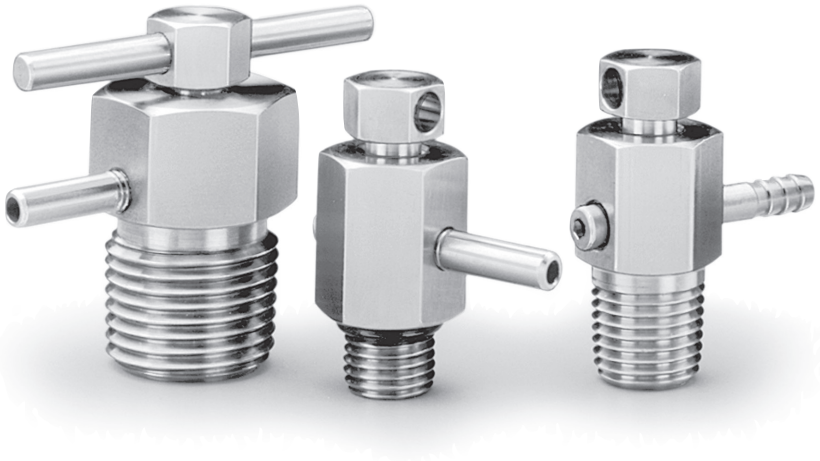
Bleed Valves and Purge Valves



Bleed Valves

- Working pressures up to 10 000 psig (689 bar)
- Temperatures up to 850°F (454°C)
- 316 stainless steel, carbon steel, alloy 400, or alloy C-276 materials

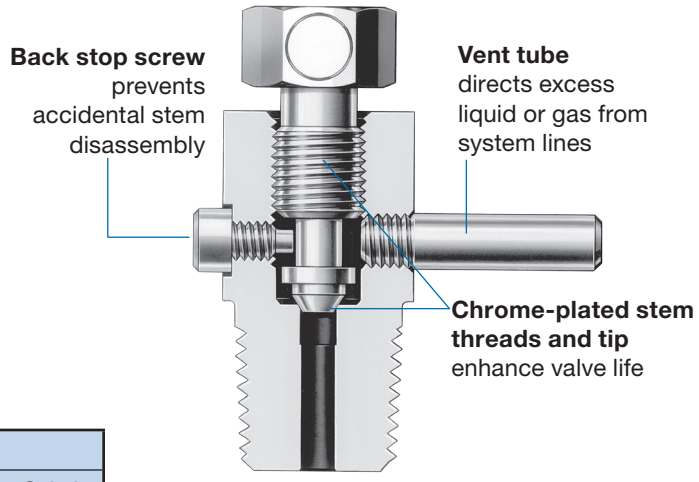
Purge Valves

- Working pressures up to 4000 psig (275 bar)
- Temperatures up to 600°F (315°C)
- 316 stainless steel, brass, or carbon steel materials

Bleed Valves

Swagelok bleed valves can be used on instrumentation devices such as multivalve manifolds or gauge valves to vent signal line pressure to atmosphere before removal of an instrument or to assist in calibration of control devices.

- Compact for convenient installation
- Male NPT and SAE end connections
- Orifice of 0.125 in. (3.2 mm); flow coefficient (C_v) of 0.25



Materials of Construction

Component	Valve Body Materials			
	316 SS	Steel	Alloy 400	Alloy C-276
	Material Grade/ASTM Specification			
Stem	*Chrome-plated 316 SS/A276*		*Alloy 400/ B164*	*Alloy C-276/ B574*
*Body*①	*316 SS/A479*	*1018②/A108*		
Back stop screw	*316 SS*		*Alloy 400*	
Vent tube	*316 SS/A269*		*Alloy 400/B165*	
Lubricant	*Nickel antiseize, hydrocarbon carrier*			

Wetted components listed in *italics*.

① Male SAE body has fluorocarbon FKM O-ring.

② Carbon steel bodies are plated with cadmium yellow dichromate for corrosion resistance.

Pressure-Temperature Ratings①

Material	316 SS	Steel	Alloy 400	Alloy C-276
Temperature, °F (°C)	**Working Pressure,** psig (bar)			
–65 (–53) to 100 (37)	10 000 (689)	10 000 (689)	10 000 (689)	10 000 (689)
200 (93)	9 290 (640)	9 110 (627)	8 800 (606)	9 120 (628)
300 (148)	8 390 (578)	8 860 (610)	8 240 (567)	8 425 (580)
400 (204)	7 705 (530)	8 555 (589)	7 960 (548)	7 800 (537)
450 (232)	7 435 (512)	8 315 (572)	7 940 (547)	7 545 (519)
500 (260)	7 165 (493)	—	7 920 (545)	7 290 (502)
600 (315)	6 770 (466)	—	—	6 850 (471)
650 (343)	6 660 (458)	—	—	6 665 (459)
700 (371)	6 480 (446)	—	—	6 520 (449)
750 (398)	6 335 (436)	—	—	6 375 (439)
800 (426)	6 230 (429)	—	—	6 265 (431)
850 (454)	6 085 (419)	—	—	6 155 (424)

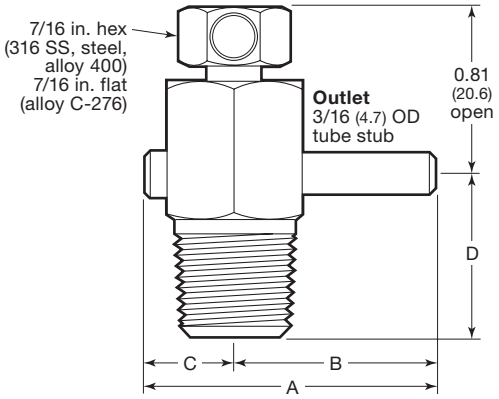
① Ratings based on all metal seals. Ratings limited to:

- –20°F (–28°C) min with steel.
- 450°F (232°C) max with SAE end connections using fluorocarbon FKM O-rings.
- 4568 psig (314 bar) max with SAE end connections.

Bleed Valves

Dimensions

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



Inlet End Connection		Ordering Number	Dimensions, in. (mm)			
Type	Size		A	B	C	D
Male NPT	1/8 in.	SS-BVM2	1.34 (34.0)	0.94 (23.9)	0.41 (10.4)	0.75 (19.1)
	1/4 in.	SS-BVM4				
	3/8 in.	SS-BVM6	1.47 (37.3)	1.03 (26.2)	0.44 (11.2)	0.88 (22.4)
	1/2 in.	SS-BVM8				
Male SAE①	1/4 in., 7/16-20	SS-BVST4	1.34 (34.0)	0.94 (23.9)	0.41 (10.4)	0.69 (17.5)
	1/2 in., 3/4-16	SS-BVST8	1.47 (37.3)	1.03 (26.2)	0.44 (11.2)	0.63 (16.0)
Male ISO②	1/4 in.	SS-BVM4RT	1.34 (34.0)	0.94 (23.9)	0.41 (10.4)	0.75 (19.1)
	1/2 in.	SS-BVM8RT	1.50 (38.1)	1.06 (26.9)	0.44 (11.2)	0.92 (23.4)

① Adapts to SAE straight thread boss and SAE J1926/1 boss.

② See specifications ISO7/1, BS EN 10226-1, DIN-2999, JIS B0203.

Ordering Information

Select an ordering number.

To order other valve body materials, replace **SS** in the ordering number with **S** for carbon steel, **M** for alloy 400, or **HC** for alloy C-276.

Example: **S**-BVM2

Low Fugitive Emissions

The American Petroleum Institute's API 624 tests for fugitive emissions to atmosphere for rising stem valves. The tests are conducted at a third party lab and certify that at no point in the test did the valve leak in excess of 100 ppm of methane. Certificates stating that the valve is certified for Low Emissions service are available. For more information, contact your authorized Swagelok sales and service representative.

Testing

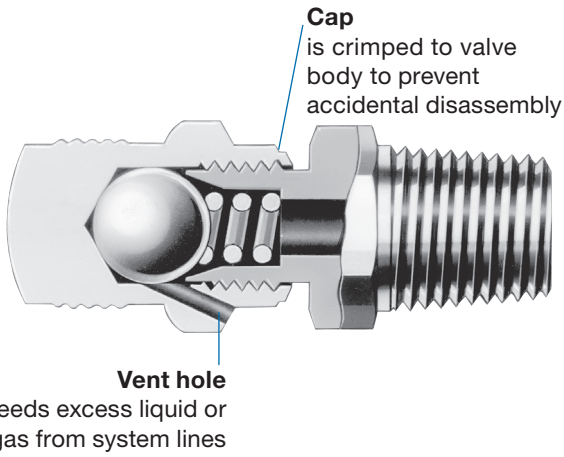
Every Swagelok bleed valve is factory tested with nitrogen at 1000 psig (69 bar). Seats have a maximum allowable leak rate of 0.1 std cm^3/min. Shell testing is performed to a requirement of no detectable leakage with a liquid leak detector.

⚠ **When installing a Swagelok bleed valve, position the vent tube to direct system fluid away from operating personnel. Always open bleed valves slowly. These valves contain no packing, so some fluid weepage will occur when the valves are opened. Operating personnel must protect themselves from exposure to system fluids.**

Purge Valves

Swagelok purge valves are manual bleed, vent, or drain valves. The knurled cap is permanently assembled to the valve body for safety. One-quarter turn with a wrench from finger-tight obtains leak-tight closure on first makeup. Snugging with a wrench ensures closure to the rated pressure with subsequent makeups.

- Compact for convenient installation
- NPT, SAE, Swagelok tube fitting, and tube adapter end connections



Materials of Construction

Component	Valve Body Materials		
	316 SS	Brass	Steel
	Material Grade/ASTM Specification		
Cap	*316 SS/A479*	*Brass 360/B16*	*Cadmium-plated 12L14/A108*
*Body*①			*Zinc-plated 12L14/A108*
*Poppet, ball*②	*316 SS/A276*		
Spring	*302 SS/A313*		
Lubricant	*Molybdenum disulfide-based paste*		

Wetted components listed in *italics*.

① Male SAE body has fluorocarbon FKM O-ring.

② 316 SS valves contain a poppet; brass and carbon steel valves contain a ball.

Pressure-Temperature Ratings①

ASME Class	1660	N/A	
Material Group	2.2	N/A	
Material Name	316 SS	Brass	Steel
Temperature, °F (°C)	Working Pressure, psig (bar)		
–65 (–53) to 100 (37)	4000 (275)	3000 (206)	3000 (206)
150 (65)	3720 (256)	2800 (192)	3000 (206)
200 (93)	3440 (237)	2600 (179)	3000 (206)
300 (148)	3105 (213)	2210 (152)	3000 (206)
350 (176)	2975 (204)	1480 (101)	2985 (205)
400 (204)	2850 (196)	740 (50.9)	—
450 (232)	2750 (189)	—	—
500 (260)	2650 (182)	—	—
600 (315)	2500 (172)	—	—

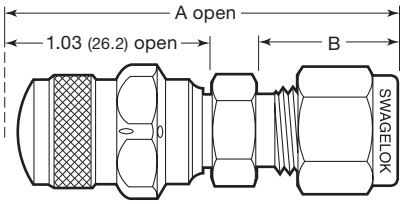
① Ratings limited to:

- –20°F (–28°C) min with steel.
- 450°F (232°C) max with SAE end connections using fluorocarbon FKM O-rings.

⚠ **When installing a Swagelok purge valve, position the vent hole to direct system fluid away from operating personnel. The vent hole rotates with the cap, changing the direction of discharge as the cap is turned. Always open purge valves slowly. These valves contain no packing, so some fluid weepage will occur when the valves are opened. Operating personnel must protect themselves from exposure to system fluids.**

Dimensions

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



Inlet End Connection		Ordering Number	Dimensions, in. (mm)	
Type	Size		A	B
Female NPT	1/8 in.	SS-4PF2	1.56 (39.6)	0.53 (13.5)
	1/4 in.	SS-4P-4F	1.75 (44.4)	0.72 (18.3)
	3/8 in.	SS-4PF6	1.81 (46.0)	0.78 (19.8)
	1/2 in.	SS-4PF8	1.98 (50.3)	0.97 (24.6)
Male NPT	1/8 in.	SS-4P-2M	1.62 (41.1)	0.38 (9.7)
	1/4 in.	SS-4P-4M	1.81 (46.0)	0.56 (14.2)
	3/8 in.	SS-4P-6M	1.84 (46.7)	
	1/2 in.	SS-4PM8	2.09 (53.1)	0.75 (19.1)
Male SAE①	1/4 in., 7/16-20	SS-4PST4	1.69 (42.9)	0.38 (9.7)
	1/2 in., 3/4-16	SS-4PST8	1.81 (46.0)	0.44 (11.2)
Male ISO②	1/8 in.	SS-4PM2RT	1.62 (41.1)	0.38 (9.7)
Swagelok tube fitting	1/8 in.	SS-4P-2	1.84 (46.7)	0.59 (15.0)
	1/4 in.	SS-4P-4	1.94 (49.3)	0.69 (17.5)
	3/8 in.	SS-4PS6	2.03 (51.6)	0.75 (19.1)
	1/2 in.	SS-4PS8	2.19 (55.6)	0.88 (22.4)
	6 mm	SS-4PS6MM	1.94 (49.3)	0.69 (17.5)
	8 mm	SS-4PS8MM	2.00 (50.8)	0.72 (18.3)
Tube adapter	1/4 in.	SS-4P-4T	1.87 (47.5)	0.63 (16.0)
	3/8 in.	SS-4P-6T	1.94 (49.3)	0.69 (17.5)
	1/2 in.	SS-4PT8	2.15 (54.6)	0.91 (23.1)

Dimensions shown with Swagelok nuts finger-tight, where applicable.

① Adapts to SAE straight thread boss and SAE J1926/1 boss.

② See specifications ISO7/1, BS EN 10226-1, DIN-2999, JIS B0203.

Ordering Information

Select an ordering number.

To order other valve body materials, replace **SS** in the ordering number with **B** for brass or **S** for carbon steel.

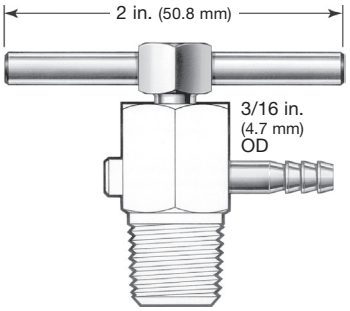
Example: **B**-4P-2F

Cleaning and Packaging

Every Swagelok bleed valve and purge valve is cleaned and packaged in accordance with Swagelok *Standard Cleaning and Packaging (SC-10)* catalog, MS-06-62.

Options

Bleed Valve



Handle

To order a Swagelok bleed valve with 316 SS/ASTM A276 or A479 bar handle, add **-SH** to the ordering number.

Example: SS-BVM4**-SH**

Barbed Vent Tube

The barbed vent tube enables use of soft plastic or rubber tubing at the valve outlet. Tube material is 316 SS/ASTM A269. To order, add **-C3** to the ordering number.

Example: SS-BVM2**-C3**

Purge Valve

PTFE Ball

The Swagelok purge valve with PTFE ball provides leak-tight shutoff with finger pressure and features a removable cap for easy ball replacement.

Pressure Rating: 200 psig at 100°F (13.7 bar at 37°C)

Temperature Rating: 350°F (176°C).

To order a Swagelok purge valve with PTFE ball, add **-TFE** to the ordering number.

Example: SS-4P-2F**-TFE**

Additional Valve Materials

Alloy 625, alloy 825, and Aloy 2507 super duplex stainless steel materials are available for bleed valves. Refer to *Bleed Valves, Special Alloy Materials—BV Series* catalog, MS-02-356.

⚠ **To increase service life, ensure proper valve performance, and prevent leakage, apply only as much torque as is required to achieve positive shutoff.**

Safe Product Selection
When selecting a product, the total system design must be considered to ensure safe, trouble-free performance. Function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the responsibilities of the system designer and user.

⚠ **WARNING**
Do not mix/interchange Swagelok products or components not governed by industrial design standards, including Swagelok tube fitting end connections, with those of other manufacturers.

Warranty Information

Swagelok products are backed by The Swagelok Limited Lifetime Warranty. For a copy, visit swagelok.com or contact your authorized Swagelok representative.