

DIAPHRAGM VALVE



VALVE SOLUTIONS for Corrosive Applications



UNPPolyvalves

Manufacturer of PFA/FEP/PTFE Lined & Plastic Valves,
Pipes & Pipe Fittings





VALVE SOLUTIONS for Corrosive Applications



ABOUT US

UNPPolyvalves has manufactured and supplied valves for corrosive applications since 1988.

UNP provides both **Solid Plastic** and **Plastic Lined**, **Ball Valves**, **Plug Valves**, **Butterfly Valves**, **Diaphragm Valves**, **Control Valves**, **Globe Valves**, **Ball Check Valves**, **Swing Check Valves**, **Sampling Valves**, **Double Window** and **Full View Sight Glasses**, **Y and T type strainers**, **Lined Pipe and Fittings** ranging from **W' to 24"**.

UNPPolyvalves products have been installed in **35+countries** through its global distribution network. Typical Customers include **Chlor-Alkali Plants**; the **Steel Industry**; the **Oil and Gas Industry**; **Bio-Pharma** and other chemical manufacturing segments.

PRODUCT FEATURES AND OPTIONS AVAILABLE

- UNP offers both Rising Stem/Spindle & Rising Hand wheel design Diaphragm valves.
- UNP offers regular (TEM + EPDM) double as well (PTFE+PVDF+EPDM) tripple layer Diaphragms to avoid failure of Diaphragm due to permeation especially for chlorine application.
- UNPPolyvalves' lining is anchored with dove tail groove making its valve suitable for both Pressure and Vacuum Applications.
- UNPPolyvalves offers all metal components in investment castings, ensuring intact and homogeneous lining with an overall even thickness of lining even with intricate surface contours.
- UNP uses virgin raw materials such as PFA from Dupont or 3M's Dyneon and specific grades are used which are high purity grade that enables use of its valves in teh Bio-Pharma and Food Industries.
- UNPPolyvalves offers flange dimensions in DIN, ANSI and JIS standards.
- UNPPolyvalves are offered in manual, pneumatically & electrically actuated as well with modulating control feature.
- UNPPolyvalves lining process uses the latest injection molding process, not a transfer molding process, making our liners more dense and, therefore, reliable.
- UNPPolyvalves products undergo 100% Hydrostatic and Pneumatic Testing ensuring reliability under pressure.
- UNPPolyvalves is an ISO 9001:2008 company and has CE certificates for all its Lined Diaphragm valves design under PED 1128.
- UNPPolyvalves lining materials for corrosive applications include PFA, FEP, PVDF, ETFE, ECTFE and PPH.
- UNPPolyvalves standard body casting material is ASTM A 216 GR. WCB; upon request ASTM A 351 GR. CF 8 or CF 8 M / ASTM A 890 GR. 4A (CD3MN) / Super Duplex.
- UNPPolyvalves provides Antistatic PFA lined Valves in grade C 980 of Dupont or 8502 ESDZ of Dyneon. Be believe that a grounding spring device, and grounding paddle, is not as reliable for conducting static charge from inside of the valve because a normal grade of PFA is non-conductive.

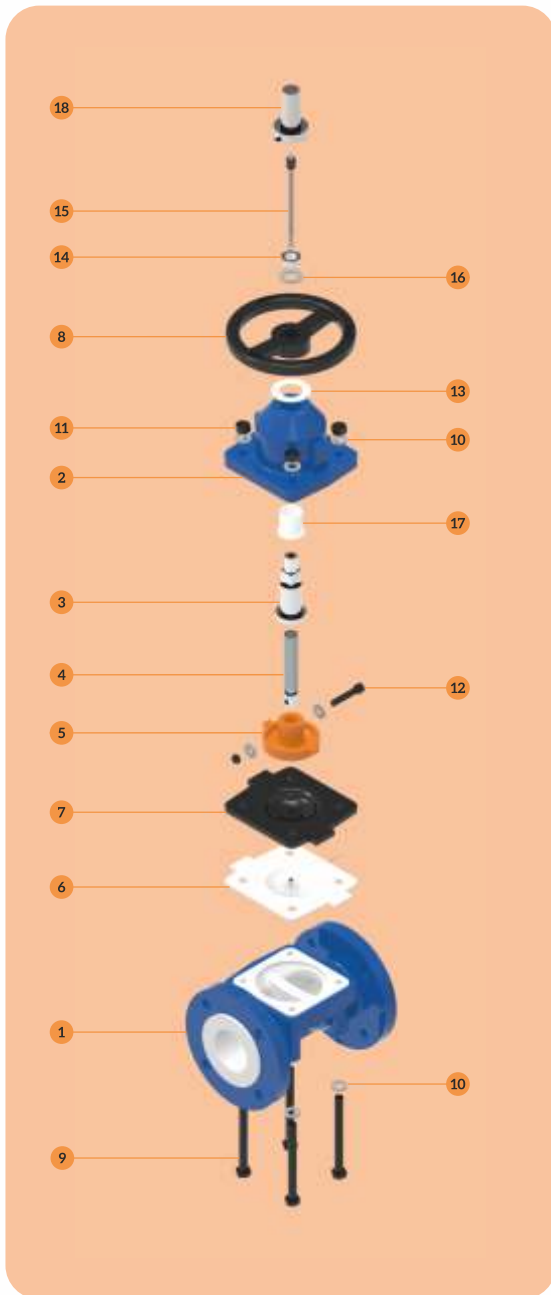
DIAPHRAGM VALVE

RISING SPINDLE/STEM

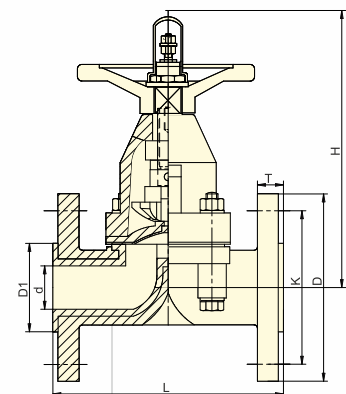
DN 15 (1/2") – DN 80 (3")

PART LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB + PFA LINED	1
2	Bonnet	ASTM A 216 GR. WCB	1
3	Spindle Sleeve	SS 304	1
4	Spindle	SS 304	1
5	Compressor	CARBON STEEL	1
6	Diaphragm	TFM	1
7	Diaphragm Backing Pad	EPDM	1
8	Hand Wheel	ASTM A 216 GR. WCB	1
9	Body Bolts	ASTM A 193 GR. B7	4
10	Bolt Washers	STEEL	4+4
11	Nuts	ASTM A 194 GR. 2H	4
12	Allen Bolt + Nut For Compressor	HIGH TENSILE 10.9	1
13	Bonnet Washer	PTFE	1
14	Hand Wheel Nut	BRASS/SS 304	1
15	Indicator Stud	SS 304	1
16	Hand Wheel Washer	SS 304	1
17	Bonnet Sleeve	DELRIN	1
18	Indicator Cap	POLYCARBONATE	1



SECTIONAL VIEW



DIMENSIONS

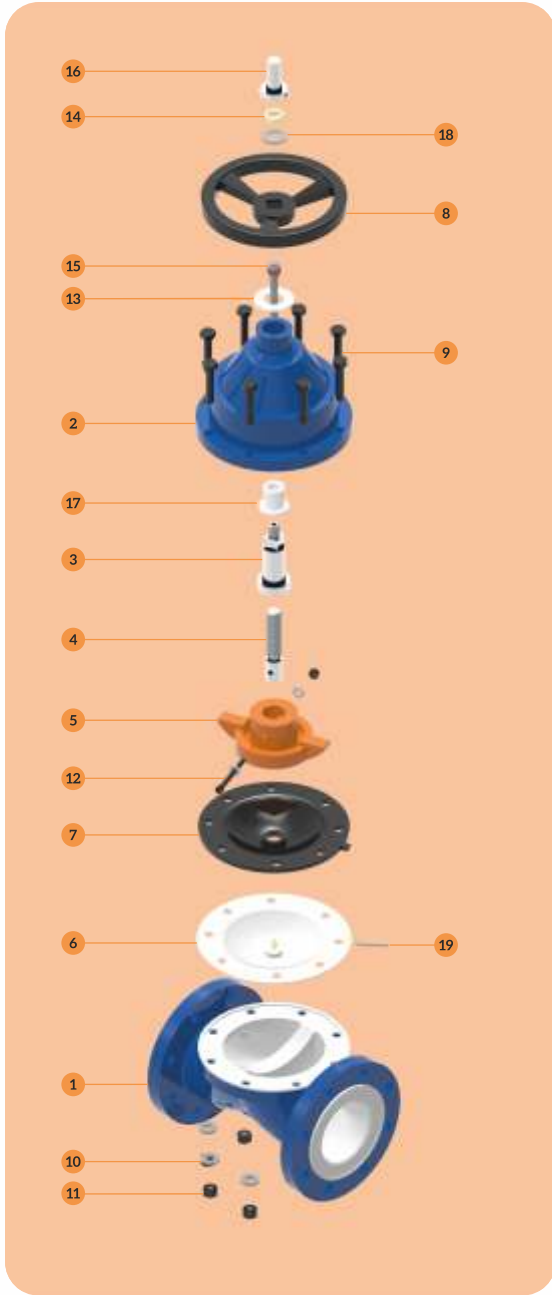
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	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
0.5"	4.49	114	3.50	89	0.59	15	0.51	13.	1.37	35	2.75	70	2.36	60	04	5/8	16
0.75"	4.88	124	3.85	98	0.78	20	0.59	15	1.69	43	2.83	72	2.75	70	04	5/8	16
1"	5.23	133	4.25	108	0.98	25	0.63	16	2.00	51	5.82	148	3.11	79	04	5/8	16
1.5"	6.53	166	5.00	127	1.57	40	0.75	19	2.87	73	6.30	160	3.86	98	04	5/8	16
2"	7.71	196	5.98	152	1.96	50	0.82	21	3.62	92	8.85	225	4.76	121	04	3/4	19
2.5"	8.74	222	7.00	178	2.55	65	0.90	23	4.13	105	9.84	250	5.51	140	04	3/4	19
3"	10.23	260	7.51	191	2.95	75	0.98	25	5.00	127	11.02	280	5.98	152	04	3/4	19

All Dimensions are in Inches & mm unless otherwise specified. PCD of the Valve can be provided in ANSI / DIN / JIS.
Tolerances are given in Inches.
Tripple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.



DIAPHRAGM VALVE
RISING SPINDLE/STEM
DN 100 (4") – DN 200 (8")

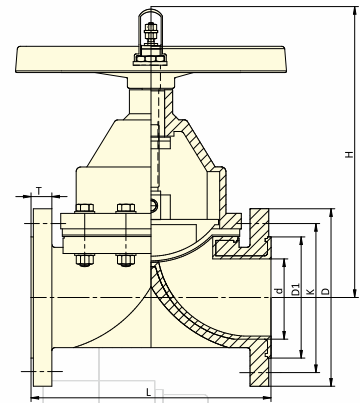
PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB + PFA LINED	1
2	Bonnet	ASTM A 216 GR. WCB	1
3	Spindle Sleeve	SS 304	1
4	Spindle	SS 304	1
5	Compressor	CARBON STEEL	1
6	Diaphragm	TFM	1
7	Diaphragm Backing Pad	EPDM	1
8	Hand Wheel	ASTM A 216 GR. WCB/CI	1
9	Body Bolts	ASTM A 193 GR. B7	8-14
10	Bolt Washers	STEEL	4-14
11	Nuts	ASTM A 194 GR. 2H	4-14
12	Allen Bolt + Nut For Compressor	HIGH TENSILE 10.9	1
13	Bonnet Washer	PTFE	1
14	Hand Wheel Nut	SS 304/BRASS	1
15	Indicator Stud	SS 304	1
16	Indicator Cap	POLYCARBONATE	1
17	Bonnet Sleeve	DELRIN	1
18	Handwheel Washer	SS	1
19	Diaphragm Pin	SS	1



SECTIONAL VIEW



DIMENSIONS

Size	L ±0.11		D ±0.04		d ±0.04		T +0.11/-0.00		D1 ±0.04		H ±0.19		K ±0.062		n	HOLE DIA.	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
4"	12.24	311	9.0	229	3.93	100	0.98	25	6.18	157	13.77	350	7.51	191	08	3/4	19
6"	16.22	412	11.02	280	5.90	150	1.06	27	8.50	216	20.07	510	9.49	241	08	7/8	22
8"	20.74	527	13.50	343	7.87	200	1.18	30	10.62	270	23.81	605	11.73	298	08	7/8	22

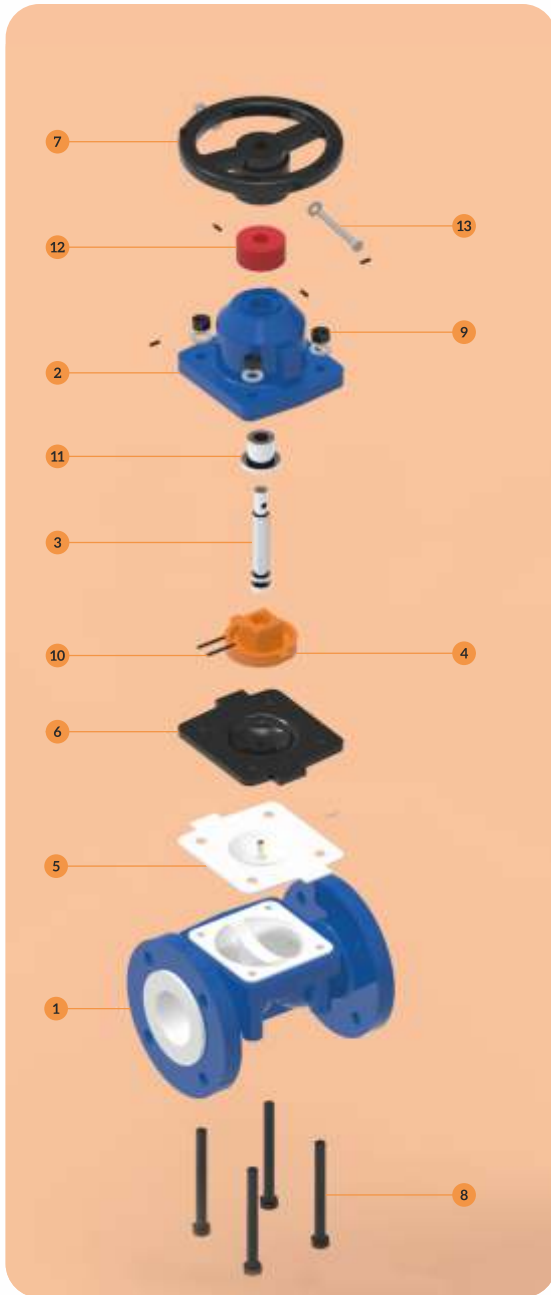
All Dimensions are in Inches & mm unless otherwise specified. PCD of the Valve can be provided in ANSI / DIN / JIS.
 Tolerances are given in Inches.
 Triple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.

DIAPHRAGM VALVE

RISING HANDWHEEL

DN 25 (1") – DN 80 (3")

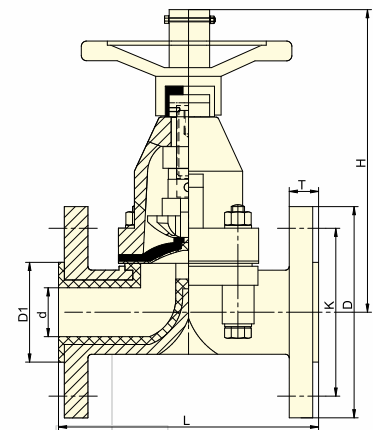
PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB + PFA LINED	1
2	Bonnet	ASTM A 216 GR. WCB	1
3	Spindle	SS 304	1
4	Compressor	CARBON STEEL	1
5	Diaphragm	TFM	1
6	Diaphragm Backing Pad	EPDM	1
7	Hand Wheel	CARBON STEEL	1
8	Body Bolts	ASTM A 193 GR. B7	4
9	Nuts	ASTM A 194 GR. 2H	4
10	Compressor Pin	STEEL	2
11	Bonnet Sleeve	SS 304	1
12	Grease Cup	POLYPROPYLENE	1
13	Hand Wheel Bolt+Nut	HIGH TENSILE 10.9	1



SECTIONAL VIEW



DIMENSIONS

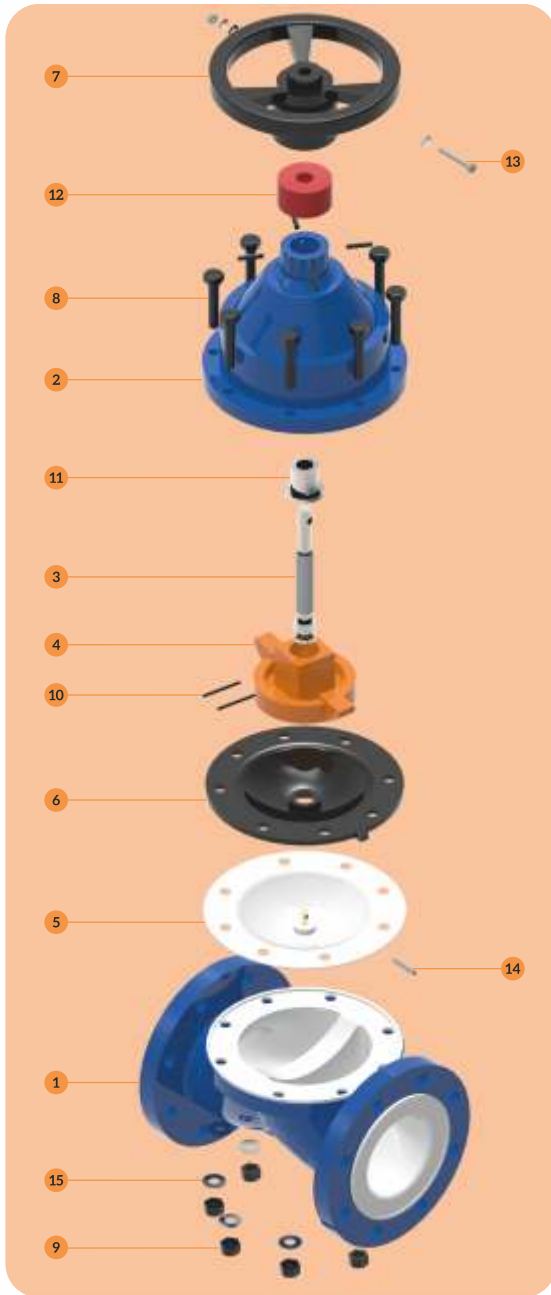
Size	L ±0.11		D ±0.04		d ±0.04		T +0.11/-0.00		D1 ±0.04		H ±0.19		K ±0.062		n	HOLE DIA.	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
1"	5.23	133	4.25	108	0.98	25	0.63	16	2.00	51	5.59	142	3.11	79	04	5/8	16
1.5"	6.53	166	5.00	127	1.57	40	0.74	19	2.87	73	6.30	160	3.86	98	04	5/8	16
2"	7.71	196	5.98	152	1.96	50	0.82	21	3.62	92	8.85	225	4.76	121	04	3/4	19
2.5"	8.74	222	7.00	178	2.55	65	0.90	23	4.13	105	9.84	250	5.51	140	04	3/4	19
3"	10.23	260	7.51	191	2.95	75	0.98	25	5.00	127	11.02	280	5.98	152	04	3/4	19

All Dimensions are in Inches & mm unless otherwise specified. PCD of the Valve can be provided in ANSI / DIN / JIS.
Tolerances are given in Inches.
Triple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.



DIAPHRAGM VALVE
RISING HANDWHEEL
DN 100 (4") – DN 200 (8")

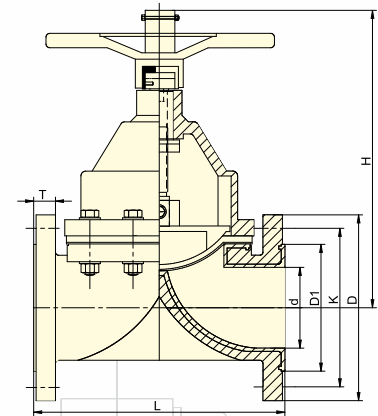
PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB + PFA LINED	1
2	Bonnet	ASTM A 216 GR. WCB	1
3	Spindle	SS 304	1
4	Compressor	CARBON STEEL	1
5	Diaphragm	TFM	1
6	Diaphragm Backing Pad	EPDM	1
7	Hand Wheel	CARBON STEEL	1
8	Body Bolts	ASTM A 193 GR. B7	8-14
9	Nuts	ASTM A 194 GR. 2H	4-14
10	Compressor Pin	STEEL	2
11	Bonnet Sleeve	SS 304	1
12	Grease Cup	POLYPROPYLENE	1
13	Hand Wheel Bolt+Nut	HIGH TENSILE 10.9	1
14	Diaphragm Pin	SS	1
15	Bolt Washers	STEEL	4-14



SECTIONAL VIEW

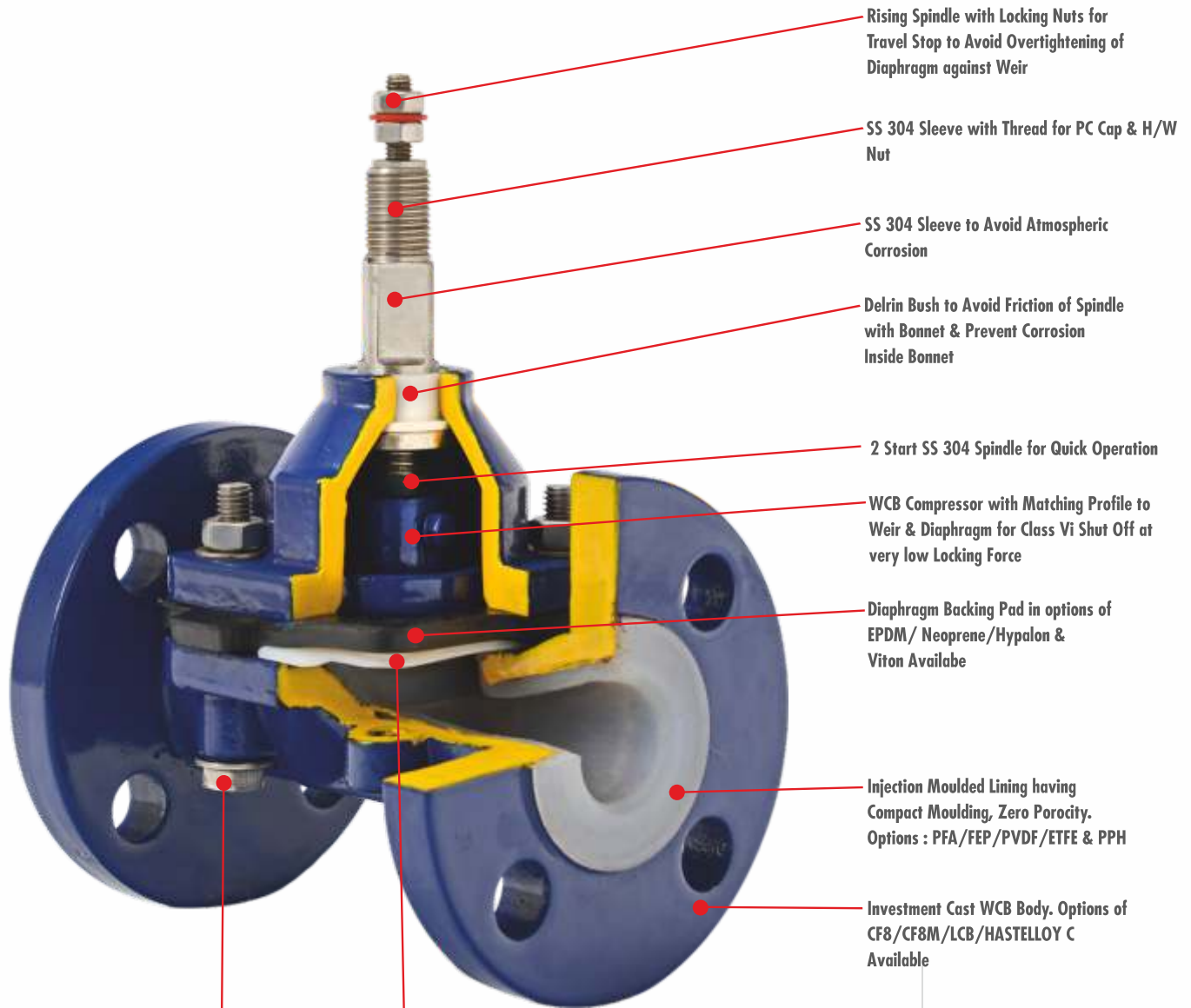


DIMENSIONS

Size	L ±0.11		D ±0.04		d ±0.04		T +0.11/-0.00		D1 ±0.04		H ±0.19		K ±0.062		n	HOLE DIA.	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
4"	12.24	311	9.01	229	3.93	100	0.98	25	6.18	157	13.77	350	7.51	191	08	3/4	19
6"	16.22	412	11.02	280	5.90	150	1.06	27	8.50	216	20.07	510	9.49	241	08	7/8	22
8"	20.74	527	13.50	343	7.87	200	1.18	30	10.62	270	23.81	605	11.73	298	08	7/8	22

All Dimensions are in Inches & mm unless otherwise specified. PCD of the Valve can be provided in ANSI / DIN / JIS.
 Tolerances are given in Inches.
 Triple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.

DIAPHRAGM VALVE FEATURES



Rising Spindle with Locking Nuts for Travel Stop to Avoid Overtightening of Diaphragm against Weir

SS 304 Sleeve with Thread for PC Cap & H/W Nut

SS 304 Sleeve to Avoid Atmospheric Corrosion

Delrin Bush to Avoid Friction of Spindle with Bonnet & Prevent Corrosion Inside Bonnet

2 Start SS 304 Spindle for Quick Operation

WCB Compressor with Matching Profile to Weir & Diaphragm for Class VI Shut Off at very low Locking Force

Diaphragm Backing Pad in options of EPDM/ Neoprene/Hypalon & Viton Available

Injection Moulded Lining having Compact Moulding, Zero Porosity. Options : PFA/FEP/PVDF/ETFE & PPH

Investment Cast WCB Body. Options of CF8/CF8M/LCB/HASTELLOY C Available

Standard B7 Bolts & Nuts. Options of B8/Hastelloy C / Alloy 20 Bolts Available

TFM Diaphragm Pin type for Low Permeation and Aggressive and Corrosive Chemical Applications. Option of TFM+PVDF+EPDM, 3 Layer Diaphragm is Available



TORQUE VALUES & VALVE Cv

SIZE	CLOSING HAND WHEEL TORQUE IN N-M		CLOSING HAND WHEEL TORQUE IN INCH-POUND		Cv
	RISING SPINDLE	RISING HAND WHEEL	RISING SPINDLE	RISING HAND WHEEL	
0.5	12	12	106	106	4.50
0.75	15	15	133	133	6.50
1"	17	17	151	151	11.50
1-0.5"	25	25	221	221	33.00
2"	30	30	266	266	60.00
2-0.5"	35	35	310	310	85.00
3"	35	35	310	310	150.00
4"	65	65	575	575	270.00
6"	175	175	1549	1549	500.00
8"	311	311	2752	2752	1275.00

VALVE NET WEIGHTS

SIZE	WEIGHT/PC	
	KGS	LBS
0.5	2.05	5.50
0.75	3.50	7.70
1"	3.70	8.14
1-0.5"	7.40	16.28
2"	11.60	25.50
2-0.5"	18.50	40.70
3"	25.30	55.66
4"	41.40	91.00
6"	86.90	191.18
8"	205.00	451.00

PRODUCT DESIGN

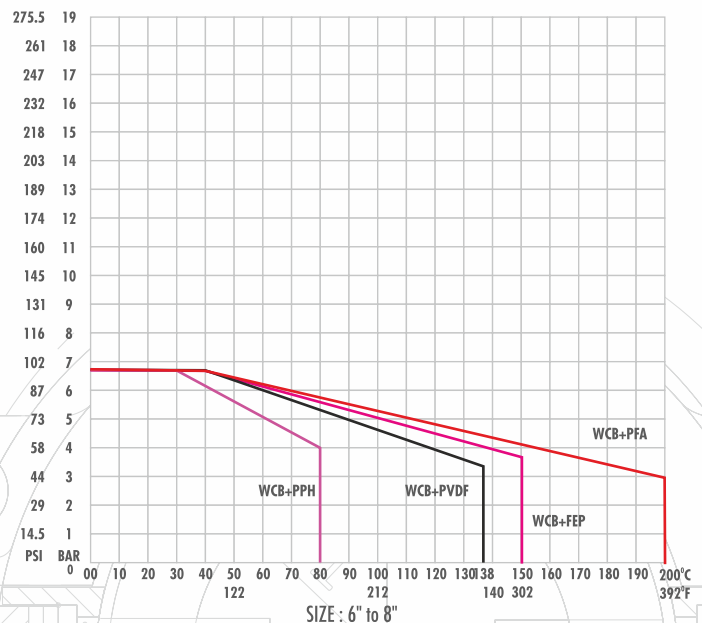
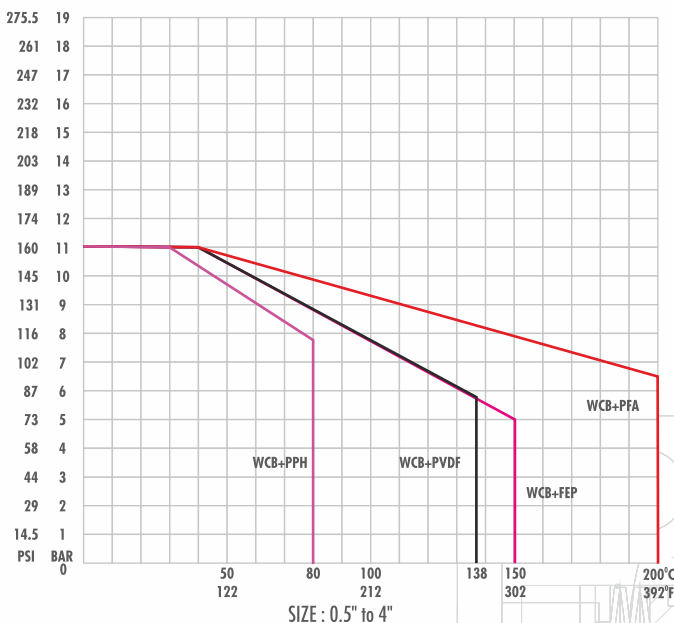
DESIGN PARAMETERS	STANDARD
VALVE DESIGN	BS EN 13397
SHELL DESIGN	ANSI B 16.34
FACE TO FACE	EN 558-1 SERIES 7
FLANGE CONNECTION RATING	ANSI B 16.5, 150# / DIN PN 10 / JIS
TESTING STANDARD	BS EN 12266-1
CONNECTION	FLANGED, RF

TESTS PERFORMED

TESTS PERFORMED	BS EN 12266-1		BS EN 12266-1	
	SIZES		SIZES	
	½" TO 4"		6" TO 8"	
HIGH PR. SHELL TEST HYDRO	225 PSI	15 KG/SQ.CM	128 PSI	9 KG/SQ.CM
HIGH PR. SEAT TEST HYDRO	165 PSI	11 KG/SQ.CM	90PSI	6.6 KG/SQ.CM
LOW PR. SEAT TEST PNEUMATIC	85 PSI	6 KG/SQ.CM	50 PSI	3.5 KG/SQ.CM

SPARK TEST	KVDC
SPARK TEST	20 KVDC

PRESSURE - TEMPERATURE GRAPH



DIAPHRAGM VALVE CODE USED

TYPE OF VALVE	CODE
DIAPHRAGM VALVE	DGMV

BODY CASTING	CODE
ASTM A 216 GR. WCB	C1
ASTM A 351 GR. CF 8	C2
ASTM A 351 GR. CF8M	C3
ALLOY 20	C4
ASTM A 890 GR. 4A(CD3MN)	C5
HASTELLOY C (276/22)	C6

DIAPHRAGM	CODE
TFM+EPDM	T7
TFM+PVDF+EPDM	T3
TFM+HYPALON	TH
TFM+NEOPRENE	TN
TFM+VITON	TV

LINING MATERIAL	CODE
PFA	L1
FEP	L2
PVDF	L3
ETFE	L4
PPH	L6
ANTISTATIC PFA	L7

SEAT	CODE
NOT APPLICABLE	XX

FASTENERS	CODE
SS 304	F2
SS 316	F3
HIGH TENSILE	F4
ASTM A 193 GR. B7	F5

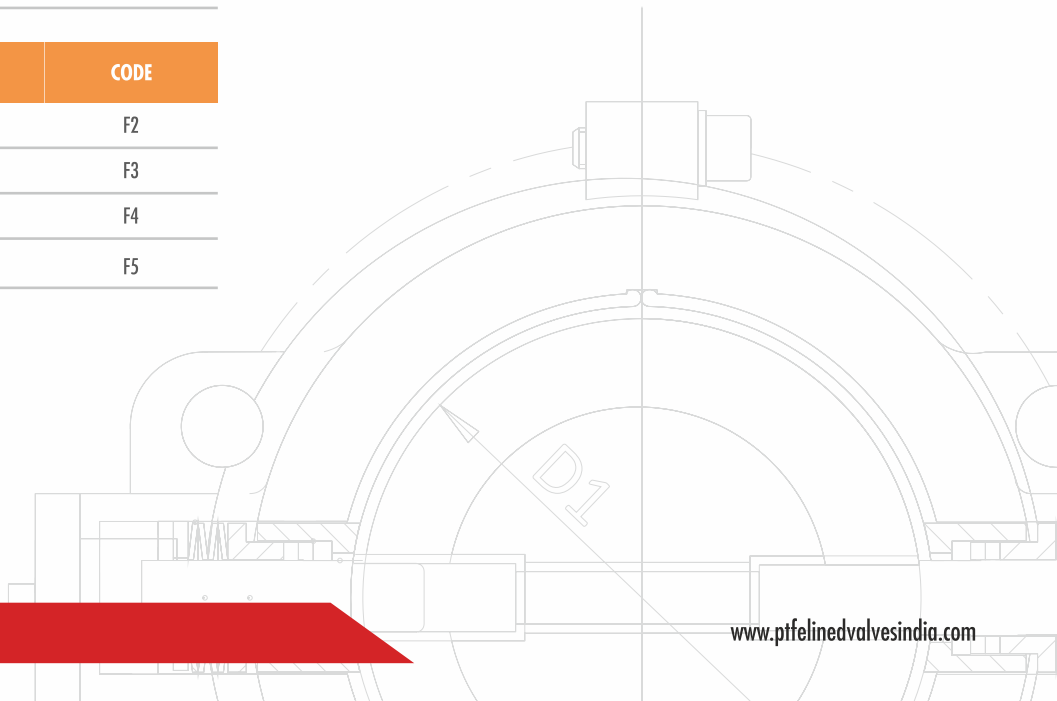
OPERATION	CODE
HANDWHEEL	H
BARE STEM	B

LOCKING	CODE
PROVIDED	Y
NOT-PROVIDED	N

SIZE										
0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	6"	8"	
CODE										
0H	75	01	1H	02	2H	03	04	06	08	

HOW TO READ CODE

CODE	DGMVC1T7L1XXF5HY02	
VALVE TYPE	DIAPHRAGM	DGMV
BODY CASTING	ASTM A 216GR.WCB	C1
DIAPHRAGM	TFM+EPDM	T7
BODY LINING	PFA	L1
SEAT	NOT APPLICABLE	XX
FASTENERS	ASTMA193 GR.B7	F5
OPERATION	HAND WHEEL	H
LOCKING	PROVIDED	Y
SIZE	2"	02





LINED DIAPHRAGM VALVE
Pneumatically Actuated



LINED DIAPHRAGM VALVE
Electrically Actuated



LINED DIAPHRAGM VALVE
Control Type

ACTUATION OPTIONS OFFERED BY UNP

ACTUATOR TYPE	SINGLE ACTING / SPRING RETURN	DOUBLE ACTING
FAIL POSITION	OPEN/CLOSE	STAY PUT
AIR SUPPLY PRESSURE	4/5 BAR OR 58/72 PSI	4/5 BAR OR 58/72 PSI
BODY MATERIAL OFFERED	MS POWDER COATED	MS POWDER COATED
MAKE OFFERED	UNP/PROCON	UNP/PROCON

NOTE : DIAPHRAGM TYPE ACTUATOR CAN BE OFFERED WITH OR WITHOUT TOP MOUNTED HANDWHEEL (TMH)

SOLENOID VALVES OFFERED

SOLENOID VALVE	SINGLE ACTING /SPRING RETURN ACTUATOR	DOUBLE ACTING ACTUATOR
TYPE	3/2 WAY NON- NAMUR	5/2 WAY NON- NAMUR
COIL RATING	24/110/220 V AC OR 24/110 V DC	24/110/220 V AC OR 24/110 V DC
COIL INSULATION CLASS	F OR H	F OR H
COIL HOUSING	WEATHER PROOF/EX-PROOF/ FLAME PROOF OR IS	WEATHER PROOF/EX-PROOF/ FLAME PROOF OR IS
SOLENOID VALVE BODY MATERIAL	ALLUMINIUM/SS 316/ SS 316L	ALLUMINIUM/SS 316/ SS 316L
GLAND CONNECTION	¼" / ½" or ¾" NPT	¼" / ½" or ¾" NPT

LIMIT SWITCHES OFFERED

LIMIT SWITCH	MECHANICAL MICROSWITCH	PROXIMITY TYPE
SWITCHES OFFERED	HONEYWELL OR SIEMENS	P & F OR SIMILAR
NO. OF SWITCHES	1 NO + 1 NC OR 2 NO + 2NC	1 NO + 1 NC OR 2 NO + 2 NC
HOUSING TYPE	WEATHER PROOF / FLAME PROOF	WEATHER PROOF / FLAME PROOF

UNP PROVIDES ELECTRO PNEUMATIC POSITIONERS OF YTC / SIEMENS OR ANY OTHER MAKE OF CUSTOMER PREFERENCE

NOTE : ELECTRICAL/MOTORISED ACTUATOR CAN BE OFFERED OF MAKE BELIMO/ITORQUE/ROTORK/AUMA



VADODARA



CORPORATE OFFICE

946, GIDC, Makarpura,
Vadodara - 390 010. INDIA
Phone : +91 - 265 - 2649248, 2632628
Fax : +91 - 265 - 2637379

FACTORY

5 to 12 PR Industrial Estate,
Por GIDC - Kashipura Road,
Moje : Kashipura - 391 243,
Dist. Vadodara. INDIA
Phone : +91 70434 30467/77 , 70430 20707

MUMBAI

THANE

207, Orion Business Park, Next to Cine Max, Kapurbawdi,
Ghodbunder Road, Thane (W) - 400 607. INDIA.
Phone : +91 - 22 - 25896422, 25896524 / 25
Fax : + 91 - 22 - 2589 - 4221

USA

BRANCH OFFICE

UNP Polyvalve USA
9704 North Holmes Street
Kansas City, MO 64155
Mobile: (816) 812-3600
brad@unp-valves.com
www.ptfelinedvalvesindia.com

www.polyvalve.com

Distributor

A. LOUIS SUPPLY
5610 MAIN AVENUE
ASHTABULA, OH 44004
(440) 997-5161

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- UNP Polyvalves does not assume any responsibility for the data given in this brochure. It is necessary for the customers to carry out necessary tests before selecting the MOC for their applications.

ISO 9001:2008

