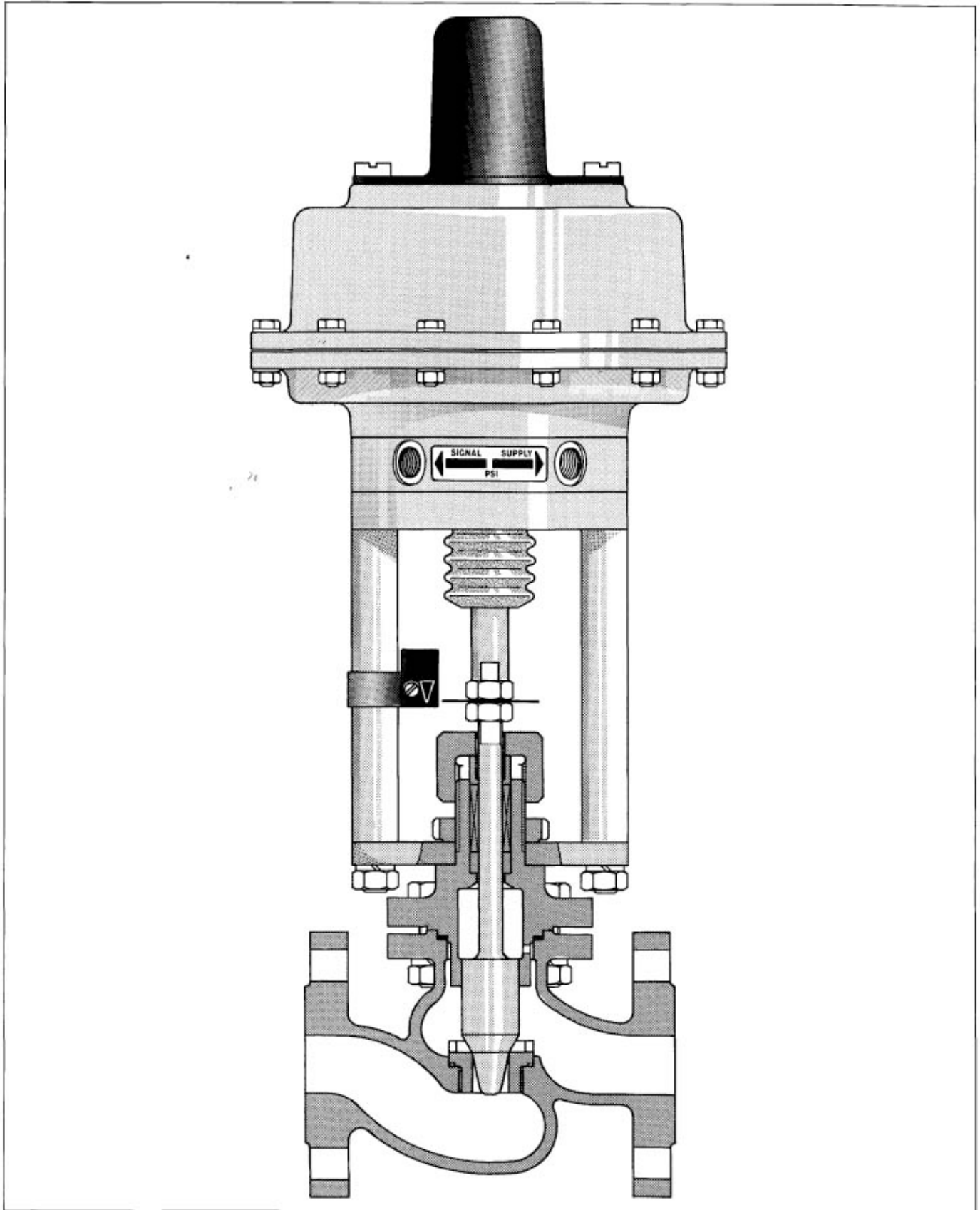


FLowsERVE



Kammer[®]
Kammer Control Valves
General Service Valves, Series 35000

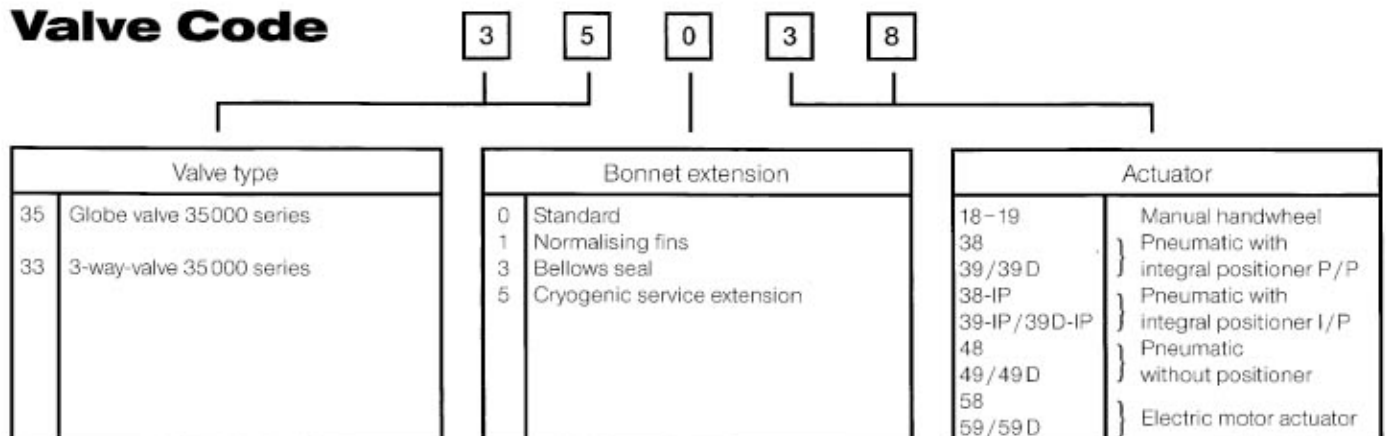


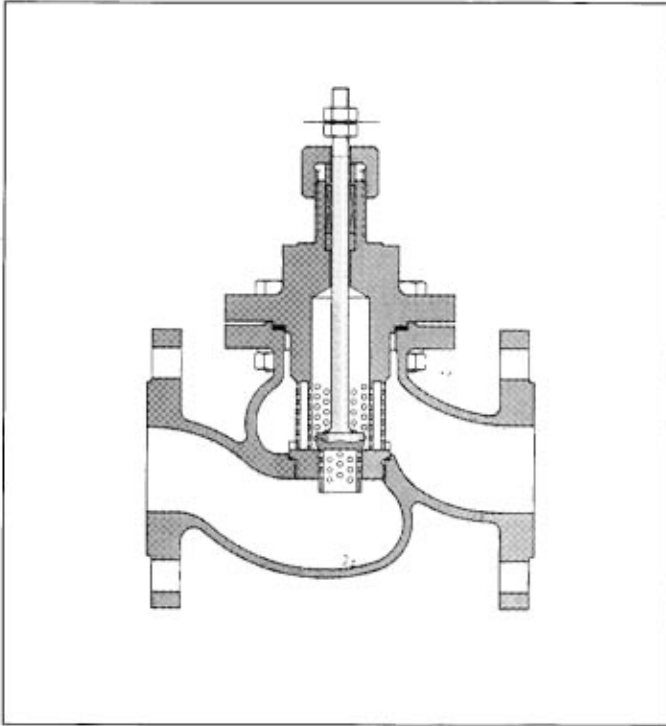
Technical data

Valve body styles:	Globe valves, 3-way-valves					
Flow characteristics:	Equal percentage, linear, on - off					
Rangeability:	50 : 1					
Seat leakage:	< 0.01% of rated C _v (ANSI Class IV)					
Valve plug / seat ring:	316 stainless steel with hard faced plug shaft. Stellite facing, Hastelloy B / C, Nickel, Monel, Titanium, Ceramics, Tungsten carbide optional. Noise reduction if required by means of multi-hole cage plug and additional silencer inside the valve body.					
PTFE soft seat:	Valve plug with PTFE insert for C _v ≥ 1.2. (T = max. 300°F)					
Packing:	PTFE for temperatures up to 480°F. Grafoil for temperatures above 480°F. PTFE packing for oxygen service.					
Body gaskets:	PTFE for temperatures up to 480°F. Grafoil for temperatures above 480°F.					
Valve sizes	1"	1 1/2"	2"	3"	4"	6"
C _v	0.12 - 12	12 - 29	12 - 46	46 - 120	73 - 190	190 - 460
Valve lift	in. 3/4"	3/4"	3/4"	1 1/2"	1 1/2"	1 1/2"
ANSI flanges	Class 150 / 300 Class 600 - 2500	x x	x x	x x	x x	x x
Body materials:						
Forged carbon steel:	A 105	x	x	x		
Forged stainless steel:	304 L*	x	x	x		
	316 Ti	x	x	x		
	316 L	x	x	x		
	321*	x	x	x		
Cast carbon steel:	WCB				x	x
Cast stainless steel:	CF8M	x	x	x	x	x
	CF3*				x	x

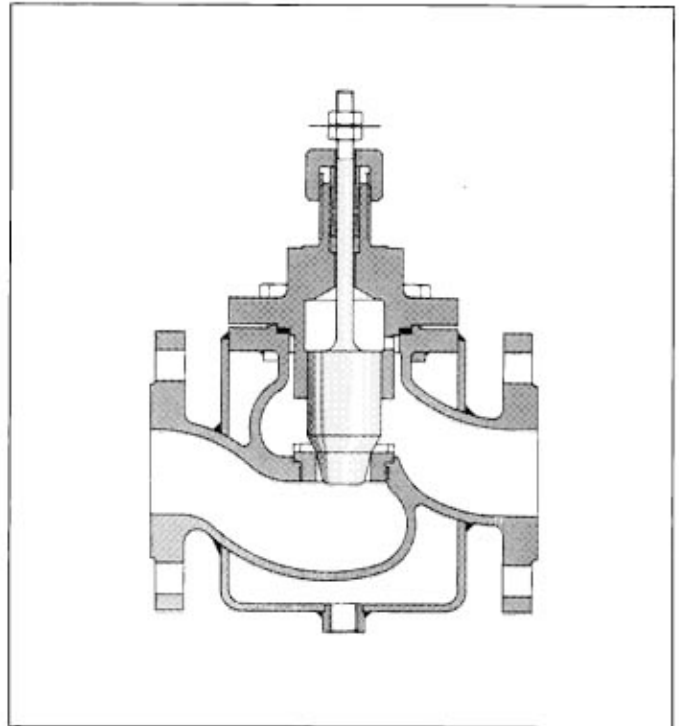
* Body material for cryogenic application.
Forged / bar stock bodies are also available in Hastelloy C, Monel 400, Nickel 201, Inconel 600 and Alloy 20.
Other stainless steel and nickel base alloys on request.

Valve Code

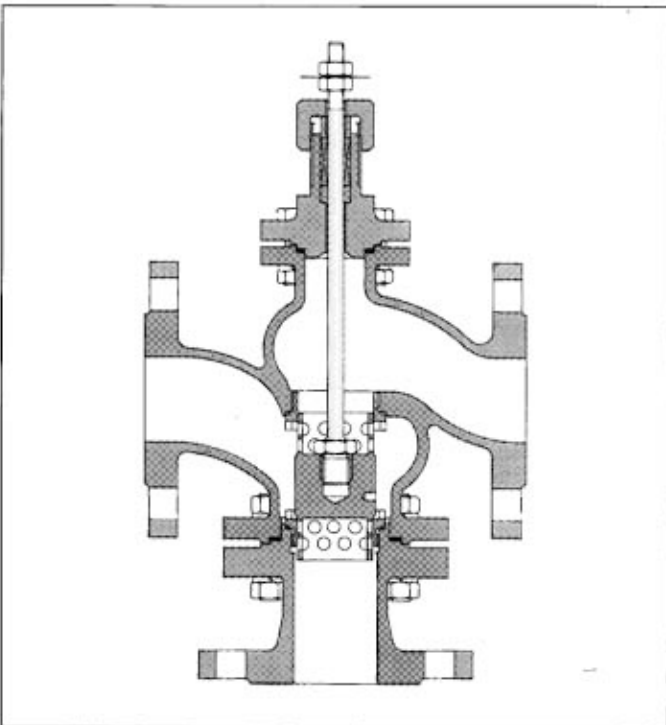




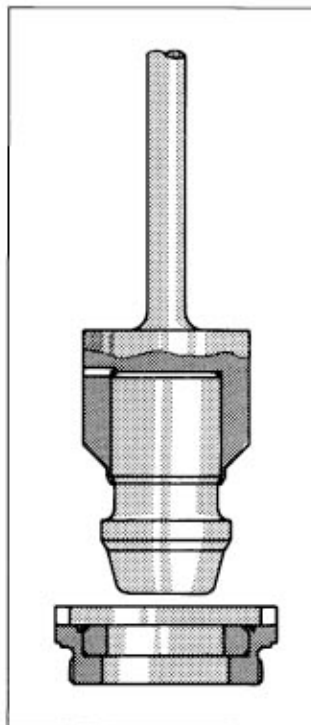
Valve with multi-hole cage plug and additional silencer.



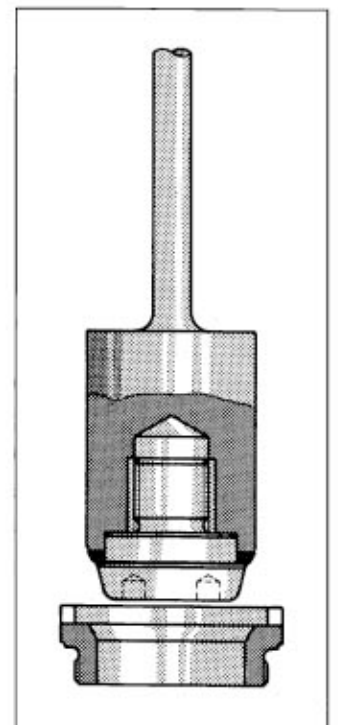
Globe valve with steam jacket.



3-way-valve.



Ceramics or tungsten carbide plug tip and seat.



Trim with PTFE soft seat.

Allowable service pressures [psig] relative to actuator size*

Air-to-open

Valve size	C _v	Seat Dia. [in.]	Size 48 Range [psi] 3 - 15	Size 38 and 48 Supply pressure / spring range [psi]				Size 39 and 49*** Supply pressure / spring range [psi]			
				20 7 - 16	35 14 - 31	50 20 - 43	60 26 - 54	20 7 - 14	35 14 - 31	50 21 - 43	60 28 - 54
1***	0.12 0.19 0.29 0.46 0.73	0.18	230	1000	2280	3570	4570	3150	5700	-	-
	1.2 1.9 2.9	0.28 0.28 0.39	230	1000	2280	3570	4570	3150	5700	-	-
	4.6 7.3 12	0.47 0.63 0.79	170 100 60	740 430 280	1710 1000 640	2570 1500 970	3570 2000 1280	2280 1280 860	5000 2860 1780	5700 4430 2860	- 5700 3860
1½"	12 19 29	0.79 0.98 1.26	-	280 170 100	640 400 240	860 570 360	1150 740 460	740 510 330	1700 1070 680	2640 1700 1070	3700 2430 1500
	12 19 29 46	0.79 0.98 1.26 1.57	-	280 170 100 60	640 400 240 160	860 570 360 230	1150 740 460 280	740 510 330 210	1700 1070 680 430	2640 1700 1070 710	3700 2430 1500 970
	46 73 120	1.57 1.97 2.48	-	-	-	-	-	210 115 70	430 280 170	570 400 260	570 570 360
4"	73 120 190	1.97 2.48 3.15	-	-	-	-	-	115 70 30	280 170 100	400 260 160	570 360 210
	190 290 460	3.15 3.94 4.92	-	-	-	-	-	30 15 -	100 60 30	160 85 50	210 130 70

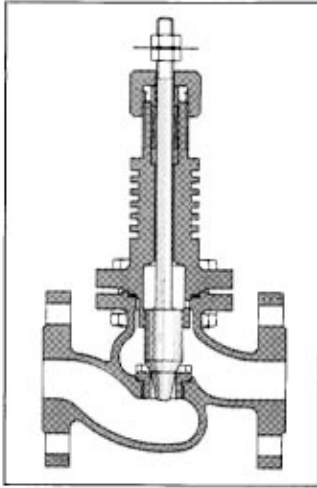
Air-to-close

Valve size	C _v	Seat Dia. [in.]	Size 48 Range [psi] 3 - 15	Size 38 and 48 Supply pressure / spring range [psi]				Size 39 and 49*** Supply pressure / spring range [psi]			
				20 4 - 13	35 7 - 16	50 13 - 27	60 14 - 31	20 4 - 13	35 7 - 14	50 14 - 27	60 14 - 31
1***	0.12 0.19 0.29 0.46 0.73	0.18	230	650	2280	3570	4570	2280	5700	-	-
	1.2 1.9 2.9	0.28 0.28 0.39	230	650	2280	3570	4570	2280	5700	-	-
	4.6 7.3 12	0.47 0.63 0.79	170 100 60	500 280 180	1710 1140 710	2570 1500 970	3570 2000 1280	1710 930 600	5000 2860 1780	5700 4280 2860	- 5700 3860
1½"	12 19 29	0.79 0.98 1.26	-	180 115 60	710 460 280	860 570 360	1150 740 460	570 360 230	1780 1140 710	2570 1710 1070	3700 2430 1500
	12 19 29 46	0.79 0.98 1.26 1.57	-	180 115 60 40	710 460 280 200	860 570 360 230	1150 740 460 280	570 360 230 140	1780 1140 710 460	2570 1710 1070 710	3700 2430 1500 970
	46 73 120	1.57 1.97 2.48	-	-	-	-	-	140 70 40	430 280 170	570 400 260	570 570 360
4"	73 120 190	1.97 2.48 3.15	-	-	-	-	-	70 40 15	280 170 100	400 260 160	570 360 210
	190 290 460	3.15 3.94 4.92	-	-	-	-	-	15 -	100 60 30	160 85 50	210 130 70

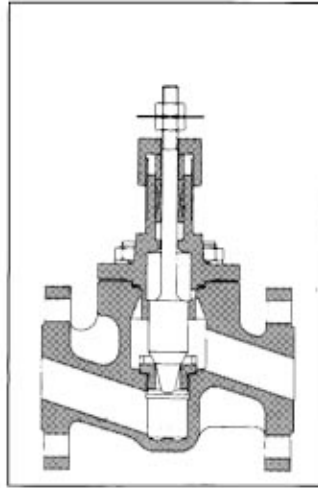
* The allowable service pressure not only depends on the actuator size but on the pressure drop across the valve and therefore it can be higher than shown in the table. Detailed information on request.

** Up to C_v 6.3 of valve size 1" the bellows area is larger than the area of the seat orifice. Thus the allowable service pressure is limited to the figures shown for C_v 10.

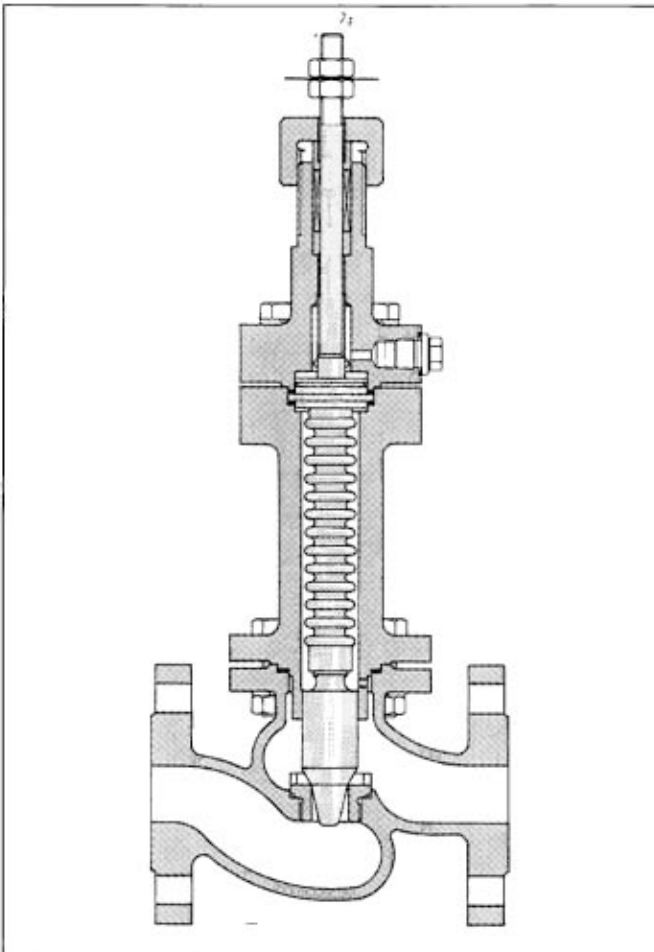
*** For actuators size 39 D and 49 D use twice the service pressures. Valve sizes 3" - 6" are available with pressure balanced valve plugs for higher service pressures. More information on request.



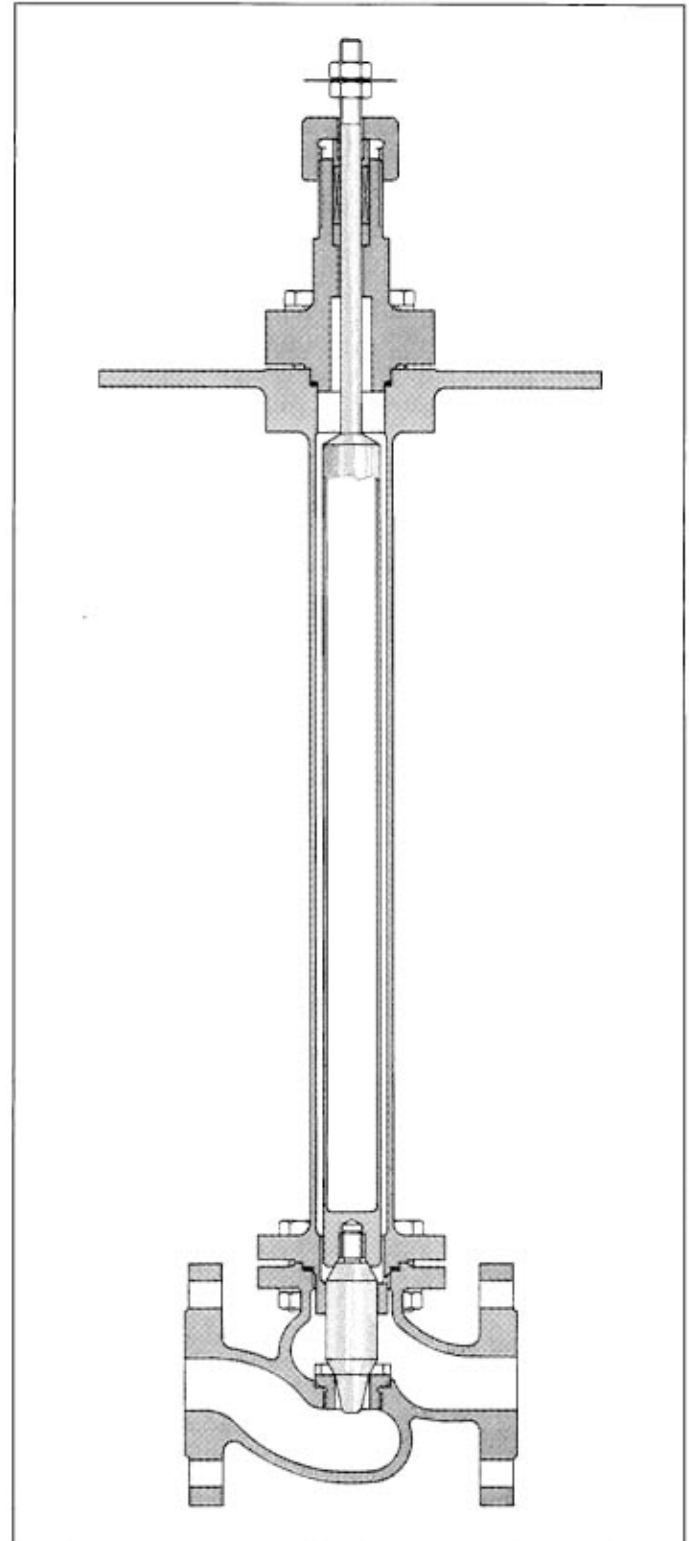
Normalising fins for temp. from +15° to -75°F and from +450° to +800°F.



Forged valve body.

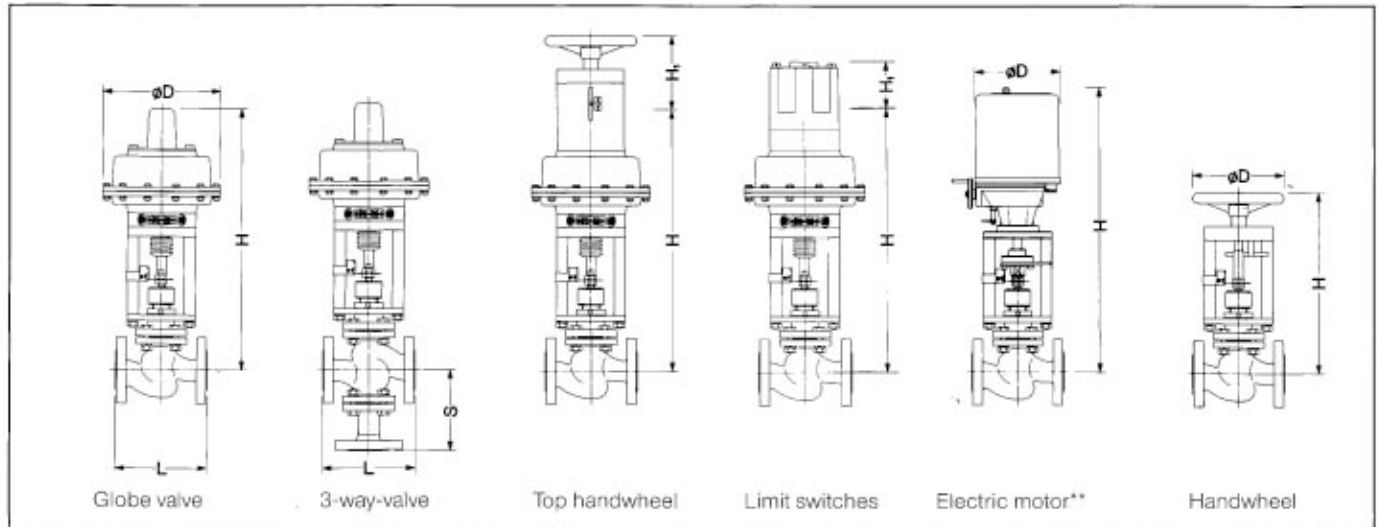


Bellows seals are available up to 3850 psig service pressure. Standard bellows material is 321 stainless steel. Hastelloy C is used for high temperature applications. Special materials for extraordinary service on request.



Control valve for cryogenic service with 24 in. extension and cover plate for cold box installation. Actuator with top mounted hand wheel. Body and extension material 321 stainless steel for service temperatures to -321 °F.

Dimensions [in.]



Valve size	Actuator size	ø D	H				H ₁	
			Standard packing	Normalising fins	Bellows seal		Top handwheel	Limit switches
					Class 300	Class 600 - 1500		
1"	38	8.1	17.9	20.3	26.4	29.1	4.7	2.8
	39	11.8	19.7	22.1	28.1	30.9	4.9	
	38 - IP	8.1	18.9	21.3	27.4	30.1	4.7	
	39 - IP	11.8	20.7	23.1	29.1	31.9	4.9	
	48	8.1	16.3	18.7	24.8	27.6	4.7	
49	11.8	18.1	20.5	26.6	29.3	4.9	2.8	
Handwheel	4.7	4.7	12.2	14.6	20.7	23.4	-	-
1 1/2" - 2"	38	8.1	19.7	22.1	27.6	30.3	4.7	2.8
	39	11.8	21.5	23.9	29.3	32.1	4.9	
	39 D*	11.8	26.6	29.0	34.3	37.2	4.9	
	38 - IP	8.1	20.7	23.1	28.6	31.3	4.7	
	39 - IP	11.8	22.5	24.9	30.3	33.1	4.9	
	39 D - IP*	11.8	27.6	30.0	35.3	38.2	4.9	
	48	8.1	18.1	20.5	26.0	28.7	4.7	
49	11.8	19.9	22.3	27.8	30.5	4.9	2.8	
49 D*	11.8	25.0	27.4	32.9	35.6	4.9	2.8	
Handwheel	6.3	6.3	14.2	16.6	22.1	24.8	-	-
3"	39	11.8	24.2	26.6	35.6	-	7.3	2.8
	39 D*	11.8	29.3	31.7	40.7	-	7.3	
	39 - IP	11.8	25.2	27.6	36.6	-	7.3	
	39 D - IP*	11.8	30.3	32.7	41.7	-	7.3	
	49	11.8	22.6	25.0	34.1	-	7.3	
49 D*	11.8	27.6	30.2	39.2	-	7.3	2.8	
Handwheel	9.8	9.8	16.9	19.3	28.3	-	-	-
4"	39	11.8	25.2	27.6	36.6	-	7.3	2.8
	39 D*	11.8	30.3	32.7	41.7	-	7.3	
	39 - IP	11.8	26.2	28.6	37.6	-	7.3	
	39 D - IP	11.8	31.3	33.7	42.7	-	7.3	
	49	11.8	23.6	26.0	35.0	-	7.3	
49 D*	11.8	28.7	31.7	40.2	-	7.3	2.8	
Handwheel	9.8	9.8	17.9	20.3	29.3	-	-	-
6"	39	11.8	29.3	31.7	35.6	-	7.3	2.8
	39 D*	11.8	34.4	36.8	40.7	-	7.3	
	39 - IP	11.8	30.3	32.7	36.6	-	7.3	
	39 D - IP*	11.8	35.4	37.8	41.7	-	7.3	
	49	11.8	27.8	30.2	34.1	-	7.3	
49 D*	11.8	32.9	35.3	39.2	-	7.3	2.8	
Handwheel	9.8	9.8	21.8	24.2	28.3	-	-	-

* Actuators with max. 2200 lbs thrust only. Dimensions for actuators of more than 2200 lbs. thrust on request.

** Dimensions for valves with electric actuator on request.

Face-to-face dimensions [in.] according to ANSI B 16.10

Valve size	ANSI - Flanges (RF)*						
	Class 150		Class 300		Class 600	Class 1500	Class 2500
	L	S	L	S	L	L	L
1"	7.25	5.50	7.75	5.50	8.25	10.00	12.12
1½"	8.75	6.75	9.25	6.75	9.87	12.00	15.12
2"	10.00	6.75	10.50	6.75	11.25	14.50	17.75
3"	11.75	11.00	12.50	11.00	-	-	-
4"	13.87	11.00	14.50	11.00	-	-	-
6"	17.75	14.25	18.62	14.25	-	-	-

* For face-to-face dimensions of valves with other flange facings see ANSI B 16.10.

Weights [lbs.], valves without actuators

Valve model	Valve size	ANSI - Flanges Class				
		150	300	600	1500	2500
35000	1"	13	15	38	55	62
	1½"	27	33	91	117	146
	2"	35	38,6	95	137	172
	3"	86	95	-	-	-
	4"	108	128	-	-	-
	6"	278	302	-	-	-
35100	1"	14	17	40	57	64
	1½"	30	35	93	119	148
	2"	38	41	97	139	174
	3"	88	97	-	-	-
	4"	110	130	-	-	-
	6"	278	302	-	-	-
35300	1"	19	21	46	64	-
	1½"	39	44	108	135	-
	2"	46	50	113	155	-
	3"	99	108	-	-	-
	4"	121	141	-	-	-
	6"	280	305	-	-	-
33000	1"	20	22	-	-	-
	1½"	41	46	-	-	-
	2"	51	54	-	-	-
	3"	117	128	-	-	-
	4"	148	170	-	-	-
	6"	300	305	-	-	-
33100	1"	21	23	-	-	-
	1½"	43	49	-	-	-
	2"	53	56	-	-	-
	3"	119	130	-	-	-
	4"	150	172	-	-	-
	6"	302	307	-	-	-
33300	1"	21	23	-	-	-
	1½"	43	49	-	-	-
	2"	53	56	-	-	-
	3"	119	130	-	-	-
	4"	150	172	-	-	-
	6"	302	307	-	-	-

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