

# DIAPHRAGM VALVE



**VALVE SOLUTIONS**  
for Corrosive  
Applications



**UNPPolyvalves**





# VALVE SOLUTIONS for Corrosive Applications





## About Us

UNP Polyvalves is manufacturing Corrosive application valves since 1988.

UNP started with all plastic valves with limited size options, today has a complete range of corrosive application valves in both options of Solid Plastic valves and Lined valves. UNP now has in it's range Ball, Plug, Butterfly, Diaphragm, Non-return, Strainers, Sampling valves, Pipes and Pipe Fittings. This completes range of piping solution in corrosive applications.

UNP has most modern manufacturing facility situated at Por with latest moulding technology and highest moulding capacity to manufacture lined valves as large as 24" with Injection moulding machines of largest capacity in the country.

Envisioned for quality and reliability, UNP Polyvalves aims for highest level of customer satisfaction through it's solutions with the commitment for excellence in all spheres of business.

UNP Polyvalves possesses live skill sets headed by highly knowledgeable, technically

experienced entrepreneurs, who lead and guide their team with a great vision to achieve high quality standards to make products for high performance and unmatched quality.

UNP Polyvalves, over these years, has been dealing with almost all chemical process industries in Chlor Alkali, Chemical, Pharmaceutical, Mining, Refineries etc., in India and exporting to 35+ countries in the world including markets such as USA, Europe, Latin America, Africa, Russia, South East Asia, Middle East, Australia etc. . . .

## Achievements

UNP Polyvalves through its technical expertise and involvement in knowing Physical process parameters has helped resolving corrosion problems related to valves and piping systems for Industries such as Chlor Alkali, CRM in Steel Industries, Mining & Copper refineries, Chemical injection skids for Oil and Gas and many more chemical process plants across the world. UNP has approvals from leading consultants such as UHDE (TKIS), Jacobs Engineering, Mott McDonald, Toyo Engineering, Fluor Daniel, TUV, EIL etc., and has worked for their prestigious projects.

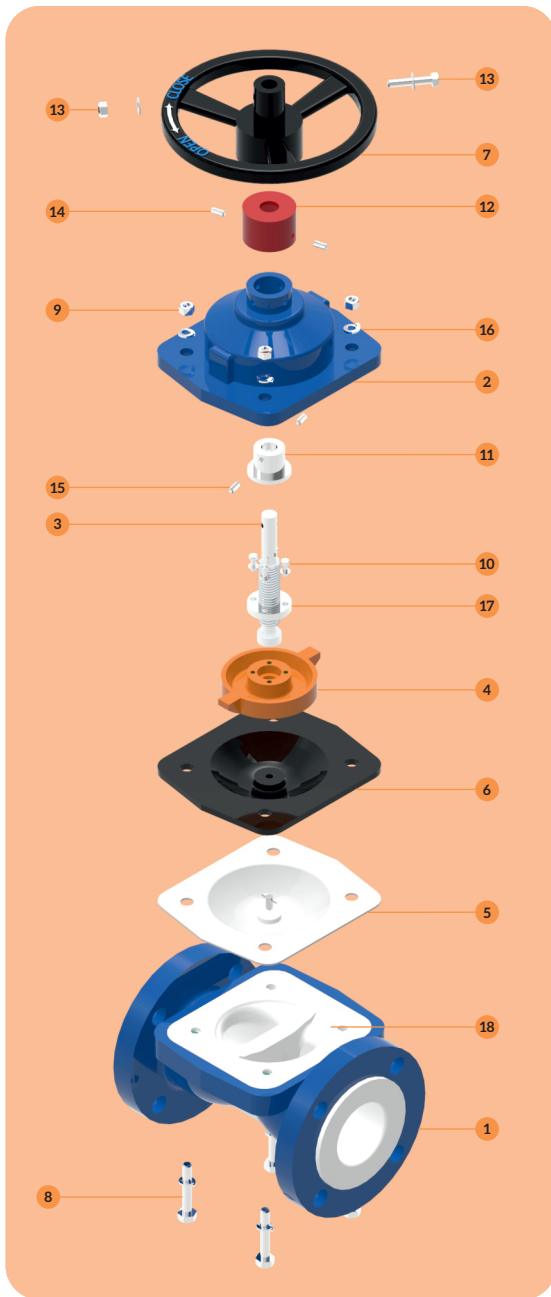
## PRODUCT FEATURES AND OPTIONS AVAILABLE

- UNP offers Rising Handwheel design with greasing cup for providing continuous lubrication to the valve stem.
- UNP offer regular (TFM + EPDM) double as well (TFM+PVDF+EPDM) tripple layer Diaphragms to avoid failure of Diaphragm due to permeation especially for chlorine application.
- UNP lining is anchored with dove tail groove and makes it's valve suitable for both Pressure and Vacuum Applications.
- UNP offers all metal components in investment castings, ensuring intact and homogeneous lining and having an overall even thickness of lining at intricate contours.
- UNP uses virgin raw materials such as PFA from Dupont or Dyneon and specific grades are used which are high purity grade, enables use of it's valves even in Pharma and food industries.
- UNP can offer flange dimensions in DIN, ANSI and JIS standards.
- UNP Valves are offered in manual, pneumatically & electrically actuated as well with modulating control feature.
- UNP does lining of all Valves by latest injection molding process and not by transfer molding process making its lining more compact and reliable.
- UNP subjects it's 100% valve quantity produced to both Hydro and Pneumatic Test ensuring 100% reliability for performance of valves under pressure.
- UNP is an ISO 9001:2015 company and is having CE certificate for all its Lined Diaphragm valves design under PED 1128.
- UNP provides all lining materials for corrosive applications such as PFA, FEP, PVDF, ETFE, and PPH.
- UNP standard body casting material is ASTM A 216 GR. WCB and upon requirement can also provide ASTM A 351 GR. CF8 or CF8M / ASTM A 890 GR. 4A (CD3MN) / Super Duplex.
- UNP provides Antistatic PFA lined Valves in grade C 980 of Dupont or 8502 ESDZ of Dyneon as just the grounding spring device can not conduct static charge from inside of the valve as normal grade of PFA is non-conductive liner in valve.



# DIAPHRAGM VALVE RISING HANDWHEEL

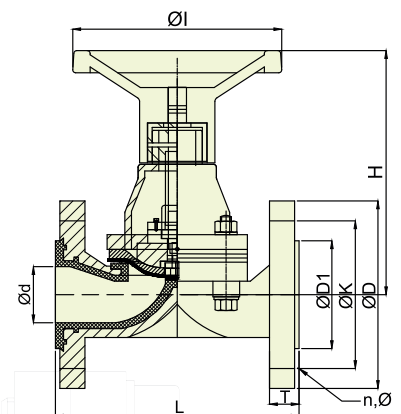
## PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / CF8 / CF8M	1
2	Bonnet	ASTM A 216 GR. WCB / CF8 / CF8M	1
3	Spindle	SS 304 / SS 316	1
4	Compressor	ASTM A 216 GR. WCB / CF8 / CF8M	1
5	Diaphragm	TFM	1
6	Diaphragm Backing Pad	EPDM	1
7	Hand Wheel	ASTM A 216 GR. WCB / CF8 / CF8M	1
8	Body Bolts	ASTM A 193 GR. B7	4
9	Nuts	ASTM A 194 GR. 2H	4
10	Adaptation Bolts	SS 304	4
11	Bonnet Sleeve	SS 304 / SS 316	1
12	Grease Cup	POLYPROPYLENE	1
13	Hand Wheel Bolt+Nut	SS 304	1
14	Grub Screw for Grease Cup	MS	2
15	Grub Screw for Bonnet Sleeve	MS	2
16	Spring Washers for Body Bolts	HT STEEL	8
17	Spindle Washer	SS 304	1
18	Lining Material	PFA / FEP / PVDF / ETFE / PPH	-



## SECTIONAL VIEW



## DIMENSIONS

Size	L ±0.11		ØD ±0.04		Ød ±0.04		T +0.11 / -0.00		ØD1 ±0.04		H ±0.19				ØI ±0.20		ØK ±0.062		n	Ø	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	OPEN		CLOSE		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	5.15	131	4.60	117	4.84	123	3.11	79	04	5/8	16
1.5"	6.53	166	5.00	127	1.57	38	0.74	19	2.87	73	7.08	180	6.29	160	5.59	142	3.86	98	04	5/8	16
2"	7.71	196	5.98	152	1.96	50	0.82	21	3.62	92	8.22	209	7.36	187	5.98	152	4.76	121	04	3/4	19
3"	10.23	260	7.51	191	2.95	75	0.98	25	5.00	127	10.23	260	8.97	228	8.77	223	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.

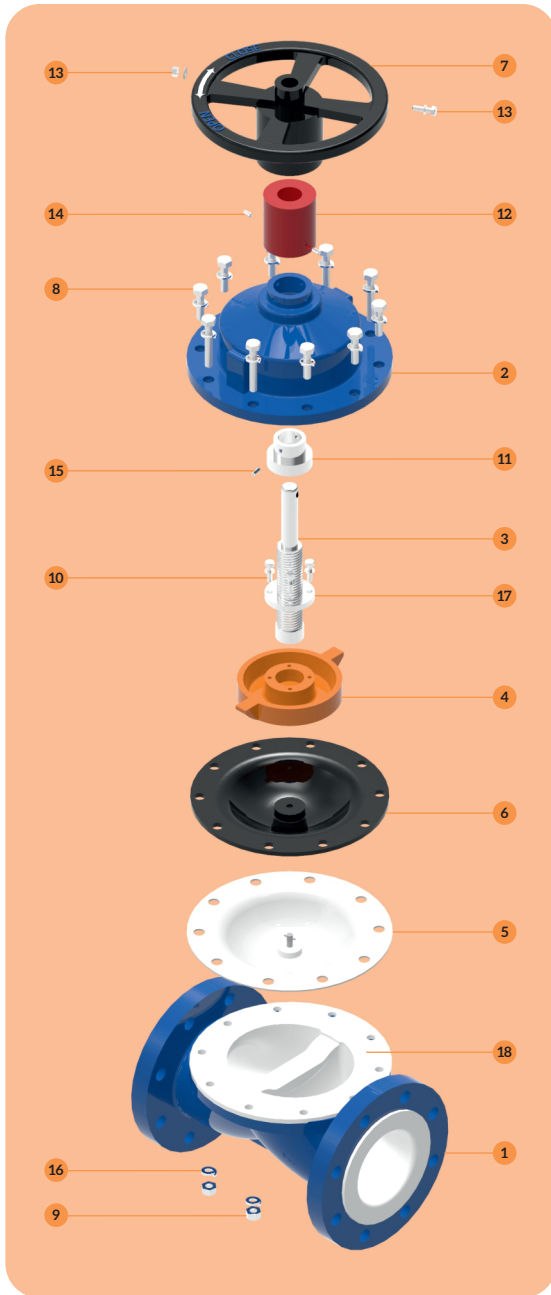
Triple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.



# DIAPHRAGM VALVE

## RISING HANDWHEEL

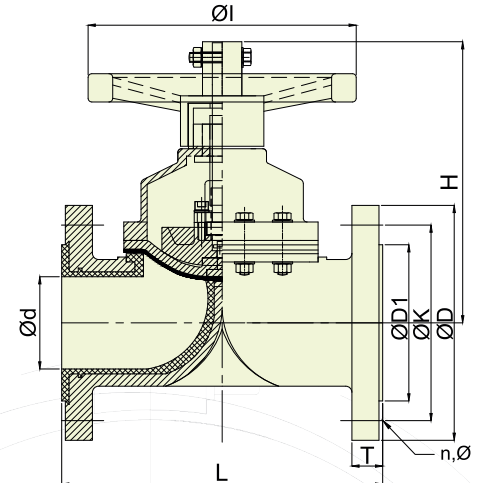
### PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / CF8 / CF8M	1
2	Bonnet	ASTM A 216 GR. WCB / CF8 / CF8M	1
3	Spindle	SS 304 / SS 316	1
4	Compressor	ASTM A 216 GR. WCB / CF8 / CF8M	1
5	Diaphragm	TFM	1
6	Diaphragm Backing Pad	EPDM	1
7	Hand Wheel	ASTM A 216 GR. WCB / CF8 / CF8M	1
8	Body Bolts	ASTM A 193 GR. B7	8
9	Nuts	ASTM A 194 GR. 2H	4
10	Adaptation Bolts	SS 304	4
11	Bonnet Sleeve	SS 304 / SS 316	1
12	Grease Cup	POLYPROPYLENE	1
13	Handwheel Bolt + Nut	SS 304	1
14	Grub Screw for Grease Cup	MS	2
15	Grub Screw for Bonnet Sleeve	MS	2
16	Spring Washers for Body Bolts	HT STEEL	12
17	Spindle Washer	SS 304	1
18	Lining Material	PFA / FEP / PVDF / ETFE / PPH	-



### SECTIONAL VIEW



### DIMENSIONS

Size	L ±0.11		ØD ±0.04		Ød ±0.04		T +0.11 / -0.00		ØD1 ±0.04		H ±0.19		ØI ±0.20		ØK ±0.062		n	Ø			
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM		
4"	12.24	311	9.01	230	3.93	100	0.98	25	6.18	157	14.37	365	12.83	326	9.33	237	7.51	191	08	3/4	19

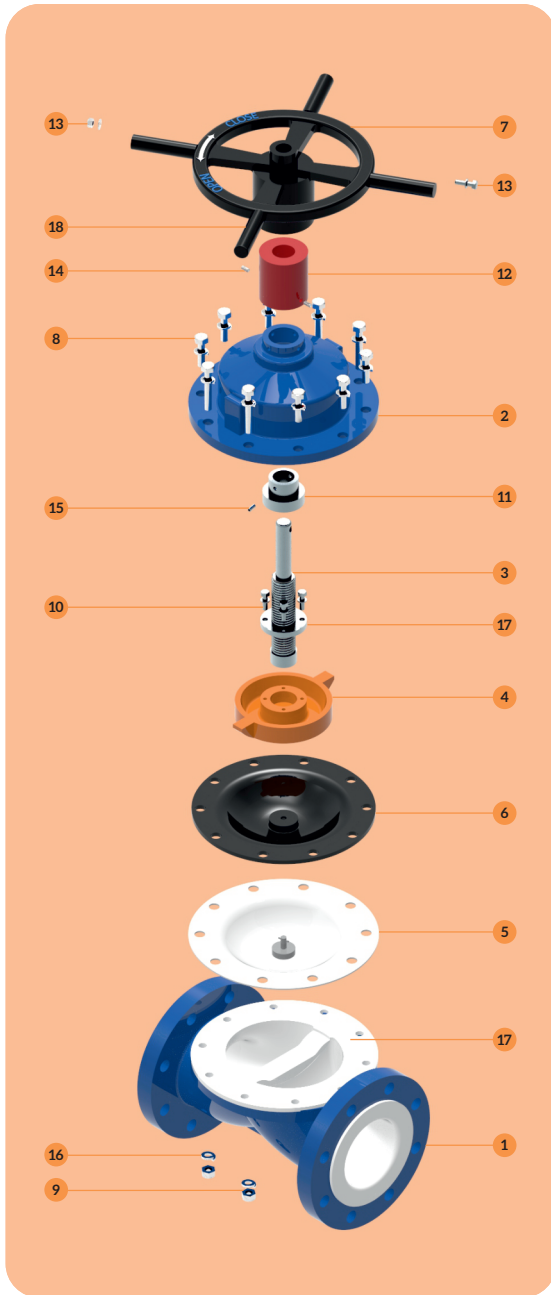
All Dimensions are in Inches / mm unless otherwise specified. PCD of the Valve can be provided in ANSI / DIN / JIS. Tolerances are given in Inches.

Triple Layered Diaphragm (TFM+PVDF+EPDM) Option Available.



# DIAPHRAGM VALVE RISING HANDWHEEL

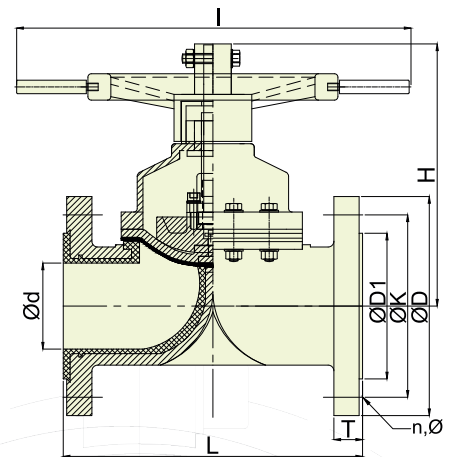
## PART LIST



PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / CF8 / CF8M	1
2	Bonnet	ASTM A 216 GR. WCB / CF8 / CF8M	1
3	Spindle	SS 304 / SS 316	1
4	Compressor	ASTM A 216 GR. WCB / CF8 / CF8M	1
5	Diaphragm	TFM	1
6	Diaphragm Backing Pad	EPDM	1
7	Hand Wheel	ASTM A 216 GR. WCB / CF8 / CF8M	1
8	Body Bolts	ASTM A 193 GR. B7	10/14
9	Nuts	ASTM A 194 GR. 2H	4/14
10	Adaptation Bolts	SS 304	4
11	Bonnet Sleeve	SS 304 / SS 316	1
12	Grease Cup	POLYPROPYLENE	1
13	Handwheel Bolt + Nut	SS 304	1
14	Grub Screw for Grease Cup	MS	2
15	Grub Screw for Bonnet Sleeve	MS	2
16	Spring Washers for Body Bolts	HT STEEL	14/14
17	Spindle Washer	SS 304	1
18	Handwheel Extension Rod	MS / SS 304 / SS 316	2/4
19	Lining Material	PFA / FEP / PVDF / ETFE / PPH	-



## SECTIONAL VIEW



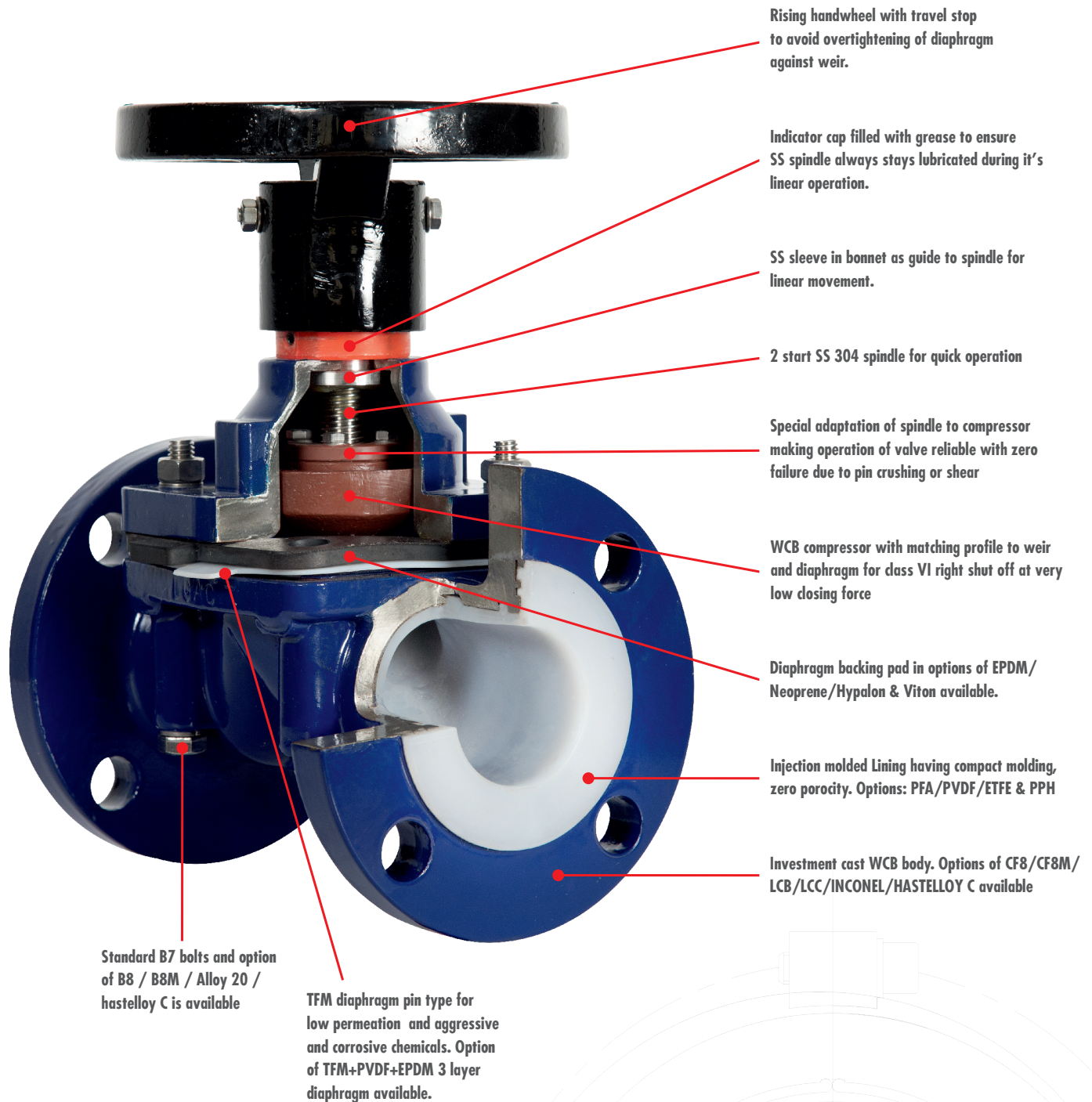
## DIMENSIONS

Size	L ±0.11		ØD ±0.04		Ød ±0.04		T +0.11 / -0.00		ØD1 ±0.04		H ±0.19				I ±0.20		ØK ±0.062		n	Ø	
											OPEN		CLOSE								
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM		INCH	MM
6"	16.22	412	11.20	280	5.90	150	1.06	27	8.50	216	18.30	465	15.35	390	22.04	560	9.49	241	08	7/8	22
8"	20.74	527	13.50	343	7.87	200	1.18	30	10.62	270	25.78	655	22.25	565	28.54	725	11.73	298	08	7/8	22
10"	25.27	642	15.98	406	9.84	250	1.29	33	12.75	324	29.52	750	25.00	635	28.54	725	14.25	362	12	1	25

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





## VALVE Cv & TORQUE VALUES

SIZE	CLOSING HAND WHEEL TORQUE IN Nm		CLOSING HAND WHEEL TORQUE IN in lb		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
1.5"	30	30	265	265	33.00
2"	30	30	265	265	60.00
2.5"	35	35	310	310	85.00
3"	45	45	398	398	150.00
4"	55	55	486	486	270.00
6"	175	175	1549	1549	500.00
8"	-	311	-	2752	1275.00
10"	-	405	-	3584	-

## VALVE NET WEIGHTS

SIZE	CHECK WEIGHT	
	kg	lb
0.5"	2.05	5.50
0.75"	3.75	8.26
1"	3.65	8.04
1.5"	7.35	16.20
2"	11.60	25.50
2.5"	18.50	40.80
3"	26.00	57.30
4"	41.40	91.00
6"	86.90	191.18
8"	205.00	451.00
10"	250.00	551.15

## PRODUCT DESIGN

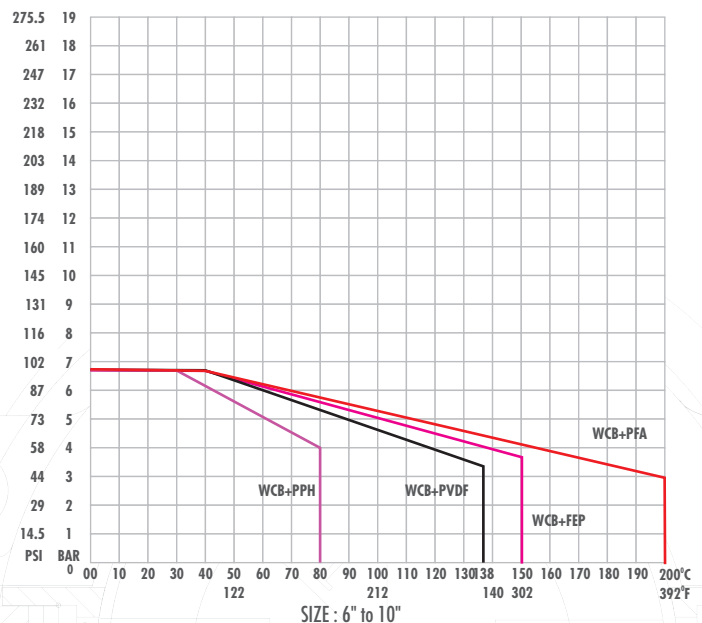
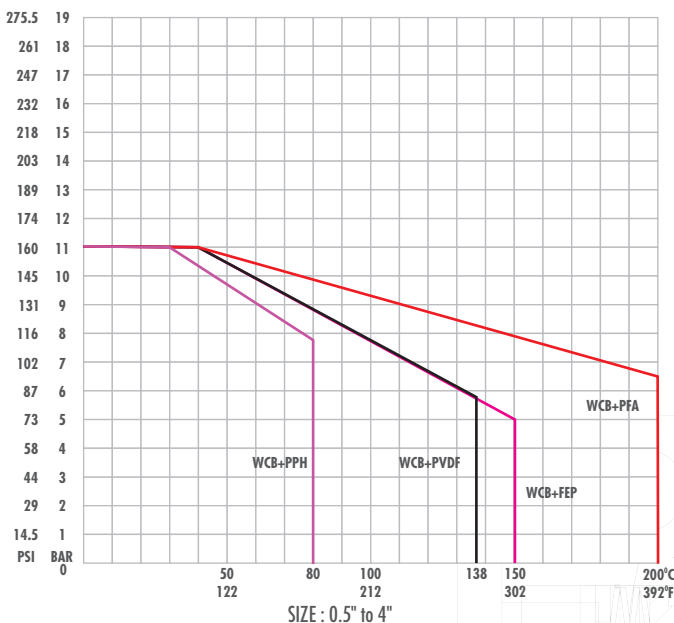
DESIGN PARAMETERS	STANDARD
VALVE DESIGN	BS EN 13397
SHELL DESIGN	ANSI B 16.34
FACE TO FACE	EN 558-1 SERIES 7
FLANGE CONNECTION RATING	ANSI B 16.5, 150# / DIN PN 10 / JIS
TESTING STANDARD	BS EN 12266-1
CONNECTION	FLANGED, RF

## TESTS PERFORMED

TESTS PERFORMED	0.5" TO 4"		6" TO 8"		10"	
HIGH PR. SHELL TEST HYDRO	225 PSI	15 kg/cm <sup>2</sup>	128 PSI	9 kg/cm <sup>2</sup>	85 PSI	6 kg/cm <sup>2</sup>
HIGH PR. SEAT TEST HYDRO	165 PSI	11 kg/cm <sup>2</sup>	90 PSI	6.6 kg/cm <sup>2</sup>	64 PSI	4.5 kg/cm <sup>2</sup>
LOW PR. SEAT TEST PNEUMATIC	85 PSI	6 kg/cm <sup>2</sup>	50 PSI	3.5 kg/cm <sup>2</sup>	50 PSI	3.5 kg/cm <sup>2</sup>

SPARK TEST	KVDC
SPARK TEST	20 KVDC

## PRESSURE - TEMPERATURE GRAPH



## CODES USED

TYPE OF VALVE	CODE
DIAPHRAGM VALVE	DGMV

BODY MOC	CODE
ASTM A 216 GR. WCB	C1
ASTM A 351 GR. CF8	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

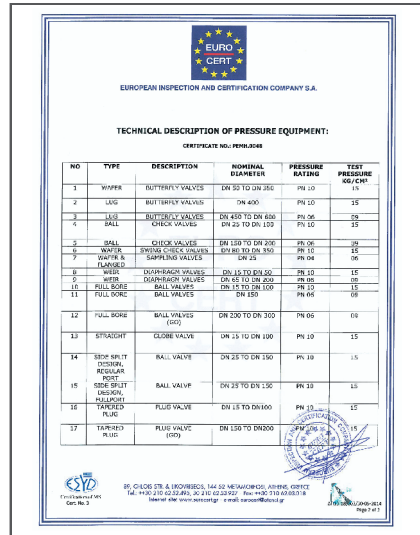
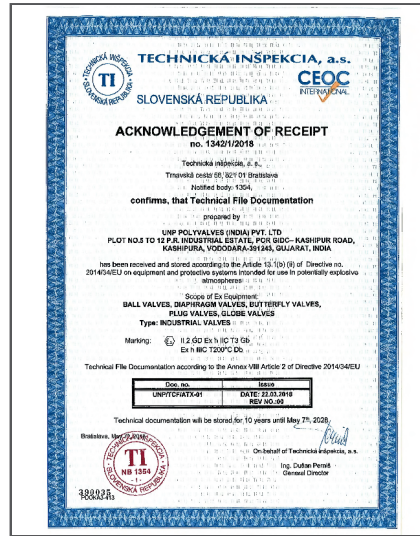
SIZE										
0.5"	0.75"	1"	1.5"	2"	2.5"	3"	4"	6"	8"	
CODE										
0H	75	01	1H	02	2H	03	04	06	08	

## HOW TO READ CODE

CODE	DGMVC1T7L1XXF5HY02	
VALVE TYPE	DIAPHRAGM	DGMV
BODY CASTING	ASTM A 216 GR. WCB	C1
DIAPHRAGM	TFM+EPDM	T7
BODY LINING	PFA	L1
SEAT	NOT APPLICABLE	XX
FASTENERS	ASTM A 193 GR. B7	F5
OPERATION	HAND WHEEL	H
LOCKING	PROVIDED	Y
SIZE	2"	02



# CERTIFICATION



**APPROVED**  
**ISO 15848-1**  
 FUGITIVE EMISSION CERTIFICATION  
**PFA LINED SIDE SPLIT**  
**FULL PORT BALL VALVES**  
 Size Range : 1/2" to 6"

**APPROVED**  
**ISO 15848-1**  
 FUGITIVE EMISSION CERTIFICATION  
**PFA LINED PLUG VALVES**  
 Size Range : 1/2" to 8"

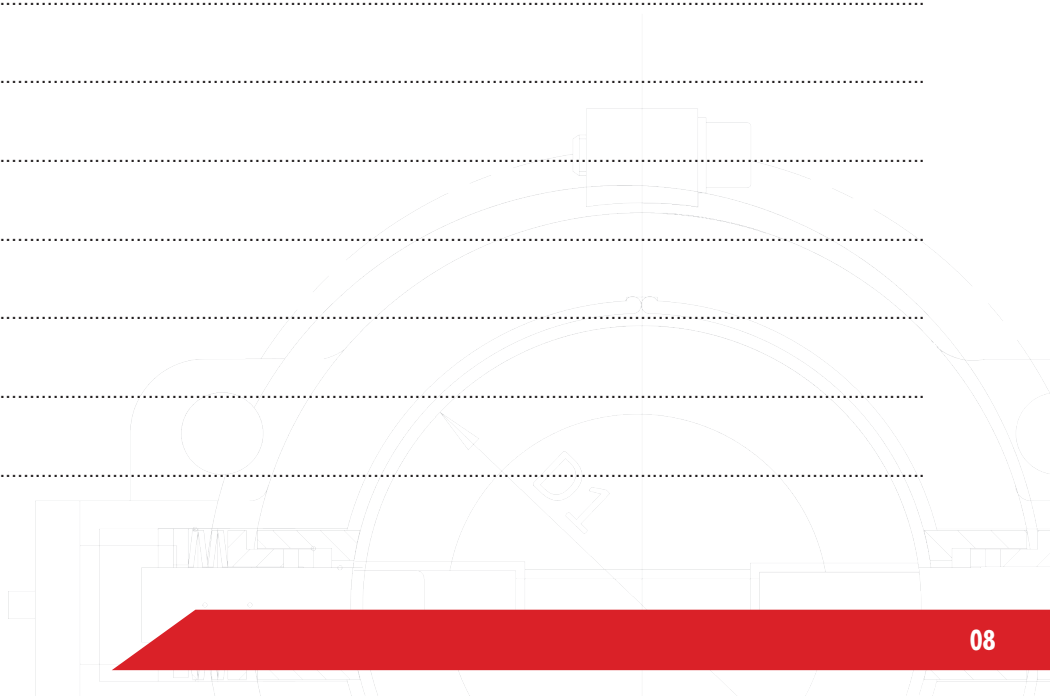
**APPROVED**  
**ISO 15848-1**  
 FUGITIVE EMISSION CERTIFICATION  
**PFA LINED BUTTERFLY VALVE**  
 Size Range : 2" to 24"

**APPROVED**  
**DIN EN 14432:2014**  
**PFA LINED BUTTERFLY VALVES**  
 Size Range : 2" to 8"

**APPROVED**  
**DIN EN 14432:2014**  
**PFA LINED SIDE SPLIT**  
**DESIGN BALL VALVES**  
 Size Range : 1" to 4"

## NOTES

A series of horizontal dotted lines for taking notes, spanning most of the page width.







## Distributor



## VADODARA



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Fax : +91 - 265 - 2637379  
Email : sales.baroda@polyvalve.com

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Moje : Kashipura - 391 243,  
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## MUMBAI

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## USA



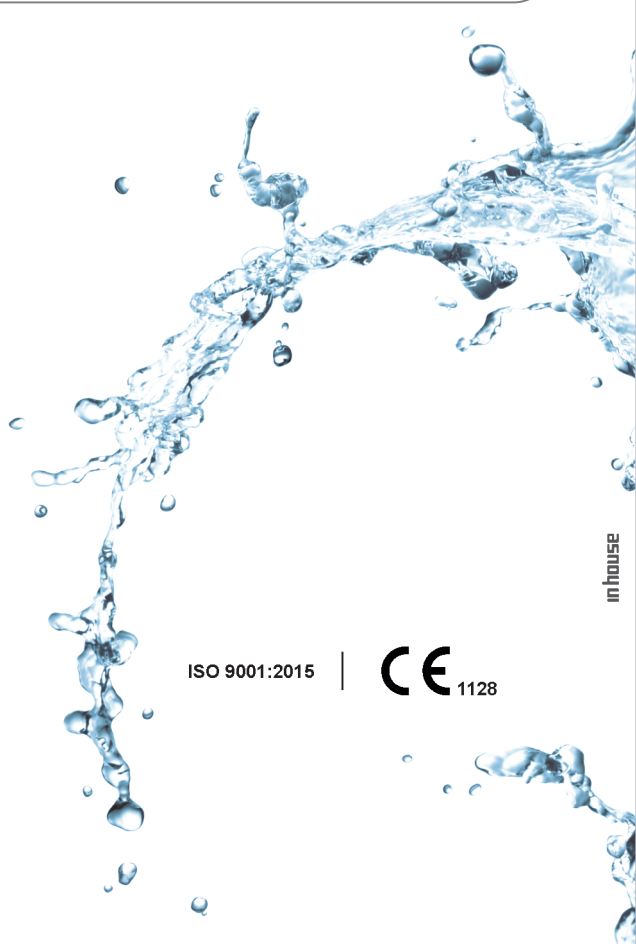
DJK - Energy Houston

### BRANCH OFFICE

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[www.polyvalve.com](http://www.polyvalve.com) | [www.polyvalve.in](http://www.polyvalve.in)

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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.



in house

ISO 9001:2015

