



Diaphragm Valve Type 314 True Union

Description

Manual, weir type diaphragm valve, multi-turn, rising stem, with true union ends.

True union ends for radial installation

Diaphragm valves especially suitable for flow control, slurries, and abrasive media

EPDM or PTFE (EPDM backed) diaphragms; EPDM end connector O-rings with EPDM diaphragms; FPM with PTFE diaphragm

PVC: solvent cement socket ends

PP: metric socket fusion or butt fusion ends

SYGEF PVDF: metric socket fusion, butt fusion, or BCF fusion ends

Size range 1/2"-2"

Optional locking handwheel

Position indicator

Product Specification

Type 314 PVC True Union Diaphragm Valve

PVC diaphragm valve 1/2" through 2" shall be of True Union design. Upper body shall be of glass-filled polypropylene material connected to lower body with exposed stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM, or PTFE with EPDM backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. PVC body material shall meet or exceed the requirements of Class 12454B of ASTM D-1784. Valve to be equipped with solvent cement socket end connections with IPS dimensions. The valve, Type 314, shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc. Tustin, CA 92780.

Product Specification

Type 314 PVDF True Union Diaphragm Valve

PVDF diaphragm valve 1/2" through 2" shall be of True Union design. Upper body shall be of glass-filled polypropylene material connected to lower body with exposed stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM, or PTFE with EPDM backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. PVDF body material shall meet or exceed the requirements of ASTM D-3222 as pertains to a natural, unpigmented, virgin, noncompounded polyvinylidene fluoride compound having a minimum tensile strength of 7800 psi/538 bar at 73°F/20°C when tested in accordance with ASTM D-638 and shall have a flexural strength of 10,700 psi/738 bar at 73°F/20°C when tested according to ASTM D-790. End connections shall be as outlined in ASTM D-2657 for fusion socket joining, and shall be compatible with metric pipe and fittings as manufactured by George Fischer, Inc. The valve, Type 314, shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc. Tustin, CA 92780.

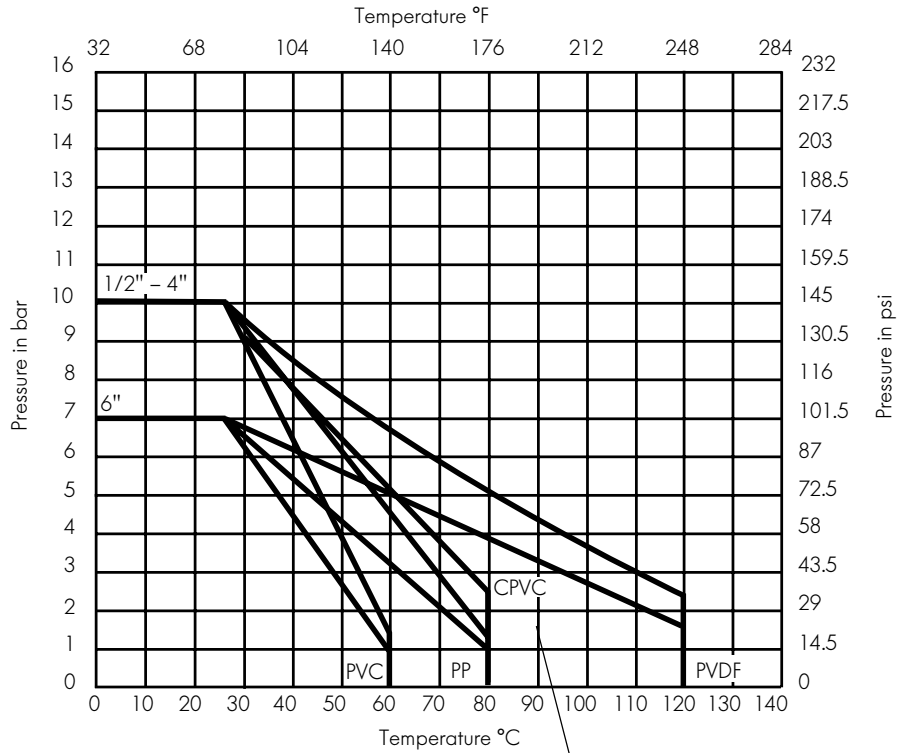
Product Specification

Type 314 Polypropylene (PP) True Union Diaphragm Valve

PP diaphragm valve 1/2" through 2" shall be of True Union design. Upper body shall be of glass-filled polypropylene material connected to lower body with exposed stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM, or PTFE with EPDM backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. PP body material shall meet or exceed the requirements of ASTM D-4101 as pertains to a type I homopolymer compound having a minimum tensile strength of 4350 psi/300 bar at 73°F/20°C when tested in accordance with ASTM D-638 and shall have a melt point which initiates at 316°F/158°C. The melt flow index (at 374°F/190°C/50N) shall be 0.4 - 0.8 grams per 10 minutes in accordance with ASTM D-1238. End connections shall be as outlined in ASTM D-2657 for fusion socket joining, and shall be compatible with metric pipe and fittings as manufactured by George Fischer, Inc. The valve, Type 314, shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc. Tustin, CA 92780.

Technical Data for Diaphragm Valves Type 314, 315, 315-HTR, 317, 319, 319-HTR

Pressure-Temperature Diagram

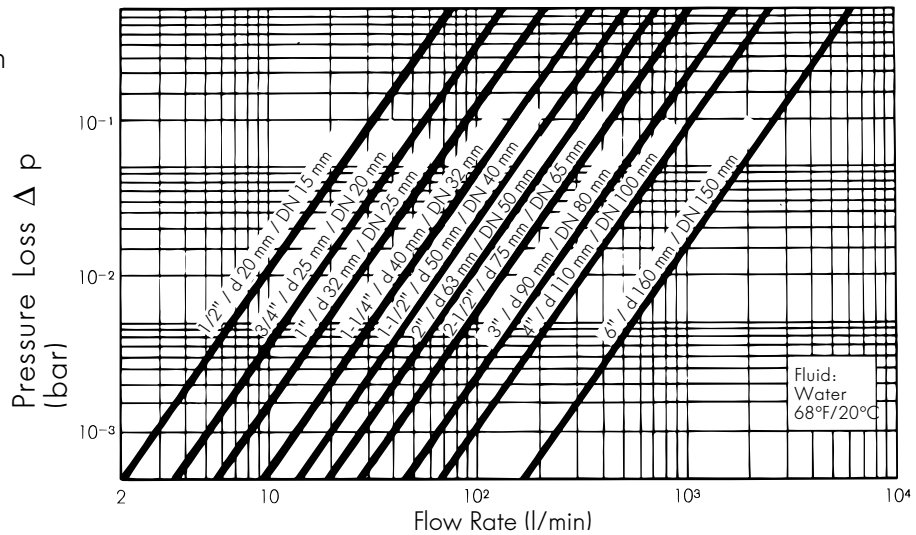


For continuous operation at temperatures over 194°F (90°C) it is recommended to use a FPM supporting diaphragm instead of an EPDM supporting diaphragm.

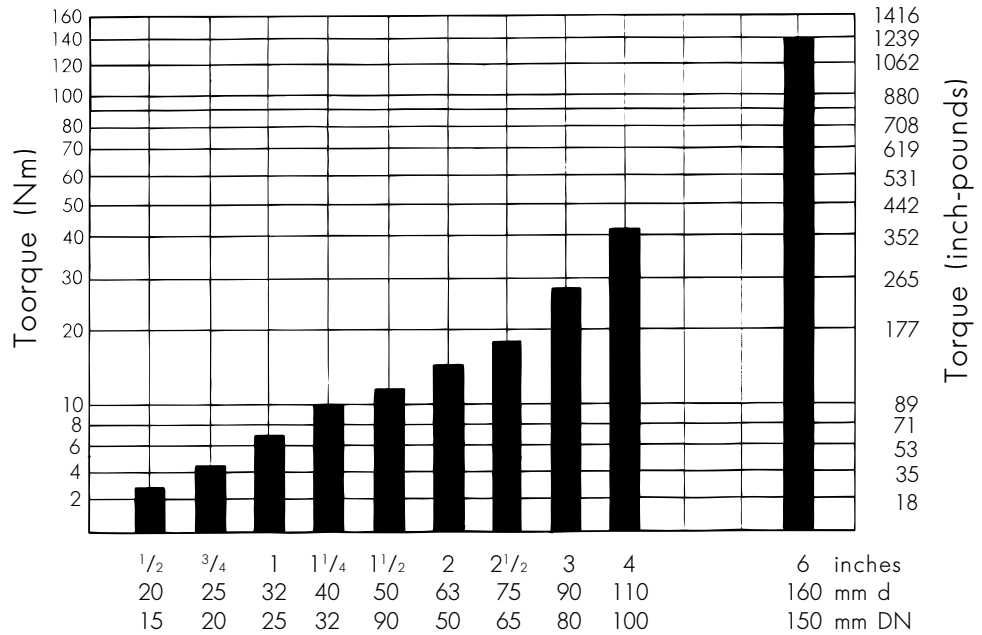
Pressure Loss Characteristics

$$\Delta p = \left(\frac{Q}{C_v} \right)^2$$

Q = gpm
p = psi



Operating Torque (average value)



C_v/k_v Values

Types 314, 315, 317

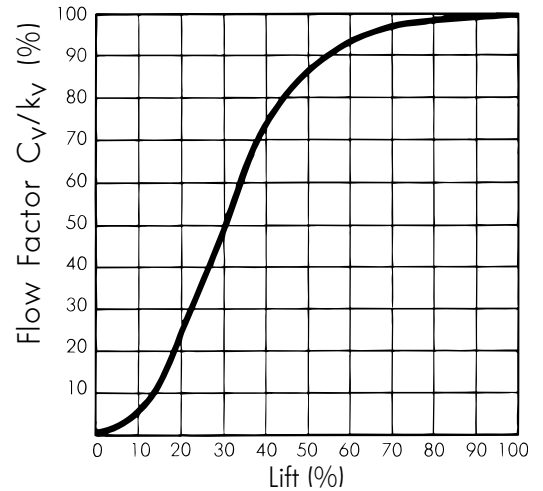
Inch size	C _v	k _v	d mm size
1/2	5.0	72	20
3/4	9.6	137	25
1	14.5	207	32
1 1/4	24.8	354	40
1 1/2	36.2	517	50
2	49.9	713	63
2 1/2	69.4	992	75
3	119.00	1700	90
4	189.00	2700	110
6	422.00	6033	160

Type 319 Zero Static Valve

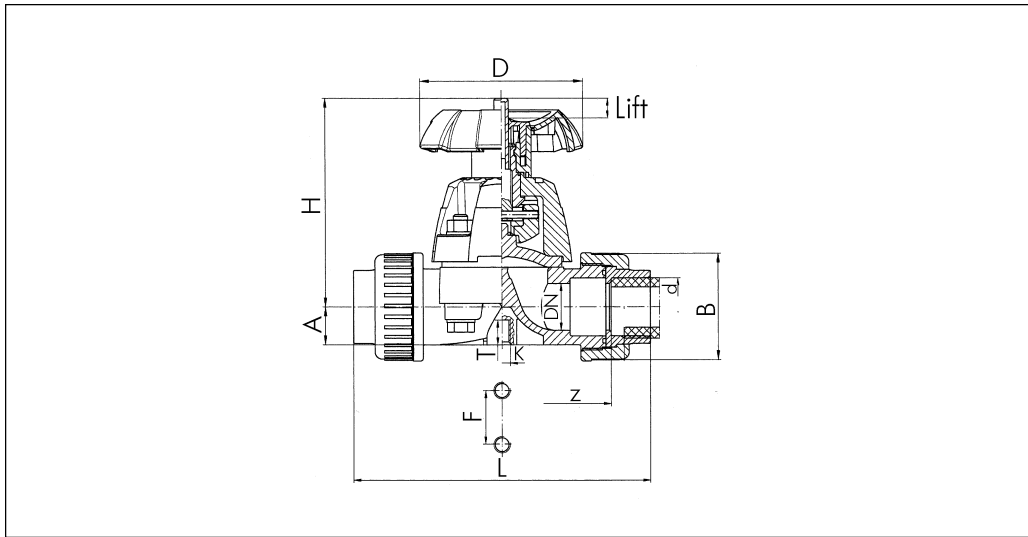
d1 - d2 size	Closest inch size	Valve ass'y. size	C _v gpm	k _v lpm
20x20 mm	1/2" x 1/2"	20	3.3	47
25x20 mm	3/4" x 1/2"	25	4.8	69
25x25 mm	3/4" x 3/4"	25	6.4	91
32x20 mm	1" x 1/2"	32	6.0	86
32x25 mm	1" x 3/4"	32	8.8	126
32x32 mm	1" x 1"	32	10.8	154
40x20 mm	1 1/4" x 1/2"	32	5.9	84
40x25 mm	1 1/4" x 3/4"	32	8.7	124
40x32 mm	1 1/4" x 1"	32	11.3	161
40x40 mm	1 1/4" x 1 1/4"	40	17.5	250
50x20 mm	1 1/2" x 1/2"	32	5.7	82
50x25 mm	1 1/2" x 3/4"	32	8.7	124
50x32 mm	1 1/2" x 1"	32	11.1	159
50x40 mm	1 1/2" x 1 1/4"	50	21.8	312
50x50 mm	1 1/2" x 1 1/2"	50	24.9	356
63x20 mm	2" x 1/2"	32	5.7	81
63x25 mm	2" x 3/4"	32	8.3	118
63x32 mm	2" x 1"	32	10.9	156
63x40 mm	2" x 1 1/4"	63	26.8	383
63x50 mm	2" x 1 1/2"	63	34.1	487
63x63 mm	2 x 2"	63	38.1	544
75x40 mm	2 1/2" x 1 1/4"	40	18.6	265
75x50 mm	2 1/2" x 1 1/2"	63	34.8	497
75x63 mm	2 1/2" x 2"	63	38.2	546
90x20 mm	3" x 1/2"	32	6.2	88
90x25 mm	3" x 3/4"	32	9.3	133
90x32 mm	3" x 1"	32	11.3	162
90x50 mm	3" x 1 1/2"	63	35.3	504
90x63 mm	3" x 2"	63	37.1	530
110x20 mm	4" x 1/2"	32	6.2	89
110x25 mm	4" x 3/4"	32	8.6	123
110x32 mm	4" x 1"	32	11.1	159
110x50 mm	4" x 1 1/2"	63	35.2	503
110x63 mm	4" x 2"	63	38.0	543

$k_v \div 14.28 = C_v$
 $C_v = \text{gallons per minute @ 1 psi } \Delta p$
 $K_v = \text{liters per minute @ 1 bar } \Delta p$

Flow Characteristics

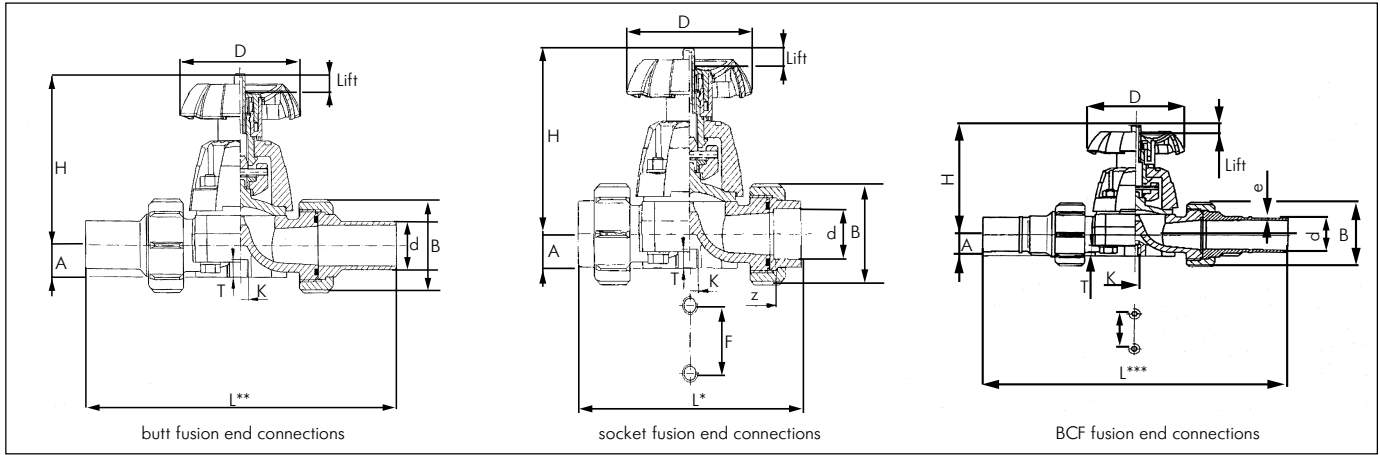


Dimensions for Type 314 True Union Diaphragm Valve PVC (solvent cement socket ends)



Inch size	A inch	B inch	D inch	F inch	K mm	H inch	L inch	T inch	Z inch	Lift inch	Weight lbs.
1/2	0.55	1.69	3.15	0.98	M6	3.54	5.04	.47	3.78	0.32	0.88
3/4	0.69	2.09	3.15	0.98	M6	4.02	5.98	.47	4.49	0.43	1.32
1	0.83	2.36	3.70	0.98	M6	4.67	6.54	.47	4.80	0.51	1.98
1-1/4	1.00	2.91	4.61	1.77	M8	4.96	7.56	.59	5.51	0.63	2.65
1-1/2	1.28	3.27	4.61	1.77	M8	5.47	8.74	.59	6.30	0.83	3.53
2	1.54	4.06	5.98	1.77	M8	6.77	10.47	.59	7.48	1.10	6.17

Dimensions for Type 314 True Union Diaphragm Valve PP and PVDF



Metric size d mm	e mm	A inch	B inch	D inch	F inch	H inch	K mm	L* inch	L**		L***		T inch	T inch	Lift inch	Weight* PP lbs.	Weight** PP lbs.	Weight* PVDF lbs.	Weight** PVDF lbs.	Weight*** PVDF lbs.
									PP inch	PVDF inch	PVDF inch	PP inch								
20	1.9	0.55	1.77	3.15	0.98	3.54	M6	5.04	7.72	7.72	8.86	0.47	0.49	0.31	0.904	0.93	1.04	1.08	1.10	
25	1.9	0.69	2.17	3.15	0.98	3.98	M6	5.91	8.70	8.66	9.53	0.47	0.49	0.43	1.279	1.32	1.52	1.57	1.61	
32	2.4	0.85	2.44	3.70	0.98	4.61	M6	6.38	9.21	9.21	10.00	0.47	0.49	0.51	1.742	1.79	2.07	2.14	2.20	
40	2.4	1.00	2.95	4.61	1.77	5.00	M6	7.24	10.24	10.16	12.13	0.59	0.49	0.63	2.734	2.80	3.31	3.42	3.53	
50	3.0	1.26	3.29	4.61	1.77	5.47	M6	8.27	11.18	11.18	12.99	0.59	0.49	0.83	3.527	3.64	4.32	4.50	4.61	
63	3.0	1.54	3.98	5.98	1.77	6.77	M6	9.76	12.64	12.60	14.69	0.59	0.49	1.10	6.261	6.48	7.52	7.80	7.98	

* socket fusion

** butt fusion

*** BCF fusion

Diaphragm Valve Type 317



Description

Manual, weir type diaphragm valve, multi-turn, rising stem, with flanged ends.

Diaphragm valves are especially suitable for flow control, slurries, and abrasive media

Available in PVC, CPVC, Polypropylene, and PVDF

EPDM or PTFE (EPDM backed) diaphragms

Size range 1/2"-6"

Loose ring flanges 1/2"-2 1/2"

Integrally molded, fixed flanges 3"-6"

Flanges are class 150 to ANSI B16.5

Threaded mounting inserts in bottom of body

304 SS exposed bolts, nuts, and washers

Optional locking handwheel 1/2"-2 1/2"

Position indicator

Product Specification

Type 317 PVC Diaphragm Valve

PVC diaphragm valve 1/2" through 6" shall be of flanged design. Upper body shall be of glass-filled polypropylene material connected to lower body with stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM or PTFE with EPDM elastomer backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. PVC body material shall meet or exceed the requirements of Class 12454B of ASTM D-1784. Valve to be equipped with flanged end connections with dimensions conforming to ANSI B16.5, class 150. The valve, Type 317, shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc. Tustin, CA 92780.

Product Specification

Type 317 CPVC Diaphragm Valve

CPVC diaphragm valve 1/2" through 4" shall be of flanged end connection. Upper body shall be of glass-filled polypropylene material connected to lower body with stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM or PTFE with EPDM elastomer backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. CPVC body material shall meet or exceed the requirements of Class 23447-B of ASTM D-1784. Valve to be equipped with flanged end connections with dimensions conforming to ANSI B16.5, class 150. The valve Type 317 shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc., Tustin, CA 92780.

Product Specification

Type 317 PP Diaphragm Valve

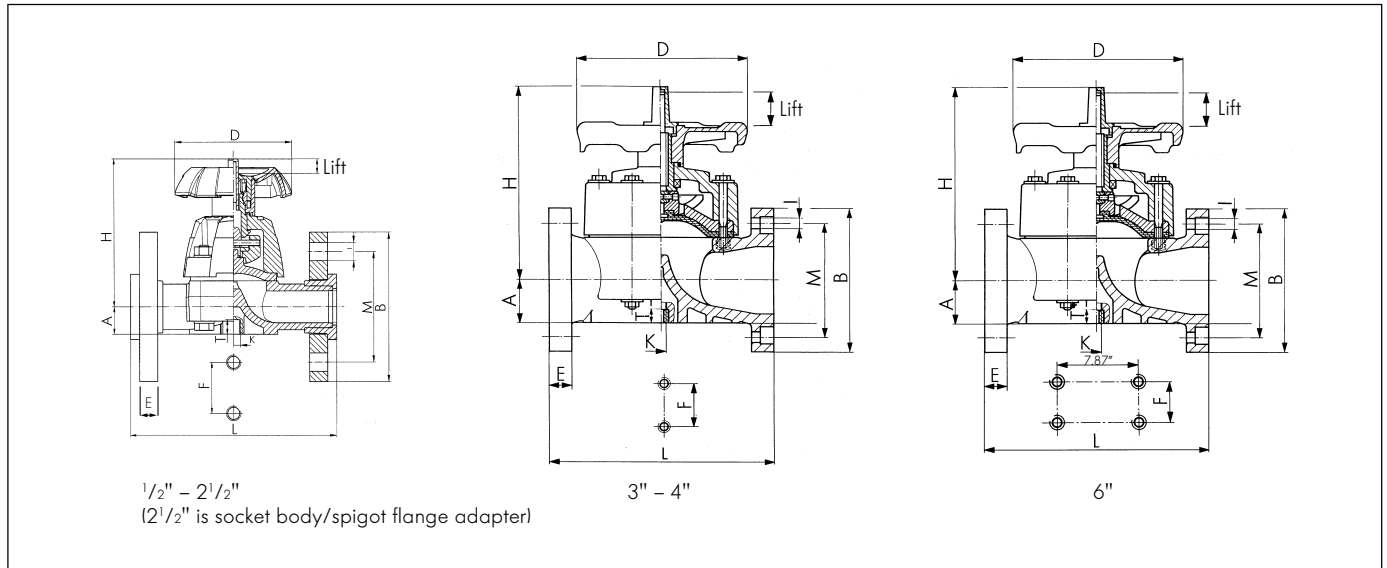
Polypropylene diaphragm valve 1/2" through 6" shall be of flanged end connection. Upper body shall be of glass-filled polypropylene material connected to lower body with stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM or PTFE with EPDM elastomer backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. Polypropylene body material shall meet or exceed the requirements of ASTM D-4101 as pertains to a type I homopolymer compound having a minimum tensile strength of 4350 psi/300 bar at 73°F/20°C when tested in accordance with ASTM D-638 and shall have a melt point which initiates at 316°F/158°C. The melt flow index (at 374°F/190°C/50N) shall be 0.4 - 0.8 grams per 10 minutes in accordance with ASTM D-1238. Valve to be equipped with flanged end connections with dimensions conforming to ANSI B16.5, class 150. The valve Type 317 shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc., Tustin, CA 92780.

Product Specification

Type 317 PVDF Diaphragm Valve

PVDF diaphragm valve 1/2" through 6" shall be of flanged end connection. Upper body shall be of glass-filled polypropylene material connected to lower body with stainless steel bolts. All interior metal parts are to be sealed from outside influence. A position indicator must be present to determine diaphragm position. Diaphragms to be either EPDM or PTFE with EPDM elastomer backing. Metal threaded bushings shall be molded into lower body to facilitate mounting. PVDF body material shall meet or exceed the requirements of ASTM D-3222 as pertains to a natural, unpigmented, virgin, noncompounded polyvinylidene fluoride compound having a minimum tensile strength of 7800 psi/538 bar at 73°F/20°C when tested in accordance with ASTM D-638 and shall have a flexural strength of 10,700 psi/738 bar at 73°F/20°C when tested according to ASTM D-790. Valve to be equipped with flanged end connections with dimensions conforming to ANSI B16.5, class 150. The valve Type 317 shall carry a pressure rating of 150 psi at 68°F as supplied by George Fischer, Inc., Tustin, CA 92780.

Dimensions for Type 317 Flanged Diaphragm Valve



Inch size	A inch	B CPVC inch	B PVC/PP/PVDF inch	D inch	E CPVC inch	E PVC/PP/PVDF inch	H inch	L PVC/PP/PVDF inch	L CPVC inch	M inch	I inch	No. bolt holes	F inch	K* mm
1/2	0.55	3.50	3.74	3.15	0.50	0.43	3.54	5.12	5.91	2.38	0.55	4	0.98	M6
3/4	0.69	3.88	4.13	3.15	0.50	0.47	4.02	5.91	6.54	2.75	0.55	4	0.98	M6
1	0.83	4.25	4.53	3.70	0.56	0.55	4.67	6.30	7.09	3.13	0.55	4	0.98	M6
1 1/4	1.00	4.63	5.51	4.61	0.63	0.59	4.96	7.09	7.56	3.50	0.71	4	1.77	M8
1 1/2	1.28	5.00	5.91	4.61	0.69	0.63	5.47	7.87	8.27	3.88	0.71	4	1.77	M8
2	1.53	6.00	6.50	5.98	0.75	0.71	6.77	9.06	9.06	4.75	0.71	4	1.77	M8
2 1/2	1.81	7.28	7.28	5.98	0.75	0.79	7.91	11.42	11.42	5.50	0.71	4	2.76	M8
3	2.24	7.87	7.87	10.63	1.38	1.38	10.43	12.20	12.20	6.00	0.71	4	4.72	M12
4	2.72	8.86	8.86	10.63	1.38	1.38	11.97	13.78	13.78	7.50	0.71	8	4.72	M12
6	4.25	—	11.22	15.75	—	1.02	17.20	18.90	18.90	9.50	0.87	8	3.94	M12

Loose ring flanges 1/2" - 2 1/2"

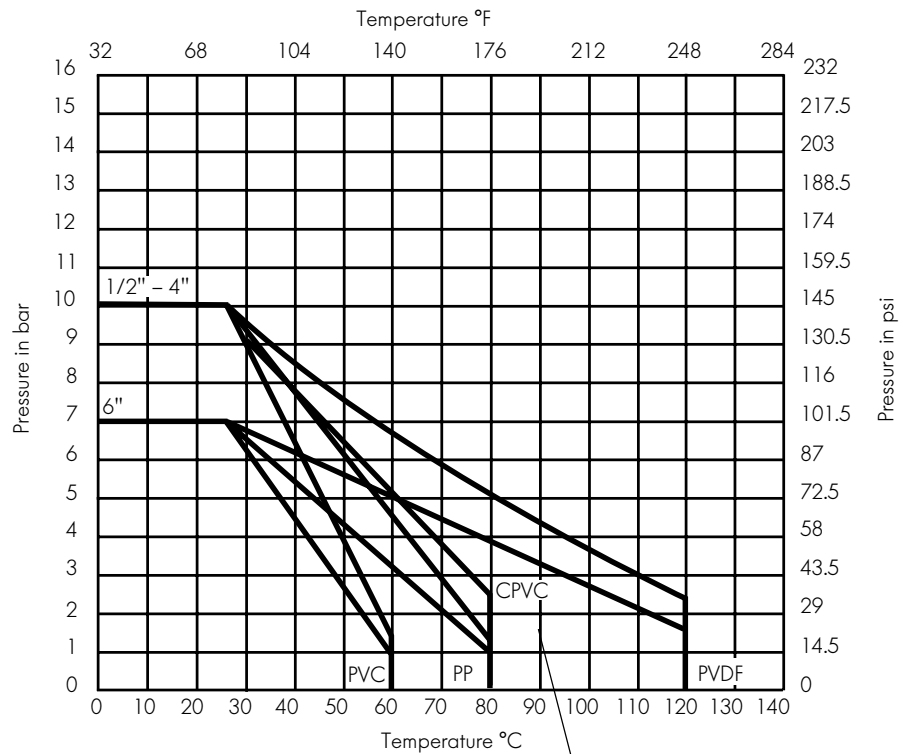
Integrally molded, fixed flanges 3" - 6"

*metric thread

Inch size	T inch	Lift inch	Weight PVC/CPVC/PP lbs.	Weight PVDF lbs.
1/2	0.47	0.31	1.0	1.3
3/4	0.47	0.43	1.5	1.9
1	0.47	0.51	2.2	2.6
1 1/4	0.59	0.63	3.5	5.1
1 1/2	0.59	0.83	4.2	5.1
2	0.59	1.10	7.1	8.2
2 1/2	0.59	1.18	9.5	12.6
3	0.91	1.57	21.4	23.6
4	0.91	1.97	30.0	32.8
6	0.91	2.76	59.5	68.3

Technical Data for Diaphragm Valves Type 314, 315, 315-HTR, 317, 319, 319-HTR

Pressure-Temperature Diagram

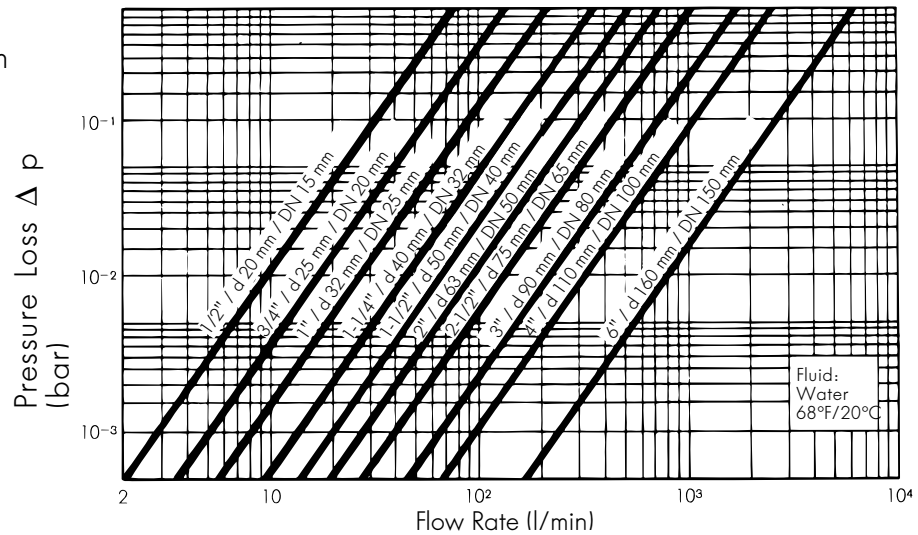


For continuous operation at temperatures over 194°F (90°C) it is recommended to use a FPM supporting diaphragm instead of an EPDM supporting diaphragm.

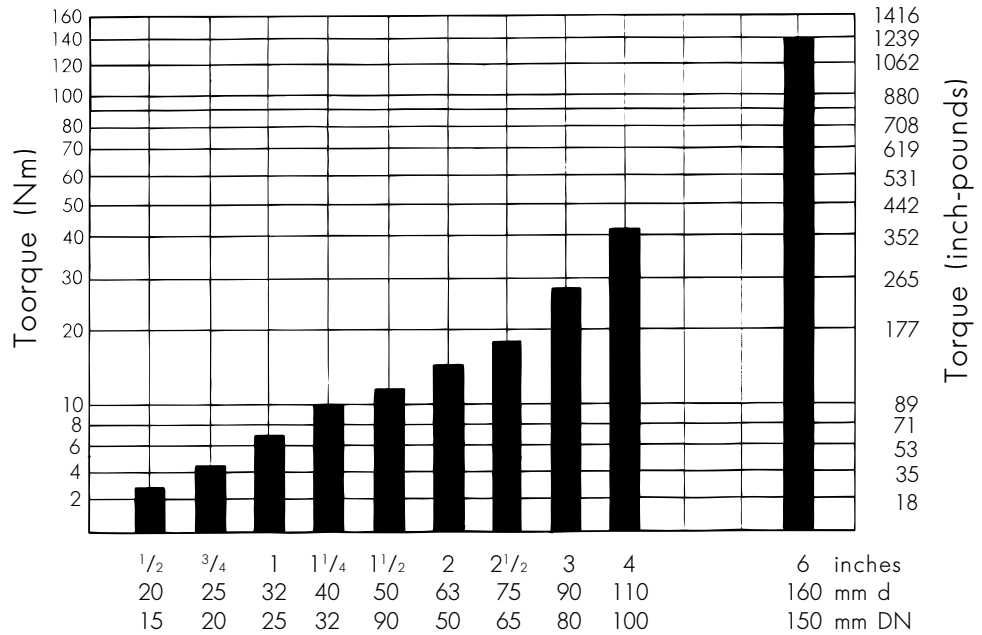
Pressure Loss Characteristics

$$\Delta p = \left(\frac{Q}{C_v} \right)^2$$

Q = gpm
p = psi



Operating Torque (average value)



C_v/k_v Values

Types 314, 315, 317

Inch size	C _v	k _v	d mm size
1/2	5.0	72	20
3/4	9.6	137	25
1	14.5	207	32
1 1/4	24.8	354	40
1 1/2	36.2	517	50
2	49.9	713	63
2 1/2	69.4	992	75
3	119.00	1700	90
4	189.00	2700	110
6	422.00	6033	160

Type 319 Zero Static Valve

d1 - d2 size	Closest inch size	Valve ass'y. size	C _v gpm	k _v lpm
20x20 mm	1/2" x 1/2"	20	3.3	47
25x20 mm	3/4" x 1/2"	25	4.8	69
25x25 mm	3/4" x 3/4"	25	6.4	91
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110x50 mm	4" x 1 1/2"	63	35.2	503
110x63 mm	4" x 2"	63	38.0	543

$k_v \div 14.28 = C_v$
 $C_v = \text{gallons per minute @ 1 psi } \Delta p$
 $K_v = \text{liters per minute @ 1 bar } \Delta p$

Flow Characteristics

