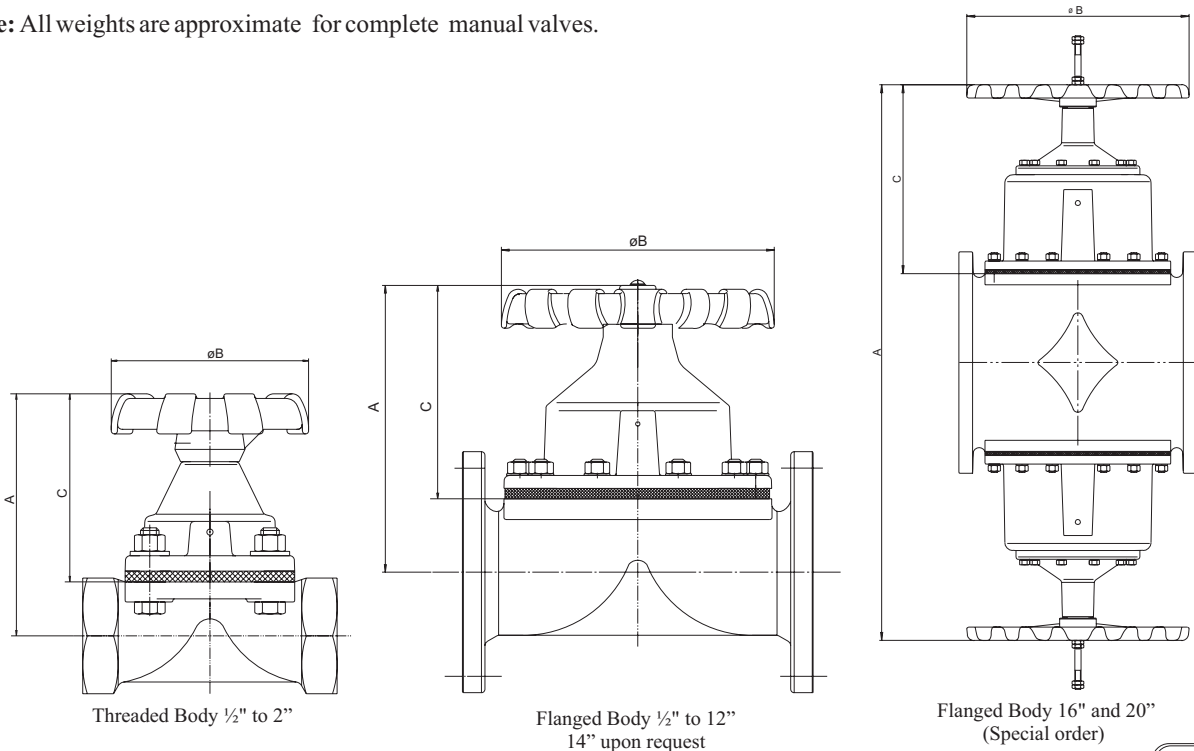


Dimensional Data, Operating Pressures and Weights

Nominal Size		Conversion Factors	Height "A" mm/in	Diameter "B" mm/in	Height "C" mm/in	Max. Working Pressure		Weight		
mm	in							kg	Connection Flange Codes 38, 44 and 45	Connection NPT and Socket Code 31 and 70
15	1/2"	Metric	110.0	90.0	87.0	bar	10	kg	2.4	1.6
		US	4.3	3.5	3.4	psi	150	lb	5.3	3.5
20	3/4"	Metric	110.0	90.0	87.0	bar	10	kg	24.0	1.7
		US	4.3	3.5	3.4	psi	150	lb	52.9	25.8
25	1"	Metric	110.0	90.0	87.0	bar	10	kg	3.3	1.8
		US	4.3	3.5	3.4	psi	150	lb	7.3	3.5
32	1 1/4"	Metric	138.0	118.0	110.0	bar	10	kg	4.9	3.4
		US	5.4	4.6	4.3	psi	150	lb	10.8	7.5
40	1 1/2"	Metric	138.0	118.0	110.0	bar	10	kg	5.7	3.7
		US	5.4	4.6	4.3	psi	150	lb	12.6	8.2
50	2"	Metric	158.0	128.0	122.0	bar	10	kg	9.2	5.5
		US	6.2	5.0	4.8	psi	150	lb	20.3	12.1
65	2 1/2"	Metric	215.0	188.0	156.0	bar	10	kg	14.3	-
		US	8.5	7.4	6.1	psi	150	lb	31.5	-
80	3"	Metric	225.0	188.0	166.0	bar	10	kg	21.9	-
		US	8.9	7.4	6.3	psi	150	lb	48.3	-
100	4"	Metric	250.0	238.0	195.0	bar	10	kg	32.1	-
		US	9.8	9.4	7.7	psi	150	lb	70.8	-
125	5"	Metric	320.0	316.0	225.0	bar	10	kg	45.0	-
		US	12.6	12.4	8.9	psi	150	lb	99.2	-
150	6"	Metric	350.0	408.0	247.0	bar	10	kg	57.8	-
		US	13.8	16.1	9.7	psi	150	lb	127.4	-
200	8"	Metric	375.0	585.0	357.0	bar	8	kg	155.0	-
		US	14.8	23.0	14.1	psi	115	lb	341.7	-
250	10"	Metric	665.0	700.0	470.0	bar	6	kg	285.0	-
		US	26.2	27.6	18.5	psi	87	lb	628.3	-
300	12"	Metric	670.0	700.0	536.0	bar	4	kg	335.0	-
		US	26.4	27.6	21.1	psi	60	lb	738.5	-
350	14"	Metric	780.0	700.0	606.0	bar	4	kg	475.0	-
		US	30.7	27.6	23.9	psi	60	lb	1047.2	-
400	16"	Metric	1530.0	700.0	536.0	bar	4	kg	630.0	-
		US	60.2	27.6	21.1	psi	58.0	lb	1388.9	-

Note: All weights are approximate for complete manual valves.

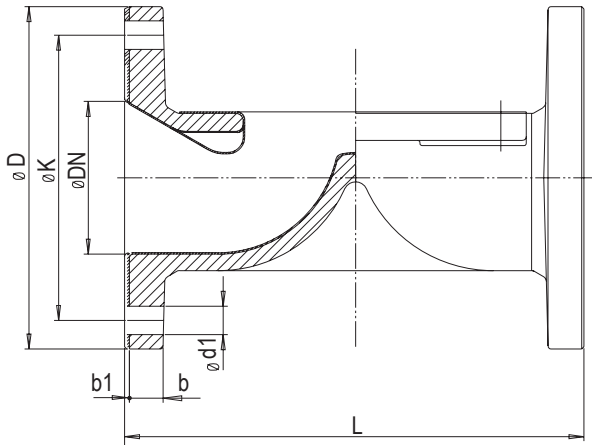


Flanged ANSI B 16.1, 125# or ANSI B 16.5, 150# Face to Face MSS SP-88

Connection		Conversion Factors	Raised Face				Ductile Iron FF		Cast Iron FF				D	b	Only for bodies with Flange RF	K	d1	Z (No of Holes)
Body Material			Unlined		Plastic Lined		Rubber Lined		Unlined		Halar							
Nominal Size			L	b1	L	b1	L	b1	L	b1	L	b1						
mm	in																	
15	1/2"	mm	-	-	-	-	-	-	-	-	-	-	88.9	11.2	35.1	60.5	16.0	4
		in	-	-	-	-	-	-	-	-	-	-	-	3.5	44.0	1.4	2.4	
20	3/4"	mm	140.0	1.6	146.0	1.6	140.0	-	140.0	-	141.6	0.8	98.4	11.2	42.9	69.9	16.0	4
		in	5.5	0.1	5.7	0.1	5.5	-	5.5	-	5.6	0.0	3.9	0.4	1.7	2.8	0.6	
25	1"	mm	140.0	1.6	146.0	1.6	140.0	-	140.0	-	141.6	0.8	108.0	11.2	50.8	79.2	16.0	4
		in	5.5	0.1	5.7	0.1	5.5	-	5.5	-	6.0	0.0	4.3	0.4	2.0	3.1	0.6	
32	1 1/4"	mm	152.0	1.6	175.0	1.6	152.0	-	152.0	-	153.6	0.8	117.5	12.7	63.5	88.9	16.0	4
		in	6.0	0.1	6.9	0.1	6.0	-	6.0	-	6.6	0.0	4.6	0.5	2.5	3.5	0.6	
40	1 1/2"	mm	165.0	1.6	175.0	1.6	165.0	-	165.0	-	166.6	0.8	127.0	14.2	73.2	98.6	16.0	4
		in	6.5	0.1	6.9	0.1	6.5	-	6.5	-	7.6	0.0	5.0	0.6	2.9	3.8	0.6	
50	2"	mm	191.0 *	1.6	200.0	1.6	191.0 *	-	191.0 *	-	192.6	0.8	152.4	15.7	91.9	120.7	19.0	4
		in	7.5	0.1	7.9	0.1	7.5	-	7.5	-	8.6	0.0	6.0	0.6	3.6	4.8	0.7	
65	2 1/2"	65	216.0 *	1.6	225.0	1.6	216.0 *	-	216.0 *	-	217.6	0.8	177.8	17.5	104.6	139.7	19.0	4
		US	8.5	0.1	8.9	0.1	8.5	-	8.5	-	10.1	0.0	7.0	0.7	4.1	5.5	0.7	
80	3"	Metric	254.0 *	1.6	260.0	1.6	254.0 *	-	254.0 *	-	255.6	0.8	190.5	19.1	127.0	152.4	19.0	4
		US	10.0	0.1	10.2	0.1	10.0	-	10.0	-	12.6	0.0	7.5	0.8	5.0	6.0	0.7	
100	4"	Metric	318.0	1.6	327.0	1.6	318.0	-	318.0	-	319.6	0.8	228.6	23.9	157.2	190.5	19.0	8
		US	12.5	0.1	12.9	0.1	12.5	-	12.5	-	14.1	0.0	9.0	0.9	6.2	7.5	0.7	
125	5"	Metric	356.0 *	1.6	-	-	356.0 *	-	356.0 *	-	357.6	0.8	254.0	23.9	185.7	215.9	22.0	8
		US	14.0	0.1	-	-	14.0	-	14.0	-	16.0	0.0	10.0	0.9	7.3	8.5	0.9	
150	6"	Metric	406.0 *	1.6	-	-	406.0 *	-	406.0 *	-	407.6	0.8	279.0	25.4	215.9	241.3	22.0	8
		US	16.0	0.1	-	-	16.0	-	16.0	-	20.6	0.0	11.0	1.0	8.5	9.5	0.9	
200	8"	Metric	521.0 *	1.6	-	-	521.0 *	-	521.0 *	-	522.6	0.8	342.9	28.4	269.7	298.5	22.0	8
		US	20.5	0.1	-	-	20.5	-	20.5	-	25.1	0.0	13.5	1.1	10.6	11.8	0.9	
250	10"	Metric	635.0 *	1.6	-	-	635.0 *	-	635.0 *	-	636.6	0.8	406.4	30.2	323.9	362.0	25.4	12
		US	25.0	0.1	-	-	25.0	-	25.0	-	25.1	0.0	16.0	1.1	12.8	14.3	1.0	
300	12"	Metric	749.0	1.6	-	-	749.0	-	749.0	-	750.6	0.8	482.6	31.8	381.0	431.8	25.4	12
		US	29.5	0.1	-	-	29.5	-	29.5	-	29.6	0.0	19.0	1.3	15.0	17.0	1.0	

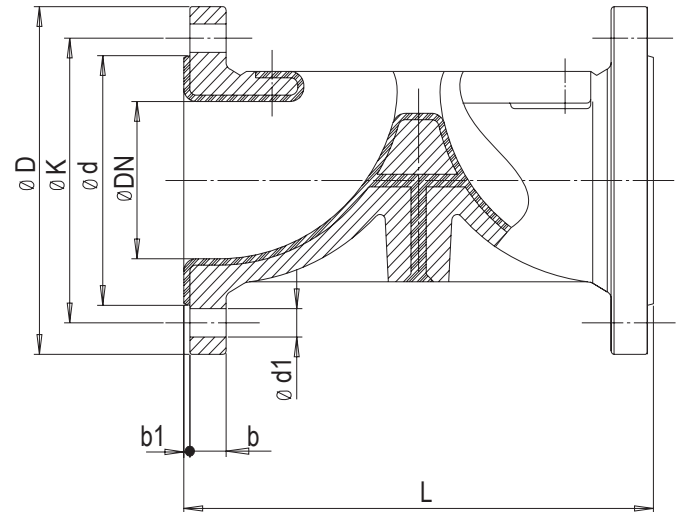
Valve Body Dimensions

Body with thin lining (coating)
Flat Face, (smooth finish)
Part Number 4555



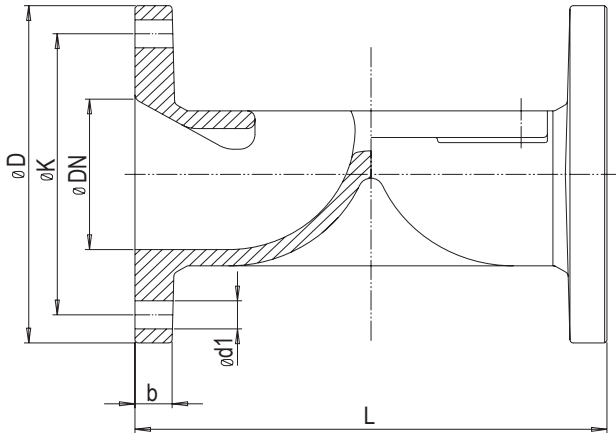
Note: In this case $b1 =$ lining thickness

Body with thick lining (Injected)
Raised Face - (smooth finish)
Part Numbers 3817, 3818, 3839, 3862, 3885

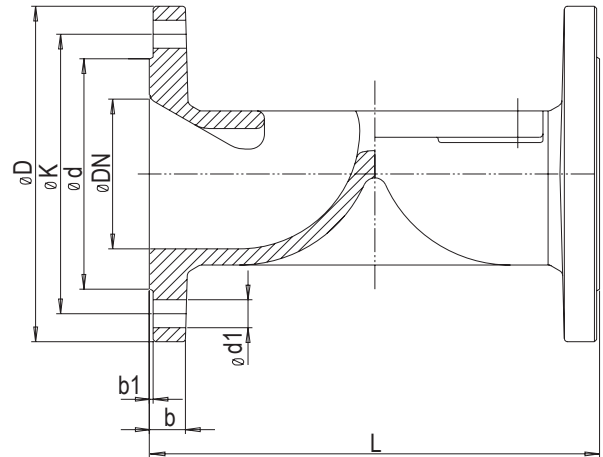


Note: In this case $b1 =$ height of raised face/lining.

Body without lining
Flat Face (smooth finish)
Part Numbers 4411, 4444, 4447, 4508

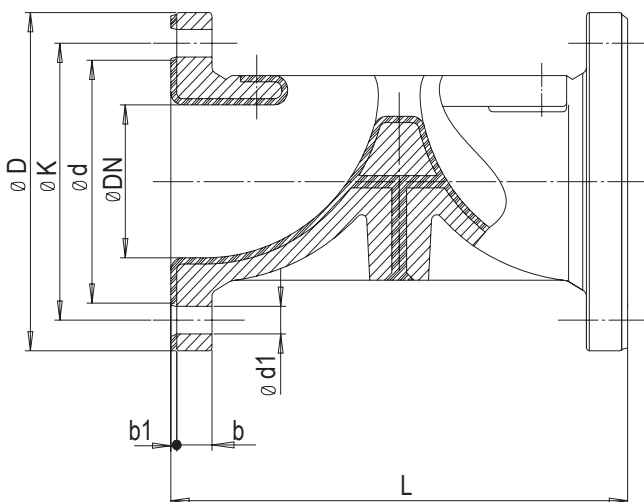


Body without lining
Raised Face (smooth finish)
Part Numbers 3811, 3844, 3847, 3B37



Note: In this case $b1 =$ height of raised face.

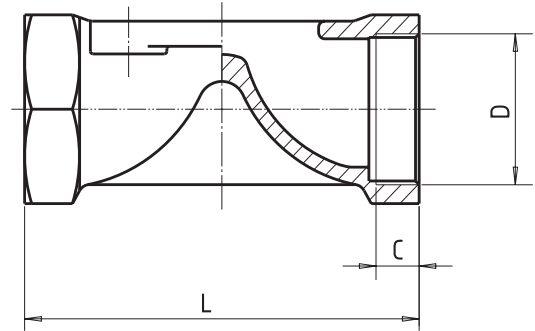
Body with rubber lining (thick)
Flat Face - (smooth finish)
Part Numbers 4482, 4483, 4486, 4487, 4488



Note: In this case $b1 =$ height of raised face.

Valve Body Dimensions

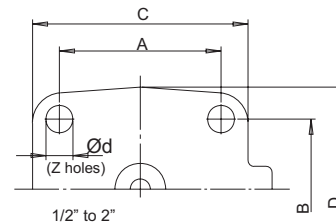
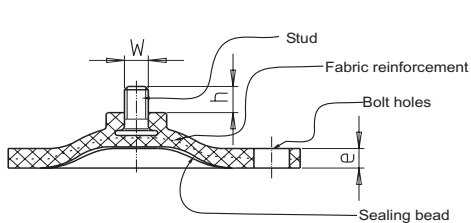
Threaded and Socket Weld						
Connection		Conversion Factors	31 (NPT Thread)		70 (Socket Weld)	
Body Material			08 (Cast Iron GG25)		37 (Stainless Steel)	
Nominal Size			L	L	D	C
mm	in					
15	1/2"	mm	85	85	21.72	09
		in	3.35	3.35	0.855	0.354
20	3/4"	mm	85	85	27.05	10
		in	3.35	3.35	1.06	0.394
25	1"	mm	110	110	33.78	13
		in	4.33	4.33	1.33	0.512
32	1 1/4"	mm	120	120	42.55	15
		in	4.72	4.72	1.68	0.591
40	1 1/2"	mm	140	140	48.64	18
		in	5.51	5.51	1.91	0.709
50	2"	mm	165	165	61.11	18
		in	6.5	6.5	2.41	0.709



Diaphragm Dimensional Data

Nominal Size		Conversion Factors	A	B	C	D	d	e	h	W	Z (No of holes)
mm	in										
15	1/2"	mm	54	46	72	54	9	6	8	1/4"	4
		in	2.13	1.81	2.83	2.13	0.354	0.236	0.315	1/4"	
20	3/4"	mm	54	46	72	54	9	6	8	1/4"	4
		in	2.13	1.81	2.83	2.13	0.354	0.236	0.315	1/4"	
25	1"	mm	54	46	72	54	9	6	8	1/4"	4
		in	2.13	1.81	2.83	2.13	0.354	0.236	0.315	1/4"	
32	1 1/4"	mm	70	65	100	70	11	7	8	1/4"	4
		in	2.76	2.56	3.94	2.76	0.433	0.276	0.315	1/4"	
40	1 1/2"	mm	70	65	100	70	11	7	8	1/4"	4
		in	2.76	2.56	3.94	2.76	0.433	0.276	0.315	1/4"	
50	2"	mm	82	78	124	82	13	7	8	1/4"	4
		in	3.23	3.07	4.88	3.23	0.0512	0.276	0.315	1/4"	

Note: The thread (W) of diaphragm stud is according to Whitworth standard.

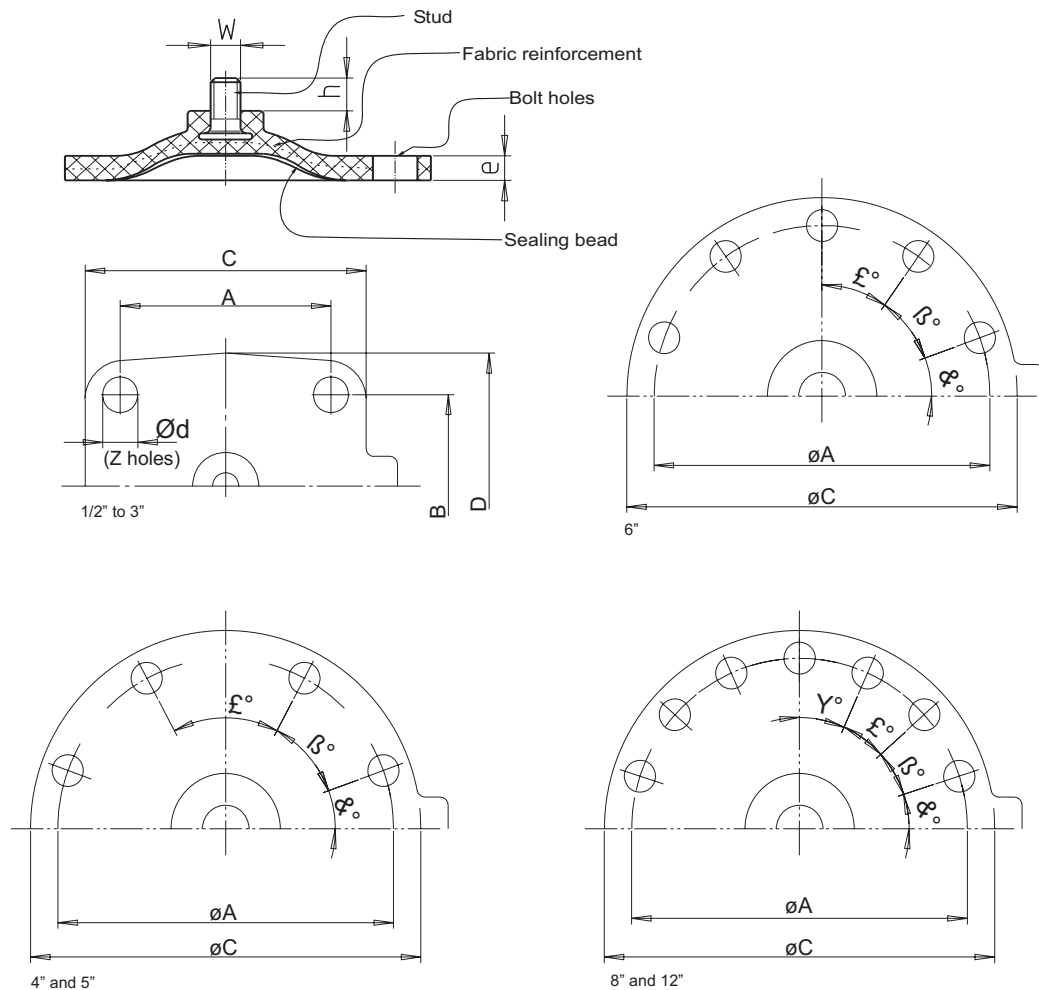


Dimensional Data for Diaphragms

Nominal Size		Conversion Factors	A	B	C	D	d	e	h	W	Z (No of holes)	α	β	γ	Y
mm	in														
65	2 1/2"	mm	102	95	143	102	14	8	10	5/16"	4	-	-	-	-
		in	4	4	6	4	1	0	0						
80	3"	mm	127	114	186	127	18	9	10	5/16"	4	-	-	-	-
		in	5	4	7	5	1	0	0						
100	4"	mm	194	-	228	-	18	10	9	5/16"	8	28°	42°	40°	-
		in	8	-	10	-	1	0	0						
125	5"	mm	222	-	270	-	18	10	14	3/8"	8	25°	43.5°	43.5°	-
		in	9	-	11	-	1	0	1						
150	6"	mm	273	-	314	-	18	12	14	3/8"	10	20°	35°	35°	-
		in	11	-	12	-	1	0	1						
200	8"	mm	381	-	410	-	19	12	22	7/8"	14	18°	27°	22.5°	22.5°
		in	15	-	16	-	1	0	1						
250	10"	mm	438	-	475	-	24	12	25	7/8"	14	22.5°	22.5°	22.5°	22.5°
		in	17	-	19	-	1	0	1						
300	12"	mm	507	-	563	-	24	14	25	7/8"	14	18°	24°	24°	24°
		in	20	-	22	-	1	1	1						

Note: The thread (W) of diaphragm stud is according to Whitworth standard.

Diaphragm Drawings





APPLICATIONS

Ideal for high-cycle applications, filling systems, galvanizing and pickling systems, water treatment systems, dosing and chemical feed lines as well as general applications that involve aggressive atmospheres that can affect actuators constructed of iron and steel.

The consistent tight-shutoff, high-cycle performance and compact size of the 687 series make it an ideal alternative to ball valves.

ACCESSORIES

- Handwheel manual override
- Electrical limit and proximity switches
- Visual position indicator
- Pneumatic and electro-pneumatic positioners
- Stroke limiters
- Safety packing
- “V” notch vent plug

DESIGN FEATURES

- Compact design
- Sizes 1/2” - 4”
- Corrosion resistant glass filled polypropylene housing with stainless steel distance piece
- 3 action modes: fail open, fail closed and double acting
- Accepts standard elastomer and Teflon faced diaphragms without changing internal components.

Technical Data

Nominal Size		Conversion Factors	Maximum Working Pressure						
			bar/psi	Control Function 1		Control Function 2		Control Function 3	
				Elastomer	Teflon	Elastomer	Teflon	Elastomer	Teflon
15	1/2"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
20	3/4"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
25	1"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
32	1 1/4"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
40	1 1/2"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
50	2"	Metric	bar	0 - 10	0 - 6	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 150	0 - 90	0 - 150	0 - 90	0 - 150	0 - 90
80	3"	Metric	bar	0 - 8	0 - 5	0 - 10	0 - 6	0 - 10	0 - 6
		US	psi	0 - 120	0 - 75	0 - 150	0 - 90	0 - 150	0 - 90
100	4"	Metric	bar	0 - 6	0 - 4	0 - 10	0 - 6	0 - 6	0 - 6
		US	psi	0 - 90	0 - 60	0 - 150	0 - 90	0 - 90	0 - 90

Note: All pressures are gauge pressures when applied upstream.
The C_v values for different body configurations vary due to differences in valve construction (i.e., Port size, body material, diaphragm material, etc.).

Max permissible working temperature:
300°F (depending on diaphragm and body materials).

The valve will seal against flow in either direction up to full working pressure.

Control Medium 5." To 2" 3" & 4"
Min. Required control pressure: 45 psi 80 psi
Max. Permissible control pressure: 90 psi 105 psi
Max. Permissible temp. of control medium: 100°F

Actuator volume:

1/2" to 1"	9.2 cubic inches
1 1/2"	21.4 cubic inches
2"	67.1 cubic inches
3"	152.6 cubic inches
4"	152.6 cubic inches

