM4	SS-MMA-MM4-JM4	1.50 (38.1)	0.50 (12.7)	0.11 (2.8)	20000 (1379)
MM4	JM6	SS-MMA-MM4-JM6	1.63 (41.3)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MM4	JM8	SS-MMA-MM4-JM8	1.75 (44.5)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
MM4	JM10	SS-MMA-MM4-JM10	1.87 (47.6)	0.94 (23.8)	0.11 (2.8)	20000 (1379)
MM4	JM12	SS-MMA-MM4-JM12	2.06 (52.4)	1.13 (28.6)	0.11 (2.8)	15000 (1034)
MM4	JM16	SS-MMA-MM4-JM16	2.19 (55.6)	1.37 (34.9)	0.11 (2.8)	15000 (1034)
MM6	JM4	SS-MMA-MM6-JM4	1.75 (44.5)	0.63 (15.9)	0.17 (4.4)	20000 (1379)
MM6	JM6	SS-MMA-MM6-JM6	1.75 (44.5)	0.63 (15.9)	0.20 (5.2)	20000 (1379)
MM6	JM8	SS-MMA-MM6-JM8	1.87 (47.6)	0.81 (20.6)	0.20 (5.2)	20000 (1379)
MM6	JM10	SS-MMA-MM6-JM10	2.06 (52.4)	0.94 (23.8)	0.20 (5.2)	20000 (1379)
MM6	JM12	SS-MMA-MM6-JM12	2.25 (57.2)	1.13 (28.6)	0.20 (5.2)	15000 (1034)
MM6	JM16	SS-MMA-MM6-JM16	2.37 (60.3)	1.37 (34.9)	0.20 (5.2)	15000 (1034)
MM9	JM4	SS-MMA-MM9-JM4	2.00 (50.8)	0.94 (23.8)	0.17 (4.4)	20000 (1379)
MM9	JM6	SS-MMA-MM9-JM6	2.01 (51.0)	0.94 (23.8)	0.23 (5.8)	20000 (1379)
MM9	JM8	SS-MMA-MM9-JM8	2.13 (54.0)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
MM9	JM10	SS-MMA-MM9-JM10	2.25 (57.2)	0.94 (23.8)	0.31 (7.9)	20000 (1379)
MM9	JM12	SS-MMA-MM9-JM12	2.44 (61.9)	1.13 (28.6)	0.31 (7.9)	15000 (1034)
MM9	JM16	SS-MMA-MM9-JM16	2.56 (65.1)	1.37 (34.9)	0.31 (7.9)	15000 (1034)
MM12	JM4	SS-MMA-MM12-JM4	2.31 (58.7)	1.19 (30.2)	0.17 (4.4)	20000 (1379)
MM12	JM6	SS-MMA-MM12-JM6	2.31 (58.7)	1.19 (30.2)	0.23 (5.8)	20000 (1379)
MM12	JM8	SS-MMA-MM12-JM8	2.37 (60.3)	1.19 (30.2)	0.31 (7.9)	20000 (1379)
MM12	JM10	SS-MMA-MM12-JM10	2.50 (63.5)	1.19 (30.2)	0.37 (9.4)	20000 (1379)
MM12	JM12	SS-MMA-MM12-JM12	2.63 (66.7)	1.19 (30.2)	0.44 (11.1)	15000 (1034)
MM12	JM16	SS-MMA-MM12-JM16	2.69 (68.3)	1.37 (34.9)	0.44 (11.1)	15000 (1034)
MM16	JM4	SS-MMA-MM16-JM4	2.81 (71.4)	1.50 (38.1)	0.17 (4.4)	20000 (1379)
MM16	JM6	SS-MMA-MM16-JM6	2.81 (71.4)	1.50 (38.1)	0.23 (5.8)	20000 (1379)
MM16	JM8	SS-MMA-MM16-JM8	2.94 (74.6)	1.50 (38.1)	0.31 (7.9)	20000 (1379)
MM16	JM10	SS-MMA-MM16-JM10	3.06 (77.8)	1.50 (38.1)	0.37 (9.4)	20000 (1379)
MM16	JM12	SS-MMA-MM16-JM12	3.13 (79.4)	1.50 (38.1)	0.46 (11.6)	15000 (1034)
MM16	JM16	SS-MMA-MM16-JM16	3.19 (81.0)	1.50 (38.1)	0.56 (14.3)	15000 (1034)

Fittings

Tubing

Quick Couplings

Line Filters

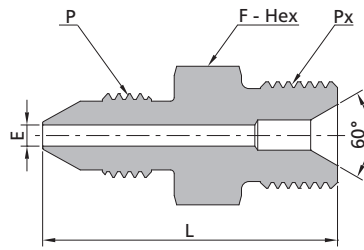
Valves

Sour Service Products

Subsea Valves

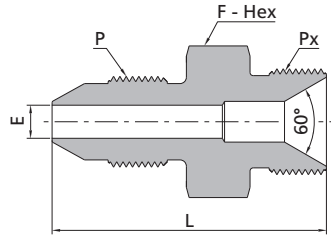
Part Number Crossover Charts

Male Medium Pressure to Male Type "M"



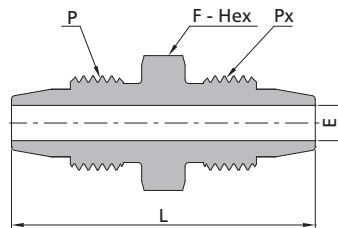
Male Medium Pressure				Male Type "M"		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MM4	TM9	SS-MMA-MM4-TM9	1.52 (38.7)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
MM4	TM12	SS-MMA-MM4-TM12	1.69 (43.0)	0.75 (19.1)	0.11 (2.8)	20000 (1379)
MM4	TM14	SS-MMA-MM4-TM14	1.90 (48.2)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MM4	TM16	SS-MMA-MM4-TM16	1.78 (45.3)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MM4	TM21	SS-MMA-MM4-TM21	1.90 (48.3)	1.37 (34.9)	0.11 (2.8)	20000 (1379)
MM6	TM9	SS-MMA-MM6-TM9	1.67 (42.4)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
MM6	TM12	SS-MMA-MM6-TM12	1.84 (46.7)	0.75 (19.1)	0.20 (5.2)	20000 (1379)
MM6	TM14	SS-MMA-MM6-TM14	2.04 (51.9)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
MM6	TM16	SS-MMA-MM6-TM16	1.93 (49.0)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
MM6	TM21	SS-MMA-MM6-TM21	2.05 (52.0)	1.37 (34.9)	0.20 (5.2)	20000 (1379)
MM9	TM9	SS-MMA-MM9-TM9	1.95 (49.6)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
MM9	TM12	SS-MMA-MM9-TM12	2.08 (52.9)	0.94 (23.8)	0.29 (7.4)	20000 (1379)
MM9	TM14	SS-MMA-MM9-TM14	2.23 (56.7)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
MM9	TM16	SS-MMA-MM9-TM16	2.12 (53.8)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MM9	TM21	SS-MMA-MM9-TM21	2.24 (56.8)	1.37 (34.9)	0.31 (7.9)	20000 (1379)
MM12	TM9	SS-MMA-MM12-TM9	2.22 (56.3)	1.19 (30.2)	0.09 (2.4)	20000 (1379)
MM12	TM12	SS-MMA-MM12-TM12	2.35 (59.6)	1.19 (30.2)	0.29 (7.4)	20000 (1379)
MM12	TM14	SS-MMA-MM12-TM14	2.47 (62.8)	1.19 (30.2)	0.15 (3.8)	20000 (1379)
MM12	TM16	SS-MMA-MM12-TM16	2.36 (59.9)	1.19 (30.2)	0.39 (10.0)	20000 (1379)
MM12	TM21	SS-MMA-MM12-TM21	2.41 (61.1)	1.37 (34.9)	0.44 (11.1)	20000 (1379)
MM16	TM9	SS-MMA-MM16-TM9	2.77 (70.3)	1.50 (38.1)	0.09 (2.4)	20000 (1379)
MM16	TM12	SS-MMA-MM16-TM12	2.90 (73.6)	1.50 (38.1)	0.29 (7.4)	20000 (1379)
MM16	TM14	SS-MMA-MM16-TM14	3.02 (76.8)	1.50 (38.1)	0.15 (3.8)	20000 (1379)
MM16	TM16	SS-MMA-MM16-TM16	2.91 (73.9)	1.50 (38.1)	0.39 (10.0)	20000 (1379)
MM16	TM21	SS-MMA-MM16-TM21	2.89 (73.3)	1.50 (38.1)	0.56 (14.3)	20000 (1379)

Male Medium Pressure to Male ISO Parallel



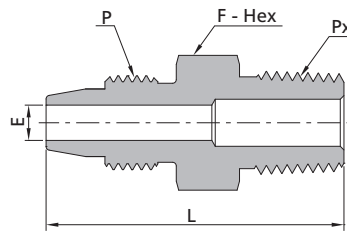
Male Medium Pressure			Male ISO Parallel			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
MM4	HBP4	SS-MMA-MM4-HBP4	1.46 (37.0)	0.63 (15.9)	0.11 (2.8)	20000 (1379)
MM4	HBP6	SS-MMA-MM4-HBP6	1.55 (39.4)	0.81 (20.6)	0.11 (2.8)	20000 (1379)
MM4	HBP8	SS-MMA-MM4-HBP8	1.69 (42.9)	1.00 (25.4)	0.11 (2.8)	20000 (1379)
MM6	HBP4	SS-MMA-MM6-HBP4	1.60 (40.7)	0.63 (15.9)	0.15 (3.8)	20000 (1379)
MM6	HBP6	SS-MMA-MM6-HBP6	1.70 (43.1)	0.81 (20.6)	0.20 (5.2)	20000 (1379)
MM6	HBP8	SS-MMA-MM6-HBP8	1.78 (45.2)	1.00 (25.4)	0.20 (5.2)	20000 (1379)
MM9	HBP4	SS-MMA-MM9-HBP4	1.89 (47.9)	0.94 (23.8)	0.15 (3.8)	20000 (1379)
MM9	HBP6	SS-MMA-MM9-HBP6	1.93 (48.9)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
MM9	HBP8	SS-MMA-MM9-HBP8	2.02 (51.4)	1.00 (25.4)	0.31 (7.9)	20000 (1379)
MM12	HBP8	SS-MMA-MM12-HBP8	2.30 (58.5)	1.19 (30.2)	0.37 (9.5)	20000 (1379)
MM12	HBP12	SS-MMA-MM12-HBP12	2.39 (60.7)	1.25 (31.8)	0.44 (11.1)	20000 (1379)
MM16	HBP8	SS-MMA-MM16-HBP8	2.81 (71.5)	1.50 (38.1)	0.37 (9.5)	20000 (1379)
MM16	HBP12	SS-MMA-MM16-HBP12	2.89 (73.5)	1.50 (38.1)	0.50 (12.7)	20000 (1379)
MM16	HBP16	SS-MMA-MM16-HBP16	3.01 (76.5)	1.50 (38.1)	0.56 (14.3)	20000 (1379)

Male 20D Series to Male 20D Series



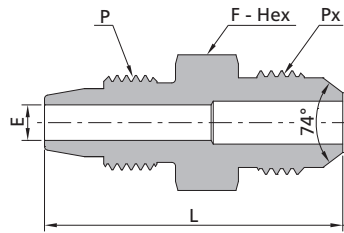
Male 20D Series			Male 20D Series			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFM2	DFM2	SS-MMA-DFM2	1.60 (40.6)	0.50 (12.7)	0.09 (2.4)	20000 (1379)
DFM4	DFM2	SS-MMA-DFM4-DFM2	1.79 (45.5)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
DFM4	DFM4	SS-MMA-DFM4	1.94 (49.4)	0.63 (15.9)	0.19 (4.8)	20000 (1379)
DFM6	DFM2	SS-MMA-DFM6-DFM2	1.85 (46.9)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
DFM6	DFM4	SS-MMA-DFM6-DFM4	2.00 (50.8)	0.75 (19.1)	0.19 (4.8)	20000 (1379)
DFM6	DFM6	SS-MMA-DFM6	2.02 (51.2)	0.75 (19.1)	0.25 (6.4)	20000 (1379)
DFM8	DFM2	SS-MMA-DFM8-DFM2	2.06 (52.2)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
DFM8	DFM4	SS-MMA-DFM8-DFM4	2.21 (56.1)	0.94 (23.8)	0.19 (4.8)	20000 (1379)
DFM8	DFM6	SS-MMA-DFM8-DFM6	2.22 (56.5)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
DFM8	DFM8	SS-MMA-DFM8	2.35 (59.8)	0.94 (23.8)	0.37 (9.5)	20000 (1379)

Male 20D Series to Male NPT



Male 20D Series				Male NPT		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFM2	NS2	SS-MMA-DFM2-NS2	1.32 (33.5)	0.50 (12.7)	0.09 (2.4)	15000 (1034)
DFM2	NS4	SS-MMA-DFM2-NS4	1.52 (38.5)	0.56 (14.3)	0.09 (2.4)	15000 (1034)
DFM2	NS6	SS-MMA-DFM2-NS6	1.56 (39.5)	0.69 (17.5)	0.09 (2.4)	15000 (1034)
DFM2	NS8	SS-MMA-DFM2-NS8	1.82 (46.4)	0.87 (22.2)	0.09 (2.4)	15000 (1034)
DFM2	NS12	SS-MMA-DFM2-NS12	1.90 (48.4)	1.06 (27.0)	0.09 (2.4)	10000 (690)
DFM2	NS16	SS-MMA-DFM2-NS16	2.19 (55.7)	1.37 (34.9)	0.09 (2.4)	10000 (690)
DFM4	NS2	SS-MMA-DFM4-NS2	1.51 (38.4)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DFM4	NS4	SS-MMA-DFM4-NS4	1.69 (42.9)	0.63 (15.9)	0.19 (4.8)	15000 (1034)
DFM4	NS6	SS-MMA-DFM4-NS6	1.71 (43.4)	0.69 (17.5)	0.19 (4.8)	15000 (1034)
DFM4	NS8	SS-MMA-DFM4-NS8	1.98 (50.3)	0.87 (22.2)	0.19 (4.8)	15000 (1034)
DFM4	NS12	SS-MMA-DFM4-NS12	2.06 (52.3)	1.06 (27.0)	0.19 (4.8)	10000 (690)
DFM4	NS16	SS-MMA-DFM4-NS16	2.35 (59.6)	1.37 (34.9)	0.19 (4.8)	10000 (690)
DFM6	NS2	SS-MMA-DFM6-NS2	1.57(39.8)	0.75 (19.1)	0.19 (4.8)	15000 (1034)
DFM6	NS4	SS-MMA-DFM6-NS4	1.74 (44.3)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DFM6	NS6	SS-MMA-DFM6-NS6	1.74 (44.3)	0.75 (19.1)	0.25 (6.4)	15000 (1034)
DFM6	NS8	SS-MMA-DFM6-NS8	1.99 (50.7)	0.87 (22.2)	0.25 (6.4)	15000 (1034)
DFM6	NS12	SS-MMA-DFM6-NS12	2.07 (52.7)	1.06 (27.0)	0.25 (6.4)	10000 (690)
DFM6	NS16	SS-MMA-DFM6-NS16	2.36 (60.0)	1.37 (34.9)	0.25 (6.4)	10000 (690)
DFM8	NS2	SS-MMA-DFM8-NS2	1.78 (45.1)	0.94 (23.8)	0.19 (4.8)	15000 (1034)
DFM8	NS4	SS-MMA-DFM8-NS4	1.95 (49.6)	0.94 (23.8)	0.25 (6.4)	15000 (1034)
DFM8	NS6	SS-MMA-DFM8-NS6	1.95 (49.6)	0.94 (23.8)	0.31 (7.9)	15000 (1034)
DFM8	NS8	SS-MMA-DFM8-NS8	2.14 (54.5)	0.94 (23.8)	0.37 (9.5)	15000 (1034)
DFM8	NS12	SS-MMA-DFM8-NS12	2.20 (56.0)	1.06 (27.0)	0.37 (9.5)	10000 (690)
DFM8	NS16	SS-MMA-DFM8-NS16	2.49 (63.3)	1.37 (34.9)	0.37 (9.5)	10000 (690)

Male 20D Series to Male JIC



Male 20D Series			Male JIC			
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFM2	JM4	SS-MMA-DFM2-JM4	1.49 (37.8)	0.50 (12.7)	0.09 (2.4)	20000 (1379)
DFM2	JM6	SS-MMA-DFM2-JM6	1.53 (38.9)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
DFM2	JM8	SS-MMA-DFM2-JM8	1.71 (43.5)	0.81 (20.6)	0.09 (2.4)	20000 (1379)
DFM2	JM10	SS-MMA-DFM2-JM10	1.85 (47.1)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
DFM2	JM12	SS-MMA-DFM2-JM12	2.04 (51.7)	1.13 (28.6)	0.09 (2.4)	15000 (1034)
DFM2	JM16	SS-MMA-DFM2-JM16	2.16 (54.9)	1.37 (34.9)	0.09 (2.4)	15000 (1034)
DFM4	JM4	SS-MMA-DFM4-JM4	1.68 (42.7)	0.63 (15.9)	0.17 (4.4)	20000 (1379)
DFM4	JM6	SS-MMA-DFM4-JM6	1.69 (42.8)	0.63 (15.9)	0.19 (4.8)	20000 (1379)
DFM4	JM8	SS-MMA-DFM4-JM8	1.87 (47.4)	0.81 (20.6)	0.19 (4.8)	20000 (1379)
DFM4	JM10	SS-MMA-DFM4-JM10	2.01 (51.0)	0.94 (23.8)	0.19 (4.8)	20000 (1379)
DFM4	JM12	SS-MMA-DFM4-JM12	2.19 (55.6)	1.13 (28.6)	0.19 (4.8)	15000 (1034)
DFM4	JM16	SS-MMA-DFM4-JM16	2.31 (58.8)	1.37 (34.9)	0.19 (4.8)	15000 (1034)
DFM6	JM4	SS-MMA-DFM6-JM4	1.74 (44.1)	0.75 (19.1)	0.17 (4.4)	20000 (1379)
DFM6	JM6	SS-MMA-DFM6-JM6	1.74 (44.2)	0.75 (19.1)	0.23 (5.8)	20000 (1379)
DFM6	JM8	SS-MMA-DFM6-JM8	1.88 (47.8)	0.81 (20.6)	0.25 (6.4)	20000 (1379)
DFM6	JM10	SS-MMA-DFM6-JM10	2.02 (51.4)	0.94 (23.8)	0.25 (6.4)	20000 (1379)
DFM6	JM12	SS-MMA-DFM6-JM12	2.20(56.0)	1.13 (28.6)	0.25 (6.4)	15000 (1034)
DFM6	JM16	SS-MMA-DFM6-JM16	2.33(59.2)	1.37 (34.9)	0.25 (6.4)	15000 (1034)
DFM8	JM4	SS-MMA-DFM8-JM4	1.94 (49.4)	0.94 (23.8)	0.17 (4.4)	20000 (1379)
DFM8	JM6	SS-MMA-DFM8-JM6	1.95 (49.5)	0.94 (23.8)	0.23 (5.8)	20000 (1379)
DFM8	JM8	SS-MMA-DFM8-JM8	2.05 (52.1)	0.94 (23.8)	0.31 (8.0)	20000 (1379)
DFM8	JM10	SS-MMA-DFM8-JM10	2.15(54.7)	0.94 (23.8)	0.37 (9.4)	20000 (1379)
DFM8	JM12	SS-MMA-DFM8-JM12	2.33 (59.3)	1.13 (28.6)	0.37 (9.5)	15000 (1034)
DFM8	JM16	SS-MMA-DFM8-JM16	2.46 (62.5)	1.37 (34.9)	0.37 (9.5)	15000 (1034)

Fittings

Tubing

Quick Couplings

Line Filters

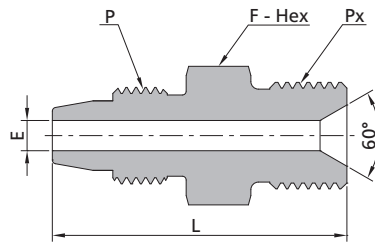
Valves

Sour Service Products

Subsea Valves

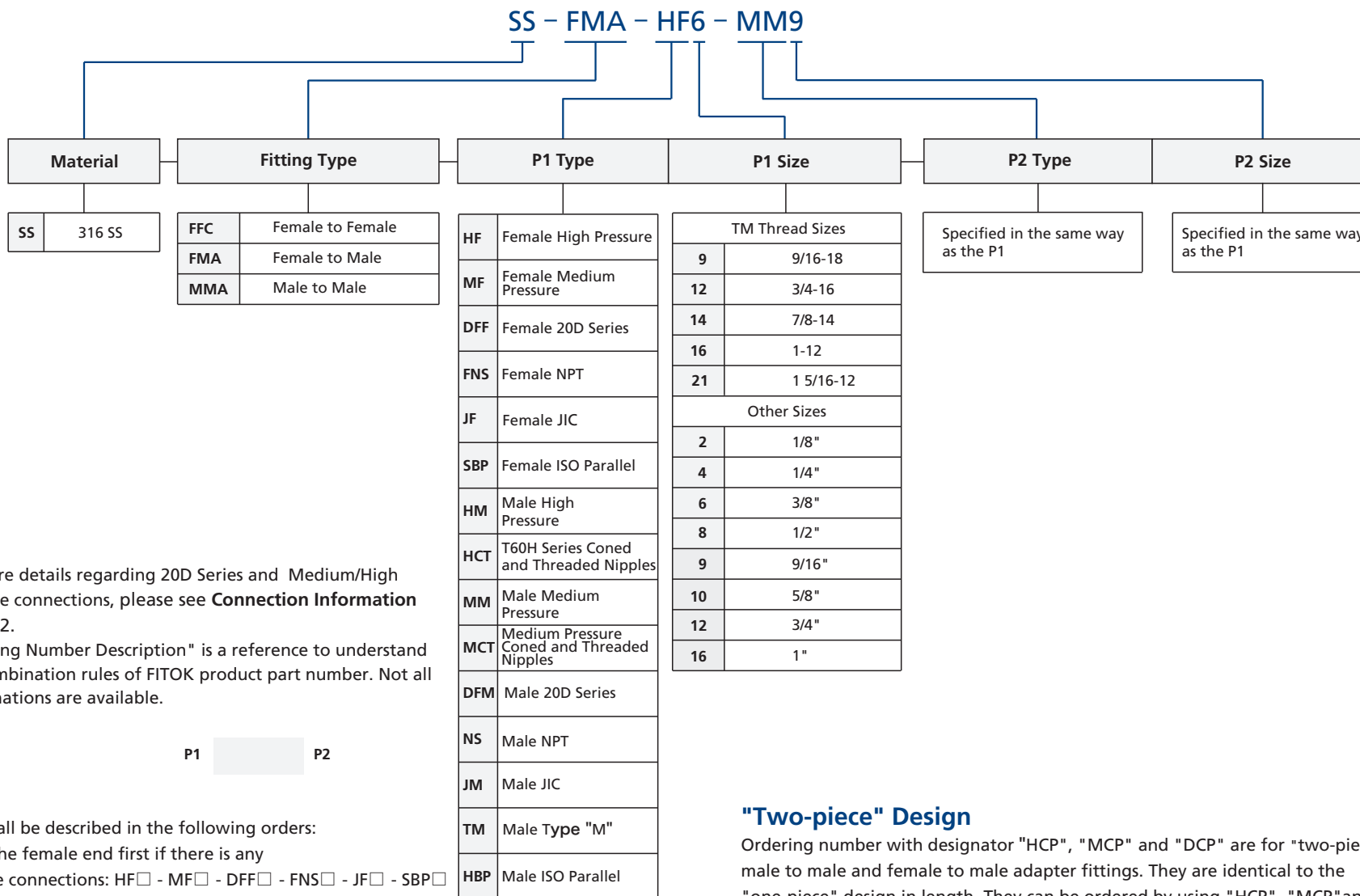
Part Number Crossover Charts

Male 20D Series to Male Type "M"



Male 20D Series				Male Type "M"		
P-Connection	Px-Connection	Ordering Number	Dimensions, in. (mm)			Working Pressure psig (bar)
			L	F	E	
DFM2	TM9	SS-MMA-DFM2-TM9	1.48(37.5)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
DFM2	TM12	SS-MMA-DFM2-TM12	1.65(41.8)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
DFM2	TM14	SS-MMA-DFM2-TM14	1.87(47.5)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
DFM2	TM16	SS-MMA-DFM2-TM16	1.76(44.6)	1.00 (25.4)	0.09 (2.4)	20000 (1379)
DFM2	TM21	SS-MMA-DFM2-TM21	1.87(47.5)	1.37 (34.9)	0.09 (2.4)	20000 (1379)
DFM4	TM9	SS-MMA-DFM4-TM9	1.63(41.4)	0.63 (15.9)	0.09 (2.4)	20000 (1379)
DFM4	TM12	SS-MMA-DFM4-TM12	1.80(45.7)	0.75 (19.1)	0.19 (4.8)	20000 (1379)
DFM4	TM14	SS-MMA-DFM4-TM14	2.02(51.4)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
DFM4	TM16	SS-MMA-DFM4-TM16	1.91(48.5)	1.00 (25.4)	0.19 (4.8)	20000 (1379)
DFM4	TM21	SS-MMA-DFM4-TM21	2.02(51.4)	1.37 (34.9)	0.19 (4.8)	20000 (1379)
DFM6	TM9	SS-MMA-DFM6-TM9	1.69(42.8)	0.75 (19.1)	0.09 (2.4)	20000 (1379)
DFM6	TM12	SS-MMA-DFM6-TM12	1.81(46.1)	0.75 (19.1)	0.25 (6.4)	20000 (1379)
DFM6	TM14	SS-MMA-DFM6-TM14	2.04(51.8)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
DFM6	TM16	SS-MMA-DFM6-TM16	1.93(48.9)	1.00 (25.4)	0.25 (6.4)	20000 (1379)
DFM6	TM21	SS-MMA-DFM6-TM21	2.04(51.8)	1.37 (34.9)	0.25 (6.4)	20000 (1379)
DFM8	TM9	SS-MMA-DFM8-TM9	1.89(48.1)	0.94 (23.8)	0.09 (2.4)	20000 (1379)
DFM8	TM12	SS-MMA-DFM8-TM12	2.02(51.4)	0.94 (23.8)	0.29 (7.4)	20000 (1379)
DFM8	TM14	SS-MMA-DFM8-TM14	2.17(55.1)	1.00 (25.4)	0.15 (3.8)	20000 (1379)
DFM8	TM16	SS-MMA-DFM8-TM16	2.06(52.2)	1.00 (25.4)	0.37 (9.5)	20000 (1379)
DFM8	TM21	SS-MMA-DFM8-TM21	2.17(55.1)	1.37 (34.9)	0.37 (9.5)	20000 (1379)

Ordering Number Description



- Notes: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

P1 P2

P1 and P2 shall be described in the following orders:

- ① Describe the female end first if there is any
- ② For female connections: HF□ - MF□ - DFF□ - FNS□ - JF□ - SBP□
- ③ For male connections: HM□ - HCT□ - MM□ - MCT□ - DFM□ - NS□ - JM□ - TM□ - HBP□
- ④ Describe in descending order according to sizes if the end connection types are the same
- ⑤ Describe the end of P1 if all end connections are the same

"Two-piece" Design

Ordering number with designator "HCP", "MCP" and "DCP" are for "two-piece" male to male and female to male adapter fittings. They are identical to the "one-piece" design in length. They can be ordered by using "HCP", "MCP" and "DCP" to take the place of "HM", "MM" and "DFM".

For example: Ordering number of "one-piece": SS-MMA-HM6-DFM4

The corresponding ordering number of "Two-piece": SS-MMA-HCP6-DCP4.

Part Number Crossover Charts	Subsea Valves	Sour Service Products	Valves	Line Filters	Quick Couplings	Tubing	Fittings
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Tools and Installation Instructions



Tools

Manual Presetting Tools

To preset double ferrules onto T15A or T20D series tubing.
Tubing sizes available in 1/8", 1/4", 3/8" and 1/2" O.D.

Ordering Number	Tube O.D., in.
PST-2D	1/8
PST-4D	1/4
PST-6D	3/8
PST-8D	1/2

Hydraulic Presetting Tools

To preset double ferrules onto T15A or T20D series tubing.
Tubing sizes available in 1/2", 9/16", 3/4" and 1" O.D.

Ordering Number	Description
HPT-DF	With full set of die heads
HPT-N	Without die heads The die heads can be ordered individually.

Die Heads

Ordering Number	Tube O.D., in.
HPT-DFF8	1/2
HPT-DFF9	9/16
HPT-DFF12	3/4
HPT-DFF16	1

Manual Coning Tools

Applied in T20M and T60H series tubing for concentric cone processing.
All the manual coning tools use the same basic tools on which the cutter heads and the collets of different sizes can be replaced. A complete ordering number shall include that of the basic tool, collet and cutter head. The collet and the cutter head can be ordered separately. For detailed information, please refer to the relevant instruction manual or contact FITOK Group.

Connection	Tube O.D. x I.D. in.	Complete Ordering Number of Tool	Ordering Number of Collet	Ordering Number of Cutter Head
MF4	1/4 x 0.109	HCT-M4	HCT-4-CO	HCT-M4-DT
MF6	3/8 x 0.203	HCT-M6	HCT-6-CO	HCT-M6-DT
MF9	9/16 x 0.312	HCT-M9	HCT-9-CO	HCT-M9-DT
HF4	1/4 x 0.083	HCT-H4	HCT-4-CO	HCT-H4-DT
HF6	3/8 x 0.125	HCT-H6	HCT-6-CO	HCT-H6-DT
HF9	9/16 x 0.188	HCT-H9	HCT-9-CO	HCT-H9-DT



Die Heads



Cutter Head



Collet

Fittings

Tubing

Quick Couplings

Line Filters

Valves

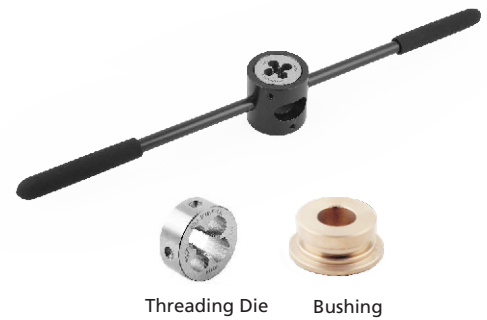
Sour Service Products

Subsea Valves

Part Number Crossover Charts

Manual Threading Tools

Applied in T20M and T60H series tubing for thread processing. All the manual threading tools use the same basic tools to process threads by replacing threading dies and guide bushings of different sizes. A complete ordering number shall include that of the basic tool, threading die and guide bushing. The threading die and the guide bushing can be ordered separately. For detailed information, please refer to the instruction manual or contact FITOK Group.



Connection	Tube O.D. x I.D. in.	Thread Size (Left Hand)	Complete Ordering Number of Tool	Ordering Number of Threading Die	Ordering Number of Bushing
MF4	1/4 x 0.109	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
MF6	3/8 x 0.203	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
MF9	9/16 x 0.312	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS
HF4	1/4 x 0.083	1/4-28 UNF	HTT-4	HTT-4-D	HTT-4-GS
HF6	3/8 x 0.125	3/8-24 UNF	HTT-6	HTT-6-D	HTT-6-GS
HF9	9/16 x 0.188	9/16-18 UNF	HTT-9	HTT-9-D	HTT-9-GS

Manual Reseating Tools

The tool is used for repairing the wearing cone seat of medium and high pressure fittings or valves. For detailed information, please refer to the instruction manual or contact FITOK Group.



Connection	Ordering Number
MF4	HRT-M4
MF6	HRT-M6
MF9	HRT-M9
MF12	HRT-M12
MF16	HRT-M16
HF4	HRT-H4
HF6	HRT-H6
HF9	HRT-H9

Installation Instructions

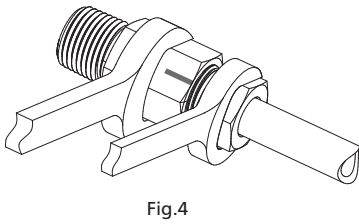
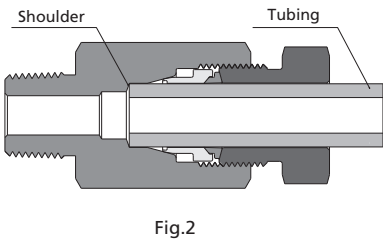
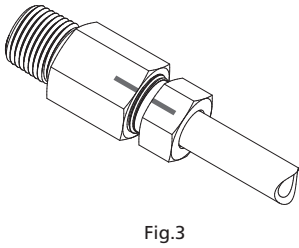
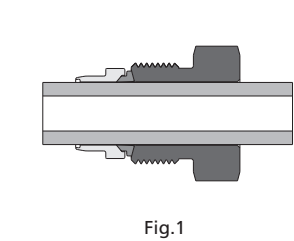
Installation of 20D Series Connections

For Tube O.D. 1/8", 1/4", 3/8" and 1/2"

Without Manual Presetting Tool

- 1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
- 2. Insert the tubing into the fitting body or the valve. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the fitting body or the valve (Fig. 2).
- 3. Mark the nut and the fitting body or the valve (Fig. 3).
- 4. Hold the fitting body or the valve steady. Refer to Table 1 to tighten the nut with a wrench to the specified number of turns, noting that the number of turns varies for different types of tubing (Fig. 4).

Table 1		
Tube Type/Specification	T15A/T20D Tubing	T20M Tubing
1/8"	1 1/4 turns	/
1/4"	1 1/2 turns	1 5/8 turns
3/8"	1 1/2 turns	1 5/8 turns
1/2"	1 1/2 turns	/



Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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With Manual Presetting Tool

1. Put the nut and ferrules onto the tubing in fixed sequence and orientation (Fig. 1).
2. Insert the tubing into the manual presetting tool. Finger tight the nut. Make sure that the tubing rests firmly on the shoulder of the presetting tool (Fig. 5).
3. Mark the nut and the manual presetting tool (Fig. 6).
4. Hold the manual presetting tool steady. Refer to Table 1 to tighten the nut with a wrench to the specified number of turns, noting that the number of turns varies for different types of tubing (Fig. 4).
5. Loosen the nut and remove the tubing with preassembled ferrules from the manual presetting tool (Fig. 7).
Note: If the tubing sticks into the manual presetting tool, remove the tubing by gently rocking it back and forth. Do not rotate the tubing.
6. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut (Fig. 8).
7. Tighten the nut 1/4 turn with a wrench while holding the fitting body or the valve steady.

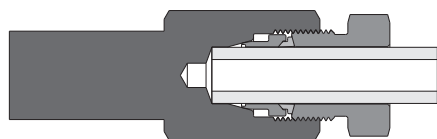


Fig.5

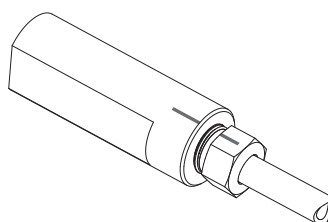


Fig.6

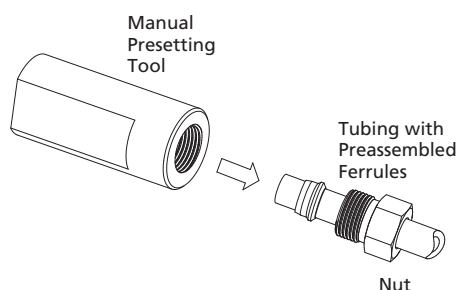


Fig.7

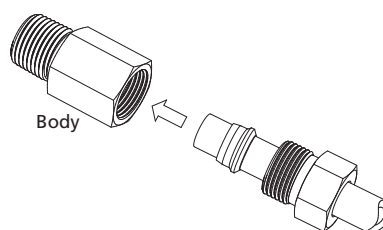


Fig.8

For Tube O.D. 1/2", 9/16", 3/4" and 1"

1. Preassemble the ferrules onto tubing using the hydraulic presetting tool. For details, please contact FITOK for instruction manual Hydraulic Presetting Tools.
2. Insert the tubing with preassembled ferrules into the fitting body or the valve. Finger tight the nut.
3. While holding the fitting body or the valve steady, tighten the nut 1/4 turn for tubing O.D. 1/2", 9/16" and 3/4" and 1/2 turn for tubing O.D. 1" with a wrench.

Reinstallation Instructions

1. Insert the tubing with preassembled ferrules into the fitting body or valve body. Finger-tighten the nut.
2. While holding the fitting body or valve body steady, tighten the nut to the previously assembled position, then further tighten slightly with a wrench.

For Plugs

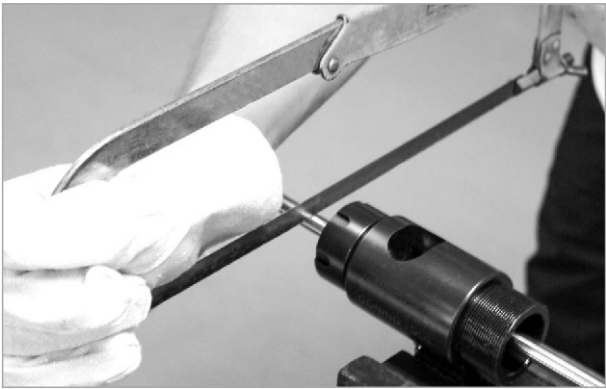
1. Insert the plug into the fitting body or the valve.
2. For initial installation, finger tight the nut, further wrench tighten 1/2 turn while holding the fitting body or the valve body steady. For reinstallations thereafter, starting from the final tightened position in the previous assembly, further wrench tighten as may be necessary.

Cautions

1. Tube end includes tubing, ferrules and ferrule nut.
2. Do not loosen or tighten fittings when the system is pressurized.
3. When assembling a tube fitting, screw the nut while holding the body steady.

Installation of Medium & High Pressure Coned and Threaded Connections

1. Cut off tubing to desired length and deburr ends.
- Note: When cutting tubing with abrasive cutting off wheel, tubing should not be over heated effecting material properties.
- Tips: The housing assemblies of manual coning tool can be used to clamp the tubing.
- Suitable manual reseating tool can help to deburr ends.



The length L can be calculated by this way:

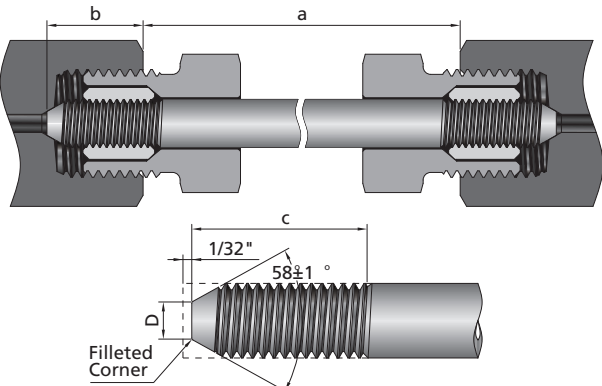


Fig.1

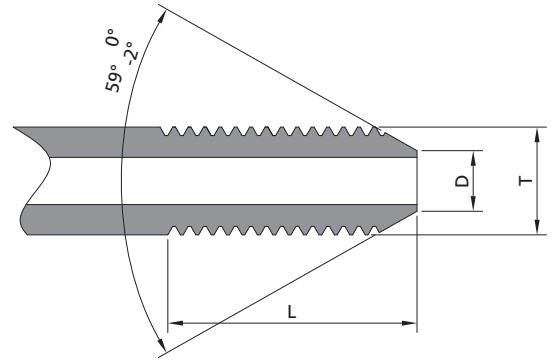
- $L=a+2b+2\times 1/32"$
- L: Tubing length
- a: Component distance
- b: Tubing engagement (please see the table below)
- 1/32": Standard face distance per tubing

Rated Pressure psig (bar)	Connection Type	Tube O.D. x I.D. in.	b in. (mm)
20000 (1379)	MF4	1/4 × 0.109	0.55(13.97)
	MF6	3/8 × 0.203	0.69(17.53)
	MF9	9/16 × 0.312	0.84(21.34)
60000 (4137)	HF4	1/4 × 0.083	0.50(12.70)
	HF6	3/8 × 0.125	0.69(17.53)
	HF9	9/16 × 0.188	0.84(21.34)

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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2. Process the tube end into the structure as shown on the right. For dimensions please see the table below.

Tips: For 1/4", 3/8" and 9/16" O.D. tubing, manual coning and threading tools can be used to make coned and threaded nipples.



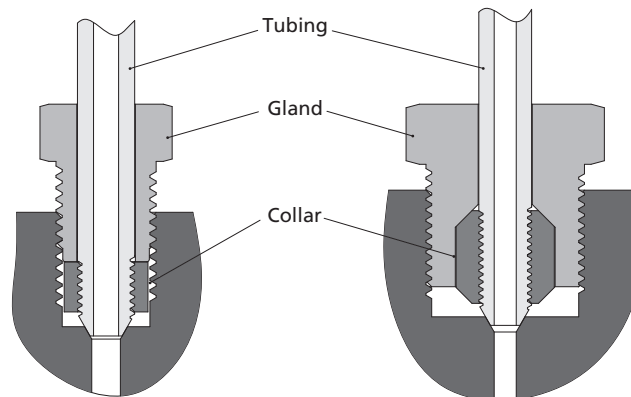
Tube O.D. x I.D. in.	Connection	T - Thread Size (Left Hand)	D in. (mm)	L in. (mm)
1/4 x 0.109	MF4	1/4-28 UNF	0.14 (3.6)	0.34 (8.7)
3/8 x 0.203	MF6	3/8-24 UNF	0.25 (6.4)	0.44 (11.1)
9/16 x 0.312	MF9	9/16-18 UNF	0.41 (10.3)	0.50 (12.7)
3/4 x 0.438	MF12	3/4-16 UNF	0.56 (14.3)	0.63 (15.9)
1 x 0.562	MF16	1-14 UNS	0.72 (18.3)	0.78 (19.8)
1 1/2 x 0.937	MF24	1 1/2-12 UNF	1.06 (27.0)	1.00 (25.4)
1/4 x 0.083	HF4	1/4-28 UNF	0.13 (3.2)	0.56 (14.3)
3/8 x 0.125	HF6	3/8-24 UNF	0.22 (5.6)	0.75 (19.1)
9/16 x 0.188	HF9	9/16-18 UNF	0.28 (7.1)	0.94 (23.8)

3. First, insert the tube through the gland, and then screw in the collar counterclockwise (left-hand threads) until the conical end of the tube showing 1-2 full threads.

4. Apply thread lubricant evenly on the gland threads, and if possible, coat the cone tip with a small amount of lubricant which is compatible with the system media.

Medium Pressure

High Pressure



5. Insert the tubing into the connecting port and finger tighten the gland.

6. Use a torque wrench to tighten the gland with the required torque shown in the table below while holding fitting body or valve steady.

Note: The installation torque may vary depending on the type of grease used.

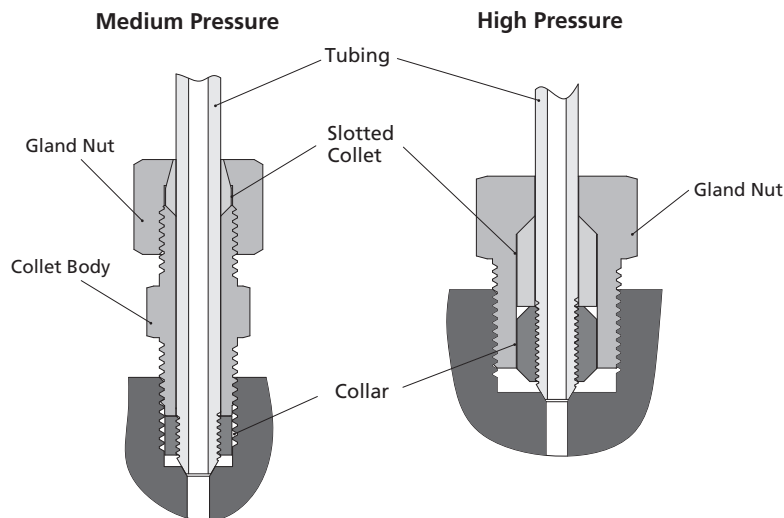
Tube O.D. x I.D. in.	Connection	Required Torque for Standard Service Products ft.-lbs. (N·m) ^①	Required Torque for Sour Service Products ft.-lbs. (N·m) ^①
1/4 × 0.109	MF4	20 (27.1)	10 (13.6)
3/8 × 0.203	MF6	30 (40.6)	15 (20.3)
9/16 × 0.312	MF9	55 (74.5)	30 (40.7)
3/4 × 0.438	MF12	90 (122)	45 (61.0)
1 × 0.562	MF16	125 (170)	100 (135.6)
1 1/2 × 0.937	MF24	200 (270)	/
1/4 × 0.083	HF4	25 (33.9)	15 (20.3)
3/8 × 0.125	HF6	50 (67.8)	25 (33.9)
9/16 × 0.188	HF9	110 (149.1)	55 (74.6)

Installation of Medium & High Pressure Anti-Vibration Gland Assembly

Anti-Vibration Gland Assembly replaces the standard gland.

1. Insert coned and threaded tubing through the Anti-Vibration Gland Assembly in the correct order as shown in the following figure, and then screw in the collar until the conical end of the tube showing 1-2 full threads.
2. For 20M series medium pressure Anti-Vibration Gland Assembly, tighten collet body to required torque for standard fittings while holding fitting body or valve steady. Then finger tighten the gland nut, and tighten the gland nut 1-1/4 turns for initial installation with a wrench while holding the collet body steady. For reinstallation, tighten the gland nut with a wrench from finger tight to 3/4 turn.
3. For 60H series high pressure Anti-Vibration Gland Assembly, use a torque wrench to tighten the gland nut with the required torque shown in the table below while holding fitting body or valve steady.

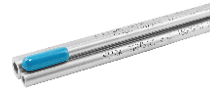
Tube O.D. x I.D. in.	Connection	Required Torque ft.-lbs. (N·m)
1/4 × 0.083	HF4	10 (13.6)
3/8 × 0.125	HF6	28 (38.0)
9/16 × 0.188	HF9	75 (101.7)



Note: When installing, please follow the given method and required torque ; otherwise it will affect the performance of the product.

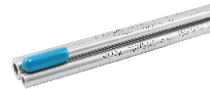
Tubing

T15A Series Tubing



B-05

T20D Series Tubing



B-07

T20M Series Tubing



B-09

T60H Series Tubing



B-12

Tubing

T15A, T20D, T20M and T60H Series



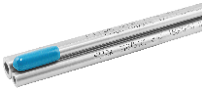
Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Contents

Connections

B-04

T15A Series Tubing



B-05

T20D Series Tubing



B-07

T20M Series Tubing



B-09

T60H Series Tubing



B-12

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Connections

- ✓ Recommended application
- Applicable but not optimal
- Limited application subject to confirmation from FITOK
- × Not applicable

Connection	Series	T15A	T20D	T20M	T60H
15S Series Single Ferrule Tube Fittings		✓	×	×	×
20D Series Tube Fittings		✓	✓	○ ^①	×
20M Series Medium Pressure Fittings		×	×	✓	□
60H Series High Pressure Fittings		×	×	×	✓

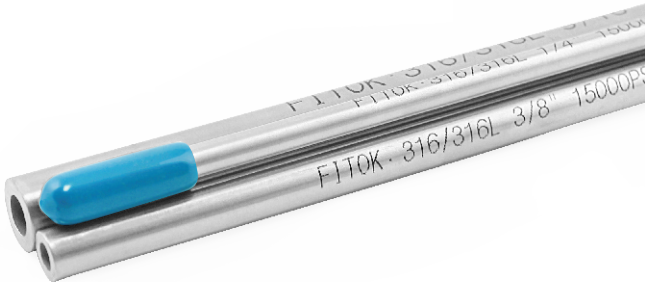
① Contact FITOK Group for installation methods of 20D series tube fittings with 20M series tubing.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

T15A Series Tubing

Features

- Materials: 316/316L, enhanced-316/316L
- Working pressure up to 15,000 psig (1034 bar)
- Working temperature: -325°F to 1000°F (-198°C to 537°C)
- Supply conditions: annealed seamless tubing
- For use with FITOK 20D series tube fittings
- Marked with brand, material grade, specification, pressure, annealing designator and heat number
- Standard length: 40 in, 80 in, 10 ft, 20 ft, 1 m, 2 m, 3 m and 6 m
Customized length as per customer requirement is also available



Materials

UNS	Grade	FITOK Designator	Composition %							
			C	Mn	P	S	Si	Cr	Ni	Mo
S31600/S31603	316/316L	SS	≤0.035	≤2.00	≤0.045	≤0.03	≤1.00	16-18	10-14	2.0-3.0
Enhanced-S31600/S31603	Enhanced-316/316L ^①	SH	≤0.03					17-18	12-14	2.6-3.0

① Enhanced-316/316L complying with GB50516-2021 Technical Code for Hydrogen Fuelling Station is available, in which Nieq is not less than 28.5%. Contact FITOK Group for more information.

Mechanical Properties

UNS	Grade	Yield Strength ksi	Tensile Strength ksi	Elongation %	Hardness
S31600/S31603	316/316L	≥30	≥75	≥30	≤90 HRB
Enhanced-S31600/S31603	Enhanced-316/316L				

Dimensional Tolerance

Tube O.D. in.	O.D. Tolerance in.	Wall Thickness Tolerance %
1/8	+/-0.003	+/-10
1/4	+/-0.005	
3/8		
1/2		
3/4		
1		

Working Pressure at Ambient Temperature

Working pressures are calculated in accordance with ASME B31.3.

Tube O.D. in.	Wall Thickness in.	Working Pressure psig (bar)
1/8	0.037	15,000 (1,034)
1/4	0.083	15,000 (1,034)
	0.065	10,300 (710)
3/8	0.118	15,000 (1,034)
	0.095	10,000 (690)
1/2	0.156	15,000 (1,034)
	0.134	11,200 (772)
3/4	0.240	15,000 (1,034)
	0.188	10,000 (690)
1	0.220	10,000 (690)

Elevated Temperature Factors

Temperature		Factor
°F	°C	
100	38	1.00
200	93	
300	149	
400	204	0.96
500	260	0.89
600	316	0.85
700	371	0.81
800	427	0.79
1000	537	0.76

Ordering Information

Tube O.D. in.	Wall Thickness in.	Ordering Number ^{①②}	
1/8	0.037	□□-T15A-2-037-6M	□□-T15A-2-037-20F
1/4	0.083	□□-T15A-4-083-6M	□□-T15A-4-083-20F
	0.065	□□-T15A-4-065-6M	□□-T15A-4-065-20F
3/8	0.118	□□-T15A-6-118-6M	□□-T15A-6-118-20F
	0.095	□□-T15A-6-095-6M	□□-T15A-6-095-20F
1/2	0.156	□□-T15A-8-156-6M	□□-T15A-8-156-20F
	0.134	□□-T15A-8-134-6M	□□-T15A-8-134-20F
3/4	0.240	□□-T15A-12-240-6M	□□-T15A-12-240-20F
	0.188	□□-T15A-12-188-6M	□□-T15A-12-188-20F
1	0.220	□□-T15A-16-220-6M	□□-T15A-16-220-20F

① In the ordering number, "6M" designator refers to 6 m tubing length and "20F" designator refers to 20 ft tubing length.

② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

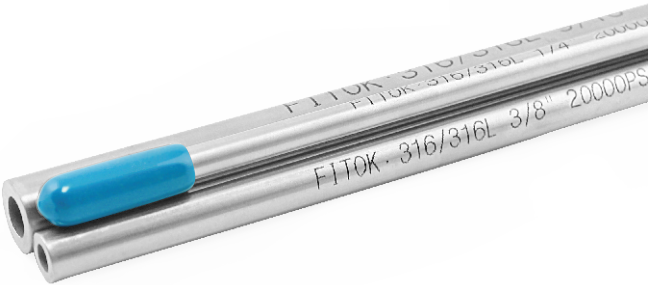
Subsea Valves

Part Number
Crossover Charts

T20D Series Tubing

Features

- Materials: 316/316L, enhanced-316/316L
- Working pressure up to 20,000 psig (1379 bar)
- Working temperature: -325°F to 800°F (-198°C to 427°C)
- Supply conditions: cold-drawn 1/8-hard seamless tubing
- For use with FITOK 20D series tube fittings
- Marked with brand, material grade, specification, pressure and heat number
- Standard length: 40 in, 80 in, 10 ft, 20 ft, 1 m, 2 m, 3 m and 6 m
Customized length as per customer requirement is also available



Materials

UNS	Grade	FITOK Designator	Composition %							
			C	Mn	P	S	Si	Cr	Ni	Mo
S31600/S31603	316/316L	SS	≤0.035	≤2.00	≤0.045	≤0.03	≤1.00	16-18	10-14	2.0-3.0
Enhanced-S31600/S31603	Enhanced-316/316L ^①	SH	≤0.03					17-18	12-14	2.6-3.0

① Enhanced-316/316L complying with GB50516-2021 Technical Code for Hydrogen Fuelling Station is available, in which N_{ieq} is not less than 28.5%. Contact FITOK Group for more information.

Mechanical Properties

UNS	Grade	Yield Strength ksi	Tensile Strength ksi	Elongation %	Hardness
S31600/S31603	316/316L	75 to 110	105 to 140	≥25	≤26 HRC
Enhanced-S31600/S31603	Enhanced-316/316L				

Dimensional Tolerance

Tube O.D. in.	O.D. Tolerance in.	Wall Thickness Tolerance %
1/4	+/-0.005	+/-10
3/8		
1/2		
3/4		
1		

Working Pressure at Ambient Temperature

Working pressures are calculated in accordance with ASME B31.3 Chapter IX High Pressure Piping.

Tube O.D. in.	Wall Thickness in.	Working Pressure psig (bar)
1/4	0.065	20,000 (1,379)
3/8	0.083	
1/2	0.109	
3/4	0.165	
1	0.172	15,000 (1,034)

Elevated Temperature Factors

Temperature		Factor
°F	°C	
100	38	1.00
200	93	
300	149	
400	204	0.96
500	260	0.89
600	316	0.85
700	371	0.81
800	427	0.79

Ordering Information

Tube O.D. in.	Wall Thickness in.	Ordering Number ^{①②③}	
1/4	0.065	□□-T20D-4-065-6M	□□-T20D-4-065-20F
3/8	0.083	□□-T20D-6-083-6M	□□-T20D-6-083-20F
1/2	0.109	□□-T20D-8-109-6M	□□-T20D-8-109-20F
3/4	0.165	□□-T20D-12-165-6M	□□-T20D-12-165-20F
1	0.172	□□-T20D-16-172-6M	□□-T20D-16-172-20F

- ① In the ordering number, "6M" designator refers to 6 m tubing length and "20F" designator refers to 20 ft tubing length.
② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.
③ Cold-drawn 1/8-hard seamless tubing is not used with 15S series single-ferrule tube fittings.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

T20M Series Tubing

Features

- Materials: 316/316L, enhanced-316/316L
- Working pressure up to 20,000 psig (1379 bar)
- Working temperature: -423°F to 800°F (-252°C to 427°C)
- Cold-drawn seamless tubing
- For use with FITOK 20M series medium pressure fittings
- Marked with brand, material grade, specification, pressure, and heat number
- Standard length: 40 in, 80 in, 10 ft, 20 ft, 1 m, 2 m, 3 m and 6 m, straight-length tubing and coned and threaded nipples in custom length are also available.



Materials

UNS	Grade	FITOK Designator	Composition %							
			C	Mn	P	S	Si	Cr	Ni	Mo
S31600/S31603	316/316L	SS	≤0.035	≤2.00	≤0.045	≤0.03	≤1.00	16-18	10-14	2.0-3.0
Enhanced-S31600/S31603	Enhanced-316/316L ^①	SH	≤0.03					17-18	12-14	2.6-3.0

① Enhanced-316/316L complying with GB50516-2021 Technical Code for Hydrogen Fuelling Station is available, in which Nieq is not less than 28.5%. Contact FITOK Group for more information.

Dimensional Tolerance

Tube O.D. in.	O.D. Tolerance in.	Tube I.D. in.	I.D. Tolerance in.
1/4	-0.002/-0.007	0.109	0/-0.005
3/8		0.203	
9/16		0.312	
3/4	-0.005/-0.01	0.438	+/-0.005
1		0.562	
1 1/2		0.937	

Working Pressure at Ambient Temperature

Working pressures are calculated in accordance with ASME B31.3 Chapter IX High Pressure Piping.

Tube O.D. in.	Tube I.D. in.	Working Pressure psig (bar)
1/4	0.109	20,000 (1,379)
3/8	0.203	
9/16	0.312	
3/4	0.438	
1	0.562	
1 1/2	0.937	15,000 (1,034)

Pressure-Temperature Ratings

Working Pressure psig (bar)				
-423 to 100°F (-252 to 37.8°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)
20,000 (1379)	20,000 (1379)	19,000 (1310)	18,000 (1241)	16,800 (1158)
15,000 (1034)	15,000 (1034)	14,200 (979)	13,500 (931)	12,600 (869)

Ordering Information

Cold-Drawn Seamless Tubing

Tube O.D. in.	Tube I.D. in.	Ordering Number ^{①②}	
1/4	0.109	□□-T20M-4-6M	□□-T20M-4-20F
3/8	0.203	□□-T20M-6-6M	□□-T20M-6-20F
9/16	0.312	□□-T20M-9-6M	□□-T20M-9-20F
3/4	0.438	□□-T20M-12-6M	□□-T20M-12-20F
1	0.562	□□-T20M-16-6M	□□-T20M-16-20F
1 1/2	0.937	□□-T20M-24-6M	□□-T20M-24-20F

① In the ordering number, "6M" designator refers to 6 m tubing length and "20F" designator refers to 20 ft tubing length. Nipples in custom length available upon request.

② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.

Fittings

Tubing

Quick Couplings

Line Filters

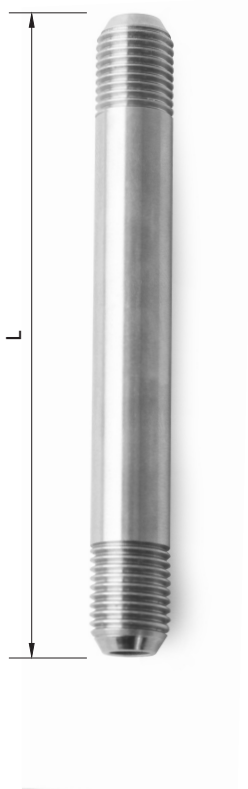
Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Coned and Threaded Nipples



Tube O.D. in.	Tube I.D. in.	Length L ^① in. (mm)	Ordering Number ^②
1/4	0.109	3.00 (76.2)	□□-T20M-4CT-3N
		4.00 (101.6)	□□-T20M-4CT-4N
		6.00 (152.4)	□□-T20M-4CT-6N
		8.00 (203.2)	□□-T20M-4CT-8N
		10.0 (254.0)	□□-T20M-4CT-10N
		12.0 (304.8)	□□-T20M-4CT-12N
3/8	0.203	3.00 (76.2)	□□-T20M-6CT-3N
		4.00 (101.6)	□□-T20M-6CT-4N
		6.00 (152.4)	□□-T20M-6CT-6N
		8.00 (203.2)	□□-T20M-6CT-8N
		10.0 (254.0)	□□-T20M-6CT-10N
		12.0 (304.8)	□□-T20M-6CT-12N
9/16	0.312	4.00 (101.6)	□□-T20M-9CT-4N
		6.00 (152.4)	□□-T20M-9CT-6N
		8.00 (203.2)	□□-T20M-9CT-8N
		10.0 (254.0)	□□-T20M-9CT-10N
		12.00 (304.8)	□□-T20M-9CT-12N
3/4	0.438	4.00 (101.6)	□□-T20M-12CT-4N
		6.00 (152.4)	□□-T20M-12CT-6N
		8.00 (203.2)	□□-T20M-12CT-8N
		10.0 (254.0)	□□-T20M-12CT-10N
		12.0 (304.8)	□□-T20M-12CT-12N
1	0.562	6.00 (152.4)	□□-T20M-16CT-6N
		8.00 (203.2)	□□-T20M-16CT-8N
		10.0 (254.0)	□□-T20M-16CT-10N
		12.0 (304.8)	□□-T20M-16CT-12N
1 1/2	0.937	6.00 (152.4)	□□-T20M-24CT-6N
		8.00 (203.2)	□□-T20M-24CT-8N
		10.0 (254.0)	□□-T20M-24CT-10N
		12.0 (304.8)	□□-T20M-24CT-12N

① Nipples in customized length available upon request.

② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.

T60H Series Tubing

Features

- Materials: 316/316L, enhanced-316/316L
- Working pressure up to 60,000 psig (4137 bar)
- Working temperature: -423°F to 1200°F (-252°C to 649°C)
- Cold-drawn seamless tubing
- For use with FITOK 60H series high pressure fittings
- Marked with brand, material grade, specification, pressure, and heat number
- Standard length: 40 in, 80 in, 10 ft, 20 ft, 1 m, 2 m, 3 m and 6 m, straight-length tubing and coned and threaded nipples in custom length are also available.



Materials

UNS	Grade	FITOK Designator	Composition %							
			C	Mn	P	S	Si	Cr	Ni	Mo
S31600/S31603	316/316L	SS	≤0.035	≤2.00	≤0.045	≤0.03	≤1.00	16-18	10-14	2.0-3.0
Enhanced-S31600/S31603	Enhanced-316/316L	SH	≤0.03					17-18	12-14	2.6-3.0

Dimensional Tolerance

Tube O.D. in.	O.D. Tolerance in.	Tube I.D. in.	I.D. Tolerance in.
1/4	-0.002/-0.007	0.083	0/-0.005
3/8	-0.005/-0.01	0.125	
9/16		0.188	

Pressure-Temperature Ratings

Working Pressure psig (bar)				
-423 to 100°F (-252 to 37.8°C)	200°F (93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)
60,000 (4137)	60,000 (4137)	57,750 (3982)	54,250 (3740)	50,700 (3496)

If tubing is used at temperatures above 800°F (427°C) or reused thereafter, working pressures for tubing in the following table shall apply.

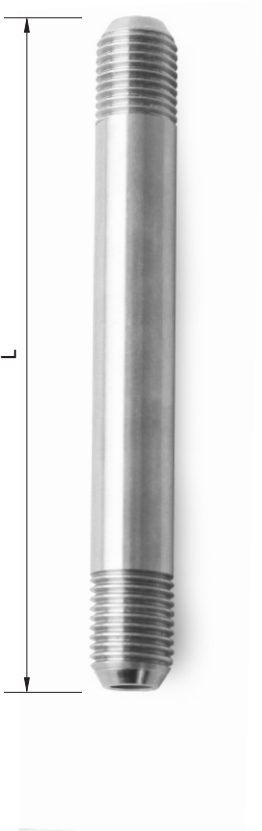
Working Pressure psig (bar)					
-423 to 200°F (-252 to 93°C)	400°F (204°C)	600°F (316°C)	800°F (427°C)	1000°F (538°C)	1200°F (649°C)
24,200 (1669)	22,200 (1531)	20,500 (1413)	18,850 (1300)	18,600 (1282)	8,750 (603)

Ordering Information
Cold-Drawn Seamless Tubing

Tube O.D. in.	Tube I.D. in.	Ordering Number ^{①②}	
1/4	0.083	□□-T60H-4-6M	□□-T60H-4-20F
3/8	0.125	□□-T60H-6-6M	□□-T60H-6-20F
9/16	0.188	□□-T60H-9-6M	□□-T60H-9-20F

① In the ordering number, "6M" designator refers to 6 m tubing length and "20F" designator refers to 20 ft tubing length. Nipples in custom length available upon request.
② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.

Coned and Threaded Nipples



Tube O.D. in.	Tube I.D. in.	Length L ^① in. (mm)	Ordering Number ^②
1/4	0.083	2.75 (69.9)	□□-T60H-4CT-2.75N
		3.00 (76.2)	□□-T60H-4CT-3N
		4.00 (101.6)	□□-T60H-4CT-4N
		6.00 (152.4)	□□-T60H-4CT-6N
		8.00 (203.2)	□□-T60H-4CT-8N
		10.0 (254.0)	□□-T60H-4CT-10N
		12.0 (304.8)	□□-T60H-4CT-12N
3/8	0.125	3.00 (76.2)	□□-T60H-6CT-3N
		4.00 (101.6)	□□-T60H-6CT-4N
		6.00 (152.4)	□□-T60H-6CT-6N
		8.00 (203.2)	□□-T60H-6CT-8N
		10.0 (254.0)	□□-T60H-6CT-10N
		12.0 (304.8)	□□-T60H-6CT-12N
9/16	0.188	4.00 (101.6)	□□-T60H-9CT-4N
		6.00 (152.4)	□□-T60H-9CT-6N
		8.00 (203.2)	□□-T60H-9CT-8N
		10.0 (254.0)	□□-T60H-9CT-10N
		12.0 (304.8)	□□-T60H-9CT-12N

① Nipples in custom length available upon request.
② To order, add the material designator as prefix: SS for 316/316L and SH for enhanced-316/316L.

Quick Couplings

Quick Couplings



C-02

Quick Couplings

- HQP Series: 10,000 psig (690 bar)
- HQB Series: 10,000 psig (690 bar)
- HQS Series: 20,000 psig (1379 bar)
- HQC Series: 30,000 psig (2068 bar)



Contents

HQP Series	C-04
HQB Series	C-06
HQS Series	C-08
HQC Series	C-10
Ordering Number Description	C-16

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

HQP Series

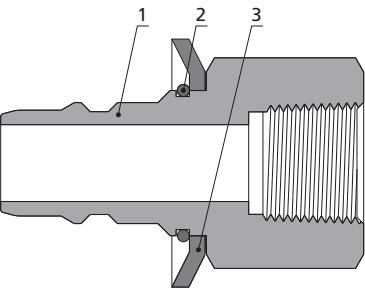
Features

- Working pressure: 10,000 psig (690 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- Stem and body material: high tensile 316 stainless steel
- Push-and-pull type quick coupling without check valve, incapable of withstanding any pressure when disconnected
- Flow coefficient (Cv) up to 8.2
- Sturdy locking mechanism with large contact area to ensure reliable stem retainment
- Slip sleeve lock design prevents accidental disconnection

Cautions

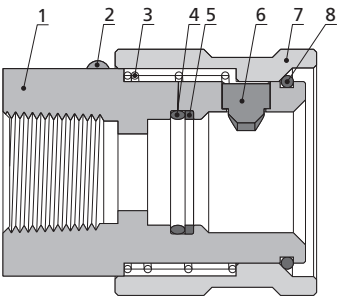
- Do not disconnect or connect quick couplings when system is pressurized
- Do not rotate quick couplings when connected
- Take care to protect the nipple and coupler when disconnected

Standard Materials of Construction



Nipple

Item	Component	Material Grade
1	Stem	316 SS
2	Wire Ring	Stainless Steel
3	Pull Piece	316 SS

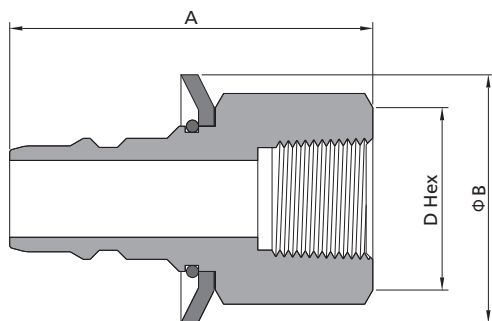


Coupler

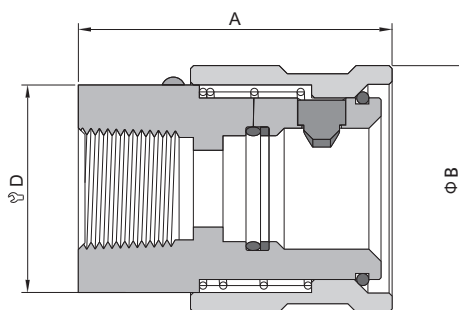
Item	Component	Material Grade
1	Body	316 SS
2	Pin	Stainless Steel
3	Spring	300 Series SS
4	O-Ring	FKM
5	Retaining Ring	PTFE
6	Locking Block	Stainless Steel
7	Slip Sleeve	316 SS
8	Wire Ring	Stainless Steel

Wetted component listed in italics.

Ordering Information and Dimensions



Nipple



Coupler

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQPSS-FNS6-NP	FNS6	2.17 (55.0)	1.59 (40.4)	1.19 (30.2)	10,000 (690)
	HQPSS-FNS8-NP	FNS8	2.36 (60.0)	1.59 (40.4)	1.19 (30.2)	
Coupler	HQPSS-FNS6-CP	FNS6	2.05 (52.0)	1.59 (40.4)	1.19 (30.2)	
	HQPSS-FNS8-CP	FNS8	2.05 (52.0)	1.59 (40.4)	1.19 (30.2)	

Note: All dimensions are shown for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

HQB Series

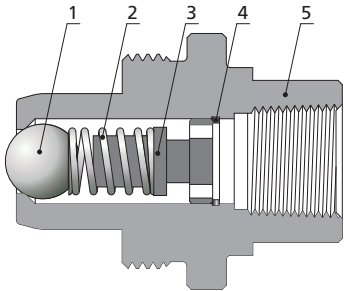
Features

- Working Pressure: 10,000 psig (690 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- S17400 stainless steel stem and high tensile S17400 stainless steel body
- Screw type quick coupling with check valve, capable of withstanding full pressure when disconnected
- Flow coefficient (Cv) up to 0.53
- Check valve with metal ball sealing, without guarantee of full gas impermeability

Cautions

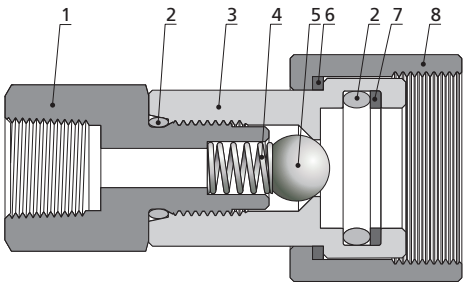
- Do not disconnect or connect quick couplings when system is pressurized
- Finger tighten the threads to "face-to-face" station when connected
- Take care to protect the nipple and coupler when disconnected

Standard Materials of Construction



Nipple

Item	Component	Material Grade
1	Ball	Stainless Steel
2	Spring	300 Series SS
3	Seat	316 SS
4	Retaining Ring	Stainless Steel
5	Stem	S17400 SS

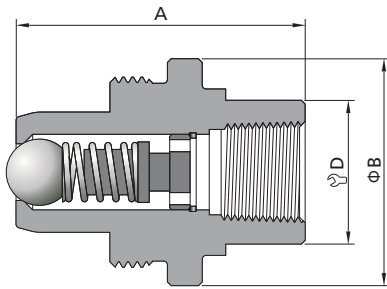


Coupler

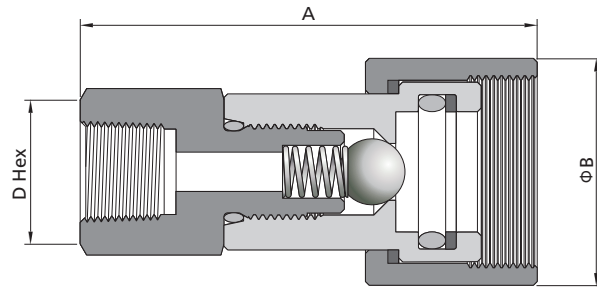
Item	Component	Material Grade
1	Body	316 SS
2	O-Ring	FKM
3	Housing	S17400 SS
4	Spring	300 Series SS
5	Ball	Stainless Steel
6	Ring	C63000
7	Retaining Ring	PTFE
8	Nut	S17400 SS
Sealant Adhesive		Anaerobic Adhesive

Wetted component listed in italics.

Ordering Information and Dimensions



Nipple



Coupler

Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQB4P-FNS4-NP	FNS4	1.54 (39.2)	1.18 (30.0)	0.75 (19.0)	10,000 (690)
	HQB4P-FNS6-NP	FNS6	1.54 (39.2)	1.18 (30.0)	0.94 (23.8)	
Coupler	HQB4P-FNS4-CP	FNS4	2.46 (62.4)	1.18 (30.0)	0.87 (22.2)	
	HQB4P-FNS6-CP	FNS6	2.46 (62.4)	1.18 (30.0)	0.94 (23.8)	

Note: All dimensions are shown for reference only and are subject to change. Other dimensions are available upon request.

Fittings

Tubing

Quick Couplings

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Subsea Valves

Part Number
Crossover Charts

HQS Series

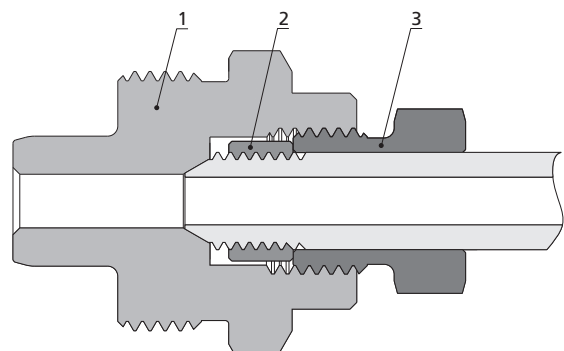
Features

- Working pressure up to 20,000 psig (1379 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- High tensile 316 stainless steel stem and S17400 stainless steel body
- Screw type quick coupling without check valve, incapable of withstanding any pressure when disconnected
- Flow coefficient (Cv) up to 33.4

Cautions

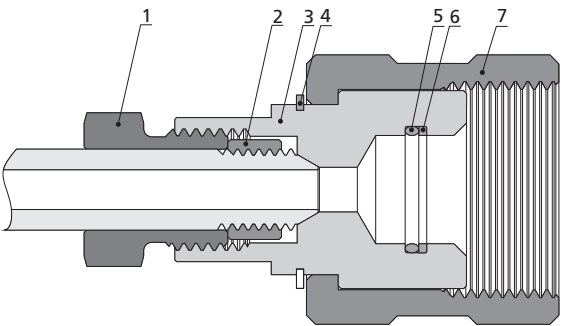
- Do not disconnect or connect quick couplings when system is pressurized
- Finger tighten the threads to "face-to-face" station when connected
- Take care to protect the nipple and coupler when disconnected

Standard Materials of Construction



Nipple

Item	Component	Material Grade
1	Stem	316 SS
2	Collar	316 SS (For Tubing Connections)
3	Gland	316 SS (For Tubing Connections)

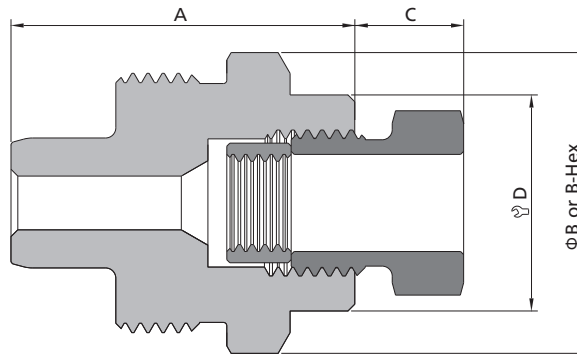


Coupler

Item	Component	Material Grade
1	Gland	316 SS (For Tubing Connections)
2	Collar	316 SS (For Tubing Connections)
3	Body	S17400 SS
4	Circlip	Stainless Steel
5	O-Ring	FKM
6	Retaining Ring	PTFE
7	Nut	316 SS

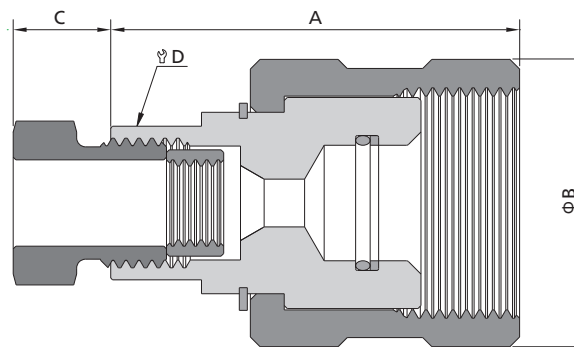
Wetted component listed in italics

Ordering Information and Dimensions



Nipple

Type	Ordering Number	Connection	Dimensions, in. (mm)				Working Pressure psig (bar)
			A	B	C	D	
Nipple	HQSSS-MF9-NP	MF9	2.40 (61.0)	1.74 (44.2)	0.55 (14.0)	1.25 (31.8)	20,000 (1379)
	HQSSS-FNS8-NP	FNS8	2.40 (61.0)	1.74 (44.2)		1.25 (31.8)	15,000 (1034)
	HQSSS-FNS12-NP	FNS12	2.48 (63.0)	2.00 (50.8)			10,000 (690)
	HQSSS-FNS16-NP	FNS16	2.60 (66.0)	2.25 (57.2)			10,000 (690)



Coupler

Type	Ordering Number	Connection	Dimensions, in. (mm)				Working Pressure psig (bar)
			A	B	C	D	
Coupler	HQSSS-MF9-CP	MF9	2.61 (66.3)	1.91 (48.4)	0.55 (14.0)	1.00 (25.4)	20,000 (1379)
	HQSSS-FNS8-CP	FNS8	2.61 (66.3)	1.91 (48.4)		1.00 (25.4)	15,000 (1034)
	HQSSS-FNS12-CP	FNS12	3.03 (77.0)	2.38 (60.4)		1.38 (34.9)	10,000 (690)
	HQSSS-FNS16-CP	FNS16	3.24 (82.4)	2.57 (65.4)		1.63 (41.3)	10,000 (690)

Note: All dimensions are shown for reference only and are subject to change. Other dimensions are available upon request.

HQC Series

HQC Series Couplers

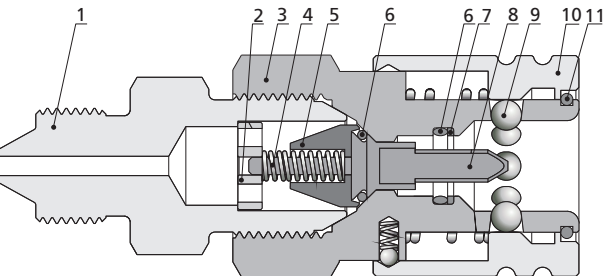
Features

- Working pressure up to 30,000 psig (2068 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- Body material: S17400 stainless steel
- Push-and-pull type coupler with check valve, capable of withstanding full pressure when disconnected
- Flow coefficient (Cv) up to 0.66

Cautions

- Do not disconnect or connect quick couplings when system is pressurized
- Do not rotate quick couplings when connected
- Take care to protect the nipple and coupler when disconnected

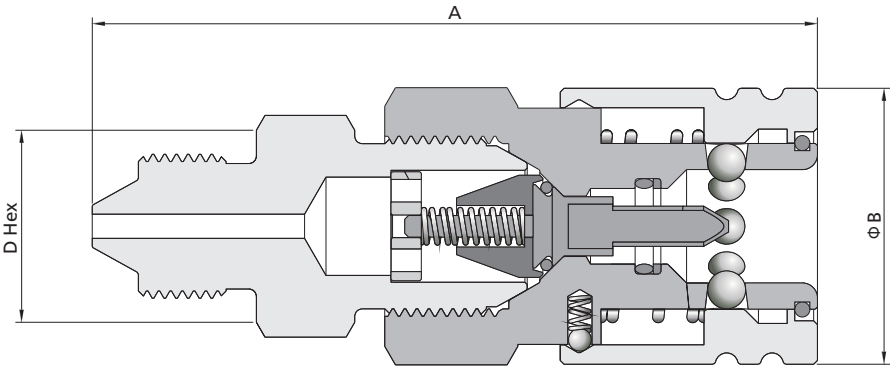
Standard Materials of Construction



Item	Component	Material Grade
1	<i>Body</i>	<i>S17400 SS</i>
2	<i>Seat</i>	<i>316 SS</i>
3	<i>Housing</i>	<i>S17400 SS</i>
4	<i>Spring</i>	<i>300 Series SS</i>
5	<i>Valve Head</i>	<i>316 SS</i>
6	<i>O-Ring</i>	<i>FKM</i>
7	<i>Retaining Ring</i>	<i>PTFE</i>
8	<i>Valve Stem</i>	<i>316 SS</i>
9	<i>Ball</i>	<i>Stainless Steel</i>
10	<i>Sleeve</i>	<i>316 SS</i>
11	<i>Wire Ring</i>	<i>Stainless Steel</i>

Wetted component listed in italics.

Ordering Information and Dimensions



Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Coupler	HQC4P-NS4-CP	NS4	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-CP	NS6	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-CP	NS8	3.68 (93.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-CP	FNS4	3.17 (80.5)	1.39 (35.4)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-CP	FNS6	3.27 (83.0)	1.39 (35.4)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-CP	FNS8	3.56 (90.5)	1.39 (35.4)	1.38 (34.9)	15,000 (1034)
	HQC4P-JM4-CP	JM4	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM6-CP	JM6	3.48 (88.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM8-CP	JM8	3.58 (91.0)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM4-CP	MM4	3.62 (92.0)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM6-CP	MM6	3.76 (95.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM9-CP	MM9	3.95 (100.5)	1.39 (35.4)	1.00 (25.4)	20,000 (1379)
	HQC4P-HM4-CP	HM4	3.54 (90.0)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM6-CP	HM6	3.80 (96.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM9-CP	HM9	3.98 (101.0)	1.39 (35.4)	1.19 (30.2)	30,000 (2068)
	HQC4P-TM9-CP	TM9	3.43 (87.0)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM12-CP	TM12	3.56 (90.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM16-CP	TM16	3.56 (90.5)	1.39 (35.4)	1.00 (25.4)	30,000 (2068)

Note: All dimensions are shown for reference only and are subject to change. Other dimensions are available upon request.

Fittings

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Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

HQC Series Nipples with Check Valve

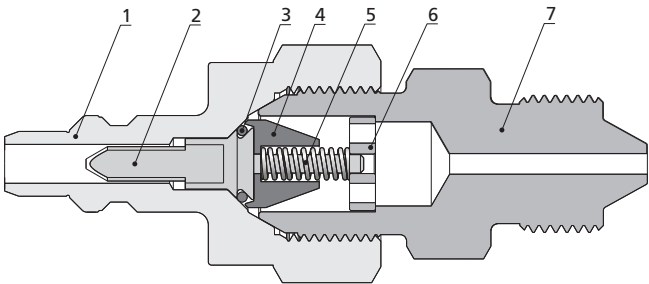
Features

- Working pressure up to 30,000 psig (2068 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- Stem material: S17400 stainless steel
- Push-and-pull type nipple with check valve, capable of withstanding full pressure when disconnected
- Flow coefficient (Cv) up to 0.66

Cautions

- Do not disconnect or connect quick couplings when system is pressurized
- Do not rotate quick couplings when connected
- Take care to protect the nipple and coupler when disconnected

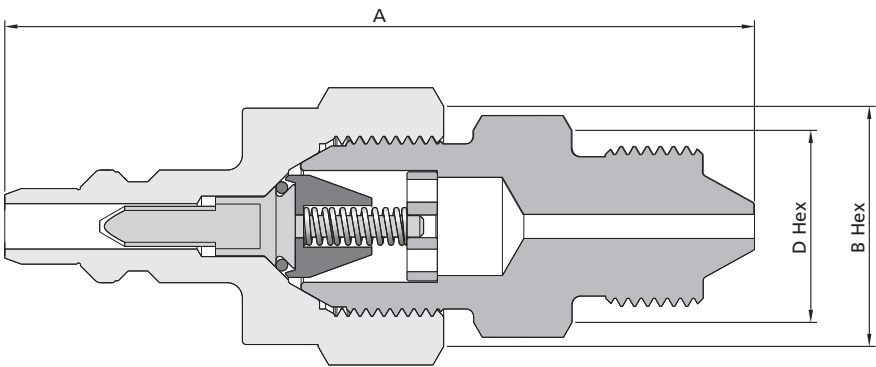
Standard Materials of Construction



Item	Component	Material Grade
1	<i>Stem</i>	<i>S17400 SS</i>
2	<i>Valve Stem</i>	<i>316 SS</i>
3	<i>O-Ring</i>	<i>FKM</i>
4	<i>Valve Head</i>	<i>316 SS</i>
5	<i>Spring</i>	<i>300 Series SS</i>
6	<i>Seat</i>	<i>316 SS</i>
7	<i>Body</i>	<i>S17400</i>

Wetted component listed in italics.

Ordering Information and Dimensions



Type	Ordering Number	Connection	Dimensions, in. (mm)			Working Pressure psig (bar)
			A	B	D	
Nipple	HQC4P-NS4-NP	NS4	3.52 (89.5)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-NP	NS6	3.52 (89.5)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-NP	NS8	3.70 (94.0)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-NP	FNS4	3.19 (81.0)	1.25 (31.8)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-NP	FNS6	3.31 (84.0)	1.25 (31.8)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-NP	FNS8	3.58 (91.0)	1.25 (31.8)	1.38 (34.9)	15,000 (1034)
	HQC4P-JM4-NP	JM4	3.50 (89.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM6-NP	JM6	3.50 (89.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM8-NP	JM8	3.43 (92.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM4-NP	MM4	3.64 (92.5)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM6-NP	MM6	3.80 (96.5)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM9-NP	MM9	3.98 (101.0)	1.25 (31.8)	1.00 (25.4)	20,000 (1379)
	HQC4P-HM4-NP	HM4	3.58 (91.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM6-NP	HM6	3.84 (97.5)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM9-NP	HM9	4.02 (102.0)	1.25 (31.8)	1.19 (30.2)	30,000 (2068)
	HQC4P-TM9-NP	TM9	3.46 (88.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM12-NP	TM12	3.58 (91.0)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM16-NP	TM16	3.60 (91.5)	1.25 (31.8)	1.00 (25.4)	30,000 (2068)

Note: All dimensions are shown for reference only and are subject to change. Other dimensions are available upon request.

Fittings

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Products

Subsea Valves

Part Number
Crossover Charts

HQC Series Nipples without Check Valve

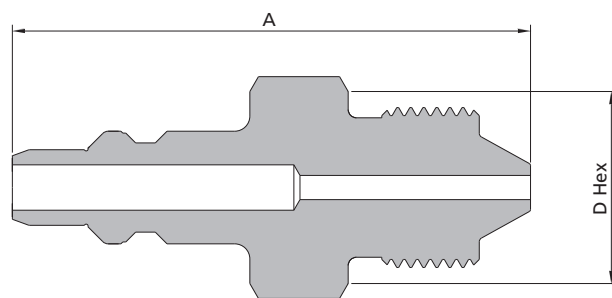
Features

- ⦿ Working pressure up to 30,000 psig (2068 bar)
- ⦿ Stem material: S17400 stainless steel
- ⦿ Push-and-pull type nipple without check valve, incapable of withstanding any pressure when disconnected
- ⦿ Flow coefficient (Cv) up to 0.66

Cautions

- ⦿ Do not disconnect or connect quick couplings when system is pressurized
- ⦿ Do not rotate quick couplings when connected
- ⦿ Take care to protect the nipple and coupler when disconnected

Ordering Information and Dimensions



Type	Ordering Number	Connection	Dimensions, in. (mm)		Working Pressure psig (bar)
			A	D	
Nipple	HQC4P-NS4-NPO	NS4	2.25 (57.1)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS6-NPO	NS6	2.25 (57.1)	1.00 (25.4)	15,000 (1034)
	HQC4P-NS8-NPO	NS8	2.44 (62.0)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS4-NPO	FNS4	2.05 (52.0)	1.00 (25.4)	15,000 (1034)
	HQC4P-FNS6-NPO	FNS6	2.09 (53.0)	1.13 (28.6)	15,000 (1034)
	HQC4P-FNS8-NPO	FNS8	2.36 (60.0)	1.38 (34.9)	15,000 (1034)
	HQC4P-JM4-NPO	JM4	2.24 (56.9)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM6-NPO	JM6	2.24 (57.0)	1.00 (25.4)	20,000 (1379)
	HQC4P-JM8-NPO	JM8	2.35 (59.6)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM4-NPO	MM4	2.37 (60.3)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM6-NPO	MM6	2.52 (64.0)	1.00 (25.4)	20,000 (1379)
	HQC4P-MM9-NPO	MM9	2.69 (68.3)	1.00 (25.4)	20,000 (1379)
	HQC4P-HM4-NPO	HM4	2.31 (58.7)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM6-NPO	HM6	2.56 (65.1)	1.00 (25.4)	30,000 (2068)
	HQC4P-HM9-NPO	HM9	2.81 (71.4)	1.19 (30.2)	30,000 (2068)
	HQC4P-TM9-NPO	TM9	2.19 (55.6)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM12-NPO	TM12	2.32 (58.9)	1.00 (25.4)	30,000 (2068)
	HQC4P-TM16-NPO	TM16	2.33 (59.2)	1.00 (25.4)	30,000 (2068)

Note: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Fittings

Tubing

Quick Couplings

Line Filters

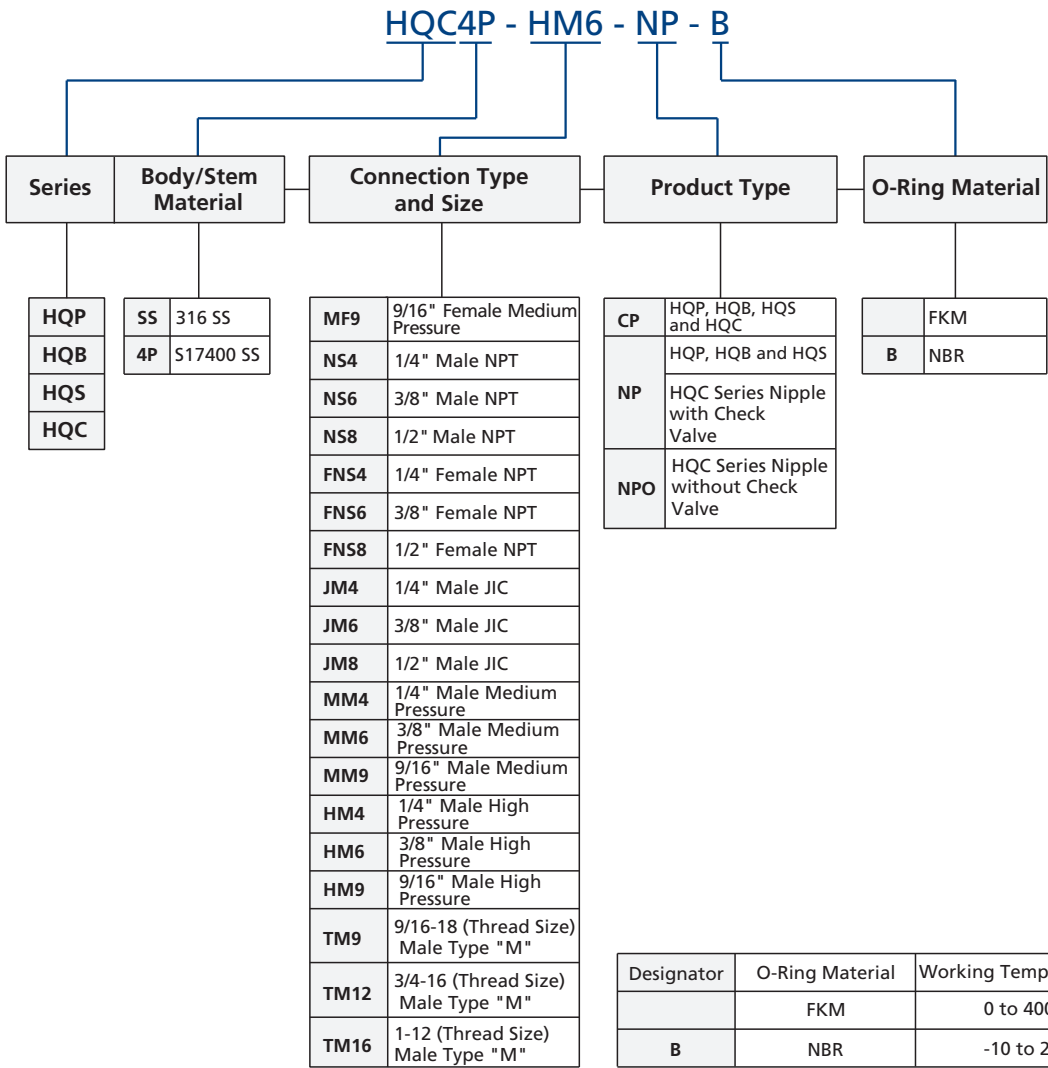
Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Ordering Number Description



- Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Line Filters

Line Filters



D-02

Line Filters

- 10FD, 10FC Series Line Filters: 10,000 psig (690 bar)
- 15FD, 15FC Series Line Filters: 15,000 psig (1034 bar)
- 20FD, 20FC Series Line Filters: 20,000 psig (1379 bar)
- 60FD, 60FC Series Line Filters: 60,000 psig (4137 bar)



Contents

10FD Series

Dual-Disc Line Filters D-04

10FC Series

Cup-Type Line Filters D-05

15FD Series

Dual-Disc Line Filters D-06

15FC Series

Cup-Type Line Filters D-08

20FD Series

Dual-Disc Line Filters D-10

20FC Series

Cup-Type Line Filters D-11

60FD Series

Dual-Disc Line Filters D-12

60FC Series

Cup-Type Line Filters D-13

Ordering Number Description

D-14

Fittings

Tubing

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Line Filters

Valves

Sour Service Products

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Part Number Crossover Charts

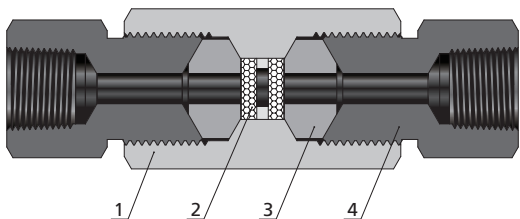
10FD Series: 10,000 psig (690 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 400°F (-50°C to 204°C)
- 3/4" and 1" female NPT available
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore sizes: 5/10, 10/35 and 35/65 µm; other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

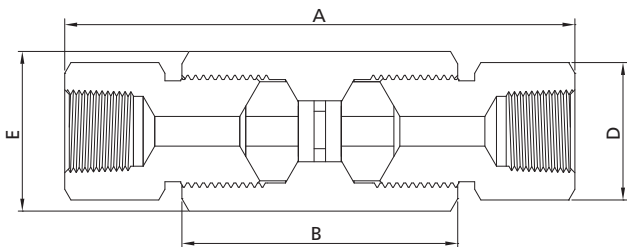
Standard Materials of Construction



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
	Lubricant	Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)				Working Pressure psig (bar)
					A	B	D (Hex)	E (Hex)	
10FDSS-FNS12-0510	FNS12	0.36 (9.1)	5/10	0.44 (286.5)	5.59 (142.0)	3.06 (77.8)	1.50 (38.1)	1.75 (44.5)	10,000 (690)
10FDSS-FNS12-1035			10/35						
10FDSS-FNS12-3565			35/65						
10FDSS-FNS16-0510	FNS16	0.56 (14.3)	5/10	0.89 (572.6)	6.66 (169.1)	3.63 (92.1)	1.75 (44.5)	1.88 (47.7)	10,000 (690)
10FDSS-FNS16-1035			10/35						
10FDSS-FNS16-3565			35/65						

Note: Dimensions are for reference only and are subject to change.

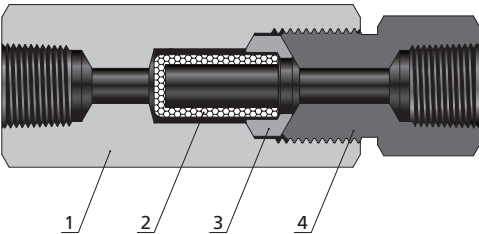
10FC Series: 10,000 psig (690 bar)

Cup-Type Line Filters

Features

- Working temperature range: -60°F to 400°F (-50°C to 204°C)
- 3/4" and 1" female NPT available
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 µm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

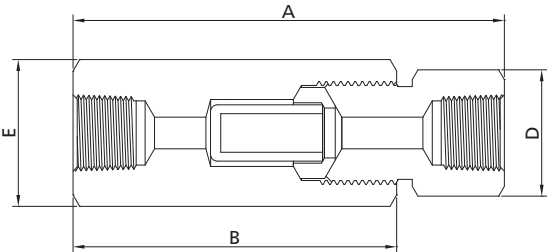
Standard Materials of Construction



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)				Working Pressure psig (bar)
					A	B	D (Hex)	E (Hex)	
10FCSS-FNS12-5	FNS12	0.52 (13.1)	5	2.65 (1709.7)	5.14 (130.6)	3.87 (98.4)	1.50 (38.1)	1.75 (44.5)	10,000 (690)
10FCSS-FNS12-35			35						
10FCSS-FNS12-65			65						
10FCSS-FNS16-5	FNS16	0.69 (17.5)	5	5.00 (3225.8)	6.39 (162.3)	4.87 (123.8)	1.75 (44.5)	1.88 (47.7)	10,000 (690)
10FCSS-FNS16-35			35						
10FCSS-FNS16-65			65						

Note: Dimensions are for reference only and are subject to change.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

15FD Series: 15,000 psig (1034 bar)

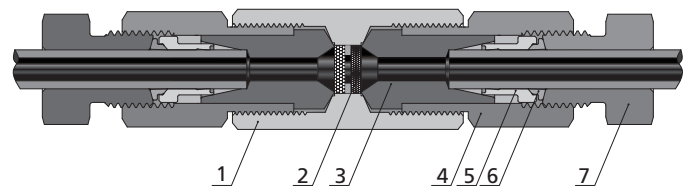
Dual-Disc Line Filters

Features

- Working temperature ranges:
 - Tubing connection: -60°F to 660°F (-50°C to 350°C)
 - Pipe connection: -60°F to 400°F (-50°C to 204°C)
- Connection types and sizes:
 - 1/8", 1/4", 3/8" and 1/2" O.D. tubing
 - 1/8", 1/4", 3/8" and 1/2" Female NPT
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore sizes: 5/10, 10/35 and 35/65 µm; other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

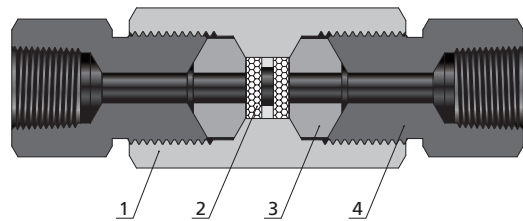
Standard Materials of Construction

Tubing Connection



Item	Component	Material Grade
1	<i>Body</i>	316 SS
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS
4	Gland Nut	316 SS
5	<i>Front Ferrule</i>	316 SS
6	<i>Rear Ferrule</i>	316 SS
7	Nut	316 SS
Lubricant		Molybdenum Disulfide

Pipe Connection

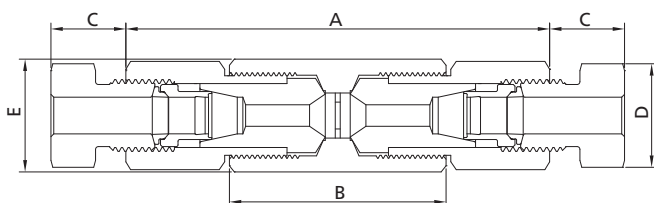


Item	Component	Material Grade
1	<i>Body</i>	316 SS
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS
4	<i>Gland Nut</i>	316 SS
Lubricant		Molybdenum Disulfide

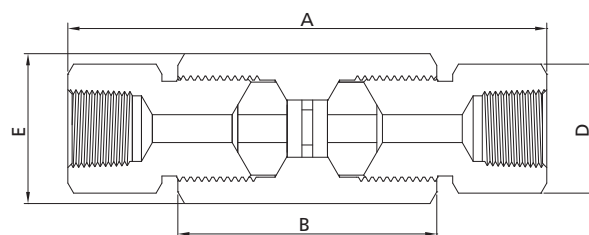
Wetted component listed in italics.

Ordering Information and Dimensions

Tubing Connection



Pipe Connection



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
15FDSS-DFF2-0510	DFF2	0.09 (2.4)	5/10	0.06 (38.7)	2.38 (60.5)	1.50 (38.1)	0.44 (11.2)	0.37 (9.5)	0.63 (15.9)	15,000 (1034)
15FDSS-DFF2-1035			10/35							
15FDSS-DFF2-3565			35/65							
15FDSS-DFF4-0510	DFF4	0.13 (3.2)	5/10	0.15 (96.8)	3.17 (80.5)	2.00 (50.8)	0.52 (13.3)	0.63 (15.9)	0.81 (20.6)	15,000 (1034)
15FDSS-DFF4-1035			10/35							
15FDSS-DFF4-3565			35/65							
15FDSS-DFF6-0510	DFF6	0.13 (3.2)	5/10	0.15 (96.8)	3.36 (85.4)	2.19 (55.6)	0.54 (13.6)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15FDSS-DFF6-1035			10/35							
15FDSS-DFF6-3565			35/65							
15FDSS-DFF8-0510	DFF8	0.19 (4.8)	5/10	0.25 (161.3)	4.30 (109.1)	2.94 (74.6)	0.60 (15.3)	0.94 (23.8)	1.19 (30.2)	15,000 (1034)
15FDSS-DFF8-1035			10/35							
15FDSS-DFF8-3565			35/65							
15FDSS-FNS2-0510	FNS2	0.13 (3.2)	5/10	0.06 (38.7)	2.79 (70.8)	1.50 (38.1)	—	0.63 (15.9)	0.63 (15.9)	15,000 (1034)
15FDSS-FNS2-1035			10/35							
15FDSS-FNS2-3565			35/65							
15FDSS-FNS4-0510	FNS4	0.19 (4.8)	5/10	0.15 (96.8)	4.15 (105.5)	2.19 (55.6)	—	0.94 (23.8)	1.00 (25.4)	15,000 (1034)
15FDSS-FNS4-1035			10/35							
15FDSS-FNS4-3565			35/65							
15FDSS-FNS6-0510	FNS6	0.19 (4.8)	5/10	0.15 (96.8)	4.15 (105.5)	2.19 (55.6)	—	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15FDSS-FNS6-1035			10/35							
15FDSS-FNS6-3565			35/65							
15FDSS-FNS8-0510	FNS8	0.31 (7.9)	5/10	0.25 (161.3)	5.27 (133.8)	2.94 (74.6)	—	1.38 (35.0)	1.38 (35.0)	15,000 (1034)
15FDSS-FNS8-1035			10/35							
15FDSS-FNS8-3565			35/65							

Note: Dimensions are for reference only and are subject to change.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

15FC Series: 15,000 psig (1034 bar)

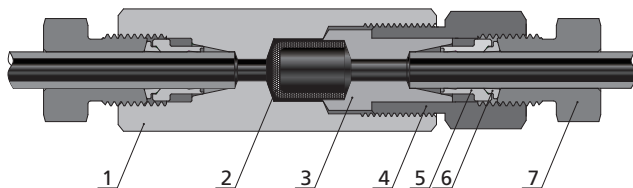
Cup-Type Line Filters

Features

- Working temperature ranges:
 - Tubing connection: -60°F to 660°F (-50°C to 350°C)
 - Pipe connection: -60°F to 400°F (-50°C to 204°C)
- Connection types and sizes:
 - 1/8", 1/4", 3/8" and 1/2" O.D. tubing
 - 1/8", 1/4", 3/8" and 1/2" Female NPT
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 µm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

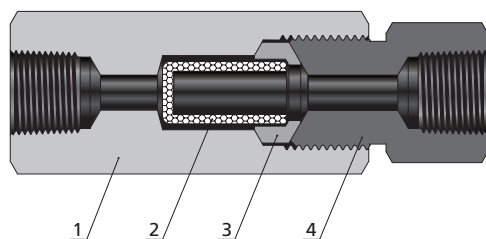
Standard Materials of Construction

Tubing Connection



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
5	Front Ferrule	316 SS
6	Rear Ferrule	316 SS
7	Nut	316 SS
Lubricant		Molybdenum Disulfide

Pipe Connection

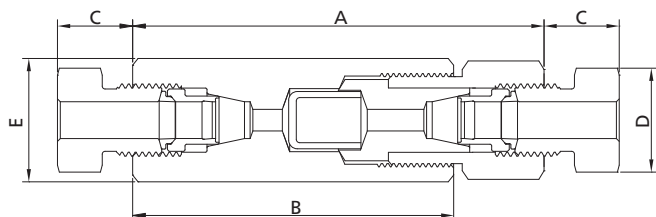


Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
Lubricant		Molybdenum Disulfide

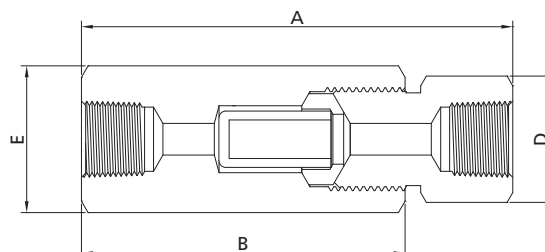
Wetted component listed in italics.

Ordering Information and Dimensions

Tubing Connection



Pipe Connection



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
15FCSS-DFF4-5	DFF4	0.19 (4.8)	5	0.81 (522.6)	3.34 (84.8)	2.72 (69.0)	0.52 (13.3)	0.63 (15.9)	0.81 (20.6)	15,000 (1034)
15FCSS-DFF4-35			35							
15FCSS-DFF4-65			65							
15FCSS-DFF6-5	DFF6	0.31 (7.9)	5	0.81 (522.6)	3.51 (89.2)	2.95 (75.0)	0.54 (13.6)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)
15FCSS-DFF6-35			35							
15FCSS-DFF6-65			65							
15FCSS-DFF8-5	DFF8	0.44 (11.1)	5	1.53 (987.1)	4.30 (109.2)	3.62 (92.0)	0.60 (15.3)	0.94 (23.8)	1.38 (35.0)	15,000 (1034)
15FCSS-DFF8-35			35							
15FCSS-DFF8-65			65							
15FCSS-FNS2-5	FNS2	0.13 (3.2)	5	0.38 (245.0)	2.58 (65.6)	1.94 (49.2)	—	0.63 (15.9)	0.63 (15.9)	15,000 (1034)
15FCSS-FNS2-35			35							
15FCSS-FNS2-65			65							
15FCSS-FNS4-5	FNS4	0.31 (7.9)	5	0.81 (522.6)	3.66 (93.0)	2.69 (68.3)	—	0.94 (23.8)	1.00 (25.4)	15,000 (1034)
15FCSS-FNS4-35			35							
15FCSS-FNS4-65			65							
15FCSS-FNS6-5	FNS6	0.31 (7.9)	5	0.81 (522.6)	3.66 (93.0)	2.69 (68.3)	—	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15FCSS-FNS6-35			35							
15FCSS-FNS6-65			65							
15FCSS-FNS8-5	FNS8	0.44 (11.1)	5	1.53 (987.1)	4.55 (115.6)	3.37 (85.7)	—	1.38 (35.0)	1.38 (35.0)	15,000 (1034)
15FCSS-FNS8-35			35							
15FCSS-FNS8-65			65							

Note: Dimensions are for reference only and are subject to change.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

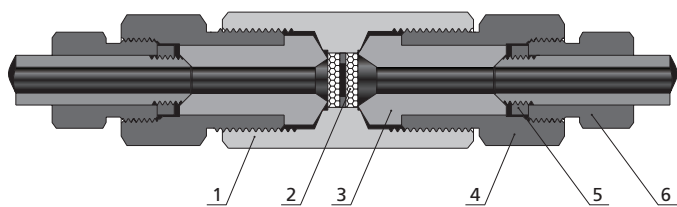
20FD Series: 20,000 psig (1379 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing size available in 9/16"
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 µm; other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

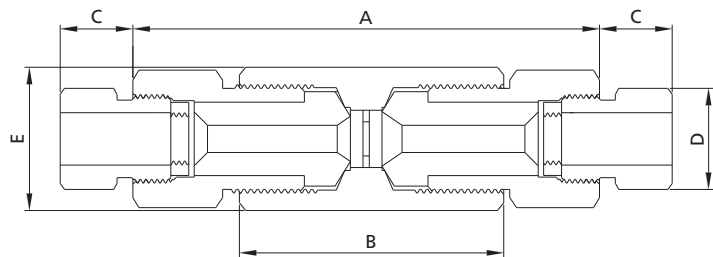
Standard Materials of Construction



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
5	Collar	316 SS
6	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
20FDSS-MF9-0510	MF9	0.31 (7.9)	5/10	0.25 (161.3)	4.30 (109.2)	2.94 (74.6)	0.55 (14.0)	0.94 (23.8)	1.38 (35.0)	20,000 (1379)
20FDSS-MF9-1035			10/35							
20FDSS-MF9-3565			35/65							

Note: Dimensions are for reference only and are subject to change.

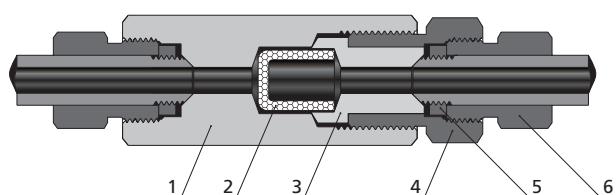
20FC Series: 20,000 psig (1379 bar)

Cup-Type Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 μm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

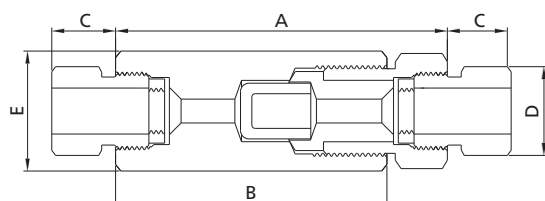
Standard Materials of Construction



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	<i>Sintered 316 SS</i>
3	Cover	316 SS
4	Gland Nut	316 SS
5	Collar	316 SS
6	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size μm	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
20FCSS-MF4-5	MF4	0.13 (3.2)	5	0.81 (522.6)	2.94 (74.1)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20FCSS-MF4-35			35							
20FCSS-MF4-65			65							
20FCSS-MF6-5	MF6	0.22 (5.5)	5	0.81 (522.6)	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.63 (15.9)	1.00 (25.4)	20,000 (1379)
20FCSS-MF6-35			35							
20FCSS-MF6-65			65							
20FCSS-MF9-5	MF9	0.36 (9.1)	5	1.53 (987.1)	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.8)	1.38 (35.0)	20,000 (1379)
20FCSS-MF9-35			35							
20FCSS-MF9-65			65							
20FCSS-MF12-5	MF12	0.52 (13.1)	5	2.65 (1709.7)	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)	20,000 (1379)
20FCSS-MF12-35			35							
20FCSS-MF12-65			65							
20FCSS-MF16-5	MF16	0.69 (17.5)	5	5.00 (3225.8)	6.62 (168.2)	5.75 (146.1)	0.74 (18.7)	1.38 (35.0)	2.12 (54.0)	20,000 (1379)
20FCSS-MF16-35			35							
20FCSS-MF16-65			65							

Note: Dimensions are for reference only and are subject to change.

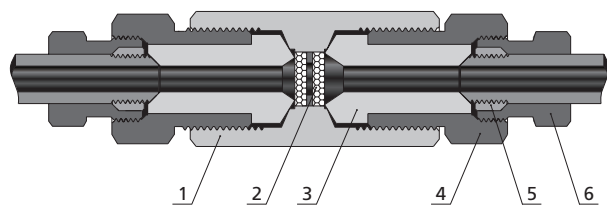
60FD Series: 60,000 psig (4137 bar)

Dual-Disc Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8" and 9/16"
- Dual-disc design allows the upstream filter element to trap the large particulate contaminants before they can reach and clog the smaller pore-size downstream element
- Downstream/upstream element nominal pore size: 5/10, 10/35 and 35/65 µm; other element combinations available on request
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

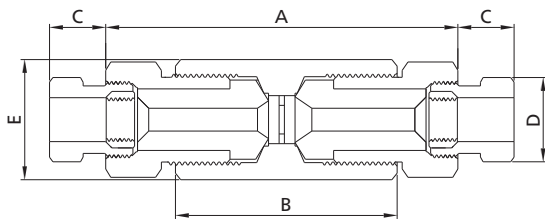
Standard Materials of Construction



Item	Component	Material Grade
1	Body	316 SS
2	Filter Element	Sintered 316 SS
3	Cover	316 SS
4	Gland Nut	316 SS
5	Collar	316 SS
6	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
60FDSS-HF4-0510	HF4	0.09 (2.4)	5/10	0.07 (45.2)	4.73 (120.1)	3.00 (76.2)	0.47 (11.9)	0.63 (15.9)	1.19 (30.2)	60,000 (4137)
60FDSS-HF4-1035			10/35							
60FDSS-HF4-3565			35/65							
60FDSS-HF6-0510	HF6	0.13 (3.2)	5/10	0.07 (45.2)	5.12 (130.2)	3.00 (76.2)	0.61 (15.8)	0.75 (19.1)	1.19 (30.2)	60,000 (4137)
60FDSS-HF6-1035			10/35							
60FDSS-HF6-3565			35/65							
60FDSS-HF9-0510	HF9	0.19 (4.8)	5/10	0.15 (96.8)	5.81 (147.6)	3.38 (85.9)	0.95 (24.1)	1.19 (30.2)	1.50 (38.1)	60,000 (4137)
60FDSS-HF9-1035			10/35							
60FDSS-HF9-3565			35/65							

Note: Dimensions are for reference only and are subject to change.

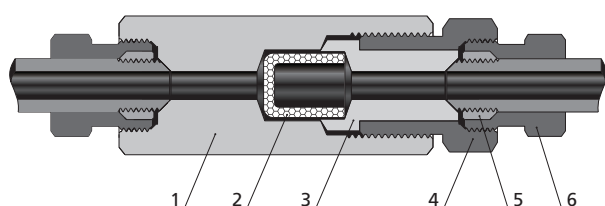
60FC Series: 60,000 psig (4137 bar)

Cup-Type Line Filters

Features

- Working temperature range: -60°F to 660°F (-50°C to 350°C)
- Tubing sizes available in 1/4", 3/8" and 9/16"
- Cup design to offer about six times the effective filter area as compared to disc-type units, and recommended in systems requiring both maximum filter surface area and high flow rates
- Nominal pore sizes for filter elements: 5, 35 and 65 µm
- Easy to replace filter elements
- Pressure differential not to exceed 1000 psig (69 bar) in a flowing condition

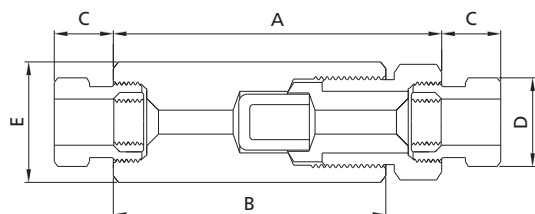
Standard Materials of Construction



Item	Component	Material Grade
1	<i>Body</i>	316 SS
2	<i>Filter Element</i>	Sintered 316 SS
3	<i>Cover</i>	316 SS
4	Gland Nut	316 SS
5	Collar	316 SS
6	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

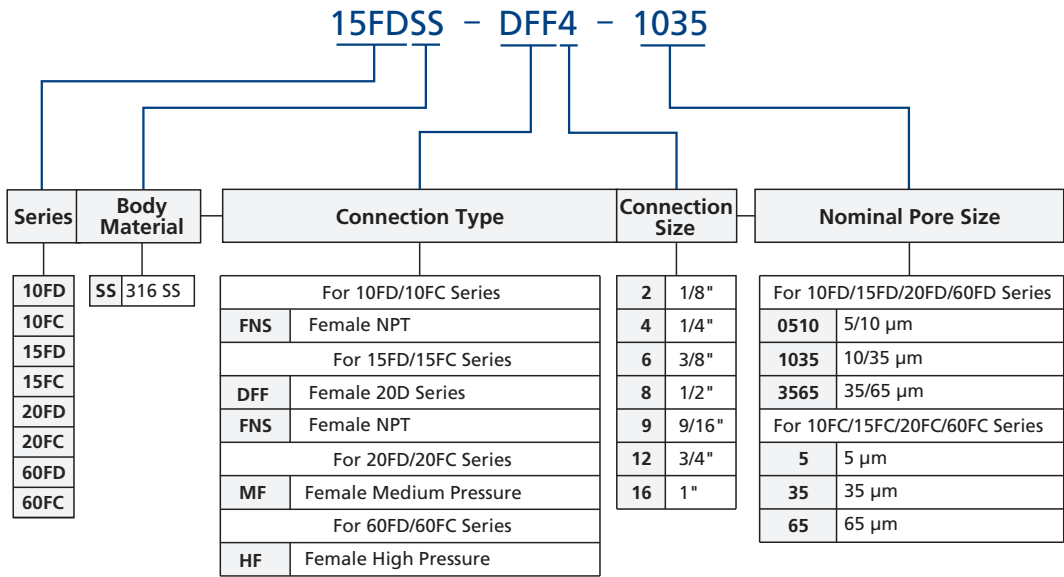
Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Nominal Pore Size (µm)	Effective Filter Element Area in. ² (mm ²)	Dimensions, in. (mm)					Working Pressure psig (bar)
					A	B	C	D (Hex)	E (Hex)	
60FCSS-HF4-5	HF4	0.09 (2.4)	5	1.29 (832.3)	4.19 (106.4)	3.38 (85.9)	0.47 (11.9)	0.63 (15.9)	1.38 (35.0)	60,000 (4137)
60FCSS-HF4-35			35							
60FCSS-HF4-65			65							
60FCSS-HF6-5	HF6	0.13 (3.2)	5	1.29 (832.3)	4.62 (117.4)	3.62 (91.9)	0.61 (15.6)	0.75 (19.1)	1.38 (35.0)	60,000 (4137)
60FCSS-HF6-35			35							
60FCSS-HF6-65			65							
60FCSS-HF9-5	HF9	0.19 (4.8)	5	1.29 (832.3)	5.25 (133.4)	4.06 (103.1)	0.95 (24.1)	1.19 (30.2)	1.50 (38.1)	60,000 (4137)
60FCSS-HF9-35			35							
60FCSS-HF9-65			65							

Note: Dimensions are for reference only and are subject to change.

Ordering Number Description



- Notes: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Valves

Ball Valves and Pneumatic Ball Valves



E-02

Needle Valves and Pneumatic Needle Valves



E-11

Check Valves



E-53

Metering Valves



E-66

Relief Valves



E-71

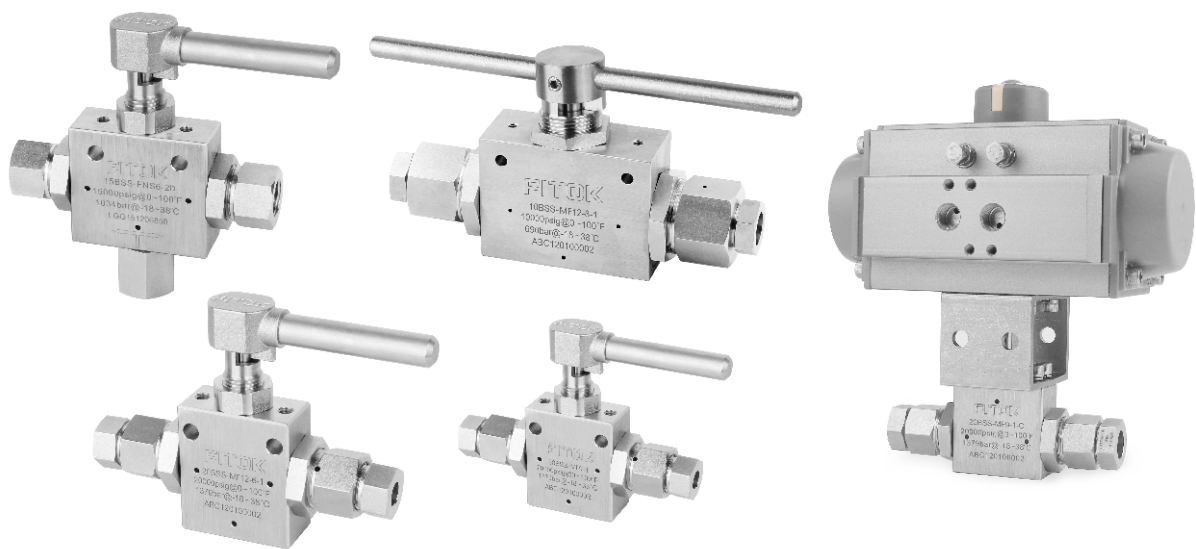
Bleed Valves and Block & Bleed Valves



E-83

Ball Valves and Pneumatic Ball Valves

10B Series: 10,000 psig (690 bar)
15B Series: 15,000 psig (1034 bar)
20B Series: 20,000 psig (1379 bar)



Contents

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Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Features

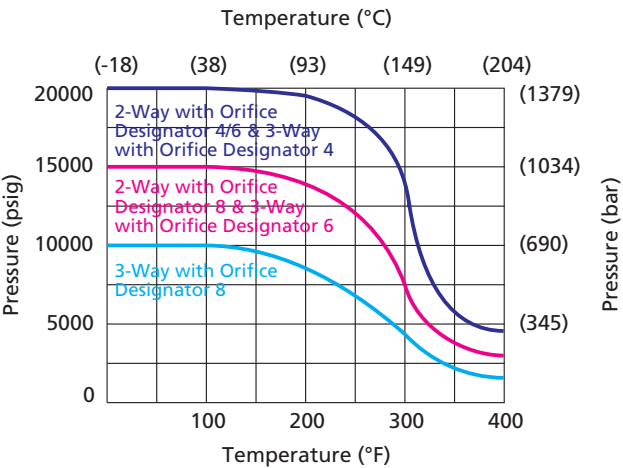
- Working pressure up to 20,000 psig (1379 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other O-ring materials available
- PEEK seats offer excellent resistance to chemicals, heat and abrasion
- Trunnion mounted stem design
- Full-port flow path to minimize pressure drop
- 2-way and 3-way valve configurations optional, with bidirectional flow for 2-way valves
- Pneumatic actuator optional with air pressure from 80 psig to 116 psig (5.5 bar to 8 bar)

Working Pressure at Ambient Temperature

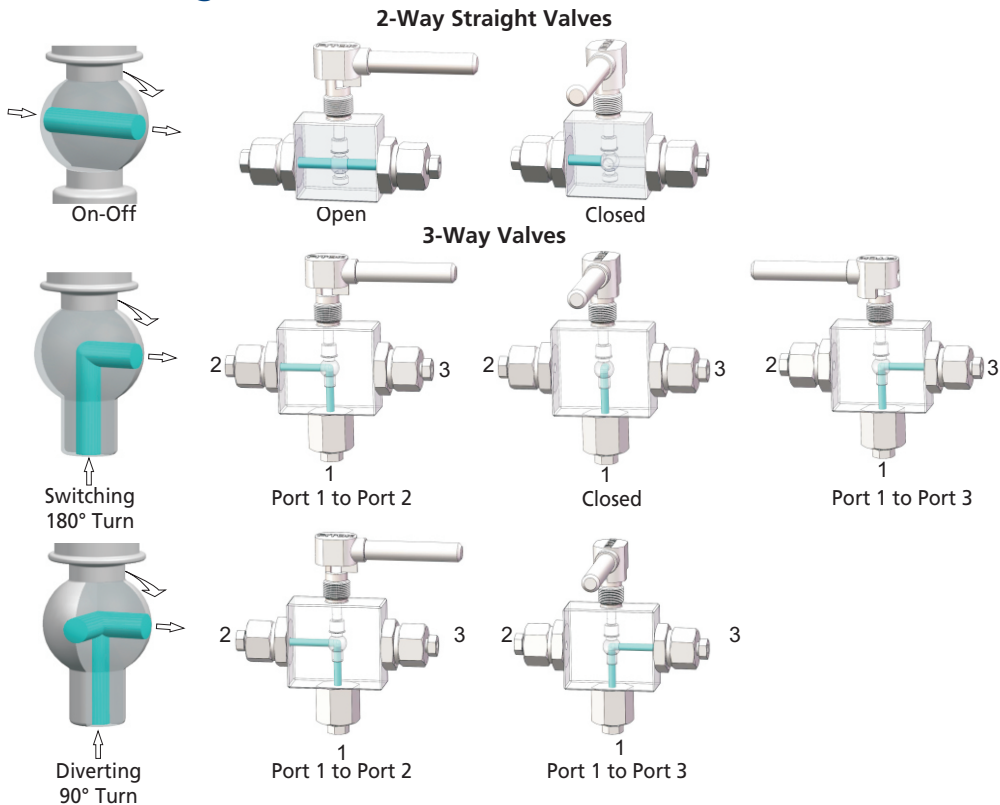
Flow Pattern	Orifice		Working Pressure ^① psig (bar)
	Designator	Dimensions, in. (mm)	
2-Way	4	0.25 (6.35)	20,000 (1379)
	6	0.375 (9.5)	20,000 (1379)
	8	0.5 (12.7)	15,000 (1034)
3-Way	4	0.19 (4.8)	20,000 (1379)
	6	0.33 (8.3)	15,000 (1034)
	8	0.5 (12.7)	10,000 (690)

① The working pressure of NPT connections 1/2" or under is 15,000 psig (1034 bar), while that of NPT connections over 1/2" is 10,000 psig (690 bar).

Pressure vs. Temperature Curve



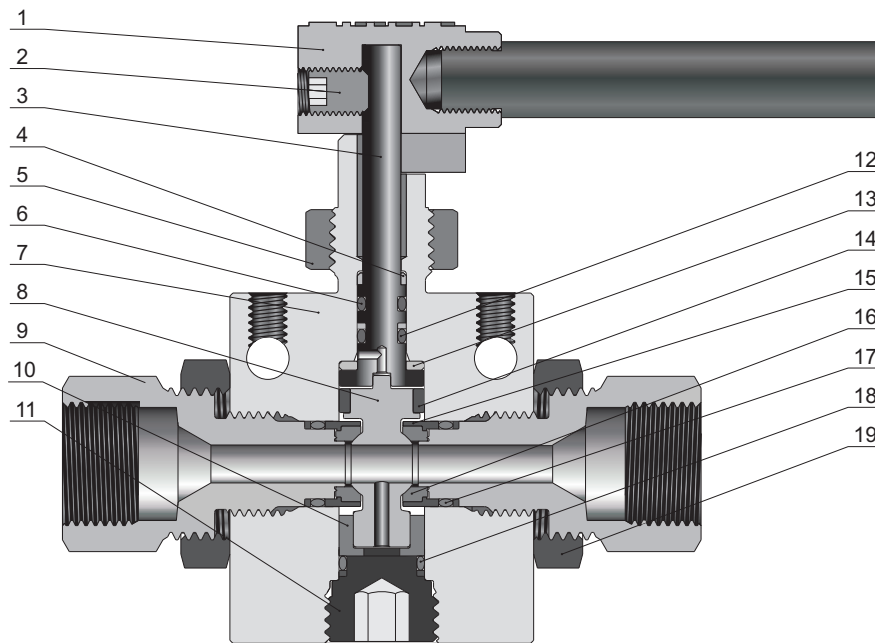
Flow Configuration



Note: The side connection is not allowed to work as inlet.

Standard Materials of Construction

2-Way Straight Valves



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	<i>Stem</i>	<i>316 SS</i>
4	Stem Backup	PEEK
5	Panel Nut	316 SS
6	Stem O-Ring	FKM
7	<i>Body</i>	<i>316 SS</i>
8	<i>Ball</i>	<i>316 SS</i>
9	<i>Seat Gland</i>	<i>316 SS</i>
10	<i>Ball Bearing</i>	<i>PEEK</i>
11	<i>Plug</i>	<i>316 SS</i>
12	<i>Stem O-Ring</i>	<i>FKM</i>
13	<i>Thrust Washer</i>	<i>PEEK</i>
14	<i>Ball Bearing</i>	<i>PEEK</i>
15	<i>Seat Retainer</i>	<i>316 SS</i>
16	<i>Seat</i>	<i>PEEK</i>
17	<i>Seat Gland O-Ring</i>	<i>FKM</i>
18	<i>Plug O-Ring</i>	<i>FKM</i>
19	Lock Nut	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Fittings

Tubing

Quick Couplings

Line Filters

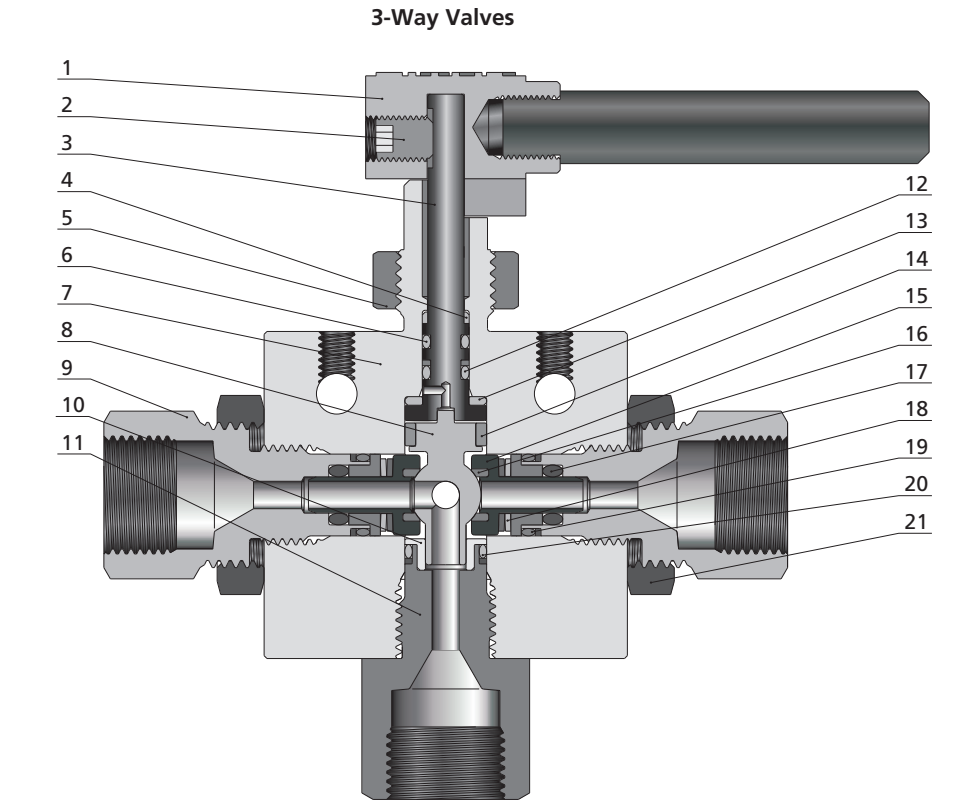
Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Fittings
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Subsea Valves
Part Number Crossover Charts

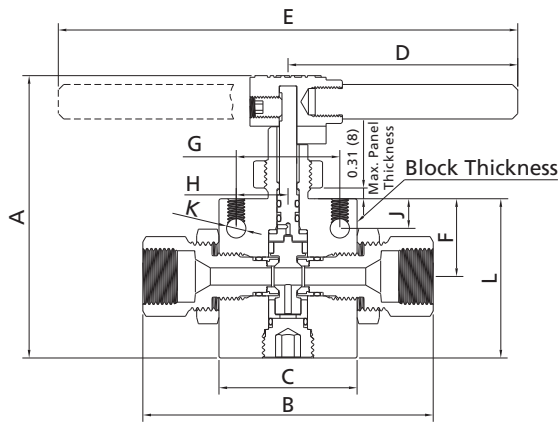


Item	Component	Material Grade
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	Stem	316 SS
4	Stem Backup	PEEK
5	Panel Nut	316 SS
6	Stem O-Ring	FKM
7	<i>Body</i>	<i>316 SS</i>
8	<i>Ball</i>	<i>316 SS</i>
9	<i>Seat Gland</i>	<i>316 SS</i>
10	<i>Ball Bearing</i>	<i>Copper Alloy</i>
11	<i>Bottom Gland</i>	<i>316 SS</i>
12	<i>Stem O-Ring</i>	<i>FKM</i>
13	<i>Thrust Washer</i>	<i>PEEK</i>
14	<i>Ball Bearing</i>	<i>PEEK</i>
15	<i>Seat Retainer</i>	<i>S17400</i>
16	<i>Seat</i>	<i>Carbon Filled PEEK</i>
17	<i>Seat Retainer O-Ring</i>	<i>FKM</i>
18	<i>Belleville Washer</i>	<i>S17700</i>
19	<i>Seat Gland O-Ring</i>	<i>FKM</i>
20	<i>Bottom Gland O-Ring</i>	<i>FKM</i>
21	Lock Nut	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

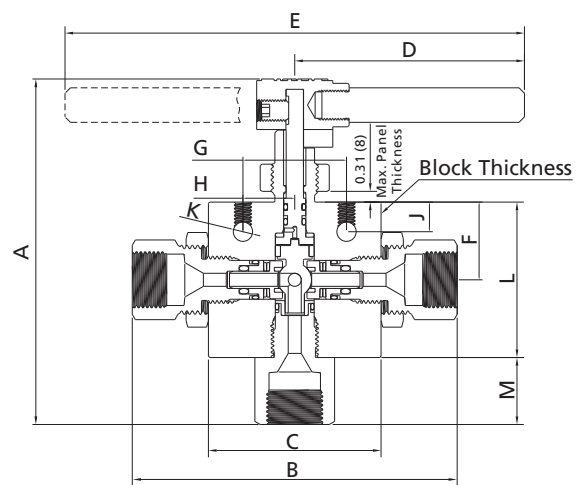
Wetted components listed in italics.

Dimensions

2-Way Straight Valves



3-Way Valves

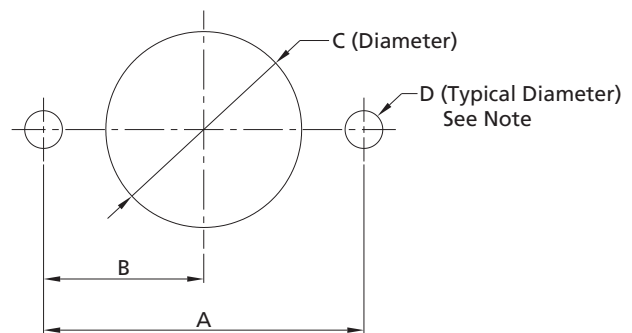


Flow Pattern	Orifice Designator	Dimensions, in. (mm)												Block Thickness
		A	B	C	D	E	F	G	H	J	K	L	M	
2-Way	4	4.09 (103.9)	4.19 (106.5)	2.00 (50.8)	3.33 (84.5)		1.13 (28.6)	1.50 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	2.31 (58.6)		1.00 (25.4)
	6	4.84 (121.0)	5.53 (140.3)	3.00 (76.2)	4.96 (126.0)		1.38 (34.9)	2.00 (50.8)	1.00 (25.4)	0.41 (10.3)	0.28 (7.1)	2.95 (74.9)		1.38 (34.9)
	8	5.39 (136.8)	7.73 (196.5)	4.12 (104.6)		10.25 (260.0)	1.66 (42.2)	3.00 (76.2)	1.50 (38.1)	0.50 (12.7)	0.28 (7.1)	3.52 (89.4)		1.75 (44.5)
3-Way	4	5.00 (127.0)	4.70 (119.5)	2.50 (63.5)	3.33 (84.5)		1.13 (28.6)	1.50 (38.1)	0.75 (19.1)	0.43 (10.9)	0.28 (7.1)	2.25 (57.2)	0.48 (12.3)	1.00 (25.4)
	6	5.88 (149.3)	5.53 (140.3)	3.00 (76.2)	4.96 (126.0)		1.38 (34.9)	2.00 (50.8)	1.00 (25.4)	0.41 (10.3)	0.28 (7.1)	2.87 (73.0)	1.89 (30.2)	1.38 (34.9)
	8	6.91 (175.6)	7.77 (197.4)	4.12 (104.6)		10.25 (260.0)	1.66 (42.2)	3.00 (76.2)	1.50 (38.1)	0.50 (12.7)	0.28 (7.1)	3.34 (84.9)	1.70 (43.2)	1.75 (44.5)

Note: All dimensions are for reference only and are subject to change.

Panel Mounting Dimensions

Flow Pattern	Orifice Designator	Dimensions, in. (mm)			
		A	B	C	D
2-Way	4	1.50 (38.1)	0.75 (19.1)	0.75 (19.1)	0.28 (7.1)
	6	2.00 (50.8)	1.00 (25.4)	1.13 (28.6)	0.28 (7.1)
	8	3.00 (76.2)	1.50 (38.1)	1.44 (36.5)	0.28 (7.1)
3-Way	4	1.50 (38.1)	0.75 (19.1)	0.75 (19.1)	0.28 (7.1)
	6	2.00 (50.8)	1.00 (25.4)	1.13 (28.6)	0.28 (7.1)
	8	3.00 (76.2)	1.50 (38.1)	1.44 (36.5)	0.28 (7.1)



Notes: 1. Body mounting 1/4-20 thread.
2. All dimensions are for reference only and are subject to change.

Ordering Information and Dimensions

Flow Pattern	Orifice Designator	Connection	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)
2-Way	4	FNS2	0.25 (6.35)	1.51	15BSS-FNS2-4-1	15,000 (1034)
		FNS4	0.25 (6.35)	1.51	15BSS-FNS4-4-1	
		FNS6	0.25 (6.35)	1.51	15BSS-FNS6-4-1	
		FNS8	0.25 (6.35)	1.51	15BSS-FNS8-4-1	
		DFF2	0.094 (2.4)	0.16	15BSS-DFF2-4-1	
		DFF4	0.19 (4.8)	0.82	20BSS-DFF4-4-1	20,000 (1379)
		DFF6	0.25 (6.35)	1.51	20BSS-DFF6-4-1	
		DFF8	0.25 (6.35)	1.51	20BSS-DFF8-4-1	
		MF4	0.11 (2.8)	0.23	20BSS-MF4-4-1	
		MF6	0.2 (5.2)	0.98	20BSS-MF6-4-1	
		MF9	0.25 (6.35)	1.51	20BSS-MF9-4-1	
		HF4	0.094 (2.4)	0.16	20BSS-HF4-4-1	
		HF6	0.125 (3.2)	0.32	20BSS-HF6-4-1	
		HF9	0.19 (4.8)	0.82	20BSS-HF9-4-1	
	6	FNS4	0.375 (9.5)	3.51	15BSS-FNS4-6-1	15,000 (1034)
		FNS6	0.375 (9.5)	3.51	15BSS-FNS6-6-1	
		FNS8	0.375 (9.5)	3.51	15BSS-FNS8-6-1	
		DFF8	0.375 (9.5)	3.51	20BSS-DFF8-6-1	20,000 (1379)
		DFF9	0.375 (9.5)	3.51	20BSS-DFF9-6-1	
		MF6	0.2 (5.2)	0.98	20BSS-MF6-6-1	
		MF9	0.31 (7.9)	2.36	20BSS-MF9-6-1	
		MF12	0.375 (9.5)	3.51	20BSS-MF12-6-1	
	8	FNS12	0.5 (12.7)	6.31	10BSS-FNS12-8-1	10,000 (690)
		FNS16	0.5 (12.7)	6.31	10BSS-FNS16-8-1	15,000 (1034)
		DFF12	0.5 (12.7)	6.31	15BSS-DFF12-8-1	
		MF12	0.5 (12.7)	6.31	15BSS-MF12-8-1	
		MF16	0.5 (12.7)	6.31	15BSS-MF16-8-1	
3-Way	4	FNS2	0.19 (4.8)	0.5	15BSS-FNS2-4-2	15,000 (1034)
					15BSS-FNS2-4-2D	
		FNS4	0.19 (4.8)	0.5	15BSS-FNS4-4-2	
					15BSS-FNS4-4-2D	
		FNS6	0.19 (4.8)	0.5	15BSS-FNS6-4-2	
					15BSS-FNS6-4-2D	
		FNS8	0.19 (4.8)	0.5	15BSS-FNS8-4-2	
					15BSS-FNS8-4-2D	
		DFF2	0.094 (2.4)	0.13	15BSS-DFF2-4-2	
					15BSS-DFF2-4-2D	
		DFF4	0.19 (4.8)	0.5	20BSS-DFF4-4-2	20,000 (1379)
					20BSS-DFF4-4-2D	
		DFF6	0.19 (4.8)	0.5	20BSS-DFF6-4-2	
					20BSS-DFF6-4-2D	
		DFF8	0.19 (4.8)	0.5	20BSS-DFF8-4-2	
					20BSS-DFF8-4-2D	
		MF4	0.11 (2.8)	0.17	20BSS-MF4-4-2	
					20BSS-MF4-4-2D	
		MF6	0.19 (4.8)	0.5	20BSS-MF6-4-2	
					20BSS-MF6-4-2D	
		MF9	0.19 (4.8)	0.5	20BSS-MF9-4-2	
					20BSS-MF9-4-2D	

Ordering Information and Dimensions (continued)

Flow Pattern	Orifice Designator	Connection	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)
3-Way	4	HF4	0.094 (2.4)	0.13	20BSS-HF4-4-2	20,000 (1379)
					20BSS-HF4-4-2D	
		HF6	0.125 (3.2)	0.22	20BSS-HF6-4-2	
					20BSS-HF6-4-2D	
		HF9	0.19 (4.8)	0.5	20BSS-HF9-4-2	
					20BSS-HF9-4-2D	
	6	FNS4	0.33 (8.3)	2.1	15BSS-FNS4-6-2	15,000 (1034)
					15BSS-FNS4-6-2D	
		FNS6	0.33 (8.3)	2.1	15BSS-FNS6-6-2	
					15BSS-FNS6-6-2D	
		FNS8	0.33 (8.3)	2.1	15BSS-FNS8-6-2	
					15BSS-FNS8-6-2D	
		DFF8	0.33 (8.3)	2.1	15BSS-DFF8-6-2	
					15BSS-DFF8-6-2D	
		DFF9	0.33 (8.3)	2.1	15BSS-DFF9-6-2	
					15BSS-DFF9-6-2D	
		MF6	0.2 (5.2)	0.81	15BSS-MF6-6-2	
					15BSS-MF6-6-2D	
		MF9	0.31 (7.9)	1.9	15BSS-MF9-6-2	
					15BSS-MF9-6-2D	
		MF12	0.33 (8.3)	2.1	15BSS-MF12-6-2	
					15BSS-MF12-6-2D	
	8	FNS12	0.5 (12.7)	4.4	10BSS-FNS12-8-2	10,000 (690)
					10BSS-FNS12-8-2D	
		FNS16	0.5 (12.7)	4.4	10BSS-FNS16-8-2	
					10BSS-FNS16-8-2D	
		MF12	0.5 (12.7)	4.4	10BSS-MF12-8-2	
					10BSS-MF12-8-2D	
		MF16	0.5 (12.7)	4.4	10BSS-MF16-8-2	
					10BSS-MF16-8-2D	

Fittings

Tubing

Quick Couplings

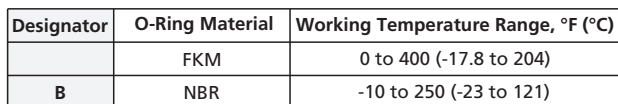
Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts



Notes: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.

2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Needle Valves and Pneumatic Needle Valves

10N Series: 10,000 psig (690 bar)

15N Series: 15,000 psig (1034 bar)

20N Series: 20,000 psig (1379 bar)

30N Series: 30,000 psig (2068 bar)

60N Series: 60,000 psig (4137 bar)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Contents

Notes

E-13

Needle Valves

10N Series: 10,000 psig (690 bar)

E-13

15N Series: 15,000 psig (1034 bar)

E-19

20N Series: 20,000 psig (1379 bar)

E-26

30N Series: 30,000 psig (2068 bar)

E-31

60N Series: 60,000 psig (4137 bar)

E-35

Stem Types

E-39

Needle Valve Lockout Device

E-39

Pneumatic Needle Valves

Piston Style Air to Open (Normally Closed)

E-40

Piston Style Air to Close (Normally Open)

E-46

Mounting Instructions

E-50

Maintenance Components

E-51

Ordering Number Description

E-52

Notes

- ⦿ Packing adjustment may be required during the service life of the valve
- ⦿ For better quality maintenance, FITOK medium & high pressure needle valves should be kept in half open position in warehouse

Needle Valves

10N Series: 10,000 psig (690 bar)

Features

- ⦿ High tensile 316 stainless steel for the valve body and S17400 stainless steel for lower stem
- ⦿ Metal-to-metal seating to achieve ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Reliable packing gland locking device
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
9/16" Female Medium Pressure	MF9	0.359 (9.12)	1.75	10,000 (690)	-100°F~1200°F (-73°C~649°C)
3/4" Female Medium Pressure	MF12	0.516 (13.10)	2.80	10,000 (690)	
1" Female Medium Pressure	MF16	0.688 (17.48)	5.20	10,000 (690)	
3/4" Female NPT	FNS12	0.437 (11.10)	2.50	10,000 (690)	-100°F~400°F (-73°C~204°C)
3/4" Female ISO Tapered Thread	FRT12				
1" Female NPT	FNS16	0.562 (14.27)	4.40	10,000 (690)	
1" Female ISO Tapered Thread	FRT16				

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by about 50% (based on water).

2. Packing Options

PTFE is the standard packing material, RPTFE glass, graphite and extended stuffing box with graphite also available. Graphite packing not recommended for hydrogen or helium service.

PTFE: -100°F~450°F (-73°C~232°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

Graphite: 0°F~800°F (-17.8°C~427°C)

Extended stuffing box with graphite: 0°F~1200°F (-17.8°C~649°C)

Fittings

Tubing

Quick Couplings

Line Filters

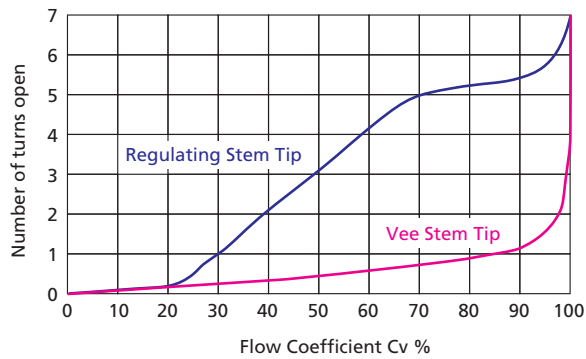
Valves

Sour Service Products

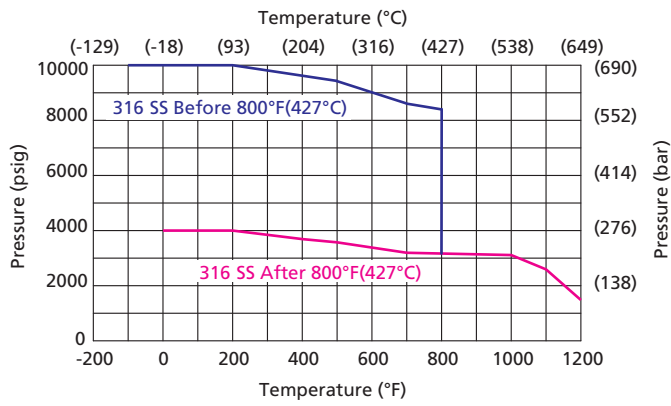
Subsea Valves

Part Number Crossover Charts

Flow Data at 100°F (38°C)

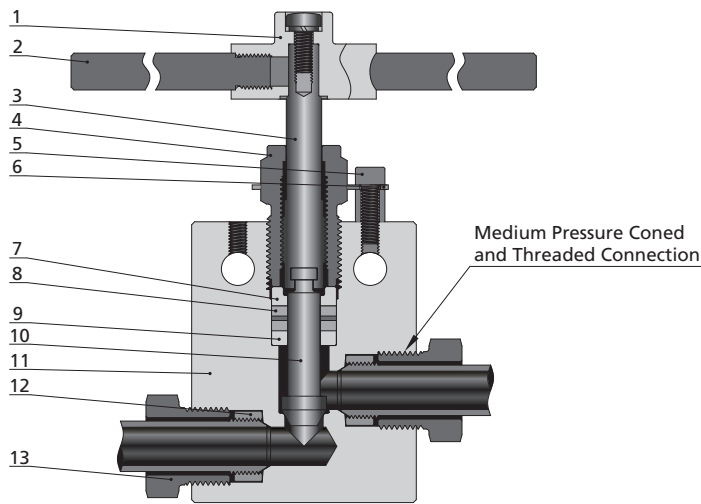


Pressure vs. Temperature Curve



Note: When temperature exceeds 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

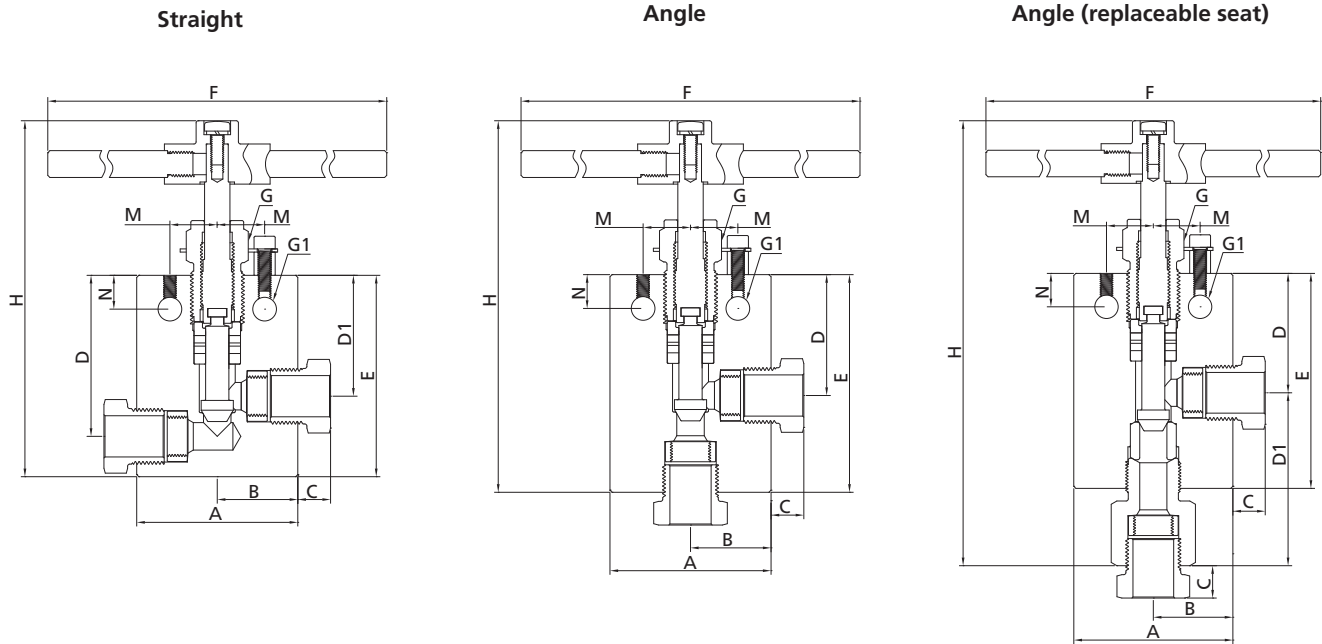
Standard Materials of Construction



Item	Component	Material Grade
1	Handle Head	Stainless Steel
2	Handle	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	C63000
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	Packing Ring	C63000
8	<i>Packing</i>	<i>PTFE/RPTFE Glass/Graphite/Extended Stuffing Box with Graphite</i>
9	<i>Packing Washer</i>	<i>S17400</i>
10	<i>Lower Stem</i>	<i>S17400</i>
11	<i>Body</i>	<i>316 SS</i>
12	Collar	316 SS (For Tubing Connections)
13	Gland	316 SS (For Tubing Connections)
	Lubricant	Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions (Tubing Connection, 2-Way)



Straight

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-1	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.20 (157.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-1	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.24 (183.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-1	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.33 (237.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

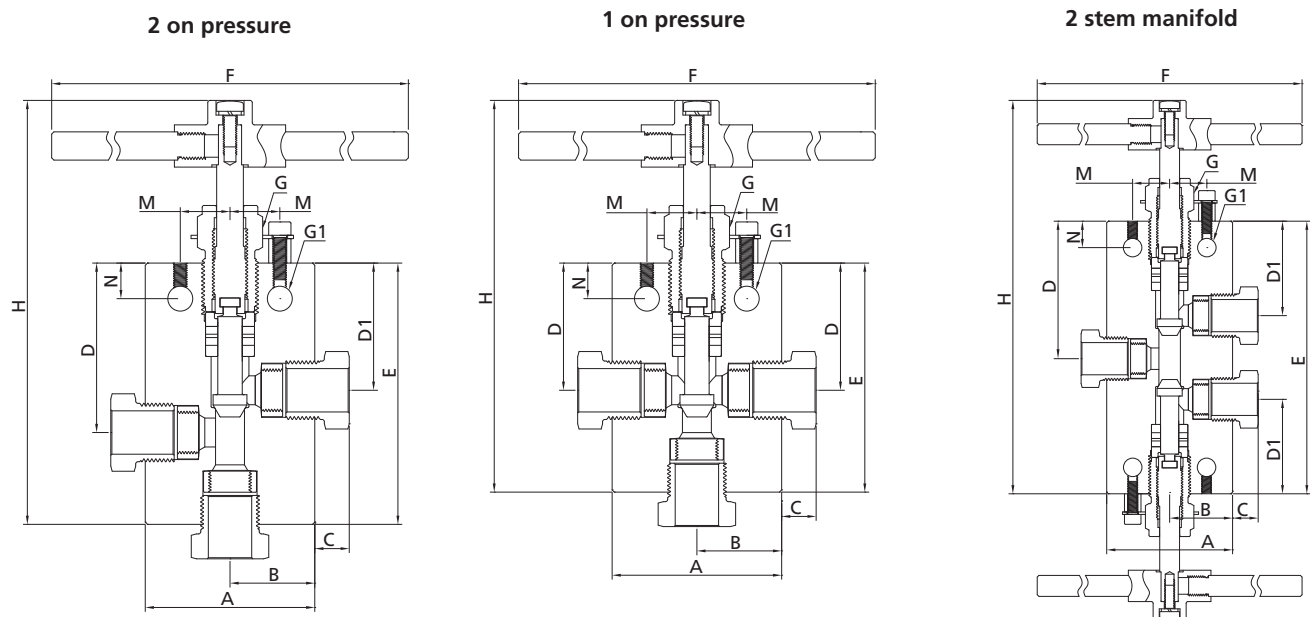
Angle

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-2	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-2	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-2	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.95 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Angle (replaceable seat)

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-3	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.57 (192.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-3	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.19 (81.1)	4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.92 (226.8)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-3	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.11 (104.5)	5.25 (133.3)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.62 (295.4)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-4	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.38 (60.5)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.95 (176.5)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-4	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.11 (206.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-4	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.58 (268.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

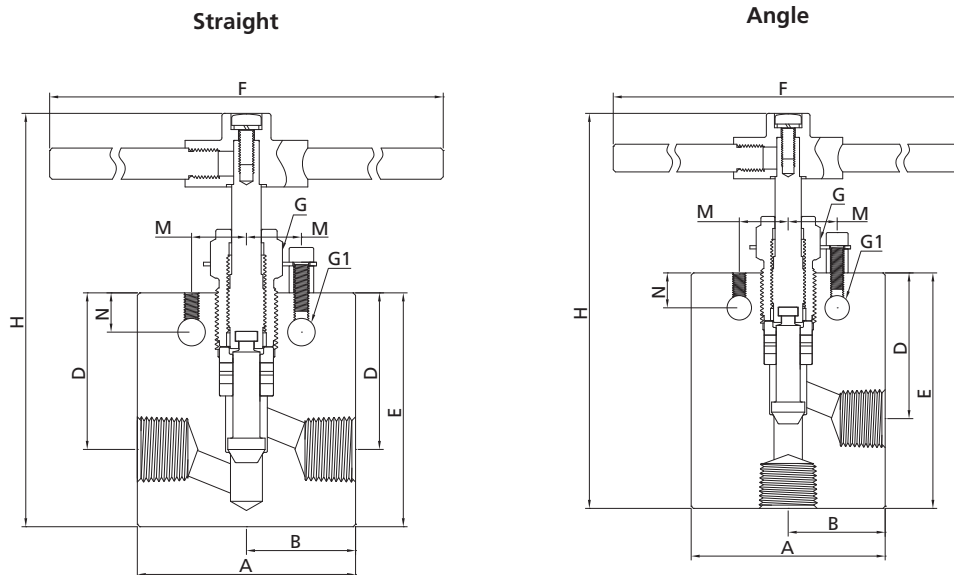
1 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-5	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.70 (170.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-5	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.73 (196.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-5	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.95 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

2 stem manifold

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-MF9-6	MF9	0.359 (9.12)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.6)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
10NSS-MF12-6	MF12	0.516 (13.11)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.98 (253.5)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
10NSS-MF16-6	MF16	0.688 (17.48)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.20 (310.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Ordering Information and Dimensions (Pipe Connection, 2-Way)



Straight																
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-FNS12-1	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)		2.63 (66.8)		3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.42 (188.6)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)	HN-L-03
10NSS-FRT12-1	FRT12															
10NSS-FNS16-1	FNS16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)		3.31 (84.1)		4.62 (117.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04
10NSS-FRT16-1	FRT16															

Angle																
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-FNS12-2	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)		2.63 (66.8)		4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)	HN-L-03
10NSS-FRT12-2	FRT12															
10NSS-FNS16-2	FNS16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)		3.31 (84.1)		5.12 (130.1)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04
10NSS-FRT16-2	FRT16															

Fittings

Tubing

Quick Couplings

Line Filters

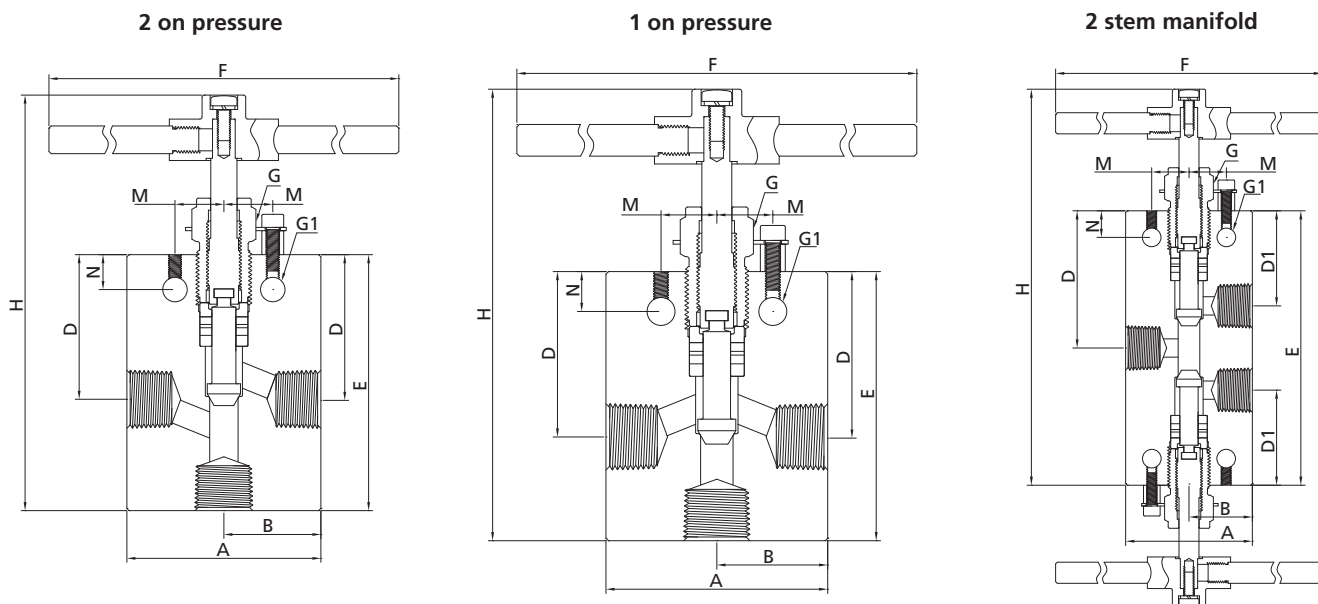
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Information and Dimensions (Pipe Connection, 3-Way)



2 on pressure

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-FNS12-4	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)		2.63 (66.8)		4.62 (117.4)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.40 (213.4)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)	HN-L-03
10NSS-FRT12-4	FRT12															
10NSS-FNS16-4	FNS16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)		3.31 (84.1)		5.88 (149.4)	10.25 (260.4)	1.64 (41.2)	0.56 (14.2)	10.70 (271.7)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04
10NSS-FRT16-4	FRT16															

1 on pressure

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-FNS12-5	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)		2.63 (66.8)		4.25 (107.9)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.92 (201.3)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)	HN-L-03
10NSS-FRT12-5	FRT12															
10NSS-FNS16-5	FNS16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)		3.31 (84.1)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.5)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04
10NSS-FRT16-5	FRT16															

2 stem manifold

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
10NSS-FNS12-6	FNS12	0.437 (11.10)	3.50 (88.9)	1.75 (44.5)		3.25 (82.6)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.28 (261.2)	0.88 (22.4)	0.63 (16.0)	1.75 (44.5)	HN-L-03
10NSS-FRT12-6	FRT12															
10NSS-FNS16-6	FNS16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)		3.75 (95.3)	2.81 (71.42)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04
10NSS-FRT16-6	FRT16															

Notes: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK group or our authorized distributors.

15N Series: 15,000 psig (1034 bar)

Features

- ⦿ High tensile 316 stainless steel for valve body and S17400 stainless steel for lower stem
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Reliable locking for packing gland
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/8" Female 20D Series Tube Fitting	DFF2	0.094 (2.39)	0.12	15, 000 (1034)	-100°F~800°F (-73°C~427°C)
1/4" Female 20D Series Tube Fitting	DFF4	0.188 (4.77)	0.65	15, 000 (1034)	
3/8" Female 20D Series Tube Fitting	DFF6	0.250 (6.35)	0.95	15, 000 (1034)	
1/2" Female 20D Series Tube Fitting	DFF8	0.375 (9.53)	1.90	15, 000 (1034)	
1/8" Female NPT	FNS2	0.078 (1.98)	0.11	15, 000 (1034)	-100°F~400°F (-73°C~204°C)
1/8" Female ISO Tapered Thread	FRT2				
1/4" Female NPT	FNS4	0.203 (5.16)	0.63	15, 000 (1034)	
1/4" Female ISO Tapered Thread	FRT4				
3/8" Female NPT	FNS6	0.219 (5.56)	0.75	15, 000 (1034)	
3/8" Female ISO Tapered Thread	FRT6				
1/2" Female NPT	FNS8	0.312 (7.92)	1.30	15, 000 (1034)	
1/2" Female ISO Tapered Thread	FRT8				

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

2. Packing Options

PTFE is the standard packing material, RPTFE glass and graphite also available. Graphite packing not recommended for hydrogen or helium service.

PTFE: -100°F~450°F (-73°C~232°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

Graphite: 0°F~800°F (-17.8°C~427°C)

Fittings

Tubing

Quick Couplings

Line Filters

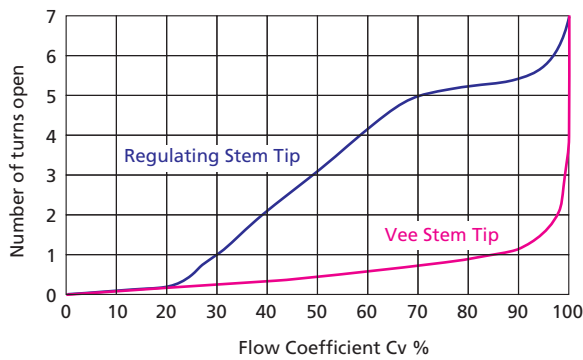
Valves

Sour Service Products

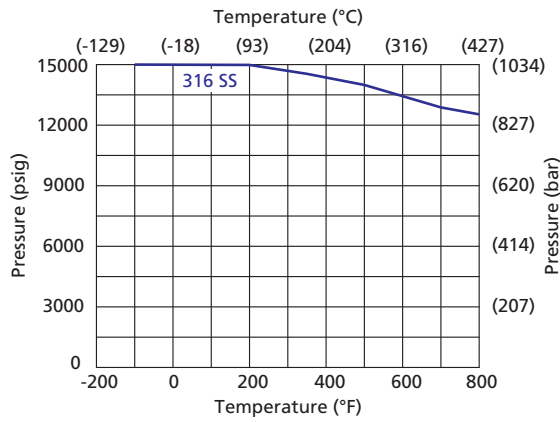
Subsea Valves

Part Number Crossover Charts

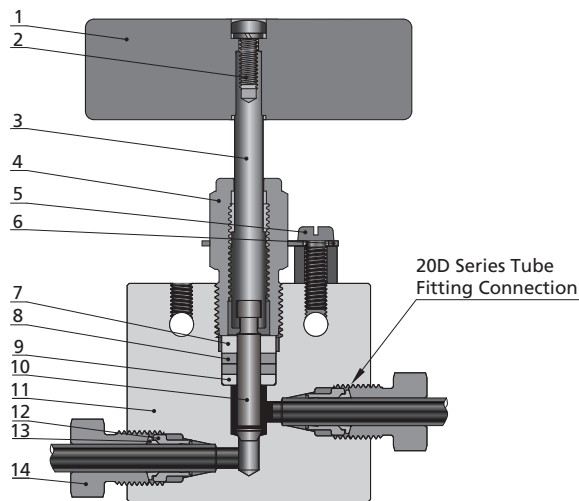
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



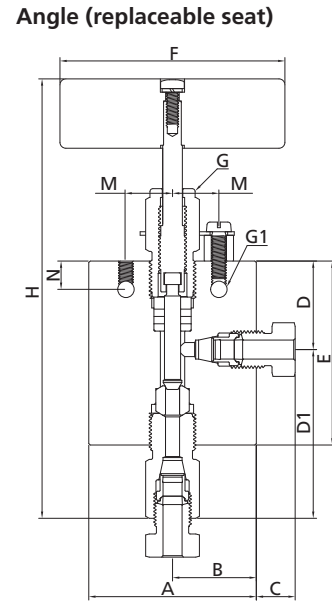
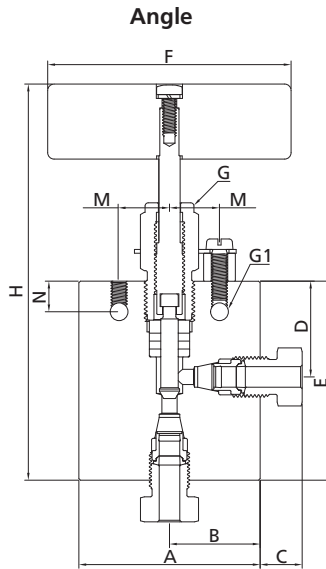
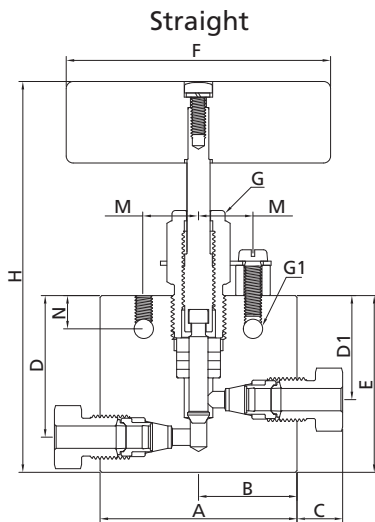
Standard Materials of Construction



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	C63000
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	Packing Ring	C63000
8	<i>Packing</i>	<i>PTFE/RPTFE/Graphite</i>
9	<i>Packing Washer</i>	<i>S17400</i>
10	<i>Lower Stem</i>	<i>S17400</i>
11	<i>Body</i>	<i>316 SS</i>
12	<i>Front Ferrule</i>	<i>316 SS (For Tubing Connections)</i>
13	<i>Rear Ferrule</i>	<i>316 SS (For Tubing Connections)</i>
14	<i>Nut</i>	<i>316 SS (For Tubing Connections)</i>
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions (Tubing Connection, 2-Way)



Straight

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-1	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.06 (27.0)	0.81 (20.6)	1.38 (35.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-1	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.90 (124.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-1	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.97 (126.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-1	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.21 (157.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

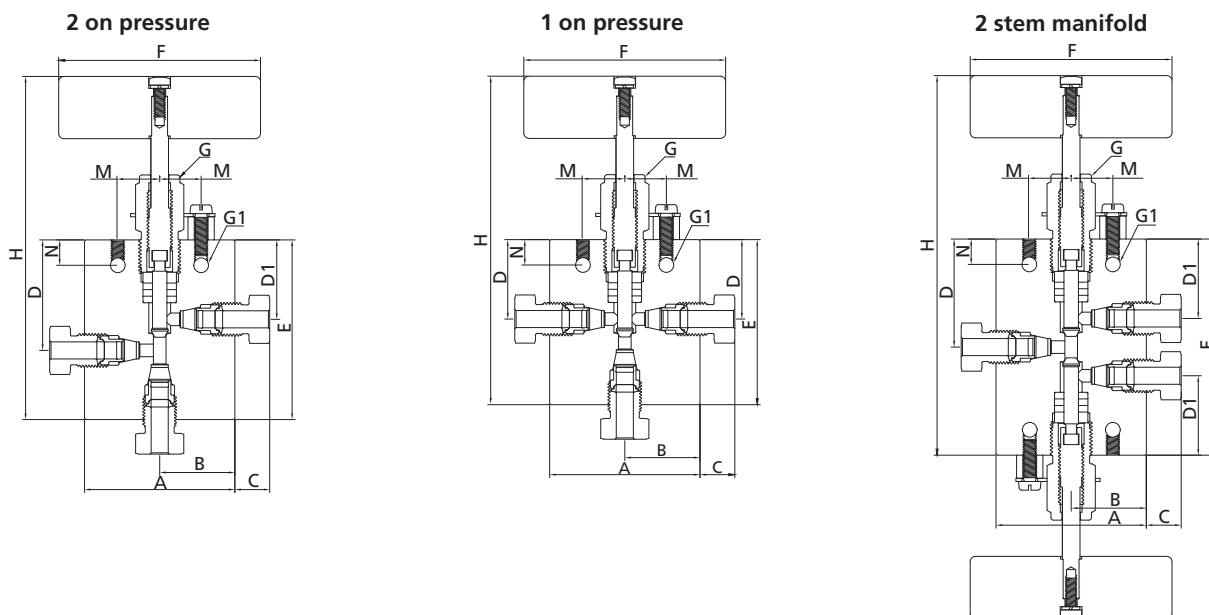
Angle

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-2	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)		1.72 (43.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.47 (88.2)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-2	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)		2.60 (66.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.50 (139.7)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-2	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)		2.56 (65.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.53 (140.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-2	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)		3.56 (90.5)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.89 (175.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

Angle (replaceable seat)

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-3	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)	1.44 (36.5)	1.56 (39.7)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.00 (101.6)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-3	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)	2.05 (52.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.13 (155.8)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-3	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)	2.32 (59.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.48 (164.7)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-3	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)	2.68 (68.1)	3.25 (82.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.72 (196.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-4	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.06 (27.0)	0.81 (20.6)	1.85 (46.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.60 (91.5)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-4	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.62 (41.2)	1.19 (30.2)	2.79 (70.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.56 (144.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-4	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.62 (41.2)	1.19 (30.2)	2.76 (70.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.73 (145.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-4	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.37 (60.3)	1.75 (44.5)	3.80 (96.6)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.14 (181.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

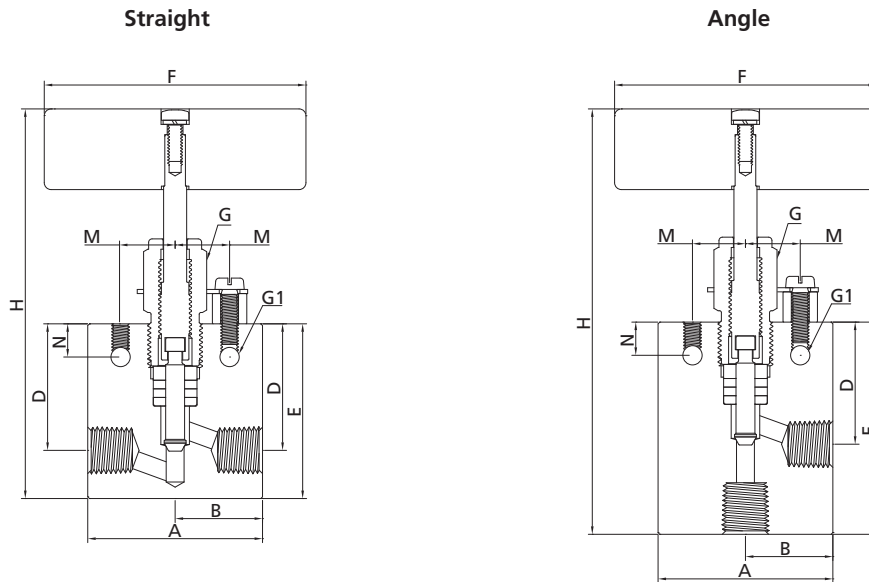
1 on pressure

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-5	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	0.81 (20.6)		1.72 (43.6)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.47 (88.2)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-5	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.19 (30.2)		2.60 (66.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.50 (139.7)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-5	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.19 (30.2)		2.56 (65.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.53 (140.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-5	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	1.75 (44.5)		3.56 (90.5)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.89 (175.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

2 stem manifold

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-DFF2-6	DFF2	0.094 (2.39)	1.81 (46.1)	0.91 (23.1)	0.44 (11.2)	1.13 (28.6)	0.81 (20.6)	2.25 (57.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	4.00 (101.8)	0.56 (14.2)	0.31 (7.9)	0.62 (15.8)	HN-L-00
15NSS-DFF4-6	DFF4	0.188 (4.77)	2.33 (59.2)	1.17 (29.6)	0.52 (13.3)	1.69 (42.9)	1.19 (30.2)	3.38 (85.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.28 (159.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-DFF6-6	DFF6	0.250 (6.35)	2.27 (57.6)	1.13 (28.8)	0.54 (13.6)	1.69 (42.9)	1.19 (30.2)	3.38 (85.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.35 (161.3)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
15NSS-DFF8-6	DFF8	0.375 (9.53)	2.86 (72.7)	1.43 (36.4)	0.60 (15.3)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.45 (214.7)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02

Ordering Information and Dimensions (Pipe Connection, 2-Way)

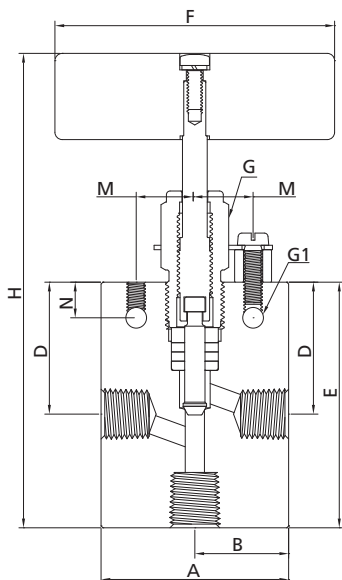


Straight																
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-FNS2-1	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.82 (20.6)		1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.4)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)	HN-L-00
15NSS-FRT2-1	FRT2															
15NSS-FNS4-1	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-FRT4-1	FRT4															
15NSS-FNS6-1	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.82 (122.5)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)	HN-L-02
15NSS-FRT6-1	FRT6															
15NSS-FNS8-1	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)	HN-L-02
15NSS-FRT8-1	FRT8															

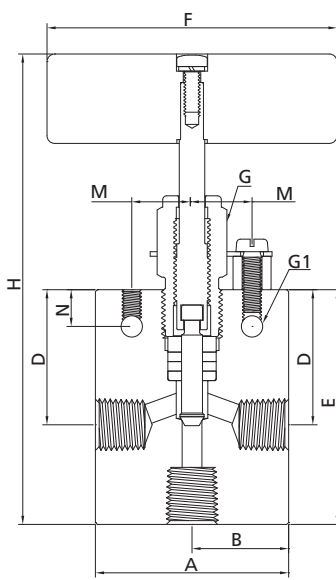
Angle																
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-FNS2-2	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.81 (20.6)		1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)	HN-L-00
15NSS-FRT2-2	FRT2															
15NSS-FNS4-2	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-FRT4-2	FRT4															
15NSS-FNS6-2	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)	HN-L-02
15NSS-FRT6-2	FRT6															
15NSS-FNS8-2	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)	HN-L-02
15NSS-FRT8-2	FRT8															

Ordering Information and Dimensions (Pipe Connection, 3-Way)

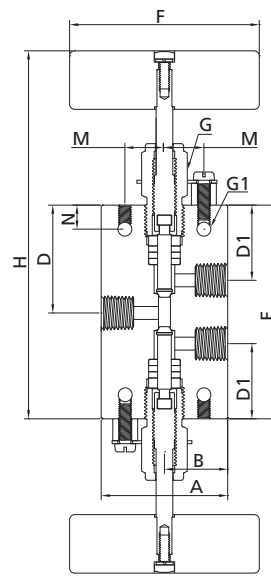
2 on pressure



1 on pressure



2 stem manifold



2 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-FNS2-4	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.82 (20.6)		1.57 (40.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.33 (84.6)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)	HN-L-00
15NSS-FRT2-4	FRT2															
15NSS-FNS4-4	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.51 (140.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-FRT4-4	FRT4															
15NSS-FNS6-4	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (138.9)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)	HN-L-02
15NSS-FRT6-4	FRT6															
15NSS-FNS8-4	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.26)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)	HN-L-02
15NSS-FRT8-4	FRT8															

1 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-FNS2-5	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.82 (20.6)		1.38 (35.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)	HN-L-00
15NSS-FRT2-5	FRT2															
15NSS-FNS4-5	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-FRT4-5	FRT4															
15NSS-FNS6-5	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)	HN-L-02
15NSS-FRT6-5	FRT6															
15NSS-FNS8-5	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)	HN-L-02
15NSS-FRT8-5	FRT8															

2 stem manifold																
Ordering Number	Connec- tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
15NSS-FNS2-6	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		1.00 (25.6)	0.68 (17.2)	2.02 (51.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.77 (95.8)	0.56 (14.2)	0.31 (7.9)	0.63 (15.9)	HN-L-00
15NSS-FRT2-6	FRT2															
15NSS-FNS4-6	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.27 (159.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
15NSS-FRT4-6	FRT4															
15NSS-FNS6-6	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.22 (158.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)	HN-L-02
15NSS-FRT6-6	FRT6															
15NSS-FNS8-6	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.56 (65.1)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.43 (214.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)	HN-L-02
15NSS-FRT8-6	FRT8															

Notes: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

20N Series: 20,000 psig (1379 bar)

Features

- High tensile 316 stainless steel for valve body and S17400 stainless steel for lower stem
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Reliable locking for packing gland
- Options for Vee or Regulating stem tips
- Five flow patterns available

Technical Data

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	MF4	0.125 (3.18)	0.31	20,000 (1379)	-100°F~1200°F (-73°C~649°C)
3/8	MF6	0.204 (5.18)	0.68	20,000 (1379)	
9/16	MF9	0.312 (7.92)	1.30	20,000 (1379)	
3/4	MF12	0.438 (11.13)	2.50	20,000 (1379)	
1	MF16	0.562 (14.27)	4.40	20,000 (1379)	

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

2. Packing Options

PTFE is the standard packing material, RPTFE glass, graphite and extended stuffing box with graphite also available.

Graphite packing not recommended for hydrogen or helium service.

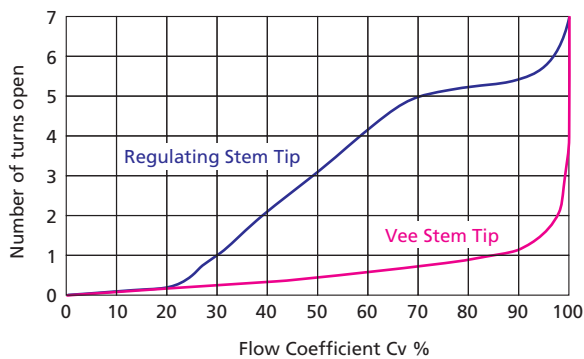
PTFE: -100°F~450°F (-73°C~232°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

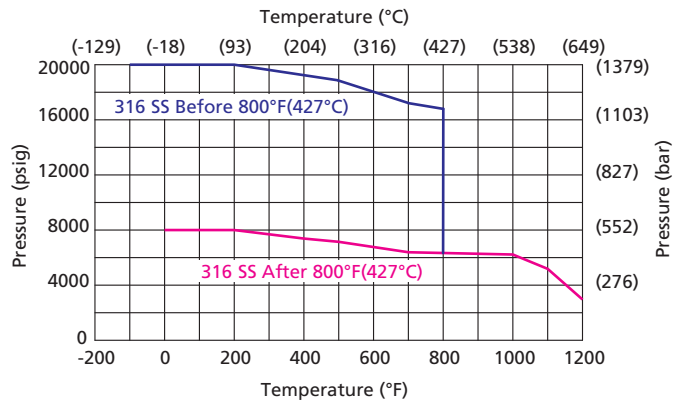
Graphite: 0°F~800°F (-17.8°C~427°C)

Extended stuffing box with graphite: -100°F~1200°F (-73°C~649°C)

Flow Data at 100°F (38°C)

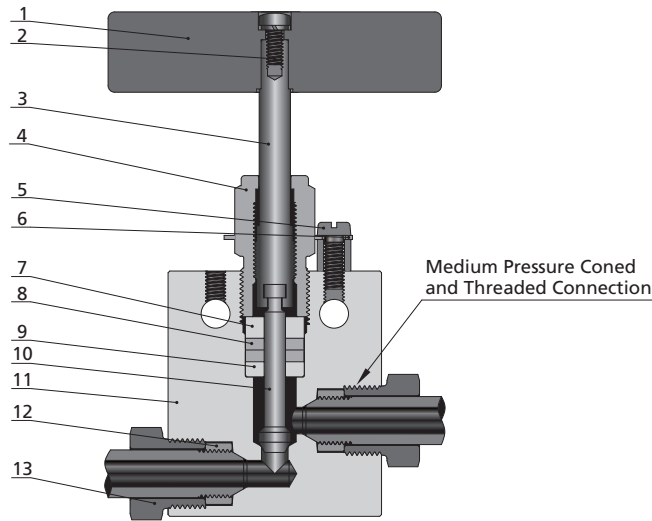


Pressure vs. Temperature Curve



Note: When temperature exceeds 800°F (427°C), use the pink curve as its cold-worked rating for future operating of the components.

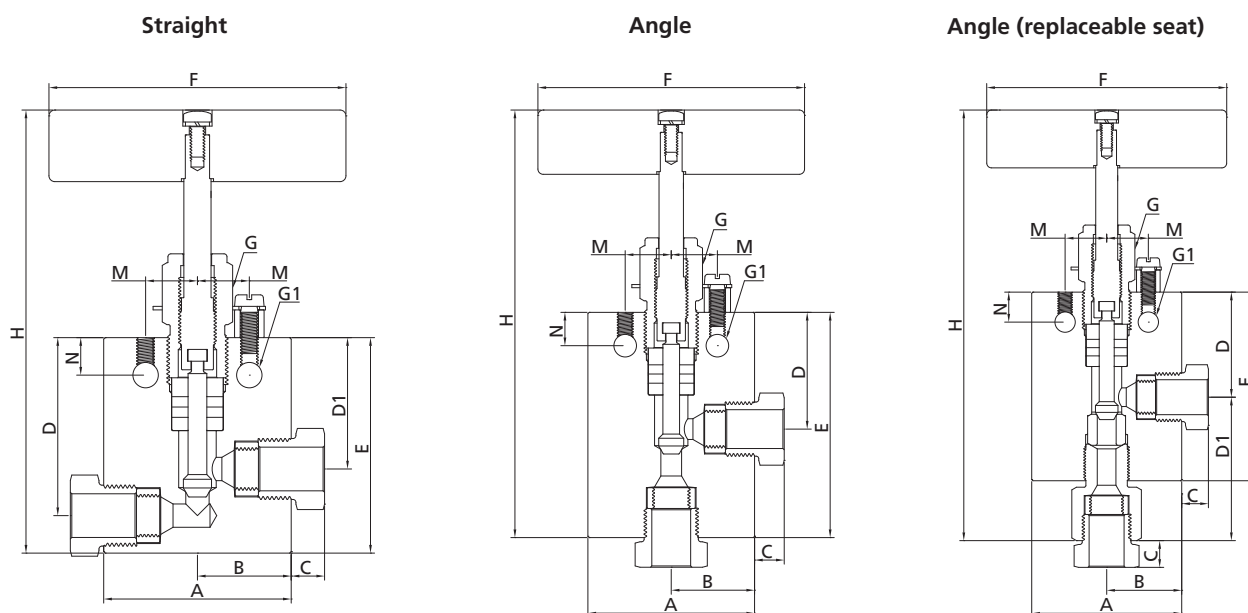
Standard Materials of Construction



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	C63000
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	Packing Ring	C63000
8	<i>Packing</i>	<i>PTFE/RPTFE Glass/Graphite/Extended Stuffing Box with Graphite</i>
9	<i>Packing Washer</i>	<i>S17400</i>
10	<i>Lower Stem</i>	<i>S17400</i>
11	Body	316 SS
12	Collar	316 SS (For Tubing Connections)
13	Gland	316 SS (For Tubing Connections)
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions (Tubing Connection, 2-Way)

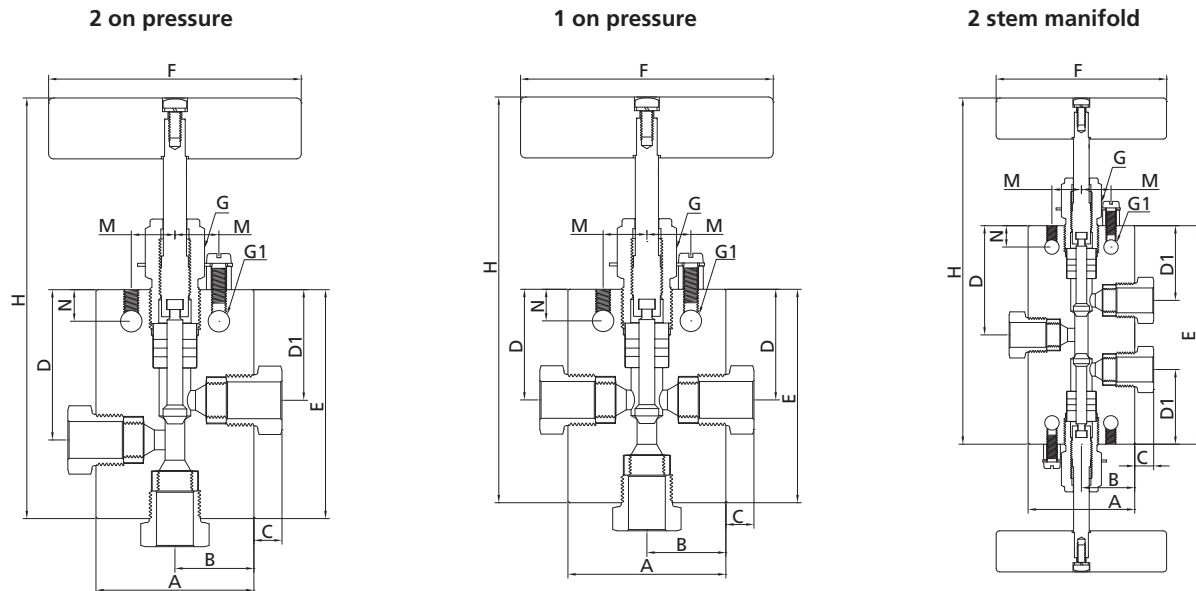


Straight																
Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-1	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-1	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-1	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-1	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.37 (187.2)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-1	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Angle																
Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-2	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-2	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-2	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-2	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-2	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Angle (replaceable seat)																
Ordering Number	Connec- tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-3	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.10 (154.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-3	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.16 (156.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-3	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.13 (79.4)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.58 (192.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-3	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.30 (236.3)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-3	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107.4)	5.25 (133.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.86 (301.3)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure																
Ordering Number	Connec- tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-4	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-4	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-4	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-4	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.24 (209.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-4	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.70 (271.9)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

E-30 Needle Valves and Pneumatic Needle Valves

1 on pressure																
Ordering Number	Connec- tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-5	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-5	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-5	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-5	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-5	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

2 stem manifold																
Ordering Number	Connec- tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
20NSS-MF4-6	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.23 (158.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	HN-L-01
20NSS-MF6-6	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.24 (158.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)	
20NSS-MF9-6	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.44 (214.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)	HN-L-02
20NSS-MF12-6	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.11 (257.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)	HN-L-03
20NSS-MF16-6	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)	HN-L-04

- Notes: 1. G is the drill dimension of packing gland mounting hole.
2. G1 is the dimension of bracket mounting hole.
3. Panel mounting drill size: 0.25" all valves.
4. H is the dimension of stem in closed position.
5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

30N Series: 30,000 psig (2068 bar)

Features

- High tensile 316 stainless steel for valve body and S17400 stainless steel for lower stem
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Reliable packing gland locking device
- Options for Vee or Regulating stem tips
- Five flow patterns available

Technical Data

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	HF4	0.094 (2.39)	0.12	30,000 (2068)	-100°F~600°F (-73°C~316°C)
3/8	HF6	0.125 (3.18)	0.23	30,000 (2068)	
9/16	HF9	0.125 (3.18)	0.33	30,000 (2068)	

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

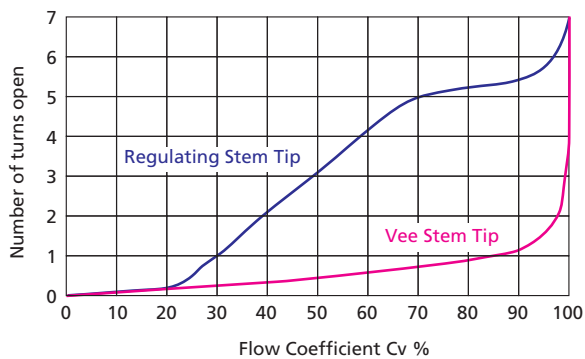
2. Packing Options

PTFE is the standard packing material, RPTFE glass also available

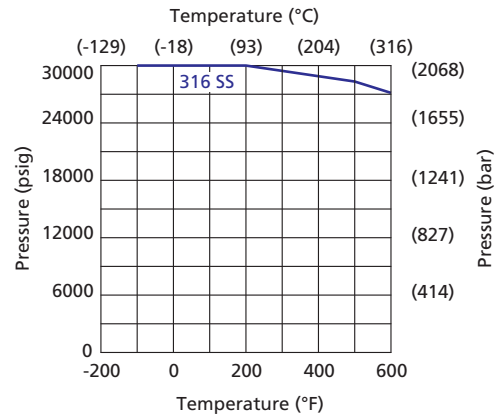
PTFE: -100°F~450°F (-73°C~232°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

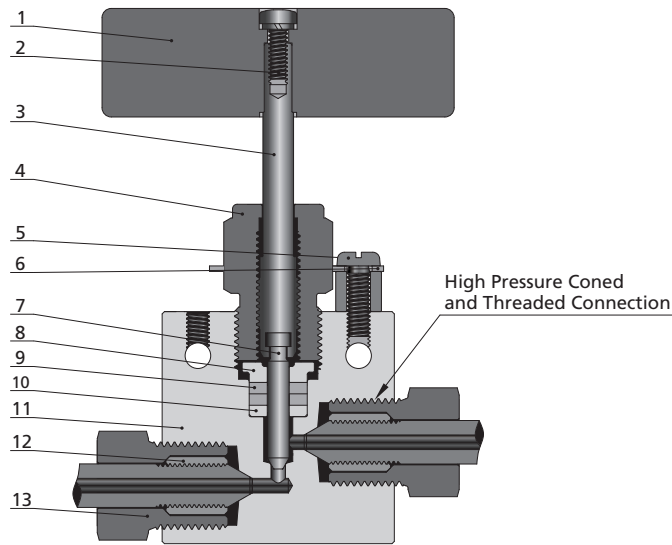
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



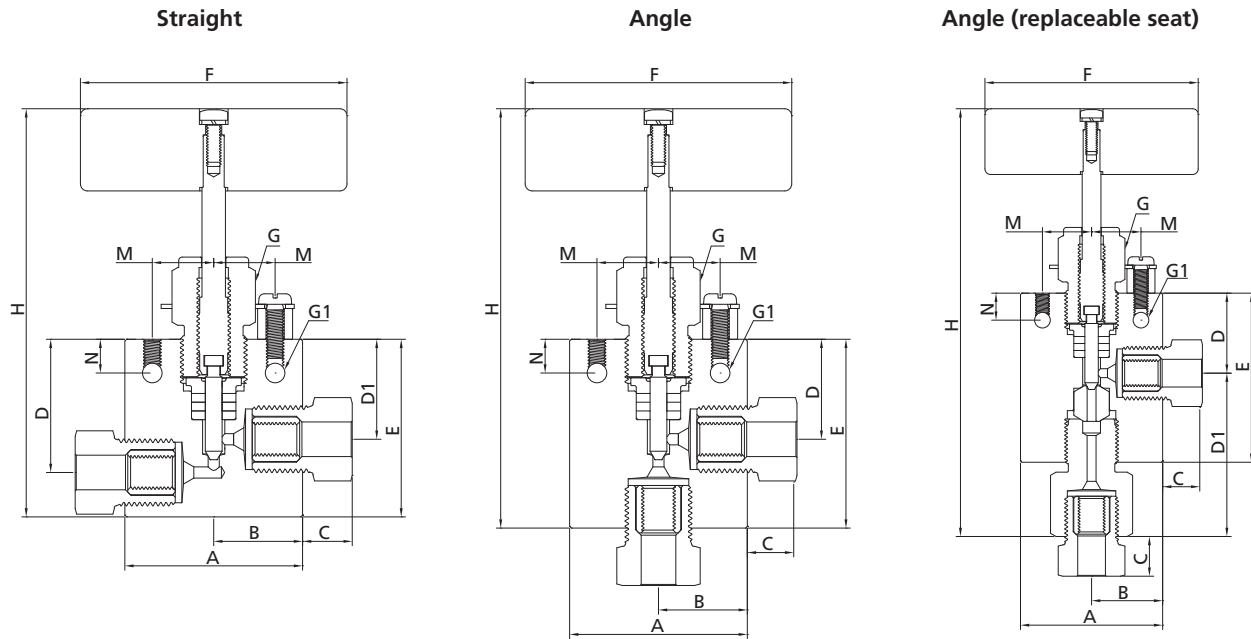
Standard Materials of Construction



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	C63000
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	<i>Lower Stem</i>	<i>S17400</i>
8	Packing Ring	C63000
9	<i>Packing</i>	<i>PTFE / RPTFE</i>
10	<i>Packing Washer</i>	<i>S17400</i>
11	<i>Body</i>	<i>316 SS</i>
12	Collar	316 SS
13	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions (Tubing Connection, 2-Way)



Straight

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-1	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-1	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-1	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Angle

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-2	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)		2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-2	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)		2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-2	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)		2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Angle (replaceable seat)

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-3	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.06 (52.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.88 (149.2)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-3	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.67)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155.4)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-3	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.6)	2.57 (65.3)	2.46 (62.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162.4)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Fittings

Tubing

Quick Couplings

Line Filters

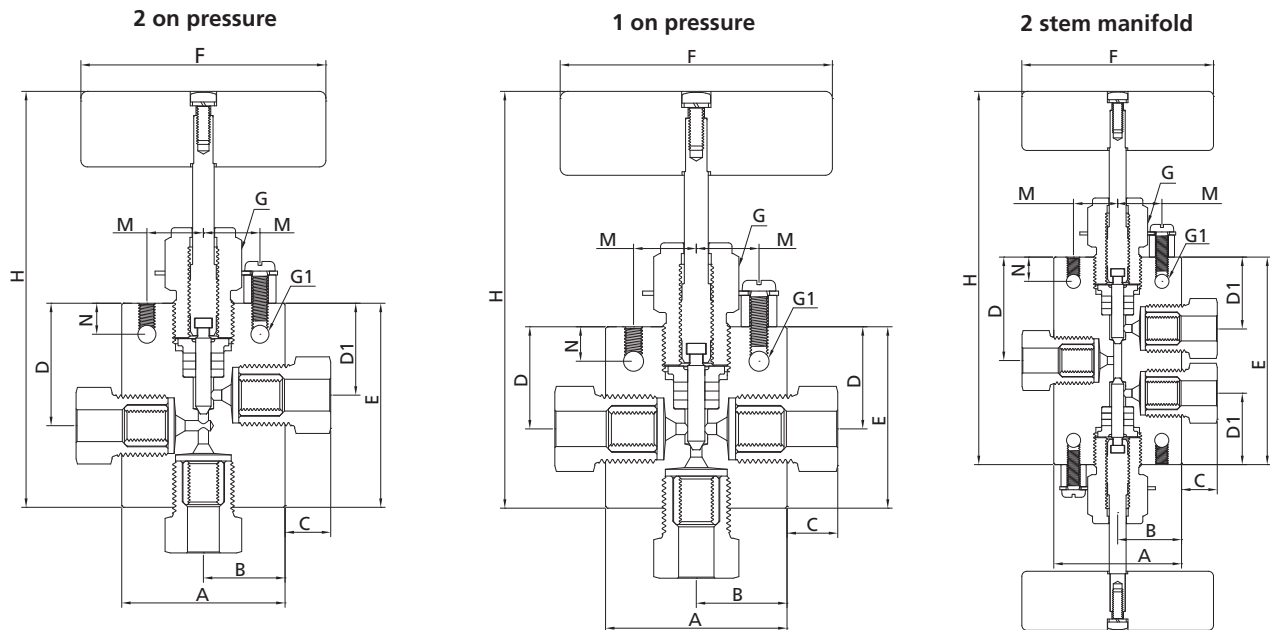
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-4	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.12 (53.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.81 (122.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-4	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.19 (131.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-4	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.88 (73.2)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.57 (141.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

1 on pressure

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-5	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)		2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-5	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)		2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-5	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)		2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

2 stem manifold

Ordering Number	Conne- ction	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
30NSS-HF4-6	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.53 (38.9)	1.12 (28.5)	3.06 (77.7)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.75 (146.0)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
30NSS-HF6-6	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.62 (41.2)	1.12 (28.5)	3.25 (82.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.94 (150.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
30NSS-HF9-6	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.88 (47.8)	1.12 (28.5)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.44 (163.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

- Notes: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

60N Series: 60,000 psig (4137 bar)

Features

- High tensile 316 stainless steel for valve body and S17400 stainless steel for lower stem
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Easy to assemble and replace packing
- Reliable packing gland locking device
- Options for Vee or Regulating stem tips
- Five flow patterns available

Technical Data

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range
1/4	HF4	0.063 (1.59)	0.08	60,000 (4137)	-100°F~600°F (-73°C~316°C)
3/8	HF6	0.063 (1.59)	0.09	60,000 (4137)	
9/16	HF9	0.078 (1.98)	0.14	60,000 (4137)	

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

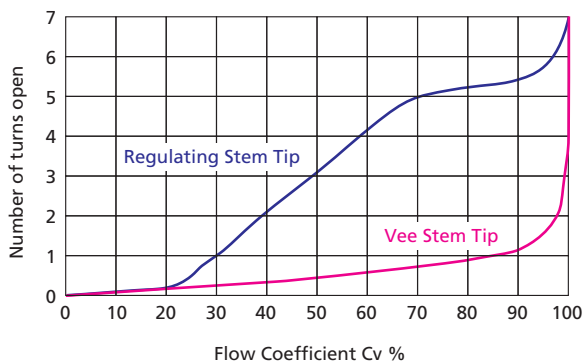
2. Packing Options

Nylon is the standard packing material, RPTFE glass also available

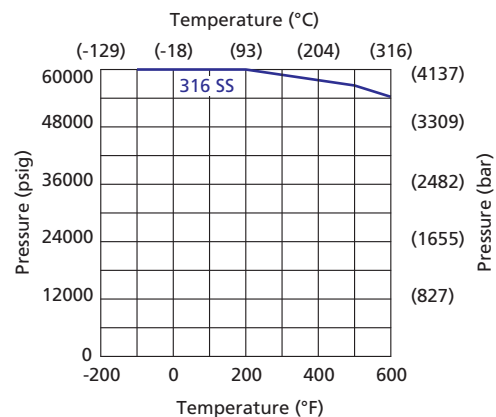
Nylon: 40°F~230°F (4.4°C~110°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

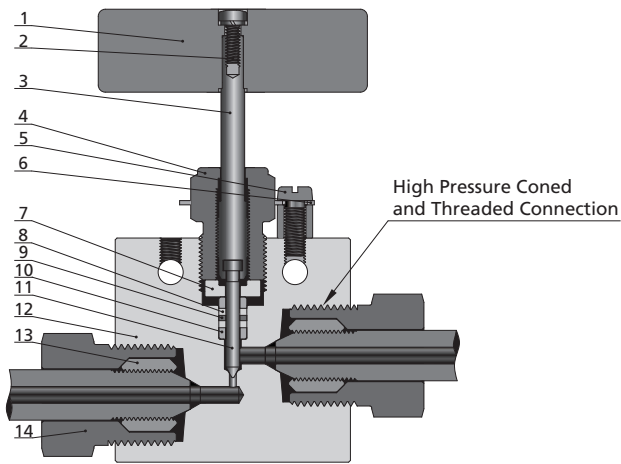
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



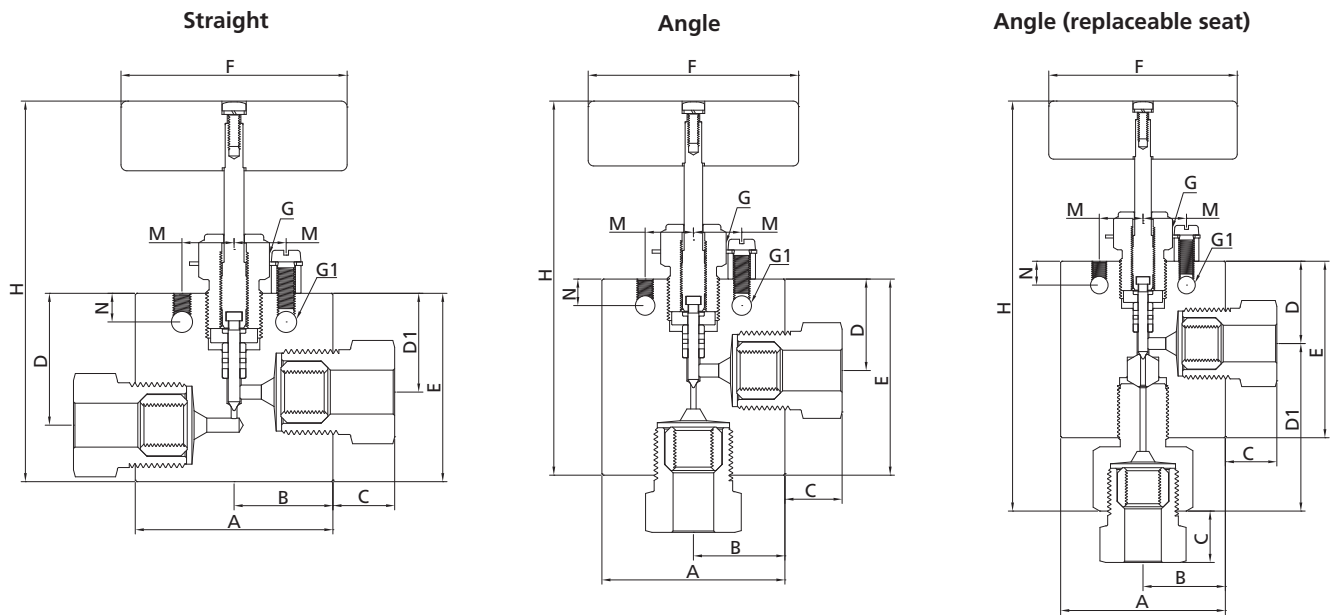
Standard Materials of Construction



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	C63000
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	Packing Ring	S17400
8	<i>Packing</i>	<i>Nylon/RPTFE</i>
9	<i>Retaining Ring</i>	<i>PEEK</i>
10	<i>Packing Washer</i>	<i>S17400</i>
11	<i>Lower Stem</i>	<i>S17400</i>
12	<i>Body</i>	<i>316 SS</i>
13	Collar	316 SS
14	Gland	316 SS
Lubricant		Molybdenum Disulfide

Wetted component listed in italics.

Ordering Information and Dimensions (Tubing Connection, 2-Way)

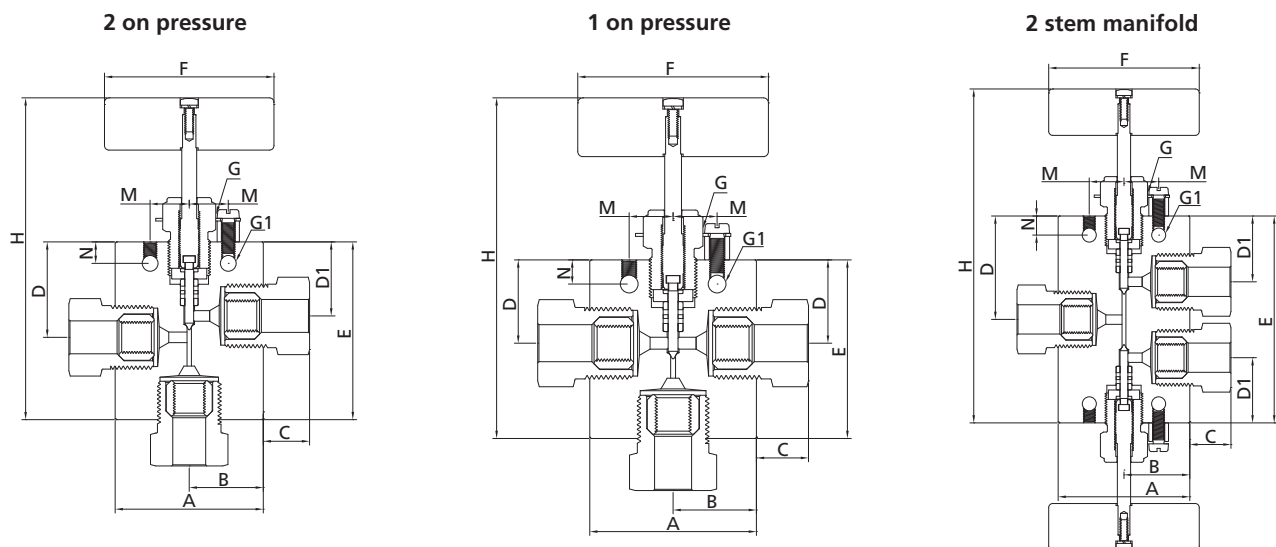


Straight																
Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-1	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-1	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.89 (124.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-1	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.14 (130.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Angle																
Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-2	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	/	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-2	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-2	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Angle (replaceable seat)																
Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-3	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.12 (53.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.07 (154.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-3	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.36 (59.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.30 (160.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-3	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	2.68 (68.8)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.65 (168.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Ordering Information and Dimensions (Tubing Connection, 3-Way)



2 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-4	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.6)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-4	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.75 (68.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.34 (135.8)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-4	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	3.03 (77.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.67 (143.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

1 on pressure

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-5	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)		2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-5	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-5	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

2 stem manifold

Ordering Number	Connec-tion	Orifice in. (mm)	Dimensions, in. (mm)													Lockout Device Ordering Number
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness	
60NSS-HF4-6	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.69)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (154.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	HN-L-01
60NSS-HF6-6	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)	
60NSS-HF9-6	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (104.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (171.8)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)	

Notes: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the dimension of bracket mounting hole.

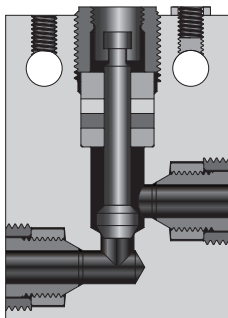
3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

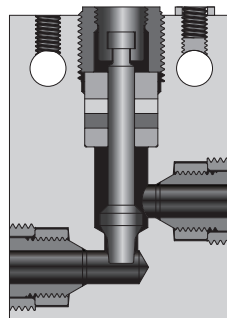
Stem Types

Two types of stems are offered by FITOK: Vee and Regulating. Both Vee and Regulating stems are interchangeable on most valves and provide bubble-tight shut-off against liquids and gases.



Vee Stem

The Vee stem is used for direct on-off, metal-to-metal shut-off with quick-opening flow characteristics.



Regulating Stem

In some applications, more precise flow control is required than is possible with a Vee stem. For these cases, FITOK offers a non-rotating, two-piece regulating stem which can be used for both control and shut-off.

Needle Valve Lockout Device

The needle valve lockout device encloses the valve handle to secure the valve in either the open or closed position, effectively preventing unauthorized operation.

Ordering Information (without Lock)

For ease of selection, FITOK offers two ordering methods:

Method 1: Valve part number + "-L"

Method 2: Order separately. Refer to the Ordering Information and Dimensions section for details.

Locked Needle Valve



Example: 20N55-MF9-1-L

Lockout Device



Installation Instructions

Hold both sides of the lockout device and gently separate the housing along the seam. Position the device over the valve handle, then close the housing securely to ensure the lockout device is firmly fixed onto the valve.



Pneumatic Needle Valves

Piston Style Air to Open (Normally Closed)

Features

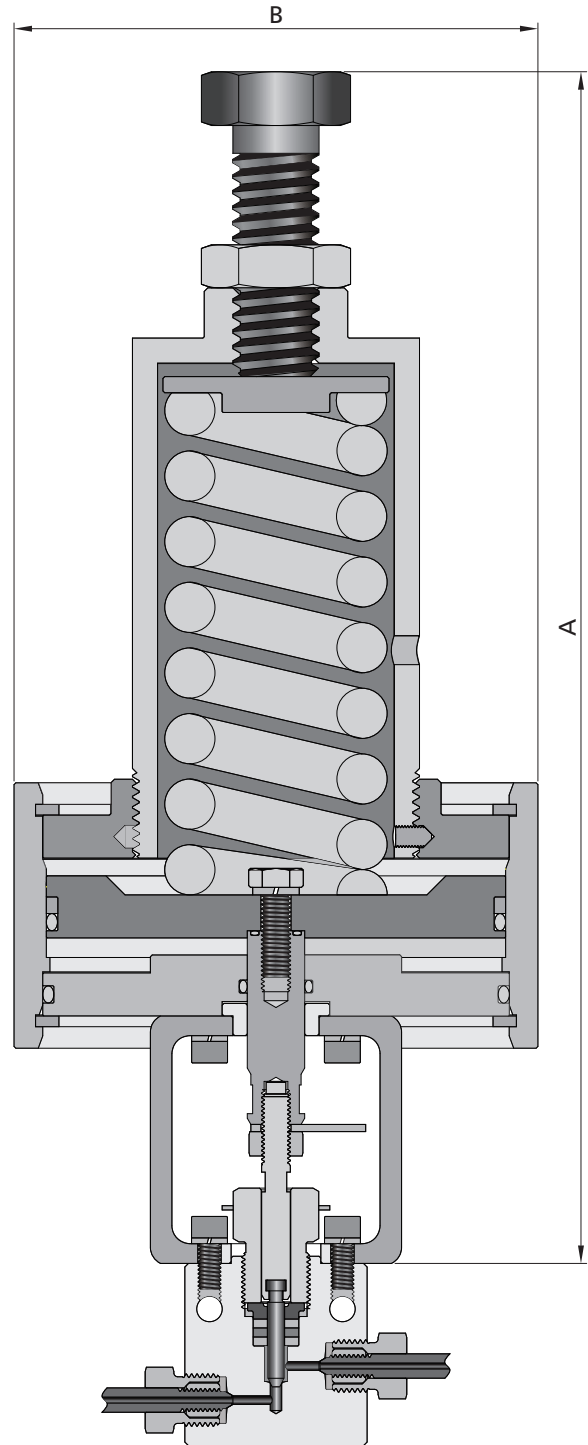
- ⦿ Air-to-open with spring return
- ⦿ Positive shut-off with metal-to-metal seating
- ⦿ Easy stem replacement
- ⦿ Standard stem position indicator
- ⦿ High actuator cycle life
- ⦿ Anodized aluminum actuator to provide good corrosion and wear resistance
- ⦿ Tested to 100,000 cycles at 100 psig (6.9 bar) with no leakage, no signs of wear or fatigue

Technical Data

Maximum working pressure for air operator		100 psig (6.9 bar)
Air operator temperature range		-10°F~200°F (-23°C~93°C)
Air operator material	Cylinder, piston, cover plates, spring housing	Anodized Aluminum
	Yoke	Stainless Steel
	O-ring	NBR
Air inlet connection		1/8 " or 3/8 " Female NPT

Dimensions

Basic Ordering Number	Air Inlet Connection	Area of Piston sq.in. (sq. cm)	A in. (mm)	B in. (mm)
10NSS-MF9-X-C	1/8" NPT	51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
10NSS-MF12-X-C		92.58 (597.3)	20.72 (526.3)	8.58 (218.0)
10NSS-MF16-X-C	3/8" NPT	112.55 (726.1)	24.12 (612.7)	9.57 (243.0)
10NSS-FNS12-X-C	1/8" NPT	92.58 (597.3)	20.72 (526.3)	8.58 (218.0)
10NSS-FRT12-X-C		92.58 (597.3)	20.72 (526.3)	8.58 (218.0)
10NSS-FNS16-X-C	3/8" NPT	112.55 (726.1)	24.12 (612.7)	9.57 (243.0)
10NSS-FRT16-X-C		112.55 (726.1)	24.12 (612.7)	9.57 (243.0)
15NSS-DF2-X-C	1/8" NPT	7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-DF4-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-DF6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-DF8-X-C		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
15NSS-FNS2-X-C		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-FRT2-X-C		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-FNS4-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-FRT4-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-FNS6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-FRT6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
15NSS-FNS8-X-C		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
15NSS-FRT8-X-C		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
20NSS-MF4-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
20NSS-MF6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
20NSS-MF9-X-C		51.20 (330.3)	16.24 (412.5)	6.54 (166.0)
20NSS-MF12-X-C		92.58 (597.3)	20.72 (526.3)	8.58 (218.0)
20NSS-MF16-X-C	3/8" NPT	112.55 (726.1)	24.12 (612.7)	9.57 (243.0)
30NSS-HF4-X-C	1/8" NPT	19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
30NSS-HF6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
30NSS-HF9-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
60NSS-HF4-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
60NSS-HF6-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)
60NSS-HF9-X-C		19.95 (128.7)	13.08 (332.3)	5.75 (146.0)



- Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
2. A is the dimension of stem in closed position.
3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Air Operator Technical Data

10N Series: 10,000 psig (690 bar)

Basic Ordering Number		System Pressure KSI (MPa)				Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	
10NSS-MF9-X-C	Air Pressure psig (bar)	40 (2.8)	50 (3.5)	60 (4.1)	65 (4.5)	1.75
	Spring Pre-Compression in. (mm)	0.17 (4.2)	0.25 (6.3)	0.33 (8.4)	0.41 (10.5)	
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	
10NSS-MF12-X-C	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	70 (4.8)	2.80
	Spring Pre-Compression in. (mm)	0.23 (5.8)	0.34 (8.7)	0.46 (11.6)	0.57 (14.5)	
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	
10NSS-MF16-X-C	Air Pressure psig (bar)	50 (3.5)	60 (4.1)	70 (4.8)	80 (5.5)	5.20
	Spring Pre-Compression in. (mm)	0.29 (7.4)	0.44 (11.1)	0.58 (14.8)	0.73 (18.5)	
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	
10NSS-FNS12-X-C 10NSS-FRT12-X-C	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)	2.09
	Spring Pre-Compression in. (mm)	0.17 (4.4)	0.26 (6.5)	0.34 (8.7)	0.43 (10.9)	
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	
10NSS-FNS16-X-C 10NSS-FRT16-X-C	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	4.40
	Spring Pre-Compression in. (mm)	0.20 (5.1)	0.30 (7.7)	0.41 (10.3)	0.51 (12.9)	
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	

- Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
3. All dimensions are for reference only and are subject to change.

15N Series: 15,000 psig (1034 bar)

Basic Ordering Number		System Pressure KSI (MPa)						Flow Coefficient (Cv)
		1-6 (6.9-41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	15 (103.4)	
15NSS-DFF2-X-C	Air Pressure psig (bar)	60 (4.1)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)	0.10
	Spring Pre-Compression in. (mm)	0.10 (2.5)	0.13 (3.3)	0.16 (4.1)	0.19 (4.9)	0.22 (5.7)	0.24 (6.1)	
	Stem Travel in. (mm)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	
15NSS-DFF4-X-C 15NSS-DFF6-X-C	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	0.54 (15NSS-DFF4-X-C) 0.95 (15NSS-DFF6-X-C)
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)	
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	
15NSS-DFF8-X-C	Air Pressure psig (bar)	50 (3.5)	60 (4.1)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)	1.90
	Spring Pre-Compression in. (mm)	0.27 (6.8)	0.36 (9.1)	0.45 (11.4)	0.54 (13.6)	0.63 (15.9)	0.67 (17.0)	
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	
15NSS-FNS2-X-C 15NSS-FRT2-X-C	Air Pressure psig (bar)	60 (4.1)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)	0.07
	Spring Pre-Compression in. (mm)	0.10 (2.5)	0.13 (3.3)	0.16 (4.1)	0.19 (4.9)	0.22 (5.7)	0.24 (6.1)	
	Stem Travel in. (mm)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	0.14 (3.5)	
15NSS-FNS4-X-C 15NSS-FRT4-X-C	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	0.47
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)	
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	
15NSS-FNS6-X-C 15NSS-FRT6-X-C	Air Pressure psig (bar)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	0.59
	Spring Pre-Compression in. (mm)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.28 (7.2)	
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	
15NSS-FNS8-X-C 15NSS-FRT8-X-C	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	1.04
	Spring Pre-Compression in. (mm)	0.20 (5.0)	0.26 (6.6)	0.33 (8.3)	0.39 (9.9)	0.46 (11.6)	0.49 (12.4)	
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.

2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

3. All dimensions are for reference only and are subject to change.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

E-44 Needle Valves and Pneumatic Needle Valves

20N Series: 20,000 psig (1379 bar)

Basic Ordering Number		System Pressure KSI (MPa)									Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)	
20NSS-MF4-X-C 20NSS-MF6-X-C	Air Pressure psig (bar)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	90 (6.2)	0.29 (20NSS-MF4-X-C) 0.62 (20NSS-MF6-X-C)
	Spring Pre-Compression in. (mm)	0.07 (1.9)	0.11 (2.9)	0.15 (3.8)	0.19 (4.8)	0.23 (5.8)	0.26 (6.7)	0.30 (7.7)	0.34 (8.6)	0.38 (9.6)	
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	
20NSS-MF9-X-C	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	90 (6.2)	1.30
	Spring Pre-Compression in. (mm)	0.13 (3.3)	0.20 (5.0)	0.26 (6.6)	0.33 (8.3)	0.39 (9.9)	0.46 (11.6)	0.52 (13.2)	0.59 (14.9)	0.65 (16.5)	
	Stem Travel in. (mm)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	0.26 (6.5)	
20NSS-MF12-X-C	Air Pressure psig (bar)	40 (2.8)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)	2.41
	Spring Pre-Compression in. (mm)	0.17 (4.4)	0.26 (6.5)	0.34 (8.7)	0.43 (10.9)	0.52 (13.1)	0.60 (15.3)	0.69 (17.4)	0.77 (19.6)	0.86 (21.8)	
	Stem Travel in. (mm)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	0.36 (9.2)	
20NSS-MF16-X-C	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	60 (4.1)	65 (4.5)	70 (4.8)	80 (5.5)	85 (5.9)	95 (6.6)	100 (6.9)	4.40
	Spring Pre-Compression in. (mm)	0.20 (5.1)	0.30 (7.7)	0.41 (10.3)	0.51 (12.9)	0.61 (15.4)	0.71 (18.0)	0.81 (20.6)	0.91 (23.1)	1.01 (25.7)	
	Stem Travel in. (mm)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	0.41 (10.3)	

- Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
3. All dimensions are for reference only and are subject to change.

30N Series: 30,000 psig (2068 bar)

Basic Ordering Number		System Pressure KSI (MPa)											Flow Coefficient (Cv)	
		1-10 (6.9-69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)	22 (151.7)	24 (165.5)	26 (179.3)	28 (193.1)	30 (206.8)		
30NSS-HF4-X-C 30NSS-HF6-X-C 30NSS-HF9-X-C	Air Pressure psig (bar)	55 (3.8)	60 (4.1)	65 (4.5)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	85 (5.9)	90 (6.2)	95 (6.6)	100 (6.9)	0.12 (30NSS-HF4-X-C)	
	Spring Pre-Compression in. (mm)	0.14 (3.8)	0.18 (4.6)	0.21 (5.4)	0.24 (6.1)	0.27 (6.9)	0.30 (7.7)	0.33 (8.4)	0.36 (9.2)	0.39 (10)	0.42 (10.7)	0.45 (11.5)	0.22 (30NSS-HF6-X-C)	
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.31 (30NSS-HF9-X-C)	

- Notes: 1. -X: Designator of valve flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
3. All dimensions are for reference only and are subject to change.

60N Series: 60,000 psig (4137 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Flow Coefficient (Cv)
		1-15 (6.9-103.4)	20 (137.9)	25 (172.4)	30 (206.8)	35 (241.3)	40 (275.8)	45 (310.3)	50 (344.7)	55 (379.2)	60 (413.7)	
60NSS-HF4-X-C 60NSS-HF6-X-C 60NSS-HF9-X-C	Air Pressure psig (bar)	55 (3.8)	65 (4.5)	65 (4.5)	75 (5.2)	75 (5.2)	85 (5.9)	95 (6.6)	95 (6.6)	95 (6.6)	95 (6.6)	0.08 (60NSS-HF4-X-C)
	Spring Pre-Compression in. (mm)	0.12 (3.2)	0.19 (4.8)	0.19 (4.8)	0.25 (6.4)	0.25 (6.4)	0.31 (7.9)	0.38 (9.7)	0.38 (9.7)	0.44 (11.2)	0.50 (12.7)	0.09 (60NSS-HF6-X-C)
	Stem Travel in. (mm)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.19 (4.9)	0.13 (3.2)	0.14 (60NSS-HF9-X-C)

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.

2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

3. All dimensions are for reference only and are subject to change.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number
Crossover Charts

Piston Style Air to Close (Normally Open)

Features

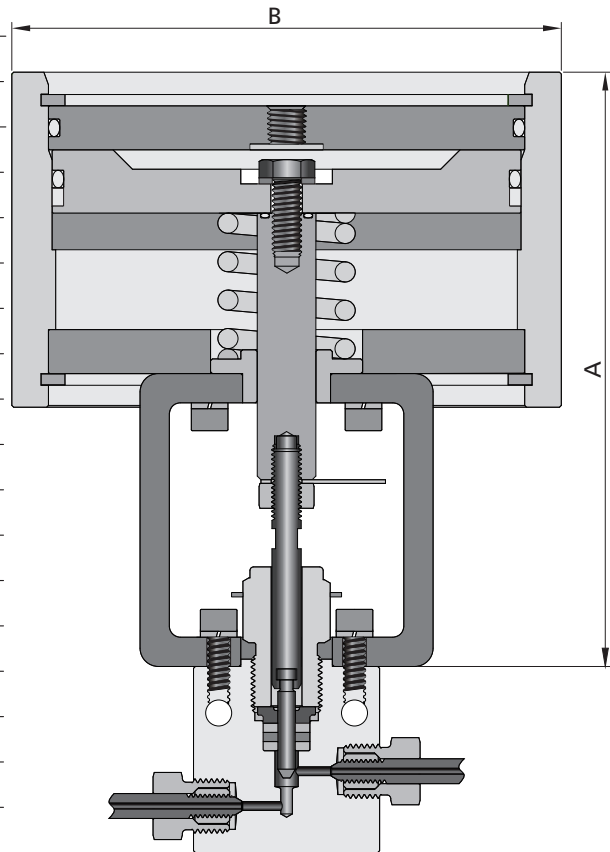
- ⦿ Air-to-close with spring return
- ⦿ Positive shut-off with metal-to-metal seating
- ⦿ Easy stem replacement
- ⦿ Standard stem position indicator
- ⦿ High actuator cycle life
- ⦿ Anodized aluminum actuator to provide good corrosion and wear resistance
- ⦿ Tested to 100,000 cycles at 100 psig (6.9 bar) with no leakage, no signs of wear or fatigue

Technical Data

Maximum working pressure for air operator		100 psig (6.9 bar)
Air operator temperature range		-10°F~200°F (-23°C~93°C)
Air operator material	Cylinder, piston, cover plates, spring housing	Anodized Aluminum
	Yoke	Stainless Steel
	O-ring	NBR
Air inlet connection		1/8" or 3/8" Female NPT

Dimensions

Basic Ordering Number	Air Inlet Connection	Area of Piston sq.in. (sq. cm)	A in. (mm)	B in. (mm)
10NSS-MF9-X-O	1/8" NPT	51.20 (330.3)	8.27 (210.0)	6.54 (166.0)
10NSS-MF12-X-O		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)
10NSS-MF16-X-O	3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)
10NSS-FNS12-X-O	1/8" NPT	92.58 (597.3)	10.55 (268.0)	8.58 (218.0)
10NSS-FRT12-X-O		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)
10NSS-FNS16-X-O	3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)
10NSS-FRT16-X-O		112.55 (726.1)	12.77 (324.4)	9.57 (243.0)
15NSS-DFF2-X-O	1/8" NPT	7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-DFF4-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-DFF6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-DFF8-X-O		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)
15NSS-FNS2-X-O		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-FRT2-X-O		7.79 (50.3)	8.56 (217.3)	3.62 (92.0)
15NSS-FNS4-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-FRT4-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-FNS6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-FRT6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
15NSS-FNS8-X-O		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)
15NSS-FRT8-X-O		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)
20NSS-MF4-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
20NSS-MF6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
20NSS-MF9-X-O		51.20 (330.3)	8.27 (210.0)	6.54 (166.0)
20NSS-MF12-X-O		92.58 (597.3)	10.55 (268.0)	8.58 (218.0)
20NSS-MF16-X-O	3/8" NPT	112.55 (726.1)	12.77 (324.4)	9.57 (243.0)
30NSS-HF4-X-O	1/8" NPT	19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
30NSS-HF6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
30NSS-HF9-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
60NSS-HF4-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
60NSS-HF6-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)
60NSS-HF9-X-O		19.95 (128.7)	5.94 (151.0)	5.75 (146.0)



- Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6).
For details, please refer to the FITOK Needle Valves catalog.
2. All dimensions are for reference only and are subject to change.
For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Air Operator Technical Data

10N Series: 10,000 psig (690 bar)

Basic Ordering Number		System Pressure KSI (MPa)				Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)		
10NSS-MF9-X-O	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	40 (2.8)	50 (3.5)	0.24 (6.0)	1.75
10NSS-MF12-X-O	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	45 (3.1)	50 (3.5)	0.35 (9.0)	2.80
10NSS-MF16-X-O	Air Pressure psig (bar)	30 (2.1)	40 (2.8)	50 (3.5)	60 (4.2)	0.39 (10.0)	5.20
10NSS-FNS12-X-O 10NSS-FRT12-X-O	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	35 (2.4)	40 (2.8)	0.35 (9.0)	2.09
10NSS-FNS16-X-O 10NSS-FRT16-X-O	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	40 (2.8)	45 (3.1)	0.39 (10.0)	3.40

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.

2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

3. All dimensions are for reference only and are subject to change.

15N Series: 15,000 psig (1034 bar)

Basic Ordering Number		System Pressure KSI (MPa)							Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	15 (103.4)		
15NSS-DFF2-X-O	Air Pressure psig (bar)	45 (3.1)	55 (3.8)	60 (4.2)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)	0.12 (3.0)	0.10
15NSS-DFF4-X-O	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)	0.19 (4.9)	0.54
15NSS-DFF6-X-O										0.95
15NSS-DFF8-X-O	Air Pressure psig (bar)	25 (1.7)	35 (2.4)	45 (3.1)	50 (3.5)	60 (4.2)	70 (4.8)	75 (5.2)	0.24 (6.0)	1.90
15NSS-FNS2-X-O 15NSS-FRT2-X-O	Air Pressure psig (bar)	65 (4.5)	75 (5.2)	80 (5.5)	90 (6.2)	95 (6.6)	100 (6.9)	100 (6.9)	0.12 (3.0)	0.07
15NSS-FNS4-X-O 15NSS-FRT4-X-O	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)	0.19 (4.9)	0.47
15NSS-FNS6-X-O 15NSS-FRT6-X-O	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	60 (4.2)	0.19 (4.9)	0.59
15NSS-FNS8-X-O 15NSS-FRT8-X-O	Air Pressure psig (bar)	20 (1.4)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	55 (3.8)	0.24 (6.0)	1.04

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.

2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

3. All dimensions are for reference only and are subject to change.

20N Series: 20,000 psig (1379 bar)

Basic Ordering Number		System Pressure KSI (MPa)									Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-4 (6.9-27.6)	6 (41.4)	8 (55.2)	10 (69.0)	12 (82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)		
20NSS-MF4-X-O	Air Pressure psig (bar)	30 (2.1)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)	75 (5.2)	0.19 (4.9)	0.29
20NSS-MF6-X-O												0.62
20NSS-MF9-X-O	Air Pressure psig (bar)	20 (1.4)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)	0.24 (6.0)	1.30
20NSS-MF12-X-O	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	35 (2.4)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	70 (4.8)	0.35 (9.0)	2.41
20NSS-MF16-X-O	Air Pressure psig (bar)	25 (1.7)	30 (2.1)	40 (2.8)	45 (3.1)	55 (3.8)	60 (4.2)	65 (4.5)	75 (5.2)	80 (5.5)	0.39 (10.0)	3.40

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
 2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
 3. All dimensions are for reference only and are subject to change.

30N Series: 30,000 psig (2068 bar)

Basic Ordering Number		System Pressure KSI (MPa)										Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-12 (6.9-82.7)	14 (96.5)	16 (110.3)	18 (124.1)	20 (137.9)	22 (151.7)	24 (165.7)	26 (179.3)	28 (193.1)	30 (206.8)		
30NSS-HF4-X-O	Air Pressure psig (bar)	45 (3.1)	50 (3.5)	55 (3.8)	60 (4.1)	65 (4.5)	70 (4.8)	75 (5.2)	80 (5.5)	85 (5.9)	85 (5.9)	0.19 (4.9)	0.12
30NSS-HF6-X-O													0.22
30NSS-HF9-X-O													0.31

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
 2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
 3. All dimensions are for reference only and are subject to change.

60N Series: 60,000 psig (4137 bar)

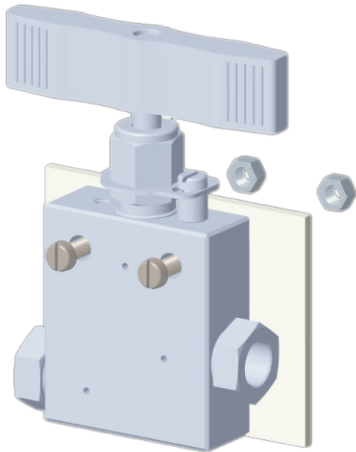
Basic Ordering Number		System Pressure KSI (MPa)									Stem Travel in. (mm)	Flow Coefficient (Cv)
		1-20 (6.9-137.9)	25 (172.4)	30 (206.8)	35 (241.3)	40 (275.8)	45 (310.3)	50 (344.7)	55 (379.2)	60 (413.7)		
60NSS-HF4-X-O	Air Pressure psig (bar)	35 (2.4)	40 (2.8)	50 (3.5)	55 (3.8)	65 (4.5)	70 (4.8)	75 (5.2)	85 (5.9)	90 (6.2)	0.19 (4.9)	0.08
60NSS-HF6-X-O												0.09
60NSS-HF9-X-O												0.14

Notes: 1. -X: Designator of valve flow patterns. Valves are available in 5 different flow patterns (-1 to -6). For details, please refer to the FITOK Needle Valves catalog.
 2. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).
 3. All dimensions are for reference only and are subject to change.

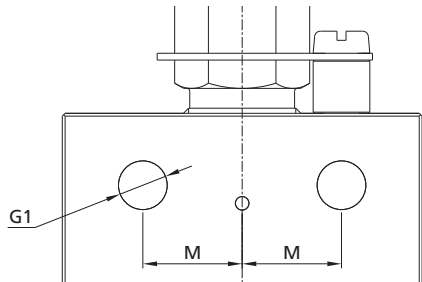
Mounting Instructions

Bracket or panel mounting options are available, as illustrated below. For dimensions M, G, and G1, refer to the Ordering Information and Dimensions section.

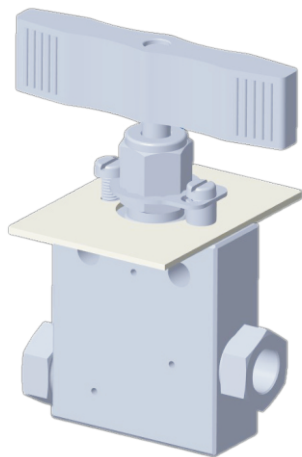
Bracket Mounting



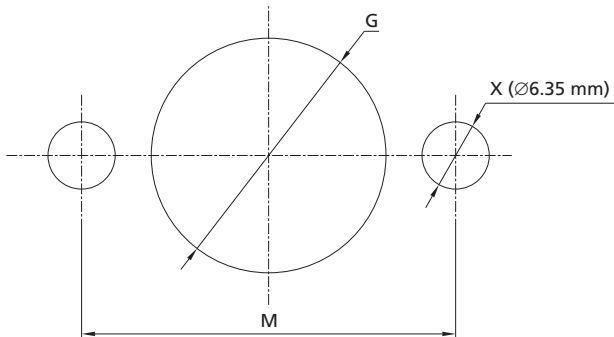
Bracket Mounting Schematic



Panel Mounting



Panel Mounting Schematic



Maintenance Components

Troubleshooting Guide

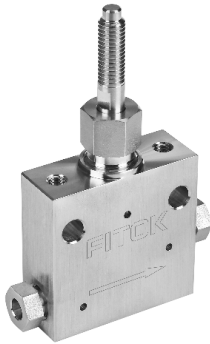
Issue	Possible Cause	Solution
Leakage from the stuffing box weep hole	Minor packing wear	Re-seal by adjusting the packing gland
	Damaged stem or severe packing wear	Replace with -RK service kit or -PRK packing kit
Leakage after valve closure	Poor sealing between lower stem and valve body	Replace with -AM valve assembly

Component Types

FITOK offers a comprehensive range of maintenance components to support servicing of needle valves and pneumatic needle valves under various fault conditions.

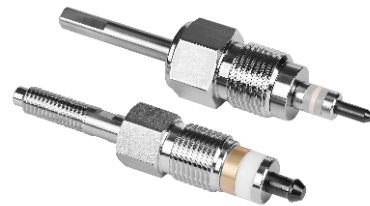
-AM Valve Assembly (Pneumatic needle valves only)

A complete needle valve assembly without actuator, including: upper stem, packing gland, lower stem, packing, packing washer, packing ring, valve body, (retaining ring), (seat), lubricant, and instructions.



-RK Service Kit

Includes upper stem, packing gland, lower stem, packing, packing washer, packing ring, (retaining ring), (seat), lubricant, and instructions.



-PRK Packing Kit

Includes packing, (retaining ring), lubricant, and instructions.



-SRK Seat (Flow Pattern -3 needle valves / pneumatic needle valves only)

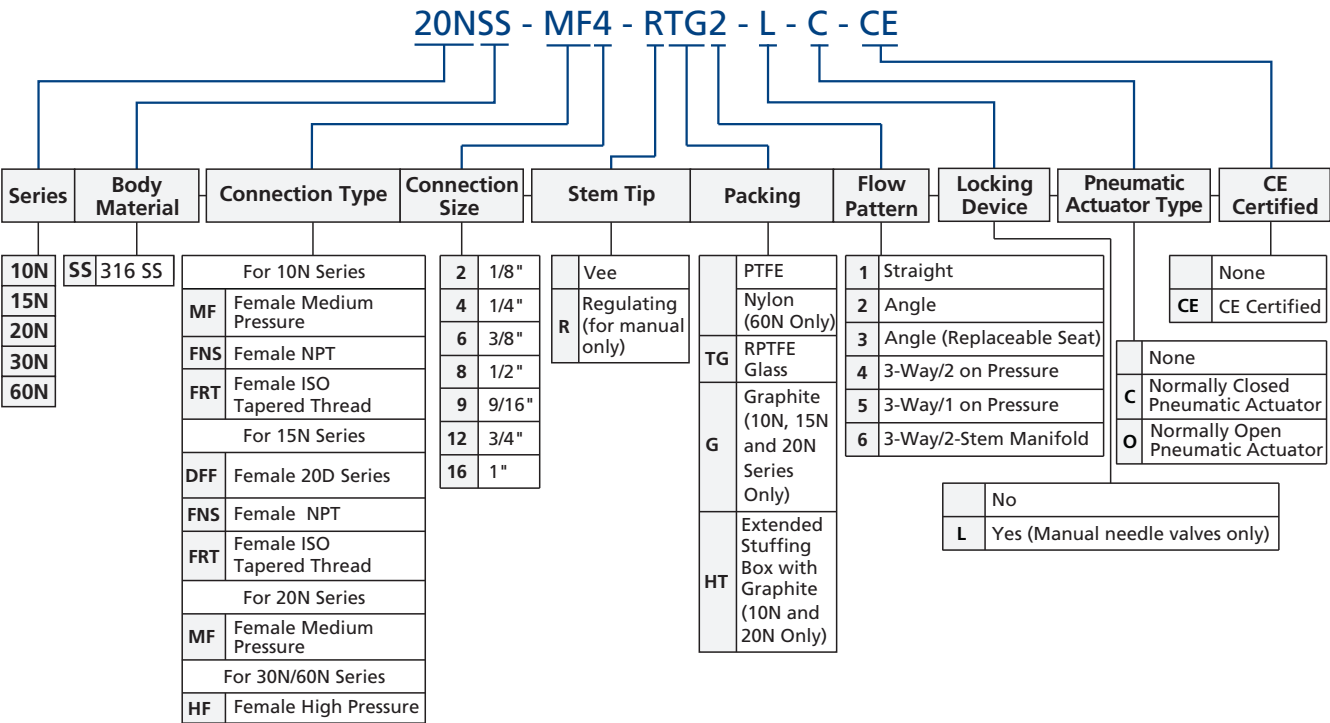
Includes seat, lubricant, and instructions.



Ordering Information

Designator	Applicability	Example Part Numbers	
		Flow Pattern-1/-2/-4/-5/-6	Flow Pattern-3
-AM	Pneumatic needle valves	20NSS-MF9-1-AM	
-RK	Needle valves	20NSS-MF9-RK	20NSS-MF9-3-RK
	Pneumatic needle valves	20NSS-MF9-OC-RK	20NSS-MF9-3-OC-RK
-PRK	Needle valves / Pneumatic needle valves	Default packing (PTFE or Nylon): 20NSS-MF9-PRK RPTFE Glass (TG): 20NSS-MF9-TG-PRK Graphite (G): 20NSS-MF9-G-PRK	
-SRK		N/A	20NSS-MF9-3-SRK

Ordering Number Description



- Notes:
- 1. Pneumatic needle valves are on/off valves, and will not regulate flow. It is not recommended to order pneumatic valves with regulating stems.
 - 2. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.
 - 3. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Check Valves

10C, 10CO Series: 10,000 psig (690 bar)

15C, 15CO Series: 15,000 psig (1034 bar)

20C, 20CO Series: 20,000 psig (1379 bar)

60C, 60CO Series: 60,000 psig (4137 bar)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Contents

10C Series

Pipe O-Ring Check Valves	E-55
--------------------------	------

10CO Series

Pipe Ball Check Valves	E-56
------------------------	------

15C Series

O-Ring Check Valves	E-57
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Pipe O-Ring Check Valves	E-58
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15CO Series

Ball Check Valves	E-59
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Pipe Ball Check Valves	E-60
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20C Series

O-Ring Check Valves	E-61
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20CO Series

Ball Check Valves	E-62
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60C Series

O-Ring Check Valves	E-63
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60CO Series

Ball Check Valves	E-64
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Ordering Number Description	E-65
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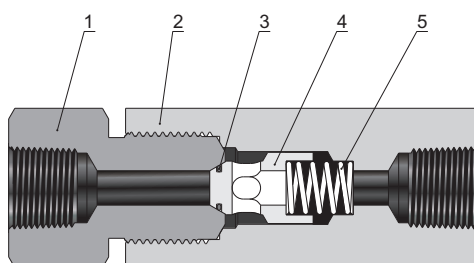
10C Series: 10,000 psig (690 bar)

Pipe O-Ring Check Valves

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other materials of O-rings available
- Provide unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Resilient O-ring seat design ensures noise-free closing and reliable reverse flow prevention

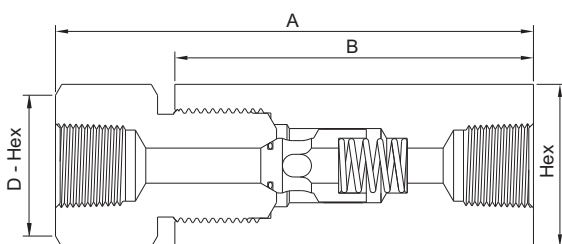
Standard Materials of Construction



Item	Component	Material Grade
1	<i>Cover Gland</i>	<i>316 SS</i>
2	<i>Valve Body</i>	<i>316 SS</i>
3	<i>O-Ring</i>	<i>FKM</i>
4	<i>Poppet</i>	<i>316 SS</i>
5	<i>Spring</i>	<i>300 Series Stainless Steel</i>
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - Hex	Hex	
10CSS-FNS16	FNS16	0.69 (17.53)	7.40	7.33 (186.2)	5.75 (146.1)	1.75 (44.5)	1.88 (47.8)	10,000 (690)

- Notes: 1. For other pipe connections, please refer to 15C Series Pipe O-Ring Check Valves for details.
 2. Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

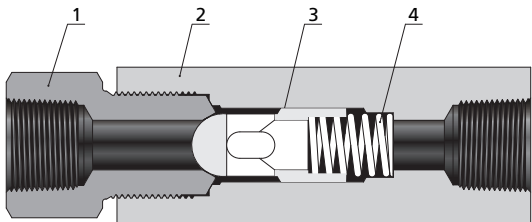
10CO Series: 10,000 psig (690 bar)

Pipe Ball Check Valves

Features

- Working temperature range: -110°F to 400°F (-79°C to 204°C)
- Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet designed essentially for axial flow with minimum pressure drop
- Optional materials of cover gland and ball poppet for longer life

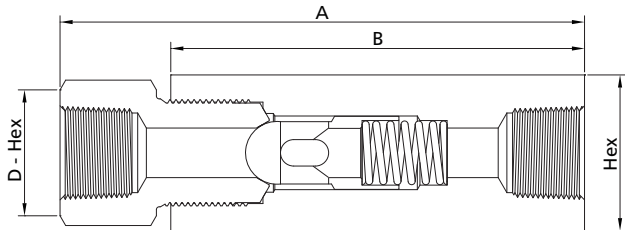
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Ball Poppet	S17400 SS
4	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Series	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - Hex	Hex	
10CO	FNS12	0.52 (13.21)	4.70	6.11 (155.3)	4.75 (120.7)	1.5 (38.1)	1.75 (44.5)	10,000 (690)
	FNS16	0.69 (17.53)	7.40	7.33 (186.2)	5.75 (146.1)	1.75 (44.5)	1.88 (47.8)	10,000 (690)

Notes: 1. For other pipe connections, please refer to 15CO Series Pipe Ball Check Valves for details.
2. Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

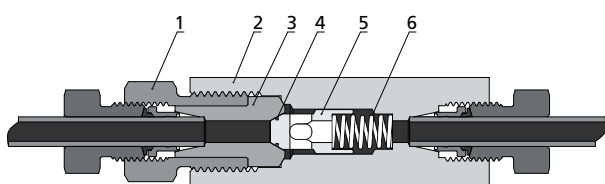
15C Series: 15,000 psig (1034 bar)

O-Ring Check Valves

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other materials of O-rings available
- Tubing sizes available in 1/4", 3/8" and 1/2"
- Provide unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Resilient O-ring seat design ensures noise-free closing and reliable reverse flow prevention

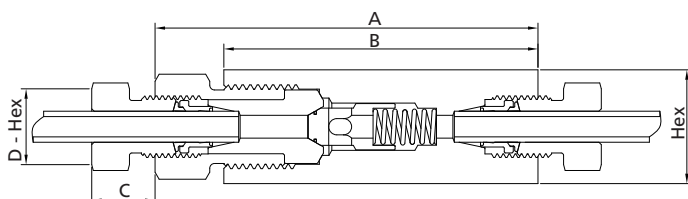
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316SS
4	O-Ring	FKM
5	Poppet	316 SS
6	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
15CSS-DFF4	DFF4	0.188 (4.78)	0.63	3.35 (85)	2.72 (69.2)	0.52 (13.3)	0.63 (16.0)	0.81 (20.6)	15,000 (1034)
15CSS-DFF6	DFF6	0.250 (6.35)	1.70	3.72 (94.6)	3.13 (79.6)	0.53 (13.5)	0.75 (19.1)	1.00 (25.4)	15,000 (1034)

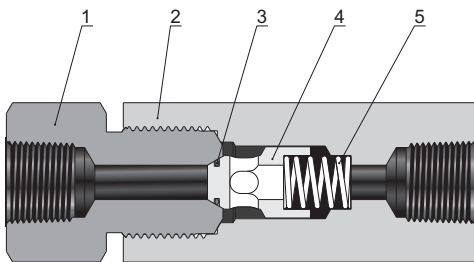
Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Pipe O-Ring Check Valves

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C);
other materials of O-rings available
- Provide unidirectional flow and tight shut-off for liquids and gases with high reliability.
When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Resilient O-ring seat design ensures noise-free closing and reliable reverse flow prevention

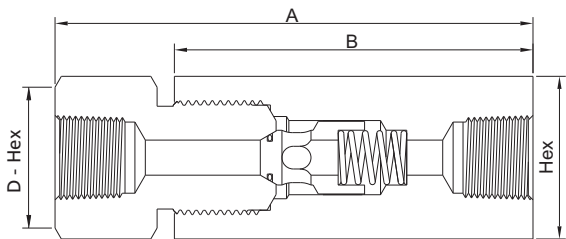
Standard Materials of Construction



Item	Component	Material Grade
1	<i>Cover Gland</i>	<i>316 SS</i>
2	<i>Valve Body</i>	<i>316 SS</i>
3	<i>O-Ring</i>	<i>FKM</i>
4	<i>Poppet</i>	<i>316 SS</i>
5	<i>Spring</i>	<i>300 Series Stainless Steel</i>
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - Hex	Hex	
15CSS-FNS4	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	15,000 (1034)
15CSS-FNS6	FNS6	0.22 (5.59)	0.84	3.95 (100.3)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)	15,000 (1034)
15CSS-FNS8	FNS8	0.36 (9.12)	2.30	5.07 (128.9)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)	15,000 (1034)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

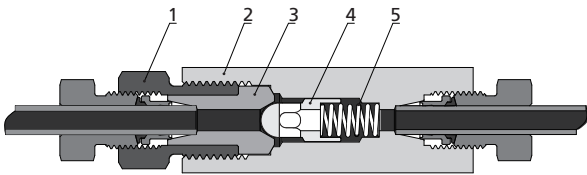
15CO Series: 15,000 psig (1034 bar)

Ball Check Valves

Features

- Working temperature range: -110°F to 800°F (-79°C to 427°C)
- Tubing sizes available in 1/4", 3/8" and 1/2"
- Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet designed essentially for axial flow with minimum pressure drop
- Optional materials of cover and ball poppet for longer life

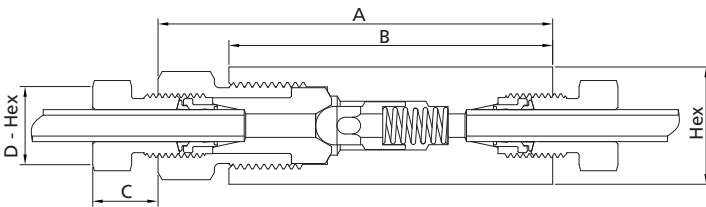
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316 SS
4	Ball Poppet	S17400 SS
5	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
15COSS-DFF4	DFF4	0.188 (4.78)	0.63	3.35 (85)	2.72 (69.2)	0.52 (13.3)	0.63 (16.0)	0.81 (20.6)	15,000 (1034)

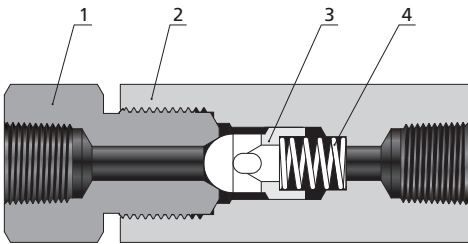
Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Pipe Ball Check Valves

Features

- Working temperature range: -110°F to 400°F (-79°C to 204°C)
- Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- Optional materials of cover gland and ball poppet for longer life

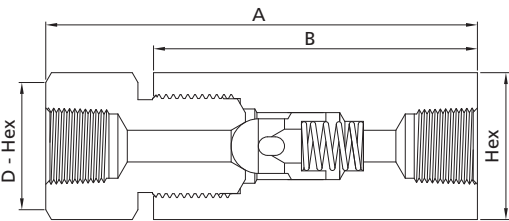
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Ball Poppet	S17400 SS
4	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	D - Hex	Hex	
15COSS-FNS4	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	15,000 (1034)
15COSS-FNS8	FNS8	0.36 (9.12)	2.30	5.07 (128.9)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)	15,000 (1034)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

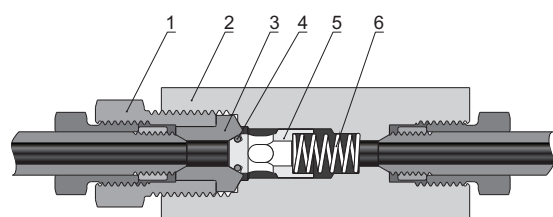
20C Series: 20,000 psig (1379 bar)

O-Ring Check Valves

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other materials of O-rings available
- Tubing sizes available from 1/4" to 1"
- Provide unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Resilient O-ring seat design ensures noise-free closing and reliable reverse flow prevention

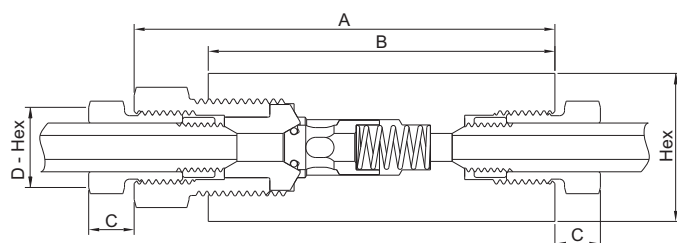
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316 SS
4	O-Ring	FKM
5	Poppet	316 SS
6	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
20CSS-MF4	MF4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20CSS-MF6	MF6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)	20,000 (1379)
20CSS-MF9	MF9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)	20,000 (1379)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

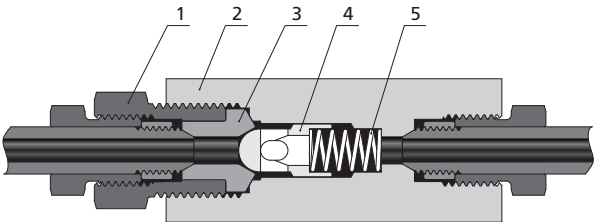
20CO Series: 20,000 psig (1379 bar)

Ball Check Valves

Features

- Working temperature range: -110°F to 1200°F (-79°C to 649°C)
- Tubing sizes available from 1/4" to 1"
- Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- Optional materials of cover and ball poppet for longer life

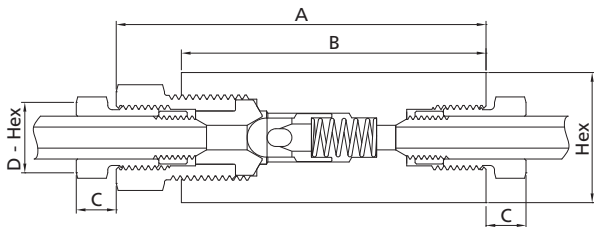
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316 SS
4	Ball Poppet	S17400 SS
5	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
20COSS-MF4	MF4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.7)	0.50 (12.7)	0.81 (20.6)	20,000 (1379)
20COSS-MF6	MF6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)	20,000 (1379)
20COSS-MF9	MF9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)	20,000 (1379)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

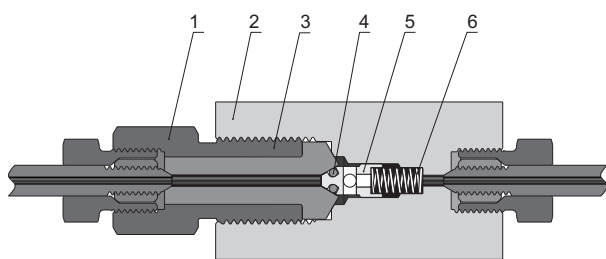
60C Series: 60,000 psig (4137 bar)

O-Ring Check Valves

Features

- Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C); other materials of O-rings available
- Tubing sizes available from 1/4" to 9/16"
- Provide unidirectional flow and tight shut-off for liquids and gases with high reliability.
When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Resilient O-ring seat design ensures noise-free closing and reliable reverse flow prevention

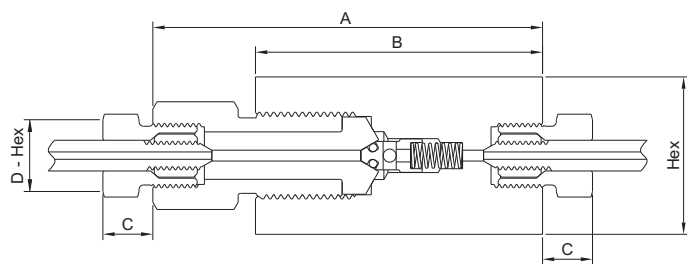
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316 SS
4	O-Ring	FKM
5	Poppet	316 SS
6	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
60CSS-HF6	HF6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.1)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)	60,000 (4137)
60CSS-HF9	HF9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.9)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)	60,000 (4137)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

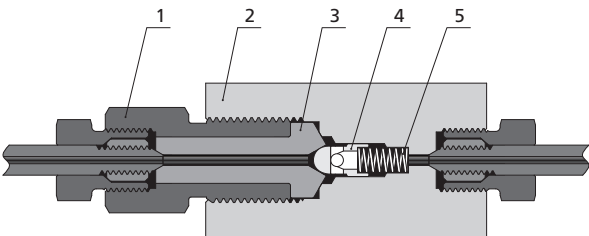
60CO Series: 60,000 psig (4137 bar)

Ball Check Valves

Features

- Working temperature range: -110°F to 1200°F (-79°C to 649°C)
- Tubing sizes available from 1/4" to 9/16"
- Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet is designed essentially for axial flow with minimum pressure drop
- Optional materials of cover and ball poppet for longer life

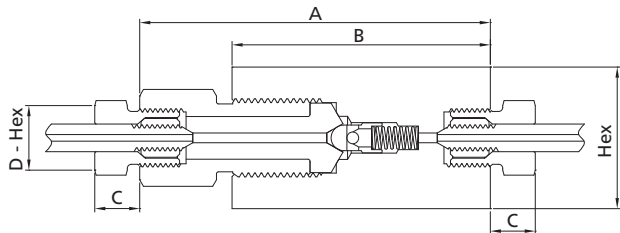
Standard Materials of Construction



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Valve Body	316 SS
3	Cover	316 SS
4	Ball Poppet	S17400 SS
5	Spring	300 Series Stainless Steel
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

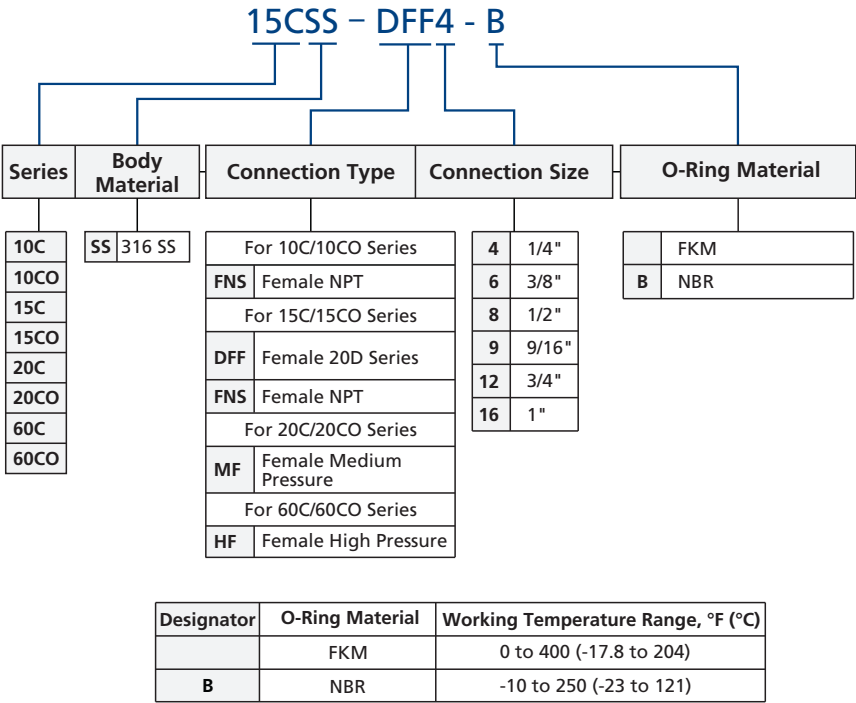
Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)
				A	B	C	D - Hex	Hex	
60COSS-HF4	HF4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	60,000 (4137)
60COSS-HF6	HF6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.1)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)	60,000 (4137)
60COSS-HF9	HF9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.9)	0.95 (24.1)	1.19 (30.16)	1.50 (38.1)	60,000 (4137)

Note: Dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



Notes: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Metering Valves

15M Series: 15,000 psig (1034 bar)

30M Series: 30,000 psig (2068 bar)

60M Series: 60,000 psig (4137 bar)



Contents

Features	E-68
Technical Data	E-68
Flow Data at 100°F (38°C)	E-68
Pressure vs. Temperature Curve	E-68
Standard Materials of Construction	E-69
Ordering Information and Dimensions	E-70
Ordering Number Description	E-70

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Features

- Precisely tapered valve stem accurately controls flow for gases and liquids
- The design of Barrel and Thimble micrometer permits repeatable settings
Each division of barrel equals to 0.025"
Thimble is divided into 25 divisions, each division of thimble equals to 0.001" stem travel
One revolution equals to valve stem 0.025" travel
- Valve body made of high tensile 316 stainless steel for maximum wear and corrosion resistance
- Packing located under stem threads
- Reliable locking device for packing gland
- Not intended as shut-off valves. Install a correlated shutoff valve when shut-off is required
- Minimum flow rate set at "0" position, and operation below "0" position not allowed

Technical Data

Series	Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
15M	1/8	DFF2	0.062 (1.57)	0.04	15,000 (1034)
15M	1/4	DFF4	0.062 (1.57)	0.04	15,000 (1034)
30M	1/4	HF4	0.062 (1.57)	0.04	30,000 (2068)
60M	1/4	HF4	0.062 (1.57)	0.04	60,000 (4137)
60M	3/8	HF6	0.062 (1.57)	0.04	60,000 (4137)

Packing Options:

Nylon is the standard packing material for 60M series, PTFE for other series. RPTFE is available for all series.

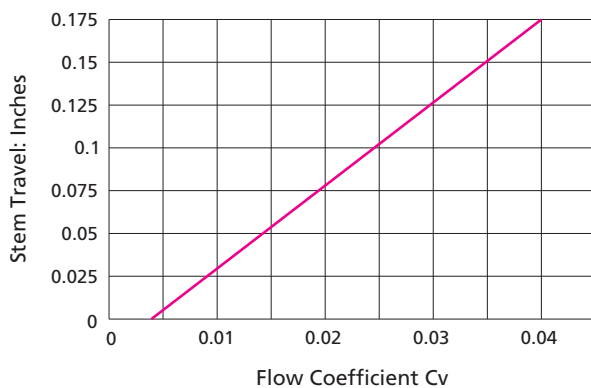
Nylon: 40°F~230°F (4.4°C~110°C).

PTFE: -100°F~450°F (-73°C~232°C).

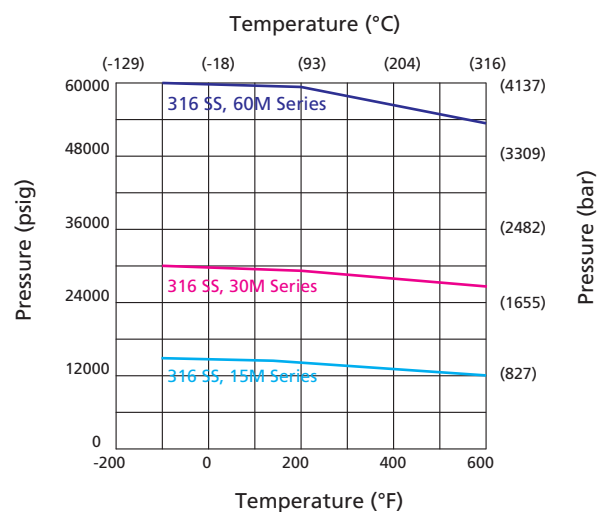
RPTFE glass: -100°F~600°F (-73°C~316°C).

Graphite: 0°F~800°F (-17.8°C~427°C).

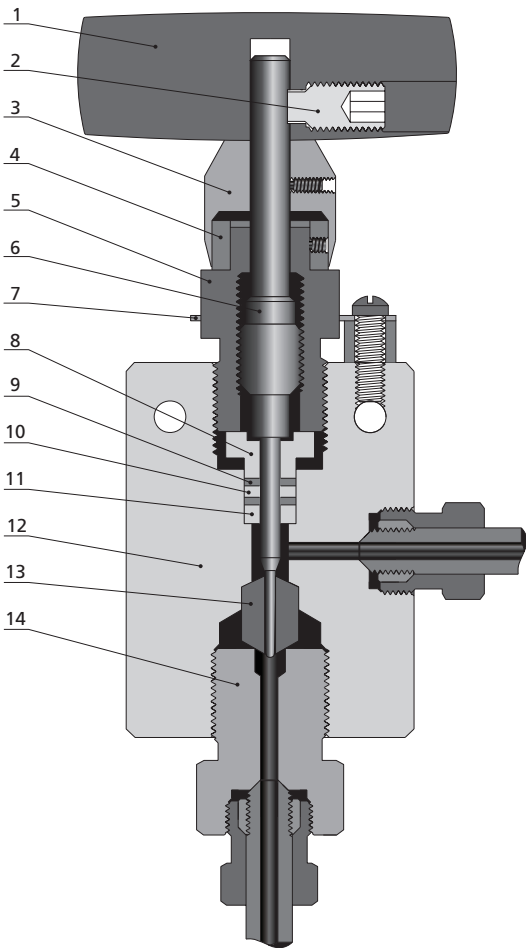
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Standard Materials of Construction

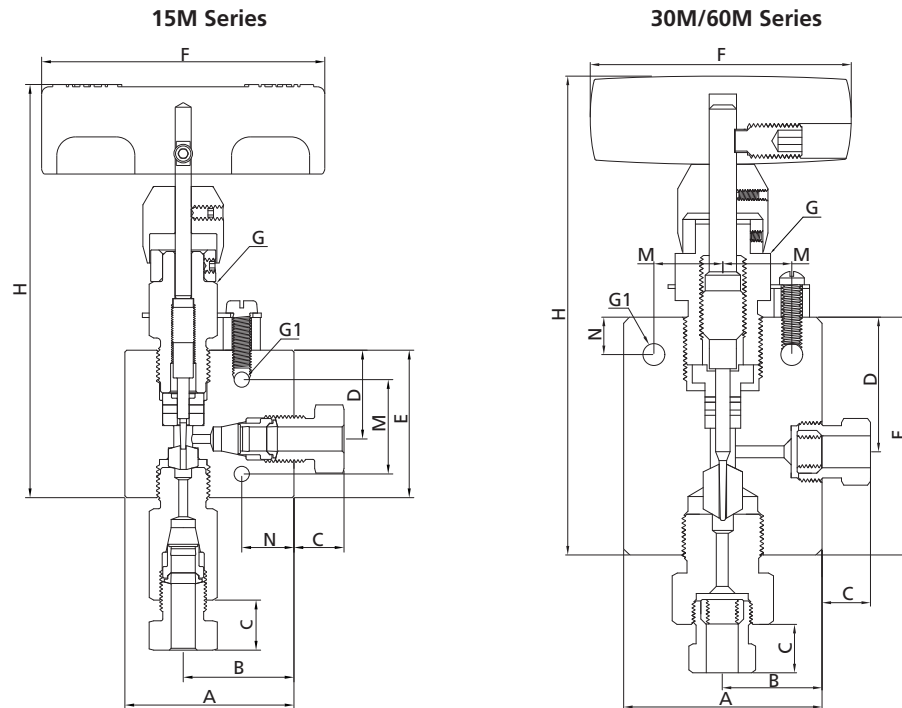


Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Thimble	304 SS
4	Barrel	304 SS
5	Packing Gland	C63000
6	Stem	316 (For 15M Series), S17400 (For 30M, 60M Series)
7	Locking Plate	304 SS
8	Packing Ring	316 (For 15M, 30M Series), S17400 (For 60M Series)
9	Packing	PTFE/RPTFE/Nylon/Graphite
10	Retaining Ring	PEEK (60M Series Only)
11	Packing Washer	316 (For 15M Series), S17400 (For 30M, 60M Series)
12	Body	316 SS
13	Seat	316 SS
14	Seat Gland	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)											Thickness
			A	B	C	D	E	F	G	G1	H	M	N	
15MSS-DFF2	DFF2	0.062 (1.57)	1.79 (45.5)	1.17 (29.8)	0.44 (11.2)	0.94 (23.8)	1.56 (39.6)	3.00 (76.2)	0.87 (22.1)	0.16 (4.1)	4.40 (111.7)	1.00 (25.4)	0.55 (14.1)	0.75 (19.1)
15MSS-DFF4	DFF4	0.062 (1.57)	1.79 (45.5)	1.17 (29.8)	0.53 (13.5)	0.94 (23.8)	1.56 (39.6)	3.00 (76.2)	0.87 (22.1)	0.16 (4.1)	4.40 (111.7)	1.00 (25.4)	0.55 (14.1)	0.75 (19.1)
30MSS-HF4	HF4	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	4.90 (124.5)	0.69 (17.3)	0.50 (12.7)	1.00 (25.4)
60MSS-HF4	HF4	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.63 (66.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	5.54 (140.7)	0.69 (17.3)	0.50 (12.7)	1.00 (25.4)
60MSS-HF6	HF6	0.062 (1.57)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.63 (66.8)	3.00 (76.2)	0.97 (24.6)	0.22 (5.6)	5.54 (140.7)	0.69 (17.3)	0.50 (12.7)	1.00 (25.4)

- Notes: 1. G is the drill dimension of packing bolt mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension when stem is in fully open position.
 5. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description

Series		Body Material		Connection		Packing Material	
15M	30M	SS	316 SS	DFF2	1/8" Female 20D Series	PTFE (15M and 30M Series Only), Nylon (60M Series Only)	TG
				DFF4	1/4" Female 20D Series		RPTFE Glass
				HF4	1/4" Female High Pressure		G
				HF6	3/8" Female High Pressure		Graphite (15M Only)

Note: "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Relief Valves

HSR Series: 20,000 psig (1379 bar)

HMR Series: 60,000 psig (4137 bar)

HAR Series: 20,000 psig (1379 bar)



Part Number Crossover Charts	Subsea Valves	Sour Service Products	Valves	Line Filters	Quick Couplings	Tubing	Fittings

Contents

HSR Series

20,000 psig (1379 bar) E-73

HMR Series

60,000 psig (4137 bar) E-76

HAR Series

20,000 psig (1379 bar) E-79

Ordering Number Description

E-82

HSR Series: 20,000 psig (1379 bar)

Features

- ⦿ Set pressure: 1,500 to 20,000 psig (103 to 1379 bar)
- ⦿ Working temperature range: 32°F to 400°F (0°C to 204°C)
- ⦿ Liquid or gas service
- ⦿ Soft seat design to provide bubble tight shut-off of gas
- ⦿ Factory-set, tested, locked, and tagged with the set pressure
- ⦿ Lock wire the cap and body together to maintain relief setting
- ⦿ Mountable in any direction

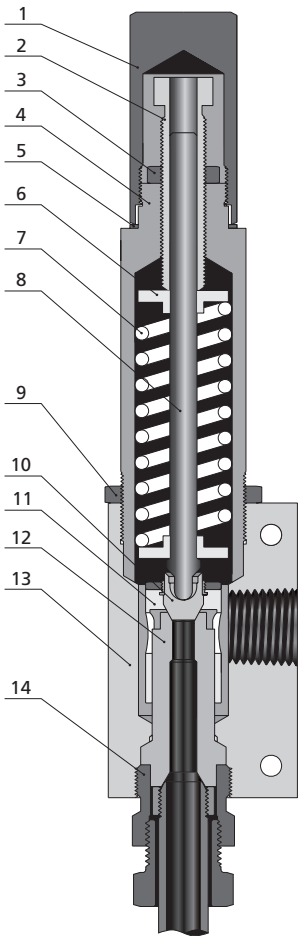
Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HSRSS-MF9-FNS12-1	9/16	MF9	FNS12	0.312 (7.92)	1.2	1,500 (103)	5,000 (345)	500 (34.5)
HSRSS-MF9-FNS12-2	9/16	MF9	FNS12	0.25 (6.35)	0.8	5,000 (345)	10,000 (690)	500 (34.5)
HSRSS-MF9-FNS12-3	9/16	MF9	FNS12	0.156 (3.96)	0.3	10,000 (690)	20,000 (1379)	500 (34.5)

- Notes: 1. Please specify the required set pressure when ordering.
2. Maximum system operating pressure should not exceed 90% of the set pressure.
3. For valves not actuated for a period of time, initial relief pressure may be higher than the set pressure.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

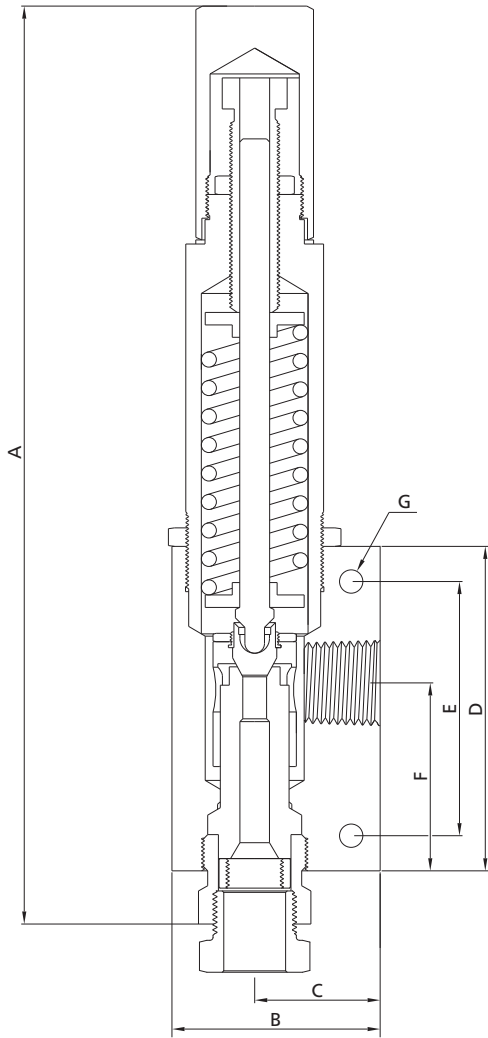
Standard Materials of Construction



Item	Component	Material Grade
1	Cap	316 SS
2	Adjusting Bolt	316 SS
3	Lock Nut	316 SS
4	Spring Cylinder	316 SS
5	Gasket	316L SS
6	Spring Washer	316 SS
7	Spring	S17700
8	Spindle	316 SS
9	Lock Nut	316 SS
10	Plug	PEEK
11	Plug Guide	316 SS
12	Seat	316 SS
13	Valve Body	316 SS
14	Seat Gland	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Dimensions



Dimensions, in.(mm)						
A	B	C	D	E	F	G
9.46 (240.4)	2.00 (50.8)	1.19 (30.2)	3.25 (82.6)	2.25 (57.1)	1.94 (49.3)	0.28 (7.2)

Notes: 1. G is the dimension of mounting holes.
2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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HMR Series: 60,000 psig (4137 bar)

Features

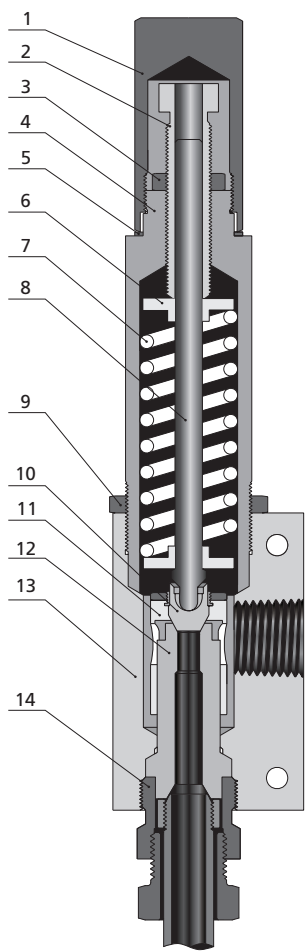
- Set pressure: 3,000 to 60,000 psig (207 to 4137 bar)
- Working temperature range: -110°F to 400°F (-79°C to 204°C)
- Liquid or gas service
- Metal-to-metal seating to provide shut-off of liquids and gases under pressure to commercial tightness standards
- Factory-set, tested, locked, and tagged with the set pressure
- Lock wire the cap and body together to maintain relief setting
- Mountable in any direction

Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice Size in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HMRSS-MF9-FNS12-1	9/16	MF9	FNS12	0.312 (7.92)	1.2	3,000 (207)	5,000 (345)	500 (34.5)
HMRSS-MF9-FNS12-2	9/16	MF9	FNS12	0.250 (6.35)	0.8	5,000 (345)	10,000 (690)	500 (34.5)
HMRSS-MF9-FNS12-3	9/16	MF9	FNS12	0.188 (4.78)	0.45	10,000 (690)	15,000 (1034)	500 (34.5)
HMRSS-MF9-FNS12-4	9/16	MF9	FNS12	0.156 (3.96)	0.3	15,000 (1034)	20,000 (1379)	500 (34.5)
HMRSS-HF6-FNS12-5	3/8	HF6	FNS12	0.125 (3.18)	0.2	20,000 (1379)	30,000 (2068)	500 (34.5)
HMRSS-HF6-FNS12-6	3/8	HF6	FNS12	0.093 (2.36)	0.1	25,000 (1724)	45,000 (3103)	500 (34.5)
HMRSS-HF6-FNS12-7	3/8	HF6	FNS12	0.078 (1.98)	0.07	30,000 (2068)	60,000 (4137)	500 (34.5)

Notes: 1. Please specify the required set pressure when ordering.
2. Maximum system operating pressure should not exceed 90% of the relief valve set pressure.
3. For valves not actuated for a period of time, initial relief pressure may be higher than the set pressure.

Standard Materials of Construction

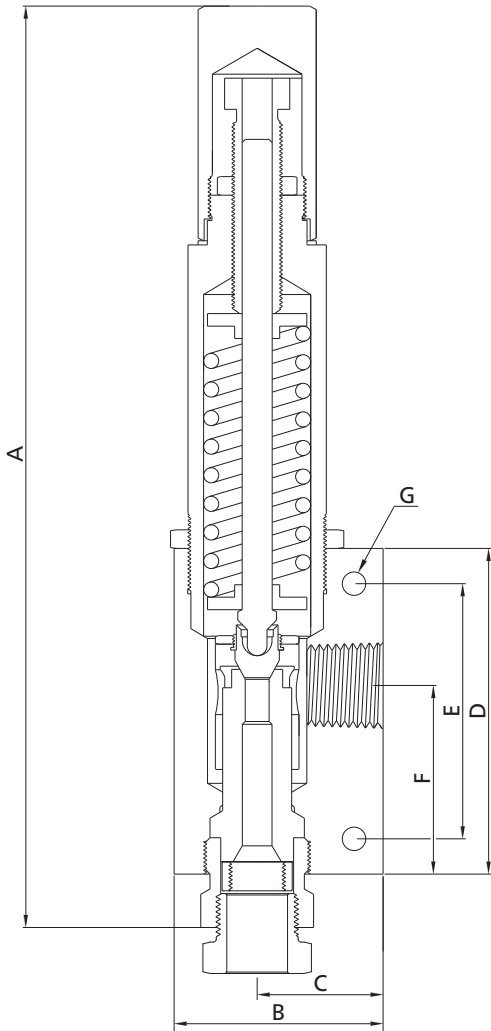


Item	Component	Material Grade
1	Cap	316 SS
2	Adjusting Bolt	316 SS
3	Lock Nut	316 SS
4	Spring Cylinder	316 SS
5	Gasket	316L SS
6	Spring Washer	316 SS
7	Spring	S17700
8	Spindle	316 SS
9	Lock Nut	316 SS
10	Plug	S17400
11	Plug Guide	316 SS
12	Seat	S17400
13	Valve Body	316 SS
14	Seat Gland	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Dimensions



Dimensions, in.(mm)						
A	B	C	D	E	F	G
9.46 (240.4)	2.00 (50.8)	1.19 (30.2)	3.25 (82.6)	2.25 (57.1)	1.94 (49.3)	0.28 (7.2)

Notes: 1. G is the dimension of mounting holes.
2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

HAR Series: 20,000 psig (1379 bar)

Features

- ⦿ Set pressure: 3,000 to 20,000 psig (207 to 1379 bar)
- ⦿ Working temperature range: 32°F to 400°F (0°C to 204°C)
- ⦿ Field adjustable
- ⦿ Liquid or gas service
- ⦿ Soft seat design to provide bubble tight shut-off of gas
- ⦿ Easily replaceable seat
- ⦿ Mountable in any direction

Ordering Information and Technical Data

Ordering Number	Inlet		Outlet Connection	Orifice Size in. (mm)	Cv	Minimum Set Pressure psig (bar)	Maximum Set Pressure psig (bar)	Maximum Back Pressure psig (bar)
	Tube O.D. in.	Connection						
HARSS-MF9-FNS12-1	9/16	MF9	FNS12	0.197 (5.0)	0.5	3,000 (207)	10,000 (690)	500 (34.5)
HARSS-MF9-FNS12-2	9/16	MF9	FNS12	0.093 (2.36)	0.1	10,000 (690)	20,000 (1379)	500 (34.5)

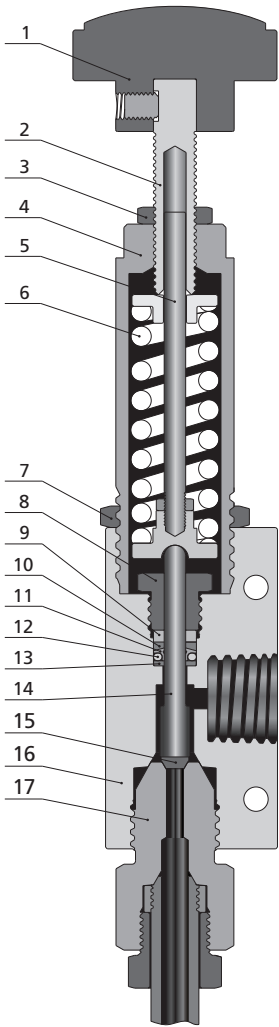
Notes: 1. Maximum system operating pressure should not exceed 90% of the relief valve set pressure.
2. For valves not actuated for a period of time, initial relief pressure may be higher than the set pressure.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

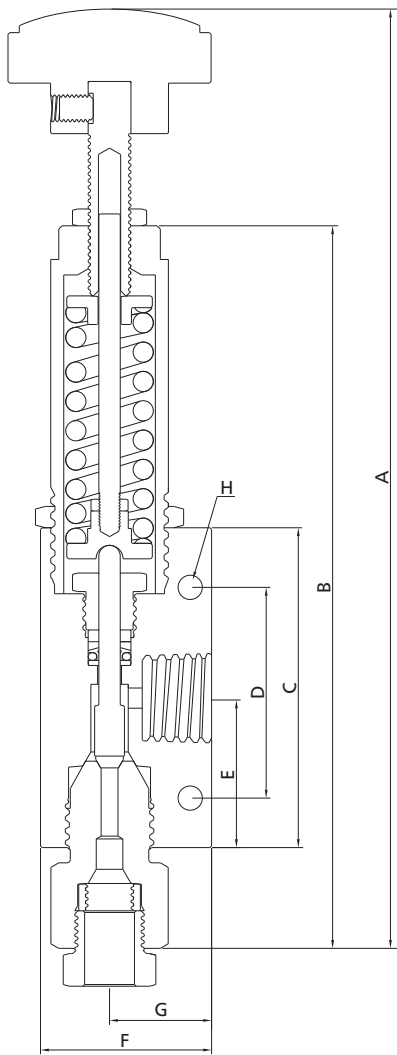
Standard Materials of Construction

Item	Component	Material Grade
1	Handle	Aluminum Alloy
2	Set Screw	316 SS
3	Lock Nut	316 SS
4	Bonnet	316 SS
5	Upper Stem	316 SS
6	Spring	S17700
7	Lock Nut	316 SS
8	Packing Gland	C63000
9	Washer	C63000
10	<i>Backing Ring</i>	<i>PEEK</i>
11	<i>Backing Ring</i>	<i>PTFE</i>
12	<i>O-Ring</i>	<i>FKM</i>
13	<i>Ring</i>	<i>PEEK</i>
14	<i>Lower Stem</i>	<i>316 SS</i>
15	<i>Plug</i>	<i>PEEK</i>
16	<i>Body</i>	<i>316 SS</i>
17	<i>Seat</i>	<i>316 SS</i>
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.



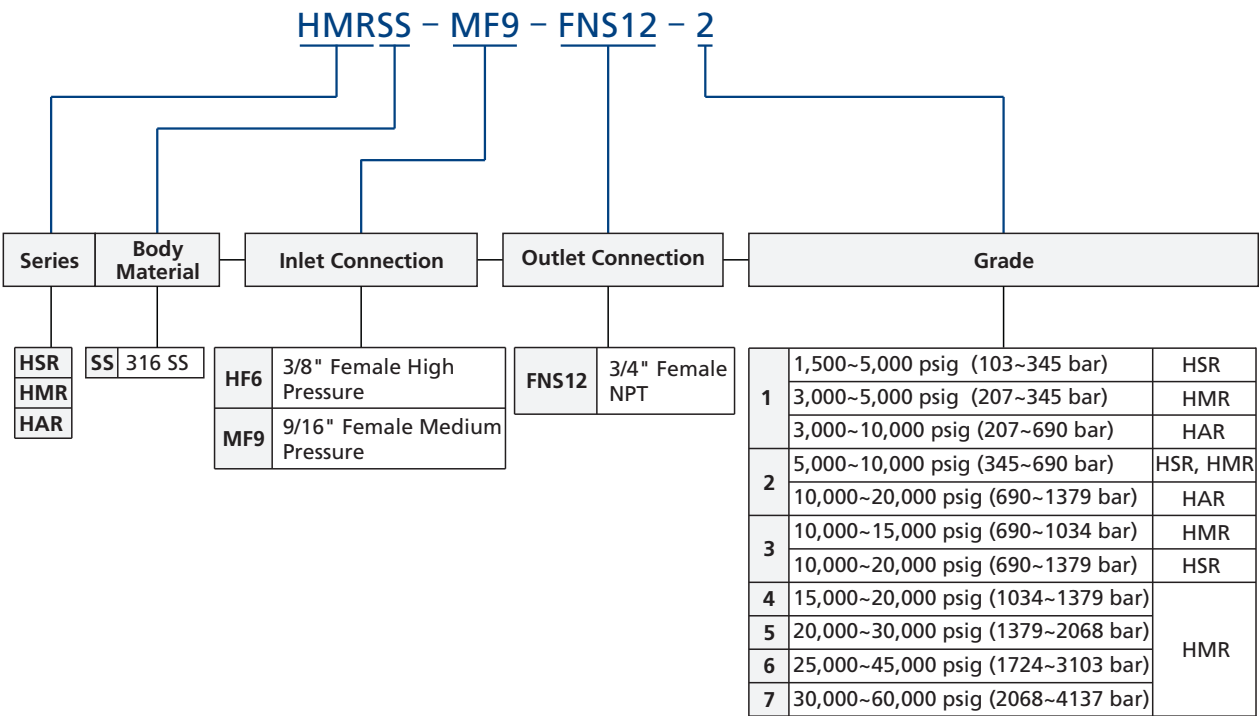
Dimensions



Dimensions, in.(mm)							
A	B	C	D	E	F	G	H
10.98 (278.8)	8.45 (214.6)	3.74 (95.0)	2.46 (62.6)	1.75 (44.4)	2.00 (50.8)	1.19 (30.3)	0.28 (7.2)

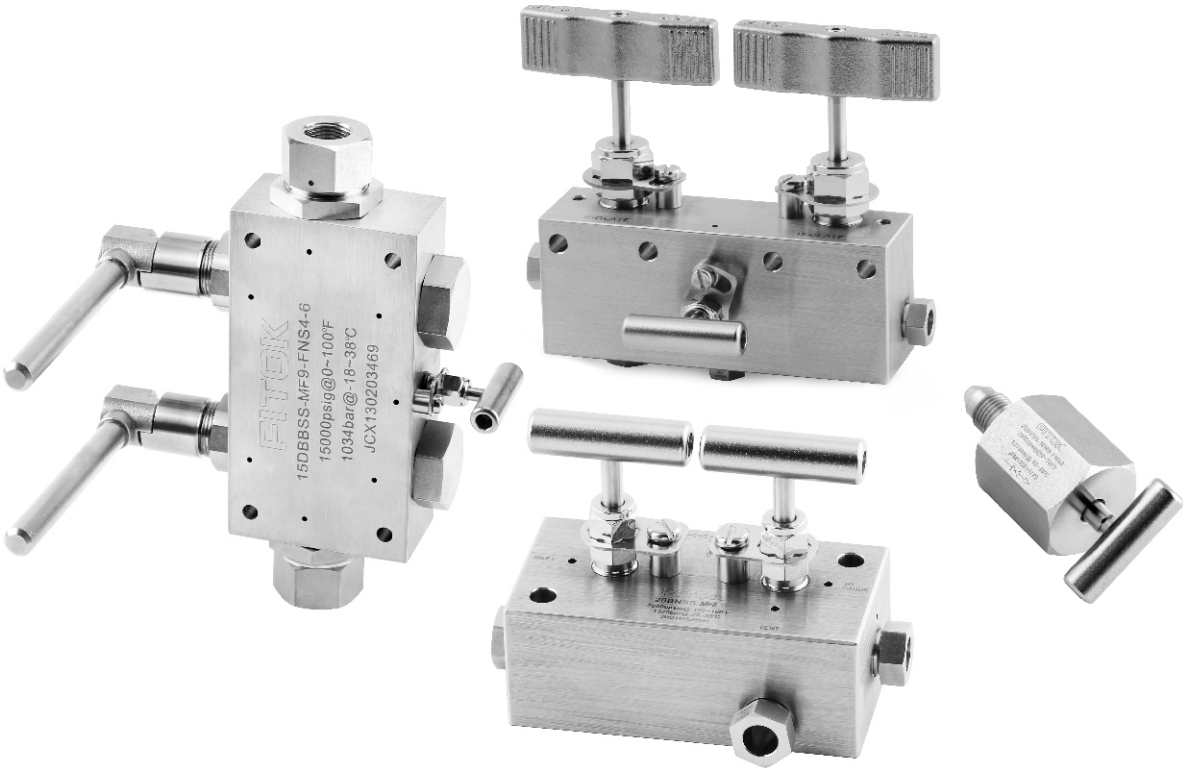
Notes: 1. H is the dimension of mounting holes.
2. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact the FITOK Group or our authorized distributors.

Ordering Number Description



Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. Valves are factory-set, test, locked, and tagged with the set pressure. Please specify the required set pressure when ordering.
3. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.

Bleed Valves and Block & Bleed Valves



	Fittings
	Tubing
	Quick Couplings
	Line Filters
Valves	
Sour Service Products	
Subsea Valves	
Part Number Crossover Charts	

Contents

Bleed Valves

Working Pressure Up to 30,000 psig (2068 bar)	E-85
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Block & Bleed Needle Valves

Working Pressure Up to 20,000 psig (1379 bar)	E-88
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Double Block & Bleed Needle Valves

Working Pressure Up to 20,000 psig (1379 bar)	E-92
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Double Block & Bleed Ball Valves

Working Pressure Up to 15,000 psig (1034 bar)	E-96
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Bleed Valves

Working Pressure Up to 30,000 psig (2068 bar)

Features

- One piece hex construction compact design allows easy installation
- FKM O-ring for operation from 0°F to 400°F (-17.8°C to 204°C)
- 1/8" Female NPT outlet connection
- High tensile 316 stainless steel body material
- Easy to assemble and replace O-ring
- Positive locking screw design prevents accidental removal of the stem
- Tee handle for easy operation

Technical Data

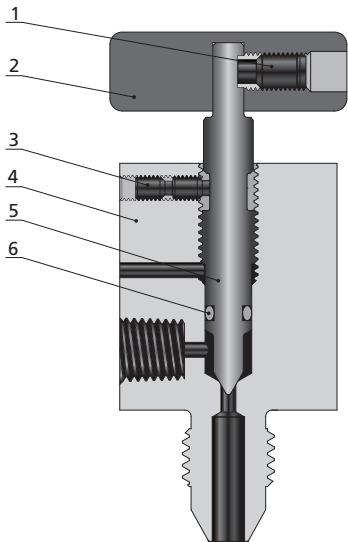
Series	Inlet Connection	Orifice in. (mm)	Working Pressure psig (bar)
15BV	DFT6	0.094 (2.4)	15,000 (1034)
	DFT8	0.094 (2.4)	15,000 (1034)
	DFT9	0.094 (2.4)	15,000 (1034)
20BV	MM6	0.094 (2.4)	20,000 (1379)
	MM9	0.094 (2.4)	20,000 (1379)
	MCT6	0.094 (2.4)	20,000 (1379)
	MCT9	0.094 (2.4)	20,000 (1379)
30BV	HM6	0.094 (2.4)	30,000 (2068)
	HM9	0.094 (2.4)	30,000 (2068)
	HCT6	0.094 (2.4)	30,000 (2068)
	HCT9	0.094 (2.4)	30,000 (2068)

Notes: 1. Working pressure shown is in closed position.
 2. Working pressure is 15,000 psig (1034 bar) bar in open position.
 3. A variety of end connections available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

Standard Materials of Construction

Item	Component	Material Grade
1	Handle Screw	Stainless Steel
2	Handle	Stainless Steel
3	Locking Screw	Stainless Steel
4	Body	316 SS
5	Stem	S17400
6	O-Ring	FKM
Lubricant		Molybdenum disulfide/Fluorinated-Based

Wetted components listed in italics.



FITOK

Fittings

Tubing

Quick Couplings

Line Filters

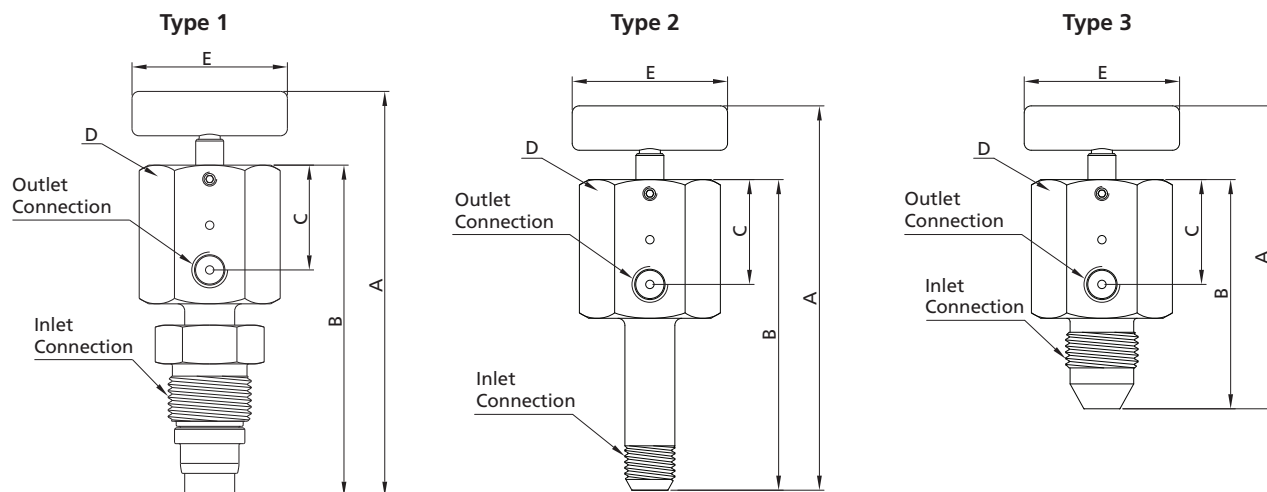
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Information and Dimensions



Type 1

Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
15BVSS-DFT6-FNS2	DFT6	FNS2	0.094 (2.4)	3.94 (100.1)	3.11 (78.9)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
15BVSS-DFT8-FNS2	DFT8	FNS2	0.094 (2.4)	4.10 (104.1)	3.26 (82.9)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
15BVSS-DFT9-FNS2	DFT9	FNS2	0.094 (2.4)	4.54 (115.4)	3.71 (94.2)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Type 2

Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-MCT6-FNS2	MCT6	FNS2	0.094 (2.4)	3.61 (91.7)	2.78 (70.5)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-MCT9-FNS2	MCT9	FNS2	0.094 (2.4)	3.82 (97.0)	2.98 (75.8)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HCT6-FNS2	HCT6	FNS2	0.094 (2.4)	4.09 (103.9)	3.26 (82.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HCT9-FNS2	HCT9	FNS2	0.094 (2.4)	4.68 (118.9)	3.85 (97.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Type 3

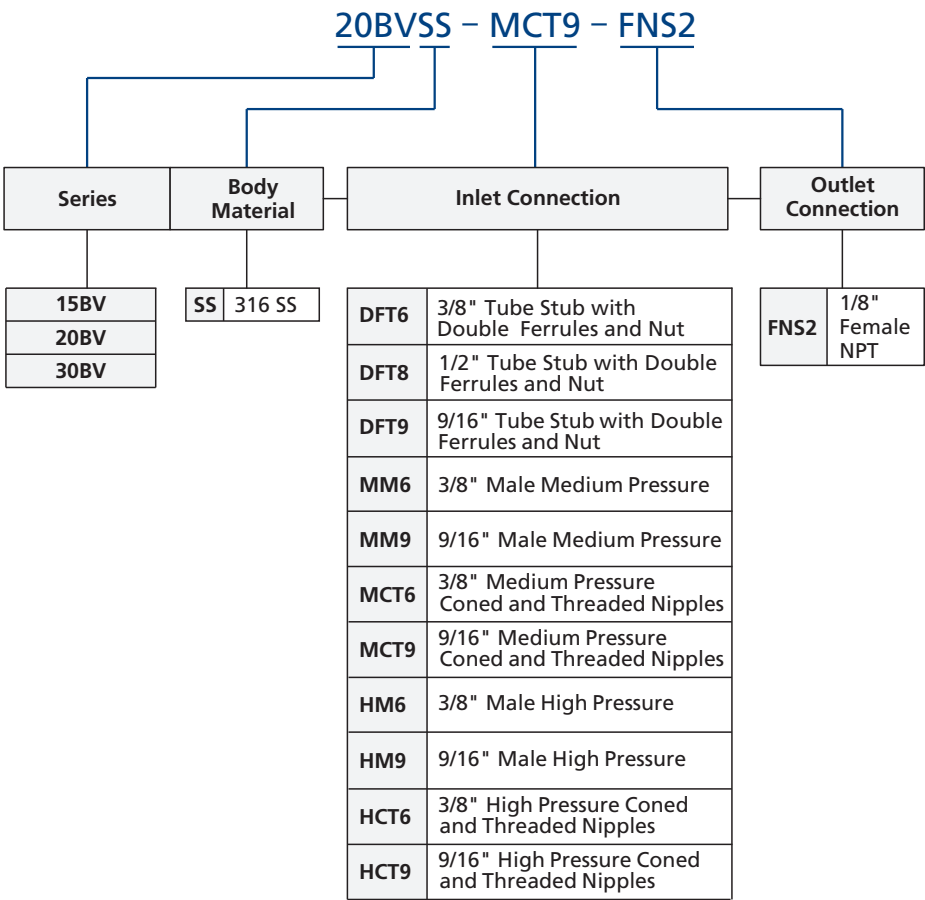
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-MM6-FNS2	MM6	FNS2	0.094 (2.4)	3.23 (82.0)	2.39 (60.8)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-MM9-FNS2	MM9	FNS2	0.094 (2.4)	3.42 (86.8)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HM6-FNS2	HM6	FNS2	0.094 (2.4)	3.27 (83.1)	2.44 (61.9)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HM9-FNS2	HM9	FNS2	0.094 (2.4)	3.44 (87.4)	2.61 (66.2)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Notes: 1. D is the dimension of hex.

2. A is the dimension of stem in closed position.

3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



- Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

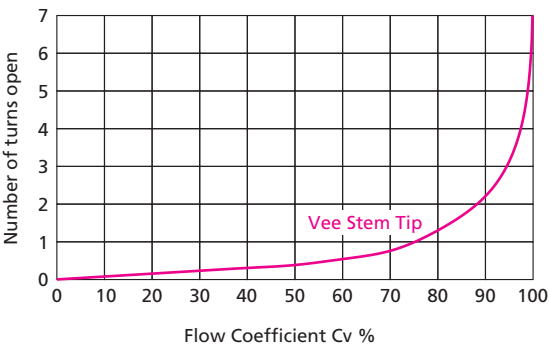
Block & Bleed Needle Valves

Working Pressure Up to 20,000 psig (1379 bar)

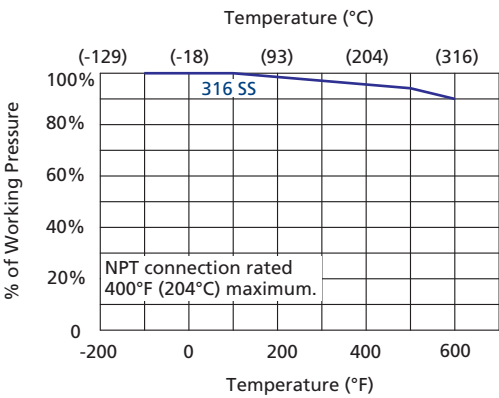
Features

- Compact design offers advantages over configurations with multiple valves and fittings
- Minimal space needed for installation and operation
- Cost savings from fewer components required
- Reduced potential for leakage
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Non-rotating stem and bar stock body design
- Reliable packing gland locking device

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve

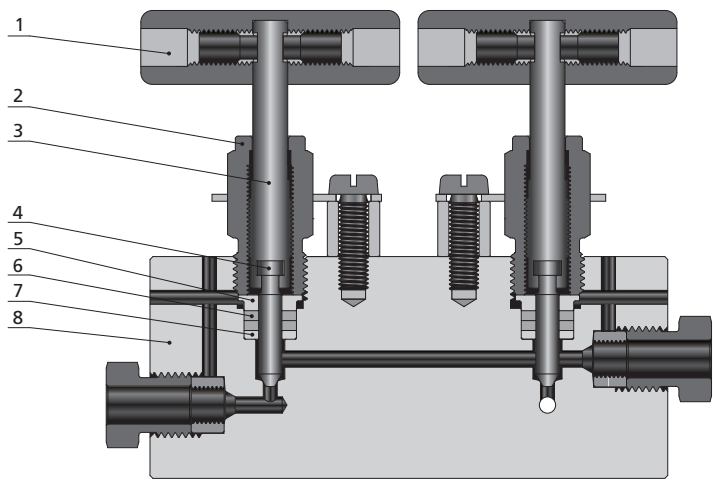


Technical Data

Series	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
15BN	FNS4	0.094 (2.4)	0.20	15,000 (1034)
	FNS6	0.094 (2.4)	0.20	15,000 (1034)
20BN	MF4	0.094 (2.4)	0.20	20,000 (1379)
	MF6	0.094 (2.4)	0.20	20,000 (1379)

- Notes: 1. Packing Options
PTFE is the standard packing material, RPTFE glass also available.
PTFE: -100°F~450°F (-73°C~232°C).
RPTFE glass: -100°F~600°F (-73°C~316°C).
2. A variety of end connections are available on request . For connections not shown above, please contact FITOK Group or our authorized distributors.

Standard Materials of Construction

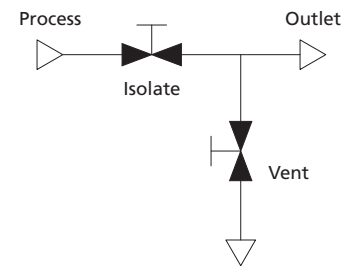
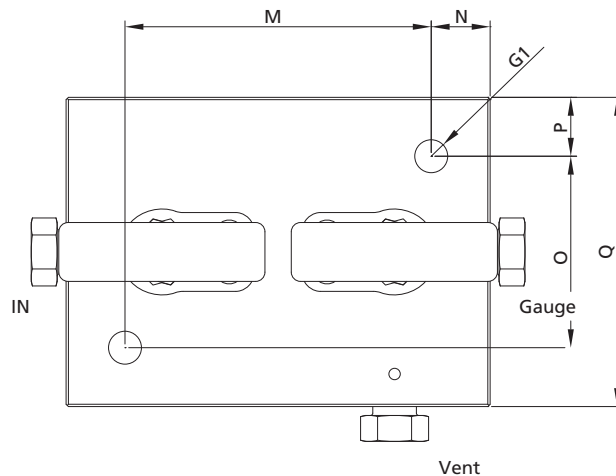
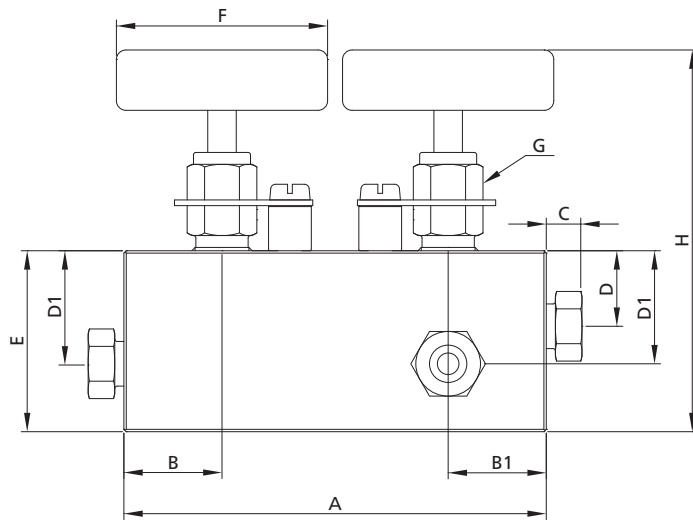


Item	Component	Material Grade
1	Handle	Stainless Steel
2	Packing Gland	C63000
3	Upper Stem	316 SS
4	<i>Lower Stem</i>	<i>S17400</i>
5	Packing Ring	C63000
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing Washer</i>	<i>S17400</i>
8	<i>Body</i>	<i>316 SS</i>
Lubricant		Molybdenum Disulfide

Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Ordering Information and Dimensions



Dimensions																		
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)															
			A	B	B1	C	D	D1	E	F	G	G1	H	M	N	O	P	Q
15BNSS-FNS4	FNS4	0.094 (2.4)	3.78 (96.0)	0.90 (22.9)	1.00 (25.4)		0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.63 (15.9)	0.28 (7.1)	3.26 (82.7)	3.03 (77.0)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
15BNSS-FNS6	FNS6	0.094 (2.4)	3.88 (98.5)	1.00 (25.4)	1.00 (25.4)		0.81 (20.6)	1.08 (27.5)	1.58 (40.2)	1.75 (44.5)	0.63 (15.9)	0.28 (7.1)	3.34 (84.8)	3.13 (79.5)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
20BNSS-MF4	MF4	0.094 (2.4)	3.5 (88.9)	0.81 (20.6)	0.81 (20.6)	0.38 (9.7)	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.63 (15.9)	0.28 (7.1)	3.26 (82.7)	2.74 (69.5)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)
20BNSS-MF6	MF6	0.094 (2.4)	3.88 (98.5)	1.00 (25.4)	1.00 (25.4)	0.44 (11.2)	0.81 (20.6)	1.08 (27.5)	1.50 (38.1)	1.75 (44.5)	0.63 (15.9)	0.28 (7.1)	3.26 (82.7)	3.13 (79.5)	0.37 (9.5)	1.25 (31.8)	0.37 (9.5)	2.00 (50.8)

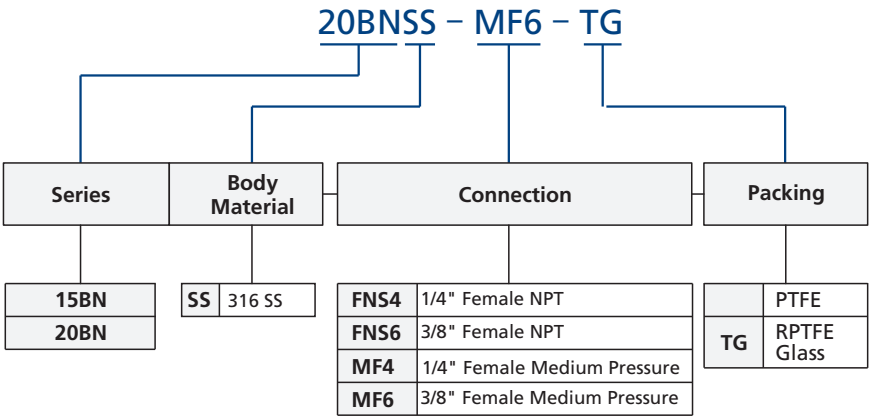
Notes: 1. G is the drill dimension of packing gland mounting hole.

2. G1 is the panel mounting drill size.

3. H is the dimension of stem in closed position.

4. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



- Notes: 1. For more details regarding Medium Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

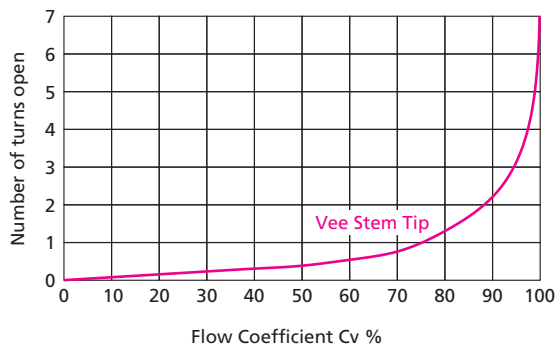
Double Block & Bleed Needle Valves

Working Pressure Up to 20,000 psig (1379 bar)

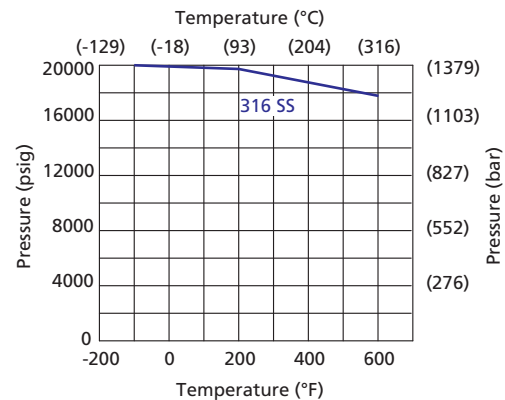
Features

- ⦿ Compact design provides large valve performance in a small package
- ⦿ Reduced potential for leakage
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Reliable packing gland locking device

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Technical Data

Series	Connection Type (Inlet and Outlet)	Vent Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
20DBN	MF4	MF4	0.094 (2.4)	0.10	20,000 (1379)
	MF6	MF4	0.094 (2.4)	0.27	20,000 (1379)
	MF9	MF4	0.094 (2.4)	0.27	20,000 (1379)
	HF9	MF4	0.094 (2.4)	0.27	20,000 (1379)

Notes: 1. Packing Options

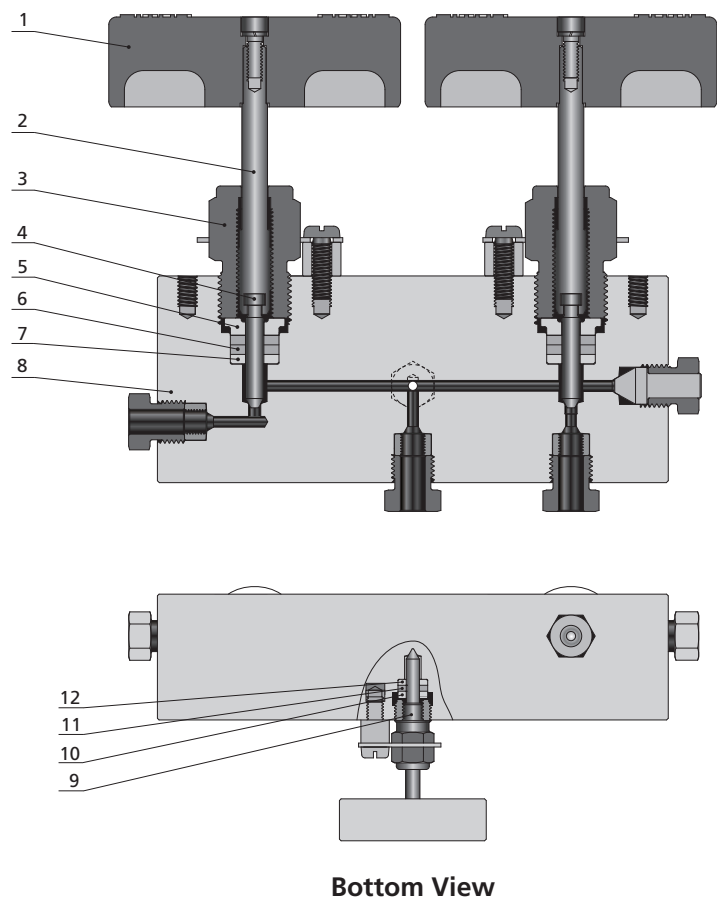
PTFE is the standard packing material, RPTFE glass also available.

PTFE: -100°F~450°F (-73°C~232°C).

RPTFE glass: -100°F~600°F (-73°C~316°C).

2. A variety of end connections are available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

Standard Materials of Construction

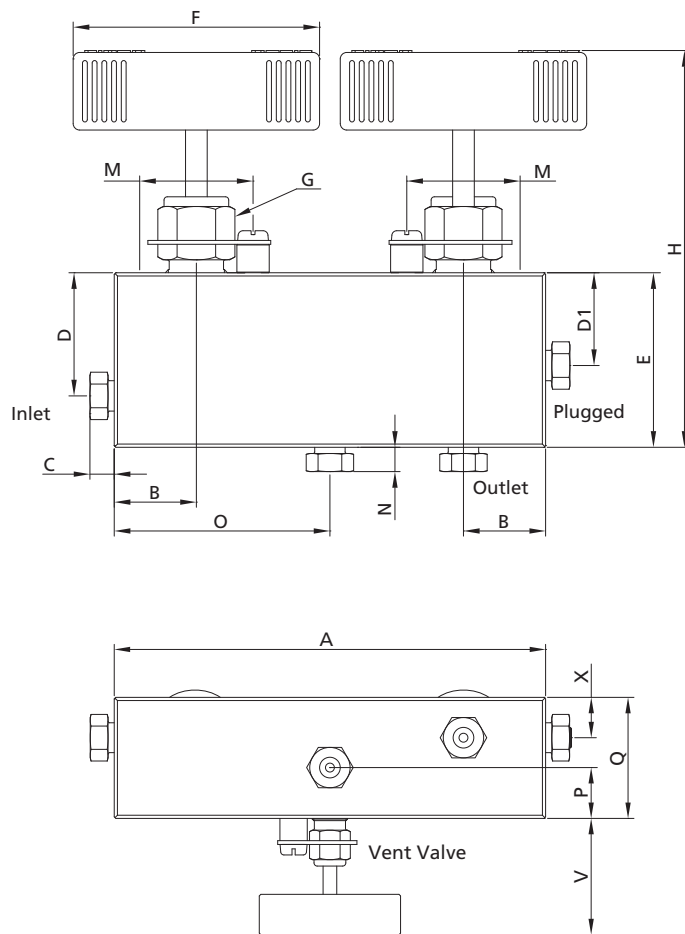


Item	Component	Material Grade
1	Handle	Stainless Steel
2	Upper Stem	316 SS
3	Packing Gland	C63000
4	<i>Lower Stem</i>	<i>S17400</i>
5	<i>Packing Ring</i>	<i>C63000</i>
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing Washer</i>	<i>S17400</i>
8	Body	316 SS
9	<i>Vent Valve Stem</i>	<i>S17400</i>
10	Vent Valve Ring	C63000
11	<i>Vent Valve Packing</i>	<i>PTFE/RPTFE</i>
12	<i>Vent Valve Packing Washer</i>	<i>S17400</i>
Lubricant		Molybdenum Disulfide

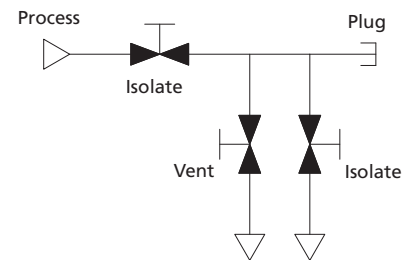
Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Ordering Information and Dimensions



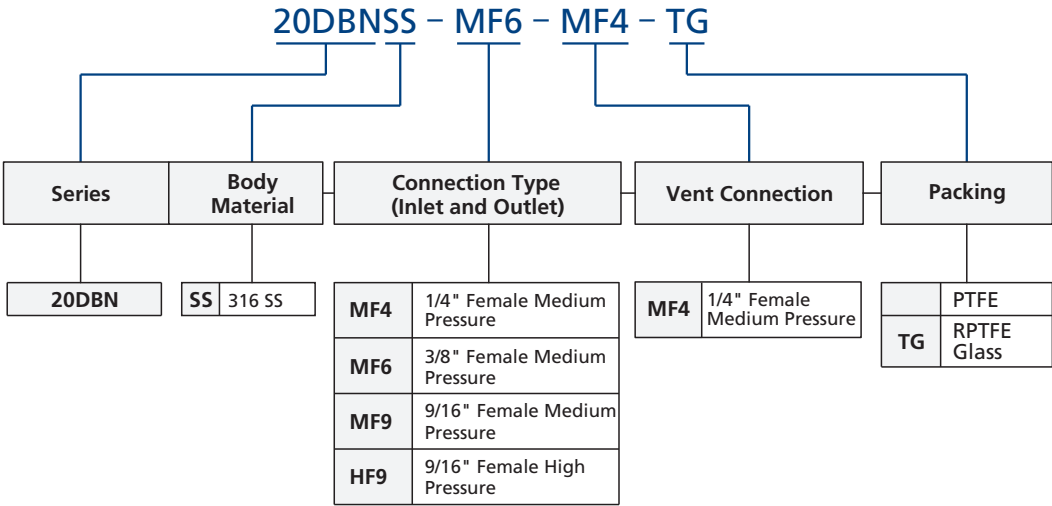
Bottom View



Dimensions																		
Ordering Number	Connection Type (Inlet and Outlet)	Orifice in. (mm)	Dimensions, in. (mm)															
			A	B	C	D	D1	E	F	G	H	M	N	O	P	Q	V	X
20DBNSS-MF4-MF4	MF4	0.094 (2.4)	5.25 (133.4)	1.00 (25.4)	0.38 (9.65)	1.50 (38.1)	1.13 (28.7)	2.13 (54.1)	3.00 (76.2)	1.00 (25.4)	4.82 (122.4)	1.38 (35.1)	0.50 (12.7)	2.62 (66.7)	0.63 (16.0)	1.50 (38.1)	1.47 (37.4)	0.50 (12.7)
20DBNSS-MF6-MF4	MF6	0.094 (2.4)	5.25 (133.4)	1.00 (25.4)	0.44 (11.2)	1.50 (38.1)	1.13 (28.7)	2.13 (54.1)	3.00 (76.2)	1.00 (25.4)	4.82 (122.4)	1.38 (35.1)	0.50 (12.7)	2.62 (66.7)	0.63 (16.0)	1.50 (38.1)	1.47 (37.4)	0.50 (12.7)
20DBNSS-MF9-MF4	MF9	0.094 (2.4)	5.88 (149.4)	1.31 (33.3)	0.55 (14.0)	1.50 (38.1)	1.13 (28.7)	3.00 (76.2)	3.00 (76.2)	1.00 (25.4)	5.69 (144.5)	1.38 (35.1)	0.50 (12.7)	2.94 (74.7)	0.63 (16.0)	1.75 (44.5)	1.47 (37.4)	0.75 (19.1)
20DBNSS-HF9-MF4	HF9	0.094 (2.4)	5.88 (149.4)	1.31 (33.3)	0.95 (24.1)	1.50 (38.1)	1.13 (28.7)	3.00 (76.2)	3.00 (76.2)	1.00 (25.4)	5.69 (144.5)	1.38 (35.1)	0.50 (12.7)	2.94 (74.7)	0.63 (16.0)	1.75 (44.5)	1.47 (37.4)	0.75 (19.1)

- Notes: 1. Vent connection: 1/4" Female Medium Pressure.
 2. G is the drill dimension of packing gland mounting hole.
 3. G1 is the panel mounting drill size.
 4. H is the dimension of stem in closed position.
 5. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



- Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

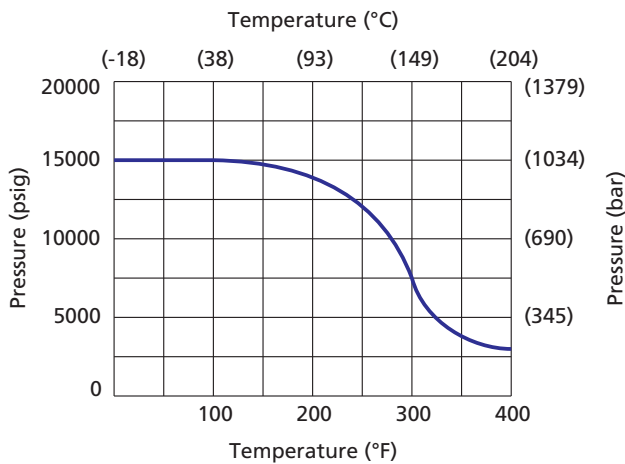
Double Block & Bleed Ball Valves

Working Pressure Up to 15,000 psig (1034 bar)

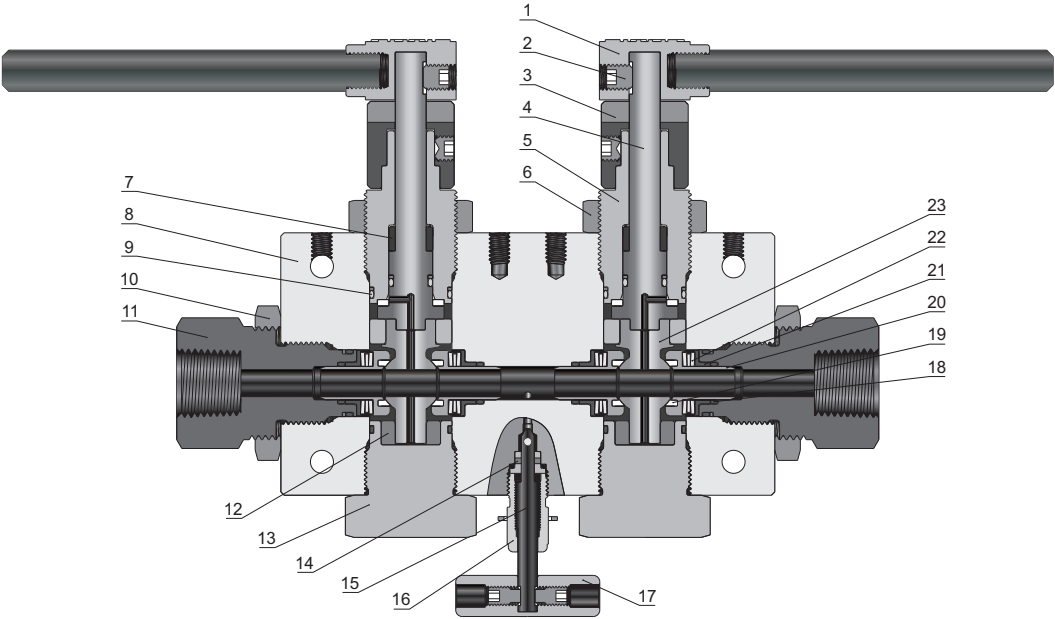
Features

- ⦿ Working temperature range from 0°F to 400°F (-17.8°C to 204°C) with FKM O-rings; other O-ring materials available
- ⦿ High tensile 316 stainless steel body material
- ⦿ PEEK seats offer excellent resistance to chemicals, heat and abrasion
- ⦿ Trunnion-style ball to prevent ball blowout
- ⦿ Full-port flow path to minimize pressure drop
- ⦿ Vee-stem vent valve
- ⦿ Wide selection of tube and pipe end fittings available
- ⦿ Quarter turn from open to closed with positive stop

Pressure vs. Temperature Curve



Standard Materials of Construction

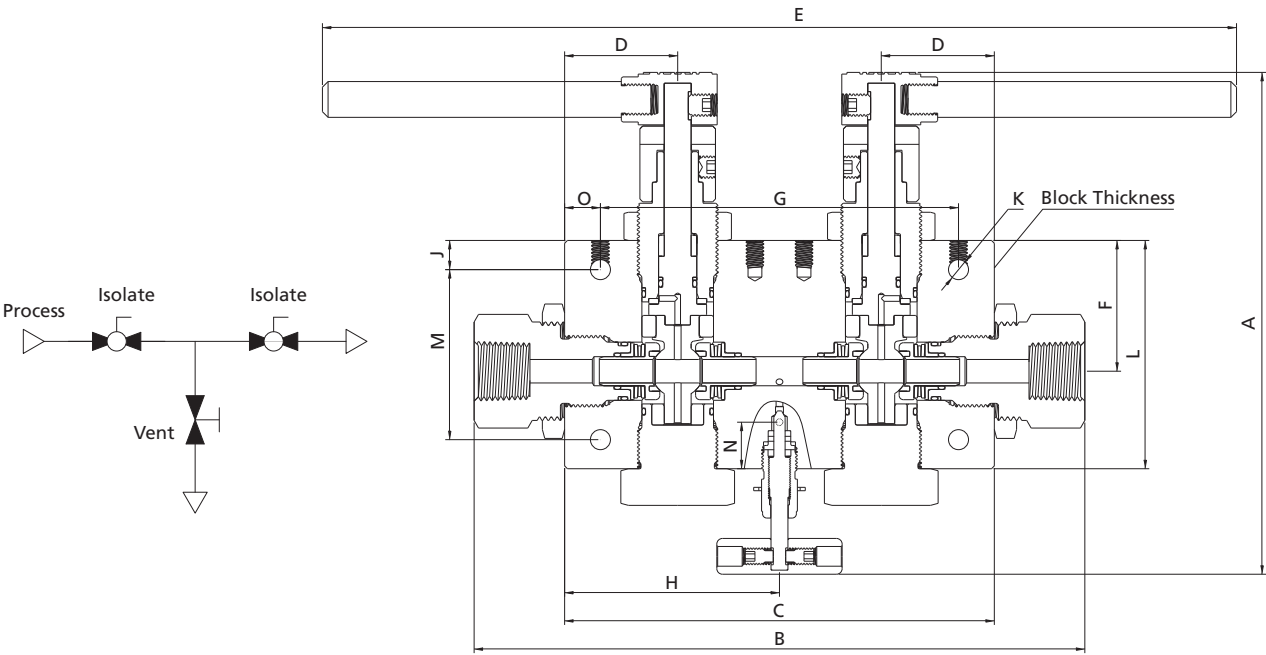


Item	Component	Material Grade
1	Handle	Stainless Steel
2	Set Screw	Stainless Steel
3	Stopping Device	316 SS
4	<i>Stem</i>	316 SS
5	<i>Packing Gland</i>	316 SS
6	Locking Piece	316 SS
7	<i>Stem Backup</i>	PEEK
8	<i>Valve Body</i>	316 SS
9	<i>O-Ring</i>	FKM
10	Lock Nut	316 SS
11	<i>Seat Gland</i>	316 SS
12	<i>Bearing</i>	PEEK
13	<i>Bottom Gland</i>	316 SS
14	<i>Vent Valve Packing</i>	PTFE
15	<i>Vent Valve Stem</i>	S17400
16	Vent Valve Packing Gland	C63000
17	Vent Valve Handle	Stainless Steel
18	<i>O-Ring</i>	FKM
19	<i>Seat</i>	PEEK
20	<i>Seat Retainer</i>	S17400
21	<i>Belleville Backup</i>	S17400
22	<i>Belleville Washers</i>	S17700
23	<i>Ball</i>	316 SS
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

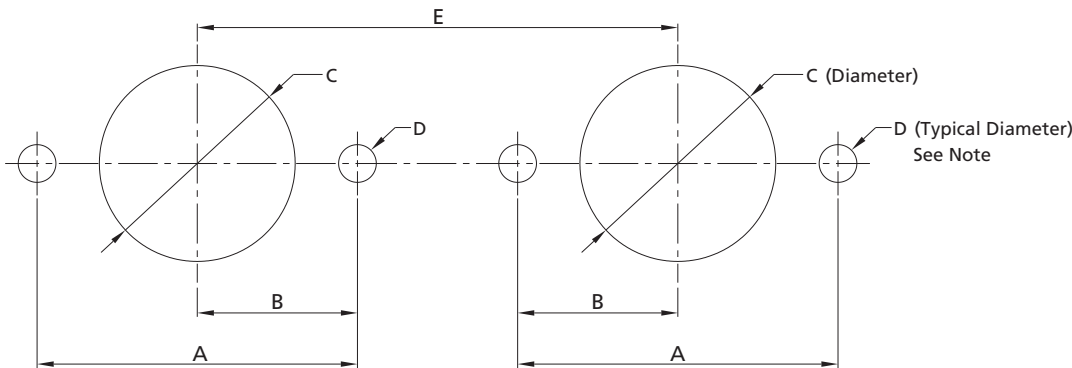
Dimensions



Dimensions, in. (mm)														
A	B	C	D	E	F	G	H	J	K	L	M	N ^①	O	Block Thickness
7.14 (181.4)	8.53 (216.6)	6 (152.4)	1.58 (40.1)	12.76 (324.2)	1.83 (46.4)	5 (127)	3 (76.2)	0.41 (10.3)	0.28 (7.1)	3.19 (81)	2.38 (60.4)	0.65 (16.5)	0.5 (12.7)	1.75 (44.45)

- Notes: 1. N: Vent connection on back side.
2. All dimensions are for reference only and are subject to change.

Panel Mounting Dimensions



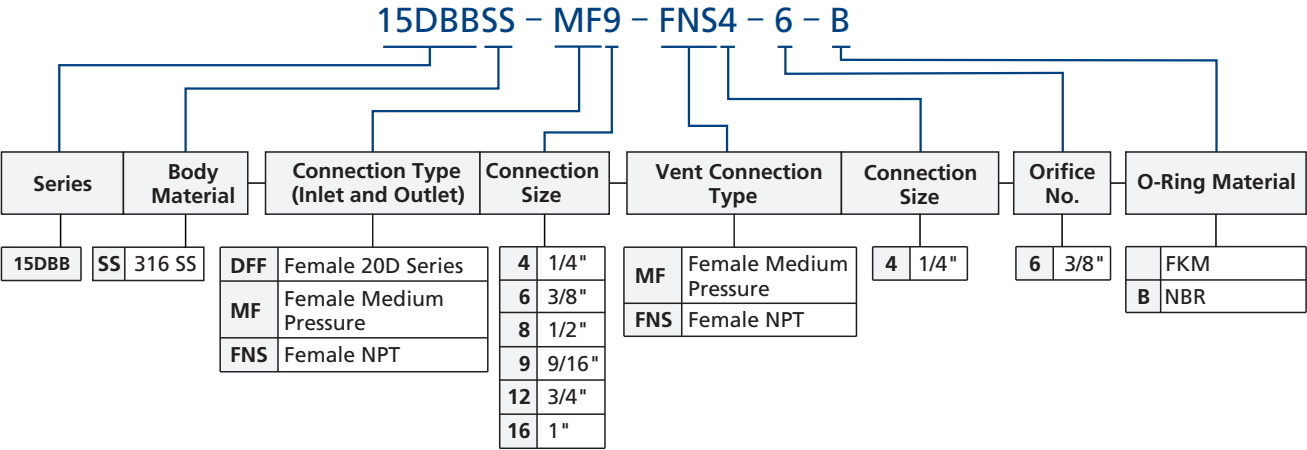
Dimensions, in. (mm)				
A	B	C	D	E
2.16 (54.8)	1.08 (27.4)	1.5 (38.1)	0.28 (7.1)	2.84 (72.2)

- Notes: 1. Body mounting 1/4-20 thread.
2. All dimensions are for reference only and are subject to change.

Ordering Information and Dimensions

Series	Ordering Number	Connection Type (Inlet and Outlet)	Vent Connection	Orifice No.	Orifice Size in. (mm)	Cv	Working Pressure psig (bar)
15DBB	15DBBSS-DFF8-FNS4-6	DFF8	FNS4	6	0.33 (8.3)	2.3	15,000 (1034)
	15DBBSS-MF4-MF4-6	MF4	MF4		0.11 (2.8)	0.23	
	15DBBSS-MF6-MF4-6	MF6	MF4		0.20 (5.2)	0.9	
	15DBBSS-MF9-MF4-6	MF9	MF4		0.33 (8.3)	2.3	
	15DBBSS-MF9-FNS4-6	MF9	FNS4		0.33 (8.3)	2.3	
	15DBBSS-MF12-MF4-6	MF12	MF4		0.33 (8.3)	2.3	
	15DBBSS-MF16-FNS4-6	MF16	FNS4		0.33 (8.3)	2.3	
	15DBBSS-FNS4-FNS4-6	FNS4	FNS4		0.33 (8.3)	2.3	
	15DBBSS-FNS6-FNS4-6	FNS6	FNS4		0.33 (8.3)	2.3	
	15DBBSS-FNS8-FNS4-6	FNS8	FNS4		0.33 (8.3)	2.3	

Ordering Number Description



- Notes: 1. For more details regarding 20D Series and Medium Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Designator	O-Ring Material	Working Temperature Range, °F (°C)
	FKM	0 to 400 (-17.8 to 204)
B	NBR	-10 to 250 (-23 to 121)

Sour Service Products

Sour Service Products



F-02

Sour Service Products

Fittings: 30,000 psig (2068 bar)
Tubing: 30,000 psig (2068 bar)
Needle Valves: 30,000 psig (2068 bar)
Bleed Valves: 20,000 psig (1379 bar)
Gauge Valves: 20,000 psig (1379 bar)
Check Valves: 30,000 psig (2068 bar)



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Contents

20M Series Medium Pressure Fittings

F-05

60H Series High Pressure Fittings

F-06

PMH Series Pipe Fittings

F-07

AMH Series Adapter Fittings

F-08

T20M Series Tubing

F-10

T60H Series Tubing

F-12

Needle Valves

Working Pressure Up to 30,000 psig (2068 bar)

F-14

Bleed Valves

Working Pressure Up to 20,000 psig (1379 bar)

F-27

Gauge Valves

Working Pressure Up to 20,000 psig (1379 bar)

F-30

Check Valves

Working Pressure Up to 30,000 psig (2068 bar)

F-34

FITOK designs and manufactures medium & high pressure valves, fittings and tubing for use with sour oil and gas (H₂S). These components are referred to as FITOK type S components.

Sour Oil and Gas (H₂S) Service or Standard Service

FITOK standard grade products are offered for standard oil field service and type S components for challenging H₂S service. FITOK type S components provide optimum resistance to H₂S through the use of the specific materials and procedures.

Working Pressure

Type S components are rated for working pressure up to 30,000 psig (2068 bar) at 100°F (38°C).

NACE MR0175 Compliant Materials

Standard material for type S component is annealed 316 SS and all pressure-containing materials used comply with NACE MR0175.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

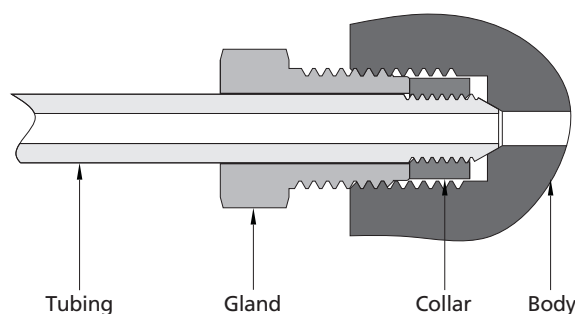
Part Number
Crossover Charts

20M Series Medium Pressure Fittings

Features

- Working pressure: 10,000 psig (690 bar)
- Coned-and-threaded connection
- Tube sizes available in 1/4", 3/8", 9/16", 3/4" and 1"
- Annealed 316 stainless steel as standard material, other materials available upon request
- Easy to disconnect and retighten
- Metal-to-metal seal to provide perfect leak-tight service for working conditions from critical vacuum to medium pressure
- Every fitting marked with size, material and trace ID

Construction



Ordering Information

The structure of FITOK's type S fittings are the same as standard medium pressure fittings. To get the complete ordering number of type S medium pressure fittings, add "-S" as a suffix to the ordering number of standard medium pressure fittings. If glands and collars are not needed, add "-SWO" as a suffix.

Examples:

- 9/16" Union, the ordering number is SS-MU-MF9-S.
- 3/8" Tee without glands and collars, the ordering number is SS-MT-MF6-SWO.

The sizes of type S fittings are the same as standard medium pressure fittings, please refer to **20M Series Medium Pressure Fittings** on A-19.

Installation Instructions

Please see A-112.

Connection Information

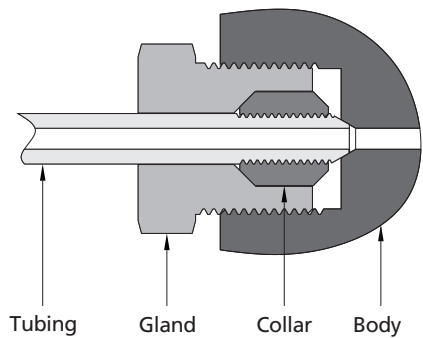
Please see A-03.

60H Series High Pressure Fittings

Features

- ⦿ Working pressure: 30,000 psig (2068 bar)
- ⦿ Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- ⦿ Coned-and-threaded connection
- ⦿ Tube sizes available in 1/4", 3/8" and 9/16"
- ⦿ Annealed 316 stainless steel as standard material, other materials available upon request
- ⦿ Easy to disconnect and retighten
- ⦿ Metal-to-metal seal to provide perfect leak-tight service from critical vacuum to high pressure
- ⦿ Every fitting marked with size, material and trace ID

Construction



Ordering Information

The structure of FITOK's type S fittings are the same as standard high pressure fittings. To get the complete ordering number of type S high pressure fittings, add "-S" as a suffix to the ordering number of standard high pressure fittings. If glands and collars are not needed, add "-SWO" as a suffix.

Examples:

1. 9/16" Union, the ordering number is SS-HU-HF9-S.
2. 3/8" Tee without glands and collars, the ordering number is SS-HT-HF6-SWO.

The sizes of type S fittings are the same as standard high pressure fittings, please refer to **60H Series High Pressure Fittings** on A-28.

Installation Instructions

Please see A-112.

Connection Information

Please see A-04.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

PMH Series Pipe Fittings

Features

- ⦿ Annealed 316 stainless steel as standard material, other materials available upon request
- ⦿ Radius junction design with elbows provides smooth flow path
- ⦿ Every fitting marked with size, material and trace ID

Working Pressure

- ⦿ Working pressures of pipe fittings are dependent on the end connection with the lowest working pressure
- ⦿ Working pressures of the end connections are shown in the table below

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
NS2/FNS2	10,000 (690)	RT2/FRT2	10,000 (690)
NS4/FNS4	10,000 (690)	RT4/FRT4	10,000 (690)
NS6/FNS6	10,000 (690)	RT6/FRT6	10,000 (690)
NS8/FNS8	10,000 (690)	RT8/FRT8	10,000 (690)
NS12/FNS12	10,000 (690)	RT12/FRT12	10,000 (690)
NS16/FNS16	10,000 (690)	RT16/FRT16	10,000 (690)

Cautions

- ⦿ Do not loosen or tighten fittings when the system is pressurized
- ⦿ Always use proper thread sealants on tapered pipe threads

Ordering Information

The structure of FITOK type S pipe fittings are the same as standard pipe fittings. To get the complete ordering number of type S pipe fittings, add "-S" as a suffix to the ordering number of standard pipe fittings. Examples: 3/8" NPT Hex Nipple, the ordering number is: SS-HPN-NS6-S.

The sizes of type S pipe fittings are the same as standard pipe fittings, please refer to *PMH Series Pipe Fittings* on A-35.

AMH Series Adapter Fittings

Features

- ⦿ Annealed 316 stainless steel as standard material, other materials available upon request
- ⦿ Every fitting marked with size, material and trace ID

Working Pressure

- ⦿ Working pressures of AMH series adapter fittings are dependent on the end connection with the lowest working pressure
- ⦿ Working pressures of the end connections are shown in the table below

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
MM4/MCP4/MF4	10,000 (690)	MCT4	10,000 (690)	HM4/HCP4/HF4	30,000 (2068)
MM6/MCP6/MF6	10,000 (690)	MCT6	10,000 (690)	HM6/HCP6/HF6	30,000 (2068)
MM9/MCP9/MF9	10,000 (690)	MCT9	10,000 (690)	HM9/HCP9/HF9	30,000 (2068)
MM12/MCP12/MF12	10,000 (690)	MCT12	10,000 (690)	—	—
MM16/MCP16/MF16	10,000 (690)	MCT16	10,000 (690)	—	—

End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)	End Connection	Working Pressure psig (bar)
HCT4	30,000 (2068)	NS2/FNS2	10,000 (690)	JM4/JF4	10,000 (690)	TM9	30,000 (2068)
HCT6	30,000 (2068)	NS4/FNS4	10,000 (690)	JM6/JF6	10,000 (690)	TM12	20,000 (1379)
HCT9	30,000 (2068)	NS6/FNS6	10,000 (690)	JM8/JF8	10,000 (690)	TM14	30,000 (2068)
—	—	NS8/FNS8	10,000 (690)	JM10/JF10	10,000 (690)	TM16	20,000 (1379)
—	—	NS12/FNS12	10,000 (690)	JM12/JF12	10,000 (690)	TM21	10,000 (690)
—	—	NS16/FNS16	10,000 (690)	JM16/JF16	10,000 (690)	—	—

Cautions

- ⦿ Do not loosen or tighten fittings when the system is pressurized
- ⦿ Always use proper thread sealants on tapered pipe threads

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Ordering Information

Except that DFT, DCP and DFF connections are not available, type S AMH series adapter fittings have the same connection types with standard AMH series adapter fittings. Add "-S" as a suffix to the ordering number of standard AMH series adapter fittings to get the complete ordering number of type S AMH series adapter fittings. For fittings with "MF" or "HF" connection, if glands and collars are not needed, add "-SWO" as a suffix.

Examples:

- 1. For adapter fittings with MM9 and NS8 connections, the ordering number is SS-MMA-MM9-NS8-S.
- 2. For adapter fittings with HF6 and MF4 connections, if glands and collars are not needed, the ordering number is SS-FFC-HF6-MF4-SWO.

The sizes of type S AMH series adapter fittings are the same as standard AMH series adapter fittings, please refer to *AMH Series Adapter Fittings* on A-66.

T20M Series Tubing

Features

- Working pressure: 10,000 psig (690 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Annealed 316/316L stainless steel as standard material, other materials available upon request
- Every tubing marked with material, size and heat number

Ordering Information

Tube O.D. in.	Tube I.D. in.	Material Grade	Basic Ordering Number	Max./Min. O.D. in. (mm)
1/4	0.109	Annealed 316/316L SS	SS-T20M-4-	0.248/0.243 (6.30/6.17)
3/8	0.203	Annealed 316/316L SS	SS-T20M-6-	0.370/0.365 (9.40/9.27)
9/16	0.312	Annealed 316/316L SS	SS-T20M-9-	0.557/0.552 (14.15/14.02)
3/4	0.438	Annealed 316/316L SS	SS-T20M-12-	0.745/0.740 (18.92/18.80)
1	0.562	Annealed 316/316L SS	SS-T20M-16-	0.995/0.990 (25.27/25.14)

To get the complete ordering number of type S tubing, add the length designator "-S" as a suffix to the basic ordering number.

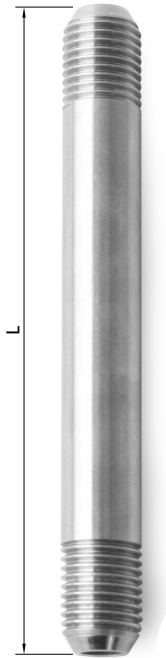
Examples:

- For 20 feet of 3/8" O.D. tubing, the complete ordering number is SS-T20M-6-**20F-S**.
- For 6 meters of 3/4" O.D. tubing, the complete ordering number is SS-T20M-12-**6M-S**.

The tubing is available in random lengths but no more than 20 feet (6 meters).



Coned and Threaded Nipples



Tube O.D. in.	Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.109	SS-T20M-4CT-2.75N-S	2.75 (69.9)
1/4	0.109	SS-T20M-4CT-3N-S	3 (76.2)
1/4	0.109	SS-T20M-4CT-4N-S	4 (101.6)
1/4	0.109	SS-T20M-4CT-6N-S	6 (152.4)
1/4	0.109	SS-T20M-4CT-8N-S	8 (203.2)
1/4	0.109	SS-T20M-4CT-10N-S	10 (254.0)
1/4	0.109	SS-T20M-4CT-12N-S	12 (304.8)
3/8	0.203	SS-T20M-6CT-3N-S	3 (76.2)
3/8	0.203	SS-T20M-6CT-4N-S	4 (101.6)
3/8	0.203	SS-T20M-6CT-6N-S	6 (152.4)
3/8	0.203	SS-T20M-6CT-8N-S	8 (203.2)
3/8	0.203	SS-T20M-6CT-10N-S	10 (254.0)
3/8	0.203	SS-T20M-6CT-12N-S	12 (304.8)
9/16	0.312	SS-T20M-9CT-4N-S	4 (101.6)
9/16	0.312	SS-T20M-9CT-6N-S	6 (152.4)
9/16	0.312	SS-T20M-9CT-8N-S	8 (203.2)
9/16	0.312	SS-T20M-9CT-10N-S	10 (254.0)
9/16	0.312	SS-T20M-9CT-12N-S	12 (304.8)
3/4	0.438	SS-T20M-12CT-4N-S	4 (101.6)
3/4	0.438	SS-T20M-12CT-6N-S	6 (152.4)
3/4	0.438	SS-T20M-12CT-8N-S	8 (203.2)
3/4	0.438	SS-T20M-12CT-10N-S	10 (254.0)
3/4	0.438	SS-T20M-12CT-12N-S	12 (304.8)
1	0.562	SS-T20M-16CT-6N-S	6 (152.4)
1	0.562	SS-T20M-16CT-8N-S	8 (203.2)
1	0.562	SS-T20M-16CT-10N-S	10 (254.0)
1	0.562	SS-T20M-16CT-12N-S	12 (304.8)

Note: Do not recommend bending of tubing.

T60H Series Tubing

Features

- Working pressure: 30,000 psig (2068 bar)
- Working temperature range: -423°F to 1200°F (-252°C to 649°C)
- Annealed 316/316L stainless steel as standard material, other materials available upon request
- Every tubing marked with material, size and heat number

Ordering Information

Tube O.D. in.	Tube I.D. in.	Material Grade	Basic Ordering Number	Max./Min. O.D. in. (mm)
1/4	0.083	Annealed 316/316L SS	SS-T60H-4-	0.248/0.243 (6.30/6.17)
3/8	0.125	Annealed 316/316L SS	SS-T60H-6-	0.370/0.365 (9.40/9.27)
9/16	0.188	Annealed 316/316L SS	SS-T60H-9-	0.557/0.552 (14.15/14.02)

To get the complete ordering number of type S tubing, add the length designator "-S" as a suffix to the basic ordering number.

Examples:

- For 20 feet of 1/4" O.D. tubing, the complete ordering number is SS-T60H-4-**20F-S**.
- For 6 meters of 9/16" O.D. tubing, the complete ordering number is SS-T60H-9-**6M-S**.

The tubing is available in random lengths but no more than 20 feet (6 meters).



Fittings

Tubing

Quick Couplings

Line Filters

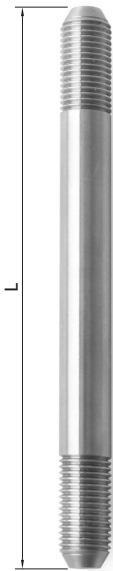
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Coned and Threaded Nipples



Tube O.D. in.	Tube I.D. in.	Ordering Number	L in. (mm)
1/4	0.083	SS-T60H-4CT-2.75N-S	2.75 (69.9)
1/4	0.083	SS-T60H-4CT-3N-S	3 (76.2)
1/4	0.083	SS-T60H-4CT-4N-S	4 (101.6)
1/4	0.083	SS-T60H-4CT-6N-S	6 (152.4)
1/4	0.083	SS-T60H-4CT-8N-S	8 (203.2)
1/4	0.083	SS-T60H-4CT-10N-S	10 (254.0)
1/4	0.083	SS-T60H-4CT-12N-S	12 (304.8)
3/8	0.125	SS-T60H-6CT-3N-S	3 (76.2)
3/8	0.125	SS-T60H-6CT-4N-S	4 (101.6)
3/8	0.125	SS-T60H-6CT-6N-S	6 (152.4)
3/8	0.125	SS-T60H-6CT-8N-S	8 (203.2)
3/8	0.125	SS-T60H-6CT-10N-S	10 (254.0)
3/8	0.125	SS-T60H-6CT-12N-S	12 (304.8)
9/16	0.188	SS-T60H-9CT-4N-S	4 (101.6)
9/16	0.188	SS-T60H-9CT-6N-S	6 (152.4)
9/16	0.188	SS-T60H-9CT-8N-S	8 (203.2)
9/16	0.188	SS-T60H-9CT-10N-S	10 (254.0)
9/16	0.188	SS-T60H-9CT-12N-S	12 (304.8)

Note: Do not recommend bending of tubing.

Needle Valves

Working Pressure Up to 30,000 psig (2068 bar)

Features

- ⦿ Annealed 316 stainless steel for valve body and nickel-based alloy for lower stem
- ⦿ Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- ⦿ Non-rotating stem and bar stock body design
- ⦿ Easy to assemble and replace packing
- ⦿ Reliable packing gland locking device
- ⦿ Options for Vee or Regulating stem tips
- ⦿ Five flow patterns available

Technical Data

15N Series					
Connection Size	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range °F (°C)
1/8" Female NPT	FNS2	0.078 (1.98)	0.11	10,000 (690)	-100 to 400 (-73 to 204)
1/8" Female ISO Tapered Thread	FRT2				
1/4" Female NPT	FNS4	0.203 (5.16)	0.63	10,000 (690)	
1/4" Female ISO Tapered Thread	FRT4				
3/8" Female NPT	FNS6	0.219 (5.56)	0.75	10,000 (690)	
3/8" Female ISO Tapered Thread	FRT6				
1/2" Female NPT	FNS8	0.312 (7.92)	1.30	10,000 (690)	
1/2" Female ISO Tapered Thread	FRT8				

20N Series					
Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range °F (°C)
1/4	MF4	0.125 (3.18)	0.31	10,000 (690)	-100 to 600 (-73 to 316)
3/8	MF6	0.204 (5.18)	0.68	10,000 (690)	
9/16	MF9	0.312 (7.92)	1.30	10,000 (690)	
3/4	MF12	0.438 (11.13)	2.50	10,000 (690)	
1	MF16	0.562 (14.27)	4.40	10,000 (690)	

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

F-15 Sour Service Products

30N Series

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range °F (°C)
1/4	HF4	0.094 (2.39)	0.12	20,000 (1379)	-100 to 600 (-73 to 316)
3/8	HF6	0.125 (3.18)	0.23	20,000 (1379)	
9/16	HF9	0.125 (3.18)	0.33	20,000 (1379)	

60N Series

Tube O.D. in.	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)	Working Temperature Range °F (°C)
1/4	HF4	0.063 (1.59)	0.08	30,000 (2068)	-100 to 600 (-73 to 316)
3/8	HF6	0.063 (1.59)	0.09	30,000 (2068)	
9/16	HF9	0.078 (1.98)	0.14	30,000 (2068)	

Notes: 1. Cv values shown are for 2-way straight valve pattern. For 2-way angle pattern, increase Cv value by 50% (based on water).

2. Packing Options

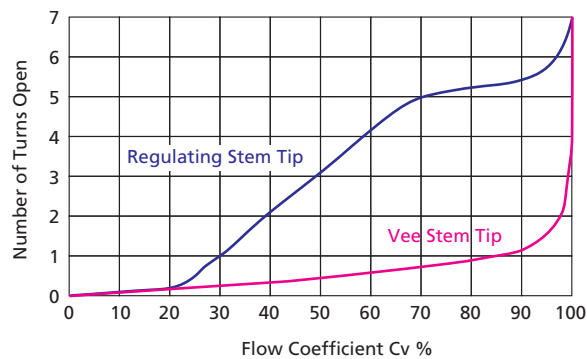
PTFE is the standard packing material for 15N, 20N and 30N series, RPTFE glass also available.

Packing material for 60N Series is RPTFE only.

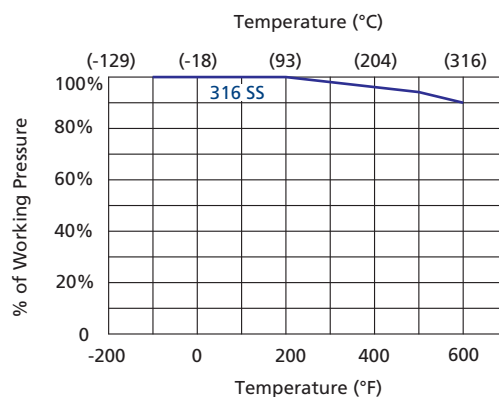
PTFE: -100°F~450°F (-73°C~232°C)

RPTFE glass: -100°F~600°F (-73°C~316°C)

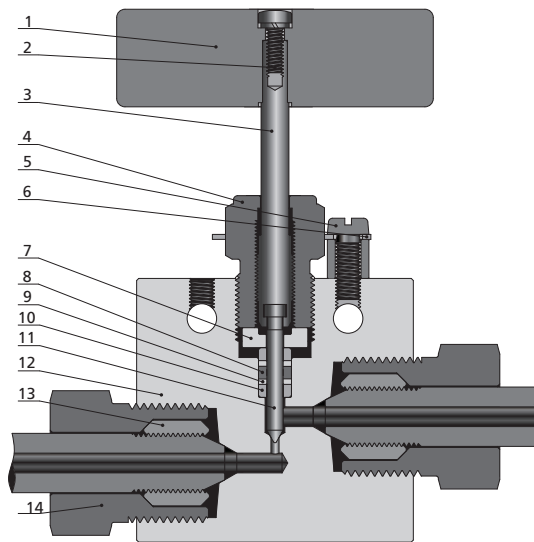
Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Standard Materials of Construction



Item	Component	Material Grade
1	Handle	Stainless Steel
2	Handle Screw	Stainless Steel
3	Upper Stem	316 SS
4	Packing Gland	316 SS
5	Locking Screw	Stainless Steel
6	Locking Plate	304 SS
7	Packing Ring	316 SS (For 15N, 20N and 30N Series), S17400 (For 60N Series)
8	<i>Packing</i>	<i>PTFE/RPTFE</i>
9	<i>Retaining Ring</i>	<i>PEEK (For 60N Series Only)</i>
10	<i>Packing Washer</i>	<i>316 SS (For 15N, 20N and 30N Series), Nickel-based Alloy (For 60N Series)</i>
11	<i>Lower Stem</i>	<i>Nickel-Based Alloy</i>
12	<i>Body</i>	<i>Annealed 316 SS</i>
13	Collar	Annealed 316 SS (For Tube Connections)
14	Gland	Annealed 316 SS (For Tube Connections)
	Lubricant	Molybdenum Disulfide

Wetted components listed in italics.

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

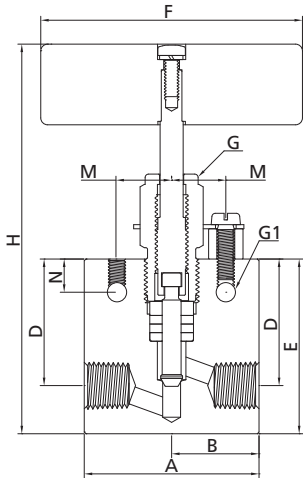
Subsea Valves

Part Number
Crossover Charts

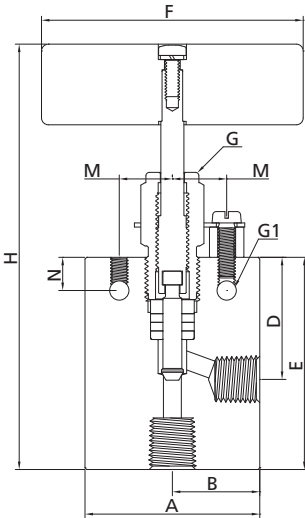
Ordering Information and Dimensions (Pipe Connection)

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

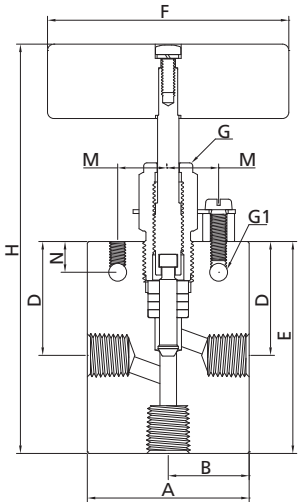
Straight



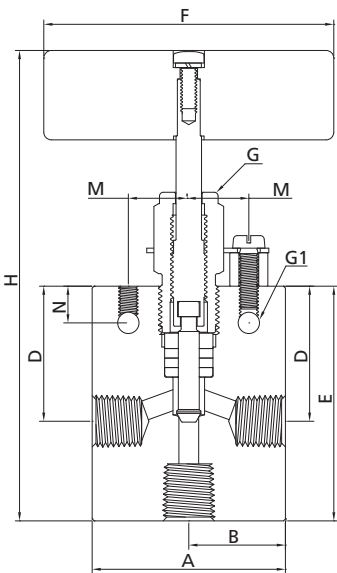
Angle



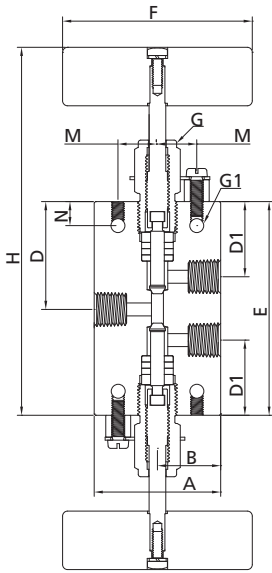
3-way/2 on pressure



3-way/1 on pressure



3-way/2 stem manifold



Ordering Information and Dimensions (Pipe Connection)

15N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-1-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.81 (20.6)		1.25 (31.8)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.00 (76.4)	0.56 (14.2)	0.31 (7.9)	0.81 (20.6)
15NSS-FRT2-1-S	FRT2														
15NSS-FNS4-1-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.1)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT4-1-S	FRT4														
15NSS-FNS6-1-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	1.19 (30.2)
15NSS-FRT6-1-S	FRT6														
15NSS-FNS8-1-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-1-S	FRT8														

15N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-2-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.81 (20.6)		1.38 (34.9)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.81 (20.6)
15NSS-FRT2-2-S	FRT2														
15NSS-FNS4-2-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT4-2-S	FRT4														
15NSS-FNS6-2-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.19 (30.2)
15NSS-FRT6-2-S	FRT6														
15NSS-FNS8-2-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-2-S	FRT8														

15N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-4-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.81 (20.6)		1.57 (40.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.33 (84.6)	0.56 (14.2)	0.31 (7.9)	0.81 (20.6)
15NSS-FRT2-4-S	FRT2														
15NSS-FNS4-4-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.51 (140.0)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT4-4-S	FRT4														
15NSS-FNS6-4-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.62 (66.6)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (138.9)	0.62 (15.8)	0.38 (9.7)	1.19 (30.2)
15NSS-FRT6-4-S	FRT6														
15NSS-FNS8-4-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.62 (92.0)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-4-S	FRT8														

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Ordering Information and Dimensions (Pipe Connection)

15N Series (3-way/1 on pressure)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-5-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		0.81 (20.6)		1.38 (35.0)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.13 (79.5)	0.56 (14.2)	0.31 (7.9)	0.81 (20.6)
15NSS-FRT2-5-S	FRT2														
15NSS-FNS4-5-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT4-5-S	FRT4														
15NSS-FNS6-5-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.41 (35.8)		2.44 (62.0)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.34 (135.7)	0.62 (15.8)	0.38 (9.7)	1.19 (30.2)
15NSS-FRT6-5-S	FRT6														
15NSS-FNS8-5-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.06 (52.3)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (169.9)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-5-S	FRT8														

15N Series (3-way/2 stem manifold)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
15NSS-FNS2-6-S	FNS2	0.078 (1.98)	1.50 (38.1)	0.75 (19.1)		1.00 (25.6)	0.68 (17.2)	2.02 (51.2)	1.75 (44.5)	0.62 (15.8)	0.17 (4.3)	3.77 (95.8)	0.56 (14.2)	0.31 (7.9)	0.81 (20.6)
15NSS-FRT2-6-S	FRT2														
15NSS-FNS4-6-S	FNS4	0.203 (5.2)	2.00 (50.8)	1.00 (25.4)		1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.27 (159.2)	0.62 (15.8)	0.38 (9.7)	1.00 (25.4)
15NSS-FRT4-6-S	FRT4														
15NSS-FNS6-6-S	FNS6	0.219 (5.56)	2.50 (63.5)	1.25 (31.8)		1.69 (42.9)	1.19 (30.2)	3.38 (85.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.22 (158.1)	0.62 (15.8)	0.38 (9.7)	1.19 (30.2)
15NSS-FRT6-6-S	FRT6														
15NSS-FNS8-6-S	FNS8	0.312 (7.92)	3.00 (76.2)	1.50 (38.1)		2.56 (65.1)	1.75 (44.5)	5.12 (130.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.43 (214.2)	0.69 (17.5)	0.50 (12.7)	1.38 (35.1)
15NSS-FRT8-6-S	FRT8														

Notes: 1. G is the drill dimension of packing gland mounting hole.

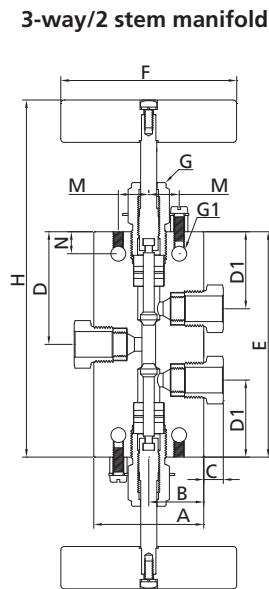
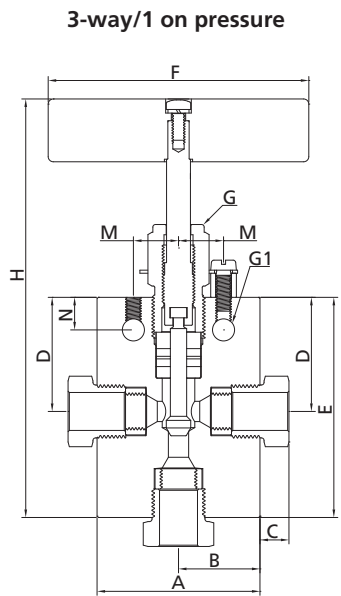
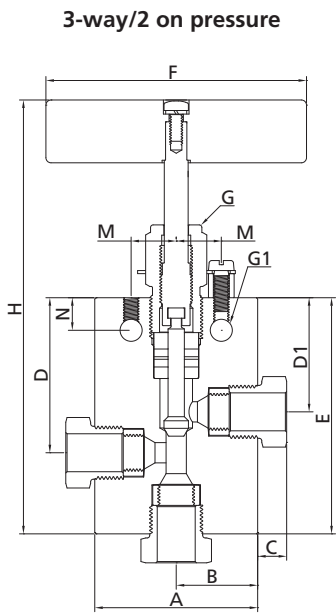
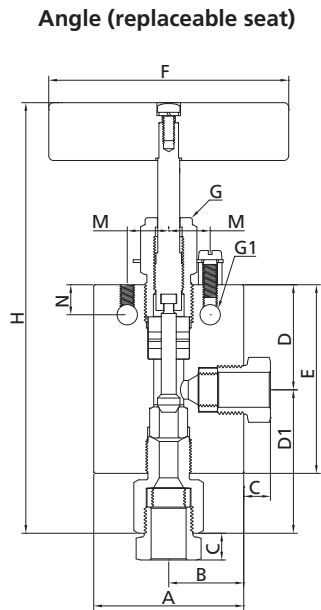
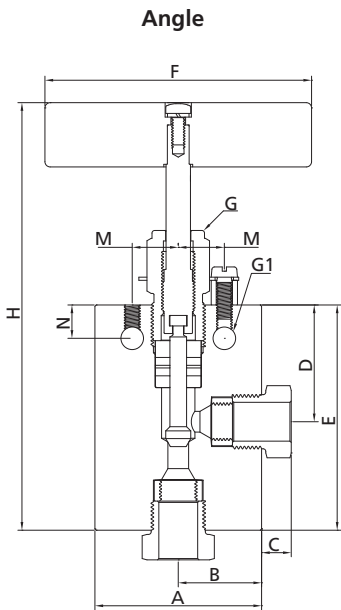
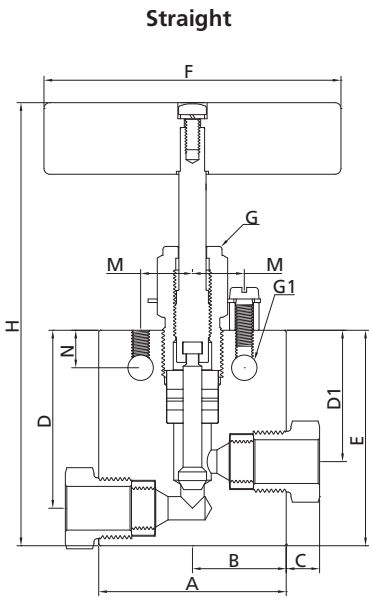
2. G1 is the dimension of bracket mounting hole.

3. Panel mounting drill size: 0.25" all valves.

4. H is the dimension of stem in closed position.

5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Information and Dimensions (Tubing Connection)



	Fittings				
		Tubing			
			Quick Couplings		
				Line Filters	
					Valves
					Sour Service Products
					Subsea Valves
					Part Number Crossover Charts

Ordering Information and Dimensions (Tubing Connection)

20N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-1-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.85 (123.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-1-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.62 (41.2)	1.19 (30.2)	2.00 (50.8)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	4.89 (124.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-1-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	2.88 (73.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.18 (157.2)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-1-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	3.75 (95.3)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.37 (187.2)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-1-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	4.63 (117.6)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.45 (240.1)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-2-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-2-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-2-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-2-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-2-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (Angle/replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-3-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.10 (154.9)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-3-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)	2.13 (54.0)	2.25 (57.2)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.16 (156.5)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-3-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)	2.50 (63.5)	3.13 (79.4)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	7.58 (192.1)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-3-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)	3.44 (87.4)	4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	9.30 (236.3)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-3-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)	4.22 (107.4)	5.25 (133.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	11.86 (301.3)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Ordering Information and Dimensions (Tubing Connection)

20N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-4-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.47 (139.0)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-4-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.63 (41.3)	1.19 (30.2)	2.63 (66.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.52 (140.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-4-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.37 (60.3)	1.75 (44.5)	3.63 (92.1)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.94 (176.3)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-4-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	4.63 (117.5)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	8.24 (209.4)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-4-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	5.88 (149.4)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	10.70 (271.9)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (3-way/1 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-5-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.28 (134.2)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-5-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.19 (30.2)		2.44 (61.9)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	5.33 (135.4)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-5-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	1.75 (44.5)		3.38 (85.9)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	6.69 (170.0)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-5-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	2.25 (57.2)		4.25 (108.0)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	7.87 (199.9)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-5-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	2.81 (71.4)		5.12 (130.1)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	9.94 (252.6)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

20N Series (3-way/2 stem manifold)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
20NSS-MF4-6-S	MF4	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.38 (9.7)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.23 (158.1)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF6-6-S	MF6	0.204 (5.18)	2.00 (50.8)	1.00 (25.4)	0.44 (11.2)	1.69 (42.9)	1.19 (30.2)	3.38 (85.7)	3.00 (76.2)	0.75 (19.1)	0.22 (5.6)	6.24 (158.6)	0.62 (15.8)	0.38 (9.7)	0.75 (19.1)
20NSS-MF9-6-S	MF9	0.312 (7.92)	2.50 (63.5)	1.25 (31.8)	0.55 (14.0)	2.56 (65.1)	1.75 (44.5)	5.13 (130.2)	4.00 (101.6)	1.00 (25.4)	0.34 (8.6)	8.44 (214.4)	0.69 (17.5)	0.50 (12.7)	1.00 (25.4)
20NSS-MF12-6-S	MF12	0.438 (11.13)	3.00 (76.2)	1.50 (38.1)	0.60 (15.2)	3.00 (76.2)	2.25 (57.2)	6.50 (165.1)	10.25 (260.4)	1.19 (30.2)	0.44 (11.2)	10.11 (257.0)	0.88 (22.4)	0.63 (16.0)	1.38 (35.1)
20NSS-MF16-6-S	MF16	0.562 (14.27)	4.12 (104.6)	2.06 (52.3)	0.74 (18.7)	3.75 (95.3)	2.81 (71.4)	7.50 (190.5)	10.25 (260.4)	1.62 (41.2)	0.56 (14.2)	12.32 (313.0)	1.25 (31.8)	1.13 (28.7)	1.75 (44.5)

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service
Products

Subsea Valves

Part Number
Crossover Charts

Ordering Information and Dimensions (Tubing Connection)

30N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-1-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-1-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-1-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-2-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)		2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-2-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)		2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-2-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)		2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (Angle/replaceable seat)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-3-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)	2.06 (52.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.88 (149.2)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-3-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)	2.31 (58.67)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.12 (155.4)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-3-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.6)	2.57 (65.3)	2.46 (62.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.39 (162.4)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (3-way/2 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-4-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.50 (38.1)	1.12 (28.5)	2.12 (53.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.81 (122.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-4-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.50 (38.1)	1.12 (28.5)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.19 (131.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-4-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.56 (39.6)	1.12 (28.5)	2.88 (73.2)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.57 (141.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Ordering Information and Dimensions (Tubing Connection)

30N Series (3-way/1 on pressure)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-5-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.12 (28.5)		2.00 (50.8)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.69 (119.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-5-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.12 (28.5)		2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.95 (125.7)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-5-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.12 (28.5)		2.44 (62.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.13 (130.3)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

30N Series (3-way/2 stem manifold)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
30NSS-HF4-6-S	HF4	0.094 (2.39)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.53 (38.9)	1.12 (28.5)	3.06 (77.7)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.75 (146.0)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF6-6-S	HF6	0.125 (3.18)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.62 (41.2)	1.12 (28.5)	3.25 (82.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.94 (150.9)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
30NSS-HF9-6-S	HF9	0.125 (3.18)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.88 (47.8)	1.12 (28.5)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.44 (163.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (Straight)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG1-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.13 (54.0)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.77 (121.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG1-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.25 (57.2)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	4.89 (124.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG1-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	2.50 (63.5)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.14 (130.6)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (Angle)															
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG2-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)		2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG2-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG2-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Information and Dimensions (Tubing Connection)

60N Series (Angle/replaceable seat)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG3-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)	2.12 (53.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.07 (154.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG3-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)	2.36 (59.9)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.30 (160.1)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG3-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)	2.68 (68.8)	2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.65 (168.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (3-way/2 on pressure)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG4-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.69 (42.9)	1.31 (33.3)	2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.6)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG4-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.69 (42.9)	1.31 (33.3)	2.75 (68.9)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.34 (135.8)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG4-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.75 (44.5)	1.31 (33.3)	3.03 (77.0)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.67 (143.9)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (3-way/1 on pressure)

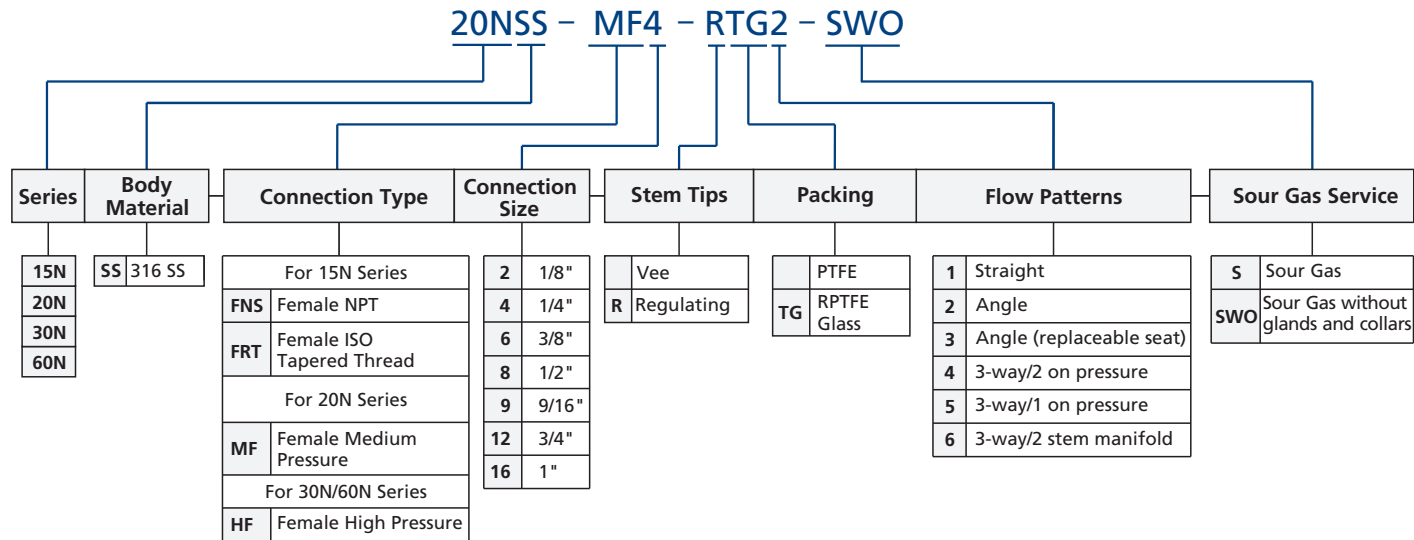
Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG5-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.31 (33.3)		2.38 (60.5)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.02 (127.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG5-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.31 (33.3)		2.62 (66.6)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	5.26 (133.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG5-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	1.31 (33.3)		2.81 (71.4)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	5.45 (138.5)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

60N Series (3-way/2 stem manifold)

Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)												
			A	B	C	D	D1	E	F	G	G1	H	M	N	Thickness
60NSS-HF4-TG6-S	HF4	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.47 (11.9)	1.72 (43.69)	1.31 (33.3)	3.44 (87.4)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.08 (154.5)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF6-TG6-S	HF6	0.063 (1.59)	2.00 (50.8)	1.00 (25.4)	0.61 (15.6)	1.88 (47.8)	1.31 (33.3)	3.75 (95.3)	3.00 (76.2)	1.00 (25.4)	0.22 (5.6)	6.39 (162.3)	0.69 (17.5)	0.38 (9.7)	1.00 (25.4)
60NSS-HF9-TG6-S	HF9	0.078 (1.98)	2.62 (66.6)	1.31 (33.3)	0.95 (24.1)	2.06 (52.3)	1.31 (33.3)	4.12 (104.6)	3.00 (76.2)	1.00 (25.4)	0.28 (7.1)	6.76 (171.8)	0.69 (17.5)	0.38 (9.7)	1.50 (38.1)

- Notes: 1. G is the drill dimension of packing gland mounting hole.
 2. G1 is the dimension of bracket mounting hole.
 3. Panel mounting drill size: 0.25" all valves.
 4. H is the dimension of stem in closed position.
 5. All dimensions are for reference only and subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.

Part Number Crossover Charts	Subsea Valves	Sour Service Products	Valves	Line Filters	Quick Couplings	Tubing	Fittings
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Bleed Valves

Working Pressure Up to 20,000 psig (1379 bar)

Features

- One piece hex construction compact design allows easy installation
- Working temperature range: 0°F to 400°F (-17.8°C to 204°C)
- 1/8" Female NPT outlet connection
- Easy to assemble and replace O-ring
- Positive locking screw design prevents accidental removal of the stem
- Tee handle for easy operation

Technical Data

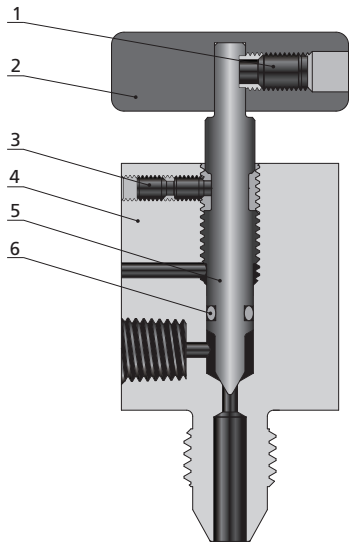
Series	Inlet Connection	Orifice in. (mm)	Working Pressure psig (bar)
20BV	MM6	0.094 (2.4)	10,000 (690)
	MM9	0.094 (2.4)	10,000 (690)
	MCT6	0.094 (2.4)	10,000 (690)
	MCT9	0.094 (2.4)	10,000 (690)
30BV	HM6	0.094 (2.4)	20,000 (1379)
	HM9	0.094 (2.4)	20,000 (1379)
	HCT6	0.094 (2.4)	20,000 (1379)
	HCT9	0.094 (2.4)	20,000 (1379)

- Notes:
- Working pressure shown is in closed position.
 - Working pressure is 10,000 psig (690 bar) in open position.
 - A variety of end connections available on request. For connections not shown above, please contact FITOK Group or our authorized distributors.

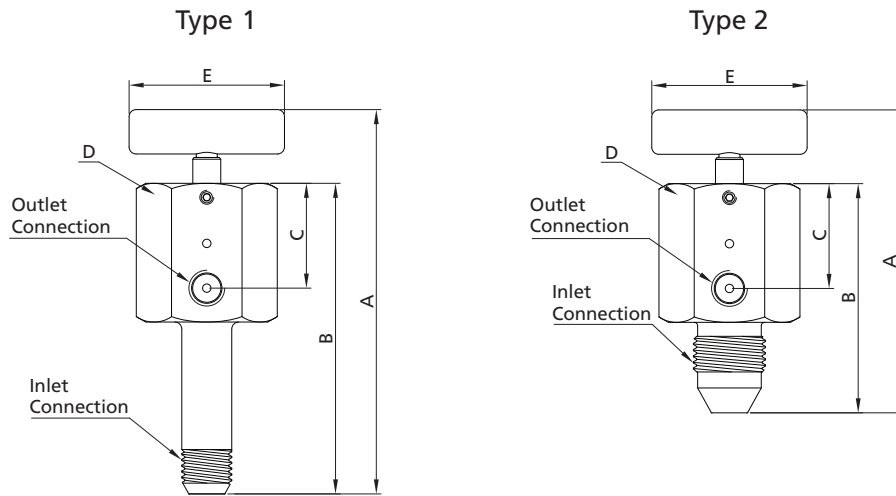
Standard Materials of Construction

Item	Component	Material Grade
1	Handle Screw	Stainless Steel
2	Handle	Stainless Steel
3	Locking Screw	Stainless Steel
4	<i>Body</i>	<i>Annealed 316 SS</i>
5	<i>Stem</i>	<i>Nickel-Based Alloy</i>
6	<i>O-Ring</i>	<i>FKM</i>
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.



Ordering Information and Dimensions



Type 1								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-MCT6-FNS2-S	MCT6	FNS2	0.094 (2.4)	3.61 (91.7)	2.78 (70.5)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-MCT9-FNS2-S	MCT9	FNS2	0.094 (2.4)	3.82 (97.0)	2.98 (75.8)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HCT6-FNS2-S	HCT6	FNS2	0.094 (2.4)	4.09 (103.9)	3.26 (82.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HCT9-FNS2-S	HCT9	FNS2	0.094 (2.4)	4.68 (118.9)	3.85 (97.7)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

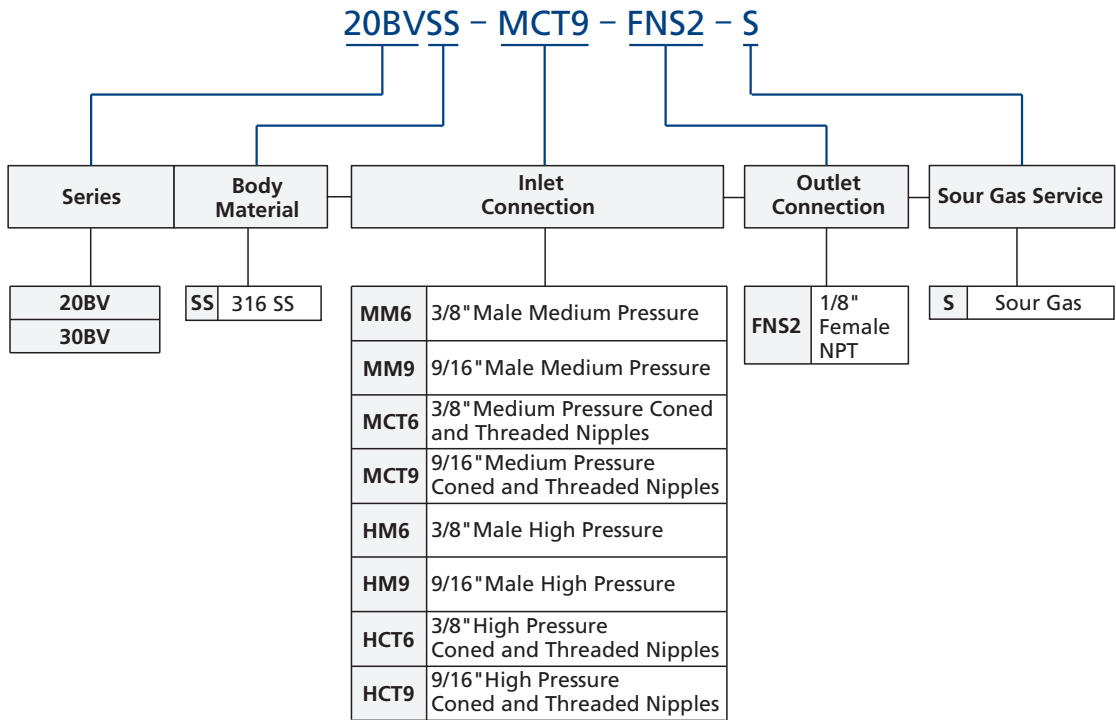
Type 2								
Ordering Number	Inlet Connection	Outlet Connection	Orifice in. (mm)	Dimensions, in. (mm)				
				A	B	C	D	E
20BVSS-MM6-FNS2-S	MM6	FNS2	0.094 (2.4)	3.23 (82.0)	2.39 (60.8)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
20BVSS-MM9-FNS2-S	MM9	FNS2	0.094 (2.4)	3.42 (86.8)	2.58 (65.6)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HM6-FNS2-S	HM6	FNS2	0.094 (2.4)	3.27 (83.1)	2.44 (61.9)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)
30BVSS-HM9-FNS2-S	HM9	FNS2	0.094 (2.4)	3.44 (87.4)	2.61 (66.2)	1.18 (30.0)	1.37 (34.9)	1.75 (44.5)

Notes: 1. D is the dimension of hex.

2. A is the dimension of stem in closed position.

3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



- Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

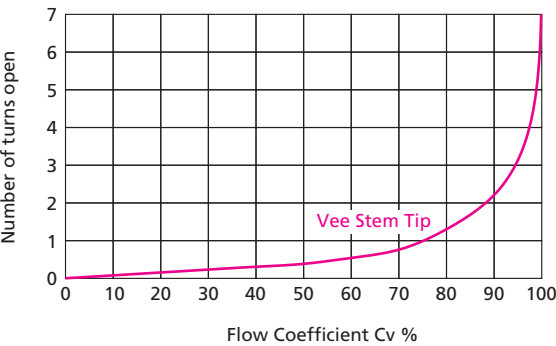
Gauge Valves

Working Pressure Up to 20,000 psig (1379 bar)

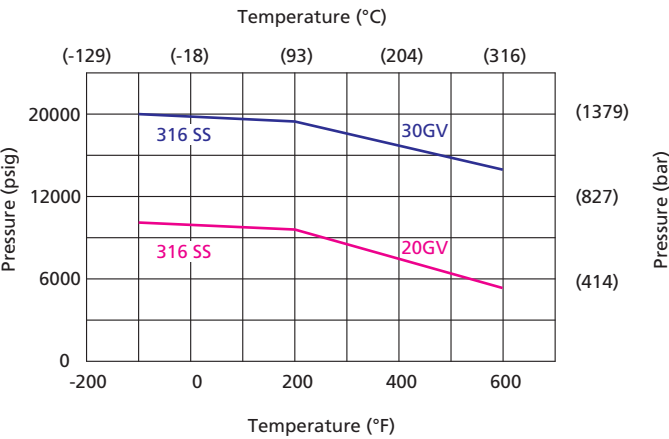
Features

- One inlet, three outlet ports.
- Metal-to-metal seating achieves ideal shutoff, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Reliable packing gland locking device

Flow Data at 100°F (38°C)



Pressure vs. Temperature Curve



Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Technical Data

Series	Connection	Orifice in. (mm)	Cv	Working Pressure psig (bar)
20GV	MF6	0.125 (3.18)	0.23	10,000 (690)
	MF9	0.125 (3.18)	0.23	10,000 (690)
30GV	HF6	0.125 (3.18)	0.33	20,000 (1379)
	HF9	0.125 (3.18)	0.33	20,000 (1379)

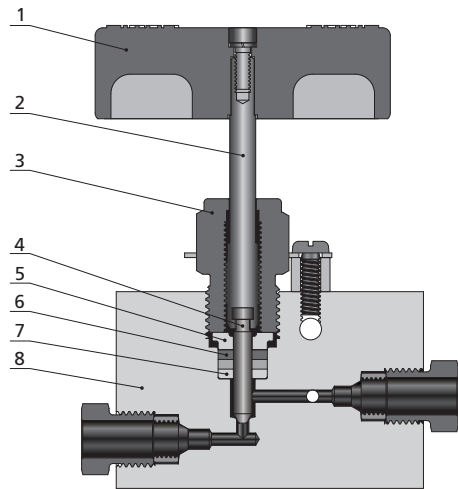
Notes: 1. Packing Options
PTFE is the standard packing material, RPTFE glass also available
PTFE: -100°F~450°F (-73°C~232°C).
RPTFE glass: -100°F~600°F (-73°C~316°C).

2. A variety of end connections are available upon request. For connections not shown above, please contact FITOK Group or our authorized distributors.

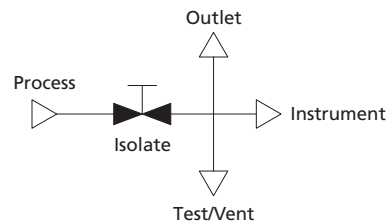
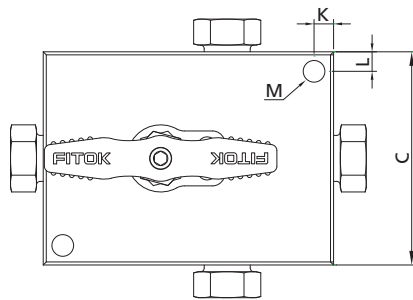
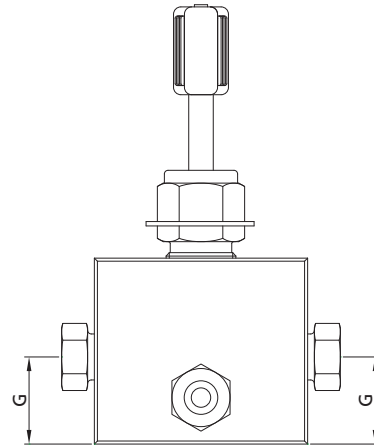
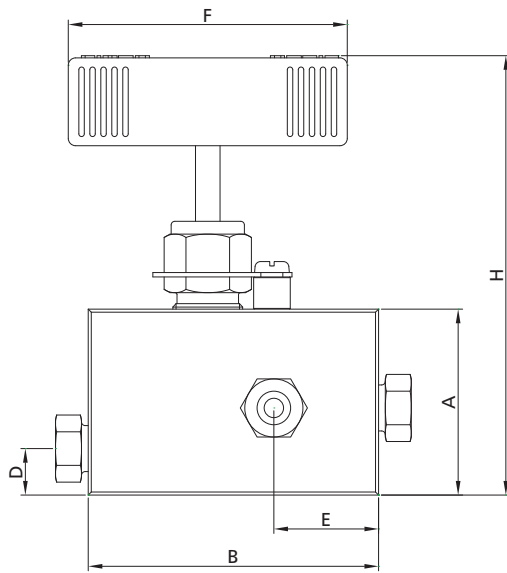
Standard Materials of Construction

Item	Component	Material Grade
1	Handle	Stainless Steel
2	Upper Stem	316 SS
3	Packing Gland	316 SS
4	<i>Lower Stem</i>	<i>Nickel-Based Alloy</i>
5	Packing Ring	316 SS
6	<i>Packing</i>	<i>PTFE/RPTFE</i>
7	<i>Packing Washer</i>	<i>316 SS</i>
8	<i>Body</i>	<i>Annealed 316 SS</i>
Lubricant		Molybdenum Disulfide

Wetted components listed in italics.



Ordering Information and Dimensions



Ordering Number	Connection	Orifice in. (mm)	Dimensions, in. (mm)										
			A	B	C	D	E	F	G	H	K	L	M
20GVSS-MF6-S	MF6	0.125 (3.18)	2.00 (50.8)	3.12 (79.3)	2.00 (50.8)	0.50 (12.7)	1.13 (28.6)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.25 (6.4)	0.28 (7.1)
20GVSS-MF9-S	MF9	0.125 (3.18)	2.00 (50.8)	3.88 (98.6)	2.75 (69.9)	0.66 (16.8)	1.38 (34.9)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)
30GVSS-HF6-S	HF6	0.125 (3.18)	2.00 (50.8)	3.12 (79.3)	2.00 (50.8)	0.50 (12.7)	1.13 (28.6)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)
30GVSS-HF9-S	HF9	0.125 (3.18)	2.00 (50.8)	3.88 (98.6)	2.75 (69.9)	0.66 (16.8)	1.38 (34.9)	3.00 (76.2)	0.94 (23.8)	4.68 (118.9)	0.38 (9.7)	0.38 (9.7)	0.28 (7.1)

Notes: 1. M is the panel mounting drill size.

2. H is the dimension of stem in closed position.

3. All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Fittings

Tubing

Quick Couplings

Line Filters

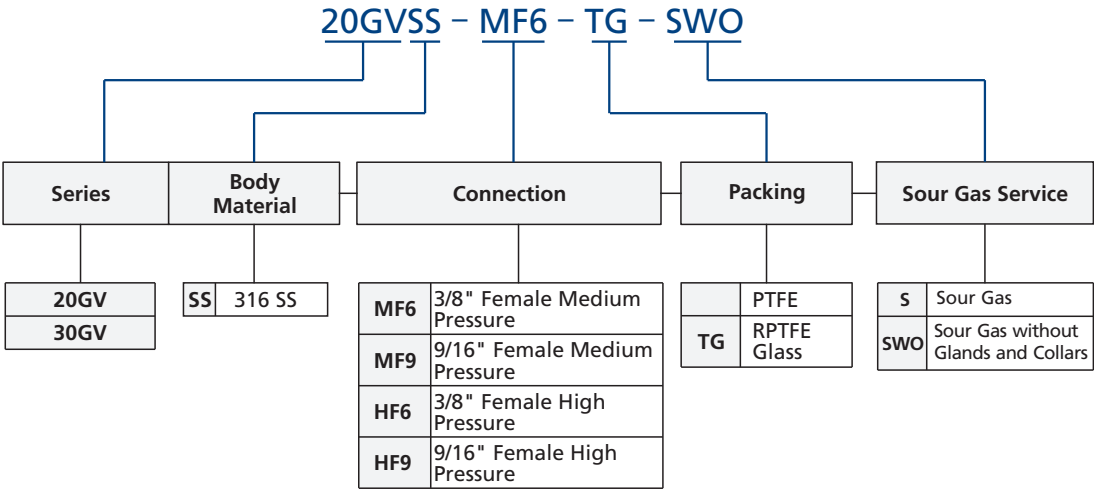
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Number Description



Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.

Check Valves

Working Pressure Up to 30,000 psig (2068 bar)

Features

(Pipe) O-Ring Check Valves

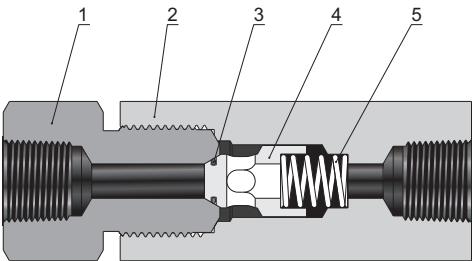
- ⦿ Provide unidirectional flow and tight shut-off for liquids and gases with high reliability (not for use as relief valve)
- ⦿ Resilient O-ring seat design for noise-free closing and zero leakage
- ⦿ Cracking pressure: 14 psig~26 psig (0.97 bar~1.79 bar)

(Pipe) Ball Check Valves

- ⦿ Prevent reverse flow where leak-tight shut-off is not mandatory (not for use as relief valve)
- ⦿ An integral design of the ball and poppet to assure positive, in-line seating without "chatter".
Poppet designed essentially for axial flow with minimum pressure drop

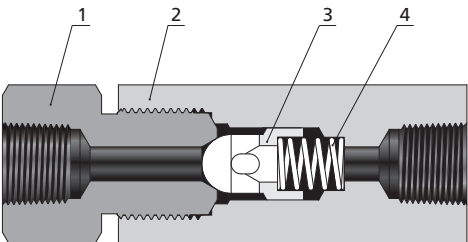
Standard Materials of Construction

15C Series Pipe O-Ring Check Valves



Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	Annealed 316 SS
3	O-Ring	FKM
4	Poppet	Annealed 316 SS
5	Spring	Nickel-Based Alloy
Lubricant		Molybdenum Disulfide

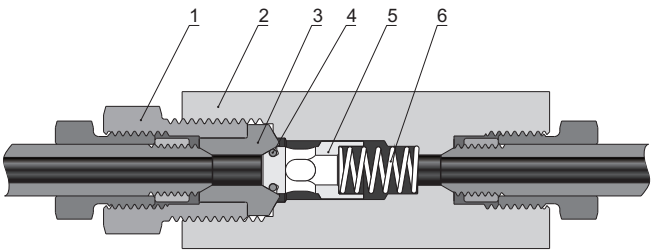
15CO Series Pipe Ball Check Valves



Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	Annealed 316 SS
3	Ball Poppet	Nickel-Based Alloy
4	Spring	
Lubricant		Molybdenum Disulfide

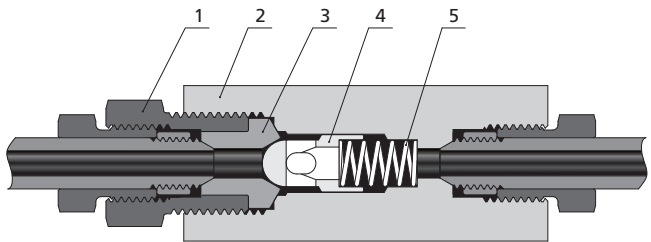
Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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20C Series O-Ring Check Valves



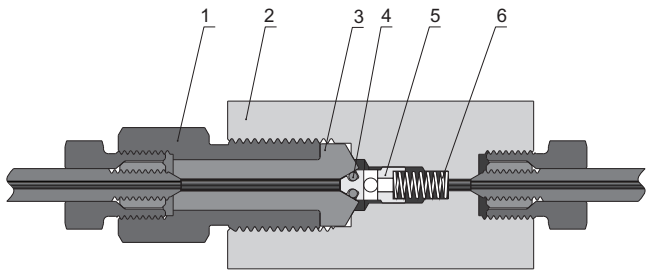
Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Annealed 316 SS</i>
4	O-Ring	<i>FKM</i>
5	Poppet	<i>Annealed 316 SS</i>
6	Spring	<i>Nickel-Based Alloy</i>
Lubricant		Molybdenum Disulfide

20CO Series Ball Check Valves



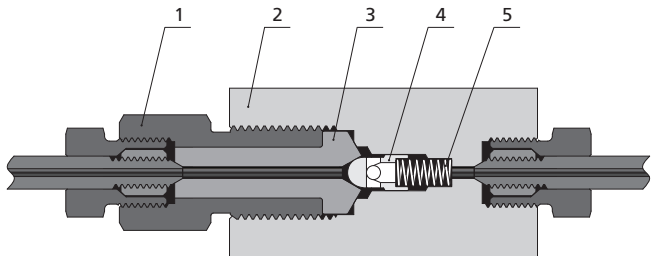
Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	
4	Ball Poppet	<i>Nickel-Based Alloy</i>
5	Spring	
Lubricant		Molybdenum Disulfide

60C Series O-Ring Check Valves



Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	<i>Annealed 316 SS</i>
4	O-Ring	<i>FKM</i>
5	Poppet	<i>Annealed 316 SS</i>
6	Spring	<i>Nickel-Based Alloy</i>
Lubricant		Molybdenum Disulfide

60CO Series Ball Check Valves

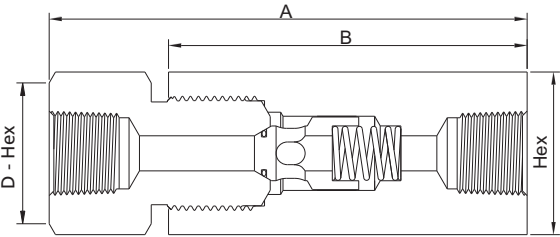


Item	Component	Material Grade
1	Cover Gland	Annealed Stainless Steel
2	Valve Body	<i>Annealed 316 SS</i>
3	Cover	
4	Ball Poppet	<i>Nickel-Based Alloy</i>
5	Spring	
Lubricant		Molybdenum Disulfide

Wetted components listed in *italics*.

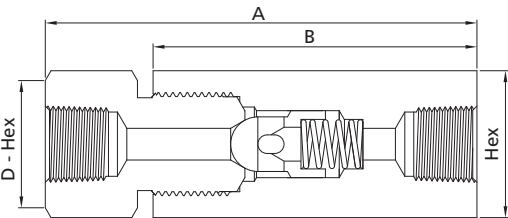
Ordering Information and Dimensions

15C Series Pipe O-ring Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	D - Hex	Hex		
15CSS-FNS4-S	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	10,000 (690)	0 to 400 (-17.8 to 204)
15CSS-FNS6-S	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)		
15CSS-FNS8-S	FNS8	0.36 (9.12)	2.30	5.07 (128.8)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)		

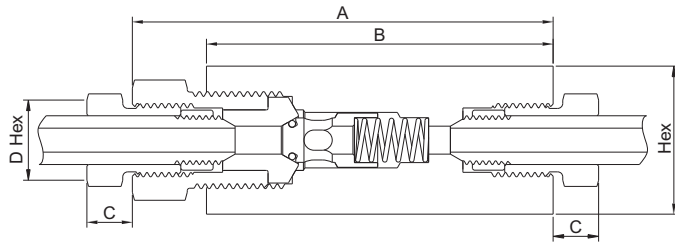
15CO Series Pipe Ball Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	D - Hex	Hex		
15COSS-FNS4-S	FNS4	0.12 (3.05)	0.28	3.30 (83.8)	2.38 (60.3)	0.94 (23.8)	0.94 (23.8)	10,000 (690)	-110 to 400 (-79 to 204)
15COSS-FNS6-S	FNS6	0.22 (5.59)	0.84	3.95 (100.33)	2.88 (73.2)	1.13 (28.6)	1.13 (28.6)		
15COSS-FNS8-S	FNS8	0.36 (9.12)	2.30	5.07 (128.8)	3.88 (98.6)	1.38 (34.9)	1.38 (34.9)		

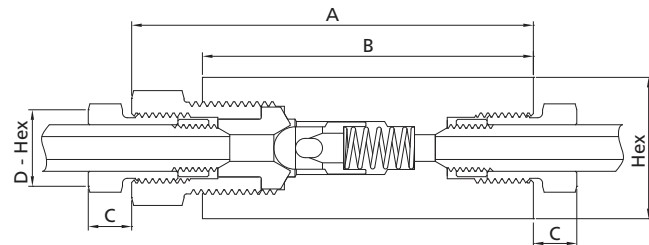
Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

20C Series O-Ring Check Valves



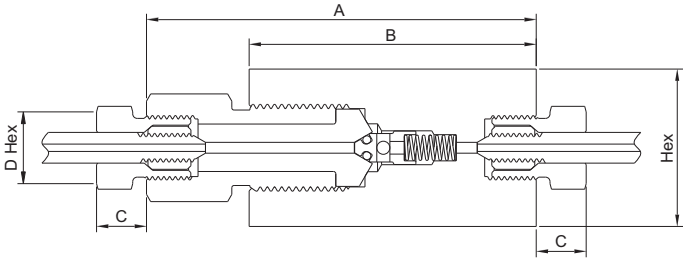
Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - Hex	Hex		
20CSS-MF4-S	MF4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.65)	0.50 (12.7)	0.81 (20.6)	10,000 (690)	0 to 400 (-17.8 to 204)
20CSS-MF6-S	MF6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)		
20CSS-MF9-S	MF9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)		
20CSS-MF12-S	MF12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)		
20CSS-MF16-S	MF16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)		

20CO Series Ball Check Valves



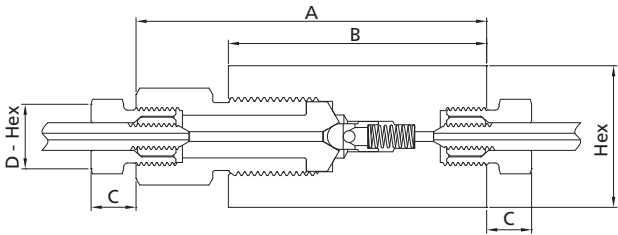
Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - Hex	Hex		
20COSS-MF4-S	MF4	0.125 (3.18)	0.28	2.94 (74.7)	2.50 (63.5)	0.38 (9.65)	0.50 (12.7)	0.81 (20.6)	10,000 (690)	-110 to 1200 (-79 to 649)
20COSS-MF6-S	MF6	0.218 (5.54)	0.84	3.12 (79.3)	2.62 (66.6)	0.44 (11.2)	0.62 (15.8)	1.00 (25.4)		
20COSS-MF9-S	MF9	0.359 (9.12)	2.30	4.18 (106.2)	3.50 (88.9)	0.55 (14.0)	0.94 (23.9)	1.38 (35.1)		
20COSS-MF12-S	MF12	0.516 (13.11)	4.70	5.50 (139.7)	4.75 (120.7)	0.60 (15.2)	1.19 (30.2)	1.75 (44.5)		
20COSS-MF16-S	MF16	0.688 (17.48)	7.40	6.91 (175.6)	5.75 (146.1)	0.74 (18.8)	1.38 (35.1)	2.12 (53.9)		

60C Series O-Ring Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - Hex	Hex		
60CSS-HF4-S	HF4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	30,000 (2068)	0 to 400 (-17.8 to 204)
60CSS-HF6-S	HF6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.0)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)		
60CSS-HF9-S	HF9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.85)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)		

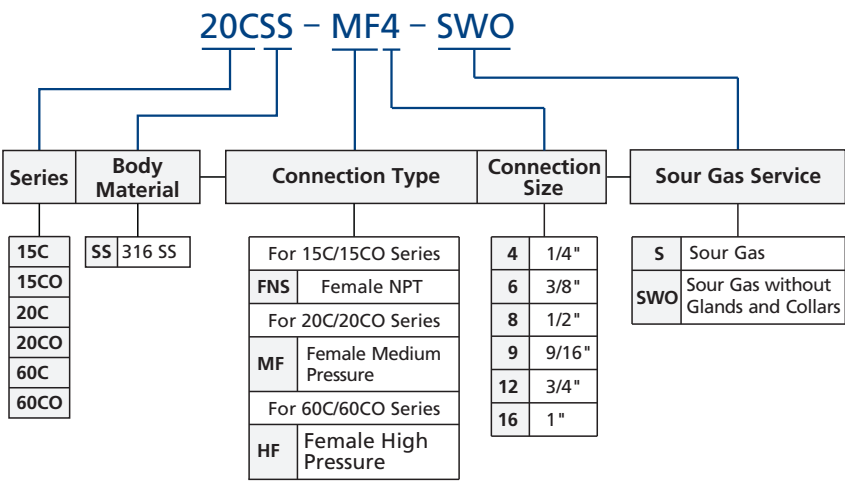
60CO Series Ball Check Valves



Ordering Number	Connection	Orifice in. (mm)	Cv	Dimensions, in. (mm)					Working Pressure psig (bar)	Working Temperature °F (°C)
				A	B	C	D - Hex	Hex		
60COSS-HF4-S	HF4	0.094 (2.39)	0.15	3.38 (85.9)	2.50 (63.5)	0.47 (11.9)	0.63 (16.0)	1.18 (30.0)	30,000 (2068)	-110 to 1200 (-79 to 649)
60COSS-HF6-S	HF6	0.125 (3.18)	0.28	3.86 (98.1)	2.80 (71.0)	0.61 (15.5)	0.81 (20.6)	1.18 (30.0)		
60COSS-HF9-S	HF9	0.187 (4.75)	0.63	4.62 (117.4)	3.38 (85.85)	0.95 (24.1)	1.12 (28.5)	1.50 (38.1)		

Note: All dimensions are for reference only and are subject to change. For dimensions not shown above, please contact FITOK Group or our authorized distributors.

Ordering Number Description



Notes: 1. For more details regarding Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
Not all combinations are available.

Subsea Valves

Subsea Valves



G-02

Subsea Valves

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Contents

Subsea Ball Valves	G-04
Subsea Hydraulic Ball Valves	G-12
Subsea Check Valves	G-14
Subsea Needle Valves	G-17
Subsea Hydraulic Needle Valves	G-20
Subsea Hydraulic Directional Control Valves	G-23

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Subsea Ball Valves

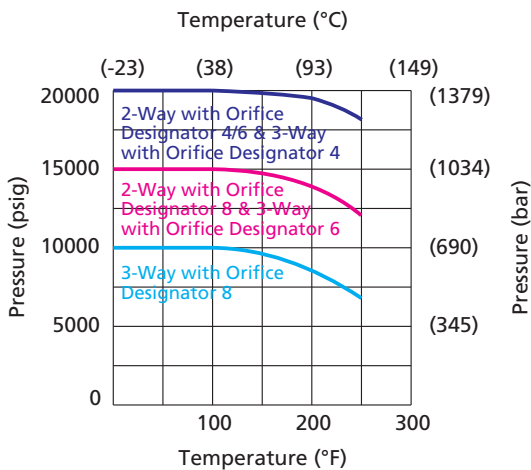
2-Way Valves, 3-Way Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- NBR O-ring for operation from -10 to 250°F (-23 to 121°C); other O-ring materials available
- High tensile 316 stainless steel or S17400 stainless steel as standard material for valve body
- Paddle assembly optional
- PEEK seats offer excellent resistance against chemicals, heat and abrasion
- Full-port flow path to minimize pressure drop
- 2-way and 3-way valve configurations
- Bidirectional flow for 2-way valves
- Wide selection of tube and pipe end fittings available
- A variety of wetted materials optional
- Maximum water depth: 13,800 ft. (4200 m)

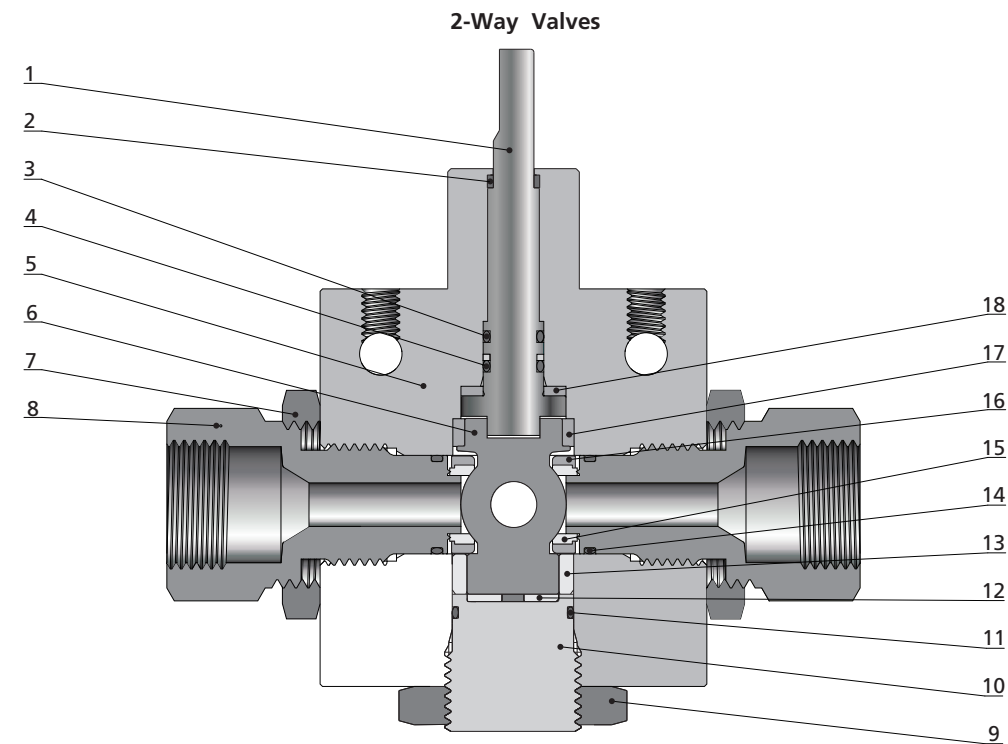


Pressure vs. Temperature Curve



Note: The side connection is not allowed to work as inlet.

Standard Materials of Construction

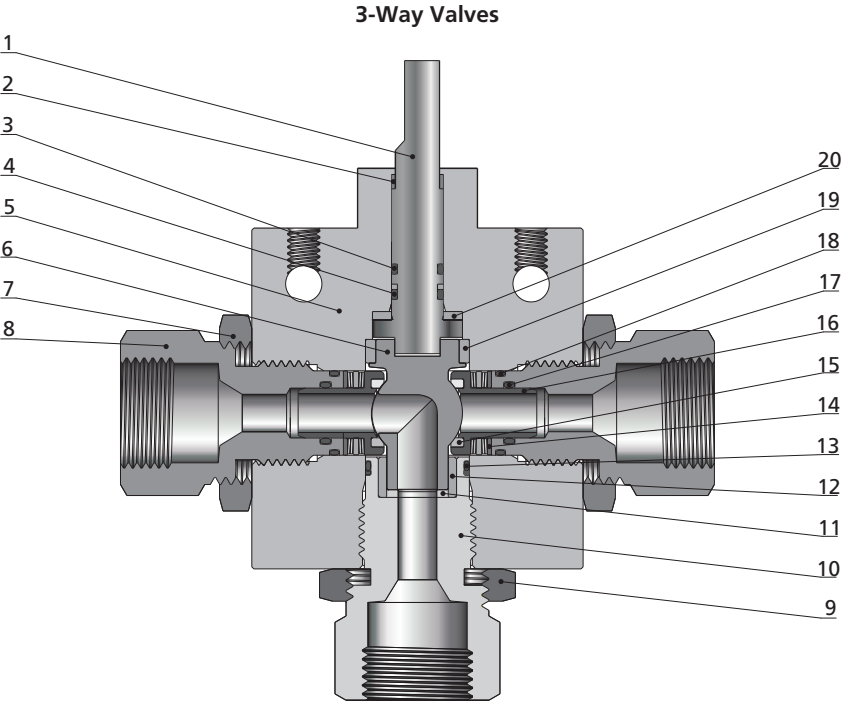


Item	Component	Material Grade
1	<i>Ball Stem</i>	316SS
2	Stem Backup	PEEK
3	O-Ring	NBR
4	<i>O-Ring</i>	<i>NBR</i>
5	<i>Body</i>	<i>316 SS / S17400 SS(For Orifice No. 16 Only)</i>
6	<i>Ball</i>	<i>316SS</i>
7	Lock Nut	316 SS
8	<i>Seat Gland</i>	<i>316 SS / S17400 SS(For Orifice No. 16 Only)</i>
9	Locking Piece	316SS
10	<i>Bottom Gland</i>	<i>316 SS / S17400 SS(For Orifice No. 16 Only)</i>
11	<i>O-Ring</i>	<i>NBR</i>
12	<i>Bottom Thrust Washer</i>	<i>PEEK</i>
13	<i>Bearing</i>	<i>PEEK</i>
14	<i>O-Ring</i>	<i>NBR</i>
15	<i>Seat</i>	<i>PEEK</i>
16	<i>Seat Retainer</i>	<i>316SS</i>
17	<i>Bearing</i>	<i>PEEK</i>
18	<i>Thrust Washer</i>	<i>PEEK</i>
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

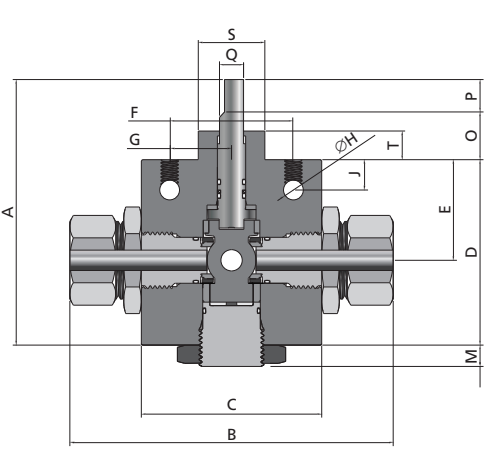
Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts



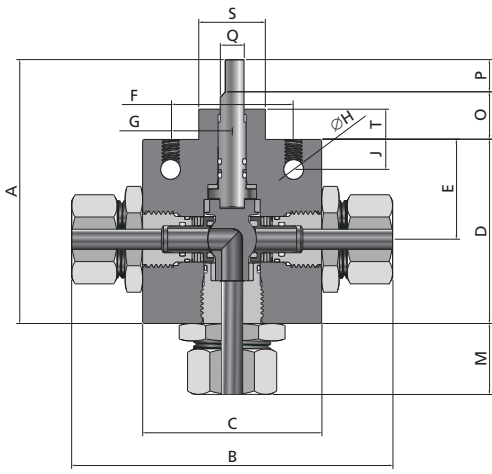
Item	Component	Material Grade
1	<i>Ball Stem</i>	316 SS
2	Stem Backup	PEEK
3	O-Ring	NBR
4	<i>O-Ring</i>	<i>NBR</i>
5	<i>Body</i>	316 SS
6	<i>Ball</i>	316 SS
7	Lock Nut	316 SS
8	<i>Seat Gland</i>	316 SS
9	Locking Piece	316SS
10	<i>Bottom Gland</i>	316SS
11	<i>Bottom Thrust Washer</i>	PEEK
12	<i>Bearing</i>	PEEK
13	<i>O-Ring</i>	<i>NBR</i>
14	<i>Belleville Washer</i>	S17700
15	<i>Seat</i>	PEEK
16	<i>Seat Retainer</i>	S17700
17	<i>O-Ring</i>	<i>NBR</i>
18	<i>O-Ring</i>	<i>NBR</i>
19	<i>Bearing</i>	PEEK
20	<i>Thrust Washer</i>	PEEK
Lubricant		Molybdenum Disulfide/Fluorinated-Based

Wetted components listed in italics.

Dimensions



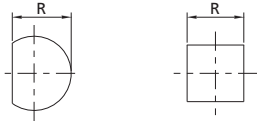
2-Way Valves



3-Way Valves

Dimensions, in. (mm)												
Flow Pattern	Orifice No.	A	B	C	D	E	F	G	H	J	M	Block Thickness
2-Way	4	4.31 (109.3)	4.20 (106.8)	2 (50.8)	2.53 (64.2)	1.28 (32.5)	1.5 (38.1)	0.75 (19.05)	0.28 (7.1)	0.43 (10.9)	0.35 (8.8)	1 (25.4)
	6	5.94 (150.8)	5.53 (140.4)	3 (76.2)	3.43 (87.3)	1.78 (45.2)	2.5 (63.5)	1.25 (31.75)	0.31 (7.9)	0.41 (10.3)	0.35 (8.8)	1.38 (34.9)
	8	6.67 (169.5)	7.72 (196.2)	4.12 (104.6)	4.23 (107.5)	2.07 (52.4)	3 (76.2)	1.5 (38.1)	0.31 (7.9)	0.5 (12.7)	0.61 (15.5)	1.75 (44.5)
3-Way	4	4.34 (110.2)	4.70 (119.5)	2.5 (63.5)	2.56 (65)	1.34 (34)	2 (50.8)	1 (25.4)	0.28 (7.1)	0.41 (10.3)	1.1 (28)	1 (25.4)
	8	6.67 (169.5)	7.72 (196.2)	4.12 (104.6)	4.23 (107.5)	2.07 (52.4)	3 (76.2)	1.5 (38.1)	0.31 (7.9)	0.5 (12.7)	1.45 (36.8)	1.75 (44.5)
Flow Pattern	Orifice No.	Dimensions, in. (mm)										
		O	P	Q	R	S	T					
2-Way	4	1.278 (32.5)	0.50 (12.7)	0.25 (6.35)	0.22 (5.48)	0.81 (20.6)	0.65 (16.4)					
	6	1.24 (31.7)	1.25 (31.8)	0.44 (11.1)	0.38 (9.35)	0.94 (23.9)	1.03 (26.2)					
	8	1.56 (39.7)	0.88 (22.2)	0.59 (14.9)	0.44 (11.13)	1.50 (38.1)	0.77 (19.6)					
3-Way	4	1.28 (32.5)	0.5 (12.7)	0.25 (6.35)	0.22 (5.49)	0.81 (20.6)	0.65 (16.4)					
	8	1.56 (39.7)	0.88 (22.2)	0.62 (15.9)	0.44 (11.13)	1.50 (38.1)	0.77 (19.6)					

Ball Stem Connection



Orifice 4

Orifice 6/8

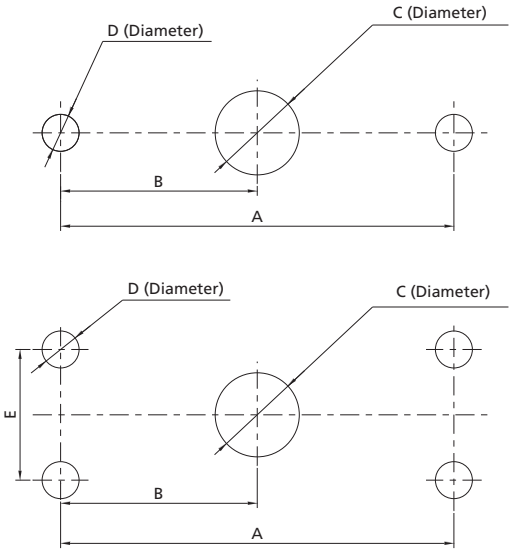
All dimensions are for reference only and are subject to change.

Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Ball Valve Panel Mounting Dimensions

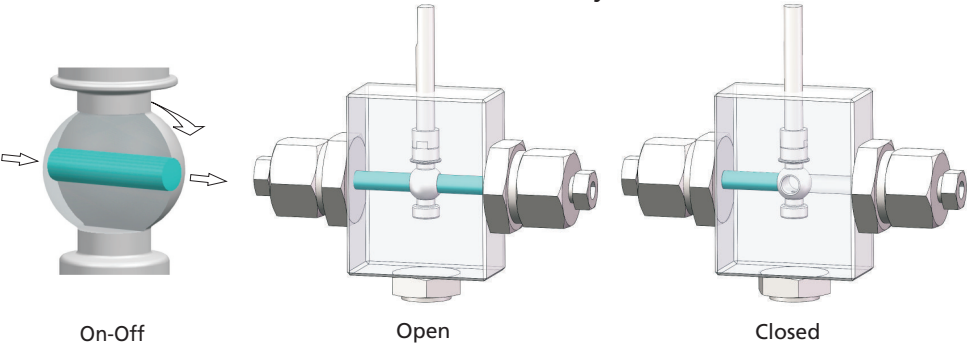
Flow Pattern	Orifice No.	Dimensions, in. (mm)			
		A	B	C	D
2-Way	4	1.5 (38.1)	0.75 (19.05)	0.88 (22.23)	0.28 (7.1)
3-Way	4	2 (50.8)	1 (25.4)	0.88 (22.23)	0.28 (7.1)

Flow Pattern	Orifice No.	Dimensions, in. (mm)				
		A	B	C	D	E
2-Way	6	2.5 (63.5)	1.25 (31.75)	1.00 (25.4)	0.33 (8.5)	0.88 (22.3)
	8	3 (76.2)	1.5 (38.1)	0.69 (17.5)	0.33 (8.5)	1 (25.4)
3-Way	8	3 (76.2)	1.5 (38.1)	1.56 (39.69)	0.33 (8.5)	1 (25.4)

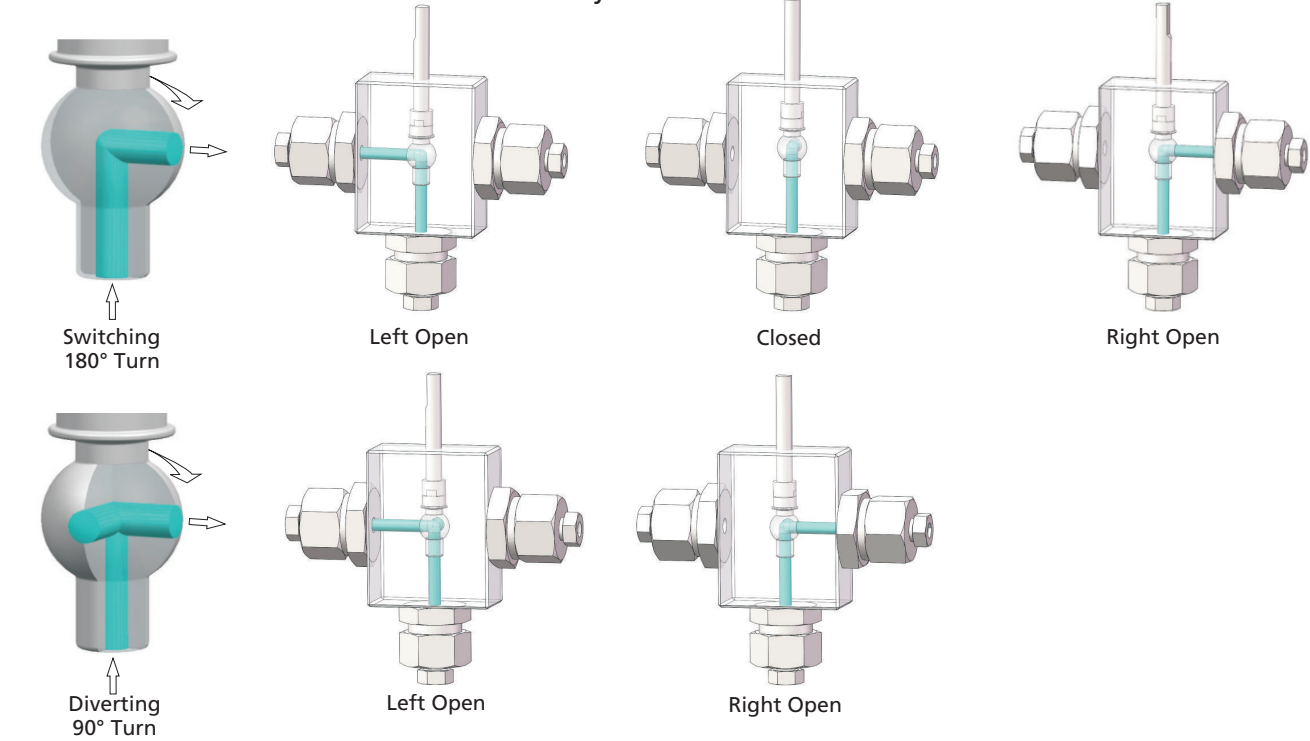


Flow Configuration

2-Way Valves



3-Way Valves



Ordering Information and Dimensions

Flow Pattern	Orifice No.	Connection	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)
2-Way	4	FNS4	0.25 (6.35)	1.51	15SBSS-FNS4-4-1	15,000 (1034)
		FNS6			15SBSS-FNS6-4-1	
		FNS8			15SBSS-FNS8-4-1	
		DFF4	0.19 (4.80)	0.82	20SBSS-DFF4-4-1	20,000 (1379)
		DFF6	0.25 (6.35)	1.51	20SBSS-DFF6-4-1	
		MF4	0.109 (2.77)	0.23	20SBSS-MF4-4-1	
		MF6	0.203 (5.16)	0.98	20SBSS-MF6-4-1	
		MF9	0.25 (6.35)	1.51	20SBSS-MF9-4-1	
		HF4	0.094 (2.39)	0.16	20SBSS-HF4-4-1	
		HF6	0.125 (3.17)	0.32	20SBSS-HF6-4-1	
	6	FNS4	0.375 (9.52)	3.51	15SBSS-FNS4-6-1	15,000 (1034)
		FNS6			15SBSS-FNS6-6-1	
		FNS8			15SBSS-FNS8-6-1	
		MF6	0.203 (5.16)	0.98	20SBSS-MF6-6-1	20,000 (1379)
		MF9	0.312 (7.92)	2.36	20SBSS-MF9-6-1	
		MF12	0.375 (9.52)	3.51	20SBSS-MF12-6-1	
	8	FNS12	0.5 (12.7)	6.31	10SBSS-FNS12-8-1	10,000 (690)
		FNS16			10SBSS-FNS16-8-1	
		MF12			15SBSS-MF12-8-1	
		MF16			15SBSS-MF16-8-1	
3-Way	4	FNS4	0.188 (4.77)	0.5	15SBSS-FNS4-4-2	15,000 (1034)
					15SBSS-FNS4-4-2D	
		FNS6			15SBSS-FNS6-4-2	
					15SBSS-FNS6-4-2D	
		MF4	0.109 (2.77)	0.17	20SBSS-MF4-4-2	20,000 (1379)
					20SBSS-MF4-4-2D	
		MF6	0.188 (4.77)	0.5	20SBSS-MF6-4-2	
					20SBSS-MF6-4-2D	

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

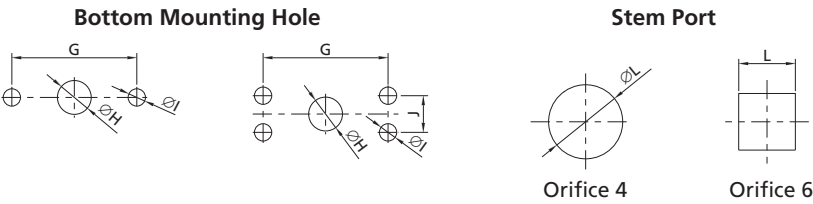
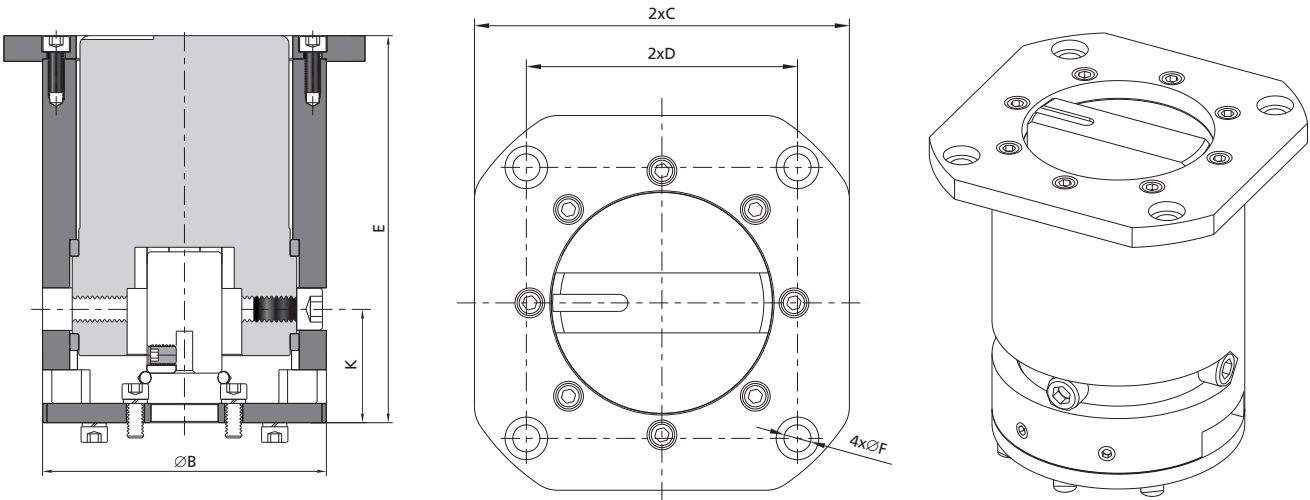
Part Number Crossover Charts

Ordering Information and Dimensions (continued)

Flow Pattern	Orifice No.	Connection	Orifice Size in. (mm)	Cv	Ordering Number	Working Pressure psig (bar)
3-Way	4	MF9	0.188 (4.77)	0.5	20SB5S-MF9-4-2	20,000 (1379)
					20SB5S-MF9-4-2D	
		HF4	0.094 (2.39)	0.13	20SB5S-HF4-4-2	
					20SB5S-HF4-4-2D	
		HF6	0.125 (3.17)	0.22	20SB5S-HF6-4-2	
					20SB5S-HF6-4-2D	
	8	MF12	0.5 (12.7)	10.2	10SB5S-MF12-8-2	10,000 (690)
		MF16			10SB5S-MF16-8-2	

Paddle Assembly Options

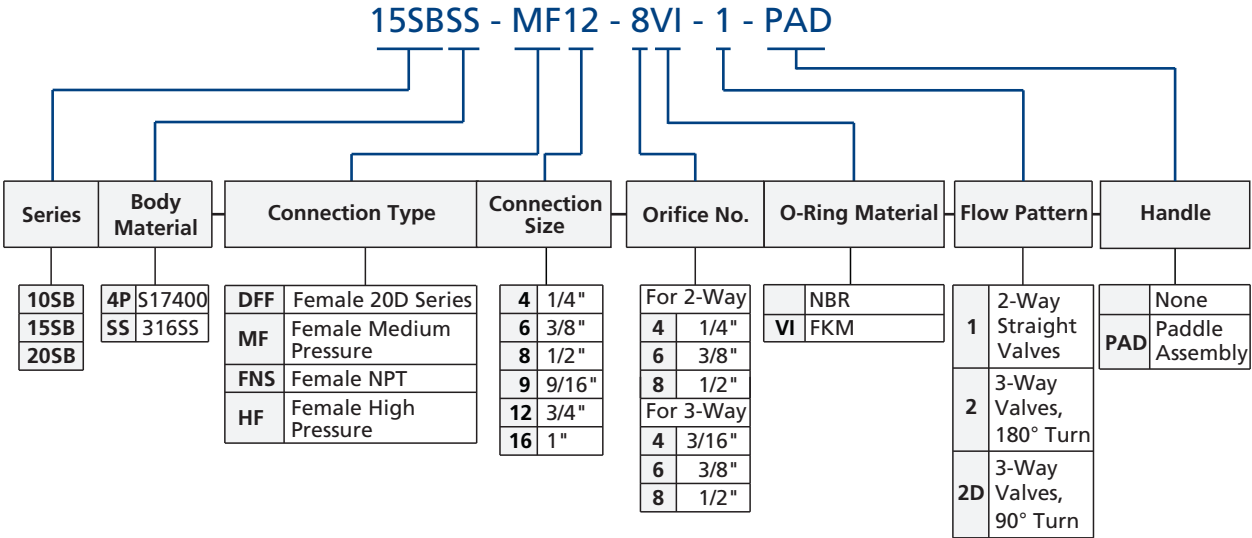
Paddle Assembly installed on the valve is suitable for ROV or diver operation to complete the opening and closing or reversing of underwater valves. PAD is made of stainless steel, which has good corrosion resistance in the submarine environment. The limit design is adopted in the structure to prevent the overtorque of ROV from affecting the normal use of the valve, meeting API 17H specification of ROV interface tooling.



Note: To order valves with paddle assembly, add "-PAD" to the valve ordering number. Example: 20SB5S-MF4-4-1-PAD.

Ordering Number	Flow Pattern	Orifice No.	Dimensions, in. (mm)											
			A	B	C	D	E	F	G	H	I	J	K	L
SS-PAD-4-1	2-Way	4	3.19 (81)	4.33 (110)	5.51 (140)	3.98 (101)	5.9 (150)	0.39 (10)	1.5 (38.1)	1.02 (26.0)	0.28 (7.1)	—	1.38 (35.1)	0.25 (6.35)
SS-PAD-6-1		6	3.19 (81)	4.33 (110)	5.51 (140)	3.98 (101)	5.9 (150)	0.39 (10)	2.5 (63.5)	1.44 (36.5)	0.33 (8.5)	0.88 (22.3)	2.5 (63.5)	0.38 (9.35)
SS-PAD-4-2	3-Way	4	3.19 (81)	4.33 (110)	5.51 (140)	3.98 (101)	5.9 (150)	0.39 (10)	2 (50.8)	1.44 (36.5)	0.28 (7.1)	—	1.38 (35.1)	0.25 (6.35)

Ordering Number Description



Designator	O-Ring Material	Working Temperature Range, °F(°C)
	NBR	-10 to 250 (-23 to 121)
VI	FKM	0 to 400 (-17.8 to 204)

- Notes: 1. For more details regarding 20D Series and Medium/ High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

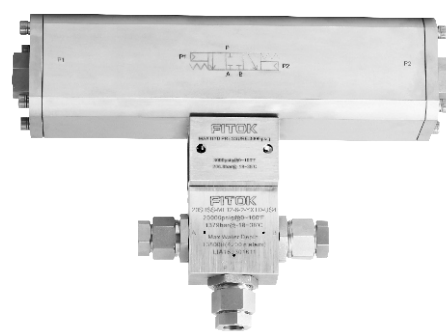
Subsea Hydraulic Ball Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Hydraulic supply pressure: 3,000 psig (207 bar)
- Working temperature: 0 to 200°F (-17.8 to 93°C)
- High tensile 316 stainless steel or S17400 stainless steel for valve body and S17400 for hydraulic actuator
- FKM O-ring and PEEK seal provide excellent resistance against chemicals, heat and abrasion
- Three types of hydraulic actuators (YC, YO, YXTD) available
- Maximum water depth: 13,800 ft. (4200 m)



Subsea Hydraulic Ball Valves (2-Way)



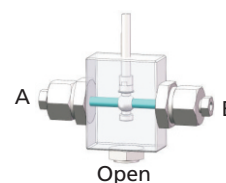
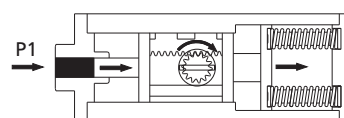
Subsea Hydraulic Ball Valves (3-Way)

Working Principle

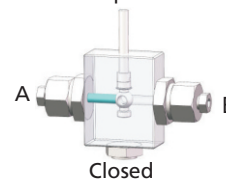
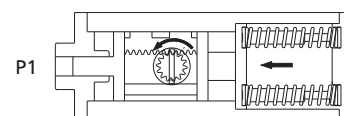
2-way (90° on-off)

YC: Hydraulic to open, single acting with spring return (Normally Closed)

Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The valve fully opens.

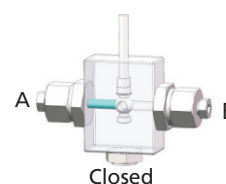
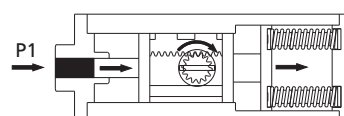


Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve closes.

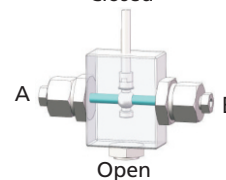
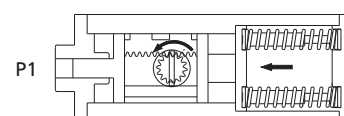


YO: Hydraulic to closed, single acting with spring return (Normally Open)

Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The valve closes.



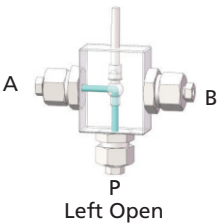
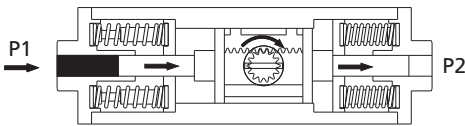
Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve fully opens.



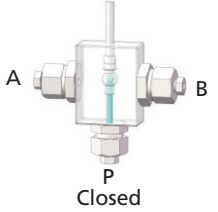
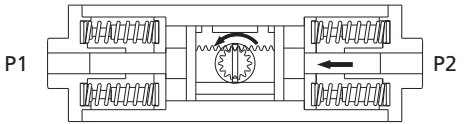
3-way (180° switching)

YXTD: 180° Normally Closed, double acting with spring return

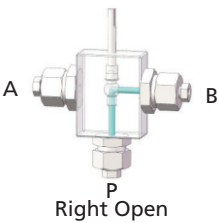
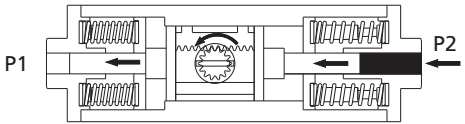
Hydraulic pressure applied to port P1 forces the piston to move towards right and compress the spring, causing a clockwise rotation by 90 degrees. The flow is allowed from bottom inlet port P to outlet A.



Following loss of hydraulic pressure on port P1, the compressed spring forces the piston to move towards left, causing a counterclockwise rotation by 90 degrees. The valve closes.



Hydraulic pressure applied to port P2 forces the piston to move towards left and compress the spring, causing a counterclockwise rotation by 90 degrees. The flow is allowed from bottom inlet port P to outlet B.



Ordering Number Description

15SBSS - MF6 - 6VI - 1 - YC - FNS4

Series	Body Material	Connection	Orifice No.	O-Ring Material	Flow Pattern	Hydraulic Actuator	Hydraulic Connection Type	Hydraulic Connection Size																																																															
10SB	4P S17400	For 10SB Series <table><tr><td>FNS12</td><td>3/4" Female NPT</td></tr><tr><td>FNS16</td><td>1" Female NPT</td></tr><tr><td>MF12</td><td>3/4" Female Medium Pressure</td></tr><tr><td>MF16</td><td>1" Female Medium Pressure</td></tr></table> For 15SB Series <table><tr><td>DFF4</td><td>1/4" Female 20D Series</td></tr><tr><td>DFF6</td><td>3/8" Female 20D Series</td></tr><tr><td>FNS4</td><td>1/4" Female NPT</td></tr><tr><td>FNS6</td><td>3/8" Female NPT</td></tr><tr><td>FNS8</td><td>1/2" Female NPT</td></tr></table> For 20SB Series <table><tr><td>MF4</td><td>1/4" Female Medium Pressure</td></tr><tr><td>MF6</td><td>3/8" Female Medium Pressure</td></tr><tr><td>MF9</td><td>9/16" Female Medium Pressure</td></tr><tr><td>MF12</td><td>3/4" Female Medium Pressure</td></tr><tr><td>HF4</td><td>1/4" Female High Pressure</td></tr><tr><td>HF6</td><td>3/8" Female High Pressure</td></tr></table>	FNS12	3/4" Female NPT	FNS16	1" Female NPT	MF12	3/4" Female Medium Pressure	MF16	1" Female Medium Pressure	DFF4	1/4" Female 20D Series	DFF6	3/8" Female 20D Series	FNS4	1/4" Female NPT	FNS6	3/8" Female NPT	FNS8	1/2" Female NPT	MF4	1/4" Female Medium Pressure	MF6	3/8" Female Medium Pressure	MF9	9/16" Female Medium Pressure	MF12	3/4" Female Medium Pressure	HF4	1/4" Female High Pressure	HF6	3/8" Female High Pressure	For 2-Way <table><tr><td>4</td><td>1/4"</td></tr><tr><td>6</td><td>3/8"</td></tr></table> For 3-Way <table><tr><td>4</td><td>3/16"</td></tr><tr><td>6</td><td>3/8"</td></tr></table>	4	1/4"	6	3/8"	4	3/16"	6	3/8"	<table><tr><td></td><td>NBR</td></tr><tr><td>VI</td><td>FKM</td></tr></table>		NBR	VI	FKM	<table><tr><td>1</td><td>2-Way Straight Valves</td></tr><tr><td>2</td><td>3-Way Valves, 180° Turn</td></tr><tr><td>2D</td><td>3-Way Valves, 90° Turn</td></tr></table>	1	2-Way Straight Valves	2	3-Way Valves, 180° Turn	2D	3-Way Valves, 90° Turn	<table><tr><td>FNS</td><td>Female NPT</td></tr><tr><td>US</td><td>Female SAE O-Ring</td></tr></table> For 2-way, 3-way <table><tr><td>YC</td><td>90° Normally Closed Hydraulic Actuator</td></tr><tr><td>YO</td><td>90° Normally Open Hydraulic Actuator</td></tr><tr><td>YXTD</td><td>180° Spring Return Double Acting Hydraulic Actuator</td></tr></table>	FNS	Female NPT	US	Female SAE O-Ring	YC	90° Normally Closed Hydraulic Actuator	YO	90° Normally Open Hydraulic Actuator	YXTD	180° Spring Return Double Acting Hydraulic Actuator	<table><tr><td>4</td><td>1/4"</td></tr><tr><td>7</td><td>7/16"-20</td></tr><tr><td>8</td><td>1/2"</td></tr></table>	4	1/4"	7	7/16"-20	8	1/2"
FNS12	3/4" Female NPT																																																																						
FNS16	1" Female NPT																																																																						
MF12	3/4" Female Medium Pressure																																																																						
MF16	1" Female Medium Pressure																																																																						
DFF4	1/4" Female 20D Series																																																																						
DFF6	3/8" Female 20D Series																																																																						
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FNS8	1/2" Female NPT																																																																						
MF4	1/4" Female Medium Pressure																																																																						
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HF4	1/4" Female High Pressure																																																																						
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4	1/4"																																																																						
7	7/16"-20																																																																						
8	1/2"																																																																						
15SB	SS 316SS																																																																						
20SB																																																																							

Notes:

1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.

2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

- Notes: 1. For more details regarding 20D Series and Medium/High Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Check Valves

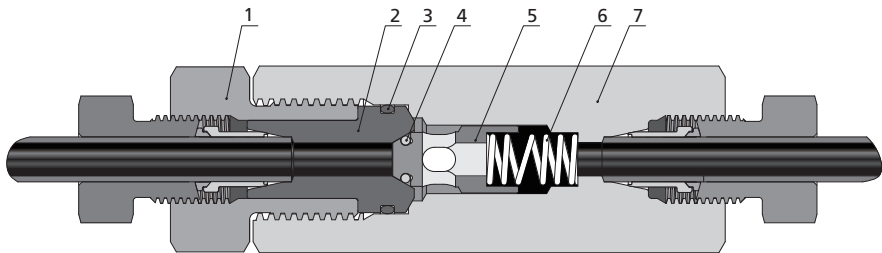
Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Cracking pressure: 14 to 26 psig (0.97 to 1.79 bar)
- NBR O-ring for operation from -10 to 250°F (-23 to 121°C); other O-ring materials available
- High tensile 316 stainless steel for valve body
- NACE MR0175 optional
- Provides unidirectional flow and tight shut-off for liquids and gases with high reliability. When differential drops below cracking pressure, valve shuts off (not for use as relief valve)
- Soft seat seal ring style or metal-to-metal seat poppet style available
- Maximum water depth: 13,800 ft. (4200 m)



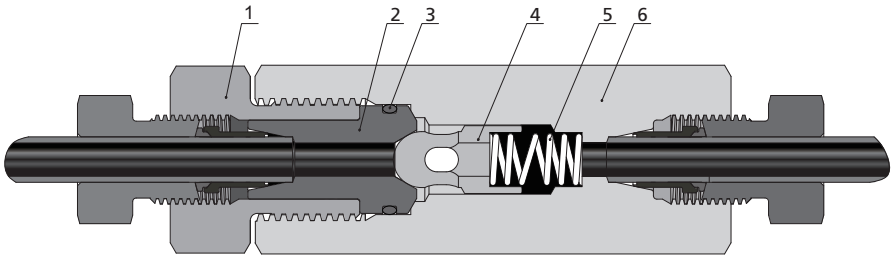
Standard Materials of Construction

SC Series



Item	Component	Material Grade
1	Cover Gland	316SS
2	Cover	316SS
3	Seal Ring	NBR
4	Seal Ring	NBR
5	Ball Poppet	316SS
6	Spring	304SS
7	Valve Body	316SS

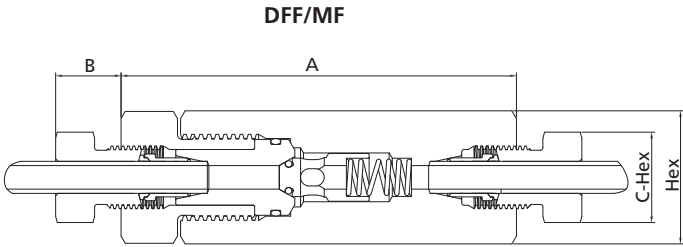
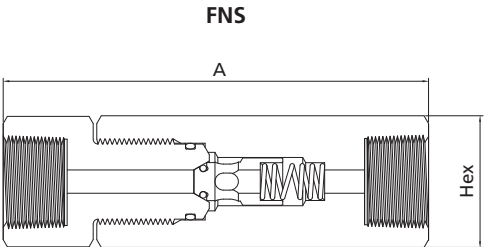
SCO Series



Item	Component	Material Grade
1	Cover Gland	316SS
2	Cover	316SS
3	Seal Ring	NBR
4	Ball Poppet	S17400SS
5	Spring	304SS
6	Valve Body	316SS

Wetted components listed in italics.

Ordering Information and Dimensions

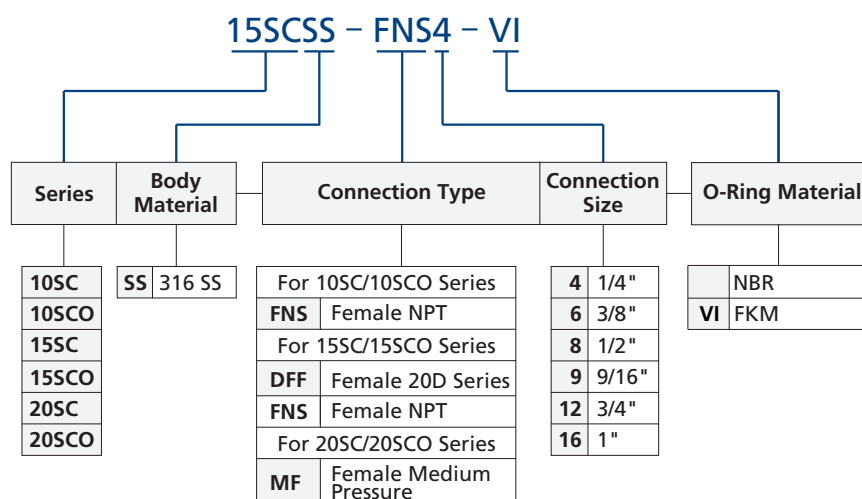


Series	Connection	Orifice Size in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	C-Hex	Hex	
10SC	FNS12	0.52 (13.21)	4.70	6.11 (155.19)	—	—	1.75 (44.45)	10,000 (690)
	FNS16	0.69 (17.53)	7.40	7.32 (185.93)	—	—	1.88 (47.75)	
10SCO	FNS12	0.52 (13.21)	4.70	6.11 (155.19)	—	—	1.75 (44.45)	
	FNS16	0.69 (17.53)	7.40	7.32 (185.93)	—	—	1.88 (47.75)	
15SC	DFF4	0.188 (4.78)	0.63	3.43 (87.12)	0.52 (13.21)	0.63 (16.00)	0.81 (20.57)	15,000 (1034)
	DFF6	0.250 (6.35)	1.70	3.82 (97.03)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)	
	DFF8	0.36 (9.12)	2.30	4.55 (115.57)	0.60 (15.24)	0.93 (23.62)	1.38 (35.05)	
15SCO	DFF4	0.188 (4.78)	0.63	3.43 (87.12)	0.53 (13.46)	0.63 (16.00)	0.81 (20.57)	
	DFF6	0.250 (6.35)	1.70	3.82 (97.03)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)	
	DFF8	0.36 (9.12)	2.30	4.55 (115.57)	0.60 (15.24)	0.93 (23.62)	1.38 (35.05)	
15SC	FNS4	0.12 (3.05)	0.28	3.43 (87.12)	—	—	0.94 (23.81)	

Ordering Information and Dimensions (continued)

Series	Connection	Orifice Size in. (mm)	Cv	Dimensions, in. (mm)				Working Pressure psig (bar)
				A	B	C-Hex	Hex	
15SC	FNS6	0.22 (5.59)	0.84	3.82 (97.03)	—	—	1.13 (28.58)	15,000 (1034)
	FNS8	0.36 (9.12)	2.30	4.55 (115.57)	—	—	1.38 (35.05)	
15SCO	FNS4	0.12 (3.05)	0.28	3.43 (87.12)	—	—	0.94 (23.81)	
	FNS6	0.22 (5.59)	0.84	3.82 (97.03)	—	—	1.13 (28.58)	
	FNS8	0.36 (9.12)	2.30	4.55 (115.57)	—	—	1.38 (35.05)	
20SC	MF4	0.125 (3.18)	0.28	2.94 (74.68)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	20,000 (1379)
	MF6	0.218 (5.54)	0.84	3.34 (84.84)	0.44 (11.18)	0.62 (15.75)	1.00 (25.40)	
	MF9	0.359 (9.12)	2.30	4.35 (110.49)	0.55 (13.97)	0.94 (23.81)	1.38 (35.05)	
	MF12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	
	MF16	0.688 (17.48)	7.40	7.07 (179.59)	0.74 (18.80)	1.38 (35.05)	2.12 (53.85)	
20SCO	MF4	0.125 (3.18)	0.28	2.94 (74.68)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)	
	MF6	0.218 (5.54)	0.84	3.12 (79.25)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)	
	MF9	0.359 (9.12)	2.30	4.18 (106.17)	0.53 (13.46)	0.94 (23.81)	1.38 (35.05)	
	MF12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)	
	MF16	0.688 (17.48)	7.40	6.63 (168.40)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)	

Ordering Number Description



- Notes: 1. For more details regarding 20D Series and Medium Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.
3. Please contact FITOK Group or our authorized distributors for more information on wetted materials (Eg: 2507 SD), seal materials and operational designs to fulfill your application requirements.

Designator	O-Ring Material	Working Temperature Range, °F(°C)
	NBR	-10 to 250 (-23 to 121)
VI	FKM	0 to 400 (-17.8 to 204)

Subsea Needle Valves

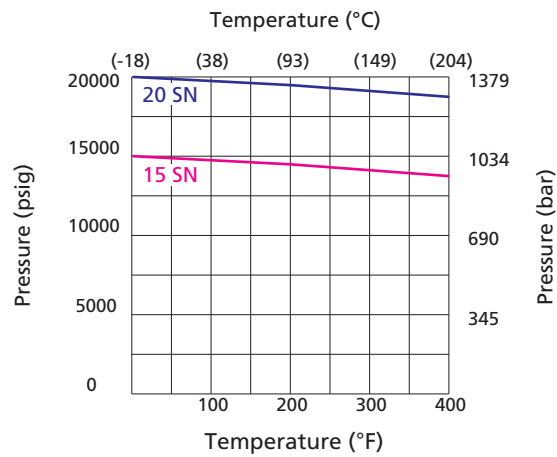
Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- NBR O-ring for operation from -10 to 250°F (-23 to 121°C); other O-ring materials available
- High tensile 316 stainless steel for valve body
- Standard stem seal material: PTFE
- NACE MR0175 optional
- Using a two-part spindle assembly with a non-rising upper stem, it is of great advantage when being used with ROVs
- Non-rotating lower stem to ensure positive non-galling operation during shut-off
- Packing located under stem threads
- Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Reliable packing gland locking device
- Wide selection of tube and pipe end fittings available
- 2-way straight and angle flow patterns available
- Orifice size: 0.203"
- Rated Cv: 0.75
- Maximum water depth: 13,800 ft. (4200 m)

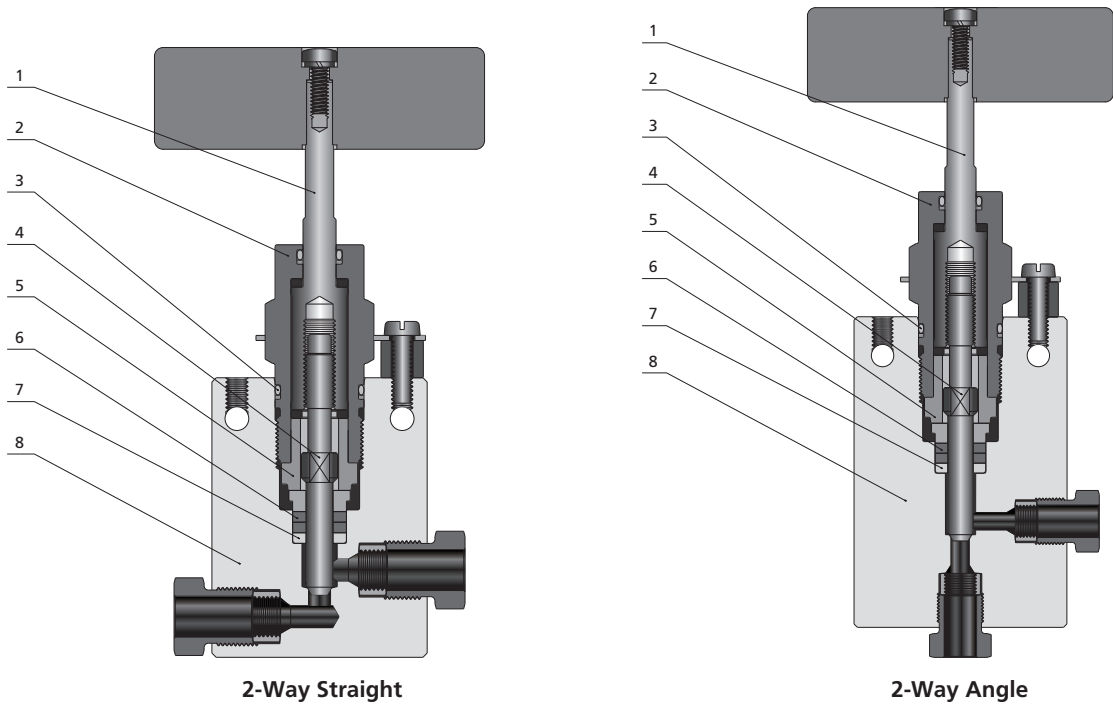


Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Pressure vs. Temperature Curve



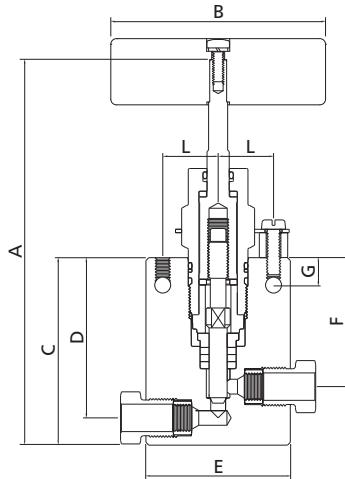
Standard Materials of Construction



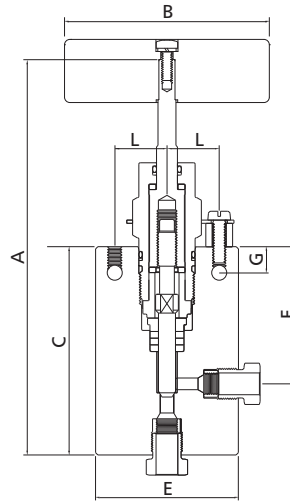
Item	Component	Material Grade
1	Upper Stem	316SS
2	Packing Gland	316SS
3	O-Ring	NBR
4	<i>Lower Stem</i>	<i>S17400</i>
5	Packing Ring	C63000
6	<i>Packing</i>	<i>PTFE</i>
7	<i>Packing Washer</i>	<i>S17400</i>
8	<i>Body</i>	<i>316 SS</i>
Lubricant		Molybdenum Disulfide

Wetted components listed in italics.

Ordering Information and Dimensions



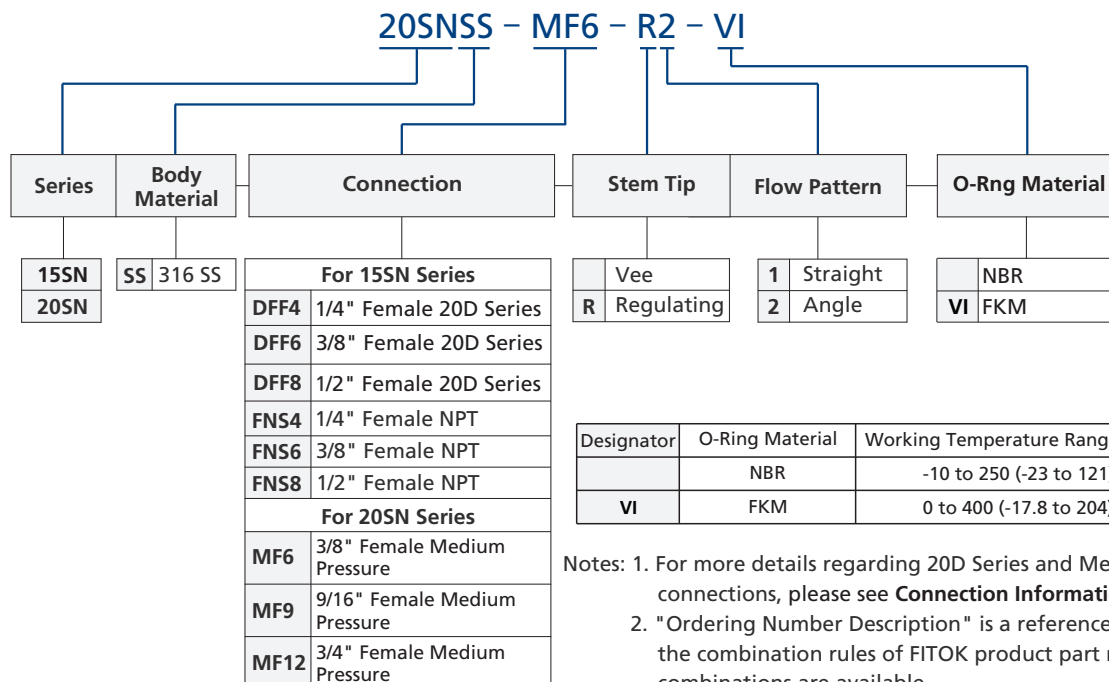
2-Way Straight



2-Way Angle

Ordering Number	Connection	Dimensions, in. (mm)								
		A	B	C	D	E	F	G	L	Block Thickness
20SNSS-MF6-1	MF6	5.35 (135.9)	3.00 (76.2)	2.60 (66.00)	2.22 (56.4)	2.00 (50.8)	1.79 (45.40)	0.38 (9.65)	0.77 (19.5)	1.00 (25.4)
20SNSS-MF9-1	MF9	5.75 (146.1)	3.00 (76.2)	3.00 (76.2)	2.40 (61.0)	2.50 (63.5)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-MF12-1	MF12	5.90 (149.9)	3.00 (76.2)	3.15 (80.0)	2.43 (61.8)	3.00 (76.2)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-MF6-2	MF6	5.78 (146.9)	3.00 (76.2)	3.03 (77.00)	—	2.00 (50.8)	1.78 (45.40)	0.38 (9.65)	0.77 (19.5)	1.00 (25.4)
20SNSS-MF9-2	MF9	6.25 (158.8)	3.00 (76.2)	3.50 (88.9)	—	2.50 (63.5)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-MF12-2	MF12	6.50 (165.2)	3.00 (76.2)	3.75 (95.3)	—	3.00 (76.2)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)

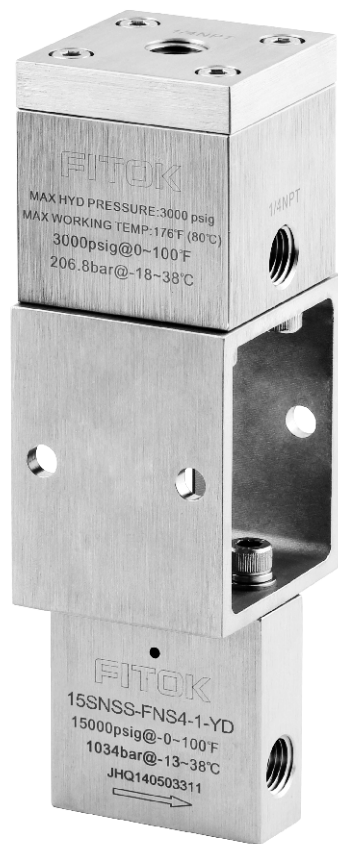
Ordering Number Description



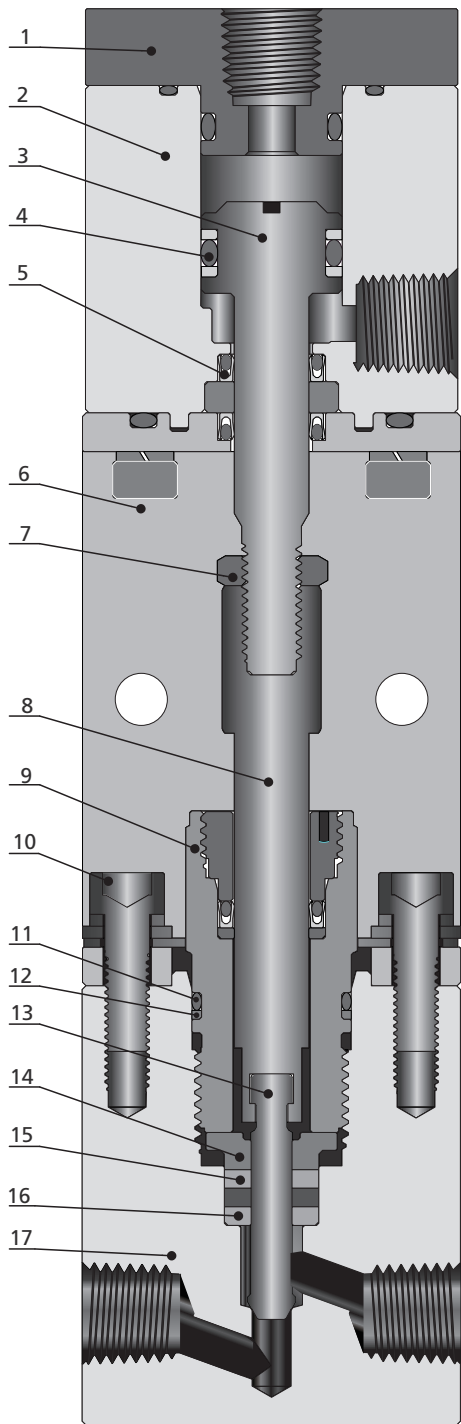
Subsea Hydraulic Needle Valves

Features

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Hydraulic supply pressure: 3,000 psig (207 bar)
- Working temperature: 0 to 175°F (-18 to 80°C)
- High tensile 316 stainless steel for valve body
- Standard stem seal material: PTFE
- NACE MR0175 optional
- Metal-to-metal seating to ensure ideal shut-off, longer stem/seat service lifetime for abrasive flow, excellent corrosion resistance and greater durability for repeated on/off cycles
- Reliable packing gland locking device
- Wide selection of tube and pipe end fittings available
- 2-way straight and angle flow patterns available
- Orifice: 0.203"
- Rated Cv: 0.75
- Maximum water depth: 13,800 ft. (4200 m)



Standard Materials of Construction



Item	Component	Material Grade
1	Gland	316 SS
2	Actuator Body	316 SS
3	Piston Rod	316 SS
4	O-Ring	FKM
5	Piston Seal	UHMWPE
6	Support Block	316 SS
7	Nut	Stainless Steel
8	Upper Stem	316 SS
9	Packing Gland	316 SS
10	Locking Screw	SS
11	O-Ring	NBR
12	O-Ring Retainer	PTFE
13	<i>Lower Stem</i>	<i>S17400</i>
14	Packing Ring	C63000
15	<i>Packing</i>	<i>PTFE</i>
16	<i>Packing Washer</i>	<i>S17400</i>
17	<i>Body</i>	<i>316 SS</i>

Wetted components listed in italics.

Fittings

Tubing

Quick Couplings

Line Filters

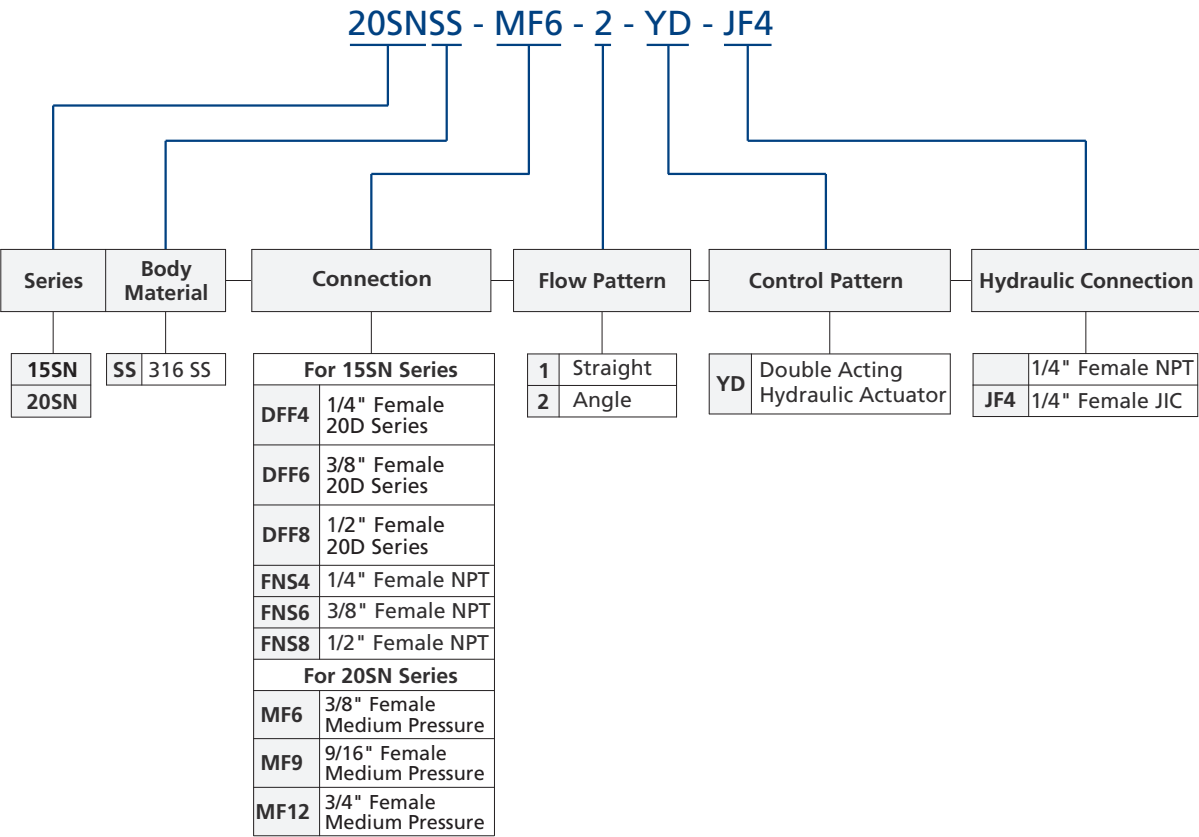
Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Ordering Number Description



- Notes: 1. For more details regarding 20D Series and Medium Pressure connections, please see **Connection Information** on A-02.
2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number. Not all combinations are available.

Subsea Hydraulic Directional Control Valves

Features

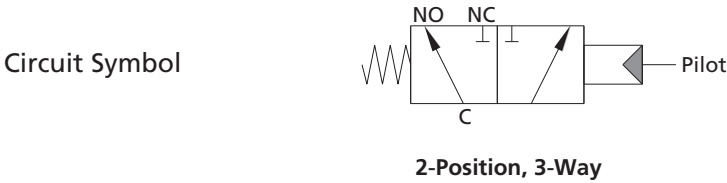
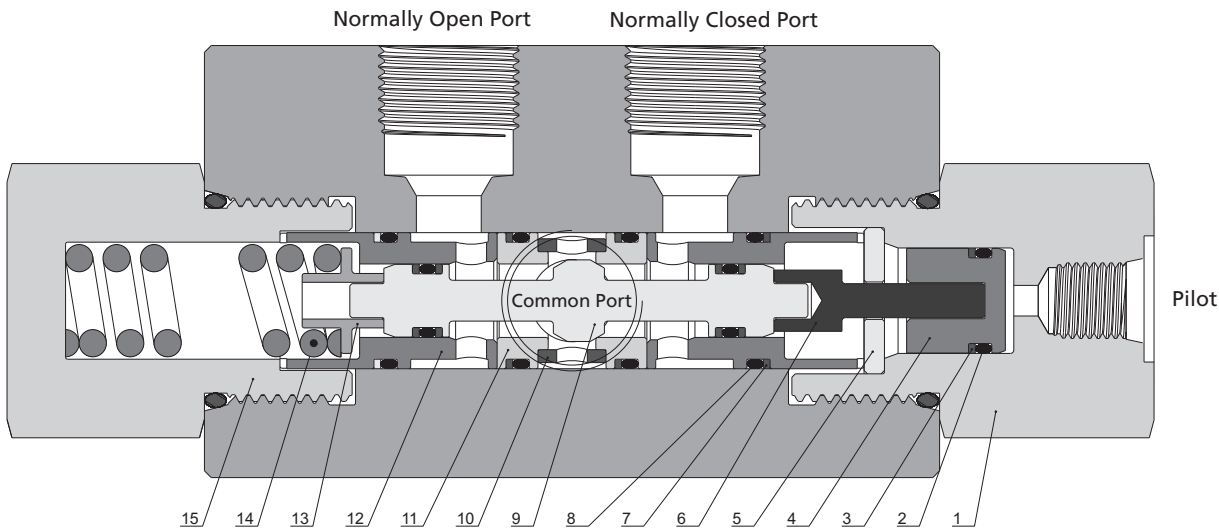
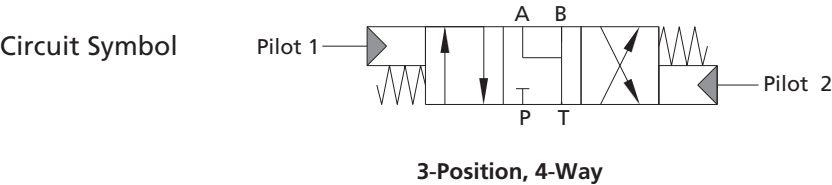
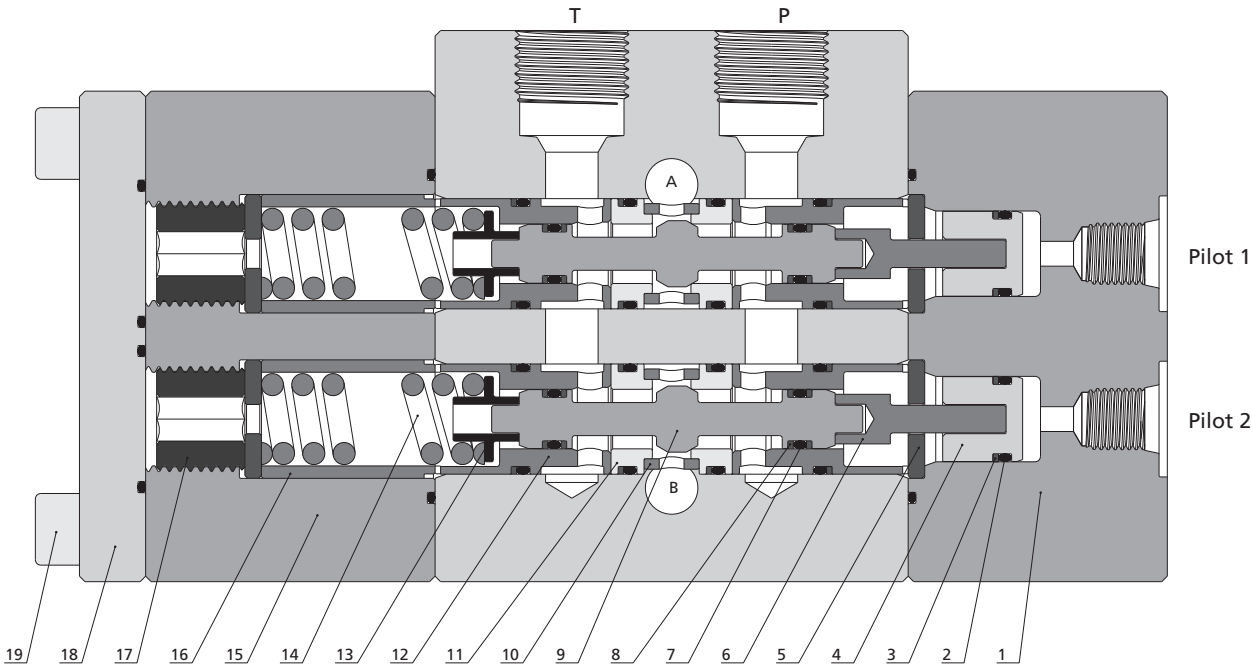
- Working pressure up to 20,000 psig (1379 bar)
- Pilot working pressure: 3,000 psig (207 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- NBR O-ring for operation from -10 to 250°F (-23 to 121°C); other O-ring materials available
- High tensile 316 stainless steel for valve body
- NBR O-rings seal provides excellent oil resistance
- Easy to connect, switch off and reverse between different flow channels
- Hydraulic remote control for easy operation
- Bolt connection for easy disassembly and maintenance
- Low impact performance to maximize cycle life
- Suitable for application with oil or water
- Orifice size: 0.25", 0.375"
- Maximum water depth: 13,800 ft. (4200 m)



Fittings	Tubing	Quick Couplings	Line Filters	Valves	Sour Service Products	Subsea Valves	Part Number Crossover Charts
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Standard Materials of Construction

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

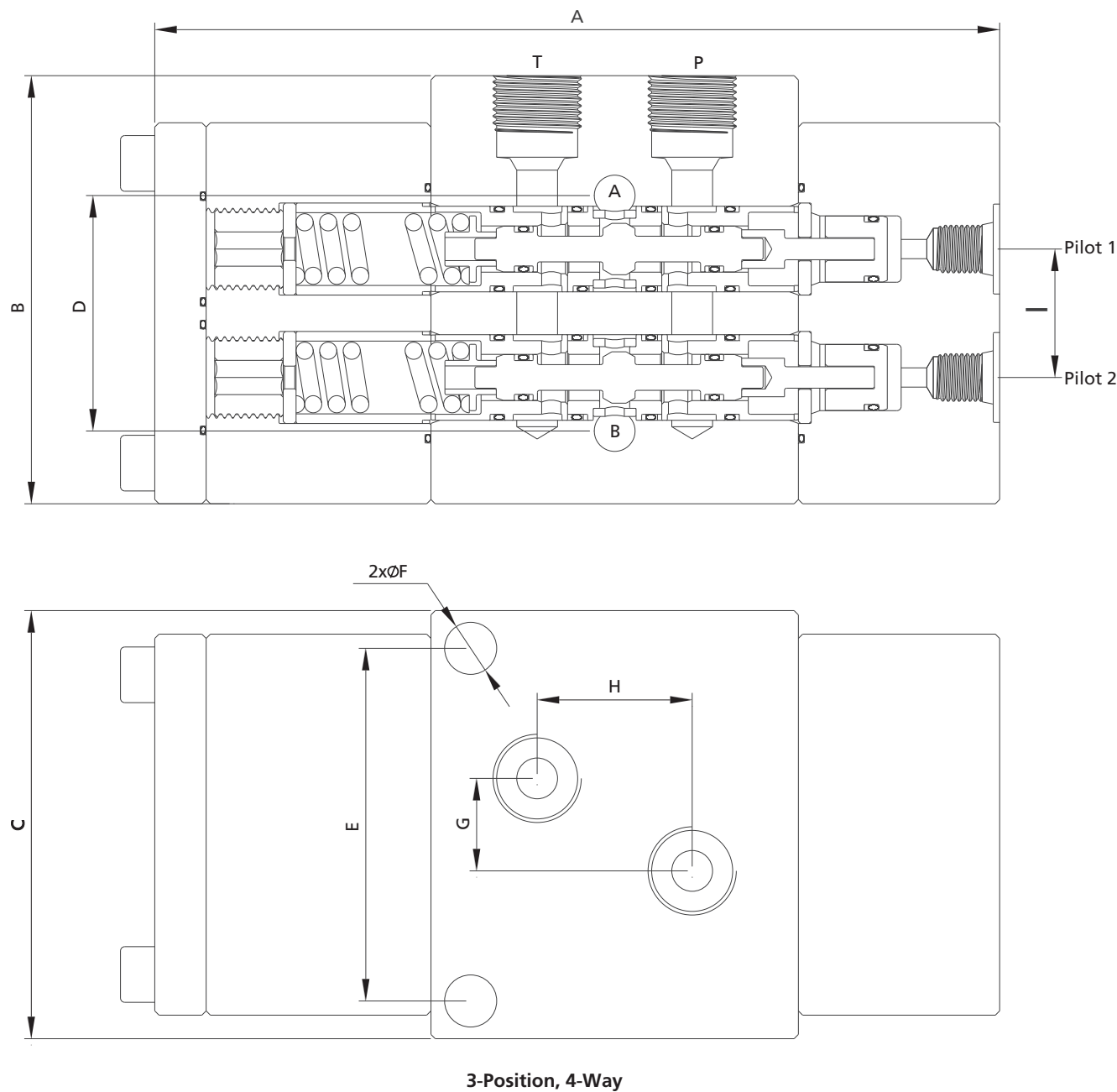


Item	Component	Material Grade
1	Gland	F316
2	O-Ring	NBR
3	Retaining Ring	PTFE
4	Piston	316 SS
5	Gasket	316 SS
6	Connection Block	316 SS
7	<i>O-Ring</i>	<i>NBR</i>
8	<i>Retaining Ring</i>	<i>PEEK</i>
9	<i>Stem</i>	<i>S17400</i>
10	<i>Pad</i>	<i>S17400</i>
11	<i>Seat</i>	<i>316 SS</i>
12	<i>Bush</i>	<i>S17400</i>
13	Connection Block	316 SS
14	Spring	S17700
15	Gland	F316
16	Bush	S17400
17	Screw	316 SS
18	Gland	F316
19	Locking Screw	316 SS

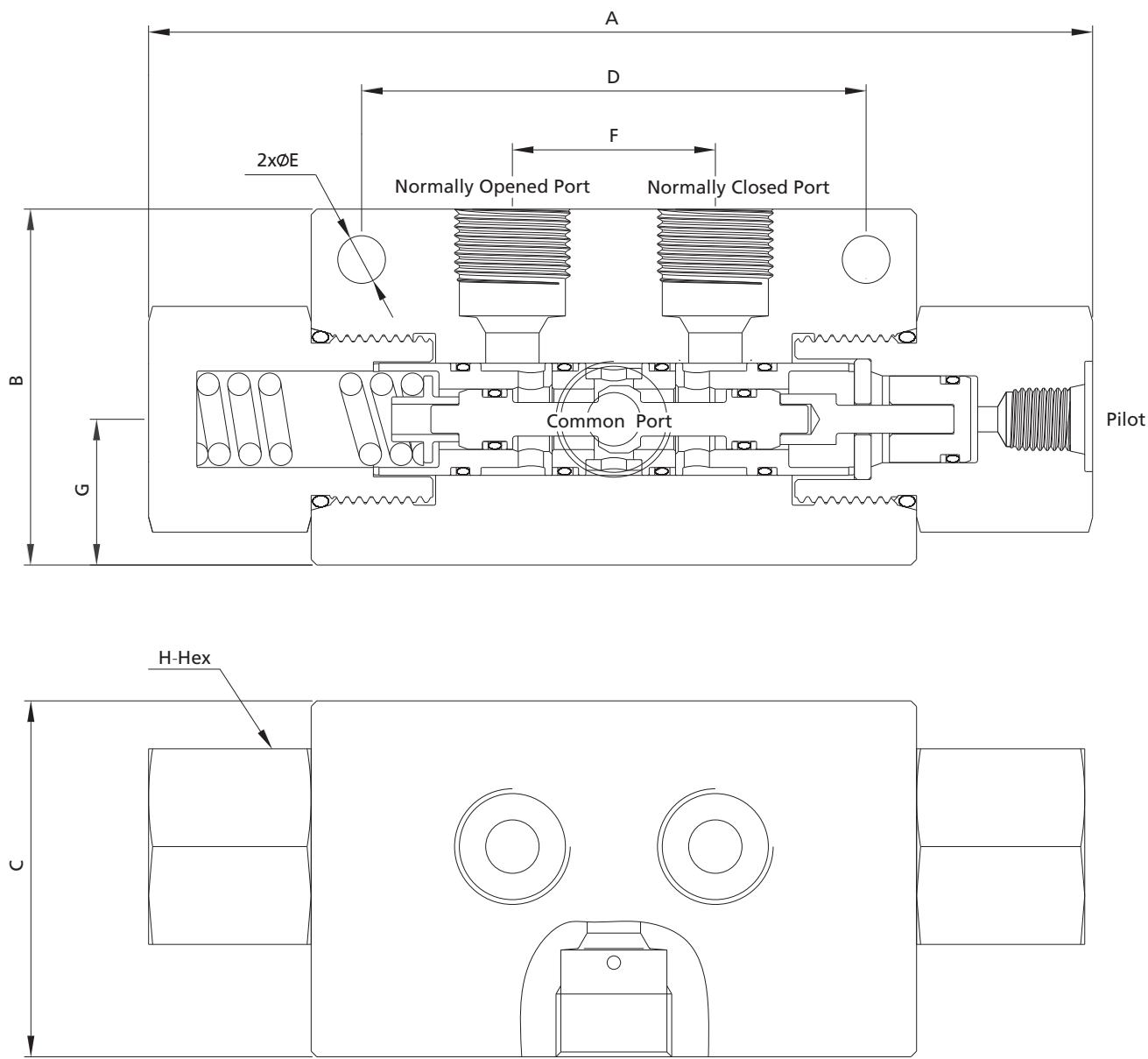
Wetted components listed in italics.

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Ordering Information and Dimensions



Ordering Number	Dimensions, in. (mm)										Working Pressure psig (bar)
	A	B	C	D	E	F	G	H	I	Orifice	
15SDCSS-3P4W-MF9-US7	6.70 (170.3)	3.50 (88.9)	3.50 (88.9)	1.74 (44.2)	2.82 (71.1)	0.41 (10.5)	0.76 (19.4)	1.13 (28.6)	1.00 (25.4)	0.25 (6.35)	15,000 (1034)
15SDCSS-3P4W-MF9-6-US7	7.20 (183)	3.54 (90)	3.74 (95)	1.26 (32)	3.19 (81)	0.33 (8.5)	1.02 (26)	1.10 (28)	1.10 (28)	0.375 (9.53)	
20SDCSS-3P4W-MF9-6-US7	7.20 (183)	3.78 (96)	4.13 (105)	1.26 (32)	3.50 (89)	0.33 (8.5)	1.02 (26)	1.46 (37)	1.10 (28)	0.375 (9.53)	20,000 (1379)



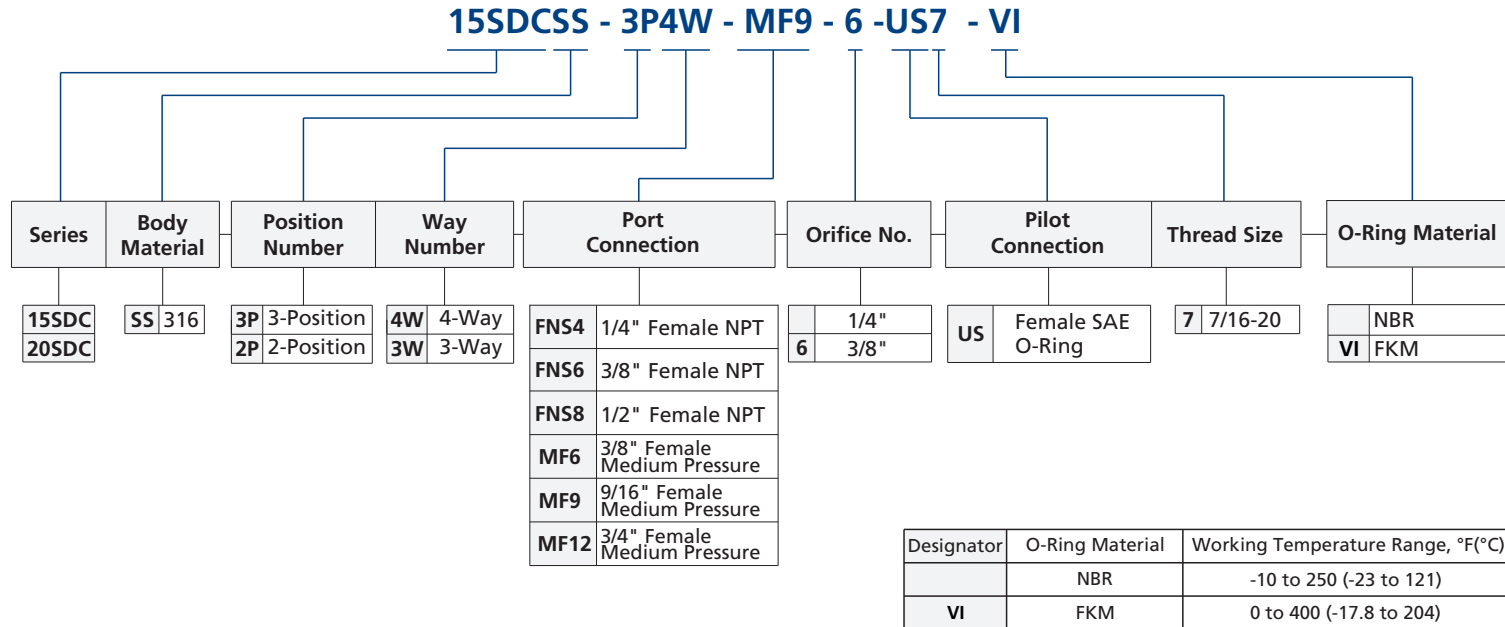
2-Position, 3-Way

Ordering Number	Dimensions, in. (mm)									Working Pressure psig (bar)
	A	B	C	D	E	F	G	H	Orifice	
15SDCSS-2P3W-MF9-US7	6.40 (162.5)	2.56 (65)	2.56 (65)	3.70 (94)	033 (8.5)	142 (36)	1.02 (26)	163 (41.28)	025 (6.35)	15,000 (1034)
15SDCSS-2P3W-MF9-6-US7	6.40 (162.5)	2.56 (65)	2.56 (65)	3.70 (94)	0.33 (8.5)	142 (36)	102 (26)	163 (41.28)	0375 (9.53)	

Fittings
Tubing
Quick Couplings
Line Filters
Valves
Sour Service Products
Subsea Valves
Part Number Crossover Charts

Part Number Crossover Charts	Subsea Valves	Sour Service Products	Valves	Line Filters	Quick Couplings	Tubing	Fittings
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Ordering Number Description



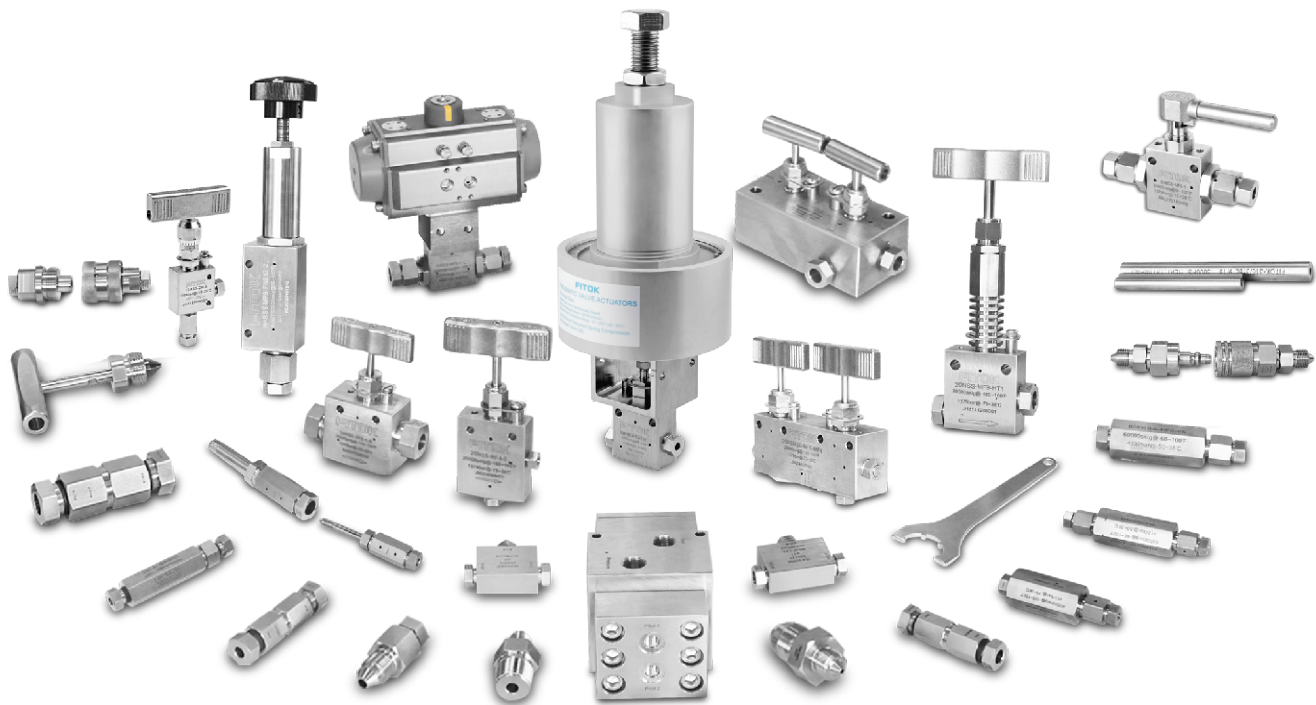
- Notes: 1. For more details regarding Medium Pressure connection, please see **Connection Information** on A-02.
 2. "Ordering Number Description" is a reference to understand the combination rules of FITOK product part number.
 Not all combinations are available.

Part Number Crossover Charts

Part Number Crossover Charts

H-02

Part Number Crossover Charts



This Catalog supersedes all previous editions. Compared to the earlier versions, changes are mainly limited to series names and port designators. Except for the structural optimization of ball valves, there is no change in the design and function of other products. Due to these changes, product P/Ns are accordingly updated. Please refer to the crossover charts below in your product selection.

Part Number Crossover Charts

20D Series Tube Fittings

Formerly Used P/N	New P/N Adopted
SS-U-DHL2	SS-DU-DFF2
SS-U-DHL4	SS-DU-DFF4
SS-U-DHL6	SS-DU-DFF6
SS-U-DHL8	SS-DU-DFF8
SS-U-DHL9	SS-DU-DFF9
SS-U-DHL12	SS-DU-DFF12
SS-U-DHL4-DHL2	SS-DU-DFF4-DFF2
SS-U-DHL6-DHL2	SS-DU-DFF6-DFF2
SS-U-DHL6-DHL4	SS-DU-DFF6-DFF4
SS-U-DHL8-DHL4	SS-DU-DFF8-DFF4
SS-U-DHL8-DHL6	SS-DU-DFF8-DFF6
SS-U-DHL9-DHL8	SS-DU-DFF9-DFF8
SS-U-DHL12-DHL8	SS-DU-DFF12-DFF8
SS-BU-DHL2	SS-DBU-DFF2
SS-BU-DHL4	SS-DBU-DFF4
SS-BU-DHL6	SS-DBU-DFF6
SS-BU-DHL8	SS-DBU-DFF8
SS-BU-DHL9	SS-DBU-DFF9
SS-BU-DHL12	SS-DBU-DFF12
SS-CM-DHL2-NS2	SS-DCM-DFF2-NS2
SS-CM-DHL2-NS4	SS-DCM-DFF2-NS4
SS-CM-DHL2-NS6	SS-DCM-DFF2-NS6
SS-CM-DHL4-NS2	SS-DCM-DFF4-NS2
SS-CM-DHL4-NS4	SS-DCM-DFF4-NS4
SS-CM-DHL4-NS6	SS-DCM-DFF4-NS6
SS-CM-DHL4-NS8	SS-DCM-DFF4-NS8
SS-CM-DHL6-NS4	SS-DCM-DFF6-NS4
SS-CM-DHL6-NS6	SS-DCM-DFF6-NS6
SS-CM-DHL6-NS8	SS-DCM-DFF6-NS8
SS-CM-DHL8-NS4	SS-DCM-DFF8-NS4
SS-CM-DHL8-NS6	SS-DCM-DFF8-NS6
SS-CM-DHL8-NS8	SS-DCM-DFF8-NS8
SS-CM-DHL8-NS12	SS-DCM-DFF8-NS12
SS-CM-DHL9-NS4	SS-DCM-DFF9-NS4
SS-CM-DHL9-NS8	SS-DCM-DFF9-NS8
SS-CM-DHL12-NS8	SS-DCM-DFF12-NS8
SS-CM-DHL12-NS12	SS-DCM-DFF12-NS12
SS-CM-DHL12-NS16	SS-DCM-DFF12-NS16
SS-CM-DHL2-SH7	SS-DCM-DFF2-SH7
SS-CM-DHL2-SH9	SS-DCM-DFF2-SH9
SS-CM-DHL4-SH7	SS-DCM-DFF4-SH7
SS-CM-DHL4-SH9	SS-DCM-DFF4-SH9
SS-CM-DHL6-SH7	SS-DCM-DFF6-SH7
SS-CM-DHL6-SH9	SS-DCM-DFF6-SH9
SS-CM-DHL8-SH7	SS-DCM-DFF8-SH7
SS-CM-DHL8-SH9	SS-DCM-DFF8-SH9
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SS-CF-DHL2-NS4	SS-DCF-DFF2-FNS4
SS-CF-DHL4-NS4	SS-DCF-DFF4-FNS4
SS-CF-DHL6-NS4	SS-DCF-DFF6-FNS4
SS-CF-DHL8-NS4	SS-DCF-DFF8-FNS4
SS-CF-DHL8-NS8	SS-DCF-DFF8-FNS8
SS-CF-DHL12-NS8	SS-DCF-DFF12-FNS8
SS-R-DHL4-DHM6	SS-DR-DFF4-DFT6
SS-R-DHL4-DHM8	SS-DR-DFF4-DFT8
SS-R-DHL6-DHM8	SS-DR-DFF6-DFT8
SS-R-DHL8-DHM6	SS-DR-DFF8-DFT6
SS-R-DHL8-DHM12	SS-DR-DFF8-DFT12
SS-R-DHL9-DHM12	SS-DR-DFF9-DFT12
SS-R-DHL12-DHM9	SS-DR-DFF12-DFT9
SS-P-DHL2	SS-DP-DFF2
SS-P-DHL4	SS-DP-DFF4
SS-P-DHL6	SS-DP-DFF6
SS-P-DHL8	SS-DP-DFF8
SS-P-DHL9	SS-DP-DFF9
SS-P-DHL12	SS-DP-DFF12
SS-AM-DHM4-NS4	SS-DAM-DFT4-NS4
SS-AM-DHM6-NS4	SS-DAM-DFT6-NS4
SS-AM-DHM6-NS8	SS-DAM-DFT6-NS8
SS-AM-DHM8-NS4	SS-DAM-DFT8-NS4
SS-AM-DHM8-NS8	SS-DAM-DFT8-NS8
SS-AM-DHM9-NS8	SS-DAM-DFT9-NS8
SS-AM-DHM12-NS12	SS-DAM-DFT12-NS12
SS-LU-DHL2	SS-DLU-DFF2

20D Series Tube Fittings

Formerly Used P/N	New P/N Adopted
SS-LU-DHL4	SS-DLU-DFF4
SS-LU-DHL6	SS-DLU-DFF6
SS-LU-DHL8	SS-DLU-DFF8
SS-LU-DHL9	SS-DLU-DFF9
SS-LU-DHL12	SS-DLU-DFF12
SS-LU-DHL4-DHL2	SS-DLU-DFF4-DFF2
SS-LU-DHL6-DHL2	SS-DLU-DFF6-DFF2
SS-LU-DHL6-DHL4	SS-DLU-DFF6-DFF4
SS-LU-DHL8-DHL4	SS-DLU-DFF8-DFF4
SS-LU-DHL8-DHL6	SS-DLU-DFF8-DFF6
SS-LU-DHL9-DHL8	SS-DLU-DFF9-DFF8
SS-LU-DHL12-DHL8	SS-DLU-DFF12-DFF8
SS-LM-DHL2-NS2	SS-DLM-DFF2-NS2
SS-LM-DHL2-NS4	SS-DLM-DFF2-NS4
SS-LM-DHL2-NS6	SS-DLM-DFF2-NS6
SS-LM-DHL4-NS4	SS-DLM-DFF4-NS4
SS-LM-DHL4-NS6	SS-DLM-DFF4-NS6
SS-LM-DHL4-NS8	SS-DLM-DFF4-NS8
SS-LM-DHL6-NS4	SS-DLM-DFF6-NS4
SS-LM-DHL6-NS6	SS-DLM-DFF6-NS6
SS-LM-DHL6-NS8	SS-DLM-DFF6-NS8
SS-LM-DHL8-NS4	SS-DLM-DFF8-NS4
SS-LM-DHL8-NS6	SS-DLM-DFF8-NS6
SS-LM-DHL8-NS8	SS-DLM-DFF8-NS8
SS-LM-DHL12-NS8	SS-DLM-DFF12-NS8
SS-LM-DHL12-NS12	SS-DLM-DFF12-NS12
SS-TTT-DHL2	SS-DT-DFF2
SS-TTT-DHL4	SS-DT-DFF4
SS-TTT-DHL6	SS-DT-DFF6
SS-TTT-DHL8	SS-DT-DFF8
SS-TTT-DHL9	SS-DT-DFF9
SS-TTT-DHL12	SS-DT-DFF12
SS-TTM-DHL2-NS2	SS-DT-DFF2-DFF2-NS2
SS-TTM-DHL2-NS4	SS-DT-DFF2-DFF2-NS4
SS-TTM-DHL4-NS2	SS-DT-DFF4-DFF4-NS2
SS-TTM-DHL4-NS4	SS-DT-DFF4-DFF4-NS4
SS-TTM-DHL6-NS4	SS-DT-DFF6-DFF6-NS4
SS-TTM-DHL8-NS4	SS-DT-DFF8-DFF8-NS4
SS-TTM-DHL8-NS6	SS-DT-DFF8-DFF8-NS6
SS-TTM-DHL12-NS12	SS-DT-DFF12-DFF12-NS12
SS-C-DHL2	SS-DX-DFF2
SS-C-DHL4	SS-DX-DFF4
SS-C-DHL6	SS-DX-DFF6
SS-C-DHL9	SS-DX-DFF9
SS-C-DHL8	SS-DX-DFF8
SS-C-DHL12	SS-DX-DFF12
SS-N-DHL2	SS-N-DFF2
SS-N-DHL4	SS-N-DFF4
SS-N-DHL6	SS-N-DFF6
SS-N-DHL8	SS-N-DFF8
SS-N-DHL9	SS-N-DFF9
SS-N-DHL12	SS-N-DFF12
SS-FF-DHL2	SS-FF-DFF2
SS-FF-DHL4	SS-FF-DFF4
SS-FF-DHL6	SS-FF-DFF6
SS-FF-DHL8	SS-FF-DFF8
SS-FF-DHL9	SS-FF-DFF9
SS-FF-DHL12	SS-FF-DFF12
SS-RF-DHL2	SS-RF-DFF2
SS-RF-DHL4	SS-RF-DFF4
SS-RF-DHL6	SS-RF-DFF6
SS-RF-DHL8	SS-RF-DFF8
SS-RF-DHL9	SS-RF-DFF9
SS-RF-DHL12	SS-RF-DFF12
SS-TP-DHL2	SS-DTP-DFF2
SS-TP-DFF2	SS-DTP-DFF2
SS-TP-DHL4	SS-DTP-DFF4
SS-TP-DFF4	SS-DTP-DFF4
SS-TP-DHL6	SS-DTP-DFF6
SS-TP-DFF6	SS-DTP-DFF6
SS-TP-DHL8	SS-DTP-DFF8
SS-TP-DFF8	SS-DTP-DFF8
SS-TP-DHL9	SS-DTP-DFF9
SS-TP-DFF9	SS-DTP-DFF9

20D Series Tube Fittings

Formerly Used P/N	New P/N Adopted
SS-TP-DHL12	SS-DTP-DFF12
SS-TP-DFF12	SS-DTP-DFF12
SS-TC-DHL2	SS-DTC-DFF2
SS-TC-DHL4	SS-DTC-DFF4
SS-TC-DHL6	SS-DTC-DFF6
SS-TC-DHL8	SS-DTC-DFF8
SS-TC-DHL9	SS-DTC-DFF9
SS-TC-DHL12	SS-DTC-DFF12

20M Series Medium Pressure Fittings

Formerly Used P/N	New P/N Adopted
SS-G-2FH4	SS-MG-MF4
SS-G-2FH6	SS-MG-MF6
SS-G-2FH9	SS-MG-MF9
SS-G-2FH12	SS-MG-MF12
SS-G-2FH16	SS-MG-MF16
SS-CO-2FH4	SS-MCO-MF4
SS-CO-2FH6	SS-MCO-MF6
SS-CO-2FH9	SS-MCO-MF9
SS-CO-2FH12	SS-MCO-MF12
SS-CO-2FH16	SS-MCO-MF16
SS-TP-2FH4	SS-MTP-MF4
SS-TP-2FH6	SS-MTP-MF6
SS-TP-2FH9	SS-MTP-MF9
SS-TP-2FH12	SS-MTP-MF12
SS-TP-2FH16	SS-MTP-MF16
SS-TC-2FH4	SS-MTC-MF4
SS-TC-2FH6	SS-MTC-MF6
SS-TC-2FH9	SS-MTC-MF9
SS-TC-2FH12	SS-MTC-MF12
SS-TC-2FH16	SS-MTC-MF16
SS-U-2FH4	SS-MU-MF4
SS-U-2FH6	SS-MU-MF6
SS-U-2FH9	SS-MU-MF9
SS-U-2FH12	SS-MU-MF12
SS-U-2FH16	SS-MU-MF16
SS-U-2FH6-2FH4	SS-MU-MF6-MF4
SS-U-2FH9-2FH4	SS-MU-MF9-MF4
SS-U-2FH9-2FH6	SS-MU-MF9-MF6
SS-U-2FH12-2FH4	SS-MU-MF12-MF4
SS-U-2FH12-2FH6	SS-MU-MF12-MF6
SS-U-2FH12-2FH9	SS-MU-MF12-MF9
SS-U-2FH16-2FH4	SS-MU-MF16-MF4
SS-U-2FH16-2FH6	SS-MU-MF16-MF6
SS-U-2FH16-2FH9	SS-MU-MF16-MF9
SS-U-2FH16-2FH12	SS-MU-MF16-MF12
SS-SU-2FH4	SS-MSU-MF4
SS-SU-2FH6	SS-MSU-MF6
SS-SU-2FH9	SS-MSU-MF9
SS-SU-2FH12	SS-MSU-MF12
SS-SU-2FH16	SS-MSU-MF16
SS-BU-2FH4	SS-MBU-MF4
SS-BU-2FH6	SS-MBU-MF6
SS-BU-2FH9	SS-MBU-MF9
SS-BU-2FH12	SS-MBU-MF12
SS-BU-2FH16	SS-MBU-MF16
SS-LU-2FH4	SS-MLU-MF4
SS-LU-2FH6	SS-MLU-MF6
SS-LU-2FH9	SS-MLU-MF9
SS-LU-2FH12	SS-MLU-MF12
SS-LU-2FH16	SS-MLU-MF16
SS-TTT-2FH4	SS-MT-MF4
SS-TTT-2FH6	SS-MT-MF6
SS-TTT-2FH9	SS-MT-MF9
SS-TTT-2FH12	SS-MT-MF12
SS-TTT-2FH16	SS-MT-MF16
SS-C-2FH4	SS-MX-MF4
SS-C-2FH6	SS-MX-MF6
SS-C-2FH9	SS-MX-MF9
SS-C-2FH12	SS-MX-MF12

20M Series Medium Pressure Fittings

Formerly Used P/N		New P/N Adopted	
SS-C-2FH16		SS-MX-MF16	
SS-AVGA-2FH4		SS-MAV-MF4	
SS-AVGA-2FH6		SS-MAV-MF6	
SS-AVGA-2FH9		SS-MAV-MF9	
SS-AVGA-2FH12		SS-MAV-MF12	
SS-AVGA-2FH16		SS-MAV-MF16	

60H Series High Pressure Fittings

Formerly Used P/N		New P/N Adopted	
SS-G-6FH4		SS-HG-HF4	
SS-G-6FH6		SS-HG-HF6	
SS-G-6FH9		SS-HG-HF9	
SS-CO-6FH4		SS-HCO-HF4	
SS-CO-6FH6		SS-HCO-HF6	
SS-CO-6FH9		SS-HCO-HF9	
SS-TP-6FH4		SS-HTP-HF4	
SS-TP-6FH6		SS-HTP-HF6	
SS-TP-6FH9		SS-HTP-HF9	
SS-TC-6FH4		SS-HTC-HF4	
SS-TC-6FH6		SS-HTC-HF6	
SS-TC-6FH9		SS-HTC-HF9	
SS-U-6FH4		SS-HU-HF4	
SS-U-6FH6		SS-HU-HF6	
SS-U-6FH9		SS-HU-HF9	
SS-HUN-HF4		SS-HU-HF4	
SS-U-6FH9-6FH4		SS-HU-HF6-HF4	
SS-U-6FH9-6FH6		SS-HU-HF9-HF6	
SS-U-6FH9-6FH9		SS-HU-HF9-HF9	
SS-U-6FH9-6FH12		SS-HU-HF9-HF12	
SS-U-6FH9-6FH16		SS-HU-HF9-HF16	
SS-SU-6FH4		SS-HSU-HF4	
SS-SU-6FH6		SS-HSU-HF6	
SS-SU-6FH9		SS-HSU-HF9	
SS-BU-6FH4		SS-HBU-HF4	
SS-BU-6FH6		SS-HBU-HF6	
SS-BU-6FH9		SS-HBU-HF9	
SS-LU-6FH4		SS-HLU-HF4	
SS-LU-6FH6		SS-HLU-HF6	
SS-LU-6FH9		SS-HLU-HF9	
SS-TTT-6FH4		SS-HT-HF4	
SS-TTT-6FH6		SS-HT-HF6	
SS-TTT-6FH9		SS-HT-HF9	
SS-C-6FH4		SS-HX-HF4	
SS-C-6FH6		SS-HX-HF6	
SS-C-6FH9		SS-HX-HF9	
SS-AVGA-6FH4		SS-HAV-HF4	
SS-AVGA-6FH6		SS-HAV-HF6	
SS-AVGA-6FH9		SS-HAV-HF9	

PMH Series Pipe Fittings

Formerly Used P/N		New P/N Adopted	
SS-HPP-AN4		SS-HPP-JM4	
SS-HPP-AN6		SS-HPP-JM6	
SS-HPP-AN8		SS-HPP-JM8	
SS-HPP-AN10		SS-HPP-JM10	
SS-HPP-AN12		SS-HPP-JM12	
SS-HPP-AN16		SS-HPP-JM16	
SS-HPP-HM9		SS-HPP-TM9	
SS-HPP-HM12		SS-HPP-TM12	
SS-HPP-HM14		SS-HPP-TM14	
SS-HPP-HM16		SS-HPP-TM16	
SS-HPP-HM21		SS-HPP-TM21	
SS-HPHN-NS2		SS-HPN-NS2	
SS-HPHN-NS4-NS2		SS-HPN-NS4-NS2	
SS-HPHN-NS4		SS-HPN-NS4	
SS-HPHN-NS6-NS2		SS-HPN-NS6-NS2	
SS-HPHN-NS6-NS4		SS-HPN-NS6-NS4	
SS-HPHN-NS6		SS-HPN-NS6	
SS-HPHN-NS8-NS2		SS-HPN-NS8-NS2	
SS-HPHN-NS8-NS4		SS-HPN-NS8-NS4	
SS-HPHN-NS8-NS6		SS-HPN-NS8-NS6	
SS-HPHN-NS8		SS-HPN-NS8	
SS-HPHN-NS12-NS2		SS-HPN-NS12-NS2	
SS-HPHN-NS12-NS4		SS-HPN-NS12-NS4	
SS-HPHN-NS12-NS6		SS-HPN-NS12-NS6	
SS-HPHN-NS12-NS8		SS-HPN-NS12-NS8	
SS-HPHN-NS12		SS-HPN-NS12	
SS-HPHN-NS16-NS2		SS-HPN-NS16-NS2	
SS-HPHN-NS16-NS4		SS-HPN-NS16-NS4	
SS-HPHN-NS16-NS6		SS-HPN-NS16-NS6	
SS-HPHN-NS16-NS8		SS-HPN-NS16-NS8	
SS-HPHN-NS16-NS12		SS-HPN-NS16-NS12	
SS-HPHN-NS16		SS-HPN-NS16	
SS-HPHN-NS2-RT2		SS-HPN-NS2-RT2	
SS-HPHN-NS4-RT2		SS-HPN-NS4-RT2	
SS-HPHN-NS4-RT4		SS-HPN-NS4-RT4	
SS-HPHN-NS6-RT2		SS-HPN-NS6-RT2	
SS-HPHN-NS6-RT4		SS-HPN-NS6-RT4	
SS-HPHN-NS6-RT6		SS-HPN-NS6-RT6	
SS-HPHN-NS8-RT2		SS-HPN-NS8-RT2	
SS-HPHN-NS8-RT4		SS-HPN-NS8-RT4	
SS-HPHN-NS8-RT6		SS-HPN-NS8-RT6	
SS-HPHN-NS8-RT8		SS-HPN-NS8-RT8	
SS-HPHN-NS12-RT2		SS-HPN-NS12-RT2	
SS-HPHN-NS12-RT4		SS-HPN-NS12-RT4	
SS-HPHN-NS12-RT6		SS-HPN-NS12-RT6	
SS-HPHN-NS12-RT8		SS-HPN-NS12-RT8	
SS-HPHN-NS12-RT12		SS-HPN-NS12-RT12	
SS-HPHN-NS16-RT2		SS-HPN-NS16-RT2	
SS-HPHN-NS16-RT4		SS-HPN-NS16-RT4	
SS-HPHN-NS16-RT6		SS-HPN-NS16-RT6	
SS-HPHN-NS16-RT8		SS-HPN-NS16-RT8	
SS-HPHN-NS16-RT12		SS-HPN-NS16-RT12	
SS-HPHN-RT2		SS-HPN-RT2	
SS-HPHN-RT4-RT2		SS-HPN-RT4-RT2	
SS-HPHN-RT4		SS-HPN-RT4	
SS-HPHN-RT6-RT2		SS-HPN-RT6-RT2	
SS-HPHN-RT6-RT4		SS-HPN-RT6-RT4	
SS-HPHN-RT6		SS-HPN-RT6	
SS-HPHN-RT8-RT2		SS-HPN-RT8-RT2	
SS-HPHN-RT8-RT4		SS-HPN-RT8-RT4	
SS-HPHN-RT8-RT6		SS-HPN-RT8-RT6	
SS-HPHN-RT8		SS-HPN-RT8	
SS-HPHN-RT12-RT2		SS-HPN-RT12-RT2	
SS-HPHN-RT12-RT4		SS-HPN-RT12-RT4	
SS-HPHN-RT12-RT6		SS-HPN-RT12-RT6	
SS-HPHN-RT12-RT8		SS-HPN-RT12-RT8	
SS-HPHN-RT12		SS-HPN-RT12	
SS-HPHN-RT16-RT2		SS-HPN-RT16-RT2	
SS-HPHN-RT16-RT4		SS-HPN-RT16-RT4	
SS-HPHN-RT16-RT6		SS-HPN-RT16-RT6	
SS-HPHN-RT16-RT8		SS-HPN-RT16-RT8	
SS-HPHN-RT16-RT12		SS-HPN-RT16-RT12	
SS-HPHN-RT16		SS-HPN-RT16	
SS-HPHN-NS2-AN4		SS-HPN-NS2-JM4	
SS-HPHN-NS2-AN6		SS-HPN-NS2-JM6	
SS-HPHN-NS4-AN4		SS-HPN-NS4-JM4	
SS-HPHN-NS4-AN6		SS-HPN-NS4-JM6	

PMH Series Pipe Fittings

Formerly Used P/N		New P/N Adopted	
SS-HPHN-NS4-AN8		SS-HPN-NS4-JM8	
SS-HPHN-NS6-AN4		SS-HPN-NS6-JM4	
SS-HPHN-NS6-AN6		SS-HPN-NS6-JM6	
SS-HPHN-NS6-AN8		SS-HPN-NS6-JM8	
SS-HPHN-NS8-AN4		SS-HPN-NS8-JM4	
SS-HPHN-NS8-AN6		SS-HPN-NS8-JM6	
SS-HPHN-NS8-AN8		SS-HPN-NS8-JM8	
SS-HPHN-NS8-AN10		SS-HPN-NS8-JM10	
SS-HPHN-NS12-AN8		SS-HPN-NS12-JM8	
SS-HPHN-NS12-AN10		SS-HPN-NS12-JM10	
SS-HPHN-NS12-AN12		SS-HPN-NS12-JM12	
SS-HPHN-NS12-AN16		SS-HPN-NS12-JM16	
SS-HPHN-NS16-AN12		SS-HPN-NS16-JM12	
SS-HPHN-NS16-AN16		SS-HPN-NS16-JM16	
SS-HPHN-NS4-SH7		SS-HPN-NS4-SH7	
SS-HPHN-NS6-SH7		SS-HPN-NS6-SH7	
SS-HPHN-NS8-SH9		SS-HPN-NS8-SH9	
SS-HPHN-NS12-SH9		SS-HPN-NS12-SH9	
SS-HPHN-NS16-SH12		SS-HPN-NS16-SH12	
SS-HPHN-NS4-SH9		SS-HPN-NS4-SH9	
SS-HPHN-NS6-SH9		SS-HPN-NS6-SH9	
SS-HPHN-NS6-SH12		SS-HPN-NS6-SH12	
SS-HPHN-NS8-SH12		SS-HPN-NS8-SH12	
SS-HPHN-NS12-SH12		SS-HPN-NS12-SH12	
SS-HPHN-NS8-SH14		SS-HPN-NS8-SH14	
SS-HPHN-NS12-SH14		SS-HPN-NS12-SH14	
SS-HPHN-NS16-SH14		SS-HPN-NS16-SH14	
SS-HPHN-NS2-HM9		SS-HPN-NS2-TM9	
SS-HPHN-NS2-HM12		SS-HPN-NS2-TM12	
SS-HPHN-NS4-HM9		SS-HPN-NS4-TM9	
SS-HPHN-NS4-HM12		SS-HPN-NS4-TM12	
SS-HPHN-NS4-HM14		SS-HPN-NS4-TM14	
SS-HPHN-NS6-HM9		SS-HPN-NS6-TM9	
SS-HPHN-NS6-HM12		SS-HPN-NS6-TM12	
SS-HPHN-NS6-HM14		SS-HPN-NS6-TM14	
SS-HPHN-NS8-HM9		SS-HPN-NS8-TM9	
SS-HPHN-NS8-HM12		SS-HPN-NS8-TM12	
SS-HPHN-NS8-HM14		SS-HPN-NS8-TM14	
SS-HPHN-NS8-HM16		SS-HPN-NS8-TM16	
SS-HPHN-NS12-HM9		SS-HPN-NS12-TM9	
SS-HPHN-NS12-HM12		SS-HPN-NS12-TM12	
SS-HPHN-NS12-HM14		SS-HPN-NS12-TM14	
SS-HPHN-NS12-HM16		SS-HPN-NS12-TM16	
SS-HPHN-NS16-HM16		SS-HPN-NS16-TM16	
SS-HPHN-NS16-HM21		SS-HPN-NS16-TM21	
SS-HPHN-HM9		SS-HPN-TM9	
SS-HPHN-HM12-HM9		SS-HPN-TM12-TM9	
SS-HPHN-HM12		SS-HPN-TM12	
SS-HPHN-HM14-HM9		SS-HPN-TM14-TM9	
SS-HPHN-HM14-HM12		SS-HPN-TM14-TM12	
SS-HPHN-HM14		SS-HPN-TM14	
SS-HPHN-HM16-HM9		SS-HPN-TM16-TM9	
SS-HPHN-HM16-HM12		SS-HPN-TM16-TM12	
SS-HPHN-HM16-HM14		SS-HPN-TM16-TM14	
SS-HPHN-HM16		SS-HPN-TM16	
SS-HPHN-HM21-HM16		SS-HPN-TM21-TM16	
SS-HPHN-HM21		SS-HPN-TM21	
SS-HPHN-AN4		SS-HPN-JM4	
SS-HPHN-AN6		SS-HPN-JM6	
SS-HPHN-AN8-AN6		SS-HPN-JM8-JM6	
SS-HPHN-AN8		SS-HPN-JM8	
SS-HPHN-AN6-AN4		SS-HPN-JM6-JM4	
SS-HPHN-AN10-AN6		SS-HPN-JM10-JM6	
SS-HPHN-AN10-AN8		SS-HPN-JM10-JM8	
SS-HPHN-AN12-AN8		SS-HPN-JM12-JM8	
SS-HPHN-AN12-AN10		SS-HPN-JM12-JM10	
SS-HPHN-AN12		SS-HPN-JM12	
SS-HPHN-AN10		SS-HPN-JM10	
SS-HPHN-AN16		SS-HPN-JM16	
SS-HPHN-AN16-AN10		SS-HPN-JM16-JM10	
SS-HPHN-AN16-AN12		SS-HPN-JM16-JM12	
SS-HPLN-NS2-1.5		SS-HPL-NS2-1.5	
SS-HPLN-NS2-2		SS-HPL-NS2-2	
SS-HPLN-NS2-2.5		SS-HPL-NS2-2.5	
SS-HPLN-NS2-3		SS-HPL-NS2-3	
SS-HPLN-NS4-2		SS-HPL-NS4-2	
SS-HPLN-NS4-2.5		SS-HPL-NS4-2.5	
SS-HPLN-NS4-3		SS-HPL-NS4-3	

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPLN-NS8-4	SS-HPL-NS8-4
SS-HPLN-NS8-6	SS-HPL-NS8-6
SS-HPLN-NS12-3	SS-HPL-NS12-3
SS-HPLN-NS12-4	SS-HPL-NS12-4
SS-HPLN-NS12-6	SS-HPL-NS12-6
SS-HPLN-NS12-8	SS-HPL-NS12-8
SS-HPLN-NS16-3	SS-HPL-NS16-3
SS-HPLN-NS16-4	SS-HPL-NS16-4
SS-HPLN-NS16-6	SS-HPL-NS16-6
SS-HPLN-NS16-8	SS-HPL-NS16-8
SS-HPLN-RT2-1.5	SS-HPL-RT2-1.5
SS-HPLN-RT2-2	SS-HPL-RT2-2
SS-HPLN-RT2-2.5	SS-HPL-RT2-2.5
SS-HPLN-RT2-3	SS-HPL-RT2-3
SS-HPLN-RT4-2	SS-HPL-RT4-2
SS-HPLN-RT4-2.5	SS-HPL-RT4-2.5
SS-HPLN-RT4-3	SS-HPL-RT4-3
SS-HPLN-RT4-4	SS-HPL-RT4-4
SS-HPLN-RT6-2	SS-HPL-RT6-2
SS-HPLN-RT6-2.5	SS-HPL-RT6-2.5
SS-HPLN-RT6-3	SS-HPL-RT6-3
SS-HPLN-RT6-4	SS-HPL-RT6-4
SS-HPLN-RT8-3	SS-HPL-RT8-3
SS-HPLN-RT8-4	SS-HPL-RT8-4
SS-HPLN-RT8-6	SS-HPL-RT8-6
SS-HPLN-RT12-3	SS-HPL-RT12-3
SS-HPLN-RT12-4	SS-HPL-RT12-4
SS-HPLN-RT12-6	SS-HPL-RT12-6
SS-HPLN-RT12-8	SS-HPL-RT12-8
SS-HPLN-RT16-3	SS-HPL-RT16-3
SS-HPLN-RT16-4	SS-HPL-RT16-4
SS-HPLN-RT16-6	SS-HPL-RT16-6
SS-HPLN-RT16-8	SS-HPL-RT16-8
SS-HPC-AN4	SS-HPC-JF4
SS-HPC-AN6	SS-HPC-JF6
SS-HPC-AN8	SS-HPC-JF8
SS-HPC-AN10	SS-HPC-JF10
SS-HPC-AN12	SS-HPC-JF12
SS-HPC-AN16	SS-HPC-JF16
SS-HMC-AS4	SS-HMC-JF4
SS-HMC-AS6	SS-HMC-JF6
SS-HMC-AS8	SS-HMC-JF8
SS-HMC-AS10	SS-HMC-JF10
SS-HMC-AS12	SS-HMC-JF12
SS-HMC-AS16	SS-HMC-JF16
SS-HMC-HM9	SS-HMC-TM9
SS-HMC-HM12	SS-HMC-TM12
SS-HMC-HM14	SS-HMC-TM14
SS-HMC-HM16	SS-HMC-TM16
SS-HMC-HM21	SS-HMC-TM21
SS-HPCG-NS2	SS-HPG-FNS2
SS-HPCG-NS4-NS2	SS-HPG-FNS4-FNS2
SS-HPCG-NS4	SS-HPG-FNS4
SS-HPCG-NS6-NS2	SS-HPG-FNS6-FNS2
SS-HPCG-NS6-NS4	SS-HPG-FNS6-FNS4
SS-HPCG-NS6	SS-HPG-FNS6
SS-HPCG-NS8-NS2	SS-HPG-FNS8-FNS2
SS-HPCG-NS8-NS4	SS-HPG-FNS8-FNS4
SS-HPCG-NS8-NS6	SS-HPG-FNS8-FNS6
SS-HPCG-NS8	SS-HPG-FNS8
SS-HPCG-NS12-NS2	SS-HPG-FNS12-FNS2
SS-HPCG-NS12-NS4	SS-HPG-FNS12-FNS4
SS-HPCG-NS12-NS6	SS-HPG-FNS12-FNS6
SS-HPCG-NS12-NS8	SS-HPG-FNS12-FNS8
SS-HPCG-NS12	SS-HPG-FNS12
SS-HPCG-NS16-NS2	SS-HPG-FNS16-FNS2
SS-HPCG-NS16-NS4	SS-HPG-FNS16-FNS4
SS-HPCG-NS16-NS6	SS-HPG-FNS16-FNS6
SS-HPCG-NS16-NS8	SS-HPG-FNS16-FNS8
SS-HPCG-NS16-NS12	SS-HPG-FNS16-FNS12
SS-HPCG-NS16	SS-HPG-FNS16
SS-HPCG-NS2-RT2	SS-HPG-FNS2-FRT2
SS-HPCG-NS4-RT2	SS-HPG-FNS4-FRT2
SS-HPCG-NS4-RT4	SS-HPG-FNS4-FRT4
SS-HPCG-NS6-RT2	SS-HPG-FNS6-FRT2
SS-HPCG-NS6-RT4	SS-HPG-FNS6-FRT4
SS-HPCG-NS6-RT6	SS-HPG-FNS6-FRT6
SS-HPCG-NS8-RT2	SS-HPG-FNS8-FRT2

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPCG-NS8-RT4	SS-HPG-FNS8-FRT4
SS-HPCG-NS8-RT6	SS-HPG-FNS8-FRT6
SS-HPCG-NS8-RT8	SS-HPG-FNS8-FRT8
SS-HPCG-NS12-RT2	SS-HPG-FNS12-FRT2
SS-HPCG-NS12-RT4	SS-HPG-FNS12-FRT4
SS-HPCG-NS12-RT6	SS-HPG-FNS12-FRT6
SS-HPCG-NS12-RT8	SS-HPG-FNS12-FRT8
SS-HPCG-NS12-RT12	SS-HPG-FNS12-FRT12
SS-HPCG-NS16-RT2	SS-HPG-FNS16-FRT2
SS-HPCG-NS16-RT4	SS-HPG-FNS16-FRT4
SS-HPCG-NS16-RT6	SS-HPG-FNS16-FRT6
SS-HPCG-NS16-RT8	SS-HPG-FNS16-FRT8
SS-HPCG-NS16-RT12	SS-HPG-FNS16-FRT12
SS-HPCG-NS16-RT16	SS-HPG-FNS16-FRT16
SS-HPCG-RT2	SS-HPG-FRT2
SS-HPCG-RT4-RT2	SS-HPG-FRT4-FRT2
SS-HPCG-RT4	SS-HPG-FRT4
SS-HPCG-RT6-RT2	SS-HPG-FRT6-FRT2
SS-HPCG-RT6-RT4	SS-HPG-FRT6-FRT4
SS-HPCG-RT6	SS-HPG-FRT6
SS-HPCG-RT8-RT2	SS-HPG-FRT8-FRT2
SS-HPCG-RT8-RT4	SS-HPG-FRT8-FRT4
SS-HPCG-RT8-RT6	SS-HPG-FRT8-FRT6
SS-HPCG-RT8	SS-HPG-FRT8
SS-HPCG-RT12-RT2	SS-HPG-FRT12-FRT2
SS-HPCG-RT12-RT4	SS-HPG-FRT12-FRT4
SS-HPCG-RT12-RT6	SS-HPG-FRT12-FRT6
SS-HPCG-RT12-RT8	SS-HPG-FRT12-FRT8
SS-HPCG-RT12	SS-HPG-FRT12
SS-HPCG-RT16-RT2	SS-HPG-FRT16-FRT2
SS-HPCG-RT16-RT4	SS-HPG-FRT16-FRT4
SS-HPCG-RT16-RT6	SS-HPG-FRT16-FRT6
SS-HPCG-RT16-RT8	SS-HPG-FRT16-FRT8
SS-HPCG-RT16-RT12	SS-HPG-FRT16-FRT12
SS-HPCG-RT16	SS-HPG-FRT16
SS-HPCG-NS2-AN4	SS-HPG-FNS2-JF4
SS-HPCG-NS4-AN4	SS-HPG-FNS4-JF4
SS-HPCG-NS4-AN6	SS-HPG-FNS4-JF6
SS-HPCG-NS6-AN4	SS-HPG-FNS6-JF4
SS-HPCG-NS6-AN6	SS-HPG-FNS6-JF6
SS-HPCG-NS6-AN8	SS-HPG-FNS6-JF8
SS-HPCG-NS8-AN6	SS-HPG-FNS8-JF6
SS-HPCG-NS8-AN8	SS-HPG-FNS8-JF8
SS-HPCG-NS8-AN10	SS-HPG-FNS8-JF10
SS-HPCG-AN4	SS-HPG-JF4
SS-HPCG-AN6-AN4	SS-HPG-JF6-JF4
SS-HPCG-AN6	SS-HPG-JF6
SS-HPCG-AN8-AN6	SS-HPG-JF8-JF6
SS-HPCG-AN8	SS-HPG-JF8
SS-HPCG-AN10-AN8	SS-HPG-JF10-JF8
SS-HPCG-AN10	SS-HPG-JF10
SS-HPCG-AN12-AN10	SS-HPG-JF12-JF10
SS-HPCG-AN12	SS-HPG-JF12
SS-HPCG-AN16-AN12	SS-HPG-JF16-JF12
SS-HPCG-AN16	SS-HPG-JF16
SS-HPZC-NS2	SS-HPZ-FNS2
SS-HPZC-NS4	SS-HPZ-FNS4
SS-HPZC-NS6	SS-HPZ-FNS6
SS-HPZC-NS8	SS-HPZ-FNS8
SS-HPZC-NS12	SS-HPZ-FNS12
SS-HPA-NS2	SS-HPA-FNS2-NS2
SS-HPA-NS2-NS4	SS-HPA-FNS2-NS4
SS-HPA-NS2-NS6	SS-HPA-FNS2-NS6
SS-HPA-NS2-NS8	SS-HPA-FNS2-NS8
SS-HPA-NS2-NS12	SS-HPA-FNS2-NS12
SS-HPA-NS4-NS2	SS-HPA-FNS4-NS2
SS-HPA-NS4	SS-HPA-FNS4-NS4
SS-HPA-NS4-NS6	SS-HPA-FNS4-NS6
SS-HPA-NS4-NS8	SS-HPA-FNS4-NS8
SS-HPA-NS4-NS12	SS-HPA-FNS4-NS12
SS-HPA-NS4-NS16	SS-HPA-FNS4-NS16
SS-HPA-NS6-NS4	SS-HPA-FNS6-NS4
SS-HPA-NS6	SS-HPA-FNS6-NS6
SS-HPA-NS6-NS8	SS-HPA-FNS6-NS8
SS-HPA-NS6-NS12	SS-HPA-FNS6-NS12
SS-HPA-NS6-NS16	SS-HPA-FNS6-NS16
SS-HPA-NS8-NS4	SS-HPA-FNS8-NS4
SS-HPA-NS8-NS6	SS-HPA-FNS8-NS6

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPLN-NS4-4	SS-HPL-NS4-4
SS-HPLN-NS6-2	SS-HPL-NS6-2
SS-HPLN-NS6-2.5	SS-HPL-NS6-2.5
SS-HPLN-NS6-3	SS-HPL-NS6-3
SS-HPLN-NS6-4	SS-HPL-NS6-4
SS-HPLN-NS8-3	SS-HPL-NS8-3
SS-HPLN-NS8-4	SS-HPL-NS8-4
SS-HPLN-NS8-6	SS-HPL-NS8-6
SS-HPLN-NS12-3	SS-HPL-NS12-3
SS-HPLN-NS12-4	SS-HPL-NS12-4
SS-HPLN-NS12-6	SS-HPL-NS12-6
SS-HPLN-NS12-8	SS-HPL-NS12-8
SS-HPLN-NS16-3	SS-HPL-NS16-3
SS-HPLN-NS16-4	SS-HPL-NS16-4
SS-HPLN-NS16-6	SS-HPL-NS16-6
SS-HPLN-NS16-8	SS-HPL-NS16-8
SS-HPLN-RT2-1.5	SS-HPL-RT2-1.5
SS-HPLN-RT2-2	SS-HPL-RT2-2
SS-HPLN-RT2-2.5	SS-HPL-RT2-2.5
SS-HPLN-RT2-3	SS-HPL-RT2-3
SS-HPLN-RT4-2	SS-HPL-RT4-2
SS-HPLN-RT4-2.5	SS-HPL-RT4-2.5
SS-HPLN-RT4-3	SS-HPL-RT4-3
SS-HPLN-RT4-4	SS-HPL-RT4-4
SS-HPLN-RT6-2	SS-HPL-RT6-2
SS-HPLN-RT6-2.5	SS-HPL-RT6-2.5
SS-HPLN-RT6-3	SS-HPL-RT6-3
SS-HPLN-RT6-4	SS-HPL-RT6-4
SS-HPLN-RT8-3	SS-HPL-RT8-3
SS-HPLN-RT8-4	SS-HPL-RT8-4
SS-HPLN-RT8-6	SS-HPL-RT8-6
SS-HPLN-RT12-3	SS-HPL-RT12-3
SS-HPLN-RT12-4	SS-HPL-RT12-4
SS-HPLN-RT12-6	SS-HPL-RT12-6
SS-HPLN-RT12-8	SS-HPL-RT12-8
SS-HPLN-RT16-3	SS-HPL-RT16-3
SS-HPLN-RT16-4	SS-HPL-RT16-4
SS-HPLN-RT16-6	SS-HPL-RT16-6
SS-HPLN-RT16-8	SS-HPL-RT16-8
SS-HPC-AN4	SS-HPC-JF4
SS-HPC-AN6	SS-HPC-JF6
SS-HPC-AN8	SS-HPC-JF8
SS-HPC-AN10	SS-HPC-JF10
SS-HPC-AN12	SS-HPC-JF12
SS-HPC-AN16	SS-HPC-JF16
SS-HMC-AS4	SS-HMC-JF4
SS-HMC-AS6	SS-HMC-JF6
SS-HMC-AS8	SS-HMC-JF8
SS-HMC-AS10	SS-HMC-JF10
SS-HMC-AS12	SS-HMC-JF12
SS-HMC-AS16	SS-HMC-JF16
SS-HMC-HM12	SS-HMC-TM12
SS-HMC-HM14	SS-HMC-TM14
SS-HMC-HM16	SS-HMC-TM16
SS-HMC-HM21	SS-HMC-TM21
SS-HPCG-NS2	SS-HPG-FNS2
SS-HPCG-NS4-NS2	SS-HPG-FNS4-FNS2
SS-HPCG-NS4	SS-HPG-FNS4
SS-HPCG-NS6-NS2	SS-HPG-FNS6-FNS2
SS-HPCG-NS6-NS4	SS-HPG-FNS6-FNS4
SS-HPCG-NS6	SS-HPG-FNS6
SS-HPCG-NS8-NS2	SS-HPG-FNS8-FNS2
SS-HPCG-NS8-NS4	SS-HPG-FNS8-FNS4
SS-HPCG-NS8-NS6	SS-HPG-FNS8-FNS6
SS-HPCG-NS8-NS8	SS-HPG-FNS8-FNS8
SS-HPCG-NS12-NS2	SS-HPG-FNS12-FNS2
SS-HPCG-NS12-NS4	SS-HPG-FNS12-FNS4
SS-HPCG-NS12-NS6	SS-HPG-FNS12-FNS6
SS-HPCG-NS12-NS8	SS-HPG-FNS12-FNS8
SS-HPCG-NS12	SS-HPG-FNS12
SS-HPCG-NS16-NS2	SS-HPG-FNS16-FNS2
SS-HPCG-NS16-NS4	SS-HPG-FNS16-FNS4
SS-HPCG-NS16-NS6	SS-HPG-FNS16-FNS6
SS-HPCG-NS16-NS8	SS-HPG-FNS16-FNS8
SS-HPCG-NS16-NS12	SS-HPG-FNS16-FNS12
SS-HPCG-NS16	SS-HPG-FNS16
SS-HPCG-NS2-RT2	SS-HPG-FNS2-FRT2
SS-HPCG-NS4-RT2	SS-HPG-FNS4-FRT2
SS-HPCG-NS4-RT4	SS-HPG-FNS4-FRT4
SS-HPCG-NS6-RT2	SS-HPG-FNS6-FRT2
SS-HPCG-NS6-RT4	SS-HPG-FNS6-FRT4
SS-HPCG-NS6-RT6	SS-HPG-FNS6-FRT6
SS-HPCG-NS8-RT2	SS-HPG-FNS8-FRT2

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

H-06 Part Number Crossover Charts

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPCG-NS4-RT2	SS-HPG-FNS4-FRT2
SS-HPCG-NS4-RT4	SS-HPG-FNS4-FRT4
SS-HPCG-NS6-RT2	SS-HPG-FNS6-FRT2
SS-HPCG-NS6-RT4	SS-HPG-FNS6-FRT4
SS-HPCG-NS6-RT6	SS-HPG-FNS6-FRT6
SS-HPCG-NS8-RT2	SS-HPG-FNS8-FRT2
SS-HPA-RT6-NS16	SS-HPA-FRT6-NS16
SS-HPA-RT8-NS4	SS-HPA-FRT8-NS4
SS-HPA-RT8-NS6	SS-HPA-FRT8-NS6
SS-HPA-RT8-NS8	SS-HPA-FRT8-NS8
SS-HPA-RT8-NS12	SS-HPA-FRT8-NS12
SS-HPA-RT8-NS16	SS-HPA-FRT8-NS16
SS-HPA-RT12-NS8	SS-HPA-FRT12-NS8
SS-HPA-RT12-NS12	SS-HPA-FRT12-NS12
SS-HPA-RT12-NS16	SS-HPA-FRT12-NS16
SS-HPA-RT16-NS8	SS-HPA-FRT16-NS8
SS-HPA-RT16-NS12	SS-HPA-FRT16-NS12
SS-HPA-RT16-NS16	SS-HPA-FRT16-NS16
SS-HPA-NS2-AN4	SS-HPA-FNS2-JM4
SS-HPA-NS4-AN4	SS-HPA-FNS4-JM4
SS-HPA-NS4-AN6	SS-HPA-FNS4-JM6
SS-HPA-NS6-AN6	SS-HPA-FNS6-JM6
SS-HPA-NS6-AN8	SS-HPA-FNS6-JM8
SS-HPA-NS8-AN8	SS-HPA-FNS8-JM8
SS-HPA-NS8-AN10	SS-HPA-FNS8-JM10
SS-HPA-NS8-AN12	SS-HPA-FNS8-JM12
SS-HPA-NS12-AN12	SS-HPA-FNS12-JM12
SS-HPA-NS16-AN16	SS-HPA-FNS16-JM16
SS-HPA-NS4-SH7	SS-HPA-FNS4-SH7
SS-HPA-NS6-SH9	SS-HPA-FNS6-SH9
SS-HPA-NS8-SH12	SS-HPA-FNS8-SH12
SS-HPA-NS12-SH14	SS-HPA-FNS12-SH14
SS-HPA-NS2-HM9	SS-HPA-FNS2-TM9
SS-HPA-NS4-HM9	SS-HPA-FNS4-TM9
SS-HPA-NS4-HM12	SS-HPA-FNS4-TM12
SS-HPA-NS6-HM9	SS-HPA-FNS6-TM9
SS-HPA-NS6-HM12	SS-HPA-FNS6-TM12
SS-HPA-NS8-HM9	SS-HPA-FNS8-TM9
SS-HPA-NS8-HM12	SS-HPA-FNS8-TM12
SS-HPA-NS8-HM14	SS-HPA-FNS8-TM14
SS-HPA-NS12-HM16	SS-HPA-FNS12-TM16
SS-HPA-NS16-HM21	SS-HPA-FNS16-TM21
SS-HPA-US7-SH9	SS-HPA-US7-SH9
SS-HPA-US7-SH12	SS-HPA-US7-SH12
SS-HPA-US9-SH12	SS-HPA-US9-SH12
SS-HPA-US9-SH14	SS-HPA-US9-SH14
SS-HPA-US12-SH14	SS-HPA-US12-SH14
SS-HPME-NS2	SS-HPE-NS2
SS-HPME-NS4	SS-HPE-NS4
SS-HPME-NS6	SS-HPE-NS6
SS-HPME-NS8	SS-HPE-NS8
SS-HPME-NS12	SS-HPE-NS12
SS-HPME-NS16	SS-HPE-NS16
SS-HPME-RT2	SS-HPE-RT2
SS-HPME-RT4	SS-HPE-RT4
SS-HPME-RT6	SS-HPE-RT6
SS-HPME-RT8	SS-HPE-RT8
SS-HPME-RT12	SS-HPE-RT12
SS-HPME-RT16	SS-HPE-RT16
SS-HPSE-NS2	SS-HPE-FNS2-NS2
SS-HPSE-NS2-NS4	SS-HPE-FNS2-NS4
SS-HPSE-NS2-NS6	SS-HPE-FNS2-NS6
SS-HPSE-NS4	SS-HPE-FNS4-NS4
SS-HPSE-NS4-NS6	SS-HPE-FNS4-NS6
SS-HPSE-NS4-NS8	SS-HPE-FNS4-NS8
SS-HPSE-NS6	SS-HPE-FNS6-NS6
SS-HPSE-NS6-NS8	SS-HPE-FNS6-NS8
SS-HPSE-NS6-NS12	SS-HPE-FNS6-NS12
SS-HPSE-NS8	SS-HPE-FNS8-NS8
SS-HPSE-NS8-NS12	SS-HPE-FNS8-NS12
SS-HPSE-NS8-NS16	SS-HPE-FNS8-NS16
SS-HPSE-NS12	SS-HPE-FNS12-NS12
SS-HPSE-NS12-NS16	SS-HPE-FNS12-NS16
SS-HPSE-NS16	SS-HPE-FNS16-NS16
SS-HPSE-RT2	SS-HPE-FRT2-RT2
SS-HPSE-RT2-RT4	SS-HPE-FRT2-RT4
SS-HPSE-RT2-RT6	SS-HPE-FRT2-RT6
SS-HPSE-RT4	SS-HPE-FRT4-RT4

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPSE-RT4-RT6	SS-HPE-FRT4-RT6
SS-HPSE-RT4-RT8	SS-HPE-FRT4-RT8
SS-HPSE-RT6	SS-HPE-FRT6-RT6
SS-HPSE-RT6-RT8	SS-HPE-FRT6-RT8
SS-HPSE-RT6-RT12	SS-HPE-FRT6-RT12
SS-HPSE-RT8	SS-HPE-FRT8-RT8
SS-HPSE-RT8-RT12	SS-HPE-FRT8-RT12
SS-HPSE-RT8-RT16	SS-HPE-FRT8-RT16
SS-HPSE-RT12	SS-HPE-FRT12-RT12
SS-HPSE-RT12-RT16	SS-HPE-FRT12-RT16
SS-HPSE-RT16	SS-HPE-FRT16-RT16
SS-HPE-NS2	SS-HPE-FNS2
SS-HPE-NS4	SS-HPE-FNS4
SS-HPE-NS6	SS-HPE-FNS6
SS-HPE-NS8	SS-HPE-FNS8
SS-HPE-NS12	SS-HPE-FNS12
SS-HPE-NS16	SS-HPE-FNS16
SS-HPE-RT2	SS-HPE-FRT2
SS-HPE-RT4	SS-HPE-FRT4
SS-HPE-RT6	SS-HPE-FRT6
SS-HPE-RT8	SS-HPE-FRT8
SS-HPE-RT12	SS-HPE-FRT12
SS-HPE-RT16	SS-HPE-FRT16
SS-HPMT-NS2	SS-HPT-NS2
SS-HPMT-NS4	SS-HPT-NS4
SS-HPMT-NS6	SS-HPT-NS6
SS-HPMT-NS8	SS-HPT-NS8
SS-HPMT-NS12	SS-HPT-NS12
SS-HPMT-NS16	SS-HPT-NS16
SS-HPMT-RT2	SS-HPT-RT2
SS-HPMT-RT4	SS-HPT-RT4
SS-HPMT-RT6	SS-HPT-RT6
SS-HPMT-RT8	SS-HPT-RT8
SS-HPMT-RT12	SS-HPT-RT12
SS-HPMT-RT16	SS-HPT-RT16
SS-HPST-NS2	SS-HPT-FNS2-NS2-FNS2
SS-HPST-NS4	SS-HPT-FNS4-NS4-FNS4
SS-HPST-NS6	SS-HPT-FNS6-NS6-FNS6
SS-HPST-NS8	SS-HPT-FNS8-NS8-FNS8
SS-HPST-NS12	SS-HPT-FNS12-NS12-FNS12
SS-HPST-NS16	SS-HPT-FNS16-NS16-FNS16
SS-HPST-RT2	SS-HPT-FRT2-RT2-FRT2
SS-HPST-RT4	SS-HPT-FRT4-RT4-FRT4
SS-HPST-RT6	SS-HPT-FRT6-RT6-FRT6
SS-HPST-RT8	SS-HPT-FRT8-RT8-FRT8
SS-HPST-RT12	SS-HPT-FRT12-RT12-FRT12
SS-HPST-RT16	SS-HPT-FRT16-RT16-FRT16
SS-HPBT-NS2	SS-HPT-FNS2-FNS2-NS2
SS-HPBT-NS4	SS-HPT-FNS4-FNS4-NS4
SS-HPBT-NS6	SS-HPT-FNS6-FNS6-NS6
SS-HPBT-NS8	SS-HPT-FNS8-FNS8-NS8
SS-HPBT-NS12	SS-HPT-FNS12-FNS12-NS12
SS-HPBT-NS16	SS-HPT-FNS16-FNS16-NS16
SS-HPBT-RT2	SS-HPT-FRT2-FRT2-RT2
SS-HPBT-RT4	SS-HPT-FRT4-FRT4-RT4
SS-HPBT-RT6	SS-HPT-FRT6-FRT6-RT6
SS-HPBT-RT8	SS-HPT-FRT8-FRT8-RT8
SS-HPBT-RT12	SS-HPT-FRT12-FRT12-RT12
SS-HPBT-RT16	SS-HPT-FRT16-FRT16-RT16
SS-HPT-NS2	SS-HPT-FNS2
SS-HPT-NS4	SS-HPT-FNS4
SS-HPT-NS6	SS-HPT-FNS6
SS-HPT-NS8	SS-HPT-FNS8
SS-HPT-NS12	SS-HPT-FNS12
SS-HPT-NS16	SS-HPT-FNS16
SS-HPT-RT2	SS-HPT-FRT2
SS-HPT-RT4	SS-HPT-FRT4
SS-HPT-RT6	SS-HPT-FRT6
SS-HPT-RT8	SS-HPT-FRT8
SS-HPT-RT12	SS-HPT-FRT12
SS-HPT-RT16	SS-HPT-FRT16
SS-HPCR-NS2	SS-HPX-FNS2
SS-HPCR-NS4	SS-HPX-FNS4
SS-HPCR-NS6	SS-HPX-FNS6
SS-HPCR-NS8	SS-HPX-FNS8
SS-HPCR-NS12	SS-HPX-FNS12
SS-HPCR-NS16	SS-HPX-FNS16
SS-HPCR-RT2	SS-HPX-FRT2

PMH Series Pipe Fittings

Formerly Used P/N	New P/N Adopted
SS-HPCR-RT4	SS-HPX-FRT4
SS-HPCR-RT6	SS-HPX-FRT6
SS-HPCR-RT8	SS-HPX-FRT8
SS-HPCR-RT12	SS-HPX-FRT12
SS-HPCR-RT16	SS-HPX-FRT16

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-FFC-6FH4-2FH4	SS-FFC-HF4-MF4
SS-FFC-6FH4-2FH6	SS-FFC-HF4-MF6
SS-FFC-6FH4-2FH9	SS-FFC-HF4-MF9
SS-FFC-6FH4-2FH12	SS-FFC-HF4-MF12
SS-FFC-6FH4-2FH16	SS-FFC-HF4-MF16
SS-FFC-6FH6-2FH4	SS-FFC-HF6-MF4
SS-FFC-6FH6-2FH6	SS-FFC-HF6-MF6
SS-FFC-6FH6-2FH9	SS-FFC-HF6-MF9
SS-FFC-6FH6-2FH12	SS-FFC-HF6-MF12
SS-FFC-6FH6-2FH16	SS-FFC-HF6-MF16
SS-FFC-6FH9-2FH4	SS-FFC-HF9-MF4
SS-FFC-6FH9-2FH6	SS-FFC-HF9-MF6
SS-FFC-6FH9-2FH9	SS-FFC-HF9-MF9
SS-FFC-6FH9-2FH12	SS-FFC-HF9-MF12
SS-FFC-6FH9-2FH16	SS-FFC-HF9-MF16
SS-FFC-6FH4-DHL2	SS-FFC-HF4-DF2
SS-FFC-6FH4-DHL4	SS-FFC-HF4-DF4
SS-FFC-6FH4-DHL6	SS-FFC-HF4-DF6
SS-FFC-6FH4-DHL8	SS-FFC-HF4-DF8
SS-FFC-6FH6-DHL2	SS-FFC-HF6-DF2
SS-FFC-6FH6-DHL4	SS-FFC-HF6-DF4
SS-FFC-6FH6-DHL6	SS-FFC-HF6-DF6
SS-FFC-6FH6-DHL8	SS-FFC-HF6-DF8
SS-FFC-6FH9-DHL2	SS-FFC-HF9-DF2
SS-FFC-6FH9-DHL4	SS-FFC-HF9-DF4
SS-FFC-6FH9-DHL6	SS-FFC-HF9-DF6
SS-FFC-6FH9-DHL8	SS-FFC-HF9-DF8
SS-FFC-6FH4-NS2	SS-FFC-HF4-FNS2
SS-FFC-6FH4-NS4	SS-FFC-HF4-FNS4
SS-FFC-6FH4-NS6	SS-FFC-HF4-FNS6
SS-FFC-6FH4-NS8	SS-FFC-HF4-FNS8
SS-FFC-6FH4-NS12	SS-FFC-HF4-FNS12
SS-FFC-6FH4-NS16	SS-FFC-HF4-FNS16
SS-FFC-6FH6-NS2	SS-FFC-HF6-FNS2
SS-FFC-6FH6-NS4	SS-FFC-HF6-FNS4
SS-FFC-6FH6-NS6	SS-FFC-HF6-FNS6
SS-FFC-6FH6-NS8	SS-FFC-HF6-FNS8
SS-FFC-6FH6-NS12	SS-FFC-HF6-FNS12
SS-FFC-6FH6-NS16	SS-FFC-HF6-FNS16
SS-FFC-6FH9-NS2	SS-FFC-HF9-FNS2
SS-FFC-6FH9-NS4	SS-FFC-HF9-FNS4
SS-FFC-6FH9-NS6	SS-FFC-HF9-FNS6
SS-FFC-6FH9-NS8	SS-FFC-HF9-FNS8
SS-FFC-6FH9-NS12	SS-FFC-HF9-FNS12
SS-FFC-6FH9-NS16	SS-FFC-HF9-FNS16
SS-FFC-2FH4-DHL2	SS-FFC-MF4-DF2
SS-FFC-2FH4-DHL4	SS-FFC-MF4-DF4
SS-FFC-2FH4-DHL6	SS-FFC-MF4-DF6
SS-FFC-2FH4-DHL8	SS-FFC-MF4-DF8
SS-FFC-2FH6-DHL2	SS-FFC-MF6-DF2
SS-FFC-2FH6-DHL4	SS-FFC-MF6-DF4
SS-FFC-2FH6-DHL6	SS-FFC-MF6-DF6
SS-FFC-2FH6-DHL8	SS-FFC-MF6-DF8
SS-FFC-2FH9-DHL2	SS-FFC-MF9-DF2
SS-FFC-2FH9-DHL4	SS-FFC-MF9-DF4
SS-FFC-2FH9-DHL6	SS-FFC-MF9-DF6
SS-FFC-2FH9-DHL8	SS-FFC-MF9-DF8
SS-FFC-2FH12-DHL6	SS-FFC-MF12-DF6
SS-FFC-2FH12-DHL8	SS-FFC-MF12-DF8
SS-FFC-2FH4-NS2	SS-FFC-MF4-FNS2
SS-FFC-2FH4-NS4	SS-FFC-MF4-FNS4
SS-FFC-2FH4-NS6	SS-FFC-MF4-FNS6
SS-FFC-2FH4-NS8	SS-FFC-MF4-FNS8
SS-FFC-2FH6-NS2	SS-FFC-MF6-FNS2
SS-FFC-2FH6-NS4	SS-FFC-MF6-FNS4

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-FFC-2FH6-NS6	SS-FFC-MF6-FNS6
SS-FFC-2FH6-NS8	SS-FFC-MF6-FNS8
SS-FFC-2FH6-NS12	SS-FFC-MF6-FNS12
SS-FFC-2FH9-NS2	SS-FFC-MF9-FNS2
SS-FFC-2FH9-NS4	SS-FFC-MF9-FNS4
SS-FFC-2FH9-NS6	SS-FFC-MF9-FNS6
SS-FFC-2FH9-NS8	SS-FFC-MF9-FNS8
SS-FFC-2FH9-NS12	SS-FFC-MF9-FNS12
SS-FFC-2FH9-NS16	SS-FFC-MF9-FNS16
SS-FFC-2FH12-NS2	SS-FFC-MF12-FNS2
SS-FFC-2FH12-NS4	SS-FFC-MF12-FNS4
SS-FFC-2FH12-NS6	SS-FFC-MF12-FNS6
SS-FFC-2FH12-NS8	SS-FFC-MF12-FNS8
SS-FFC-2FH12-NS12	SS-FFC-MF12-FNS12
SS-FFC-2FH12-NS16	SS-FFC-MF12-FNS16
SS-FFC-2FH16-NS4	SS-FFC-MF16-FNS4
SS-FFC-2FH16-NS6	SS-FFC-MF16-FNS6
SS-FFC-2FH16-NS8	SS-FFC-MF16-FNS8
SS-FFC-2FH16-NS12	SS-FFC-MF16-FNS12
SS-FFC-2FH16-NS16	SS-FFC-MF16-FNS16
SS-FMA-6FH4-6MP4	SS-FMA-HF4-HM4
SS-FMA-6FH4-6MP6	SS-FMA-HF4-HM6
SS-FMA-6FH4-6MP9	SS-FMA-HF4-HM9
SS-FMA-6FH6-6MP4	SS-FMA-HF6-HM4
SS-FMA-6FH6-6MP6	SS-FMA-HF6-HM6
SS-FMA-6FH6-6MP9	SS-FMA-HF6-HM9
SS-FMA-6FH9-6MP4	SS-FMA-HF9-HM4
SS-FMA-6FH9-6MP6	SS-FMA-HF9-HM6
SS-FMA-6FH9-6MP9	SS-FMA-HF9-HM9
SS-FMA-6FH4-6CT4	SS-FMA-HF4-HCT4
SS-FMA-6FH4-6CT6	SS-FMA-HF4-HCT6
SS-FMA-6FH4-6CT9	SS-FMA-HF4-HCT9
SS-FMA-6FH6-6CT4	SS-FMA-HF6-HCT4
SS-FMA-6FH6-6CT6	SS-FMA-HF6-HCT6
SS-FMA-6FH6-6CT9	SS-FMA-HF6-HCT9
SS-FMA-6FH9-6CT4	SS-FMA-HF9-HCT4
SS-FMA-6FH9-6CT6	SS-FMA-HF9-HCT6
SS-FMA-6FH9-6CT9	SS-FMA-HF9-HCT9
SS-FMA-6FH4-2MP4	SS-FMA-HF4-MM4
SS-FMA-6FH4-2MP6	SS-FMA-HF4-MM6
SS-FMA-6FH4-2MP9	SS-FMA-HF4-MM9
SS-FMA-6FH4-2MP12	SS-FMA-HF4-MM12
SS-FMA-6FH4-2MP16	SS-FMA-HF4-MM16
SS-FMA-6FH6-2MP4	SS-FMA-HF6-MM4
SS-FMA-6FH6-2MP6	SS-FMA-HF6-MM6
SS-FMA-6FH6-2MP9	SS-FMA-HF6-MM9
SS-FMA-6FH6-2MP12	SS-FMA-HF6-MM12
SS-FMA-6FH6-2MP16	SS-FMA-HF6-MM16
SS-FMA-6FH9-2MP4	SS-FMA-HF9-MM4
SS-FMA-6FH9-2MP6	SS-FMA-HF9-MM6
SS-FMA-6FH9-2MP9	SS-FMA-HF9-MM9
SS-FMA-6FH9-2MP12	SS-FMA-HF9-MM12
SS-FMA-6FH9-2MP16	SS-FMA-HF9-MM16
SS-FMA-6FH4-DMP2	SS-FMA-HF4-DFM2
SS-FMA-6FH4-DMP4	SS-FMA-HF4-DFM4
SS-FMA-6FH4-DMP6	SS-FMA-HF4-DFM6
SS-FMA-6FH4-DMP8	SS-FMA-HF4-DFM8
SS-FMA-6FH6-DMP2	SS-FMA-HF6-DFM2
SS-FMA-6FH6-DMP4	SS-FMA-HF6-DFM4
SS-FMA-6FH6-DMP6	SS-FMA-HF6-DFM6
SS-FMA-6FH6-DMP8	SS-FMA-HF6-DFM8
SS-FMA-6FH9-DMP2	SS-FMA-HF9-DFM2
SS-FMA-6FH9-DMP4	SS-FMA-HF9-DFM4
SS-FMA-6FH9-DMP6	SS-FMA-HF9-DFM6
SS-FMA-6FH9-DMP8	SS-FMA-HF9-DFM8
SS-FMA-6FH4-NS2	SS-FMA-HF4-NS2
SS-FMA-6FH4-NS4	SS-FMA-HF4-NS4
SS-FMA-6FH4-NS6	SS-FMA-HF4-NS6
SS-FMA-6FH4-NS8	SS-FMA-HF4-NS8
SS-FMA-6FH4-NS12	SS-FMA-HF4-NS12
SS-FMA-6FH6-NS2	SS-FMA-HF6-NS2
SS-FMA-6FH6-NS4	SS-FMA-HF6-NS4
SS-FMA-6FH6-NS6	SS-FMA-HF6-NS6
SS-FMA-6FH6-NS8	SS-FMA-HF6-NS8
SS-FMA-6FH6-NS12	SS-FMA-HF6-NS12
SS-FMA-6FH6-NS16	SS-FMA-HF6-NS16
SS-FMA-6FH9-NS2	SS-FMA-HF9-NS2
SS-FMA-6FH9-NS4	SS-FMA-HF9-NS4

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-FMA-6FH9-NS6	SS-FMA-HF9-NS6
SS-FMA-6FH9-NS8	SS-FMA-HF9-NS8
SS-FMA-6FH9-NS12	SS-FMA-HF9-NS12
SS-FMA-6FH9-NS16	SS-FMA-HF9-NS16
SS-FMA-6FH4-HM9	SS-FMA-HF4-TM9
SS-FMA-6FH4-HM12	SS-FMA-HF4-TM12
SS-FMA-6FH4-HM14	SS-FMA-HF4-TM14
SS-FMA-6FH4-HM16	SS-FMA-HF4-TM16
SS-FMA-6FH6-HM9	SS-FMA-HF6-TM9
SS-FMA-6FH6-HM12	SS-FMA-HF6-TM12
SS-FMA-6FH6-HM14	SS-FMA-HF6-TM14
SS-FMA-6FH6-HM16	SS-FMA-HF6-TM16
SS-FMA-6FH6-HM21	SS-FMA-HF6-TM21
SS-FMA-6FH9-HM14	SS-FMA-HF9-TM14
SS-FMA-6FH9-HM16	SS-FMA-HF9-TM16
SS-FMA-6FH9-HM21	SS-FMA-HF9-TM21
SS-FMA-2FH4-6MP4	SS-FMA-MF4-HM4
SS-FMA-2FH4-6MP6	SS-FMA-MF4-HM6
SS-FMA-2FH4-6MP9	SS-FMA-MF4-HM9
SS-FMA-2FH6-6MP4	SS-FMA-MF6-HM4
SS-FMA-2FH6-6MP6	SS-FMA-MF6-HM6
SS-FMA-2FH6-6MP9	SS-FMA-MF6-HM9
SS-FMA-2FH9-6MP4	SS-FMA-MF9-HM4
SS-FMA-2FH9-6MP6	SS-FMA-MF9-HM6
SS-FMA-2FH9-6MP9	SS-FMA-MF9-HM9
SS-FMA-2FH12-6MP4	SS-FMA-MF12-HM4
SS-FMA-2FH12-6MP6	SS-FMA-MF12-HM6
SS-FMA-2FH12-6MP9	SS-FMA-MF12-HM9
SS-FMA-2FH16-6MP4	SS-FMA-MF16-HM4
SS-FMA-2FH16-6MP6	SS-FMA-MF16-HM6
SS-FMA-2FH16-6MP9	SS-FMA-MF16-HM9
SS-FMA-2FH4-2MP4	SS-FMA-MF4-MM4
SS-FMA-2FH4-2MP6	SS-FMA-MF4-MM6
SS-FMA-2FH4-2MP9	SS-FMA-MF4-MM9
SS-FMA-2FH4-2MP12	SS-FMA-MF4-MM12
SS-FMA-2FH4-2MP16	SS-FMA-MF4-MM16
SS-FMA-2FH6-2MP4	SS-FMA-MF6-MM4
SS-FMA-2FH6-2MP6	SS-FMA-MF6-MM6
SS-FMA-2FH6-2MP9	SS-FMA-MF6-MM9
SS-FMA-2FH6-2MP12	SS-FMA-MF6-MM12
SS-FMA-2FH6-2MP16	SS-FMA-MF6-MM16
SS-FMA-2FH9-2MP4	SS-FMA-MF9-MM4
SS-FMA-2FH9-2MP6	SS-FMA-MF9-MM6
SS-FMA-2FH9-2MP9	SS-FMA-MF9-MM9
SS-FMA-2FH9-2MP12	SS-FMA-MF9-MM12
SS-FMA-2FH9-2MP16	SS-FMA-MF9-MM16
SS-FMA-2FH12-2MP4	SS-FMA-MF12-MM4
SS-FMA-2FH12-2MP6	SS-FMA-MF12-MM6
SS-FMA-2FH12-2MP9	SS-FMA-MF12-MM9
SS-FMA-2FH12-2MP12	SS-FMA-MF12-MM12
SS-FMA-2FH12-2MP16	SS-FMA-MF12-MM16
SS-FMA-2FH16-2MP9	SS-FMA-MF16-MM9
SS-FMA-2FH16-2MP12	SS-FMA-MF16-MM12
SS-FMA-2FH16-2MP16	SS-FMA-MF16-MM16
SS-FMA-2FH4-2CT4	SS-FMA-MF4-MCT4
SS-FMA-2FH4-2CT6	SS-FMA-MF4-MCT6
SS-FMA-2FH4-2CT9	SS-FMA-MF4-MCT9
SS-FMA-2FH6-2CT4	SS-FMA-MF6-MCT4
SS-FMA-2FH6-2CT6	SS-FMA-MF6-MCT6
SS-FMA-2FH6-2CT9	SS-FMA-MF6-MCT9
SS-FMA-2FH9-2CT4	SS-FMA-MF9-MCT4
SS-FMA-2FH9-2CT6	SS-FMA-MF9-MCT6
SS-FMA-2FH9-2CT9	SS-FMA-MF9-MCT9
SS-FMA-2FH12-2CT4	SS-FMA-MF12-MCT4
SS-FMA-2FH12-2CT6	SS-FMA-MF12-MCT6
SS-FMA-2FH12-2CT9	SS-FMA-MF12-MCT9
SS-FMA-2FH16-2CT4	SS-FMA-MF16-MCT4
SS-FMA-2FH16-2CT6	SS-FMA-MF16-MCT6
SS-FMA-2FH16-2CT9	SS-FMA-MF16-MCT9
SS-FMA-2FH4-DMP2	SS-FMA-MF4-DFM2
SS-FMA-2FH4-DMP4	SS-FMA-MF4-DFM4
SS-FMA-2FH4-DMP6	SS-FMA-MF4-DFM6
SS-FMA-2FH4-DMP8	SS-FMA-MF4-DFM8
SS-FMA-2FH6-DMP2	SS-FMA-MF6-DFM2
SS-FMA-2FH6-DMP4	SS-FMA-MF6-DFM4
SS-FMA-2FH6-DMP6	SS-FMA-MF6-DFM6
SS-FMA-2FH6-DMP8	SS-FMA-MF6-DFM8
SS-FMA-2FH9-DMP2	SS-FMA-MF9-DFM2

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-FMA-2FH9-DMP4	SS-FMA-MF9-DFM4
SS-FMA-2FH9-DMP6	SS-FMA-MF9-DFM6
SS-FMA-2FH9-DMP8	SS-FMA-MF9-DFM8
SS-FMA-2FH12-DMP2	SS-FMA-MF12-DFM2
SS-FMA-2FH12-DMP4	SS-FMA-MF12-DFM4
SS-FMA-2FH12-DMP6	SS-FMA-MF12-DFM6
SS-FMA-2FH12-DMP8	SS-FMA-MF12-DFM8
SS-FMA-2FH16-DMP2	SS-FMA-MF16-DFM2
SS-FMA-2FH16-DMP4	SS-FMA-MF16-DFM4
SS-FMA-2FH16-DMP6	SS-FMA-MF16-DFM6
SS-FMA-2FH16-DMP8	SS-FMA-MF16-DFM8
SS-FMA-2FH4-NS2	SS-FMA-MF4-NS2
SS-FMA-2FH4-NS4	SS-FMA-MF4-NS4
SS-FMA-2FH4-NS6	SS-FMA-MF4-NS6
SS-FMA-2FH4-NS8	SS-FMA-MF4-NS8
SS-FMA-2FH4-NS12	SS-FMA-MF4-NS12
SS-FMA-2FH6-NS2	SS-FMA-MF6-NS2
SS-FMA-2FH6-NS4	SS-FMA-MF6-NS4
SS-FMA-2FH6-NS6	SS-FMA-MF6-NS6
SS-FMA-2FH6-NS8	SS-FMA-MF6-NS8
SS-FMA-2FH6-NS12	SS-FMA-MF6-NS12
SS-FMA-2FH6-NS16	SS-FMA-MF6-NS16
SS-FMA-2FH9-NS2	SS-FMA-MF9-NS2
SS-FMA-2FH9-NS4	SS-FMA-MF9-NS4
SS-FMA-2FH9-NS6	SS-FMA-MF9-NS6
SS-FMA-2FH9-NS8	SS-FMA-MF9-NS8
SS-FMA-2FH9-NS12	SS-FMA-MF9-NS12
SS-FMA-2FH9-NS16	SS-FMA-MF9-NS16
SS-FMA-2FH12-NS2	SS-FMA-MF12-NS2
SS-FMA-2FH12-NS4	SS-FMA-MF12-NS4
SS-FMA-2FH12-NS6	SS-FMA-MF12-NS6
SS-FMA-2FH12-NS8	SS-FMA-MF12-NS8
SS-FMA-2FH12-NS12	SS-FMA-MF12-NS12
SS-FMA-2FH12-NS16	SS-FMA-MF12-NS16
SS-FMA-2FH16-NS2	SS-FMA-MF16-NS2
SS-FMA-2FH16-NS4	SS-FMA-MF16-NS4
SS-FMA-2FH16-NS6	SS-FMA-MF16-NS6
SS-FMA-2FH16-NS8	SS-FMA-MF16-NS8
SS-FMA-2FH16-NS12	SS-FMA-MF16-NS12
SS-FMA-2FH16-NS16	SS-FMA-MF16-NS16
SS-FMA-2FH4-HM9	SS-FMA-MF4-TM9
SS-FMA-2FH4-HM12	SS-FMA-MF4-TM12
SS-FMA-2FH4-HM14	SS-FMA-MF4-TM14
SS-FMA-2FH6-HM9	SS-FMA-MF6-TM9
SS-FMA-2FH6-HM12	SS-FMA-MF6-TM12
SS-FMA-2FH6-HM14	SS-FMA-MF6-TM14
SS-FMA-2FH6-HM16	SS-FMA-MF6-TM16
SS-FMA-2FH9-HM9	SS-FMA-MF9-TM9
SS-FMA-2FH9-HM12	SS-FMA-MF9-TM12
SS-FMA-2FH9-HM14	SS-FMA-MF9-TM14
SS-FMA-2FH9-HM16	SS-FMA-MF9-TM16
SS-FMA-2FH9-HM21	SS-FMA-MF9-TM21
SS-FMA-2FH12-HM14	SS-FMA-MF12-TM14
SS-FMA-2FH12-HM16	SS-FMA-MF12-TM16
SS-FMA-2FH12-HM21	SS-FMA-MF12-TM21
SS-FMA-2FH16-HM21	SS-FMA-MF16-TM21
SS-FMA-DHL2-6MP4	SS-FMA-DFH2-HM4
SS-FMA-DHL2-6MP6	SS-FMA-DFH2-HM6
SS-FMA-DHL2-6MP9	SS-FMA-DFH2-HM9
SS-FMA-DHL4-6MP4	SS-FMA-DFH4-HM4
SS-FMA-DHL4-6MP6	SS-FMA-DFH4-HM6
SS-FMA-DHL4-6MP9	SS-FMA-DFH4-HM9
SS-FMA-DHL6-6MP4	SS-FMA-DFH6-HM4
SS-FMA-DHL6-6MP6	SS-FMA-DFH6-HM6
SS-FMA-DHL6-6MP9	SS-FMA-DFH6-HM9
SS-FMA-DHL8-6MP4	SS-FMA-DFH8-HM4
SS-FMA-DHL8-6MP6	SS-FMA-DFH8-HM6
SS-FMA-DHL8-6MP9	SS-FMA-DFH8-HM9
SS-FMA-DHL2-2MP4	SS-FMA-DFH2-MM4
SS-FMA-DHL2-2MP6	SS-FMA-DFH2-MM6
SS-FMA-DHL2-2MP9	SS-FMA-DFH2-MM9
SS-FMA-DHL2-2MP12	SS-FMA-DFH2-MM12
SS-FMA-DHL2-2MP16	SS-FMA-DFH2-MM16
SS-FMA-DHL4-2MP4	SS-FMA-DFH4-MM4
SS-FMA-DHL4-2MP6	SS-FMA-DFH4-MM6
SS-FMA-DHL4-2MP9	SS-FMA-DFH4-MM9
SS-FMA-DHL4-2MP12	SS-FMA-DFH4-MM12
SS-FMA-DHL4-2MP16	SS-FMA-DFH4-MM16

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

AMH Series Adapter Fittings

Fittings	Formerly Used P/N	New P/N Adopted
	SS-FMA-DHL6-2MP4	SS-FMA-DF66-MM4
	SS-FMA-DHL6-2MP6	SS-FMA-DF66-MM6
	SS-FMA-DHL6-2MP9	SS-FMA-DF66-MM9
	SS-FMA-DHL6-2MP12	SS-FMA-DF66-MM12
	SS-FMA-DHL6-2MP16	SS-FMA-DF66-MM16
	SS-FMA-DHL8-2MP4	SS-FMA-DF88-MM4
	SS-FMA-DHL8-2MP6	SS-FMA-DF88-MM6
	SS-FMA-DHL8-2MP9	SS-FMA-DF88-MM9
	SS-FMA-DHL8-2MP12	SS-FMA-DF88-MM12
	SS-FMA-DHL8-2MP16	SS-FMA-DF88-MM16
	SS-FMA-DHL2-DMP2	SS-FMA-DF22-DFM2
	SS-FMA-DHL2-DMP4	SS-FMA-DF22-DFM4
	SS-FMA-DHL2-DMP6	SS-FMA-DF22-DFM6
	SS-FMA-DHL2-DMP8	SS-FMA-DF22-DFM8
	SS-FMA-DHL4-DMP2	SS-FMA-DF44-DFM2
	SS-FMA-DHL4-DMP4	SS-FMA-DF44-DFM4
	SS-FMA-DHL4-DMP6	SS-FMA-DF44-DFM6
	SS-FMA-DHL4-DMP8	SS-FMA-DF44-DFM8
	SS-FMA-DHL6-DMP2	SS-FMA-DF66-DFM2
	SS-FMA-DHL6-DMP4	SS-FMA-DF66-DFM4
	SS-FMA-DHL6-DMP6	SS-FMA-DF66-DFM6
	SS-FMA-DHL6-DMP8	SS-FMA-DF66-DFM8
	SS-FMA-DHL8-DMP2	SS-FMA-DF88-DFM2
	SS-FMA-DHL8-DMP4	SS-FMA-DF88-DFM4
	SS-FMA-DHL8-DMP6	SS-FMA-DF88-DFM6
	SS-FMA-DHL8-DMP8	SS-FMA-DF88-DFM8
	SS-FMA-NS2-6MP4	SS-FMA-FNS2-HM4
	SS-FMA-NS2-6MP6	SS-FMA-FNS2-HM6
	SS-FMA-NS2-6MP9	SS-FMA-FNS2-HM9
	SS-FMA-NS4-6MP4	SS-FMA-FNS4-HM4
	SS-FMA-NS4-6MP6	SS-FMA-FNS4-HM6
	SS-FMA-NS4-6MP9	SS-FMA-FNS4-HM9
	SS-FMA-NS6-6MP4	SS-FMA-FNS6-HM4
	SS-FMA-NS6-6MP6	SS-FMA-FNS6-HM6
	SS-FMA-NS6-6MP9	SS-FMA-FNS6-HM9
	SS-FMA-NS8-6MP4	SS-FMA-FNS8-HM4
	SS-FMA-NS8-6MP6	SS-FMA-FNS8-HM6
	SS-FMA-NS8-6MP9	SS-FMA-FNS8-HM9
	SS-FMA-NS12-6MP4	SS-FMA-FNS12-HM4
	SS-FMA-NS12-6MP6	SS-FMA-FNS12-HM6
	SS-FMA-NS12-6MP9	SS-FMA-FNS12-HM9
	SS-FMA-NS16-6MP4	SS-FMA-FNS16-HM4
	SS-FMA-NS16-6MP6	SS-FMA-FNS16-HM6
	SS-FMA-NS16-6MP9	SS-FMA-FNS16-HM9
	SS-FMA-NS2-6CT4	SS-FMA-FNS2-HCT4
	SS-FMA-NS2-6CT6	SS-FMA-FNS2-HCT6
	SS-FMA-NS4-6CT4	SS-FMA-FNS4-HCT4
	SS-FMA-NS4-6CT6	SS-FMA-FNS4-HCT6
	SS-FMA-NS4-6CT9	SS-FMA-FNS4-HCT9
	SS-FMA-NS6-6CT4	SS-FMA-FNS6-HCT4
	SS-FMA-NS6-6CT6	SS-FMA-FNS6-HCT6
	SS-FMA-NS6-6CT9	SS-FMA-FNS6-HCT9
	SS-FMA-NS8-6CT4	SS-FMA-FNS8-HCT4
	SS-FMA-NS8-6CT6	SS-FMA-FNS8-HCT6
	SS-FMA-NS8-6CT9	SS-FMA-FNS8-HCT9
	SS-FMA-NS12-6CT4	SS-FMA-FNS12-HCT4
	SS-FMA-NS12-6CT6	SS-FMA-FNS12-HCT6
	SS-FMA-NS12-6CT9	SS-FMA-FNS12-HCT9
	SS-FMA-NS16-6CT4	SS-FMA-FNS16-HCT4
	SS-FMA-NS16-6CT6	SS-FMA-FNS16-HCT6
	SS-FMA-NS16-6CT9	SS-FMA-FNS16-HCT9
	SS-FMA-NS2-2MP4	SS-FMA-FNS2-MM4
	SS-FMA-NS2-2MP6	SS-FMA-FNS2-MM6
	SS-FMA-NS2-2MP9	SS-FMA-FNS2-MM9
	SS-FMA-NS2-2MP12	SS-FMA-FNS2-MM12
	SS-FMA-NS2-2MP16	SS-FMA-FNS2-MM16
	SS-FMA-NS4-2MP4	SS-FMA-FNS4-MM4
	SS-FMA-NS4-2MP6	SS-FMA-FNS4-MM6
	SS-FMA-NS4-2MP9	SS-FMA-FNS4-MM9
	SS-FMA-NS4-2MP12	SS-FMA-FNS4-MM12
	SS-FMA-NS4-2MP16	SS-FMA-FNS4-MM16
	SS-FMA-NS6-2MP4	SS-FMA-FNS6-MM4
	SS-FMA-NS6-2MP6	SS-FMA-FNS6-MM6
	SS-FMA-NS6-2MP9	SS-FMA-FNS6-MM9
	SS-FMA-NS6-2MP12	SS-FMA-FNS6-MM12
	SS-FMA-NS6-2MP16	SS-FMA-FNS6-MM16
	SS-FMA-NS8-2MP4	SS-FMA-FNS8-MM4
	SS-FMA-NS8-2MP6	SS-FMA-FNS8-MM6

AMH Series Adapter Fittings

Fittings	Formerly Used P/N	New P/N Adopted
	SS-FMA-NS8-2MP9	SS-FMA-FNS8-MM9
	SS-FMA-NS8-2MP12	SS-FMA-FNS8-MM12
	SS-FMA-NS8-2MP16	SS-FMA-FNS8-MM16
	SS-FMA-NS12-2MP4	SS-FMA-FNS12-MM4
	SS-FMA-NS12-2MP6	SS-FMA-FNS12-MM6
	SS-FMA-NS12-2MP9	SS-FMA-FNS12-MM9
	SS-FMA-NS12-2MP12	SS-FMA-FNS12-MM12
	SS-FMA-NS12-2MP16	SS-FMA-FNS12-MM16
	SS-FMA-NS16-2MP4	SS-FMA-FNS16-MM4
	SS-FMA-NS16-2MP6	SS-FMA-FNS16-MM6
	SS-FMA-NS16-2MP9	SS-FMA-FNS16-MM9
	SS-FMA-NS16-2MP12	SS-FMA-FNS16-MM12
	SS-FMA-NS16-2MP16	SS-FMA-FNS16-MM16
	SS-FMA-NS2-2CT4	SS-FMA-FNS2-MCT4
	SS-FMA-NS2-2CT6	SS-FMA-FNS2-MCT6
	SS-FMA-NS2-2CT9	SS-FMA-FNS2-MCT9
	SS-FMA-NS2-2CT12	SS-FMA-FNS2-MCT12
	SS-FMA-NS2-2CT16	SS-FMA-FNS2-MCT16
	SS-FMA-NS4-2CT4	SS-FMA-FNS4-MCT4
	SS-FMA-NS4-2CT6	SS-FMA-FNS4-MCT6
	SS-FMA-NS4-2CT9	SS-FMA-FNS4-MCT9
	SS-FMA-NS4-2CT12	SS-FMA-FNS4-MCT12
	SS-FMA-NS4-2CT16	SS-FMA-FNS4-MCT16
	SS-FMA-NS6-2CT6	SS-FMA-FNS6-MCT6
	SS-FMA-NS6-2CT9	SS-FMA-FNS6-MCT9
	SS-FMA-NS6-2CT12	SS-FMA-FNS6-MCT12
	SS-FMA-NS6-2CT16	SS-FMA-FNS6-MCT16
	SS-FMA-NS8-2CT9	SS-FMA-FNS8-MCT9
	SS-FMA-NS8-2CT12	SS-FMA-FNS8-MCT12
	SS-FMA-NS8-2CT16	SS-FMA-FNS8-MCT16
	SS-FMA-NS12-2CT9	SS-FMA-FNS12-MCT9
	SS-FMA-NS12-2CT12	SS-FMA-FNS12-MCT12
	SS-FMA-NS12-2CT16	SS-FMA-FNS12-MCT16
	SS-FMA-NS16-2CT12	SS-FMA-FNS16-MCT12
	SS-FMA-NS16-2CT16	SS-FMA-FNS16-MCT16
	SS-FMA-NS2-DMP2	SS-FMA-FNS2-DFM2
	SS-FMA-NS2-DMP4	SS-FMA-FNS2-DFM4
	SS-FMA-NS2-DMP6	SS-FMA-FNS2-DFM6
	SS-FMA-NS2-DMP8	SS-FMA-FNS2-DFM8
	SS-FMA-NS4-DMP2	SS-FMA-FNS4-DFM2
	SS-FMA-NS4-DMP4	SS-FMA-FNS4-DFM4
	SS-FMA-NS4-DMP6	SS-FMA-FNS4-DFM6
	SS-FMA-NS4-DMP8	SS-FMA-FNS4-DFM8
	SS-FMA-NS6-DMP2	SS-FMA-FNS6-DFM2
	SS-FMA-NS6-DMP4	SS-FMA-FNS6-DFM4
	SS-FMA-NS6-DMP6	SS-FMA-FNS6-DFM6
	SS-FMA-NS6-DMP8	SS-FMA-FNS6-DFM8
	SS-FMA-NS8-DMP2	SS-FMA-FNS8-DFM2
	SS-FMA-NS8-DMP4	SS-FMA-FNS8-DFM4
	SS-FMA-NS8-DMP6	SS-FMA-FNS8-DFM6
	SS-FMA-NS8-DMP8	SS-FMA-FNS8-DFM8
	SS-FMA-NS12-DMP2	SS-FMA-FNS12-DFM2
	SS-FMA-NS12-DMP4	SS-FMA-FNS12-DFM4
	SS-FMA-NS12-DMP6	SS-FMA-FNS12-DFM6
	SS-FMA-NS12-DMP8	SS-FMA-FNS12-DFM8
	SS-FMA-NS16-DMP2	SS-FMA-FNS16-DFM2
	SS-FMA-NS16-DMP4	SS-FMA-FNS16-DFM4
	SS-FMA-NS16-DMP6	SS-FMA-FNS16-DFM6
	SS-FMA-NS16-DMP8	SS-FMA-FNS16-DFM8
	SS-MMA-6MP4	SS-MMA-HM4
	SS-MMA-6MP6	SS-MMA-HM6
	SS-MMA-6MP9-6MP4	SS-MMA-HM9-HM4
	SS-MMA-6MP9-6MP6	SS-MMA-HM9-HM6
	SS-MMA-6MP9	SS-MMA-HM9
	SS-MMA-6MP6-6MP4	SS-MMA-HM6-HM4
	SS-MMA-6MP4-2MP4	SS-MMA-HM4-MM4
	SS-MMA-6MP4-2MP9	SS-MMA-HM4-MM9
	SS-MMA-6MP4-2MP12	SS-MMA-HM4-MM12
	SS-MMA-6MP4-2MP16	SS-MMA-HM4-MM16
	SS-MMA-6MP6-2MP4	SS-MMA-HM6-MM4
	SS-MMA-6MP6-2MP6	SS-MMA-HM6-MM6
	SS-MMA-6MP6-2MP9	SS-MMA-HM6-MM9
	SS-MMA-6MP6-2MP12	SS-MMA-HM6-MM12
	SS-MMA-6MP6-2MP16	SS-MMA-HM6-MM16
	SS-MMA-6MP9-2MP4	SS-MMA-HM9-MM4
	SS-MMA-6MP9-2MP6	SS-MMA-HM9-MM6
	SS-MMA-6MP9-2MP9	SS-MMA-HM9-MM9
	SS-MMA-6MP9-2MP12	SS-MMA-HM9-MM12

AMH Series Adapter Fittings

Fittings	Formerly Used P/N	New P/N Adopted
	SS-MMA-6MP9-2MP16	SS-MMA-HM9-MM16
	SS-MMA-6MP4-2MP6	SS-MMA-HM4-MM6
	SS-MMA-6MP4-DMP2	SS-MMA-HM4-DFM2
	SS-MMA-6MP4-DMP4	SS-MMA-HM4-DFM4
	SS-MMA-6MP4-DMP8	SS-MMA-HM4-DFM8
	SS-MMA-6MP4-DMP6	SS-MMA-HM4-DFM6
	SS-MMA-6MP6-DMP2	SS-MMA-HM6-DFM2
	SS-MMA-6MP6-DMP4	SS-MMA-HM6-DFM4
	SS-MMA-6MP6-DMP8	SS-MMA-HM6-DFM8
	SS-MMA-6MP6-DMP6	SS-MMA-HM6-DFM6
	SS-MMA-6MP9-DMP2	SS-MMA-HM9-DFM2
	SS-MMA-6MP9-DMP4	SS-MMA-HM9-DFM4
	SS-MMA-6MP9-DMP8	SS-MMA-HM9-DFM8
	SS-MMA-6MP9-DMP6	SS-MMA-HM9-DFM6
	SS-MMA-6MP4-NS2	SS-MMA-HM4-NS2
	SS-MMA-6MP4-NS4	SS-MMA-HM4-NS4
	SS-MMA-6MP4-NS6	SS-MMA-HM4-NS6
	SS-MMA-6MP4-NS8	SS-MMA-HM4-NS8
	SS-MMA-6MP4-NS12	SS-MMA-HM4-NS12
	SS-MMA-6MP4-NS16	SS-MMA-HM4-NS16
	SS-MMA-6MP6-NS2	SS-MMA-HM6-NS2
	SS-MMA-6MP6-NS4	SS-MMA-HM6-NS4
	SS-MMA-6MP6-NS6	SS-MMA-HM6-NS6
	SS-MMA-6MP6-NS8	SS-MMA-HM6-NS8
	SS-MMA-6MP6-NS12	SS-MMA-HM6-NS12
	SS-MMA-6MP6-NS16	SS-MMA-HM6-NS16
	SS-MMA-6MP9-NS2	SS-MMA-HM9-NS2
	SS-MMA-6MP9-NS4	SS-MMA-HM9-NS4
	SS-MMA-6MP9-NS6	SS-MMA-HM9-NS6
	SS-MMA-6MP9-NS8	SS-MMA-HM9-NS8
	SS-MMA-6MP9-NS12	SS-MMA-HM9-NS12
	SS-MMA-6MP9-NS16	SS-MMA-HM9-NS16
	SS-MMA-6MP4-AN4	SS-MMA-HM4-JM4
	SS-MMA-6MP4-AN6	SS-MMA-HM4-JM6
	SS-MMA-6MP4-AN8	SS-MMA-HM4-JM8
	SS-MMA-6MP4-AN10	SS-MMA-HM4-JM10
	SS-MMA-6MP4-AN12	SS-MMA-HM4-JM12
	SS-MMA-6MP4-AN16	SS-MMA-HM4-JM16
	SS-MMA-6MP6-AN4	SS-MMA-HM6-JM4
	SS-MMA-6MP6-AN6	SS-MMA-HM6-JM6
	SS-MMA-6MP6-AN8	SS-MMA-HM6-JM8
	SS-MMA-6MP6-AN10	SS-MMA-HM6-JM10
	SS-MMA-6MP6-AN12	SS-MMA-HM6-JM12
	SS-MMA-6MP6-AN16	SS-MMA-HM6-JM16
	SS-MMA-6MP9-AN4	SS-MMA-HM9-JM4
	SS-MMA-6MP9-AN6	SS-MMA-HM9-JM6
	SS-MMA-6MP9-AN8	SS-MMA-HM9-JM8
	SS-MMA-6MP9-AN10	SS-MMA-HM9-JM10
	SS-MMA-6MP9-AN12	SS-MMA-HM9-JM12
	SS-MMA-6MP9-AN16	SS-MMA-HM9-JM16
	SS-MMA-6MP4-HM9	SS-MMA-HM4-TM9
	SS-MMA-6MP4-HM12	SS-MMA-HM4-TM12
	SS-MMA-6MP4-HM14	SS-MMA-HM4-TM14
	SS-MMA-6MP4-HM16	SS-MMA-HM4-TM16
	SS-MMA-6MP4-HM21	SS-MMA-HM4-TM21
	SS-MMA-6MP6-HM9	SS-MMA-HM6-TM9
	SS-MMA-6MP6-HM12	SS-MMA-HM6-TM12
	SS-MMA-6MP6-HM14	SS-MMA-HM6-TM14
	SS-MMA-6MP6-HM16	SS-MMA-HM6-TM16
	SS-MMA-6MP6-HM21	SS-MMA-HM6-TM21
	SS-MMA-6MP9-HM9	SS-MMA-HM9-TM9
	SS-MMA-6MP9-HM12	SS-MMA-HM9-TM12
	SS-MMA-6MP9-HM14	SS-MMA-HM9-TM14
	SS-MMA-6MP9-HM16	SS-MMA-HM9-TM16
	SS-MMA-6MP9-HM21	SS-MMA-HM9-TM21
	SS-MMA-2MP4	SS-MMA-MM4
	SS-MMA-2MP6-2MP4	SS-MMA-MM6-MM4
	SS-MMA-2MP6	SS-MMA-MM6
	SS-MMA-2MP9-2MP4	SS-MMA-MM9-MM4
	SS-MMA-2MP9-2MP6	SS-MMA-MM9-MM6
	SS-MMA-2MP9	SS-MMA-MM9
	SS-MMA-2MP12-2MP4	SS-MMA-MM12-MM4
	SS-MMA-2MP12-2MP6	SS-MMA-MM12-MM6
	SS-MMA-2MP12-2MP9	SS-MMA-MM12-MM9
	SS-MMA-2MP12	SS-MMA-MM12
	SS-MMA-2MP16-2MP4	SS-MMA-MM16-MM4
	SS-MMA-2MP16-2MP6	SS-MMA-MM16-MM6
	SS-MMA-2MP16-2MP9	SS-MMA-MM16-MM9

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-MMA-2MP16-2MP12	SS-MMA-MM16-MM12
SS-MMA-2MP16	SS-MMA-MM16
SS-MMA-2MP4-DMP2	SS-MMA-MM4-DFM2
SS-MMA-2MP4-DMP4	SS-MMA-MM4-DFM4
SS-MMA-2MP4-DMP6	SS-MMA-MM4-DFM6
SS-MMA-2MP4-DMP8	SS-MMA-MM4-DFM8
SS-MMA-2MP6-DMP2	SS-MMA-MM6-DFM2
SS-MMA-2MP6-DMP4	SS-MMA-MM6-DFM4
SS-MMA-2MP6-DMP6	SS-MMA-MM6-DFM6
SS-MMA-2MP6-DMP8	SS-MMA-MM6-DFM8
SS-MMA-2MP9-DMP2	SS-MMA-MM9-DFM2
SS-MMA-2MP9-DMP4	SS-MMA-MM9-DFM4
SS-MMA-2MP9-DMP6	SS-MMA-MM9-DFM6
SS-MMA-2MP9-DMP8	SS-MMA-MM9-DFM8
SS-MMA-2MP12-DMP2	SS-MMA-MM12-DFM2
SS-MMA-2MP12-DMP4	SS-MMA-MM12-DFM4
SS-MMA-2MP12-DMP6	SS-MMA-MM12-DFM6
SS-MMA-2MP12-DMP8	SS-MMA-MM12-DFM8
SS-MMA-2MP16-DMP2	SS-MMA-MM16-DFM2
SS-MMA-2MP16-DMP4	SS-MMA-MM16-DFM4
SS-MMA-2MP16-DMP6	SS-MMA-MM16-DFM6
SS-MMA-2MP16-DMP8	SS-MMA-MM16-DFM8
SS-MMA-2MP4-NS2	SS-MMA-MM4-NS2
SS-MMA-2MP4-NS4	SS-MMA-MM4-NS4
SS-MMA-2MP4-NS6	SS-MMA-MM4-NS6
SS-MMA-2MP4-NS8	SS-MMA-MM4-NS8
SS-MMA-2MP4-NS12	SS-MMA-MM4-NS12
SS-MMA-2MP4-NS16	SS-MMA-MM4-NS16
SS-MMA-2MP6-NS2	SS-MMA-MM6-NS2
SS-MMA-2MP6-NS4	SS-MMA-MM6-NS4
SS-MMA-2MP6-NS6	SS-MMA-MM6-NS6
SS-MMA-2MP6-NS8	SS-MMA-MM6-NS8
SS-MMA-2MP6-NS12	SS-MMA-MM6-NS12
SS-MMA-2MP6-NS16	SS-MMA-MM6-NS16
SS-MMA-2MP9-NS2	SS-MMA-MM9-NS2
SS-MMA-2MP9-NS4	SS-MMA-MM9-NS4
SS-MMA-2MP9-NS6	SS-MMA-MM9-NS6
SS-MMA-2MP9-NS8	SS-MMA-MM9-NS8
SS-MMA-2MP9-NS12	SS-MMA-MM9-NS12
SS-MMA-2MP9-NS16	SS-MMA-MM9-NS16
SS-MMA-2MP12-NS2	SS-MMA-MM12-NS2
SS-MMA-2MP12-NS4	SS-MMA-MM12-NS4
SS-MMA-2MP12-NS6	SS-MMA-MM12-NS6
SS-MMA-2MP12-NS8	SS-MMA-MM12-NS8
SS-MMA-2MP12-NS12	SS-MMA-MM12-NS12
SS-MMA-2MP12-NS16	SS-MMA-MM12-NS16
SS-MMA-2MP16-NS2	SS-MMA-MM16-NS2
SS-MMA-2MP16-NS4	SS-MMA-MM16-NS4
SS-MMA-2MP16-NS6	SS-MMA-MM16-NS6
SS-MMA-2MP16-NS8	SS-MMA-MM16-NS8
SS-MMA-2MP16-NS12	SS-MMA-MM16-NS12
SS-MMA-2MP16-NS16	SS-MMA-MM16-NS16
SS-MMA-2MP4-AN4	SS-MMA-MM4-JM4
SS-MMA-2MP4-AN6	SS-MMA-MM4-JM6
SS-MMA-2MP4-AN8	SS-MMA-MM4-JM8
SS-MMA-2MP4-AN10	SS-MMA-MM4-JM10
SS-MMA-2MP4-AN12	SS-MMA-MM4-JM12
SS-MMA-2MP4-AN16	SS-MMA-MM4-JM16
SS-MMA-2MP6-AN4	SS-MMA-MM6-JM4
SS-MMA-2MP6-AN6	SS-MMA-MM6-JM6
SS-MMA-2MP6-AN8	SS-MMA-MM6-JM8
SS-MMA-2MP6-AN10	SS-MMA-MM6-JM10
SS-MMA-2MP6-AN12	SS-MMA-MM6-JM12
SS-MMA-2MP9-AN4	SS-MMA-MM9-JM4
SS-MMA-2MP9-AN6	SS-MMA-MM9-JM6
SS-MMA-2MP9-AN8	SS-MMA-MM9-JM8
SS-MMA-2MP9-AN10	SS-MMA-MM9-JM10
SS-MMA-2MP9-AN12	SS-MMA-MM9-JM12
SS-MMA-2MP9-AN16	SS-MMA-MM9-JM16
SS-MMA-2MP12-AN4	SS-MMA-MM12-JM4
SS-MMA-2MP12-AN6	SS-MMA-MM12-JM6
SS-MMA-2MP12-AN8	SS-MMA-MM12-JM8
SS-MMA-2MP12-AN10	SS-MMA-MM12-JM10
SS-MMA-2MP12-AN12	SS-MMA-MM12-JM12
SS-MMA-2MP12-AN16	SS-MMA-MM12-JM16
SS-MMA-2MP16-AN4	SS-MMA-MM16-JM4
SS-MMA-2MP16-AN6	SS-MMA-MM16-JM6

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-MMA-2MP16-AN8	SS-MMA-MM16-JM8
SS-MMA-2MP16-AN10	SS-MMA-MM16-JM10
SS-MMA-2MP16-AN12	SS-MMA-MM16-JM12
SS-MMA-2MP16-AN16	SS-MMA-MM16-JM16
SS-MMA-2MP4-HM9	SS-MMA-MM4-TM9
SS-MMA-2MP4-HM12	SS-MMA-MM4-TM12
SS-MMA-2MP4-HM14	SS-MMA-MM4-TM14
SS-MMA-2MP4-HM16	SS-MMA-MM4-TM16
SS-MMA-2MP4-HM21	SS-MMA-MM4-TM21
SS-MMA-2MP6-HM9	SS-MMA-MM6-TM9
SS-MMA-2MP6-HM12	SS-MMA-MM6-TM12
SS-MMA-2MP6-HM14	SS-MMA-MM6-TM14
SS-MMA-2MP6-HM16	SS-MMA-MM6-TM16
SS-MMA-2MP6-HM21	SS-MMA-MM6-TM21
SS-MMA-2MP9-HM9	SS-MMA-MM9-TM9
SS-MMA-2MP9-HM12	SS-MMA-MM9-TM12
SS-MMA-2MP9-HM14	SS-MMA-MM9-TM14
SS-MMA-2MP9-HM16	SS-MMA-MM9-TM16
SS-MMA-2MP9-HM21	SS-MMA-MM9-TM21
SS-MMA-2MP12-HM9	SS-MMA-MM12-TM9
SS-MMA-2MP12-HM12	SS-MMA-MM12-TM12
SS-MMA-2MP12-HM14	SS-MMA-MM12-TM14
SS-MMA-2MP12-HM16	SS-MMA-MM12-TM16
SS-MMA-2MP12-HM21	SS-MMA-MM12-TM21
SS-MMA-2MP16-HM9	SS-MMA-MM16-TM9
SS-MMA-2MP16-HM12	SS-MMA-MM16-TM12
SS-MMA-2MP16-HM14	SS-MMA-MM16-TM14
SS-MMA-2MP16-HM16	SS-MMA-MM16-TM16
SS-MMA-2MP16-HM21	SS-MMA-MM16-TM21
SS-MMA-DMP2	SS-MMA-DFM2
SS-MMA-DMP4-DMP2	SS-MMA-DFM4-DFM2
SS-MMA-DMP4	SS-MMA-DFM4
SS-MMA-DMP6-DMP2	SS-MMA-DFM6-DFM2
SS-MMA-DMP6-DMP4	SS-MMA-DFM6-DFM4
SS-MMA-DMP6	SS-MMA-DFM6
SS-MMA-DMP8-DMP2	SS-MMA-DFM8-DFM2
SS-MMA-DMP8-DMP4	SS-MMA-DFM8-DFM4
SS-MMA-DMP8-DMP6	SS-MMA-DFM8-DFM6
SS-MMA-DMP8	SS-MMA-DFM8
SS-MMA-DMP2-NS2	SS-MMA-DFM2-NS2
SS-MMA-DMP2-NS4	SS-MMA-DFM2-NS4
SS-MMA-DMP2-NS6	SS-MMA-DFM2-NS6
SS-MMA-DMP2-NS8	SS-MMA-DFM2-NS8
SS-MMA-DMP2-NS12	SS-MMA-DFM2-NS12
SS-MMA-DMP2-NS16	SS-MMA-DFM2-NS16
SS-MMA-DMP4-NS2	SS-MMA-DFM4-NS2
SS-MMA-DMP4-NS4	SS-MMA-DFM4-NS4
SS-MMA-DMP4-NS6	SS-MMA-DFM4-NS6
SS-MMA-DMP4-NS8	SS-MMA-DFM4-NS8
SS-MMA-DMP4-NS12	SS-MMA-DFM4-NS12
SS-MMA-DMP4-NS16	SS-MMA-DFM4-NS16
SS-MMA-DMP6-NS2	SS-MMA-DFM6-NS2
SS-MMA-DMP6-NS4	SS-MMA-DFM6-NS4
SS-MMA-DMP6-NS6	SS-MMA-DFM6-NS6
SS-MMA-DMP6-NS8	SS-MMA-DFM6-NS8
SS-MMA-DMP6-NS12	SS-MMA-DFM6-NS12
SS-MMA-DMP6-NS16	SS-MMA-DFM6-NS16
SS-MMA-DMP8-NS2	SS-MMA-DFM8-NS2
SS-MMA-DMP8-NS4	SS-MMA-DFM8-NS4
SS-MMA-DMP8-NS6	SS-MMA-DFM8-NS6
SS-MMA-DMP8-NS8	SS-MMA-DFM8-NS8
SS-MMA-DMP8-NS12	SS-MMA-DFM8-NS12
SS-MMA-DMP8-NS16	SS-MMA-DFM8-NS16
SS-MMA-DMP2-AN4	SS-MMA-DFM2-JM4
SS-MMA-DMP2-AN6	SS-MMA-DFM2-JM6
SS-MMA-DMP2-AN8	SS-MMA-DFM2-JM8
SS-MMA-DMP2-AN10	SS-MMA-DFM2-JM10
SS-MMA-DMP2-AN12	SS-MMA-DFM2-JM12
SS-MMA-DMP2-AN16	SS-MMA-DFM2-JM16
SS-MMA-DMP4-AN4	SS-MMA-DFM4-JM4
SS-MMA-DMP4-AN6	SS-MMA-DFM4-JM6
SS-MMA-DMP4-AN8	SS-MMA-DFM4-JM8
SS-MMA-DMP4-AN10	SS-MMA-DFM4-JM10
SS-MMA-DMP4-AN12	SS-MMA-DFM4-JM12
SS-MMA-DMP4-AN16	SS-MMA-DFM4-JM16
SS-MMA-DMP6-AN4	SS-MMA-DFM6-JM4
SS-MMA-DMP6-AN6	SS-MMA-DFM6-JM6
SS-MMA-DMP6-AN8	SS-MMA-DFM6-JM8

AMH Series Adapter Fittings

Formerly Used P/N	New P/N Adopted
SS-MMA-DMP6-AN10	SS-MMA-DFM6-JM10
SS-MMA-DMP6-AN12	SS-MMA-DFM6-JM12
SS-MMA-DMP6-AN16	SS-MMA-DFM6-JM16
SS-MMA-DMP8-AN4	SS-MMA-DFM8-JM4
SS-MMA-DMP8-AN6	SS-MMA-DFM8-JM6
SS-MMA-DMP8-AN8	SS-MMA-DFM8-JM8
SS-MMA-DMP8-AN10	SS-MMA-DFM8-JM10
SS-MMA-DMP8-AN12	SS-MMA-DFM8-JM12
SS-MMA-DMP8-AN16	SS-MMA-DFM8-JM16
SS-MMA-DMP2-HM9	SS-MMA-DFM2-TM9
SS-MMA-DMP2-HM12	SS-MMA-DFM2-TM12
SS-MMA-DMP2-HM14	SS-MMA-DFM2-TM14
SS-MMA-DMP2-HM16	SS-MMA-DFM2-TM16
SS-MMA-DMP2-HM21	SS-MMA-DFM2-TM21
SS-MMA-DMP4-HM9	SS-MMA-DFM4-TM9
SS-MMA-DMP4-HM12	SS-MMA-DFM4-TM12
SS-MMA-DMP4-HM14	SS-MMA-DFM4-TM14
SS-MMA-DMP4-HM16	SS-MMA-DFM4-TM16
SS-MMA-DMP4-HM21	SS-MMA-DFM4-TM21
SS-MMA-DMP6-HM9	SS-MMA-DFM6-TM9
SS-MMA-DMP6-HM12	SS-MMA-DFM6-TM12
SS-MMA-DMP6-HM14	SS-MMA-DFM6-TM14
SS-MMA-DMP6-HM16	SS-MMA-DFM6-TM16
SS-MMA-DMP6-HM21	SS-MMA-DFM6-TM21
SS-MMA-DMP8-HM12	SS-MMA-DFM8-TM12
SS-MMA-DMP8-HM14	SS-MMA-DFM8-TM14
SS-MMA-DMP8-HM16	SS-MMA-DFM8-TM16
SS-MMA-DMP8-HM21	SS-MMA-DFM8-TM21

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Tubing

Formerly Used P/N		New P/N Adopted	
SS-15T2-037-6M	SS-T15A-2-037-6M		
SS-15T4-083-6M	SS-T15A-4-083-6M		
SS-15T6-118-6M	SS-T15A-6-118-6M		
SS-15T8-156-6M	SS-T15A-8-156-6M		
SS-HT-6FH4-6M	SS-T60H-4-6M		
SS-HT-6FH6-6M	SS-T60H-6-6M		
SS-HT-6FH9-6M	SS-T60H-9-6M		
SS-MT-2FH6-6M	SS-T20M-6-6M		
SS-MT-2FH9-6M	SS-T20M-9-6M		
SS-MT-2FH12-6M	SS-T20M-12-6M		
SS-MT-2FH16-6M	SS-T20M-16-6M		
S4-MT-2FH6-6M	S4-T20M-6-6M		
S4-HT-6FH6-6M	S4-T60H-6-6M		
SS-MT-2FH4-20	SS-T20M-4-20F		
SS-MT-2FH6-20	SS-T20M-6-20F		
SS-MT-2FH9-20	SS-T20M-9-20F		
SS-MT-2FH12-20	SS-T20M-12-20F		
SS-MT-2FH16-20	SS-T20M-16-20F		
SS-HT-6FH4-20	SS-T60H-4-20F		
SS-HT-6FH6-20	SS-T60H-6-20F		
SS-HT-6FH9-20	SS-T60H-9-20F		
SS-15T4-065-6M	SS-T15A-4-065-6M		
SS-15T8-134-6M	SS-T15A-8-134-6M		
SS-15T2-037-20	SS-T15A-2-037-20F		
SS-15T4-083-20	SS-T15A-4-083-20F		
SS-15T6-118-20	SS-T15A-6-118-20F		
SS-15T8-156-20	SS-T15A-8-156-20F		
SS-15T12-240-20	SS-T15A-12-240-20F		
SS-15T12-240-6M	SS-T15A-12-240-6M		
SS-CTN-2FH4-2.75	SS-T20M-4CT-2.75N		
SS-CTN-2FH9-4	SS-T20M-9CT-4N		
SS-CTN-2FH12-4	SS-T20M-12CT-4N		
SS-CTN-2FH16-6	SS-T20M-16CT-6N		
SS-CTN-2FH4-3	SS-T20M-4CT-3N		
SS-CTN-2FH4-4	SS-T20M-4CT-4N		
SS-CTN-2FH4-6	SS-T20M-4CT-6N		
SS-CTN-2FH6-6	SS-T20M-6CT-6N		
SS-CTN-2FH9-6	SS-T20M-9CT-6N		
SS-CTN-2FH12-6	SS-T20M-12CT-6N		
SS-CTN-2FH12-8	SS-T20M-12CT-8N		
SS-CTN-2FH12-10	SS-T20M-12CT-10N		
SS-CTN-2FH16-8	SS-T20M-16CT-8N		
SS-CTN-2FH16-10	SS-T20M-16CT-10N		
SS-CTN-2FH16-12	SS-T20M-16CT-12N		
SS-CTN-2FH4-8	SS-T20M-4CT-8N		
SS-CTN-2FH4-10	SS-T20M-4CT-10N		
SS-CTN-2FH4-12	SS-T20M-4CT-12N		
SS-CTN-2FH12-12	SS-T20M-12CT-12N		
SS-CTN-2FH9-8	SS-T20M-9CT-8N		
SS-CTN-2FH9-12	SS-T20M-9CT-12N		
SS-CTN-2FH6-8	SS-T20M-6CT-8N		
SS-CTN-2FH6-10	SS-T20M-6CT-10N		
SS-CTN-2FH6-12	SS-T20M-6CT-12N		

Quick Couplings

Formerly Used P/N		New P/N Adopted	
HQSSS-2FH9-NP	HQSSS-MF9-NP		
HQSSS-2FH9-CP	HQSSS-MF9-CP		
HQC4P-AN4-CP	HQC4P-JM4-CP		
HQC4P-AN6-CP	HQC4P-JM6-CP		
HQC4P-AN8-CP	HQC4P-JM8-CP		
HQC4P-2MP4-CP	HQC4P-MM4-CP		
HQC4P-2MP6-CP	HQC4P-MM6-CP		
HQC4P-2MP9-CP	HQC4P-MM9-CP		
HQC4P-6MP4-CP	HQC4P-HM4-CP		
HQC4P-6MP6-CP	HQC4P-HM6-CP		
HQC4P-6MP9-CP	HQC4P-HM9-CP		
HQC4P-HM9-CP	HQC4P-TM9-CP		
HQC4P-HM12-CP	HQC4P-TM12-CP		
HQC4P-HM16-CP	HQC4P-TM16-CP		
HQC4P-AN4-NP	HQC4P-JM4-NP		
HQC4P-AN6-NP	HQC4P-JM6-NP		
HQC4P-AN8-NP	HQC4P-JM8-NP		
HQC4P-2MP4-NP	HQC4P-MM4-NP		
HQC4P-2MP6-NP	HQC4P-MM6-NP		
HQC4P-2MP9-NP	HQC4P-MM9-NP		
HQC4P-6MP4-NP	HQC4P-HM4-NP		
HQC4P-6MP6-NP	HQC4P-HM6-NP		
HQC4P-6MP9-NP	HQC4P-HM9-NP		
HQC4P-HM9-NP	HQC4P-TM9-NP		
HQC4P-HM12-NP	HQC4P-TM12-NP		
HQC4P-HM16-NP	HQC4P-TM16-NP		
HQC4P-AN4-NP1	HQC4P-JM4-NPO		
HQC4P-AN6-NP1	HQC4P-JM6-NPO		
HQC4P-AN8-NP1	HQC4P-JM8-NPO		
HQC4P-2MP4-NP1	HQC4P-MM4-NPO		
HQC4P-2MP6-NP1	HQC4P-MM6-NPO		
HQC4P-2MP9-NP1	HQC4P-MM9-NPO		
HQC4P-6MP4-NP1	HQC4P-HM4-NPO		
HQC4P-6MP6-NP1	HQC4P-HM6-NPO		
HQC4P-6MP9-NP1	HQC4P-HM9-NPO		
HQC4P-HM9-NP1	HQC4P-TM9-NPO		
HQC4P-HM12-NP1	HQC4P-TM12-NPO		
HQC4P-HM16-NP1	HQC4P-TM16-NPO		

Line Filters

Formerly Used P/N		New P/N Adopted	
15FDSS-DHL2-0510	15FDSS-DFF2-0510		
15FDSS-DHL2-1035	15FDSS-DFF2-1035		
15FDSS-DHL2-3565	15FDSS-DFF2-3565		
15FDSS-DHL4-0510	15FDSS-DFF4-0510		
15FDSS-DHL4-1035	15FDSS-DFF4-1035		
15FDSS-DHL4-3565	15FDSS-DFF4-3565		
15FDSS-DHL6-0510	15FDSS-DFF6-0510		
15FDSS-DHL6-1035	15FDSS-DFF6-1035		
15FDSS-DHL6-3565	15FDSS-DFF6-3565		
15FDSS-DHL8-0510	15FDSS-DFF8-0510		
15FDSS-DHL8-1035	15FDSS-DFF8-1035		
15FDSS-DHL8-3565	15FDSS-DFF8-3565		
15FCSS-DHL4-5	15FCSS-DFF4-5		
15FCSS-DHL4-35	15FCSS-DFF4-35		
15FCSS-DHL4-65	15FCSS-DFF4-65		
15FCSS-DHL6-5	15FCSS-DFF6-5		
15FCSS-DHL6-35	15FCSS-DFF6-35		
15FCSS-DHL6-65	15FCSS-DFF6-65		
15FCSS-DHL8-5	15FCSS-DFF8-5		
15FCSS-DHL8-35	15FCSS-DFF8-35		
15FCSS-DHL8-65	15FCSS-DFF8-65		
20FDSS-2FH9-0510	20FDSS-MF9-0510		
20FDSS-2FH9-1035	20FDSS-MF9-1035		
20FDSS-2FH9-3565	20FDSS-MF9-3565		
20FCSS-2FH4-5	20FCSS-MF4-5		
20FCSS-2FH4-35	20FCSS-MF4-35		
20FCSS-2FH4-65	20FCSS-MF4-65		
20FCSS-2FH6-5	20FCSS-MF6-5		
20FCSS-2FH6-35	20FCSS-MF6-35		
20FCSS-2FH6-65	20FCSS-MF6-65		
20FCSS-2FH9-5	20FCSS-MF9-5		
20FCSS-2FH9-35	20FCSS-MF9-35		

Line Filters

Formerly Used P/N		New P/N Adopted	
20FCSS-2FH9-65	20FCSS-MF9-65		
20FCSS-2FH12-5	20FCSS-MF12-5		
20FCSS-2FH12-35	20FCSS-MF12-35		
20FCSS-2FH12-65	20FCSS-MF12-65		
20FCSS-2FH16-5	20FCSS-MF16-5		
20FCSS-2FH16-35	20FCSS-MF16-35		
20FCSS-2FH16-65	20FCSS-MF16-65		
60FDSS-6FH4-0510	60FDSS-HF4-0510		
60FDSS-6FH4-1035	60FDSS-HF4-1035		
60FDSS-6FH4-3565	60FDSS-HF4-3565		
60FDSS-6FH6-0510	60FDSS-HF6-0510		
60FDSS-6FH6-1035	60FDSS-HF6-1035		
60FDSS-6FH6-3565	60FDSS-HF6-3565		
60FDSS-6FH9-0510	60FDSS-HF9-0510		
60FDSS-6FH9-1035	60FDSS-HF9-1035		
60FDSS-6FH9-3565	60FDSS-HF9-3565		
60FCSS-6FH4-5	60FCSS-HF4-5		
60FCSS-6FH4-35	60FCSS-HF4-35		
60FCSS-6FH4-65	60FCSS-HF4-65		
60FCSS-6FH6-5	60FCSS-HF6-5		
60FCSS-6FH6-35	60FCSS-HF6-35		
60FCSS-6FH6-65	60FCSS-HF6-65		
60FCSS-6FH9-5	60FCSS-HF9-5		
60FCSS-6FH9-35	60FCSS-HF9-35		
60FCSS-6FH9-65	60FCSS-HF9-65		

Ball Valves and Pneumatic Ball Valves

Formerly Used P/N		New P/N Adopted	
10BSS-DFF12-8-1-ATC	10BSS-DFF12-8-1-O		
10BSS-DFF12-8-1-ATO	10BSS-DFF12-8-1-C		
10BSS-MF12-8-1-ATO	10BSS-MF12-8-1-C		
10BSS-MF12-8-1-ATC	10BSS-MF12-8-1-O		
10BSS-MF12-8-1-AOC	10BSS-MF12-8-1-D		
10BSS-FNS16-8-1-ATO	10BSS-FNS16-8-1-C		
10BSS-FNS16-8-1-ATC	10BSS-FNS16-8-1-O		
15BSS-DFF6-1-AOC	15BSS-DFF6-4-1-D		
15BSS-DFF8-1-ATO	15BSS-DFF8-4-1-C		
15BSS-FNS4-1-ATO	15BSS-FNS4-4-1-C		
15BSS-FNS4-1-ATC	15BSS-FNS4-4-1-O		
15BSS-FNS4-1-N-ATO	15BSS-FNS4-4B-1-C		
15BSS-FNS8-6-1-N-AOC	15BSS-FNS8-6B-1-D		
15BSS-MF12-8-1-AOC	15BSS-MF12-8-1-D		
20BSS-DFF4-1-ATO	20BSS-DFF4-4-1-C		
20BSS-MF6-1-ATO	20BSS-MF6-4-1-C		
20BSS-MF6-2-AOC	20BSS-MF6-4-2-DX		
20BSS-MF6-6-1-ATO	20BSS-MF6-6-1-C		
20BSS-MF9-6-1-ATO	20BSS-MF9-6-1-C		
20BSS-MF9-6-1-N-ATO	20BSS-MF9-6B-1-C		
20BSS-MF12-6-1-ATO	20BSS-MF12-6-1-C		
20BSS-MF12-6-1-ATC	20BSS-MF12-6-1-O		

Needle Valves and Pneumatic Needle Valves

Formerly Used P/N	New P/N Adopted
10NSS-2FH9-1	10NSS-MF9-1
10NSS-2FH12-1	10NSS-MF12-1
10NSS-2FH16-1	10NSS-MF16-1
10NSS-2FH9-2	10NSS-MF9-2
10NSS-2FH12-2	10NSS-MF12-2
10NSS-2FH16-2	10NSS-MF16-2
10NSS-2FH9-3	10NSS-MF9-3
10NSS-2FH12-3	10NSS-MF12-3
10NSS-2FH16-3	10NSS-MF16-3
10NSS-2FH9-4	10NSS-MF9-4
10NSS-2FH12-4	10NSS-MF12-4
10NSS-2FH16-4	10NSS-MF16-4
10NSS-2FH9-5	10NSS-MF9-5
10NSS-2FH12-5	10NSS-MF12-5
10NSS-2FH16-5	10NSS-MF16-5
10NSS-2FH9-6	10NSS-MF9-6
10NSS-2FH12-6	10NSS-MF12-6
10NSS-2FH16-6	10NSS-MF16-6
10NSS-FNS12-1	10NSS-FNS12-1
10NSS-FNS16-1	10NSS-FNS16-1
10NSS-FRT12-1	10NSS-FRT12-1
10NSS-FRT16-1	10NSS-FRT16-1
10NSS-FNS12-2	10NSS-FNS12-2
10NSS-FNS16-2	10NSS-FNS16-2
10NSS-FRT12-2	10NSS-FRT12-2
10NSS-FRT16-2	10NSS-FRT16-2
10NSS-FNS12-4	10NSS-FNS12-4
10NSS-FNS16-4	10NSS-FNS16-4
10NSS-FRT12-4	10NSS-FRT12-4
10NSS-FRT16-4	10NSS-FRT16-4
10NSS-FNS12-5	10NSS-FNS12-5
10NSS-FNS16-5	10NSS-FNS16-5
10NSS-FRT12-5	10NSS-FRT12-5
10NSS-FRT16-5	10NSS-FRT16-5
10NSS-FNS12-6	10NSS-FNS12-6
10NSS-FNS16-6	10NSS-FNS16-6
10NSS-FRT12-6	10NSS-FRT12-6
10NSS-FRT16-6	10NSS-FRT16-6
15NSS-DHL2-1	15NSS-DF2-1
15NSS-DHL4-1	15NSS-DF4-1
15NSS-DHL6-1	15NSS-DF6-1
15NSS-DHL8-1	15NSS-DF8-1
15NSS-DHL2-2	15NSS-DF2-2
15NSS-DHL4-2	15NSS-DF4-2
15NSS-DHL6-2	15NSS-DF6-2
15NSS-DHL8-2	15NSS-DF8-2
15NSS-DHL2-3	15NSS-DF2-3
15NSS-DHL4-3	15NSS-DF4-3
15NSS-DHL6-3	15NSS-DF6-3
15NSS-DHL8-3	15NSS-DF8-3
15NSS-DHL2-4	15NSS-DF2-4
15NSS-DHL4-4	15NSS-DF4-4
15NSS-DHL6-4	15NSS-DF6-4
15NSS-DHL8-4	15NSS-DF8-4
15NSS-DHL2-5	15NSS-DF2-5
15NSS-DHL4-5	15NSS-DF4-5
15NSS-DHL6-5	15NSS-DF6-5
15NSS-DHL8-5	15NSS-DF8-5
15NSS-DHL2-6	15NSS-DF2-6
15NSS-DHL4-6	15NSS-DF4-6
15NSS-DHL6-6	15NSS-DF6-6
15NSS-DHL8-6	15NSS-DF8-6
15NSS-FNS2-1	15NSS-FNS2-1
15NSS-FRT2-1	15NSS-FRT2-1
15NSS-FNS4-1	15NSS-FNS4-1
15NSS-FRT4-1	15NSS-FRT4-1
15NSS-FNS6-1	15NSS-FNS6-1
15NSS-FRT6-1	15NSS-FRT6-1
15NSS-FNS8-1	15NSS-FNS8-1
15NSS-FRT8-1	15NSS-FRT8-1
15NSS-FNS2-2	15NSS-FNS2-2
15NSS-FRT2-2	15NSS-FRT2-2
15NSS-FNS4-2	15NSS-FNS4-2
15NSS-FRT4-2	15NSS-FRT4-2
15NSS-FNS6-2	15NSS-FNS6-2
15NSS-FRT6-2	15NSS-FRT6-2
15NSS-FNS8-2	15NSS-FNS8-2

Needle Valves and Pneumatic Needle Valves

Formerly Used P/N	New P/N Adopted
15NSS-FRT8-2	15NSS-FRT8-2
15NSS-FNS2-4	15NSS-FNS2-4
15NSS-FRT2-4	15NSS-FRT2-4
15NSS-FNS4-4	15NSS-FNS4-4
15NSS-FRT4-4	15NSS-FRT4-4
15NSS-FNS6-4	15NSS-FNS6-4
15NSS-FRT6-4	15NSS-FRT6-4
15NSS-FNS8-4	15NSS-FNS8-4
15NSS-FRT8-4	15NSS-FRT8-4
15NSS-FNS2-5	15NSS-FNS2-5
15NSS-FRT2-5	15NSS-FRT2-5
15NSS-FNS4-5	15NSS-FNS4-5
15NSS-FRT4-5	15NSS-FRT4-5
15NSS-FNS6-5	15NSS-FNS6-5
15NSS-FRT6-5	15NSS-FRT6-5
15NSS-FNS8-5	15NSS-FNS8-5
15NSS-FRT8-5	15NSS-FRT8-5
15NSS-FNS2-6	15NSS-FNS2-6
15NSS-FRT2-6	15NSS-FRT2-6
15NSS-FNS4-6	15NSS-FNS4-6
15NSS-FRT4-6	15NSS-FRT4-6
15NSS-FNS6-6	15NSS-FNS6-6
15NSS-FRT6-6	15NSS-FRT6-6
15NSS-FNS8-6	15NSS-FNS8-6
15NSS-FRT8-6	15NSS-FRT8-6
20NSS-2FH4-1	20NSS-MF4-1
20NSS-2FH6-1	20NSS-MF6-1
20NSS-2FH9-1	20NSS-MF9-1
20NSS-2FH12-1	20NSS-MF12-1
20NSS-2FH16-1	20NSS-MF16-1
20NSS-2FH4-2	20NSS-MF4-2
20NSS-2FH6-2	20NSS-MF6-2
20NSS-2FH9-2	20NSS-MF9-2
20NSS-2FH12-2	20NSS-MF12-2
20NSS-2FH16-2	20NSS-MF16-2
20NSS-2FH4-3	20NSS-MF4-3
20NSS-2FH6-3	20NSS-MF6-3
20NSS-2FH9-3	20NSS-MF9-3
20NSS-2FH12-3	20NSS-MF12-3
20NSS-2FH16-3	20NSS-MF16-3
20NSS-2FH4-4	20NSS-MF4-4
20NSS-2FH6-4	20NSS-MF6-4
20NSS-2FH9-4	20NSS-MF9-4
20NSS-2FH12-4	20NSS-MF12-4
20NSS-2FH16-4	20NSS-MF16-4
20NSS-2FH4-5	20NSS-MF4-5
20NSS-2FH6-5	20NSS-MF6-5
20NSS-2FH9-5	20NSS-MF9-5
20NSS-2FH12-5	20NSS-MF12-5
20NSS-2FH16-5	20NSS-MF16-5
20NSS-2FH4-6	20NSS-MF4-6
20NSS-2FH6-6	20NSS-MF6-6
20NSS-2FH9-6	20NSS-MF9-6
20NSS-2FH12-6	20NSS-MF12-6
20NSS-2FH16-6	20NSS-MF16-6
30NSS-6FH4-1	30NSS-HF4-1
30NSS-6FH6-1	30NSS-HF6-1
30NSS-6FH9-1	30NSS-HF9-1
30NSS-6FH4-2	30NSS-HF4-2
30NSS-6FH6-2	30NSS-HF6-2
30NSS-6FH9-2	30NSS-HF9-2
30NSS-6FH4-3	30NSS-HF4-3
30NSS-6FH6-3	30NSS-HF6-3
30NSS-6FH9-3	30NSS-HF9-3
30NSS-6FH4-4	30NSS-HF4-4
30NSS-6FH6-4	30NSS-HF6-4
30NSS-6FH9-4	30NSS-HF9-4
30NSS-6FH4-5	30NSS-HF4-5
30NSS-6FH6-5	30NSS-HF6-5
30NSS-6FH9-5	30NSS-HF9-5
30NSS-6FH4-6	30NSS-HF4-6
30NSS-6FH6-6	30NSS-HF6-6
30NSS-6FH9-6	30NSS-HF9-6
60NSS-6FH4-1	60NSS-HF4-1
60NSS-6FH6-1	60NSS-HF6-1
60NSS-6FH9-1	60NSS-HF9-1
60NSS-6FH4-2	60NSS-HF4-2

Needle Valves and Pneumatic Needle Valves

Formerly Used P/N	New P/N Adopted
60NSS-6FH6-2	60NSS-HF6-2
60NSS-6FH9-2	60NSS-HF9-2
60NSS-6FH4-3	60NSS-HF4-3
60NSS-6FH6-3	60NSS-HF6-3
60NSS-6FH9-3	60NSS-HF9-3
60NSS-6FH4-4	60NSS-HF4-4
60NSS-6FH6-4	60NSS-HF6-4
60NSS-6FH9-4	60NSS-HF9-4
60NSS-6FH4-5	60NSS-HF4-5
60NSS-6FH6-5	60NSS-HF6-5
60NSS-6FH9-5	60NSS-HF9-5
60NSS-6FH4-6	60NSS-HF4-6
60NSS-6FH6-6	60NSS-HF6-6
60NSS-6FH9-6	60NSS-HF9-6
10NSS-2FH9-X-ATO	10NSS-MF9-X-C
10NSS-2FH12-X-ATO	10NSS-MF12-X-C
10NSS-2FH16-X-ATO	10NSS-MF16-X-C
10NSS-FNS12-X-ATO	10NSS-FNS12-X-C
10NSS-FNS16-X-ATO	10NSS-FNS16-X-C
10NSS-FRT12-X-ATO	10NSS-FRT12-X-C
10NSS-FRT16-X-ATO	10NSS-FRT16-X-C
15NSS-DHL2-X-ATO	15NSS-DF2-X-C
15NSS-DHL4-X-ATO	15NSS-DF4-X-C
15NSS-DHL6-X-ATO	15NSS-DF6-X-C
15NSS-DHL8-X-ATO	15NSS-DF8-X-C
15NSS-FNS2-X-ATO	15NSS-FNS2-X-C
15NSS-FNS2-X-ATO	15NSS-FNS2-X-C
15NSS-FRT2-X-ATO	15NSS-FRT2-X-C
15NSS-FRT2-X-ATO	15NSS-FRT2-X-C
15NSS-FNS4-X-ATO	15NSS-FNS4-X-C
15NSS-FRT4-X-ATO	15NSS-FRT4-X-C
15NSS-FNS6-X-ATO	15NSS-FNS6-X-C
15NSS-FRT6-X-ATO	15NSS-FRT6-X-C
15NSS-FNS8-X-ATO	15NSS-FNS8-X-C
15NSS-FRT8-X-ATO	15NSS-FRT8-X-C
20NSS-2FH4-X-ATO	20NSS-MF4-X-C
20NSS-2FH6-X-ATO	20NSS-MF6-X-C
20NSS-2FH9-X-ATO	20NSS-MF9-X-C
20NSS-2FH12-X-ATO	20NSS-MF12-X-C
20NSS-2FH16-X-ATO	20NSS-MF16-X-C
30NSS-6FH4-X-ATO	30NSS-HF4-X-C
30NSS-6FH6-X-ATO	30NSS-HF6-X-C
30NSS-6FH9-X-ATO	30NSS-HF9-X-C
30NSS-6FH4-X-ATO	60NSS-HF4-X-C
60NSS-6FH6-X-ATO	60NSS-HF6-X-C
60NSS-6FH9-X-ATO	60NSS-HF9-X-C
10NSS-2FH9-X-ATC	10NSS-MF9-X-O
10NSS-2FH12-X-ATC	10NSS-MF12-X-O
10NSS-2FH16-X-ATC	10NSS-MF16-X-O
10NSS-FNS12-X-ATC	10NSS-FNS12-X-O
10NSS-FNS12-X-ATC	10NSS-FNS12-X-O
10NSS-FRT12-X-ATC	10NSS-FRT12-X-O

Needle Valves and
Pneumatic Needle Valves

Formerly Used P/N		New P/N Adopted	
10NSS-FNS16-X-ATC	10NSS-FNS16-X-LO	10NSS-FNS16-X-O	
10NSS-FRT16-X-ATC	10NSS-FRT16-X-LO	10NSS-FRT16-X-O	
15NSS-DHL2-X-ATC	15NSS-DFF2-X-LO	15NSS-DFF2-X-O	
15NSS-DHL4-X-ATC	15NSS-DFF4-X-LO	15NSS-DFF4-X-O	
15NSS-DHL6-X-ATC	15NSS-DFF6-X-LO	15NSS-DFF6-X-O	
15NSS-DHL8-X-ATC	15NSS-DFF8-X-LO	15NSS-DFF8-X-O	
15NSS-FNS2-X-ATC	15NSS-FNS2-X-LO	15NSS-FNS2-X-O	
15NSS-FRT2-X-ATC	15NSS-FRT2-X-LO	15NSS-FRT2-X-O	
15NSS-FNS4-X-ATC	15NSS-FNS4-X-LO	15NSS-FNS4-X-O	
15NSS-FRT4-X-ATC	15NSS-FRT4-X-LO	15NSS-FRT4-X-O	
15NSS-FNS6-X-ATC	15NSS-FNS6-X-LO	15NSS-FNS6-X-O	
15NSS-FRT6-X-ATC	15NSS-FRT6-X-LO	15NSS-FRT6-X-O	
15NSS-FNS8-X-ATC	15NSS-FNS8-X-LO	15NSS-FNS8-X-O	
15NSS-FRT8-X-ATC	15NSS-FRT8-X-LO	15NSS-FRT8-X-O	
20NSS-2FH4-X-ATC	20NSS-MF4-X-LO	20NSS-MF4-X-O	
20NSS-2FH6-X-ATC	20NSS-MF6-X-LO	20NSS-MF6-X-O	
20NSS-2FH9-X-ATC	20NSS-MF9-X-LO	20NSS-MF9-X-O	
20NSS-2FH12-X-ATC	20NSS-MF12-X-LO	20NSS-MF12-X-O	
20NSS-2FH16-X-ATC	20NSS-MF16-X-LO	20NSS-MF16-X-O	
30NSS-6FH4-X-ATC	30NSS-HF4-X-LO	30NSS-HF4-X-O	
30NSS-6FH6-X-ATC	30NSS-HF6-X-LO	30NSS-HF6-X-O	
30NSS-6FH9-X-ATC	30NSS-HF9-X-LO	30NSS-HF9-X-O	
60NSS-6FH4-X-ATC	60NSS-HF4-X-LO	60NSS-HF4-X-O	
60NSS-6FH6-X-ATC	60NSS-HF6-X-LO	60NSS-HF6-X-O	
60NSS-6FH9-X-ATC	60NSS-HF9-X-LO	60NSS-HF9-X-O	

Check Valves

Formerly Used P/N		New P/N Adopted	
10CSS-FNS12	10CSS-FNS12	10CSS-FNS12	
10CSS-FNS16	10CSS-FNS16	10CSS-FNS16	
10COSS-FNS12	10COSS-FNS12	10COSS-FNS12	
10COSS-FNS16	10COSS-FNS16	10COSS-FNS16	
15CSS-DHL4	15CSS-DFF4	15CSS-DFF4	
15CSS-DHL6	15CSS-DFF6	15CSS-DFF6	
15CSS-DHL8	15CSS-DFF8	15CSS-DFF8	
15CSS-FNS4	15CSS-FNS4	15CSS-FNS4	
15CSS-FNS6	15CSS-FNS6	15CSS-FNS6	
15CSS-FNS8	15CSS-FNS8	15CSS-FNS8	
15COSS-DHL4	15COSS-DFF4	15COSS-DFF4	
15COSS-DHL6	15COSS-DFF6	15COSS-DFF6	
15COSS-DHL8	15COSS-DFF8	15COSS-DFF8	
15COSS-FNS4	15COSS-FNS4	15COSS-FNS4	
15COSS-FNS6	15COSS-FNS6	15COSS-FNS6	
15COSS-FNS8	15COSS-FNS8	15COSS-FNS8	
20CSS-2FH4	20CSS-MF4	20CSS-MF4	
20CSS-2FH6	20CSS-MF6	20CSS-MF6	
20CSS-2FH9	20CSS-MF9	20CSS-MF9	
20CSS-2FH12	20CSS-MF12	20CSS-MF12	
20CSS-2FH16	20CSS-MF16	20CSS-MF16	
20COSS-2FH4	20COSS-MF4	20COSS-MF4	
20COSS-2FH6	20COSS-MF6	20COSS-MF6	
20COSS-2FH9	20COSS-MF9	20COSS-MF9	
20COSS-2FH12	20COSS-MF12	20COSS-MF12	

Check Valves

Formerly Used P/N		New P/N Adopted	
20COSS-2FH16	20COSS-MF16	20COSS-MF16	
60CSS-6FH4	60CSS-HF4	60CSS-HF4	
60CSS-6FH6	60CSS-HF6	60CSS-HF6	
60CSS-6FH9	60CSS-HF9	60CSS-HF9	
60COSS-6FH4	60COSS-HF4	60COSS-HF4	
60COSS-6FH6	60COSS-HF6	60COSS-HF6	
60COSS-6FH9	60COSS-HF9	60COSS-HF9	

Metering Valves

Formerly Used P/N		New P/N Adopted	
15MSS-DHL2	15MSS-DFF2	15MSS-DFF2	
15MSS-DHL4	15MSS-DFF4	15MSS-DFF4	
30MSS-6FH4	30MSS-HF4	30MSS-HF4	
60MSS-6FH4	60MSS-HF4	60MSS-HF4	
60MSS-6FH6	60MSS-HF6	60MSS-HF6	

Relief Valves

Formerly Used P/N		New P/N Adopted	
HSR5S-2FH9-FNS12-1	HSR5S-MF9-FNS12-1	HSR5S-MF9-FNS12-1	
HSR5S-2FH9-FNS12-2	HSR5S-MF9-FNS12-2	HSR5S-MF9-FNS12-2	
HSR5S-2FH9-FNS12-3	HSR5S-MF9-FNS12-3	HSR5S-MF9-FNS12-3	
HMR5S-2FH9-FNS12-1	HMR5S-MF9-FNS12-1	HMR5S-MF9-FNS12-1	
HMR5S-2FH9-FNS12-2	HMR5S-MF9-FNS12-2	HMR5S-MF9-FNS12-2	
HMR5S-2FH9-FNS12-3	HMR5S-MF9-FNS12-3	HMR5S-MF9-FNS12-3	
HMR5S-2FH9-FNS12-4	HMR5S-MF9-FNS12-4	HMR5S-MF9-FNS12-4	
HMR5S-6FH6-FNS12-5	HMR5S-HF6-FNS12-5	HMR5S-HF6-FNS12-5	
HMR5S-6FH6-FNS12-6	HMR5S-HF6-FNS12-6	HMR5S-HF6-FNS12-6	
HMR5S-6FH6-FNS12-7	HMR5S-HF6-FNS12-7	HMR5S-HF6-FNS12-7	
HAR5S-2FH9-FNS12-1	HAR5S-MF9-FNS12-1	HAR5S-MF9-FNS12-1	
HAR5S-2FH9-FNS12-2	HAR5S-MF9-FNS12-2	HAR5S-MF9-FNS12-2	

Bleed Valves and
Block & Bleed Valves

Formerly Used P/N		New P/N Adopted	
15BV5S-DHM6-FNS2	15BV5S-DFT6-FNS2	15BV5S-DFT6-FNS2	
15BV5S-DHM8-FNS2	15BV5S-DFT8-FNS2	15BV5S-DFT8-FNS2	
15BV5S-DHM9-FNS2	15BV5S-DFT9-FNS2	15BV5S-DFT9-FNS2	
20BV5S-2CT6-FNS2	20BV5S-MCT6-FNS2	20BV5S-MCT6-FNS2	
20BV5S-2CT9-FNS2	20BV5S-MCT9-FNS2	20BV5S-MCT9-FNS2	
30BV5S-6CT6-FNS2	30BV5S-HCT6-FNS2	30BV5S-HCT6-FNS2	
30BV5S-6CT9-FNS2	30BV5S-HCT9-FNS2	30BV5S-HCT9-FNS2	
20BV5S-2MP6-FNS2	20BV5S-MM6-FNS2	20BV5S-MM6-FNS2	
20BV5S-2MP9-FNS2	20BV5S-MM9-FNS2	20BV5S-MM9-FNS2	
30BV5S-6MP6-FNS2	30BV5S-HM6-FNS2	30BV5S-HM6-FNS2	
30BV5S-6MP9-FNS2	30BV5S-HM9-FNS2	30BV5S-HM9-FNS2	
15BN5S-FNS4	15BN5S-FNS4	15BN5S-FNS4	
15BN5S-FNS6	15BN5S-FNS6	15BN5S-FNS6	
20BN5S-2FH4	20BN5S-MF4	20BN5S-MF4	
20BN5S-2FH6	20BN5S-MF6	20BN5S-MF6	
20DBN5S-2FH4-2FH4	20DBN5S-MF4-MF4	20DBN5S-MF4-MF4	
20DBN5S-2FH6-2FH4	20DBN5S-MF6-MF4	20DBN5S-MF6-MF4	
20DBN5S-2FH9-2FH4	20DBN5S-MF9-MF4	20DBN5S-MF9-MF4	
20DBN5S-6FH9-2FH4	20DBN5S-HF9-MF4	20DBN5S-HF9-MF4	
15DBB5S-DHL8-FNS4-6	15DBB5S-DFF8-FNS4-6	15DBB5S-DFF8-FNS4-6	
15DBB5S-2FH4-2FH4-6	15DBB5S-MF4-MF4-6	15DBB5S-MF4-MF4-6	
15DBB5S-2FH6-2FH4-6	15DBB5S-MF6-MF4-6	15DBB5S-MF6-MF4-6	
15DBB5S-2FH9-2FH4-6	15DBB5S-MF9-MF4-6	15DBB5S-MF9-MF4-6	
15DBB5S-2FH9-FNS4-6	15DBB5S-MF9-FNS4-6	15DBB5S-MF9-FNS4-6	
15DBB5S-2FH12-2FH4-6	15DBB5S-MF12-MF4-6	15DBB5S-MF12-MF4-6	
15DBB5S-2FH16-FNS4-6	15DBB5S-MF16-FNS4-6	15DBB5S-MF16-FNS4-6	
15DBB5S-FNS4-FNS4-6	15DBB5S-FNS4-FNS4-6	15DBB5S-FNS4-FNS4-6	
15DBB5S-FNS6-FNS4-6	15DBB5S-FNS6-FNS4-6	15DBB5S-FNS6-FNS4-6	
15DBB5S-FNS8-FNS4-6	15DBB5S-FNS8-FNS4-6	15DBB5S-FNS8-FNS4-6	

Sour Service Products

Formerly Used P/N		New P/N Adopted	
SS-CTN-2FH9-4-5	SS-T20M-9CT-4N-5	SS-T20M-9CT-4N-5	
SS-CTN-2FH4-4-5	SS-T20M-4CT-4N-5	SS-T20M-4CT-4N-5	
SS-CTN-2FH16-6-5	SS-T20M-16CT-6N-5	SS-T20M-16CT-6N-5	
SS-CTN-2FH4-2.75-5	SS-T20M-4CT-2.75N-5	SS-T20M-4CT-2.75N-5	
SS-CTN-2FH4-6-5	SS-T20M-4CT-6N-5	SS-T20M-4CT-6N-5	
SS-CTN-2FH4-8-5	SS-T20M-4CT-8N-5	SS-T20M-4CT-8N-5	
SS-CTN-2FH4-10-5	SS-T20M-4CT-10N-5	SS-T20M-4CT-10N-5	
SS-CTN-2FH4-12-5	SS-T20M-4CT-12N-5	SS-T20M-4CT-12N-5	
SS-CTN-2FH6-3-5	SS-T20M-6CT-3N-5	SS-T20M-6CT-3N-5	
SS-CTN-2FH6-4-5	SS-T20M-6CT-4N-5	SS-T20M-6CT-4N-5	
SS-CTN-2FH6-6-5	SS-T20M-6CT-6N-5	SS-T20M-6CT-6N-5	
SS-CTN-2FH6-8-5	SS-T20M-6CT-8N-5	SS-T20M-6CT-8N-5	
SS-CTN-2FH6-10-5	SS-T20M-6CT-10N-5	SS-T20M-6CT-10N-5	
SS-CTN-2FH6-12-5	SS-T20M-6CT-12N-5	SS-T20M-6CT-12N-5	
SS-CTN-2FH9-6-5	SS-T20M-9CT-6N-5	SS-T20M-9CT-6N-5	
SS-CTN-2FH9-8-5	SS-T20M-9CT-8N-5	SS-T20M-9CT-8N-5	
SS-CTN-2FH9-10-5	SS-T20M-9CT-10N-5	SS-T20M-9CT-10N-5	
SS-CTN-2FH9-12-5	SS-T20M-9CT-12N-5	SS-T20M-9CT-12N-5	
SS-CTN-2FH12-4-5	SS-T20M-12CT-4N-5	SS-T20M-12CT-4N-5	
SS-CTN-2FH12-6-5	SS-T20M-12CT-6N-5	SS-T20M-12CT-6N-5	
SS-CTN-2FH12-8-5	SS-T20M-12CT-8N-5	SS-T20M-12CT-8N-5	
SS-CTN-2FH12-10-5	SS-T20M-12CT-10N-5	SS-T20M-12CT-10N-5	
SS-CTN-2FH12-12-5	SS-T20M-12CT-12N-5	SS-T20M-12CT-12N-5	
SS-CTN-2FH16-8-5	SS-T20M-16CT-8N-5	SS-T20M-16CT-8N-5	
SS-CTN-2FH16-10-5	SS-T20M-16CT-10N-5	SS-T20M-16CT-10N-5	
SS-CTN-2FH16-12-5	SS-T20M-16CT-12N-5	SS-T20M-16CT-12N-5	
SS-CTN-6FH4-2.75-5	SS-T60H-4CT-2.75N-5	SS-T60H-4CT-2.75N-5	
SS-CTN-6FH4-3-5	SS-T60H-4CT-3N-5	SS-T60H-4CT-3N-5	
SS-CTN-6FH4-4-5	SS-T60H-4CT-4N-5	SS-T60H-4CT-4N-5	
SS-CTN-6FH4-6-5	SS-T60H-4CT-6N-5	SS-T60H-4CT-6N-5	
SS-CTN-6FH4-8-5	SS-T60H-4CT-8N-5	SS-T60H-4CT-8N-5	
SS-CTN-6FH4-10-5	SS-T60H-4CT-10N-5	SS-T60H-4CT-10N-5	
SS-CTN-6FH4-12-5	SS-T60H-4CT-12N-5	SS-T60H-4CT-12N-5	
SS-CTN-6FH6-3-5	SS-T60H-6CT-3N-5	SS-T60H-6CT-3N-5	
SS-CTN-6FH6-4-5	SS-T60H-6CT-4N-5	SS-T60H-6CT-4N-5	
SS-CTN-6FH6-6-5	SS-T60H-6CT-6N-5	SS-T60H-6CT-6N-5	
SS-CTN-6FH6-8-5	SS-T60H-6CT-8N-5	SS-T60H-6CT-8N-5	
SS-CTN-6FH6-10-5	SS-T60H-6CT-10N-5	SS-T60H-6CT-10N-5	
SS-CTN-6FH6-12-5	SS-T60H-6CT-12N-5	SS-T60H-6CT-12N-5	
SS-CTN-6FH9-6-5	SS-T60H-9CT-6N-5	SS-T60H-9CT-6N-5	
SS-CTN-6FH9-8-5	SS-T60H-9CT-8N-5	SS-T60H-9CT-8N-5	
SS-CTN-6FH9-10-5	SS-T60H-9CT-10N-5	SS-T60H-9CT-10N-5	
SS-CTN-6FH9-12-5	SS-T60H-9CT-12N-5	SS-T60H-9CT-12N-5	
15NSS-FNS2-1-5	15NSS-FNS2-1-5	15NSS-FNS2-1-5	
15NSS-FRT2-1-5	15NSS-FRT2-1-5	15NSS-FRT2-1-5	
15NSS-FNS4-1-5	15NSS-FNS4-1-5	15NSS-FNS4-1-5	
15NSS-FRT4-1-5	15NSS-FRT4-1-5	15NSS-FRT4-1-5	
15NSS-FNS6-1-5	15NSS-FNS6-1-5	15NSS-FNS6-1-5	
15NSS-FRT6-1-5	15NSS-FRT6-1-5	15NSS-FRT6-1-5	
15NSS-FNS8-1-5	15NSS-FNS8-1-5	15NSS-FNS8-1-5	
15NSS-FRT8-1-5	15NSS-FRT8-1-5	15NSS-FRT8-1-5	
15NSS-FNS2-2-5	15NSS-FNS2-2-5	15NSS-FNS2-2-5	
15NSS-FRT2-2-5	15NSS-FRT2-2-5	15NSS-FRT2-2-5	
15NSS-FNS4-2-5	15NSS-FNS4-2-5	15NSS-FNS4-2-5	
15NSS-FRT4-2-5	15NSS-FRT4-2-5	15NSS-FRT4-2-5	
15NSS-FNS6-2-5	15NSS-FNS6-2-5	15NSS-FNS6-2-5	
15NSS-FRT6-2-5	15NSS-FRT6-2-5	15NSS-FRT6-2-5	
15NSS-FNS8-2-5	15NSS-FNS8-2-5	15NSS-FNS8-2-5	
15NSS-FRT8-2-5	15NSS-FRT8-2-5	15NSS-FRT8-2-5	
15NSS-FNS2-4-5	15NSS-FNS2-4-5	15NSS-FNS2-4-5	
15NSS-FRT2-4-5	15NSS-FRT2-4-5	15NSS-FRT2-4-5	
15NSS-FNS4-4-5	15NSS-FNS4-4-5	15NSS-FNS4-4-5	
15NSS-FRT4-4-5	15NSS-FRT4-4-5	15NSS-FRT4-4-5	
15NSS-FNS6-4-5	15NSS-FNS6-4-5	15NSS-FNS6-4-5	
15NSS-FRT6-4-5	15NSS-FRT6-4-5	15NSS-FRT6-4-5	
15NSS-FNS8-4-5	15NSS-FNS8-4-5	15NSS-FNS8-4-5	
15NSS-FRT8-4-5	15NSS-FRT8-4-5	15NSS-FRT8-4-5	
15NSS-FNS2-5-5	15NSS-FNS2-5-5	15NSS-FNS2-5-5	
15NSS-FRT2-5-5	15NSS-FRT2-5-5	15NSS-FRT2-5-5	
15NSS-FNS4-5-5	15NSS-FNS4-5-5	15NSS-FNS4-5-5	
15NSS-FRT4-5-5	15NSS-FRT4-5-5	15NSS-FRT4-5-5	
15NSS-FNS6-5-5	15NSS-FNS6-5-5	15NSS-FNS6-5-5	
15NSS-FRT6-5-5	15NSS-FRT6-5-5	15NSS-FRT6-5-5	
15NSS-FNS8-5-5	15NSS-FNS8-5-5	15NSS-FNS8-5-5	
15NSS-FRT8-5-5	15NSS-FRT8-5-5	15NSS-FRT8-5-5	
15NSS-FNS2-6-5	15NSS-FNS2-6-5	15NSS-FNS2-6-5	
15NSS-FRT2-6-5	15NSS-FRT2-6-5	15NSS-FRT2-6-5	
15NSS-FNS4-6-5	15NSS-FNS4-6-5	15NSS-FNS4-6-5	

Sour Service Products

Formerly Used P/N	New P/N Adopted
15NSS-FRT4-6-S	15NSS-FRT4-6-S
15NSS-FNS6-6-S	15NSS-FNS6-6-S
15NSS-FRT6-6-S	15NSS-FRT6-6-S
15NSS-FNS8-6-S	15NSS-FNS8-6-S
15NSS-FRT8-6-S	15NSS-FRT8-6-S
20NSS-2FH4-1-S	20NSS-MF4-1-S
20NSS-2FH6-1-S	20NSS-MF6-1-S
20NSS-2FH9-1-S	20NSS-MF9-1-S
20NSS-2FH12-1-S	20NSS-MF12-1-S
20NSS-2FH16-1-S	20NSS-MF16-1-S
20NSS-2FH4-2-S	20NSS-MF4-2-S
20NSS-2FH6-2-S	20NSS-MF6-2-S
20NSS-2FH9-2-S	20NSS-MF9-2-S
20NSS-2FH12-2-S	20NSS-MF12-2-S
20NSS-2FH16-2-S	20NSS-MF16-2-S
20NSS-2FH4-3-S	20NSS-MF4-3-S
20NSS-2FH6-3-S	20NSS-MF6-3-S
20NSS-2FH9-3-S	20NSS-MF9-3-S
20NSS-2FH12-3-S	20NSS-MF12-3-S
20NSS-2FH16-3-S	20NSS-MF16-3-S
20NSS-2FH4-4-S	20NSS-MF4-4-S
20NSS-2FH6-4-S	20NSS-MF6-4-S
20NSS-2FH9-4-S	20NSS-MF9-4-S
20NSS-2FH12-4-S	20NSS-MF12-4-S
20NSS-2FH16-4-S	20NSS-MF16-4-S
20NSS-2FH4-5-S	20NSS-MF4-5-S
20NSS-2FH6-5-S	20NSS-MF6-5-S
20NSS-2FH9-5-S	20NSS-MF9-5-S
20NSS-2FH12-5-S	20NSS-MF12-5-S
20NSS-2FH16-5-S	20NSS-MF16-5-S
20NSS-2FH4-6-S	20NSS-MF4-6-S
20NSS-2FH6-6-S	20NSS-MF6-6-S
20NSS-2FH9-6-S	20NSS-MF9-6-S
20NSS-2FH12-6-S	20NSS-MF12-6-S
20NSS-2FH16-6-S	20NSS-MF16-6-S
30NSS-6FH4-1-S	30NSS-HF4-1-S
30NSS-6FH6-1-S	30NSS-HF6-1-S
30NSS-6FH9-1-S	30NSS-HF9-1-S
30NSS-6FH4-2-S	30NSS-HF4-2-S
30NSS-6FH6-2-S	30NSS-HF6-2-S
30NSS-6FH9-2-S	30NSS-HF9-2-S
30NSS-6FH4-3-S	30NSS-HF4-3-S
30NSS-6FH6-3-S	30NSS-HF6-3-S
30NSS-6FH9-3-S	30NSS-HF9-3-S
30NSS-6FH4-4-S	30NSS-HF4-4-S
30NSS-6FH6-4-S	30NSS-HF6-4-S
30NSS-6FH9-4-S	30NSS-HF9-4-S
30NSS-6FH4-5-S	30NSS-HF4-5-S
30NSS-6FH6-5-S	30NSS-HF6-5-S
30NSS-6FH9-5-S	30NSS-HF9-5-S
30NSS-6FH4-6-S	30NSS-HF4-6-S
30NSS-6FH6-6-S	30NSS-HF6-6-S
30NSS-6FH9-6-S	30NSS-HF9-6-S
60NSS-6FH4-TG1-S	60NSS-HF4-TG1-S
60NSS-6FH6-TG1-S	60NSS-HF6-TG1-S
60NSS-6FH9-TG1-S	60NSS-HF9-TG1-S
60NSS-6FH4-TG2-S	60NSS-HF4-TG2-S
60NSS-6FH6-TG2-S	60NSS-HF6-TG2-S
60NSS-6FH9-TG2-S	60NSS-HF9-TG2-S
60NSS-6FH4-TG3-S	60NSS-HF4-TG3-S
60NSS-6FH6-TG3-S	60NSS-HF6-TG3-S
60NSS-6FH9-TG3-S	60NSS-HF9-TG3-S
60NSS-6FH4-TG4-S	60NSS-HF4-TG4-S
60NSS-6FH6-TG4-S	60NSS-HF6-TG4-S
60NSS-6FH9-TG4-S	60NSS-HF9-TG4-S
60NSS-6FH4-TG5-S	60NSS-HF4-TG5-S
60NSS-6FH6-TG5-S	60NSS-HF6-TG5-S
60NSS-6FH9-TG5-S	60NSS-HF9-TG5-S
60NSS-6FH4-TG6-S	60NSS-HF4-TG6-S
60NSS-6FH6-TG6-S	60NSS-HF6-TG6-S
60NSS-6FH9-TG6-S	60NSS-HF9-TG6-S
20BVSS-2CT6-FNS2-S	20BVSS-MCT6-FNS2-S
20BVSS-2CT9-FNS2-S	20BVSS-MCT9-FNS2-S
30BVSS-6CT6-FNS2-S	30BVSS-HCT6-FNS2-S
30BVSS-6CT9-FNS2-S	30BVSS-HCT9-FNS2-S
20BVSS-2MP6-FNS2-S	20BVSS-MM6-FNS2-S
20BVSS-2MP9-FNS2-S	20BVSS-MM9-FNS2-S
30BVSS-6MP6-FNS2-S	30BVSS-HM6-FNS2-S

Sour Service Products

Formerly Used P/N	New P/N Adopted
30BVSS-6MP9-FNS2-S	30BVSS-HM9-FNS2-S
20GVSS-2FH9-S	20GVSS-MF9-S
30GVSS-6FH6-S	30GVSS-HF6-S
30GVSS-6FH9-S	30GVSS-HF9-S
15CSS-FNS4-S	15CSS-FNS4-S
15CSS-FNS8-S	15CSS-FNS8-S
15COSS-FNS4-S	15COSS-FNS4-S
15COSS-FNS6-S	15COSS-FNS6-S
15COSS-FNS8-S	15COSS-FNS8-S
20CSS-2FH4-S	20CSS-MF4-S
20CSS-2FH6-S	20CSS-MF6-S
20CSS-2FH12-S	20CSS-MF12-S
20CSS-2FH16-S	20CSS-MF16-S
20COSS-2FH4-S	20COSS-MF4-S
20COSS-2FH6-S	20COSS-MF6-S
20COSS-2FH9-S	20COSS-MF9-S
20COSS-2FH12-S	20COSS-MF12-S
20COSS-2FH16-S	20COSS-MF16-S
60CSS-6FH4-S	60CSS-HF4-S
60CSS-6FH6-S	60CSS-HF6-S
60CSS-6FH9-S	60CSS-HF9-S
60COSS-6FH6-S	60COSS-HF6-S
60COSS-6FH9-S	60COSS-HF9-S

Subsea Valves

Formerly Used P/N	New P/N Adopted
10SBSS-2FH12-8-1	10SBSS-MF12-8-1
10SBSS-2FH16-8-1	10SBSS-MF16-8-1
10SBSS-FNS12-8-1	10SBSS-FNS12-8-1
10SBSS-FNS16-8-1	10SBSS-FNS16-8-1
10SB4P-2FH24-16-1	10SB4P-MF24-16-1
10SBSS-2FH12-8-2	10SBSS-MF12-8-2
15SBSS-DHL4-4-1	15SBSS-DFF4-4-1
15SBSS-DHL6-4-1	15SBSS-DFF6-4-1
15SBSS-FNS4-4-1	15SBSS-FNS4-4-1
15SBSS-FNS6-4-1	15SBSS-FNS6-4-1
15SBSS-FNS8-4-1	15SBSS-FNS8-4-1
15SBSS-FNS4-6-1	15SBSS-FNS4-6-1
15SBSS-FNS6-6-1	15SBSS-FNS6-6-1
15SBSS-FNS8-6-1	15SBSS-FNS8-6-1
15SBSS-2FH12-8-1	15SBSS-MF12-8-1
15SBSS-FNS4-4-2	15SBSS-FNS4-4-2
15SBSS-FNS4-4-2D	15SBSS-FNS4-4-2D
15SBSS-FNS6-4-2	15SBSS-FNS6-4-2
15SBSS-FNS6-4-2D	15SBSS-FNS6-4-2D
20SBSS-2FH4-4-1	20SBSS-MF4-4-1
20SBSS-2FH6-4-1	20SBSS-MF6-4-1
20SBSS-2FH9-4-1	20SBSS-MF9-4-1
20SBSS-6FH4-4-1	20SBSS-HF4-4-1
20SBSS-6FH6-4-1	20SBSS-HF6-4-1
20SBSS-2FH6-6-1	20SBSS-MF6-6-1
20SBSS-2FH9-6-1	20SBSS-MF9-6-1
20SBSS-2FH12-6-1	20SBSS-MF12-6-1
20SBSS-2FH4-4-2	20SBSS-MF4-4-2
20SBSS-2FH4-4-2D	20SBSS-MF4-4-2D
20SBSS-2FH6-4-2	20SBSS-MF6-4-2
20SBSS-2FH6-4-2D	20SBSS-MF6-4-2D
20SBSS-2FH9-4-2	20SBSS-MF9-4-2
20SBSS-2FH9-4-2D	20SBSS-MF9-4-2D
20SBSS-6FH4-4-2	20SBSS-HF4-4-2
20SBSS-6FH4-4-2D	20SBSS-HF4-4-2D
20SBSS-6FH6-4-2	20SBSS-HF6-4-2
20SBSS-6FH6-4-2D	20SBSS-HF6-4-2D
10SCSS-FNS12	10SCSS-FNS12
10SCSS-FNS16	10SCSS-FNS16
10SCSS-FNS12	10SCSS-FNS12
10SCSS-FNS16	10SCSS-FNS16
15SCSS-DHL4	15SCSS-DFF4
15SCSS-DHL6	15SCSS-DFF6
15SCSS-DHL8	15SCSS-DFF8
15SCSS-DHL4	15SCSS-DFF4
15SCSS-DHL6	15SCSS-DFF6
15SCSS-DHL8	15SCSS-DFF8
15SCSS-FNS4	15SCSS-FNS4
15SCSS-FNS6	15SCSS-FNS6
15SCSS-FNS8	15SCSS-FNS8
15SCSS-FNS4	15SCSS-FNS4
15SCSS-FNS6	15SCSS-FNS6
15SCSS-FNS8	15SCSS-FNS8
20SCSS-2FH4	20SCSS-MF4
20SCSS-2FH6	20SCSS-MF6
20SCSS-2FH9	20SCSS-MF9
20SCSS-2FH12	20SCSS-MF12
20SCSS-2FH16	20SCSS-MF16
20SCSS-2FH4	20SCSS-MF4
20SCSS-2FH6	20SCSS-MF6
20SCSS-2FH9	20SCSS-MF9
20SCSS-2FH12	20SCSS-MF12
20SCSS-2FH16	20SCSS-MF16
20SNSS-2FH6-1	20SNSS-MF6-1
20SNSS-2FH9-1	20SNSS-MF9-1
20SNSS-2FH12-1	20SNSS-MF12-1
20SNSS-2FH6-2	20SNSS-MF6-2
20SNSS-2FH9-2	20SNSS-MF9-2
20SNSS-2FH12-2	20SNSS-MF12-2
15SDCSS-3P4W-2FH9-US7	15SDCSS-3P4W-MF9-US7
15SDCSS-3P4W-2FH9-US7	15SDCSS-3P4W-MF9-US7
15SDCSS-2P3W-2FH9-US7	15SDCSS-2P3W-MF9-US7
15SDCSS-2P3W-2FH9-US7	15SDCSS-2P3W-MF9-US7

Fittings

Tubing

Quick Couplings

Line Filters

Valves

Sour Service Products

Subsea Valves

Part Number Crossover Charts

Warranty Information

FITOK products are backed by The FITOK Limited Lifetime Warranty. For a copy, contact FITOK Group or our authorized distributors.

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