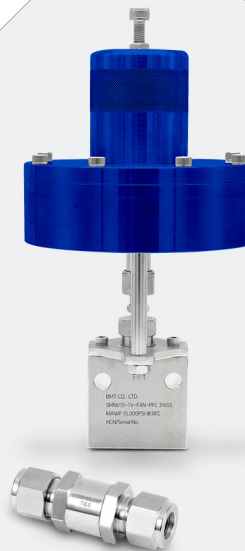


Medium Pressure Valves

- Medium Pressure Needle Valves
- Medium Pressure Ball Valves
- Medium Pressure Check Valves
- Medium Pressure Relief Valves



Medium Pressure Needle Valves

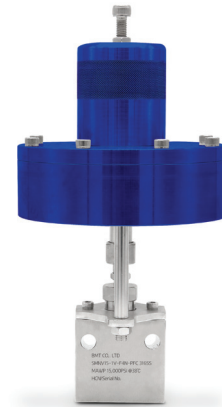


KS B ISO 19880-3
(Gaseous hydrogen
Fuelling Stations)

SMNV10/15/20 up to 20,000 psi (1380 bar)

Features

- Pressures up to 20,000 psi (1,380 bar)
- Non-rotating stem tips.
- Available sizes : 1/4", 3/8", 9/16", 3/4", 1".
- 316 stainless steel high tensile bodies.
- Choice of VEE or Regulating stem tip.
- PTFE(Teflon) encapsulated packing provides dependable stem and body sealing.



Specifications

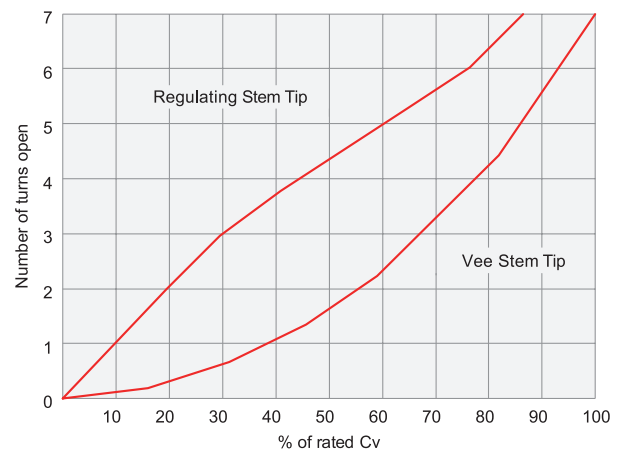
- Maximum Working Pressure rating: 20,000psig (1,380bar) @72 F°(22 C°)
- Temperature rating: 0 to 450 F°(-17.8 to 232 C°) with Teflon packing and up to 1200 F°(648 C°) with optional grafoil packing.

Technical Data

Valve Flow Coefficient

Tube O.D (In.)	Connection	Orifice, In. (mm)	*Cv	Pressure / Temperature Rating @72 F°(22 C°)
1/4"	Cone and Thread	0.125" (3.18)	0.31	20,000 psi (1,379 bar)
1/4"	NPT	0.200" (5.1)	0.63	15,000 psi (1,034 bar)
1/4"	Pre-Forming	0.200" (5.1)	0.63	15,000 psi (1,034 bar)
3/8"	Cone and Thread	0.200" (5.1)	0.63	20,000 psi (1,379 bar)
3/8"	NPT	0.216" (5.5)	0.75	15,000 psi (1,034 bar)
3/8"	Pre-Forming	0.216" (5.5)	0.75	15,000 psi (1,034 bar)
1/2"	NPT	0.311" (7.9)	1.30	15,000 psi (1,034 bar)
1/2"	Pre-Forming	0.311" (7.9)	1.30	15,000 psi (1,034 bar)
9/16"	Cone and Thread	0.311" (7.9)	1.30	20,000 psi (1,379 bar)
3/4"	Cone and Thread	0.437" (11.1)	2.50	20,000 psi (1,379 bar)
3/4"	NPT	0.437" (11.1)	2.50	10,000 psi (689 bar)
3/4"	Pre-Forming	0.437" (11.1)	2.50	10,000 psi (689 bar)
1"	Cone and Thread	0.56" (14.2)	4.40	20,000 psi (1,379 bar)
1"	NPT	0.56" (14.2)	4.40	10,000 psi (689 bar)
1"	Pre-Forming	0.56" (14.2)	4.40	10,000 psi (689 bar)

Coefficient Curves (Cv)



*Cv values listed are for 2-way straight pattern valves.
For 2-way angle pattern valves, increase Cv value by 50%.

Ordering Information

Example :	SMNV20 - 1V - MP9 - GR - HS					
	1	2 3	4	5	6	

*316 Stainless Steel is Standard Body Material

1. Valve Series

- SMNV10** = 10,000 psi
- SMNV15** = 15,000 psi
- SMNV20** = 20,000 psi

2. Body Pattern

- 1** = 2-way straight
- 2** = 2-way angle
- 3** = 3-way, two pressure connections
- 4** = 3-way, one pressure connection
- 5** = 3-way, two stem connection valve
- 6** = Replaceable seat valve

3. Stem Type

- V** = Vee stem
- R** = Regulating stem

4. Connection Size & Type

Size (inch)	1/4	3/8	1/2	9/16	3/4	1
NPT(Female)	F4N	F6N	F8N	-	F12N	F16N
Medium Pressure C&T	MP4	MP6	-	MP9	MP12	MP16
Pre-forming	4F	6F	8F	-	12F	16F

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

5. Packing Material

- (Blank)** = PTFE (Standard)
- GR** = Grafoil

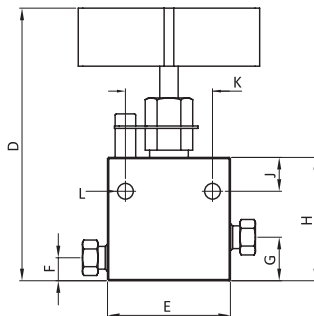
6. Application

- (Blank)** = General Gas, Water
- GH** = General Hydrogen
- H70** = Hydrogen Station ☞

※ Hydrogen station application is certified according to KS B ISO 19880-3.

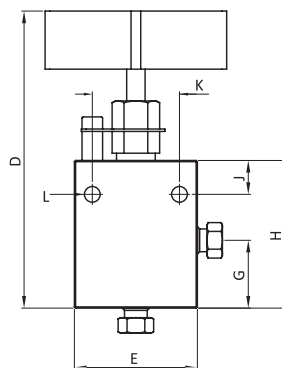
Table of Dimensions

Two Way Straight Valves



Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SMNV10-1V-F12N	3/4 (19.05)	0.437 (11.1)	7.00 (177.8)	3.50 (88.9)	0.75 (19.0)	1.50 (38.1)	3.75 (95.3)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-1V-F16N	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	0.88 (22.4)	1.82 (46.2)	4.63 (117.6)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV10-1V-12F	3/4 (19.05)	0.437 (11.1)	7.00 (177.8)	3.50 (88.9)	0.75 (19.0)	1.50 (38.10)	3.75 (95.3)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-1V-16F	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	0.88 (22.4)	1.82 (46.2)	4.63 (117.6)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV15-1V-F4N	1/4 (6.35)	0.2 (5.1)	4.41 (112.0)	2.00 (50.8)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-1V-F6N	3/8 (9.53)	0.22 (5.5)	4.41 (112.0)	2.50 (63.5)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.40)
SMNV15-1V-F8N	1/2 (12.70)	0.311 (7.9)	5.90 (150.0)	3.00 (76.2)	0.61 (15.5)	1.04 (26.5)	2.95 (75.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV15-1V-4F	1/4 (6.35)	0.2 (5.1)	4.41 (112.0)	2.00 (50.8)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-1V-6F	3/8 (9.53)	0.22 (5.5)	4.41 (112.0)	2.50 (63.5)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.40)
SMNV15-1V-8F	1/2 (12.70)	0.311 (7.9)	5.90 (150.0)	3.00 (76.2)	0.61 (15.5)	1.04 (26.5)	2.95 (75.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV20-1V-MP4	1/4 (6.35)	0.125 (3.2)	4.41 (112.0)	2.00 (50.8)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-1V-MP6	3/8 (9.53)	0.2 (5.1)	4.41 (112.0)	2.00 (50.8)	0.37 (9.5)	0.71 (18.0)	2.00 (50.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-1V-MP9	9/16 (14.29)	0.311 (7.9)	5.94 (151.0)	2.50 (63.5)	0.61 (15.5)	1.04 (26.5)	2.95 (75.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.00 (25.40)
SMNV20-1V-MP12	3/4 (19.05)	0.437 (11.1)	7.00 (177.8)	3.00 (76.2)	0.75 (19.0)	1.50 (38.1)	3.75 (95.3)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)
SMNV20-1V-MP16	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	0.88 (22.4)	1.82 (46.2)	4.63 (117.6)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)

Two Way Angle Valves

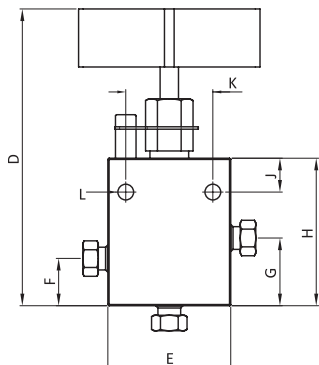


Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	G	H	J	K	L		
SMNV10-2V-F12N	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.50 (88.9)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)	
SMNV10-2V-F16N	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	2.30 (58.5)	5.12 (130.0)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	
SMNV10-2V-12F	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.50 (88.9)	2.00 (50.8)	4.25 (108)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)	
SMNV10-2V-16F	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	2.30 (58.5)	5.12 (130.0)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	
SMNV15-2V-F4N	1/4 (6.35)	0.2 (5.1)	4.80 (122.0)	2.00 (50.8)	1.25 (31.8)	2.44 (61.9)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV15-2V-F6N	3/8 (9.53)	0.22 (5.5)	4.80 (122.0)	2.50 (63.5)	1.25 (31.8)	2.44 (61.9)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.40)	
SMNV15-2V-F8N	1/2 (12.70)	0.311 (7.9)	6.43 (163.3)	3.00 (76.2)	1.63 (41.4)	3.38 (85.9)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)	
SMNV15-2V-4F	1/4 (6.35)	0.2 (5.1)	4.80 (122.0)	2.00 (50.8)	1.25 (31.8)	2.44 (61.9)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV15-2V-6F	3/8 (9.53)	0.22 (5.5)	4.80 (122.0)	2.50 (63.5)	1.25 (31.8)	2.44 (61.90)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.40)	
SMNV15-2V-8F	1/2 (12.70)	0.311 (7.9)	6.43 (163.3)	3.00 (76.2)	1.63 (41.4)	3.38 (85.9)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)	
SMNV20-2V-MP4	1/4 (6.35)	0.125 (3.2)	4.80 (122.0)	2.00 (50.8)	1.25 (31.8)	2.44 (61.9)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV20-2V-MP6	3/8 (9.53)	0.2 (5.1)	4.80 (122.0)	2.00 (50.8)	1.25 (31.8)	2.44 (61.9)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV20-2V-MP9	9/16 (14.29)	0.311 (7.9)	6.43 (163.5)	2.50 (63.5)	1.63 (41.4)	3.38 (85.9)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.00 (25.4)	
SMNV20-2V-MP12	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.00 (76.2)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)	
SMNV20-2V-MP16	1 (25.4)	0.56 (14.2)	9.00 (228.6)	4.10 (104.3)	2.30 (58.5)	5.12 (130.0)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	

- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with nuts finger-tight, where applicable.

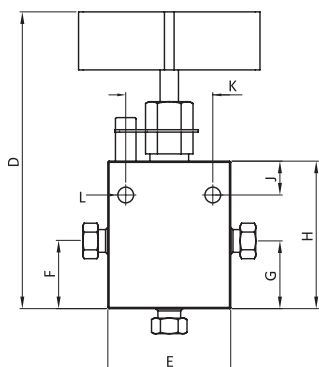
Table of Dimensions

Three Way Valves / Two Pressure Connections



Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SMNV10-3V-F12N	3/4 (19.0)	0.437 (11.1)	7.88 (200.0)	3.50 (88.9)	1.63 (41.3)	2.38 (60.5)	4.63 (117.6)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-3V-F16N	1 (25.4)	0.56 (14.2)	9.75 (247.9)	4.10 (104.3)	2.13 (54.1)	3.07 (78.0)	5.88 (149.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV10-3V-12F	3/4 (19.05)	0.437 (11.1)	7.88 (200.0)	3.50 (88.9)	1.63 (41.3)	2.38 (60.5)	4.63 (117.6)	0.63 (16.0)	1.76 (44.70)	0.44 (11.2)	1.75 (44.5)
SMNV10-3V-16F	1 (25.4)	0.56 (14.2)	9.75 (247.9)	4.10 (104.3)	2.13 (54.1)	3.07 (78.0)	5.88 (149.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV15-3V-F4N	1/4 (6.35)	0.2 (5.1)	5.00 (127.00)	2.00 (50.8)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-3V-F6N	3/8 (9.53)	0.22 (5.5)	5.00 (127.0)	2.50 (63.5)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)
SMNV15-3V-F8N	1/2 (12.70)	0.311 (7.9)	6.51 (165.6)	3.00 (76.2)	1.25 (31.8)	1.88 (47.8)	3.63 (92.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV15-3V-4F	1/4 (6.35)	0.2 (5.1)	5.00 (127.0)	2.00 (50.8)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-3V-6F	3/8 (9.53)	0.22 (5.5)	5.00 (127.0)	2.50 (63.5)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)
SMNV15-3V-8F	1/2 (12.70)	0.311 (7.9)	6.51 (165.6)	3.00 (76.2)	1.25 (31.8)	1.88 (47.8)	3.63 (92.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV20-3V-MP4	1/4 (6.35)	0.125 (3.2)	5.00 (127.0)	2.00 (50.8)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-3V-MP6	3/8 (9.53)	0.2 (5.1)	5.00 (127.0)	2.00 (50.8)	1.00 (25.4)	1.44 (36.6)	2.62 (66.5)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-3V-MP9	9/16 (14.29)	0.311 (7.9)	6.51 (165.6)	2.50 (63.5)	1.25 (31.8)	1.88 (47.8)	3.62 (92.0)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.00 (25.4)
SMNV20-3V-MP12	3/4 (19.05)	0.437 (11.1)	7.88 (200.0)	3.00 (76.2)	1.63 (41.3)	2.38 (60.5)	4.63 (117.6)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)
SMNV20-3V-MP16	1 (25.4)	0.56 (14.2)	9.75 (247.9)	4.10 (104.3)	2.13 (54.1)	3.07 (78.0)	5.88 (149.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)

Three Way Valves / One Pressure Connection

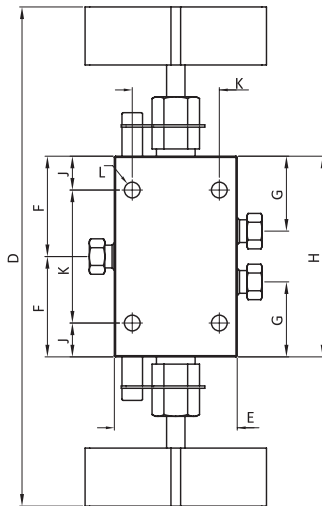


Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SMNV10-4V-F12N	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.50 (88.9)	2.00 (50.8)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-4V-F16N	1 (25.4)	0.56 (14.2)	9.00 (228.9)	4.10 (104.3)	2.31 (58.7)	2.31 (58.7)	5.12 (130.0)	1.13 (28.7)	2.50 (63.5)	0.55 (14)	1.75 (44.5)
SMNV10-4V-12F	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.50 (88.9)	2.00 (50.8)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-4V-16F	1 (25.4)	0.56 (14.2)	9.00 (228.9)	4.10 (104.3)	2.31 (58.7)	2.31 (58.7)	5.12 (130.0)	1.13 (28.70)	2.50 (63.5)	0.55 (14)	1.75 (44.5)
SMNV15-4V-F4N	1/4 (6.35)	0.20 (5.1)	4.81 (122.3)	2.00 (50.8)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	0.75 (19)
SMNV15-4V-F6N	3/8 (9.53)	0.22 (5.5)	4.81 (122.3)	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	1.00 (25.4)
SMNV15-4V-F8N	1/2 (12.70)	0.311 (7.9)	6.31 (160.3)	3.00 (76.2)	1.63 (41.4)	1.63 (41.4)	3.38 (85.8)	0.55 (14.0)	1.81 (46)	0.33 (8.5)	1.38 (35.0)
SMNV15-4V-4F	1/4 (6.35)	0.20 (5.1)	4.81 (122.3)	2.00 (50.8)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	0.75 (19)
SMNV15-4V-6F	3/8 (9.53)	0.22 (5.5)	4.81 (122.3)	2.50 (63.5)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	1.00 (25.4)
SMNV15-4V-8F	1/2 (12.70)	0.311 (7.9)	6.31 (160.3)	3.00 (76.2)	1.63 (41.4)	1.63 (41.4)	3.38 (85.8)	0.55 (14.0)	1.81 (46)	0.33 (8.5)	1.38 (35.0)
SMNV20-4V-MP4	1/4 (6.35)	0.125 (3.2)	4.81 (122.3)	2.00 (50.8)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	0.75 (19)
SMNV20-4V-MP6	3/8 (9.53)	0.2 (5.1)	4.81 (122.3)	2.00 (50.8)	1.25 (31.8)	1.25 (31.8)	2.44 (62.0)	0.55 (14.0)	1.42 (36)	0.25 (6.5)	0.75 (19)
SMNV20-4V-MP9	9/16 (14.29)	0.311 (7.9)	6.43 (163.6)	2.50 (63.5)	1.63 (41.4)	1.63 (41.4)	3.38 (85.8)	0.55 (14.0)	1.81 (46)	0.33 (8.5)	1.00 (25.4)
SMNV20-4V-MP12	3/4 (19.05)	0.437 (11.1)	7.50 (190.5)	3.00 (76.2)	2.00 (50.8)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)
SMNV20-4V-MP16	1 (25.4)	0.56 (14.2)	9.00 (228.9)	4.10 (104.3)	2.31 (58.7)	2.31 (58.7)	5.12 (130.0)	1.13 (28.70)	2.50 (63.50)	0.55 (14)	1.75 (44.5)

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

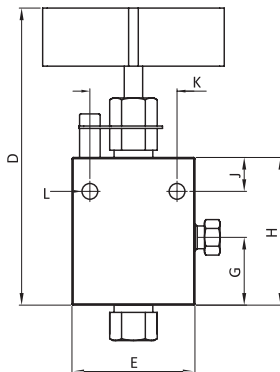
Table of Dimensions

Three Way / Two Stem Connection Valves



Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	F	G	H	J	K	L	
SMNV10-5V-F12N	3/4 (19.05)	0.437 (11.1)	13.00 (330.2)	3.50 (88.9)	3.25 (82.5)	2.00 (50.8)	6.50 (165.1)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-5V-F16N	1 (25.4)	0.56 (14.2)	15.44 (392.4)	4.10 (104.3)	3.75 (95.3)	1.88 (47.8)	7.50 (190.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV10-5V-12F	3/4 (19.05)	0.437 (11.1)	13.00 (330.2)	3.50 (88.9)	3.25 (82.5)	2.00 (50.8)	6.50 (165.1)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)
SMNV10-5V-16F	1 (25.4)	0.56 (14.2)	15.44 (392.4)	4.10 (104.3)	3.75 (95.3)	1.88 (47.8)	7.50 (190.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)
SMNV15-5V-F4N	1/4 (6.35)	0.2 (5.1)	8.13 (206.4)	2.00 (50.8)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-5V-F6N	3/8 (9.53)	0.22 (5.5)	8.13 (206.4)	2.50 (63.5)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)
SMNV15-5V-F8N	1/2 (12.70)	0.311 (7.9)	11.31 (287.5)	3.00 (76.2)	2.56 (65.0)	1.63 (41.4)	5.13 (130.2)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV15-5V-4F	1/4 (6.35)	0.2 (5.1)	8.13 (206.4)	2.00 (50.8)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV15-5V-6F	3/8 (9.53)	0.22 (5.5)	8.13 (206.4)	2.50 (63.5)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)
SMNV15-5V-8F	1/2 (12.70)	0.311 (7.9)	11.31 (287.5)	3.00 (76.2)	2.56 (65.0)	1.63 (41.4)	5.13 (130.2)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)
SMNV20-5V-MP4	1/4 (6.35)	0.125 (3.2)	8.13 (206.4)	2.00 (50.8)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-5V-MP6	3/8 (9.53)	0.2 (5.1)	8.13 (206.4)	2.00 (50.8)	1.69 (42.9)	1.00 (25.4)	3.38 (85.8)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)
SMNV20-5V-MP9	9/16 (14.29)	0.311 (7.9)	11.31 (287.5)	2.50 (63.5)	2.56 (65.0)	1.63 (41.4)	5.13 (130.2)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.00 (25.4)
SMNV20-5V-MP12	3/4 (19.05)	0.437 (11.1)	13.00 (330.2)	3.00 (76.2)	3.25 (82.5)	2.00 (50.8)	6.50 (165.1)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)
SMNV20-5V-MP16	1 (25.4)	0.56 (14.2)	15.44 (392.4)	4.10 (104.3)	3.75 (95.3)	1.88 (47.5)	7.50 (190.5)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)

Replaceable Seat Valves



Part No.	Tube OD, in.(mm)	Orifice, in.(mm)	Dimensions, in.(mm)								Thickness, in.(mm)
			D	E	G	H	J	K	L		
SMNV10-6V-F12N	3/4 (19.05)	0.437 (11.1)	9.00 (228.6)	3.50 (88.9)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)	
SMNV10-6V-F16N	1 (25.4)	0.56 (14.2)	11.00 (279.6)	4.10 (104.3)	2.56 (65.0)	5.25 (133.4)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	
SMNV10-6V-12F	3/4 (19.05)	0.437 (11.1)	9.00 (228.6)	3.50 (88.9)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.75 (44.5)	
SMNV10-6V-16F	1 (25.4)	0.56 (14.2)	11.00 (279.6)	4.10 (104.3)	2.56 (65.0)	5.25 (133.4)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	
SMNV15-6V-F4N	1/4 (6.35)	0.20 (5.1)	5.75 (146.1)	2.00 (50.8)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV15-6V-F6N	3/8 (9.53)	0.22 (5.5)	5.75 (146.1)	2.50 (63.5)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)	
SMNV15-6V-F8N	1/2 (12.70)	0.311 (7.9)	7.34 (186.7)	3.00 (76.2)	1.38 (35.0)	3.13 (79.4)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)	
SMNV15-6V-4F	1/4 (6.35)	0.20 (5.1)	5.75 (146.1)	2.00 (50.8)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV15-6V-6F	3/8 (9.53)	0.22 (5.5)	5.75 (146.1)	2.50 (63.5)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	1.00 (25.4)	
SMNV15-6V-8F	1/2 (12.70)	0.311 (7.9)	7.34 (186.7)	2.50 (63.5)	1.38 (35.0)	3.13 (79.4)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.38 (35.0)	
SMNV20-6V-MP4	1/4 (6.35)	0.125 (3.2)	5.75 (146.1)	2.00 (50.8)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV20-6V-MP6	3/8 (9.53)	0.2 (5.1)	5.75 (146.1)	2.00 (50.8)	1.06 (26.9)	2.25 (57.2)	0.55 (14.0)	1.42 (36.0)	0.25 (6.5)	0.75 (19.0)	
SMNV20-6V-MP9	9/16 (14.29)	0.311 (7.9)	7.34 (186.7)	2.50 (63.5)	1.38 (35.0)	3.13 (79.4)	0.55 (14.0)	1.81 (46.0)	0.33 (8.5)	1.00 (25.4)	
SMNV20-6V-MP12	3/4 (19.05)	0.437 (11.1)	9.00 (228.6)	3.00 (76.2)	2.00 (50.8)	4.25 (108.0)	0.63 (16.0)	1.76 (44.7)	0.44 (11.2)	1.38 (35.0)	
SMNV20-6V-MP16	1 (25.4)	0.56 (14.2)	11.00 (279.6)	4.10 (104.3)	2.56 (65.0)	5.25 (133.0)	1.13 (28.7)	2.50 (63.5)	0.55 (14.0)	1.75 (44.5)	

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Medium Pressure Ball Valves

SMBV Series 10,000, 15,000 and 20,000 psi

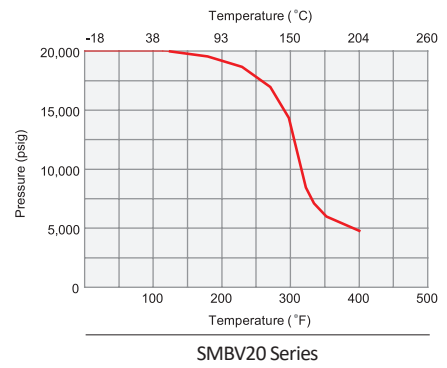
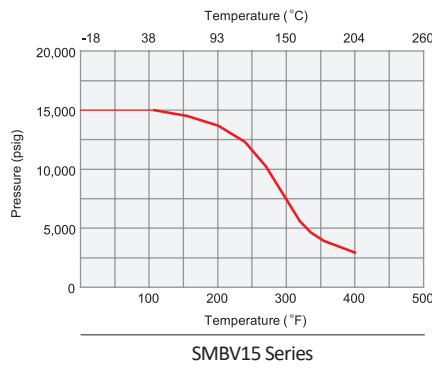
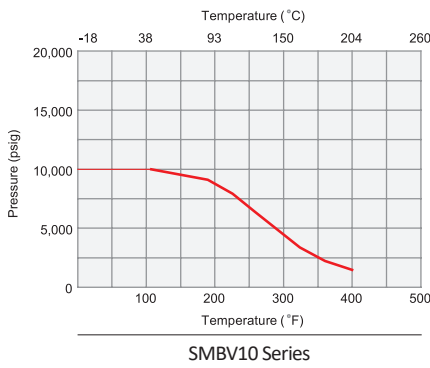
Features

- Trunnion mounted style, ideal for severe duty applications.
- Two-way and three-way valve configurations.
- Three-way, quarter turn diverter and half turn switching models.
- Full-port flow path minimizes pressure drop.
- PEEK seats offer excellent resistance to chemicals, heat, and wear/abrasion.
- 316 stainless steel high tensile bodies.
- Electric and pneumatic actuator options.
- Viton O-ring for operation from 0°F (-17.8°C) to 400°F (204°C)
- Optional O-rings available.
- Wide selection of tube and pipe end fittings available.



Technical Data

Pressure & Temperature Curve



Ordering Information

Example : **SMBV20 3 - MP9 - 4**

1
2
3
4

*316 Stainless Steel is Standard Body Material

1. Valve Series

- SMBV10 = 10,000 psi
- SMBV15 = 15,000 psi
- SMBV20 = 20,000 psi

2. Body Style

- (Blank) = 2-WAY Straight Valve
- 3 = 3-WAY VALVE, 180° Turn
- 3Q = 3-WAY VALVE, 90° Turn

3. Connection Size & Type

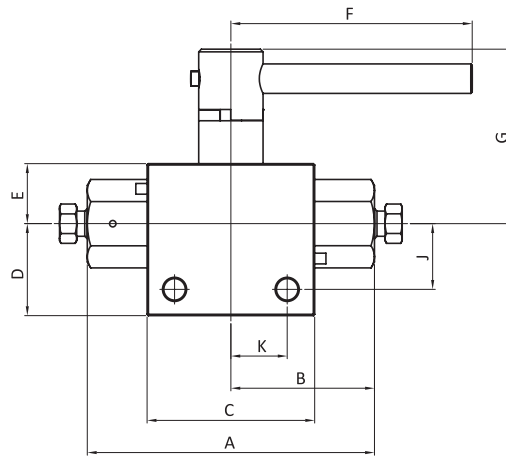
Size (inch)	1/4	3/8	1/2	9/16	3/4	1
NPT(Female)	F4N	F6N	F8N	-	F12N	-
Medium Pressure C&T	MP4	MP6	-	MP9	MP12	MP16
Pre-forming	4F	6F	8F	-	12F	

4. Orifice Size

- 4 = 5.3mm
- 6 = 9.5mm
- 8 = 14.2mm

※ For special sizes and configurations, please consult BMT (SUPERLOK) sales representative.

Table of Dimensions

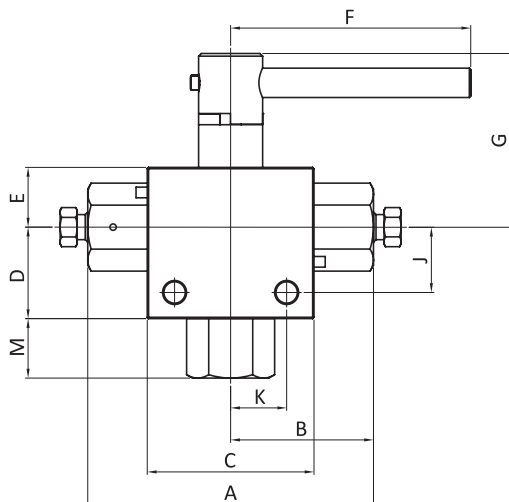


Two Way Straight Valves

Part No.	Tube OD	Orifice, in.(mm)	Dimensions, in.(mm)									Thickness, in.(mm)											
			A	B	C	D	E	F	G	J	K												
SMBV10-F12N-8	F.NPT 3/4"	0.559 (14.2)	7.36 (187)	3.68 (93.5)	4.53 (115)	2.19 (55.5)	1.56 (39.5)	4.61 (117)	3.71 (94.2)	1.65 (42)	1.44 (36.5)	2 (50.8)											
SMBV10-12F-8	Pre-Forming 3/4"																						
SMBV15-F4N-4	F.NPT 1/4"	0.208 (5.3)	4.21 (107)	2.11 (53.6)	2.46 (62.5)	1.35 (34.3)	0.88 (22.4)	3.54 (90)	2.56 (65.1)	0.96 (24.5)	0.83 (21)	1.32 (33.5)											
SMBV15-F6N-4	F.NPT 3/8"																						
SMBV15-F8N-4	F.NPT 1/2"																						
SMBV15-4F-4	Pre-Forming 1/4"																						
SMBV15-6F-4	Pre-Forming 3/8"																						
SMBV15-8F-4	Pre-Forming 1/2"																						
SMBV15-F8N-6	F.NPT 1/2"												0.374 (9.5)	6.3 (160)	3.15 (80)	4.09 (103.8)	1.97 (50)	1.38 (35)	4.53 (115)	3.69 (93.6)	1.57 (40)	1.44 (36.5)	1.75 (44.5)
SMBV15-8F-6	Pre-Forming 1/2"																						
SMBV20-MP4-4	MP 1/4"	0.125 (3.2)	4.21 (107)	2.11 (53.6)	2.46 (62.5)	1.35 (34.3)	0.88 (22.4)	3.54 (90)	2.56 (65.1)	0.96 (24.5)	0.83 (21)	1.32 (33.5)											
SMBV20-MP6-4	MP 3/8"																						
SMBV20-MP9-4	MP 9/16"																						
SMBV20-MP4-6	MP 1/4"	0.374 (9.5)	6.3 (160)	3.15 (80)	4.09 (103.8)	1.97 (50)	1.38 (35)	4.53 (115)	3.69 (93.6)	1.57 (40)	1.44 (36.5)	1.75 (44.5)											
SMBV20-MP6-6	MP 3/8"																						
SMBV20-MP9-6	MP 9/16"																						
SMBV20-MP12-6	MP 3/4"																						
SMBV20-MP16-6	MP 1"												7.44 (189)	3.72 (94.5)									

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Table of Dimensions



Three Way Valves

Part No.	Tube OD	Orifice, in.(mm)	Dimensions, in.(mm)										Thickness, in.(mm)
			A	B	C	D	E	F	G	J	K	M	
SMBV103-F8N-4	F.NPT 1/2"	0.208 (5.3)	4.74 (120)	2.37 (60)	2.46 (62.5)	1.35 (34.3)	0.88 (22.4)	3.54 (90)	2.56 (65.1)	0.96 (24.5)	0.83 (21)	0.86 (21.8)	1.32 (33.5)
SMBV103-8F-4	Pre-Forming 1/2"												
SMBV103-F8N-6	F.NPT 1/2"	0.374 (9.5)	6.3 (160)	3.15 (80)	4.09 (103.8)	1.97 (50)	1.38 (35)	4.53 (115)	3.69 (93.6)	1.57 (40)	1.44 (36.5)	1.11 (28.1)	1.75 (44.5)
SMBV103-8F-6	Pre-Forming 1/2"												
SMBV153-F4N-4	F.NPT 1/4"	0.208 (5.3)	4.21 (107)	2.11 (53.6)	2.46 (62.5)	1.35 (34.3)	0.88 (22.4)	3.54 (90)	2.56 (65.1)	0.96 (24.5)	0.83 (21)	0.86 (21.8)	1.32 (33.5)
SMBV153-F6N-4	F.NPT 3/8"												
SMBV153-4F-4	Pre-Forming 1/4"												
SMBV153-6F-4	Pre-Forming 3/8"												
SMBV153-MP4-6	MP 1/4"	0.374 (9.5)	6.3 (160)	3.15 (80)	4.09 (103.8)	1.97 (50)	1.38 (35)	4.53 (115)	3.69 (93.6)	1.57 (40)	1.44 (36.5)	1.11 (28.1)	1.75 (44.5)
SMBV153-MP6-6	MP 3/8"												
SMBV153-MP9-6	MP 9/16"												
SMBV153-MP12-6	MP 3/4"												
SMBV203-MP4-4	MP 1/4"	0.125 (3.2)	4.21 (107)	2.11 (53.6)	2.46 (62.5)	1.35 (34.3)	0.88 (22.4)	3.54 (90)	2.56 (65.1)	0.96 (24.5)	0.83 (21)	0.86 (21.8)	1.32 (33.5)
SMBV203-MP6-4	MP 3/8"	0.208 (5.3)											
SMBV203-MP9-4	MP 9/16"												

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Medium Pressure Check Valves



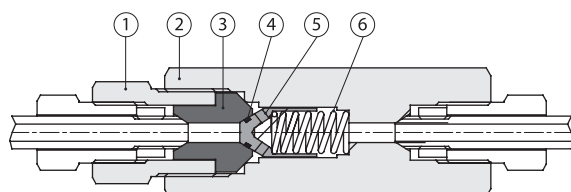
SMPCV Series 20,000 psi

Features

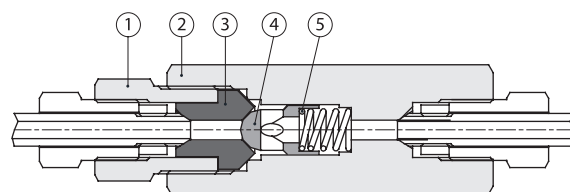
- Tubing size available for 1/4" to 1".
- Maximum working pressure : 20,000 psig (1379 bar)
- Working temperature :
 - O-ring type : -50°F (-45°C) to 500°F (260°C).
 - Ball type : -110°F (-79°C) to 1200°F (649°C).
- Cracking pressure : 14 psig ~ 26 psig (0.966 bar ~ 1.794 bar).



Materials of Construction



O-Ring Check Valve



Ball Check Valve

No.	Description	Material
1	Insert Gland	SS316 / A479
**2	Body	SS316 / A479
**3	Insert	SS316 / A479
**4	O-Ring	Viton (Standard) / NBR / Kalrez
**5	Poppet	SS316 / A479
**6	Spring	304 Stainless Steel

* Provides unidirectional flow and tight shut-off for liquids and gas with high reliability. When differential drops below cracking pressure, valve shuts off. (Not for use as relief valve)
 ** Wetted components

No.	Description	Material
1	Insert Gland	SS316 / A479
**2	Body	SS316 / A479
**3	Insert	SS316 / A479
**4	Ball Poppet	SS316 / A479
**5	Spring	304 Stainless Steel

* Prevents reverse flow where leak-tight shut-off is not mandatory. When differential drops below cracking pressure, valve closes. (Not for use as relief valve)
 ** Wetted components

Ordering Information

Example : **SMPCV20 - MP9 - BP - K**

1
2
3
4

*316 Stainless Steel is Standard Body Material

1. Valve Series

- SMPCV10 = 10,000 psi
- SMPCV15 = 15,000 psi
- SMPCV20 = 20,000 psi

2. Connection Size & Type

Size (inch)	1/8	1/4	3/8	1/2	9/16	3/4	1
NPT(Female)	-	F4N	F6N	F8N	-	F12N	F16N
Medium Pressure C&T	-	MP4	MP6	-	MP9	MP12	MP16
Pre-forming	-	4F	6F	8F	-	12F	16F

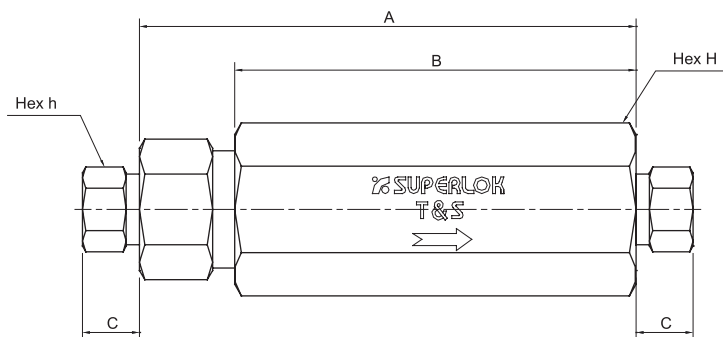
3. Poppet Type

- (Blank) = O-Ring Check Valve
- BP = Ball Check Valve

4. O-Ring Material

- (Blank) = Viton (Standard)
- N = NBR
- K = Kalrez

Table of Dimensions



SMPCV Series

Part No.	Connection	Orifice, in.(mm)	Cv	Dimensions, in. (mm)					Pressure / Temperature Rating @ 100°F (38 °C)
				A	B	C	h	H	
SMPCV10-F12N	F.NPT 3/4"	0.520 (13.2)	4.7	6.28 (159.5)	4.74 (120.5)	-	-	1.75 (44.45)	10,000 psig (689 bar)
SMPCV10-F16N	F.NPT 1"	0.688 (17.5)	7.4	7.70 (195.5)	5.75 (146.0)	-	-	1.88 (47.75)	
SMPCV15-F4N	F.NPT 1/4"	0.125 (3.2)	0.28	3.37 (85.6)	2.38 (60.5)	-	-	0.81 (20.6)	15,000 psig (1,034 bar)
SMPCV15-F6N	F.NPT 3/8"	0.216 (5.5)	0.84	3.95 (100.3)	2.88 (73.1)	-	-	1 (25.4)	
SMPCV15-F8N	F.NPT 1/2"	0.358 (9.1)	2.3	5.36 (136.1)	3.88 (98.5)	-	-	1.19 (30.2)	
SMPCV15-4F	Pre-Forming 1/4"	0.125 (3.2)	0.28	3.37 (85.6)	2.38 (60.5)	-	-	0.81 (20.6)	
SMPCV15-6F	Pre-Forming 3/8"	0.216 (5.5)	0.84	3.95 (100.3)	2.88 (73.1)	-	-	1 (25.4)	
SMPCV15-8F	Pre-Forming 1/2"	0.358 (9.1)	2.3	5.36 (136.1)	3.88 (98.5)	-	-	1.19 (30.2)	
SMPCV20-MP4	MP 1/4"	0.125 (3.2)	0.28	2.83 (72)	2.38 (60.5)	0.38 (9.65)	0.5 (12.7)	0.81 (20.6)	20,000 psig (1,379 bar)
SMPCV20-MP6	MP 3/8"	0.216 (5.5)	0.84	3.28 (83.3)	2.81 (71.5)	0.47 (11.94)	0.62 (15.9)	1 (25.4)	
SMPCV20-MP9	MP 9/16"	0.358 (9.1)	2.3	4.09 (104)	3.54 (90)	0.53 (13.46)	0.87 (22.2)	1.38 (35)	
SMPCV20-MP12	MP 3/4"	0.520 (13.2)	4.7	5.5 (139.7)	4.75 (120.7)	0.62 (15.8)	1.13 (28.6)	1.75 (44.5)	
SMPCV20-MP16	MP 1"	0.688 (17.5)	7.4	6.63 (168.4)	5.75 (146.0)	0.72 (18.3)	1.37 (34.9)	1.88 (47.8)	

- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with nuts finger-tight, where applicable.

Medium Pressure Relief Valves

SMRV20 Series 20,000 psi

Features

- Soft seat relief valves.
- Set pressure : 1,500 to 20,000psig (103.4 to 1378.9 bar).
- Working temperature : 32°F (0°C) to 400°F (204°C).
- Liquid or gas service. Provide bubble tight shut-off of gas.
- Pressure settings are made at the factory and valves are tagged accordingly.
- Lock wire secure cap to maintain set pressure.
- Easily exchangeable seat.



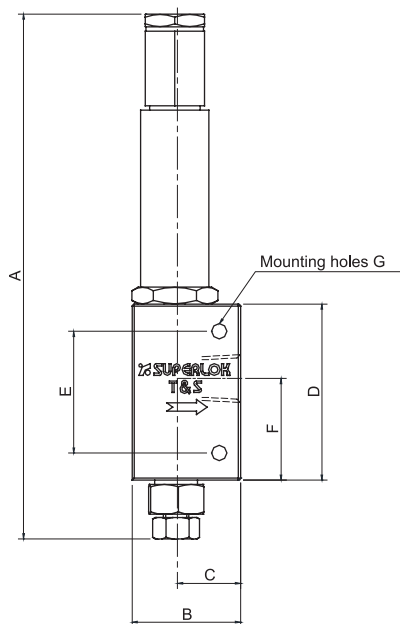
Technical Data

Grade	Inlet		Outlet Connection Type	Orifice Size, In. (mm)	Cv	Pressure Rating, psig (bar) @ 100°F (38 °C)		
	Tube OD	Connection Type				Minimum Set Pressure	Maximum Set Pressure	Maximum Back Pressure
1A	9/16"	MP9	F.NPT 3/4"	0.312 (7.92)	1.2	1500 (103.4)	5000 (344.7)	500 (34.5)
2A				0.250 (6.35)	0.8	5000 (344.7)	10,000 (689.5)	
3A				0.156 (3.96)	0.3	10,000 (689.5)	20,000 (1378.9)	
4A				0.156 (3.96)	0.3	15,000 (1034.2)	20,000 (1378.9)	

* Maximum system operation pressure should not exceed 90% of relief valve set pressure.

- Dimensions and Drawings are for reference only and are subject to change without prior notice.
- Unless otherwise specified, all dimensions are in millimeters.
- Sizes, pressure classes, and end connections not listed are available upon request.
- Dimensions shown with nuts finger-tight, where applicable.

Table of Dimensions



Part No.	Dimensions, in. (mm)						
	A	B	C	D	E	F	G
SMRV20-MP9-F12N	9.46 (240.4)	2 (50.8)	1.19 (30.2)	3.25 (82.6)	2.25 (57.1)	1.94 (49.3)	0.28 (7.1)

• All dimensions are for reference only, subject to change.

Ordering Information

Example :

SMRV20 - MP9 - F12N - 3A

1
2
3

*316 Stainless Steel is Standard Body Material

1. Inlet Tube O.D

□ MP9 = Medium Pressure 9/16"

2. Outlet Connection Size

□ F12N = Female 3/4" NPT

3. Grade (Set Pressure)

1A	1500 ~ 5000 psig for SHRV20 Series
	3000 ~ 5000 psig for SHRV60 Series
2A	5000 ~ 10,000 psig
3A	10,000 ~ 15,000 psig
4A	15,000 ~ 20,000 psig

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Fittings & Valves

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Check/Relief/Excess Flow Valves

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Bend Fittings

Diaphragm Valves

Bellows Valves

Check Valves

Clean Ball Valves

Regulators

Gas Filters

HGS® : Trademark registered in Republic of Korea (as of April 2024)

Electric & Energy

Metal Clad Switchgear (MCSG)

Compact Switchboard

Motor Control Center (MCC)

Smart Distribution Board

Energy Management System (EMS)