SCP PFA-Lined Cylindrical Plug Valves

NPS ½" – 2" · 3" – 6" reduced port · Class 150

A lined cylindrical plug valve for shut-off, flow control and throttling of corrosive, abrasive or toxic media, liquid or gas. Two-piece cast body and bonnet, a one-piece PFA-encapsulated cylinder and shaft, cavity-free flow path, a dynamic shaft seal to TA-Luft and an ISO 5211 top flange for direct mounting of handlevers, gearboxes and actuators.



Design

Sizes	NPS ½" – 2"; 3" – 6" reduced port.
Body	Cast steel WCB (1.0619), RAL 5005 signal-blue epoxy coated, or stainless CF8M (1.4408). Two-piece body with bolted bonnet.
Lining	PFA standard; PFA-AS (conductive) to order. Resilient liner-to-cylinder contact keeps operating torque low and constant.
Cylinder and shaft	One piece, solid or encapsulated min. 0.10 in (2.5 mm). PFA-encapsulated duplex (1.4462) standard; PFA-AS, PVDF, PP or ETFE encapsulation, or solid 316L, titanium Gr. 2 and Gr. 7 and alloy C-276, to order.
Shaft seal	Dynamic shaft seal to TA-Luft: PTFE diaphragm on a duplex pressure plate, FPM shaft seal ring and O-rings (VMQ optional), Belleville springs in spring steel, 316L pressure sleeve. Double-D shaft to EN 12116 with rated breaking point.
Connections	Flanges to ASME B16.5 Class 150; Class 300, PN16 and JIS 10K to order. Face-to-face to ASME B16.10 (½" and ¾" are EN 558-1 range 1 lengths). ISO 5211 top flange (F05 – F10) with O-ring.
Pressure	0.01 psia (vacuum) to 232 psi, depending on size and temperature. Pressure-temperature chart on the Swissfluid sheet.
Temperature	−40 °F to +400 °F (−40 °C to +204 °C) depending on lining. Low-temperature or austenitic steels required below +14 °F (−10 °C).
Compliance	Bubble-tight shut-off; pressure and tightness testing to EN 12266-1 leakage rate A / API 598; marking to EN 19; certificates to EN 10204 3.1 / 2.2 / 2.1; conformity with the European Pressure Equipment Directive (PED).

Source: Swissfluid USA PM 22 us 2020-10.

Main features

- Heavy-duty, robust, maintenance-free construction
- Bubble-tight across the full pressure and temperature range
- Cavity-free design, maximum permeation protection
- Zero stem leakage from the stem sealing mechanism
- Consistent low torque: cylindrical plug on a resilient liner
- Maximum flow rates at the lowest pressure drops
- Components replaceable on site
- Handlever as standard, or bare shaft for actuator mounting

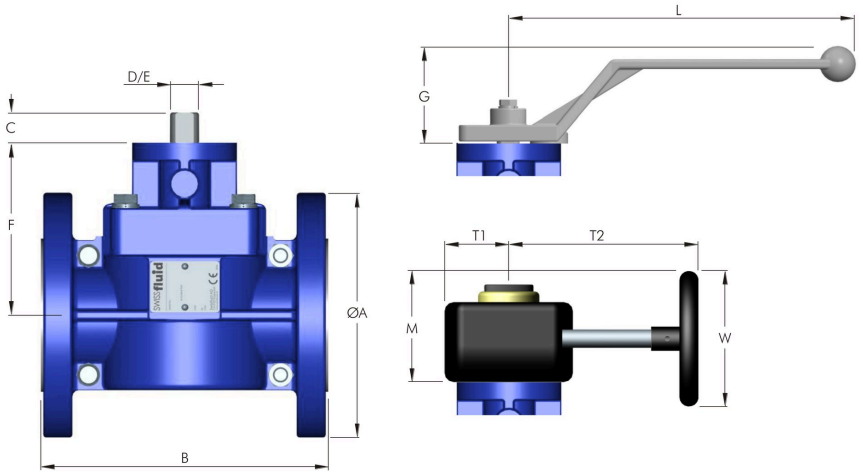
LinedPipe.Com note. PFA is chosen for chemistry, not grit. For a chemically compatible abrasive slurry, the cylinder can be PVDF-encapsulated (the body lining stays PFA); Swissfluid also offers PVDF linings on its ball, butterfly and diaphragm valves.

Construction. Two-piece body and bonnet in WCB or CF8M, PFA liner, PFA-encapsulated duplex cylinder and shaft, PTFE diaphragm and duplex pressure plate, FPM elastomers and O-rings, Belleville springs in spring steel, 316L pressure sleeve, PTFE-lined steel-backed bushing, A2-70 stainless body bolting, SS304 name plate.

Typical service. Chemical and petrochemical, biotechnology and pharmaceutical, semiconductor, pulp and paper, food processing, paint and pigments, fertilizers, textiles, mining and steel.

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Dimensions



Dimensions, inches · Class 150 with hand lever

Size	B face-to-face	Ø A flange	F	G	L lever	ISO 5211	Valve lbs	Lever lbs	Gearbox lbs
½"	5.12*	3.74‡	3.39	2.28	8.31	F05	7.04	0.79	5.06
¾"	5.91*	4.13‡	3.50	2.28	8.31	F05	8.36	0.79	5.06
1"	5.00	4.25	3.62	2.28	8.31	F05	7.92	0.79	5.06
1½"	6.50	5.00	4.02	2.28	9.88	F07	11.88	0.90	5.06
2"	7.00	6.00	4.21	2.28	9.88	F07	18.04	0.90	5.06
3" RP	8.00	7.50	4.21	2.28	9.88	F07	30.36	0.90	5.06
4" RP	9.00	9.00	5.39	2.44	12.40	F07	50.38	1.98	7.70
6" RP	10.50	11.00	5.79	—	—	F10	77.00	1.98	7.70

Face-to-face to ASME B16.10 per the sheet; * ½" and ¾" are EN 558-1 range 1 (DIN) lengths, not B16.10 lengths. Flanges to ASME B16.5 Class 150. ‡ DIN-size flange diameter, as Swissfluid's sheet gives it. Source: Swissfluid USA PM 22 us 2020-10.

Note. Torque values on the Swissfluid sheet are break-away values for a PFA-encapsulated cylinder with PFA liner, without actuator safety factors.

SCP PFA-Lined Cylindrical Plug Valves

Ordering code, options

Ordering code

Build a code from left to right; a standard valve is **SCP · 2" · ANSI150# · G10 · A85 · E68 · U85 · DD**. Some selections require or exclude others; we check every code before it goes to the factory.

Size	**½"–2"** NPS ½" – 2" · **3"RP–6"RP** reduced port · **DN15–100** metric
Flange	**ANSI150#** ASME Class 150 · **ANSI300#** ASME Class 300 · **PN16** PN16 · **JIS 10K** JIS 10K
Body	**G10** WCB carbon steel · **G15** CF8M stainless
Body lining	**A85** PFA · **A86** PFA-AS conductive
Elastomer	**E67** FPM · **E68** VMQ silicone
Cylinder	**U85** PFA encapsulated · **U86** PFA-AS encapsulated · **U88** PVDF encapsulated · **U89** PP encapsulated · **U91** ETFE encapsulated · **S32** solid 316L · **S40** solid Ti Grade 2 · **S41** solid Ti Grade 7 · **S43** solid alloy C-276
Shaft end	**DD** Double-D drive · **SP** square parallel · **SR** square 45° rotated
Options	**Vp60** 60° V-port · **Vh** vented cylinder · **B7** B7 body bolts · **Ti** titanium body bolts · **RAL** special paint

Data and codes: Swissfluid USA PM 22 us 2020-10.

Options

- **V-port cylinder** Control service, various contours; 60° standard.
- **Vented cylinder** Drilled vent hole for upstream pressure relief.
- **Cylinder materials** PFA-AS, PVDF, PP or ETFE encapsulation; solid 316L, titanium Gr. 2 or Gr. 7, alloy C-276.
- **Elastomers** FPM standard; VMQ silicone
- **Flange connections** Class 300, PN16, JIS 10K
- **Bolting** A2-70 stainless standard; B7 or titanium body bolts
- **Shaft end** Double-D standard; square parallel or square 45° rotated
- **Paint** Special RAL color
- **Actuation** Manual gearbox or pneumatic actuator on an ISO mounting kit, with E/P positioner, limit switch box, solenoid valve, NAMUR bracket, position indicator and manual override

SCP PFA-Lined Cylindrical Plug Valves

Ordering from LinedPipe.Com

Size, series, lining, class and quantity are enough to start. For a quotation send the service conditions (media, concentration, temperature, pressure, flow), the end connections and, for a valve, the actuation you need; we will confirm the ordering code, the installation dimensions and a delivery time.

Request a quote

(251) 625-4949 · info@linedpipe.com · linedpipe.com/contact/
(the online quote form takes valves line by line and attachments).

What to tell us

- Series and size, flange class, and full or reduced port where the series offers both
- Lining, and the ball, disc, glass, seat and elastomer materials where the series has them
- Body material: carbon steel or stainless, as the series offers
- For a valve, the topworks: bare stem, lever, gearbox, pneumatic or electric actuator, fail position, accessories
- Options from the series' ordering code, such as a conductive lining or special bolting
- Certificates: EN 10204 3.1 material certificates and test reports on request

Dimensions

Face-to-face lengths in our valve catalog are stated against ASME B16.10, MSS SP-88, EN 558-1 or EN 12982, as the note under each table says; where a table mixes standards, lengths marked * are not to the US standard. Confirm the installation length on the order acknowledgement before cutting pipe.

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