

DESCRIPTION

The Type SMV valve combines the precision Cv and flow characteristics of our remotely operated valves into one that can be operated manually. The SMV is available in 1/4", 1/2", 3/4" and 1" sizes. Its design places the stem threads above and out of the process fluid, reducing the possibility of thread contamination and corrosion. It is available with most innervalve sizes that are available in our Type 807 and 752 control valves. Consult the factory for Cv's below 0.05.

APPLICATIONS

The Type SMV valve is widely used in industrial applications, research, and process pilot plants on liquids, gases or steam to control fractional flows in 1/4", 1/2", 3/4", and 1" pipe. Its compact size makes it an ideal choice for additive injection, sampling, or low flow hydraulic systems. It is recommended for use wherever precise control is an important factor or where physical constraints limit valve weight or size.

MATERIALS OF CONSTRUCTION

Body-Bonnet

- Standard cast body 316 SST
- Optional cast body Alloy 20, Alloy B & C, Alloy 400, WCB
- Optional barstock body All the above plus Alloy 600 & 800, Titanium, Zirconium, 316L, 304/304L, 347SST and others
- Standard end connections NPT
- Optional Flanges (ANSI/ASME, DIN, ISO, etc.), Tube Fittings (screwed and backwelded), Socket Weld (our patented WELD-A-CATOR®), Butt-Weld (for pipe or tubing), plus others

Innervalve

- Standard 316 SST
- Optional Stellite®, Titanium Nitride Coating

Packing

- Standard PTFE Chevron rings
- Optional Graphite, REK® (Kalrez® based chevron ring), glass filled chevron rings

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Stellite® is a registered trademark of The Haynes Stellite Company.
REK® is a registered trademark of Badger Meter, Inc.



Type SMV Valve

STANDARD FEATURES

- Stellite Plug/Seat or Soft Seating available
- Interchangeable innervalves
- PTFE Chevron packing
- Anodized Aluminum Tee-Handle
- Coated Stem Threads

OPTIONAL FEATURES

- Extended bonnets for cryo or hot applications
- Angle Body
- Heating jackets
- TiN coating of innervalve stem and seat
- Other stem thread pitches
- SST Tee-Handle

TEMPERATURE RANGE

- -100° to +400°F (with TFE packing and standard bonnet)
- -100° to +700°F (with TFE packing and cooling fin bonnet)
- For extreme temperatures, consult the factory.



1/4" Research Control Valve

Pressure vs. Temperature Rating for Valve Superstructure
Excluding Packing or End Fittings

See Note 1 below

Temp	316 S/S	Carbon Steel	Hast B or =	Hast. C or =	Monel	Alloy 20
100°F	5000	4000	5000	5000	4000	5000
200°F	5000	3700	5000	5000	4000	5000
300°F	4750	3500	5000	5000	3880	4850
400°F	4190	3200	5000	5000	3770	4700
500°F	4000	2900	4900	4900	3740	4500
600°F	3820	2600	4850	4850	3740	4200
700°F	3640	2300	4800	4800	3640	3900
800°F	3580		4750	4750	3580	3700
900°F	2840			4500	2280	3000
1000°F	1160			4000	940	1500
1100°F	Consult factory for higher temperatures			3500		
1200°F	Consult factory for higher temperatures			3000		
Rec. Torque ft/lb (+/- 2ft/lb)	37	37	39	37	31	35

1/2" Research Control Valve

Pressure vs. Temperature Rating for Valve Superstructure
Excluding Packing or End Fittings.

See Note 1 below

Temp	316 S/S	Carbon Steel	Hast B or =	Hast. C or =	Monel	Alloy 20
100°F	5000	4000	5000	5000	4000	5000
200°F	4750	3800	5000	5000	3780	5000
300°F	4310	3600	5000	5000	3520	4950
400°F	3860	3300	5000	5000	3420	4850
500°F	3640	3100	4900	4900	3390	4600
600°F	3470	2900	4870	4870	3390	4300
700°F	3310	2700	4610	4610	3310	4200
800°F	3255		4430	4430	2090	4000
900°F	3190			4200	2070	3000
1000°F	1860			4000	850	1500
1100°F	Consult factory for higher temperatures			3400		
1200°F	Consult factory for higher temperatures			3000		
Rec. Torque ft/lb (+/- 2ft/lb)	122	122	131	124	102	117

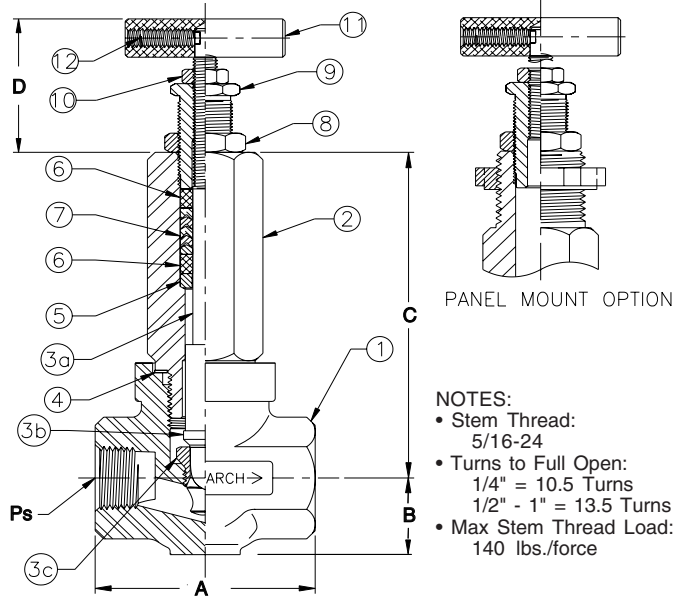
3/4" and 1" Research Control Valve

Pressure vs. Temperature Rating for Valve Superstructure
Excluding Packing or End Fittings

See Note 1 below

Temp	316 S/S		Carbon Steel	
	3/4"	1"	3/4"	1"
100°F	1500	1500	1500	1500
200°F	1450	1450	1350	1350
300°F	1325	1325	1325	1325
400°F	1175	1175	1275	1275
500°F	1100	1100	1200	1200
600°F	1050	675	1100	1100
700°F	840	250	1075	1075
800°F	575			4430
3/4" and 1" Rec. Torque = 290 ft/lbs.				

Note 1. The pressure/temperature ratings listed above are based on material cross sections at the joint between the body and bonnet where a gasketed screwed type bonnet is utilized. When the proper torque levels are used, the valve should not experience rupture of the joint or the material. The above listed torque levels were used in hydrostatic tests at the factory at 70 degrees F. at maximum body rating and were found to provide acceptable seating. Other factors such as high or cyclic temperatures, light process gases, or poor gasket surfaces can dictate the ability of a seal to be made. Under such conditions, the only way to be assured of tight sealing is to perform a test under the actual process conditions.



Description of Items

- | | |
|--------------------------|----------------------|
| 1. Valve Body | 7. Packing (cv-ring) |
| 2. Valve Bonnet | 8. Jam nut |
| 3. Trim Set (innervalue) | 9. Packing Gland |
| 4. Body Bonnet Gasket | 10. Jam nut |
| 5. Packing Adaptor | 11. Handle |
| 6. Packing Wiper | 12. Set Screw |

DIMENSIONS (Inches)

PS	A	B	C	D	STROKE
1/4 inch	2.12	0.68	4.00	1.75 -2.36	0.437
1/2 inch	2.75	1.00	4.25	1.75 -2.36	0.562
3/4 inch	3.38	1.18	4.75	1.75 -2.36	0.562
1 inch	4.00	1.50	4.74	1.75 -2.36	0.562

INNERVALUE CHART

Valve Size	Trim Designation	Max Cv	Orifice Dia. (in)	Orifice Area(sq in)	Nominal Rangeability	
					Linear	Equal %
1"	6.0	6.0	0.6250	0.3068	50:1	60:1
1"	5.0	5.0	0.6250	0.3068	50:1	60:1
1"	4.5	4.5	0.5000	0.1963	50:1	60:1
3/4"-1"	4.0	4.0	0.5000	0.1963	50:1	60:1
3/4"-1"	3.5	3.5	0.5000	0.1963	50:1	60:1
1/2"-1"	A	2.5	0.3750	0.1104	40:1	50:1
1/2"-1"	B	2.0	0.3750	0.1104	40:1	50:1
1/2"-1"	C	1.25	0.2810	0.0620	40:1	50:1
1/2"-1"	D	0.8	0.2500	0.0491	40:1	50:1
1/2"-1"	E	0.5	0.2500	0.0491	40:1	50:1
1/4"-1"	F	0.32	0.1560	0.0191	30:1	40:1
1/4"-1"	G	0.2	0.1560	0.0191	30:1	40:1
1/4"-1"	H	0.13	0.1560	0.0191	30:1	40:1
1/4"-1"	I	0.08	0.1560	0.0191	30:1	40:1
1/4"-1"	J	0.05	0.1560	0.0191	30:1	40:1
1/4"-1"	K	0.03	0.0860	0.0058	25:1	NA
1/4"-1"	L	0.02	0.0860	0.0058	25:1	NA
1/4"-1"	M	0.01	0.0860	0.0058	25:1	NA
1/4"-1"	N	0.006	0.0860	0.0058	25:1	NA
1/4"-1"	O	0.003	0.0860	0.0058	25:1	NA

Due to continuous research, product improvements and enhancements, Badger Meter reserves the right to change product or system specifications without notice, except to the extent an outstanding bid obligation exists.

Please see our website at
www.badgermeter.com
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