

BUTTERFLY VALVE



VALVE SOLUTIONS
for Corrosive
Applications



UNPPolyvalves



VALVE SOLUTIONS for Corrosive Applications



About Us

UNPPolyvalves 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 Valves, Non-return Valves, Strainers, Sampling valves, Pipes and Pipe fittings. This completes range of complete piping solution in corrosive applications.

UNP has most modern 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 its solutions with the commitment for excellence In all spheres of business.

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

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

UNP Polyvalves, over all 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 market such as USA, Europe, Latin America, Africa, Russia, South East Asia, Australia etc. . . .

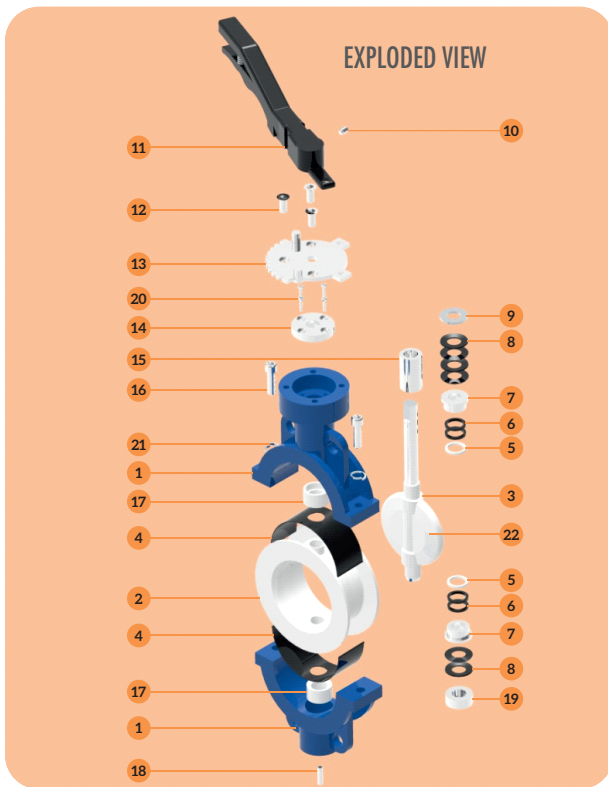
Achievements

UNP Polyvalves through its technical expertise and involvement in knowing Physical process parameters could help resolving corrosion problems related to valves and piping system in Industries such as Chlor Alkali, CRM in Steel Industries, Chemical injection skids for Oil and Gas and many more chemical plant across the world. UNP today has approvals from leading consultants such as UHDE, Jacobs Engineering, Mott McDonald, Toyo Engineering, Fluor Daniel, TUV, EIL etc., and have worked for their prestigious projects.

GENERAL PRODUCT INFORMATION

BUTTERFLY VALVES	FEATURE OFFERED	OPTIONS AVAILABLE
APPLICATIONS	MOST CORROSIVE & AGGRESSIVE CHEMICALS & VAPOURS	
STANDARDS FOLLOWED	DESIGN : API 609 WAFER & LUG FACE TO FACE DIMENSIONS : API 609 CATEGORY : A CONNECTION RATING : ANSI B 16.5 TEST : API 598	TEST : ISO 9393-2 OR BS EN 12266-1-2003
BODY	ASTM A 216 GR. WCB	ASTM A 351 GR. CF8 OR 8M
DISC LINING MATERIALS	PFA	FEP/PVDF/ETFE/ECTFE & PPH
SEAT / LINERS	ISOSTATICALLY MOULDED PTFE	ISOSTATICALLY MOULDED TFM / OR MPTFE
VALVE PAINTING	EPOXY 2 PART PAINT	PU PAINT
TEMPERATURE	- 40 DEG.F TO 450 DEG. F (PFA)	LINING IN FEP, ETFE & PVDF IS AVAILABLE WITH DIFF TEMPERATURE RANGE
DISC SEALING	CLASS VI, TIGHT SHUT OFF AS PER API 598	
SHAFT SEALS	LOADED PACKING WITH GLAND COVERS ON TOP & BOTTOM	
MAX. PRESSURE	225 PSI	
FLOW DIRECTION	BI-DIRECTIONAL	
SPARK TEST FOR LINED COMPONENTS	20 KVDC	

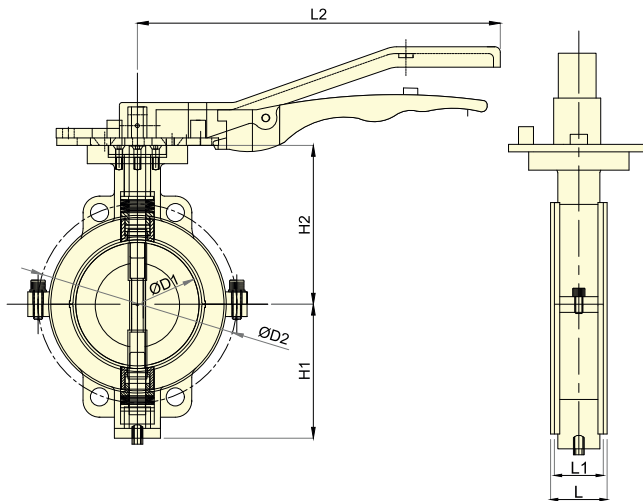
LINED BUTTERFLY VALVE LEVER OPERATED – WAFER



MATERIAL LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / SS 304 / SS 316	2
2	Seat	PTFE / MPTFE / TFM	1
3	Disc	ASTM A 890 GR. 4A (CD3MN) + PFA	1
4	Seat Pad	VITON / SILICON	2
5	Washer	PTFE	2
6	Gland Seals	VITON	4
7	T-Bush	SS 304	2
8	Disc Springs	50 Crv 4	6
9	Retainer	SS 304	2
10	Pin For Handler	STEEL	1
11	Handle	WCB	1
12	Allen CSK Bolt for Teeth Plate	HT 12.9	3
13	Teeth Plate	WCB / SS	1
14	Thrust Collar Top	SS 304	1
15	Sleeve	SS 304	1
16	Body Bolts	ASTM A 193 GR. B7	2
17	Bush	PFA	2
18	Grub Screw	STEEL	1
19	Bottom Gland Cover	SS 304	1
20	Allen CSK for Top Thrust Collar	HT 12.9	4
21	Spring Washer	STEEL	2
22	Disc Lining Material	PFA / FEP / PVDF / ETFE / ECTFE / PPH	-

SECTIONAL VIEW



DIMENSIONS

Size	L ± .12		L1 ± .04		ØD1 ± .08		ØD2 ± .08		H1 ± .31		H2 ± .31		L2 ± .31		ØDD		W	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
2"	1.85	47	1.69	43	1.97	60	4.76	121	3.27	83	4.60	117	10.47	266	0.55	14	0.43	11
2.5"	1.97	50	1.81	46	2.55	65	5.51	140	3.54	90	5.39	137	10.47	266	0.55	14	0.43	11
3"	1.97	50	1.81	46	2.95	75	6	152	3.54	90	5.04	128	10.47	266	0.55	14	0.43	11
4"	2.20	56	2.04	52	3.93	100	7.5	191	4.52	115	6.14	156	10.47	266	0.71	18	0.55	14

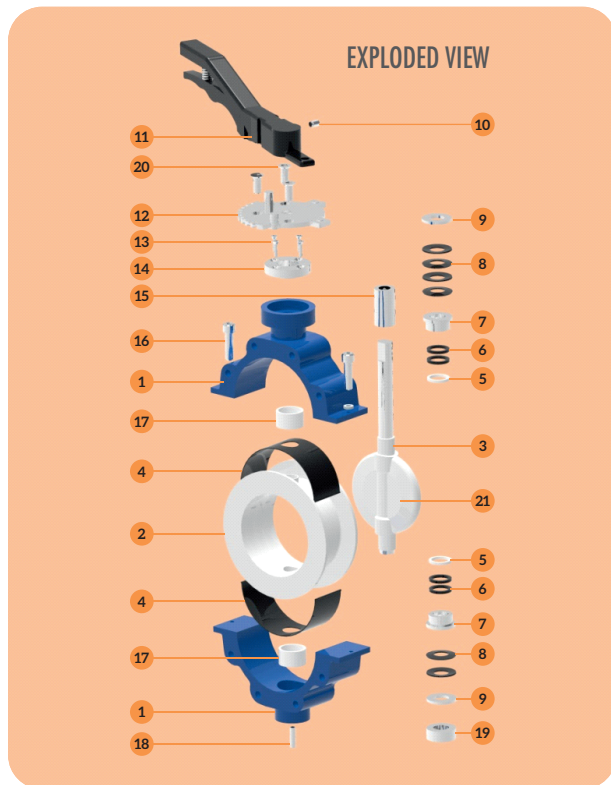
All Dimension are in Inches & mm.
PCD of the Valve can be provided in ANSI / DIN / JIS

LINED BUTTERFLY VALVE

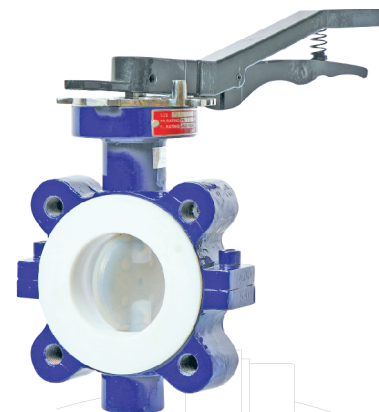
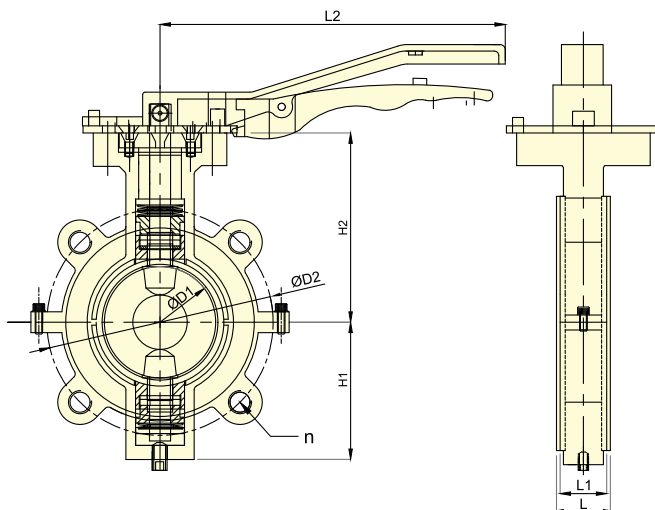
LEVER OPERATED – FULL LUG

MATERIAL LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / SS 304 / SS 316	2
2	Seat	PTFE / MPTFE / TFM	1
3	Disc	ASTM A 890 GR. 4A (CD3MN) + PFA	1
4	Seat Pad	VITON / SILICON	2
5	Washer	PTFE	2
6	Gland Seals	VITON	4
7	T-Bush	SS 304	2
8	Disc Springs	50 Crv 4	6
9	Retainer	SS 304	2
10	Pin For Handler	STEEL	1
11	Handle	WCB	1
12	Teeth Plate	WCB / SS	1
13	Allen CSK Bolt for Thrust Collar	HT 12.9	4
14	Thrust Collar Top	HT 12.9	1
15	Sleeve	SS 304	1
16	Body Bolts	ASTM A 193 GR. B7	2
17	Bush	PFA	2
18	Grub Screw	STEEL	1
19	Bottom Gland Cover	SS 304	1
20	Allen CSK Bolt for Teeth Plate	HT 12.9	3
21	Disc Lining Material	PFA / FEP / PVDF / ETFE / ECTFE / PPH	-



SECTIONAL VIEW



DIMENSIONS

Size	L ± .12		L1 ± .04		ØD1 ± .08		ØD2 ± .08		H1 ± .31		H2 ± .31		L2 ± .31		ØDD		W		n
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	
2"	1.85	47	1.69	43	1.97	50	4.76	121	3.27	83	4.60	117	10.47	266	0.55	14	0.43	11	04
2.5"	1.97	50	1.81	46	2.55	65	5.51	140	3.54	90	5.39	137	10.47	266	0.55	14	0.43	11	04
3"	1.97	50	1.81	46	2.95	75	6	152	3.62	92	5.03	128	10.47	266	0.55	14	0.43	11	04
4"	2.20	56	2.04	52	3.93	100	7.5	191	4.52	115	6.18	157	10.47	266	0.71	18	0.55	14	08

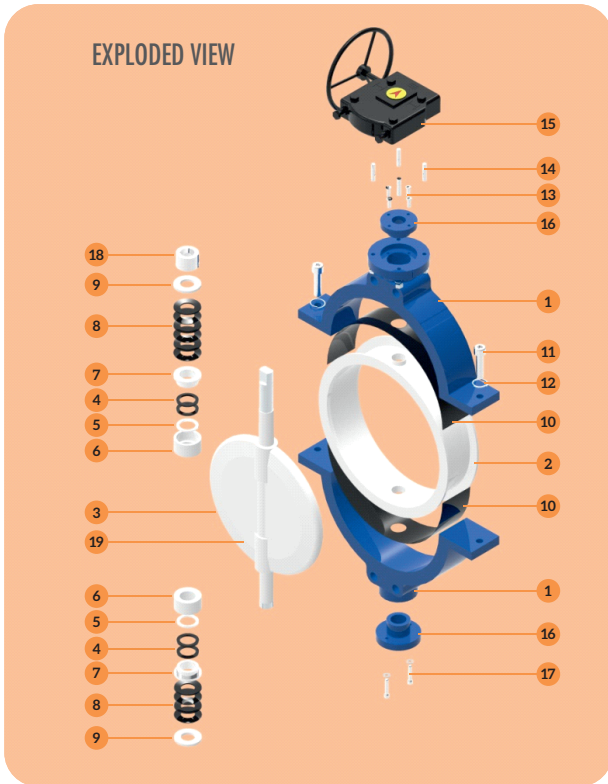
All Dimension are in Inches & mm.
PCD of the Valve can be provided in ANSI / DIN / JIS

LINED BUTTERFLY VALVE

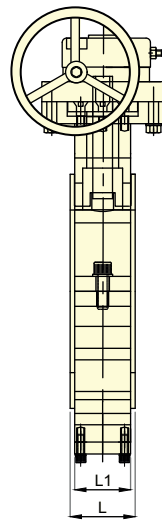
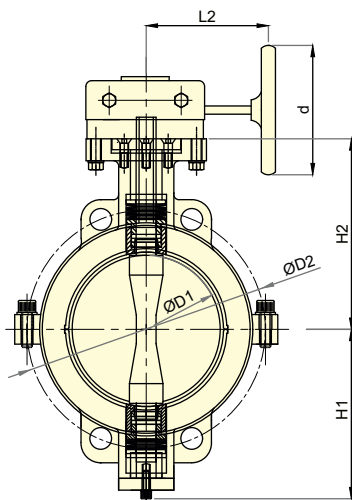
GEAR OPERATED – WAFER

MATERIAL LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / SS 304 / SS 316	2
2	Seat	PTFE / MPTFE / TFM	1
3	Disc	ASTM A 890 GR. 4A (CD3MN) + PFA	1
4	Gland Seals	VITON	4
5	Washer	PTFE	2
6	Bush	PFA	2
7	T-Bush	SS 304	2
8	Disc Spring	50 Crv 4	10
9	Retainer	SS 304	2
10	Seat Pads	VITON / SILICON	2
11	Body Bolts	ASTM A 193 GR. B7	2
12	Spring Washer	STEEL	2
13	Gland Bolts	HT 12.9	2
14	Gear Box Mounting Studs	SS 304	4
15	Gear Box	Cast Iron Epoxy Painted	1
16	Thrust Collar	SS 304	2
17	Bottom Cover Bolts	HT 12.9	2
18	Sleeve	SS 304	1
19	Disc Lining Material	PFA / FEP / PVDF / ETFE / ECTFE / PPH	-



SECTIONAL VIEW



DIMENSIONS

Size	L ± .12		L1 ± .04		ØD1 ± .08		ØD2 ± .08		H1 ± .31		H2 ± .31		L2 ± .31		d		ØDD		W	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM
5"	2.36	60	2.20	56	4.92	125	8.50	216	5.90	150	6.45	164	7.68	195	9.84	250	0.79	20	0.55	14
6"	2.36	60	2.20	56	5.90	150	9.49	241	6.37	162	7.63	194	7.68	195	9.84	250	0.79	20	0.55	14
8"	2.52	64	2.36	60	7.87	200	11.75	298	7.20	183	9.25	235	7.68	195	9.84	250	0.98	25	0.74	19
10"	2.83	72	2.68	68	9.84	250	14.25	362	9.21	234	9.88	251	8.89	226	13.78	350	1.10	28	0.86	22
12"	3.30	84	3.07	78	11.81	300	17	432	10.66	271	11.57	294	8.89	226	13.78	350	1.10	28	0.86	22
14"	3.30	84	3.07	78	13.78	350	18.70	476	12.20	310	12.79	325	8.89	226	13.78	350	1.10	28	0.86	22
16"	4.25	108	4.01	102	15.74	400	21.25	540	13.18	335	13.58	345	9.84	250	19.68	500	1.41	36	1.1	28
18"	4.72	120	4.49	114	17.71	450	22.75	578	15.55	395	14.76	375	9.84	250	19.68	500	1.41	36	1.1	28
20"	5.23	133	5	127	19.44	494	25	635	16.73	425	16.33	415	11.10	282	23.62	600	1.79	45.5	1.41	36
24"	6.29	160	6.06	154	23.54	600	29.52	749	18.70	475	19.48	495	11.10	282	23.62	600	2	51	1.45	37

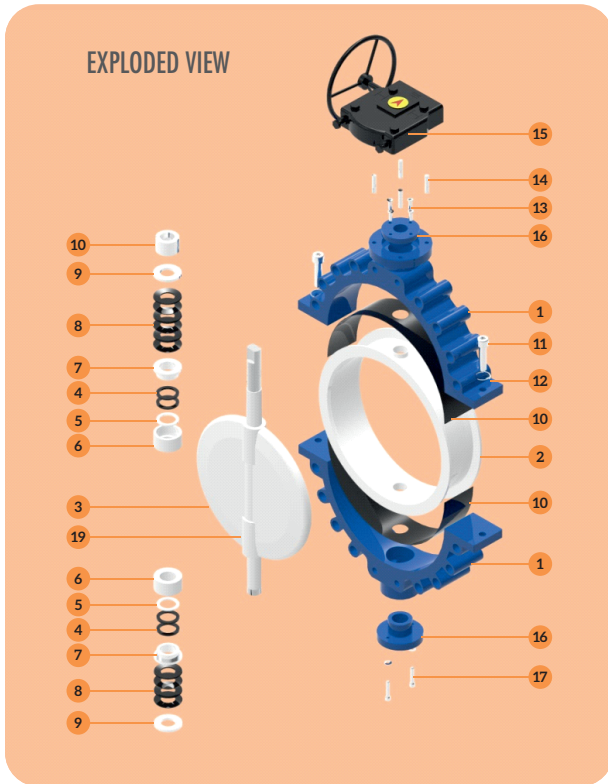
All Dimension are in Inches & mm. | PCD of the Valve can be provided in ANSI / DIN / JIS

LINED BUTTERFLY VALVE

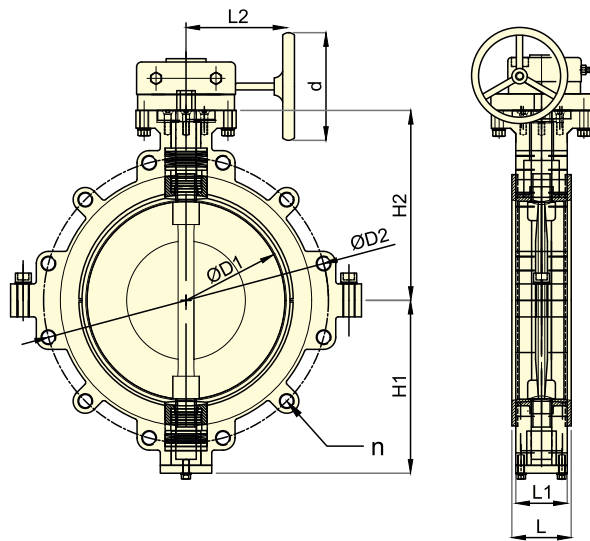
GEAR OPERATED – FULL LUG

MATERIAL LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB / SS 304 / SS 316	2
2	Seat	PTFE / MPTEFE / TFM	1
3	Disc	ASTM A 890 GR. 4A (CD3MN) + PFA	1
4	Gland Seals	VITON	4
5	Washer	PTFE	2
6	Bush	PFA	2
7	T-Bush	SS 304	2
8	Disc Spring	50 Crv 4	10
9	Retainer	SS 304	2
10	Seat Pads	VITON / SILICON	2
11	Body Bolts	ASTM A 193 GR. B7	2
12	Spring Washer	STEEL	2
13	Gland Bolts	HT 12.9	2
14	Gear Box Mounting Studs	SS 304	4
15	Gear Box	Cast Iron Epoxy Painted	1
16	Thrust Collar	SS 304	2
17	Bottom Cover Bolts	HT 12.9	2
18	Sleeve	SS 304	1
19	Disc Lining Material	PFA / FEP / PVDF / ETFE / ECTFE / PPH	-



SECTIONAL VIEW

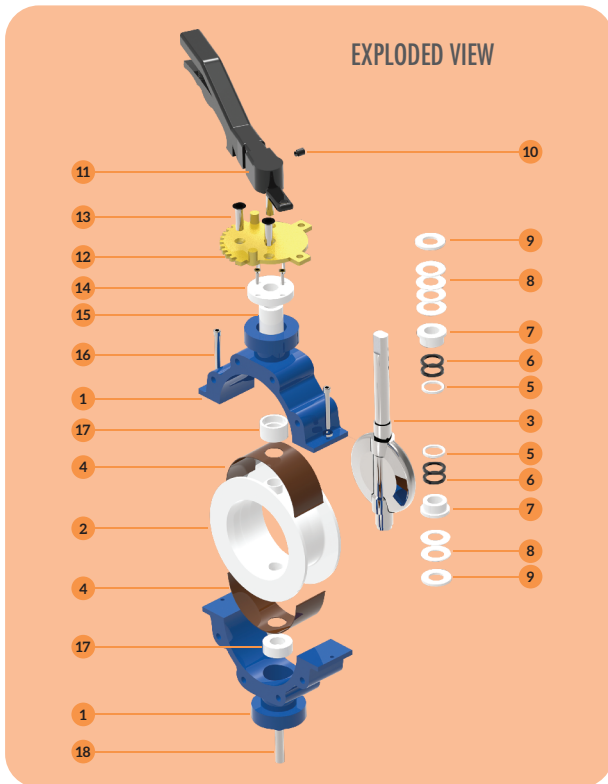


DIMENSIONS

Size	L ± .12		L1 ± .04		ØD1 ± .08		ØD2 ± .08		H1 ± .31		H2 ± .31		L2 ± .31		d		ØDD		W		n
	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	INCH	MM	
6"	2.36	60	2.20	56	5.90	150	9.49	241	6.41	163	7.48	190	7.68	195	9.84	250	0.79	20	0.55	14	08
8"	2.52	64	2.36	60	7.87	200	11.75	298	7.79	198	9.13	232	7.68	195	9.84	250	0.98	25	0.74	19	08
10"	2.83	72	2.68	68	9.84	250	14.25	362	8.58	218	9.84	250	8.89	226	13.78	350	1.10	28	0.86	22	12
12"	3.30	84	3.07	78	11.81	300	17	432	10.43	265	11.33	288	8.89	226	13.78	350	1.10	28	0.86	22	12
14"	3.30	84	3.07	78	13.78	350	18.70	476	12.55	319	12.44	316	8.89	226	13.78	350	1.10	28	0.86	22	12
16"	4.25	108	4.01	102	15.74	400	21.25	540	13.19	335	13.58	345	9.84	250	19.68	500	1.41	36	1.10	28	16
18"	4.72	120	4.49	114	17.71	450	22.75	578	15.74	400	14.72	374	9.84	250	19.68	500	1.41	36	1.10	28	16
20"	5.23	133	5	127	19.44	494	25	635	16.73	425	16.33	415	11.10	282	23.62	600	1.79	45.5	1.41	36	20
24"	6.29	160	6.06	154	23.54	600	29.52	749	19.37	492	19.88	505	11.10	282	23.62	600	2	51	1.45	37	20

All Dimension are in Inches & mm. | PCD of the Valve can be provided in ANSI / DIN / JIS

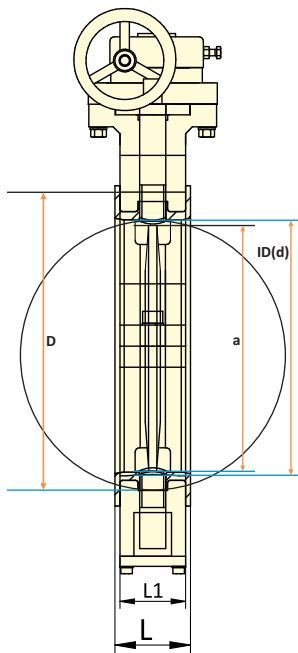
METAL DISC BUTTERFLY VALVE LEVER & GEAR OPERATED - FULL LUG & WAFER



MATERIAL LIST

PART NO.	DESCRIPTION	MATERIAL OF CONSTRUCTION	QTY.
1	Body	ASTM A 216 GR. WCB	2
2	Seat	PTFE / MPTFE / TFM	1
3	Disc	Duplex / Super / Duplex / AL. Bronze / Cf8 / CF8M	1
4	Seat Pad	VITON / SILICON	2
5	Washer	PTFE	2
6	Gland Seals	VITON	4
7	T-Bush	SS 304	2
8	Disc Springs	50 Crv 4	6
9	Retainer	SS 304	2
10	Pin For Handle	STEEL	1
11	Handle	WCB	1
12	Teeth Plate	WCB / SS	1
13	Allen CSK Bolts	HT 12.9	3
14	Thrust Collar Top	SS 304	1
15	Sleeve	SS 304	1
16	Body Bolts	ASTM 193 GR. B7	2
17	Bush	PFA	2
18	Grub Screw	STEEL	1

INSTALLATION DETAILS OF LINED BUTTERFLY VALVE WAFER & LUGGED CONSTRUCTION

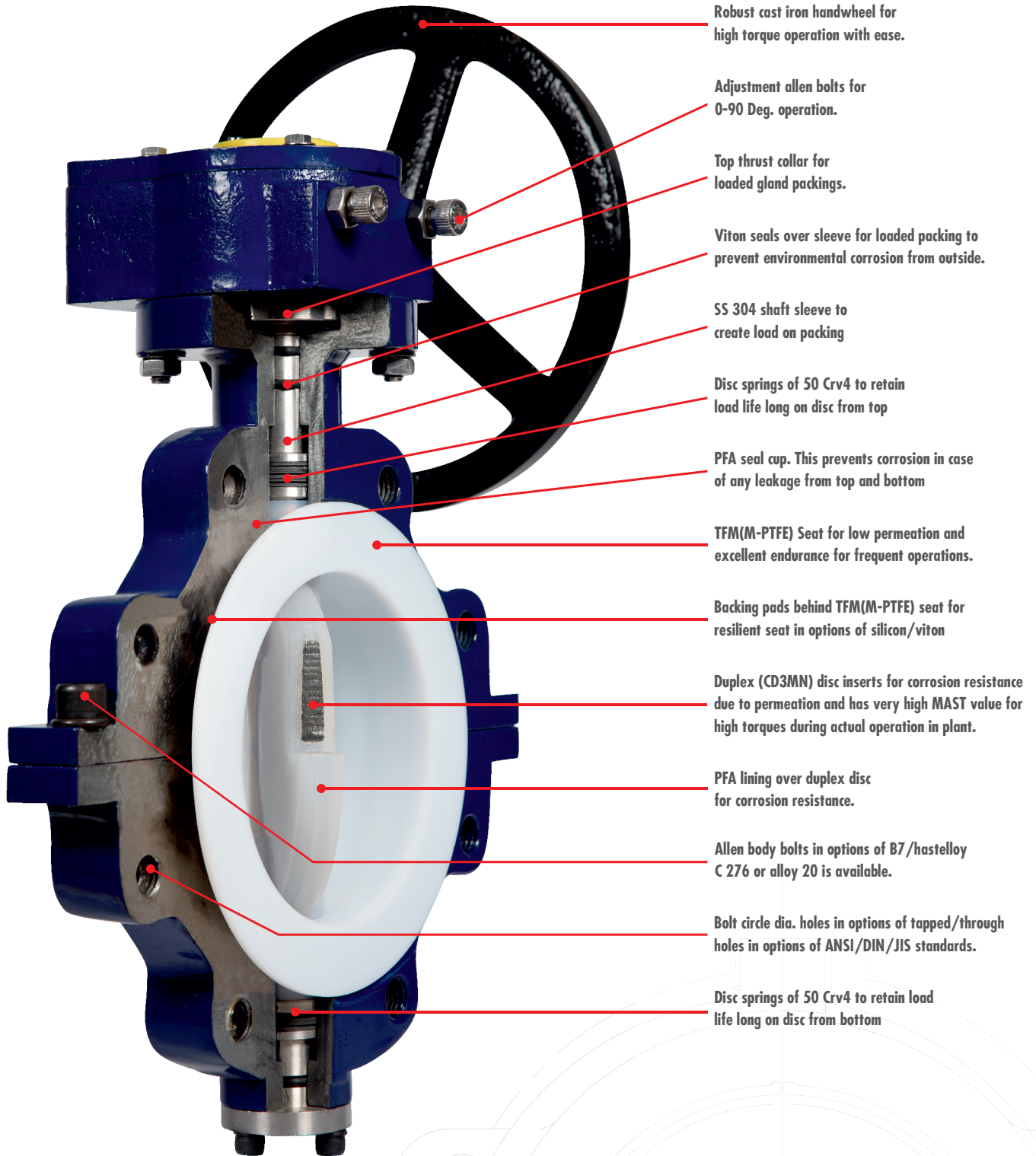


MINIMUM PIPE ID REQUIRED FOR FULL DISC OPENING

Size (MM)	F / F		D		a		Pipe I.D Req.(d)	
	INCH	MM	INCH	MM	INCH	MM	INCH	MM
600	6.29	160	27.6	700	22.6	575	23.0	585
500	5.23	133	23.0	584	18.7	477	19.3	490
450	4.72	120	21.0	534	16.9	430	17.3	440
400	4.25	108	18.5	470	15.1	384	15.4	390
350	3.3	84	16.2	412	13.3	338	13.5	344
300	3.3	84	15.0	380	11.3	286	11.5	292
250	2.83	72	12.7	323	9.3	236	9.5	242
200	2.52	64	10.6	270	7.4	187	7.6	193
150	2.36	60	8.5	216	5.4	136	5.5	140
125	2.36	60	7.3	185	4.2	107	4.4	110
100	2.2	56	6.2	157	3.2	80	3.3	83
80	1.97	50	5.0	127	2.1	52	2.2	55
65	1.97	50	4.1	105	1.42	36	1.54	39
50	1.85	47	3.6	92	VALVE DISC OPEN INSIDE "L"			

L = Face to face dimension of Butterfly Valve
 a = Chord of disc in open position
 ID (d) = Minimum Pipe ID Required
 50mm to 100mm size Lever Type, Above 100mm size Gear Type

VALVE FEATURES



Robust cast iron handwheel for high torque operation with ease.

Adjustment allen bolts for 0-90 Deg. operation.

Top thrust collar for loaded gland packings.

Viton seals over sleeve for loaded packing to prevent environmental corrosion from outside.

SS 304 shaft sleeve to create load on packing

Disc springs of 50 Crv4 to retain load life long on disc from top

PFA seal cup. This prevents corrosion in case of any leakage from top and bottom

TFM(M-PTFE) Seat for low permeation and excellent endurance for frequent operations.

Backing pads behind TFM(M-PTFE) seat for resilient seat in options of silicon/viton

Duplex (CD3MN) disc inserts for corrosion resistance due to permeation and has very high MAST value for high torques during actual operation in plant.

PFA lining over duplex disc for corrosion resistance.

Allen body bolts in options of B7/hastelloy C 276 or alloy 20 is available.

Bolt circle dia. holes in options of tapped/through holes in options of ANSI/DIN/JIS standards.

Disc springs of 50 Crv4 to retain load life long on disc from bottom

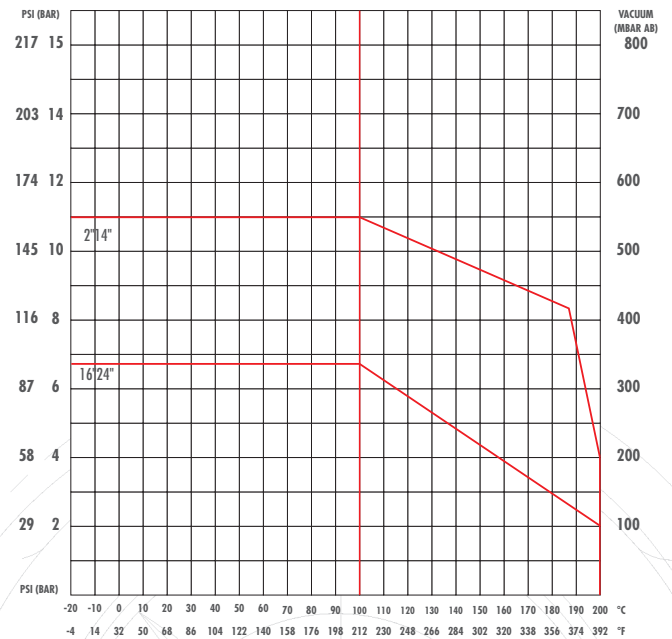
C_v VALUES FOR BUTTERFLY VALVE AT DIFFERENT POSITIONS

SIZE	20°	30°	40°	50°	60°	70°	80°	90°
2"	5.8	13	28	49	74	107	137	155
2.5"	9.3	22	47	81	125	180	232	263
3"	17	38	83	145	220	313	388	455
4"	23	56	110	188	296	447	563	678
5"	44	95	191	296	528	748	945	1177
6"	70	151	273	458	748	1108	1415	1734
8"	110	267	539	922	1369	2105	2796	3538
10"	203	406	824	1346	1867	2807	4234	5232
12"	307	605	1154	1995	3091	4599	6914	8363
14"	406	765	1369	2088	3341	5278	8329	10161
16"	591	1142	1717	2842	4907	7598	10730	13166
18"	771	1456	2587	4466	7250	10672	14210	17284
20"	1032	1879	3456	6206	9454	13688	18050	20880
24"	1125	2494	4849	8607	13166	19082	24592	28420

BREAK TORQUE VALUES FOR BUTTERFLY VALVES

SIZE	TORQUE IN Nm	TORQUE IN LB INCH
2"	30	265
2.5"	30	265
3"	30	265
4"	60	530
5"	110	972
6"	125	1105
8"	180	1591
10"	360	3183
12"	480	4243
14"	800	7072
16"	1200	10608
18"	2018	17840
20"	2460	21746
24"	3075	27183

PRESSURE - TEMPERATURE GRAPH FOR WCB+ PFA / PTFE LINED BUTTERFLY VALVES



WEIGHT / VALVE

SIZE	KGS.		LBS.	
	INCHES	WAFER	FULLLUG	WAFER
2"	5.00	6.50	11	14.30
2.5"	6.00	7.50	13	16.50
3"	7.00	8.60	15	19.00
4"	9.00	13.40	20	16.08
5"	20.00	23.00	44	50.60
6"	23.00	25.50	51	56.10
8"	26.00	30.50	57	67.10
10"	45.00	51.00	112	112.20
12"	62.00	75.00	136	165.00
14"	66.00	80.00	145	176.00
16"	112.00	135.00	246	297.00
18"	157.00	189.00	346	415.80
20"	288.00	346.00	634	761.20
24"	420.00	504.00	924	1109.00

CODE USED

TYPE OF VALVE	CODE
WAFER TYPE BUTTERFLY	BFWR
FULL LUG BUTTERFLY	BFFL

BODY CASTINGS	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

TRIM INSERTS	CODE
ALLOY 20	T4
ASTM A 890 GR. 4A(CD3MN)	T5
SUPER DUPLEX	T6

OPERATION	CODE
LEVER	L
GEAR	G
BARE STEM	B

CODE USED

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

SEAT WITH BACKING PADS	CODE
PTFE WITH SILICON	PS
PTFE WITH VITON	PV
TFM WITH SILICON	TS
TFM WITH VITON	TV

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

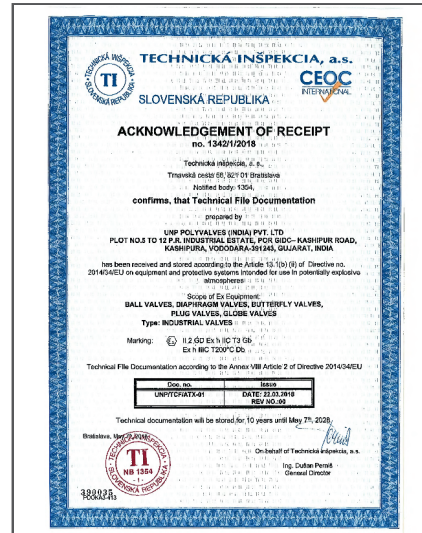
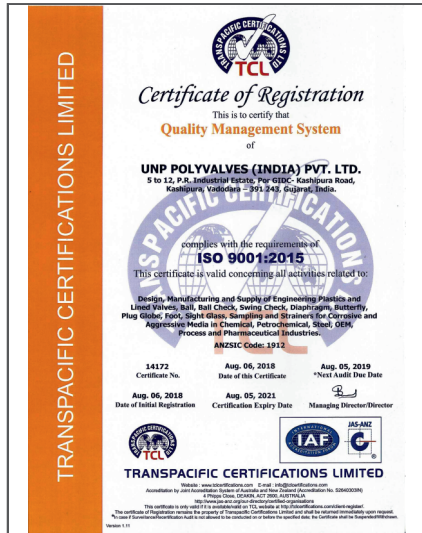
LOCKING	CODE
PROVIDED	Y
NOT PROVIDED	N

SIZE													
2"	2.5"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
CODE													
02	2H	03	04	05	06	08	10	12	14	16	18	20	24

HOW TO READ

CODE	BFFLC1T5L1PSF5GN08	
VALVE TYPE	BUTTERFLY FULL LUG	BFFL
CASTING	ASTM A 216 GR. WCB	C1
TRIM INSERT	ASTMA 890 GR. 4A(CD3MN)	T5
LINING MATERIAL	PFA	L1
SEAT/LINER	PTFE WITH SILICON BACKING PADS	PS
FASTNERS	ASTM A 193 GR. B7	F5
OPERATION	GEAR	G
LOCKING	NO	N
SIZE	8"	08

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"

LIST OF CONSULTANT

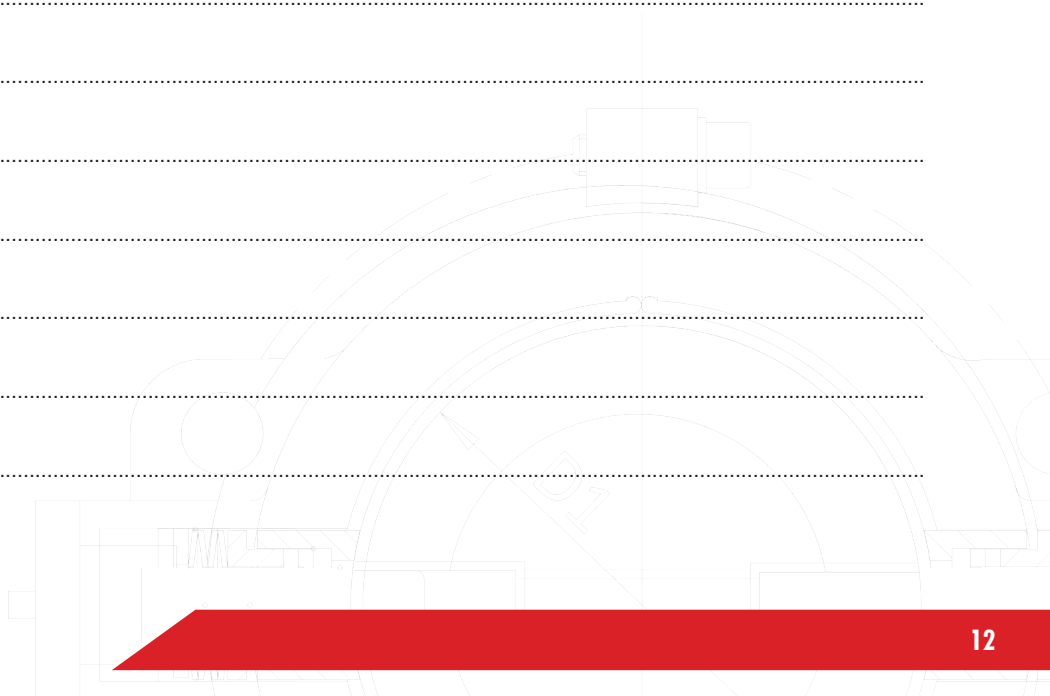

NOTES

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



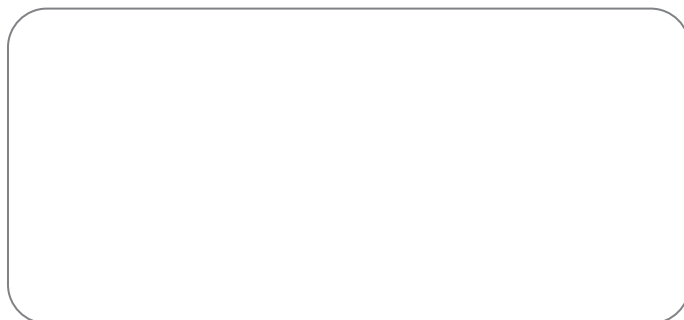
NOTES

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Distributor



USA



DJK - Energy Houston

BRANCH OFFICE

DJK-ENERGY HOUSTON INC.
13201, NW FWY, Suite 800,
Houston, Texas - 77040, USA
Phone : +1 832 213 9674
Email : djk@linedvalvesamerica.us

MUMBAI



UNPPolyvalves

THANE

207, Orion Business Park, Next to Cine Max, Kapurbawdi,
Ghodbunder Road, Thane (W) - 400 607. INDIA.
Phone : +91 22 2589 6422, 2589 6524 /25
Fax : + 91- 22- 2589-4221
Email : sales.thane@polyvalve.com

VADODARA

CORPORATE OFFICE

946, GIDC, Makarpura,
Vadodara - 390 010. INDIA
Phone : +91-265-2649248, 2632628
Fax : +91-265-263737 9
Email : sales.baroda@polyvalve.com

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

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