

Diaphragm Valves



CRN
Registered
Good Chemline

SIZES: Type 14: 1/2" – 4"
Type 15: 5" – 6"
Type 72: 8" – 10"

ENDS: Flanged: 1/2" – 10"¹
True Union Socket, Threaded or Butt²: 1/2" – 2"
ChemFlare™³: 1/2" – 1"

DIAPHRAGMS: EPDM, PTFE⁴



Type 14 (1/2" to 4") and Type 15 (5" and 6") Diaphragm Valves are an improved version of the older DV Series. The 8" and 10" DV's are still current design but are now called Type 72. Types 14 and 15 have been redesigned using modern computer design technology. Improvements are higher pressure resistance, lower hand wheel torques to close, better hydraulics (lower pressure losses) and other features. Tests show Type 14 to outperform major competitors in resistance to bonnet leakage on tough applications with thermal cycling.

These diaphragm valves have service histories dating back to 1970 operating in some of the toughest chemical plant applications in Canada. They have proven internal and external corrosion resistance.

This is an excellent throttling valve, and is suited for slurries or viscous liquids. Because of the self-draining design with no dead volume, it is good for sanitary and high purity applications. These diaphragm valves offers higher temperature/pressure ratings and chemical resistance compared to other valve types.

Features

- **Excellent Chemical Resistance**
Large choice of materials including PVDF bodies and PTFE diaphragms for extremely aggressive services
- **Externally Corrosion Resistant**
Plastic bonnet, handwheel, covered and sealed indicator
Bonnet seals protect internal parts from corrosive environments
- **High Pressure Resistance**
Designed with a high safety factor against leakage
Tight closing with low hand wheel torque
Highest pressure vs. temperature ratings of all plastic valve types
- **Designed for Long Diaphragm Life**
Standard Travel Stop prevents over-tightening and excessive stress on diaphragm.
Special design of compressor eliminates point loading of diaphragm stud, extending life.
- **Standard Flange Face-to-Face Lengths**
Same lengths as ITT plastic lined (1/2" to 2", 3" to 4")
- **CRN Registration numbers by province**
Ontario: OC11045.5
Newfoundland: OC11045.50
Saskatchewan/Manitoba/Quebec: OC11045.56
New Brunswick: OC11045.57
Nova Scotia: OC11045.58
P.E.I.: OC11045.59
British Columbia: not required
Alberta: not required

¹ Up to 4" only in CPVC.

² Butt fusion ends are for connection to PP and PVDF metric piping systems.

³ For ChemFlare™ end connectors, consult Chemline.

⁴ Other diaphragm materials are available.

⁵ Not required for non-expandable fluids.

JJ DOWNS INDUSTRIAL PLASTICS INC.
JJDOWNS.COM

Type 14 Diaphragm Valves

New design for superior performance

Position Indicator/Travel Stop
With low profile sealed plastic cover

New Design Hand Wheel
Easy to operate
Low torques are required to open and close

Designed to Eliminate Leakage
Bonnet flange and body under diaphragm are now thicker. The result is tight sealing under higher pressures. "Weepage" on aggressive chemical applications is eliminated. Seating requires low handwheel torque.

One Piece Flanged Body
Strong monobloc construction
Suitable for installation in metal piping systems

PTFE Diaphragm
Heavy duty two-piece design

Base Mounting Pad
Optional threaded inserts allow valve to be fixed to structures



True Union Bodies
Available 1/2" to 2" with a choice of end connections – Socket, Threaded or Butt



Pneumatically Actuated
Diaphragm type actuators made of PPG are available normally closed, normally open or double acting. 1/2" to 2". All control accessories may be directly mounted. Valve sizes 3" to 10" are available with pneumatic piston actuators.



Electrically Actuated
Valve top flange has ISO 5211 standard dimensions for easy mounting of actuators. Mounting hardware is corrosion resistant PPG bracket and 304 SS coupling.



PVDF Gas Barrier
To prevent migration of chlorines through the PTFE layer



Flange Leakage Protectors

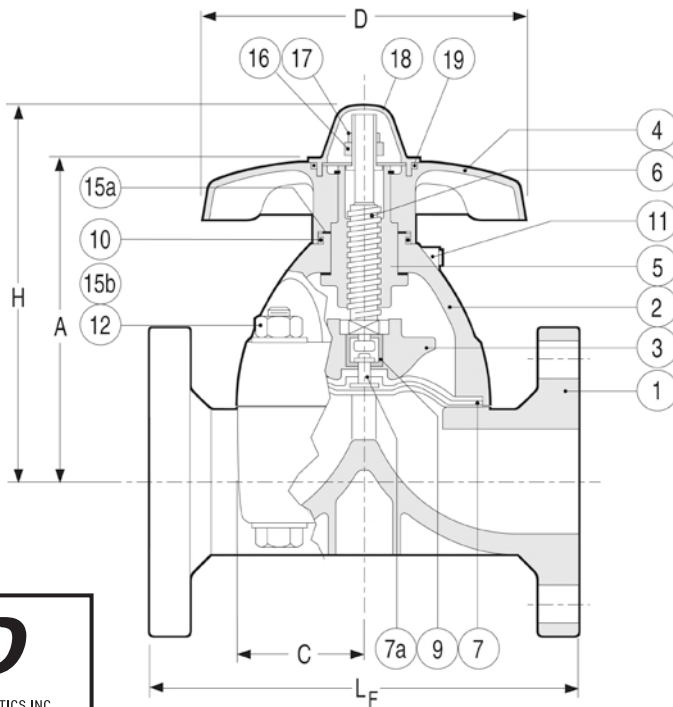


Hand Wheel Lock-out

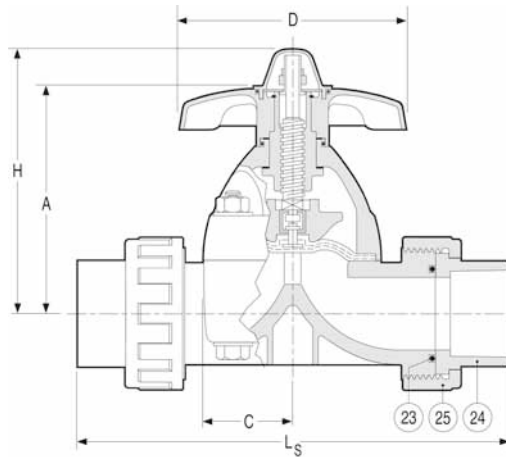


PTFE Coated Bolts

Type 14 Diaphragm Valves



Solid Flanged Body



True Union Body – Socket = S, Threaded = T, Flanged = F



PARTS

▲ Recommended Spare Parts

No.	Part	Pcs.	Materials	
			Body	Bonnet
1	Body	1		
2	Bonnet	1	PVC PP CPVC PVDF	PVC PP PP, PPG ¹
3	Compressor	1	PVDF	
4	Handwheel	1	Polypropylene	
5	Sleeve	1	Bronze BC 6	
6	Stem	1	Copper Alloy BSM C3604	
7▲	Diaphragm	1	EPDM, PTFE with EPDM cushion	
7a	Diaphragm Insert	1	304 SS	
9	Diaphragm Insert Connection	1	304 SS	
10	Bonnet O-Ring	1	EPDM	
11	Grease Nipple 2-1/2" to 4" only	1	Brass	
12	Stud Bolt, Bolt, Nut & Washer	Set	304 SS	
13	Insert Nut 2-1/2" to 4" only ²	4	Brass, 304 SS for PVDF only	
15a	Thrust Rings 1/2" to 4" only	1	UHMWPE	
15b	Thrust Rings 1/2" to 4" only	1	UHMWPE	
16	Stopper	1	Bronze BC6	
17	Lock Nut	1	304 SS	
18▲	Indicator Cover	1	Polycarbonate	
19	Cover O-Ring	1	EPDM	
23	Face O-Ring	2	EPDM, FKM (Viton®)	
24	End Connector	2	PVC, CPVC, PP, PVDF	
25	Union Nut	2	PVC, CPVC, PP, PVDF	

¹ Optional PVDF bonnet is for temperatures 100 to 120°C.

² Part No.13, Insert Nut, is not shown.

DIMENSIONS INCHES

WEIGHTS LB.

Size ³	A	C	D	H	Flanged ⁴		True Union			PVC TU	PVC Flg	PP Flg	CPVC Flg	PVDF Flg	
					L _F	L _S	PVC/CPVC		L _B						
							L _T	L _S							L _T
1/2"	3.39	2.13 x 2.60	3.46	4.09	4.25	5.47	5.04	5.47	5.04	5.90	1.1	1.5	1.3	1.5	1.8
3/4"	3.46	2.13 x 2.60	3.46	4.17	5.88	6.18	5.83	6.18	5.83	6.78	1.3	1.8	1.3	1.8	2.0
1"	3.66	2.64 x 3.15	3.46	4.37	5.88	7.32	6.77	7.32	6.77	7.67	2.0	2.4	1.8	2.4	2.6
1-1/4"	3.82	2.64 x 3.15	3.46	4.57	6.38	7.95	7.40	7.95	7.40	8.34	2.4	2.9	2.2	3.1	3.3
1-1/2"	5.67	4.24 x 4.25	6.14	6.97	6.94	10.47	9.65	10.47	9.65	10.87	5.7	4.8	4.8	5.9	6.4
2"	6.22	4.84 x 4.84	6.14	7.52	7.94	11.54	11.06	11.54	10.95	12.01	6.4	7.7	6.2	7.7	8.6
2-1/2"	7.40	6.73	8.66	10.47	9.84	-	-	-	-	-	-	12.3	9.2	11.7	13.0
3"	7.95	7.68	8.66	11.02	10.38	-	-	-	-	-	-	15.6	11.9	15.2	16.1
4"	9.49	9.25	10.12	12.95	12.94	-	-	-	-	-	-	23.1	19.1	19.6	22.7

³ Type 15/72 diaphragm valves for 5" to 10" sizes.

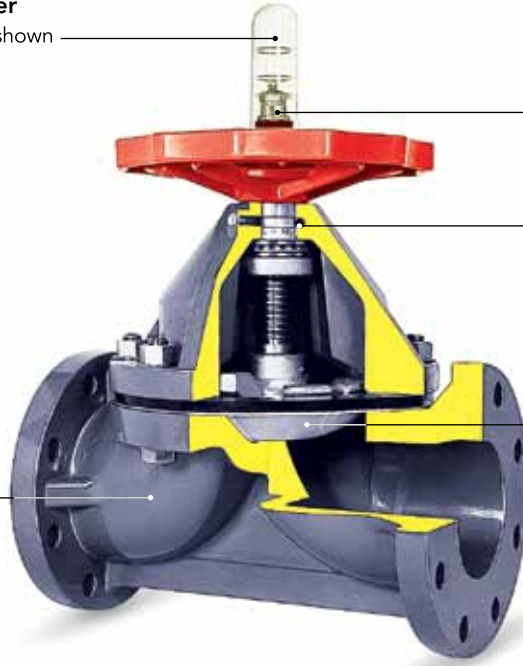
⁴ Type 14 flanged dimensions match the previous DV Series "Type G". Older DV Series "Type 72", 1/2" to 4" have different dimensions. These are available special order.

Type 15/72 Diaphragm Valves

JJD
 JJ DOWNS INDUSTRIAL PLASTICS INC
 416.236.1884
 JJDOWNS.COM
 Toronto, ON

Position Indicator with Sealed Plastic Cover
 Valve position clearly shown

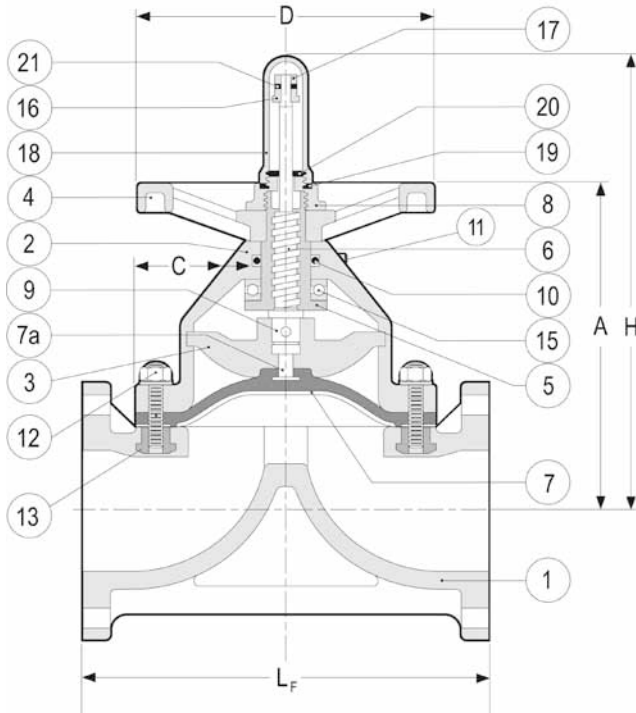


Limit Closing Stop
 Prevents excessive closing pressure.
 Prolongs diaphragm life.

Bonnet O-Ring
 Protects internal parts from corrosive atmosphere.

PTFE Diaphragm
 Heavy duty two-piece design

Strong One-Piece Flanged Body



PARTS

▲ Recommended Spare Parts

No.	Part	Pcs.	Materials	
1	Body	1	Body	Bonnet
2	Bonnet	1	PVC PP PVDF	PVC PP PPG ¹
3	Compressor 5" & 6"	1	PVDF	
	Compressor 8" & 10"	1	Cast Iron	
4	Handwheel	1	Polypropylene	
5	Sleeve 5" & 6"	1	Bronze (BC 6)	
	Sleeve 8" & 10"	1	Carbon Steel	
6	Stem 5" & 6"	1	Copper Alloy (BSM C3604)	
	Stem 8" & 10"	1	Cast Iron	
7▲	Diaphragm	1	EPDM, PTFE with EPDM cushion	
7a	Diaphragm Insert	1	304 SS	
8▲	Cap Nut	1	Polypropylene	
9	Compressor Pin	1	304 SS	
10	Bonnet O-Ring	1	Nitrile	
11	Grease Nipple	1	Brass	
12	Stud Bolt, Bolt, Nut & Washer	Set	304 SS	
13	Insert Nut	4	Brass, 304 SS for PVDF only	
15	Thrust Bearings	1	High Carbon Chromium	
16	Stopper	1	Plated Steel	
17	Lock Nut	1	Plated Steel	
18▲	Indicator Cover	1	Polycarbonate	
19	Cover Gasket	1	EPDM	
20	Washer	1	Plated Steel	
21	Spring Washer	1	Spring Steel	

DIMENSIONS INCHES

WEIGHTS LB.

Size	Valve Type	A	C	D	H	Flg L _F	PVC Flg	PP Flg	PVDF Flg
5"	15	12.13	12.60	11.81	16.54	16.14	48.4	42.9	80.3
6"	15	13.15	15.16	16.14	18.74	18.90	76.3	67.1	89.1
8"	72	16.5	16.93	16.1	24.7	22.44	116.	99.	138.
10"	72	20.1	21.26	22.0	30.6	26.77	206.	171.	242.

¹ Optional PVDF bonnet is for temperatures 100 to 120°C

Diaphragm Valves

WORKING PRESSURES PSI

Body Diaphragm	Valve Type	PVC				Polypropylene & CPVC						PVDF			
		EPDM		PTFE		EPDM		PTFE		PTFE		PTFE			
Size		0-40°C 32-104°F	60°C 140°F	0-40°C 32-104°F	60°C 140°F	0-40°C 32-104°F	60°C 140°F	90°C 194°F	0-40°C 32-104°F	60°C 140°F	90°C 194°F	-40-60°C -40-140°F	80°C 176°F	100°C 212°F	120°C 248°F
1/2"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
3/4"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
1"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
1-1/4"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
1-1/2"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
2"	14	150	105	150	105	150	120	70/45*	150	120	70/45*	150	125	100	70
2-1/2"	14	150	120	150	120	150	120	85	150	120	85	150	100	85	70
3"	14	150	120	150	120	150	120	85	150	120	85	150	100	85	70
4"	14	150	120	150	120	150	120	85	150	120	85	150	100	85	70
5"	15	100	85	70	60	70	60	50	60	45	45	60	45	45	40
6"	15	100	70	70	60	65	50	50	60	45	45	60	45	45	40
8"	72	70	60	60	45	70	60	50	60	45	45	60	45	45	40
10"	72	65	50	60	45	65	50	50	60	45	45	60	45	45	40

Temperature Ranges: PVC 0 to 60°C (32 to 140°F); PP -20 to 90°C (-4 to 194°F), CPVC 0 to 95°C (32 to 203°F);

PVDF with PPG Bonnet -40 to 100°C (-40 to 212°F); PVDF with PVDF Bonnet -40 to 120°C (-40 to 248°F).

* 70 psi for PP valves / 45 psi for CPVC valves.

Cv VALUES VS. OPENING

Size	25%	50%	75%	100%	No. Turns to Open	VACUUM RATING		BOLT TORQUES Maximum Flange Bolt Torque ft-lb
						Inches Mercury EPDM	PTFE	
1/2"	1.2	2.7	4.1	4.8	5.	29.9	29.9	13
3/4"	1.3	3.0	4.5	5.3	5.	29.9	29.9	13
1"	2.0	4.8	7.	8.5	6.	29.9	29.9	15
1-1/4"	3.	6.	9.	11.	6.	29.9	29.9	15
1-1/2"	6.	15.	22.	26.	5.	29.9	29.9	15
2"	10.	25.	37.	43.	6.	29.9	29.9	17
2-1/2"	40.	68.	80.	85.	9.	15.0	15.0	17
3"	54.	92.	108.	115.	11.	15.0	15.0	22
4"	87.	148.	174.	185.	10.	15.0	15.0	22
5"	141.	246.	285.	300.	9.75	14.2	2.8	29
6"	188.	328.	380.	400.	10.5	9.9	N.R.	33
8"	329.	574.	665.	700.	18.	4.0	N.R.	40
10"	470.	820.	950.	1,000.	20.	2.0	N.R.	40

ORDERING EXAMPLE

Type 14/15/72 Diaphragm Valves	14	-	A	020	P	F
Bonnet	Blank – Standard	K – PVDF				
Valve Body	A – PVC	B – PP	C – CPVC		K – PVDF	
Size	005 – 1/2"	007 – 3/4"	010 – 1"	012 – 1-1/4"		
	015 – 1-1/2"	020 – 2"	025 – 2-1/2"		030 – 3"	
	040 – 4"	050 – 5"	060 – 6"	080 – 8"	100 – 10"	
Diaphragm	E – EPDM		P – PTFE			
Ends	F – Flanged	S – Socket Union	T – Threaded Union			
	B – Butt Union ¹		CF – ChemFlare™			

Example: Type 14 Weir Type Diaphragm Valve, PVC, 2", PTFE diaphragm, flanged ends.

¹ PP and PVDF metric butt fusion ends (1/2" to 2") connect to Chemline PP and PVDF piping systems.

OPTIONS & ACCESSORIES

- PVDF Gas Barrier for PTFE diaphragms on chlorine services
- Vacuum Proof Diaphragms for 29.9" Hg vacuum resistance 3" to 10" sizes
- PVDF Bonnet on PVDF Valves for temperatures 100 to 120°C
- Electrically and Pneumatically Actuated – Consult Chemline
- Chain Wheel Operator
- Municipal Operating Nut
- Handwheel Extension
- Handwheel Lockout