

SUBSEA VALVES

Fitok Subsea Valves are manufactured with some notable differences to standard models to help ensure effective fluid transfer for the Oil and Gas Industry.

Valves within the range include ball type in various different configurations. As well as Subsea check and needle valve to pressures up to 20,000 psi (1400 bar).

Matching pipe fittings and tube are also available to complement this range. They are suitable for water depths of up to 4,200m and high temperatures.

NACE MR0175 compliance and H2S Sour Gas suitability is available.



SUBSEA BALL VALVES

10,000 PSI TO 20,000 PSI RATED

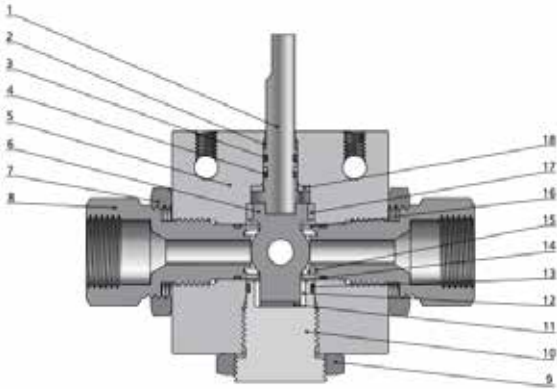
FEATURES

- 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
- Available to NACE MR0175
- Rapid quatre turn action to provide quick opening/closing action for easy ROV or diver operation
- 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)



STANDARD MATERIALS OF CONSTRUCTION

2-way Valves

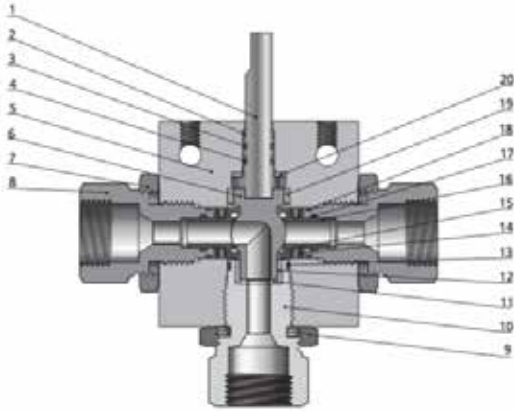


Item	Component	Material Grade
1	Ball Stem	316 SS
2	Stem Backup	PEEK
3	O-ring	NBR
4	O-ring	NBR
5	Body	316 SS / S17400 SS (For Orifice No. 16 only)
6	Ball	316 SS
7	Lock Nut	316 SS
8	Seat Gland	316 SS / S17400 SS (For Orifice No. 16 only)
9	Locking Piece	316 SS
10	Bottom Gland	316 SS / S17400 SS (For Orifice No. 16 only)
11	Bottom Thrust Washer	PEEK
12	Bearing	PEEK
13	O-ring	NBR
14	O-ring	NBR
15	Seat	PEEK
16	Seat Retainer	316 SS
17	Bearing	PEEK
18	Thrust Washer	PEEK
-	Lubricant	Molybdenum Disulfide / Fluorinated-based

SUBSEA BALL VALVES

10,000 PSI TO 20,000 PSI RATED

3-way Valves

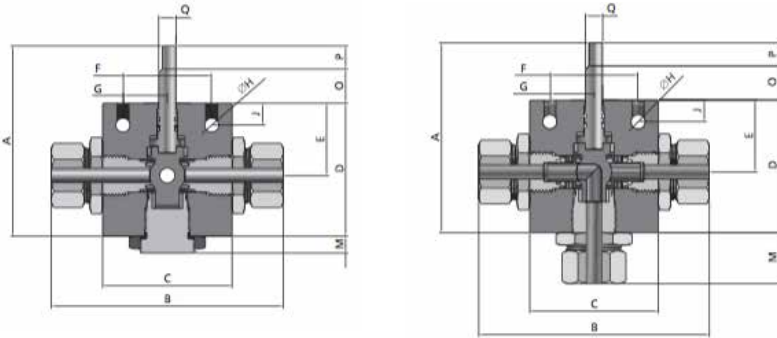


Item	Component	Material Grade
1	Ball Stem	316 SS
2	Stem Backup	PEEK
3	O-ring	NBR
4	O-ring	NBR
5	Body	316 SS
6	Ball	316 SS
7	Lock Nut	316 SS
8	Seat Gland	316 SS
9	Locking Piece	316 SS
10	Bottom Gland	316 SS
11	Bottom Thrust Washer	PEEK
12	Bearing	PEEK
13	O-ring	NBR
14	Belleville Washer	S17700
15	Seat	PEEK
16	Seat Retainer	S17700
17	O-ring	NBR
18	O-ring	NBR
19	Bearing	PEEK
20	Thrust Washer	PEEK
	Lubricant	Molybdenum Disulfide / Fluorinated-based

SUBSEA BALL VALVES

10,000 PSI TO 20,000 PSI RATED

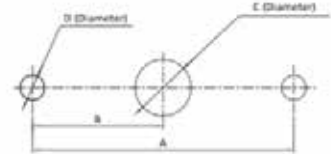
3-way Straight Valves



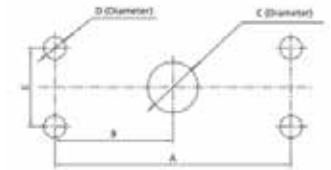
Body Style	Orifice No.	in. (mm)														Block Thickness
		A	B	C	D	E	F	G	H	J	M	O	P	Q	R	
2-way	4	4.31 (10.93)	4.20 (106.8)	2 (50.8)	2.53 (64.2)	1.28 (32.5)	1.5 (38.1)	0.75 (19.05)	0.28 (7.1)	0.43 (10.9)	0.31 (7.7)	1.278 (32.5)	0.50 (12.7)	0.25 (6.35)	0.22 (5.48)	1 (25.4)
	6	5.94 (150.8)	5.53 (140.3)	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)	1.24 (31.7)	1.25 (31.8)	0.44 (11.1)	0.38 (9.35)	1.38 (34.9)
	8	6.67 (196.5)	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)	1.56 (39.7)	0.88 (22.2)	0.62 (15.9)	0.44 (11.13)	1.75 (44.5)
	16	10.82 (274.8)	12.30 (312.4)	6.24 (158.6)	6.65 (169.0)	3.20 (81.3)	4 (101.6)	2 (50.8)	0.41 (10.4)	0.63 (15.9)	0.89 (22.5)	2.41 (61.3)	1.75 (44.5)	1.25 (31.8)	1.00 (25.4)	3.38 (85.7)
3-way	4	4.43 (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)	1.28 (32.5)	0.5 (12.7)	0.25 (6.35)	0.22 (5.49)	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)	1.56 (39.7)	0.88 (22.2)	0.62 (15.9)	0.44 (11.13)	1.75 (44.5)

BALL VALVE PANEL MOUNTING DIMENSIONS

Body Style	Orifice No.	A	B	C	D
		in. (mm)			
2-way	4	1.5 (38.1)	0.75 (19.1)	0.31 (7.9)	0.28 (7.1)
3-way	4	2 (50.8)	1 (25.4)	0.31 (7.9)	0.28 (7.1)



Body Style	Orifice No.	A	B	C	D	E
		in. (mm)				
2-way	6	2.5 (63.5)	1.25 (31.75)	0.5 (12.7)	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)
	16	4 (101.6)	2 (50.8)	1.38 (35.0)	0.39 (10.0)	1.50 (38.1)
3-way	8	3 (76.2)	1.5 (38.1)	0.69 (17.5)	0.33 (8.5)	1 (25.4)

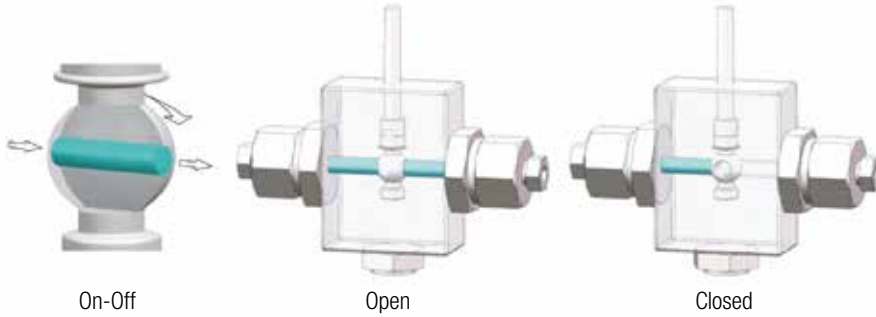


SUBSEA BALL VALVES

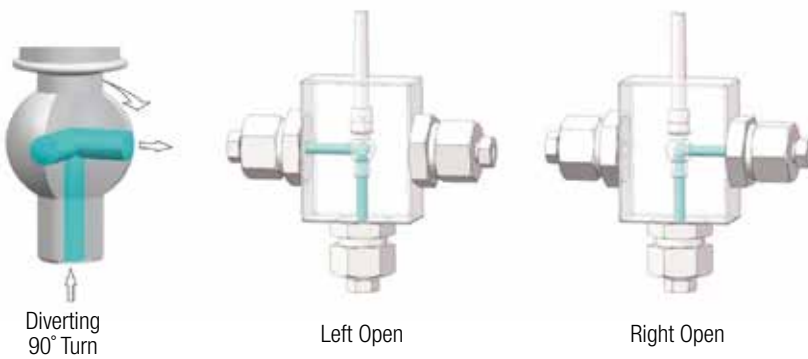
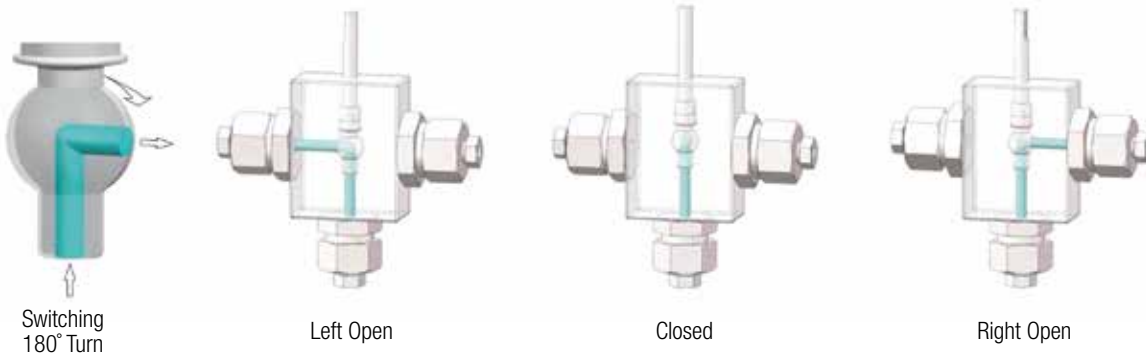
10,000 PSI TO 20,000 PSI RATED

FLOW CONFIGURATION

2-Way Valves



3-Way Valves



SUBSEA BALL VALVES

10,000 PSI TO 20,000 PSI RATED

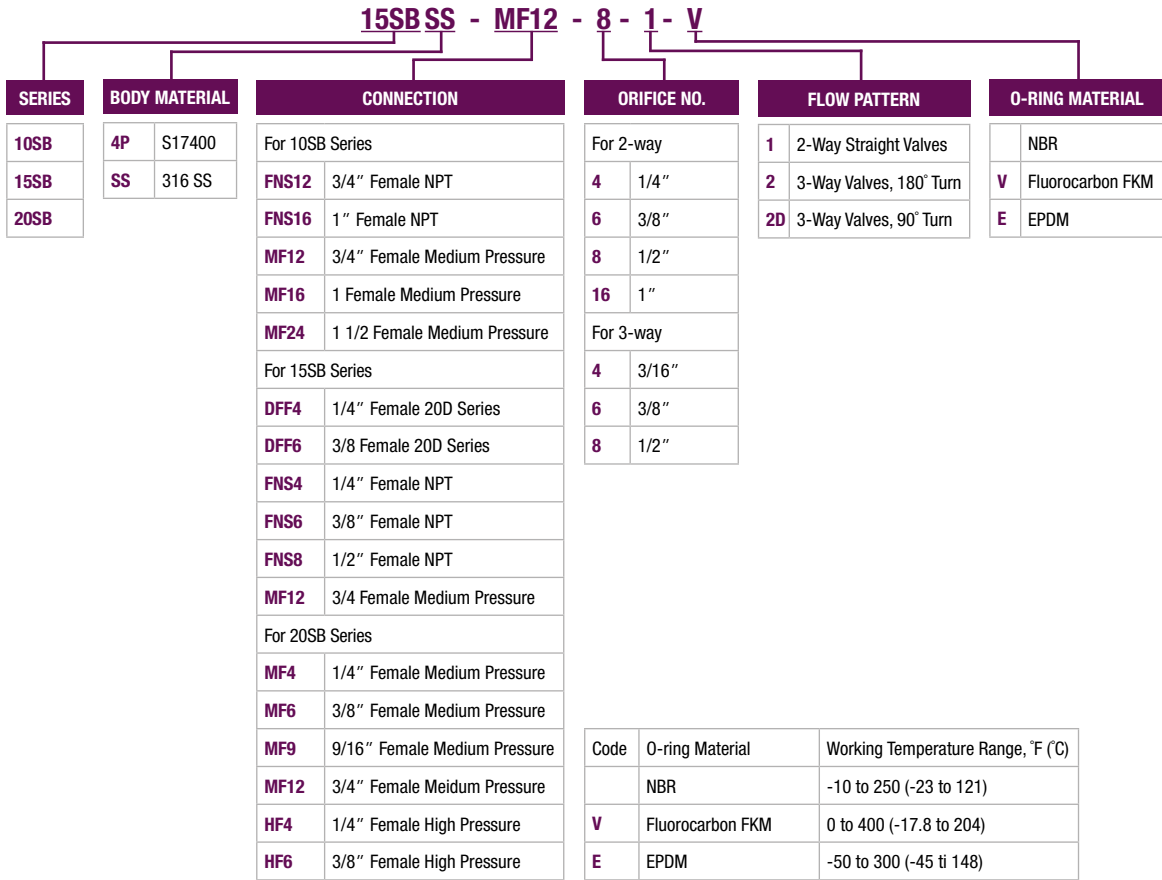
TECHNICAL DATA & DIMENSIONS

#	Flow Pattern	Connection	Orifice No.	Orifice Size in. (mm)	Cv	Working Pressure psig (bar)
10SBSS-MF12-8-1	2-way	MF12	8	0.5 (12.7)	10.2	10,000 (690)
10SBSS-MF16-8-1		MF16		0.5 (12.7)	10.2	
10SBSS-FNS12-8-1		FNS12		0.5 (12.7)	10.2	
10SBSS-FNS16-8-1		FNS16		0.5 (12.7)	10.2	
10SB4P-MF24-16-1		MF24	16	0.94 (23.8)	30.0	
10SBSS-MF12-8-2	3-way	MF12	8	0.5 (12.7)	10.2	
15SBSS-DFF4-4-1	2-way	DFF4	4	0.128 (3.25)	0.26	15,000 (1034)
15SBSS-DFF6-4-1		DFF6		0.25 (6.35)	1.51	
15SBSS-FNS4-4-1		FNS4		0.25 (6.35)	1.51	
15SBSS-FNS6-4-1		FNS6		0.25 (6.35)	1.51	
15SBSS-FNS8-4-1		FNS8	0.25 (6.35)	1.51		
15SBSS-FNS4-6-1		FNS4	6	0.375 (9.52)	3.51	
15SBSS-FNS6-6-1		FNS6		0.375 (9.52)	3.51	
15SBSS-FNS8-6-1		FNS8		0.375 (9.52)	3.51	
15SBSS-MF12-8-1		MF12	8	0.5 (12.7)	10.2	
15SBSS-FNS4-4-2	3-way	FNS4	4	0.188 (4.77)	0.5	
15SBSS-FNS4-4-2D		FNS4		0.188 (4.77)	0.5	
15SBSS-FNS6-4-2		FNS6		0.188 (4.77)	0.5	
15SBSS-FNS6-4-2D		FNS6		0.188 (4.77)	0.5	
20SBSS-MF4-4-1	2-way	MF4	4	0.109 (2.77)	0.36	20,000 (1379)
20SBSS-MF6-4-1		MF6		0.203 (5.16)	1.23	
20SBSS-MF9-4-1		MF9		0.25 (6.35)	1.51	
20SBSS-HF4-4-1		HF4		0.094 (2.39)	0.26	
20SBSS-HF6-4-1		HF6	0.125 (3.17)	0.47		
20SBSS-MF6-6-1		MF6	6	0.203 (5.16)	1.23	
20SBSS-MF9-6-1		MF9		0.312 (7.92)	2.93	
20SBSS-MF12-6-1		MF12		0.375 (9.52)	3.51	
20SBSS-MF4-4-2	MF4	4		0.109 (2.77)	0.17	
20SBSS-MF4-4-2D	MF4		0.109 (2.77)	0.17		
20SBSS-MF6-4-2	MF6		0.188 (4.77)	0.5		
20SBSS-MF6-4-2D	MF6		0.188 (4.77)	0.5		
20SBSS-MF9-4-2	MF9		0.188 (4.77)	0.5		
20SBSS-HF4-4-2	HF4		0.094 (2.39)	0.13		
20SBSS-HF4-4-2D	HF4		0.094 (2.39)	0.13		
20SBSS-HF6-4-2	HF6		0.125 (3.17)	0.22		
20SBSS-HF6-4-2D	HF6	0.125 (3.17)	0.22			

SUBSEA BALL VALVES

10,000 PSI TO 20,000 PSI RATED

PART NUMBER DESCRIPTION



SUBSEA CHECK VALVES

10,000 PSI TO 20,000 PSI RATED

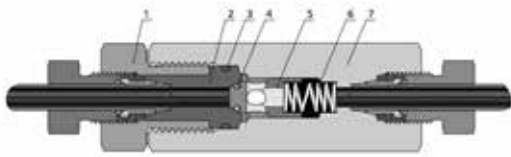
FEATURES

- Working pressure up to 20,000 psig (1379 bar)
- Maximum external pressure: 6,000 psig (414 bar)
- Cracking pressure: 14 to 26 psig (0.966 to 1.794 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
- Available to NACE MR0175
- 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)



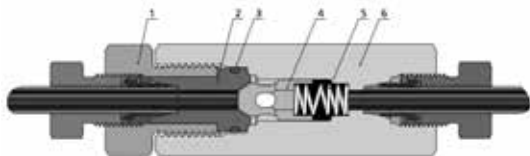
STANDARD MATERIALS OF CONSTRUCTION

SC Series



Item	Component	Material Grade
1	Cover Gland	316 SS
2	Cover	316 SS
3	Seal Ring	NBR
4	Seal Ring	NBR
5	Ball Poppet	316 SS
6	Spring	304 SS
7	Valve Body	316 SS

SCO Series



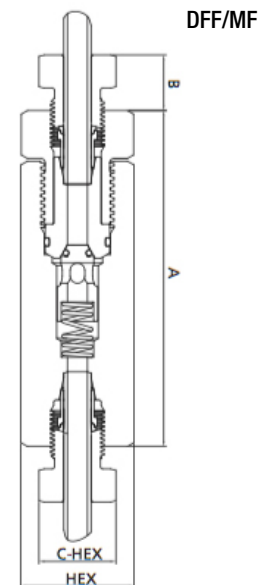
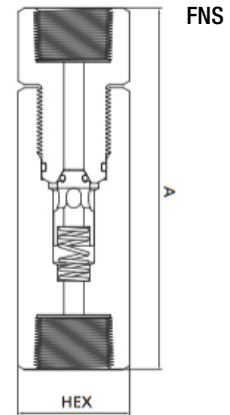
Item	Component	Material Grade
1	Cover Gland	316 SS
2	Cover	316 SS
3	Seal Ring	NBR
4	Ball Poppet	316 SS
5	Spring	304 SS
6	Valve Body	316 SS

SUBSEA CHECK VALVES

10,000 PSI TO 20,000 PSI RATED

TECHNICAL DATA & DIMENSIONS

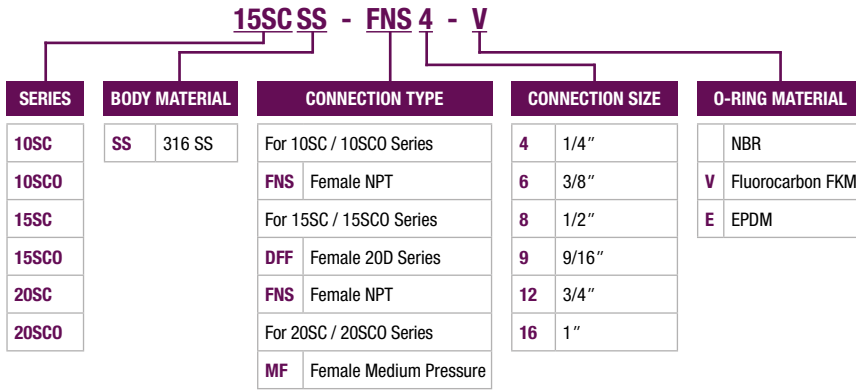
#	Connection	Orifice Size in. (mm)	Cv	A	B	C-HEX	HEX	Working Pressure psig (bar)	
				in. (mm)					
10SCSS-FNS12	FNS12	0.52 (13.21)	4.70	6.11 (155.19)	-	-	1.75 (44.45)	10,000 (690)	
10SCSS-FNS16	FNS16	0.69 (17.52)	7.40	7.32 (185.93)	-	-	1.88 (47.75)		
10SCOSS-FNS12	FNS12	0.52 (13.21)	4.70	6.11 (155.19)	-	-	1.75 (44.45)		
10SCOSS-FNS16	FNS16	0.69 (17.53)	7.40	7.32 (185.93)	-	-	1.88 (47.75)		
15SCSS-DFF4	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)	
15SCSS-DFF6	DFF6	0.250 (6.35)	1.70	3.82 (97.03)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)		
15SCSS-DFF8	DFF8	0.375 (9.53)	3.40	4.55 (115.57)	0.60 (15.24)	0.93 (23.62)	1.38 (35.05)		
15SCOSS-DFF4	DFF4	0.188 (4.78)	0.63	3.43 (87.12)	0.53 (13.46)	0.63 (16.00)	0.81 (20.57)		
15SCOSS-DFF6	DFF6	0.250 (6.35)	1.70	3.82 (97.03)	0.53 (13.46)	0.75 (19.05)	1.00 (25.40)		
15SCOSS-DFF8	DFF8	0.375 (9.53)	3.40	4.55 (115.57)	0.60 (15.24)	0.93 (23.62)	1.38 (35.05)		
15SCSS-FNS4	FNS4	0.12 (3.05)	0.28	3.43 (87.12)	-	-	0.94 (23.81)		
15SCSS-FNS6	FNS6	0.22 (5.59)	0.84	3.82 (97.03)	-	-	1.13 (28.58)		
15SCSS-FNS8	FNS8	0.36 (9.12)	2.30	4.55 (115.57)	-	-	1.38 (35.05)		
15SCOSS-FNS4	FNS4	0.12 (3.05)	0.28	3.43 (87.12)	-	-	0.94 (23.81)		
15SCOSS-FNS6	FNS6	0.22 (5.59)	0.84	3.82 (97.03)	-	-	1.13 (28.58)		
15SCOSS-FNS8	FNS8	0.36 (9.12)	2.30	4.55 (115.57)	-	-	1.38 (35.05)		
20SCSS-MF4	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)
20SCSS-MF6	MF6	0.218 (5.54)	0.84	3.34 (84.84)	0.44 (11.18)	0.62 (15.75)	1.00 (25.40)		
20SCSS-MF9	MF9	0.359 (9.12)	2.30	4.35 (110.49)	0.55 (12.97)	0.94 (23.81)	1.38 (35.05)		
20SCSS-MF12	MF12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.23)	1.75 (44.45)		
20SCSS-MF16	MF16	0.688 (17.48)	7.40	7.07 (179.59)	0.74 (18.80)	1.38 (35.05)	2.12 (53.85)		
20SCOSS-MF4	MF4	0.125 (3.18)	0.28	2.94 (74.68)	0.38 (9.65)	0.50 (12.70)	0.81 (20.57)		
20SCOSS-MF6	MF6	0.218 (5.54)	0.84	3.12 (79.25)	0.47 (11.94)	0.62 (15.75)	1.00 (25.40)		
20SCOSS-MF9	MF9	0.359 (9.12)	2.30	4.18 (106.17)	0.53 (13.46)	0.94 (23.81)	1.38 (35.05)		
20SCOSS-MF12	MF12	0.516 (13.11)	4.70	5.50 (139.70)	0.62 (15.75)	1.19 (30.32)	1.75 (44.45)		
20SCOSS-MF16	MF16	0.688 (17.48)	7.40	6.63 (168.40)	0.72 (18.29)	1.38 (35.05)	2.12 (53.85)		



SUBSEA CHECK VALVES

10,000 PSI TO 20,000 PSI RATED

PART NUMBER DESCRIPTION



Code	O-ring Material	Working Temperature Range, °F (°C)
	NBR	-10 to 250 (-23 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
E	EPDM	-50 to 300 (-45 to 148)

SUBSEA NEEDLE VALVES

10,000 PSI TO 20,000 PSI RATED

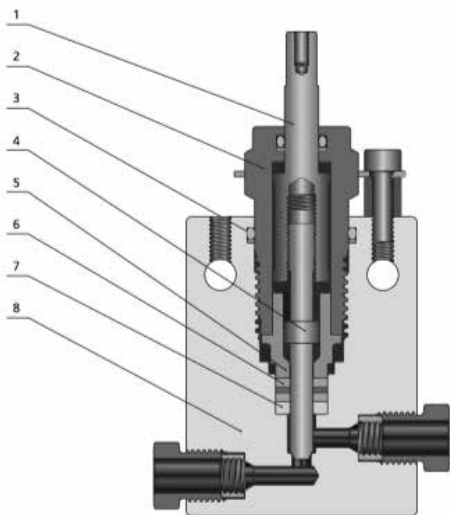
FEATURES

- 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 250F (-23 to 121C); other O-ring materials available
- High tensile 316 stainless steel for valve body
- Standar stem seal material: PTFE
- Available to NACE MR0175
- 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 suring 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 depthL 13,800 ft. (4200 m)

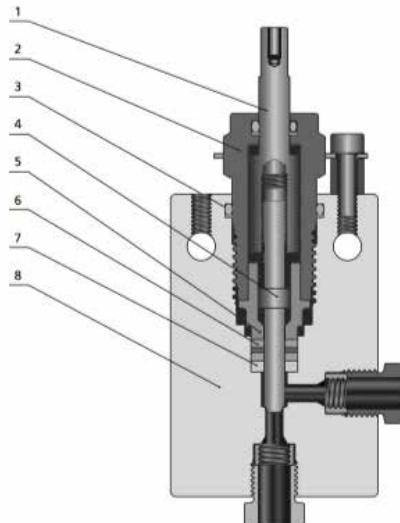


STANDARD MATERIALS OF CONSTRUCTION

2-way Straight



2-way Angle



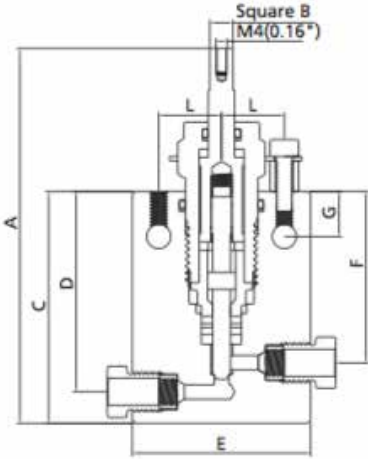
Item	Component	Material Grade
1	Upper Stem	316 SS
2	Packing Gland	316 SS
3	O-ring	NBR
4	Lower Stem	S17400
5	Packing Ring	C63000
6	Packing	PTFE
7	Packing Washer	S17400
8	Body	316 SS
-	Lubricant	Molybdenum Disulfide

SUBSEA NEEDLE VALVES

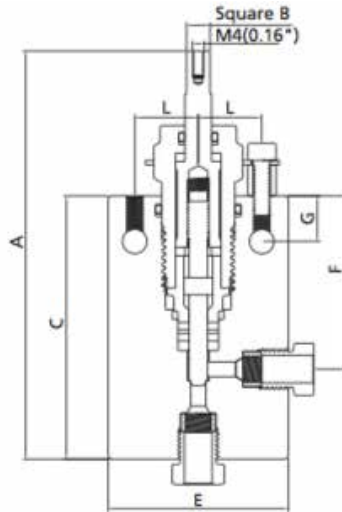
10,000 PSI TO 20,000 PSI RATED

DIMENSIONS

2-way Straight



2-way Angle

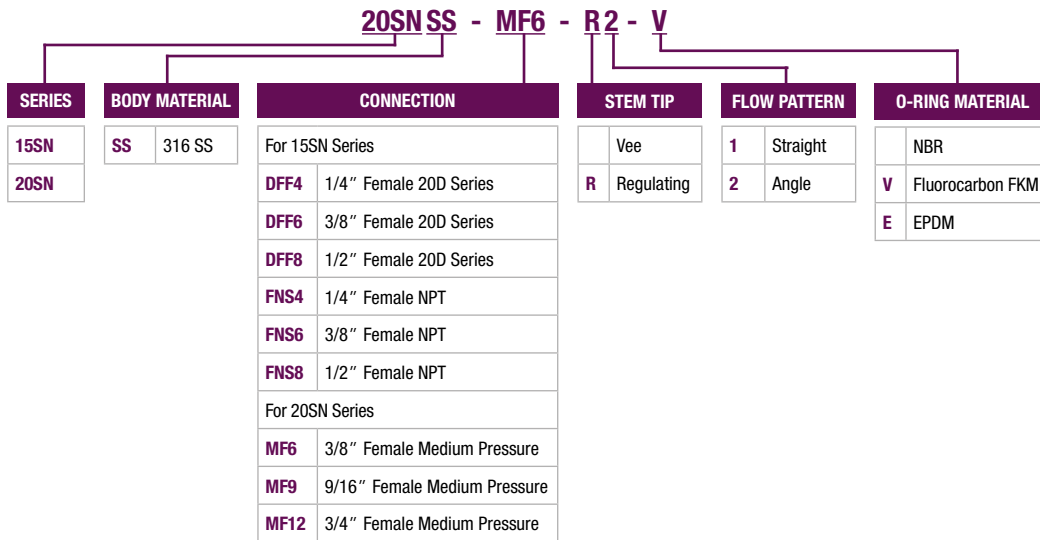


#	Connection Type	A	B	C	D	E	F	G	L	Block Thickness
		in. (mm)								
20SNSS-MF6-1	MF6	5.35 (135.9)	0.24 (6.0)	2.60 (66.00)	2.22 (56.4)	2.00 (50.8)	1.79 (45.40)	0.38 (9.65)	0.77 (19.5)	1.00 (25.4)
20SNSS-MF9-1	MF9	5.75 (146.1)	0.24 (6.0)	3.00 (76.2)	2.40 (61.0)	2.50 (63.5)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)
20SNSS-MF12-1	MF12	5.90 (149.9)	0.24 (6.0)	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)	0.24 (6.0)	3.03 (77.0)	-	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)	0.24 (6.0)	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)	0.24 (6.0)	3.75 (95.3)	-	3.00 (76.2)	2.00 (50.8)	0.38 (9.65)	0.77 (19.5)	1.50 (38.1)

SUBSEA NEEDLE VALVES

10,000 PSI TO 20,000 PSI RATED

PART NUMBER DESCRIPTION



Code	O-ring Material	Working Temperature Range, °F (°C)
	NBR	-10 to 250 (-23 to 121)
V	Fluorocarbon FKM	0 to 400 (-17.8 to 204)
E	EPDM	-50 to 300 (-45 to 148)