

IBV

SERIES

Description

Series IBV Instrument Ball Valves offer reliable 1/4-turn ON/OFF flow control for pressures up to 6,000 Psig (413 bar). These valves feature a Micro-Finished Floating Ball design to provide a positive seal in both directions. Series IBV Instrument Ball Valves also feature a “straight-through” flow path to ensure high flows with minimum pressure drop. The valves are designed to operate with a low operation torque while providing a long service life. All valve configurations can be panel mounted.

Features

- Bi-Directional
 - Straight-Through Flow Path
 - Micro-Finished Floating Ball
 - Large Orifices for High Flow Efficiency
 - Handle Orientation Indicates Flow
 - NPT, O’ring Face Seal, or Dual Ferrule Tube Connections
 - Adjustable Stem Packing for in-line maintenance
 - 100% Factory Tested
- **3D CAD MODELS AVAILABLE ONLINE**

Technical Data

Pressure Rating: 6,000 PSI (413 Bar) at 100°F (3:1 SF)¹
 Per NFPA 52 (2013): 4,750 PSI (328 Bar)
 Per ASME B31.3 (2012): 4,400 PSI (303 Bar)
 Temperature Rating: -65° to 200°F (-54° to 93°C)
 Leakage: < 0.1 SCCM @ 2,100 PSIG (145 Bar)
 - 100% Factory Tested for Leakage
 Note: For a leak-free stem seal at pressures higher than 2,100 PSI or after prolonged use, additional tightening of the stem packing may be required.
 Flow Coefficients: per size, see Dimensional Data Table

Materials of Construction

Component	Material
Body	316 Stainless Steel, ASTM A182
Valve Stem, Valve Ball, Tube Ends, Nuts, Washers, Ferrules	316 Stainless Steel, ASTM A479
Ball Seat Assembly	316 Stainless Steel, ASTM A479 and PCTFE ASTM D1430
Seat Spacer, Stem Packing, O’Rings	PTFE, ASTM D1710
Handle with Insert	Nylon with Stainless Steel Insert
Set Screw	18-8 Stainless Steel
Face Seal O’Rings ²	Standard – FKM
	Option “H” - HNBR

¹ for sustained use at temperatures higher than 100°F, pressure rating may be affected, consult factory.
²other O’Ring materials available, consult factory.

Note: All valves lubricated with perfluorinated polyether (PFPE)

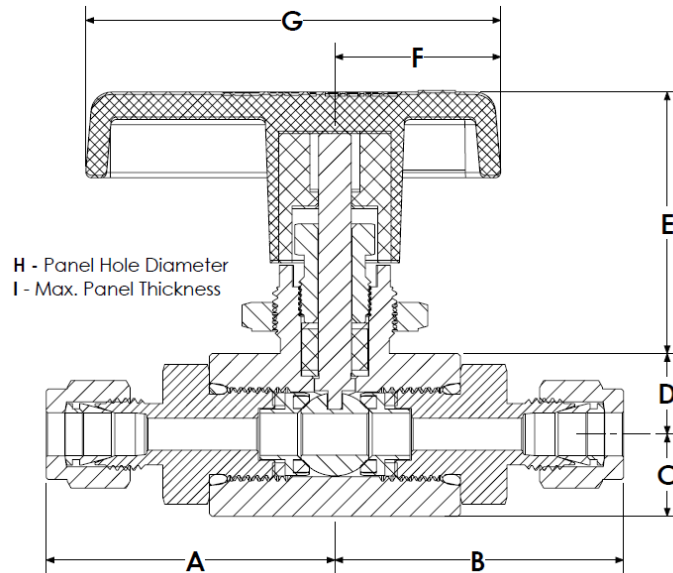


IBV-8T



IBV-4T

INSTRUMENT BALL VALVE



Dimensional Data

MODEL CODE	PORT CONFIGURATION (INLET AND OULET)	FLOW COEFF. (Cv)	VALVE ORIFICE (in)	Dimensions in inches (mm)							
				A, B	C	D	E	F	G	H	I
IBV-4T	1/4" Bi-Lok	1.05	0.187	1.50 (38.1)	0.49 (12.4)	0.48 (12.2)	1.56 (39.6)	1.00 (25.4)	2.50 (63.5)	0.77 (19.6)	0.20 (5.1)
IBV-4F	1/4" NPT Female	2.35	0.250	1.50 (38.1)							
IBV-6T	3/8" Bi-Lok	2.35	0.250	1.80 (45.7)							
IBV-6FS	3/8" Face Seal	2.35	0.250	1.50 (38.1)							
IBV-6F	3/8" NPT Female	6.40	0.406	2.25 (57.1)	0.72 (18.3)	0.71 (18.0)	1.73 (43.9)	1.25 (31.8)	3.50 (88.9)	0.90 (22.9)	0.35 (8.9)
IBV-8T	1/2" Bi-Lok	6.40	0.406	2.65 (67.3)							
IBV-8F	1/2" NPT Female	6.40	0.406	2.45 (62.2)							
IBV-8FS	1/2" Face Seal	5.60	0.375	2.25 (57.1)							
IBV-12T	3/4" Bi-Lok	6.40	0.406	2.65 (67.3)							
IBV-12F	3/4" NPT Female	6.40	0.406	2.65 (67.3)							

Notes: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. Restrictions in inlet or outlet piping may reduce flow. NPT Threads per ASME B1.20.1. Face Seal Connections per SAE J1453.

How to Order

IBV - 8T

SERIES
IBV - Instrument Ball Valve

PORT CONFIGURATION

- 4T - 1/4" Bi-Lok
- 4F - 1/4" NPT Female
- 6T - 3/8" Bi-Lok
- 6FS - 3/8" Face Seal*
- 6F - 3/8" NPT Female
- 8T - 1/2" Bi-Lok
- 8F - 1/2" NPT Female
- 8FS - 1/2" Face Seal*
- 12T - 3/4" Bi-Lok
- 12F - 3/4" NPT Female

* - Face Seal Connections come standard with FKM O-Rings.

Natural Gas Service
HNBR O-Rings are recommended for Face Seal Connections in Natural Gas Service. Specify "-H" suffix to indicate HNBR Face Seal O-Rings.

PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



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SHUT OFF VALVE
1/8" - 1/2" NPT
1/8" - 1/2" Dual Ferrule Tube
0 - 3000 Psig (207 Bar)

SOV

SERIES

Description

Series SOV Shut Off Valves offers low torque, quarter turn, positive shut off of forward flow up to 3000 Psig (207 Bar). These valves feature a one piece body construction with a machined metallic replaceable plug Stem. Sealing is accomplished with a standard elastomeric O-Ring seal. Larger size valves utilize Teflon Backup Rings to reduce operating torque and provide long service life. The Series SOV can be ordered Cleaned for Oxygen Service.

Features

- Straight-Through Flow Path
- Large Orifices Provide Higher Flows
- Handle Orientation Indicates Flow
- Optional Downstream Vent
- Unique Soft Open Plug Stem
- NPT or Dual Ferrule Tube Connections
- 100% Factory Tested for Leakage

Technical Data

Maximum Operating Pressure @ 100° F

Brass and Stainless: 3000 Psig (207 Bar)

Notes: 1-1/8" (28.6 mm) Square Brass Body Valves downgraded to 2000 Psig (137 Bar) Max. If reverse flow occurs, differential pressure is limited to 150 Psid (10.3 Bar) Max. Attempting to meter flow in the reverse flow direction may damage O-Ring.

Leakage: Zero both Internal and External

100% Factory tested for leakage at 150 Psig (10.3 Bar)

Downstream Vent Option - Downstream pressure is relieved to atmosphere when valve is in the closed position. Maximum operating pressure is downgraded to 150 Psig (10.3 Bar).

Downstream Vent Orifice:

5/8" (15.9 mm) and 3/4" (19.1 mm) Square Body Valves: 0.04" (1.0 mm)

1-1/8" (28.6 mm) Square Body Valves: 0.09" (2.3 mm)

Temperature Range:

Seal Dependent (See How To Order)

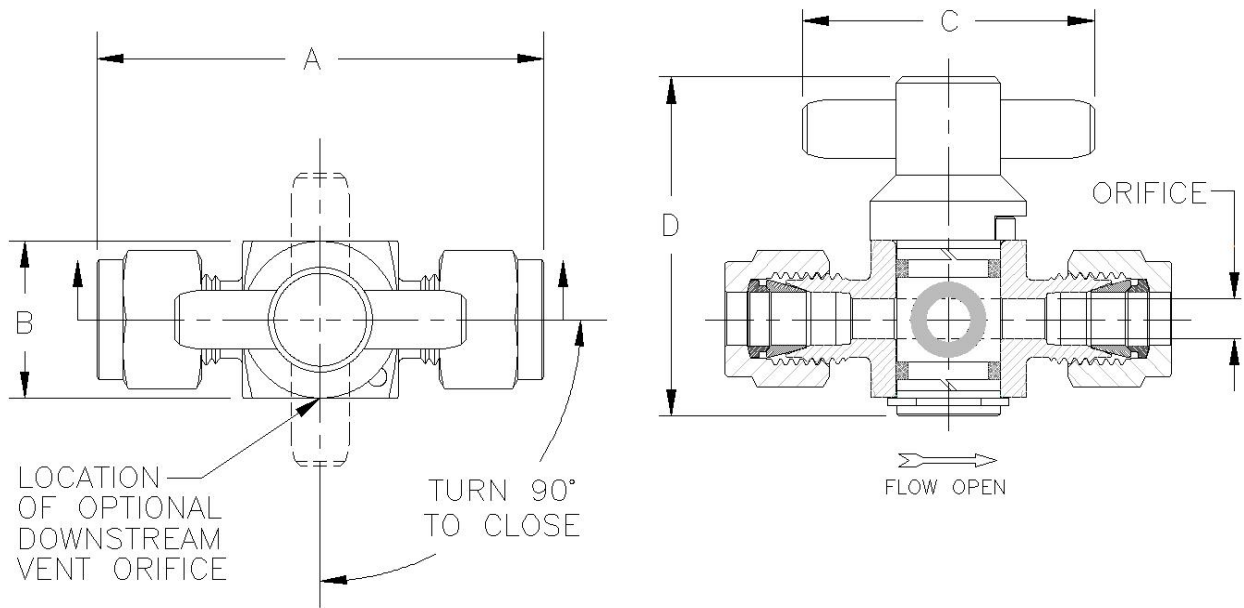
Materials of Construction

Component	Brass	Stainless Steel
Body, Plug Stem, Nuts and Ferrules	Brass, ASTM B16	316SS, ASTM A479
Handle	6061 Aluminum, ASTM B211, Anodized per Mil-A-8625	
Orifice/Body Seals	Buna-N, Neoprene, Ethylene Propylene, or Viton®	
Backup Ring ¹	PTFE	
Retaining Ring	PH 15-7 Mo SS, AISI 632	
Stop Pin	18-8 SS	

¹ 5/8" Square Body Valves are not supplied with PTFE Backup Rings
Plug Stem and O-Rings are lubricated with Krytox®.



SHUT OFF VALVE

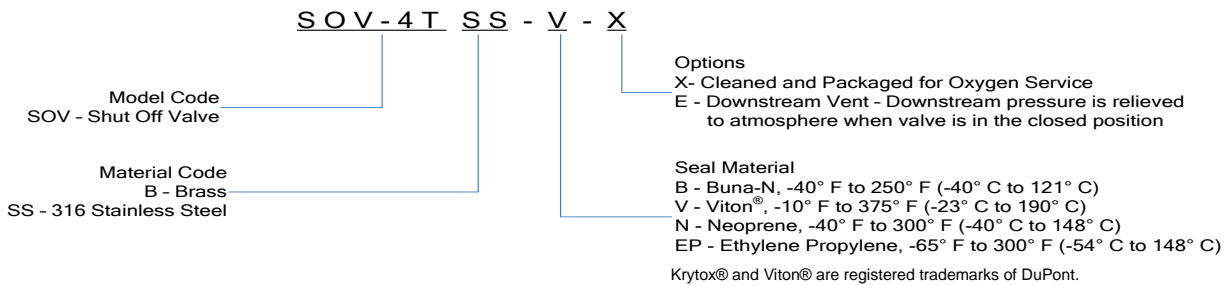


Dimensional Data

MODEL CODE	PORT CONFIGURATION		FLOW COEFFICIENT Cv	Dimensions in inches (mm)				
	INLET	OUTLET		VALVE ORIFICE	A OVERALL LENGTH	B BODY (SQ)	C HANDLE	D HEIGHT
SOV-2T	1/8" Tube		0.05	0.093 (2.4)	1.89 (48.0)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4T	1/4" Tube		0.72	0.187 (4.7)	2.15 (54.6)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-6T	3/8" Tube		1.45	0.281 (7.2)	2.68 (68.1)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-8T	1/2" Tube		2.34	0.343 (8.71)	2.88 (73.2)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-2F	1/8" Female NPT		0.30	0.125 (3.2)	1.69 (42.9)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4F	1/4" Female NPT		0.72	0.187 (4.7)	1.87 (47.5)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-6F	3/8" Female NPT		2.34	0.343 (8.71)	2.75 (69.9)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-8F	1/2" Female NPT		2.34	0.343 (8.71)	2.88 (73.2)	1.125 (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-2P	1/8" Male NPT		0.30	0.125 (3.2)	1.5 (38.1)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-4P	1/4" Male NPT		0.30	0.125 (3.2)	1.69 (42.9)	0.625 (15.9)	1.19 (30.2)	1.41 (35.8)
SOV-8P	1/2" Male NPT		2.34	0.343 (8.71)	2.64 (67.1)	1.125 * (28.6)	2.50 (63.5)	2.14 (54.4)
SOV-4PT	1/4" Male NPT	1/4" Tube	0.72	0.187 (4.7)	2.00 (50.8)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-4PF	1/4" Male NPT	1/4" Female NPT	0.72	0.187 (4.7)	1.84 (46.7)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)
SOV-4FP	1/4" Female NPT	1/4" Male NPT	0.72	0.187 (4.7)	1.84 (46.7)	0.75 (19.1)	1.40 (35.6)	1.63 (41.3)

Notes: Dimensions shown with Bi-Lok nuts finger-tight. Dimensions are in inches (millimeters), for reference only and subject to change. Restrictions in inlet or outlet piping may reduce flow. NPT Threads per ASME B1.20.1
 * 1-1/8" Brass body valves have a maximum operating pressure of 2000 psig (137 Bar).

How to Order



PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



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SERIES 4000

Description

The Series 4000 Quick Opening Valve functions as in-line on-off switch particularly suited to applications in Instrumentation and Control Panels to open and close circuits or isolate gauges. The unique design of these valves permits full-closed to full-open operation quickly with a 60° turn of the knob. Standard units will detent in the selected position or, if desired, can be spring loaded (Option R) to return to the off position when released. The Series 4000 is offered in 2-way and 3-way designs. The 2-way design is a snap action on-off control, while the 3-way design offers the same snap on-off action while venting the downstream pressure to atmosphere when in the off position. These valves are compact in size and can be utilized for in-line and panel mount applications. Valves can be ordered Cleaned and Packaged for Oxygen service.

Technical Data

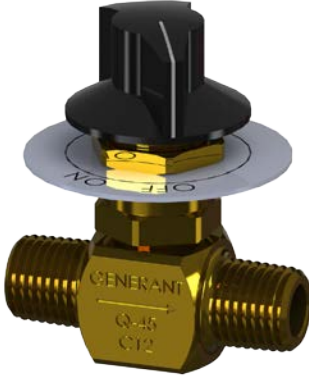
- Max Operating Pressure: 125 Psig (8.6 Bar)
- Temperature Range: -20°F to 300°F (-29°C to 149°C)
- Flow Coefficient (C_v): 0.5
- 2-Way or 3-Way (vents downstream to atmosphere thru 3/32" orifice) Configurations
- 100% Factory Tested for Bubble Tight Shut Off
- Optional Spring Return to Close
- Standard Panel Mount:
 - Supplied with "Off – On" Aluminum Indicator Plate (1/16" thick, 1-5/8" diameter) and Panel Nut
 - 5/8" Panel Hole
 - 5/32" Maximum Panel Thickness

Materials of Construction

Component	Material
Body, Stem, Housing, Bonnet, Valve Seat, Valve Cup, Rollers, Locknut	Brass, ASTM B16
Knob	Thermosetting Phenolic
Indicator Plate	Aluminum
Spring	17-7 SS, ASTM A313
Roller Pin	Hardened Steel
Set Screw	Steel (Black Oxide)
Valve Seal, O-Ring	FKM



Model Q-44

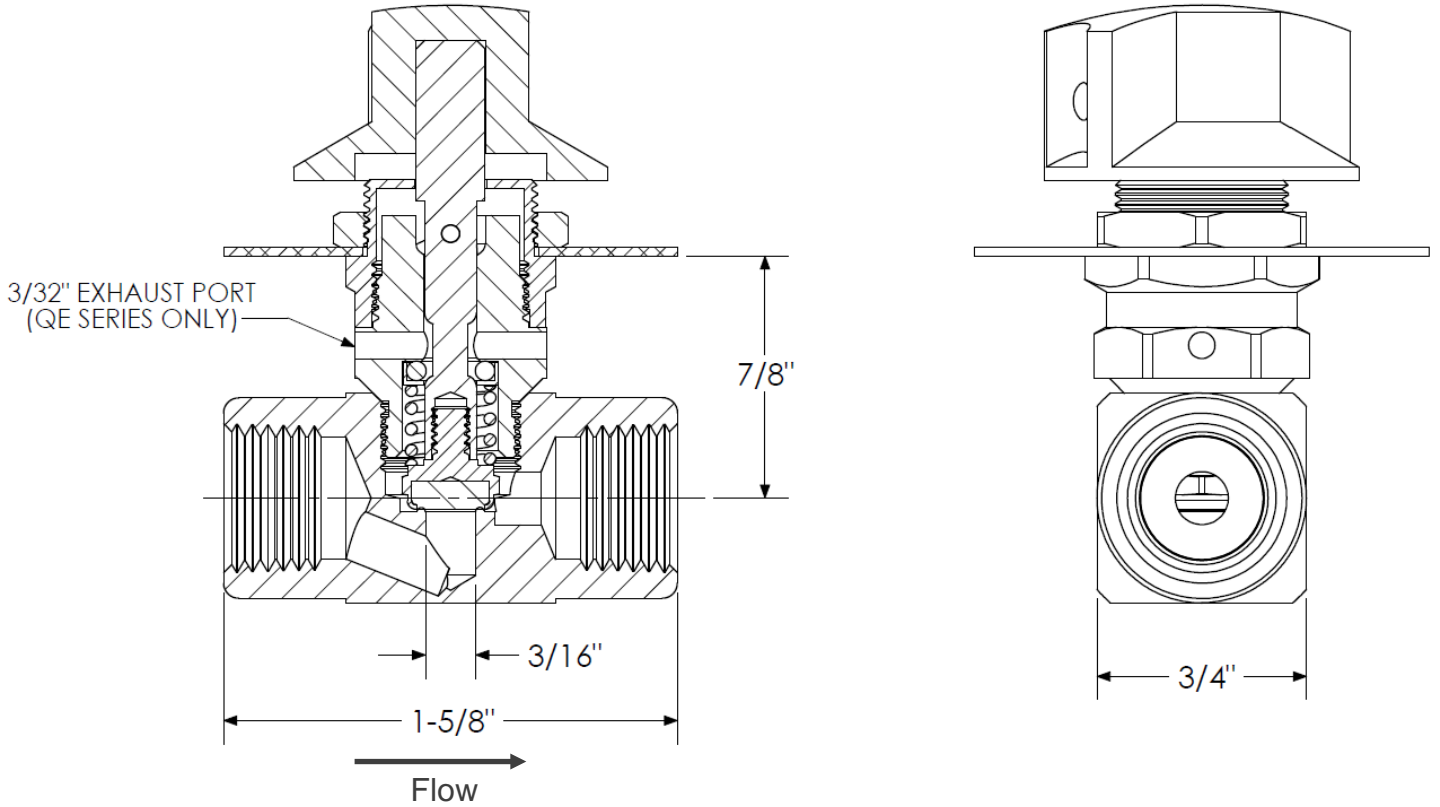


Model Q-45

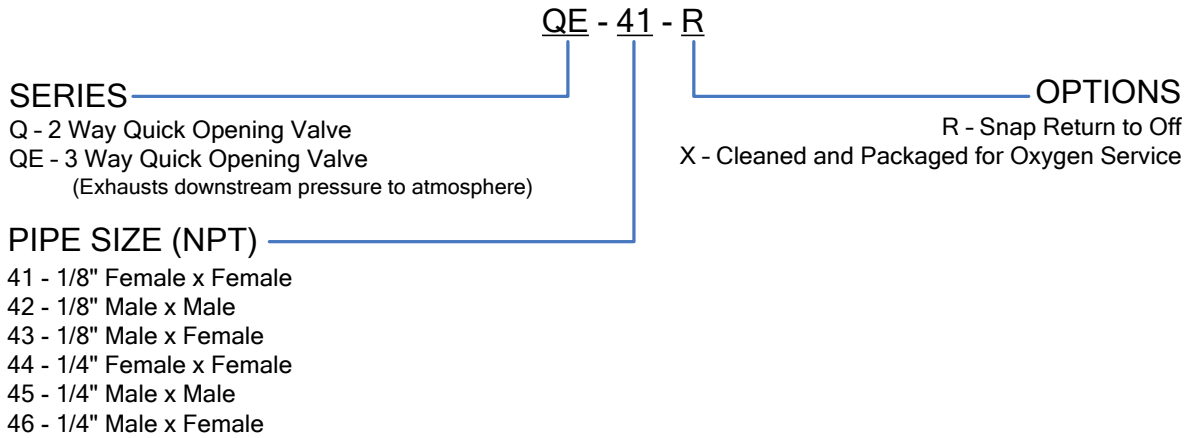


Model QE-44

QUICK OPENING VALVE



How To Order



PROPER COMPONENT SELECTION – When specifying a component, the total system design must be considered to ensure safe and trouble-free performance. Intended component function, materials compatibility, pressure ratings, installation, environment and maintenance are the responsibility of the system designer.



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