

Subsea Service Ball Valves—IPT Series

For Pressures up to
15 000 psig (1034 bar)



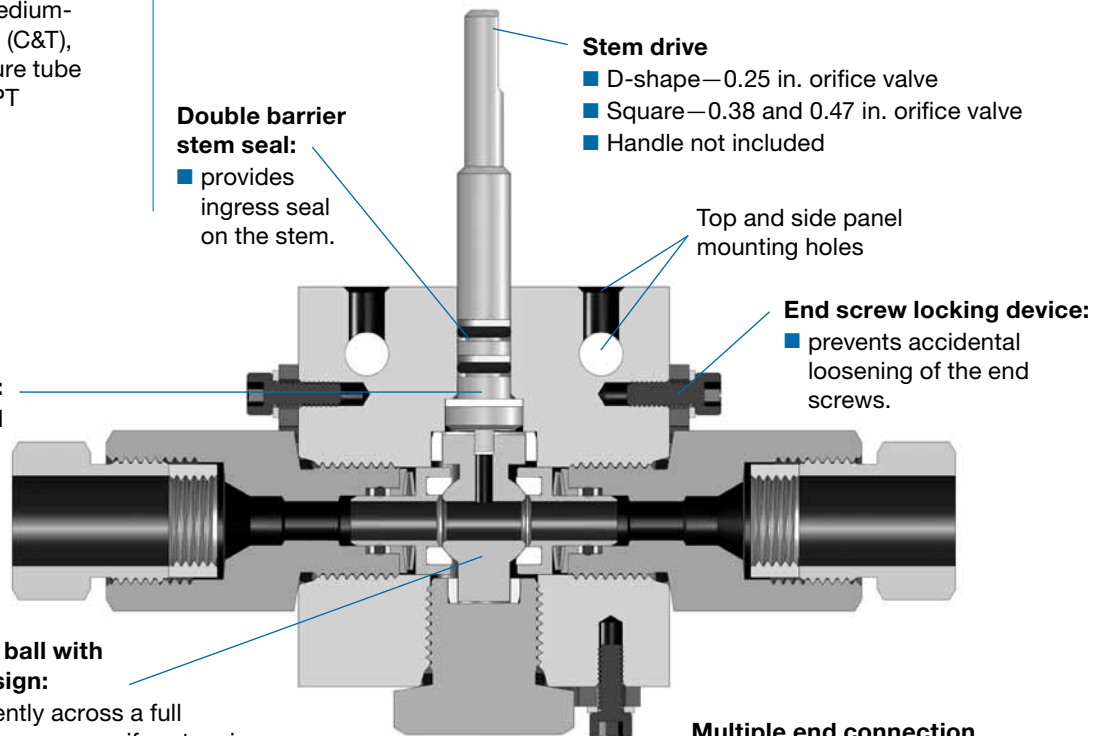
- Pressure ratings up to 15 000 psig (1034 bar)
- Temperature range from 0 to 250°F (-17 to 121°C)
- 316 stainless steel construction
- Three valve/orifice sizes:
0.25 in. (6.4 mm)
0.38 in. (9.7 mm)
0.47 in. (11.9 mm)
- End connection sizes: 1/4 to 1 in.
- End connection styles: medium-pressure cone and thread (C&T), Swagelok medium-pressure tube fitting (FK), and female NPT

Bottom-loaded stem design:

- eliminates stem blowout and enhances operator safety.

Trunnion-style ball with direct-load design:

- seals consistently across a full range of pressures, even if system is depressurized and repressurized
- ensures reliable operation for improved actuation of control systems.



Shown: 0.25 in. orifice valve

Features

- Bi-directional, 2-way trunnion-style valves
- Double barrier stem seal
- Single barrier end screw seal
- Quarter-turn operation
- ROV actuation
- Designed for workover applications
- Available for sour gas applications. Materials are selected in accordance with NACE MR0175/ISO15156.

Pressure-Temperature Ratings

Temperature °F (°C)	316 Stainless Steel with Fluorocarbon FKM O-Rings	
	Valve/ Orifice Size in. (mm)	Working Pressure psig (bar) ^①
0 (-17) to 250 (121)	0.25 (6.4)	15 000 (1034)
	0.38 (9.7)	10 000 (689)
	0.47 (11.9)	

① Working pressure determined based on ASME B31.3 Process Piping, Chapter IX High Pressure Piping. Working pressure ratings for NACE-compliant valves are 50 % of ratings in table.

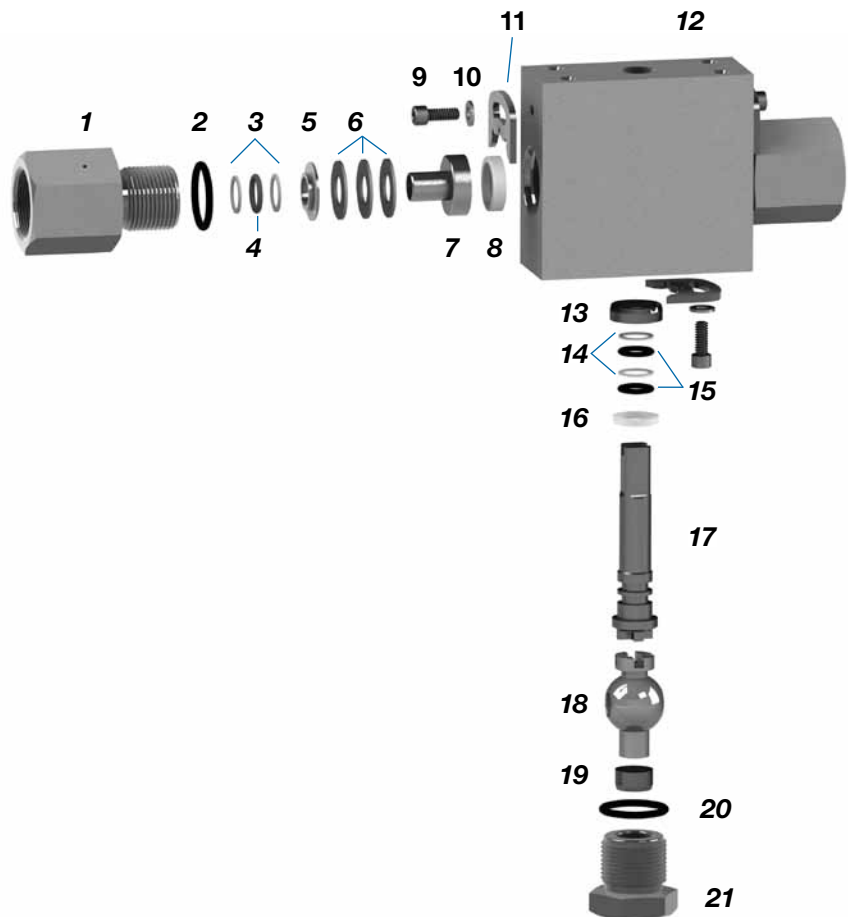
② Pressure ratings may derate based upon the chosen end connection.

Important Information About Ball Valves

- ⚠ Swagelok ball valves are designed to be used in a fully open or fully closed position.
- ⚠ Valves that have not been cycled for a period of time may have a higher initial actuation torque.
- ⚠ Do not exceed maximum torque values shown on "Actuation Torque" on page 82.
- ⚠ Not designed for permanent use or fixed subsea applications.

Materials of Construction

Component	Material Grade/ ASTM Specification
1 End adapter	316 SS/A276 or A479
2 O-ring	Fluorocarbon FKM
3 End screw backup ring	Reinforced PEEK
4 O-ring	Fluorocarbon FKM
5 Follower	316 SS/A276 or A479
6 Spring washer	Standard—301 SS/A666 NACE—N07718/B637 or B670
7 Seat retainer	316 SS/A276 or A479
8 Seat seal	Reinforced PEEK
9 Cap screw	316 SS
10 Lock washer	316 SS/ASME B18
11 Locking device	316 SS/ASME B18
12 Body	316 SS/A276 or A479
13 Upper bearing	S21800/A276
14 Stem backup ring	Reinforced PTFE
15 O-ring	Fluorocarbon FKM
16 Bearing washer	S21800/A276
17 Stem	N06625/B443 or B446
18 Ball	316 SS/A276 or A479
19 Lower bearing	S21800/A276
20 O-ring	Fluorocarbon FKM
21 Plug	316 SS/A276 or A479
Wetted lubricants	Silicone-based with tungsten disulfide additive
Nonwetted lubricants	Hydrocarbon-based



Wetted components listed in *italics*.

Testing

Every IPT series subsea service ball valve is factory tested with water at the maximum working pressure internally for 60 seconds. Shell and seat testing is performed to a requirement of no visible leakage.

Cleaning and Packaging

All IPT series subsea service ball valves are cleaned and packaged in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)*, MS-06-62.

Actuation Torque

Depending on stem adapter design, torque value may vary.

Valve/ Orifice Size in. (mm)	Required Torque	
	ft·lb	N·m
0.25 (6.4)	20	27.1
0.38 (9.7)	100	135
0.47 (11.9)	200	271

Options

O-Ring Materials

Optional O-ring materials are available for all IPT series subsea service ball valves shown below. To order, add the optional O-ring material designator to the valve ordering number.

Examples:

Optional HNBR O-ring: SBV-NT-9MF9MF-H

Optional perfluorocarbon FFKM O-ring: SBV-NT-9MF9MF-C

O-Ring Material	Temperature Rating °F (°C)	Designator
HNBR	0 to 250 (-17 to 121)	-H
Perfluorocarbon FFKM	20 to 185 (-6 to 85)	-C

Dimensions

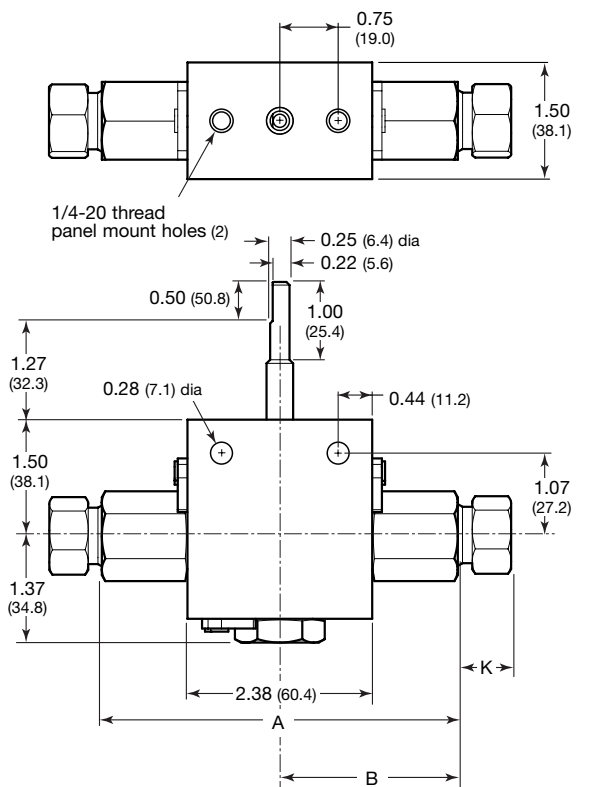
Dimensions, in inches (millimeters), are for reference only and are subject to change.

Samples of typical ordering numbers and dimensions are shown in the table below. See the Ordering Information on page "Ordering Information" on page 84 to build ordering numbers for other subsea service ball valve configurations.

End Connections		Orifice in. (mm)	Ordering Number	Dimensions, in. (mm)		
Inlet/Outlet	Size			A	B	K
10 000 psig (689 bar)						
Cone and thread	9/16 in.	0.38 (9.7)	SBV-NT-9MF9MF	6.21 (158)	3.11 (79.0)	0.68 (17.3)
	1 in.	0.47 (11.9)	SBV-JT-16MF16MF	7.73 (196)	3.87 (98.3)	0.74 (18.8)
15 000 psig (1034 bar)						
Cone and thread	9/16 in.	0.25 (6.4)	SBV-MT-6MF6MF	4.58 (116)	2.29 (58.2)	0.48 (12.2)

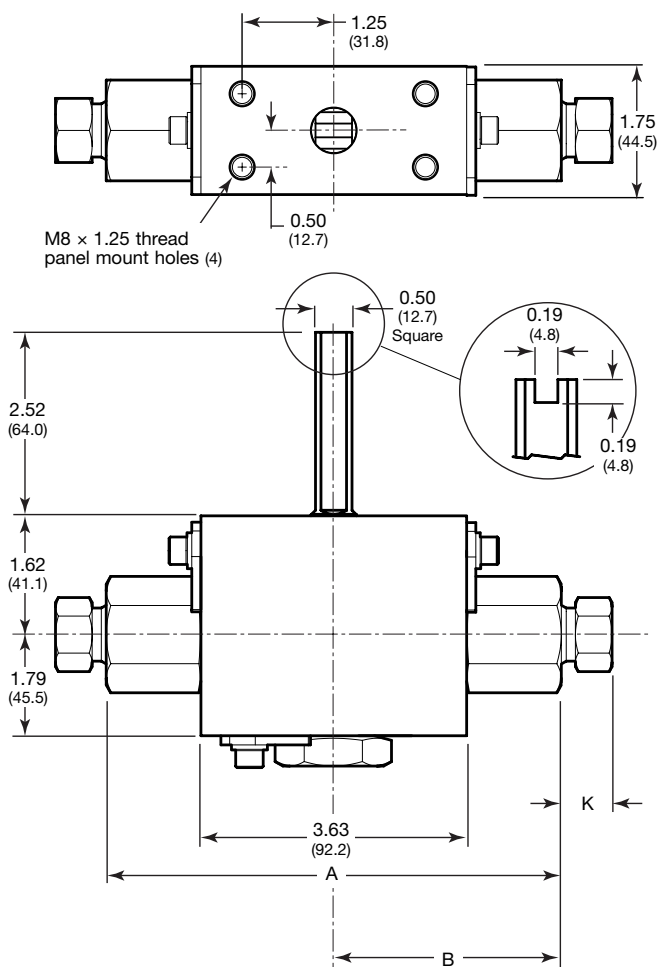
For additional dimensions of valve configurations, contact your authorized Swagelok representative.

Valve Size: M (0.25 in.) Orifice



Shown with female medium-pressure cone and thread end connections

Valve Size: N (0.38 in.) Orifice

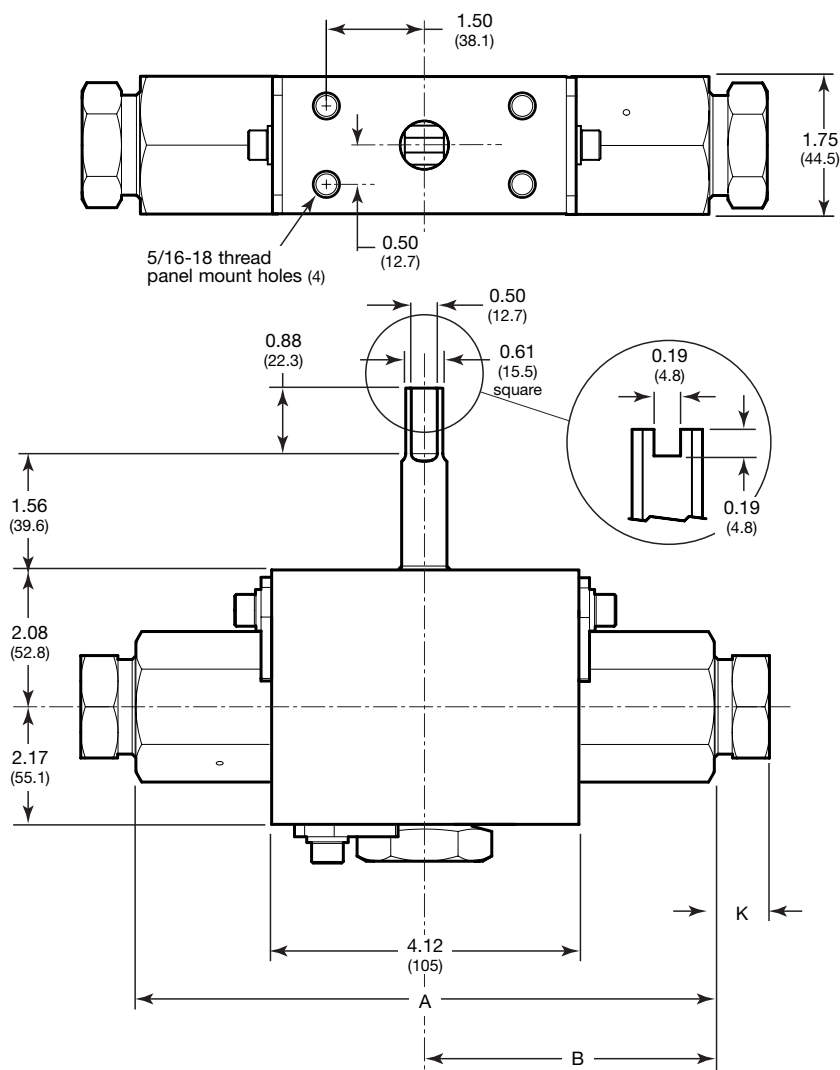


Shown with female medium-pressure cone and thread end connections

Dimensions

Dimensions, in inches (millimeters), are for reference only and are subject to change.

Valve Size: J (0.47 in.) Orifice



Shown with female medium-pressure cone and thread end connections

Ordering Information

Build a valve ordering number by combining the designators in the sequence shown below.

1 **2** **3** **4** **5** **6**
SBV - N T - 12NF 12NF - C

1 Valve Type

SBV = subsea service ball valve

2 Orifice Size

M = 0.25 in.
N = 0.38 in.
J = 0.47 in.

3 Flow Path

T = 2-way

4 End Connection Size

M Orifice Size (0.25 in.)

4 = 1/4 in.

6 = 3/8 in.

N Orifice Size (0.38 in.)

8 = 1/2 in. (FNPT and FK only)

9 = 9/16 in. (C&T and FK only)

J Orifice Size (0.47 in.)

12 = 3/4 in.

16 = 1 in. (FNPT and C&T only)

5 End Connection Type

FK = Swagelok medium-pressure tube fitting

NF = Female NPT

MF = Female medium-pressure cone and thread

6 Seal Material

None = Fluorocarbon FKM, standard

H = HNBR

C = Perfluorocarbon FFKM