


**JOINT VENTURE**  
**Alka-Tech**      **LIBERTY VALVES**®  
**INDUSTRIAL VALVES & FITTINGS CO.**



**IBR**  
CERTIFIED

**FIRE SAFE**  
APPROVED



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# BALL VALVE DESIGN FEATURES

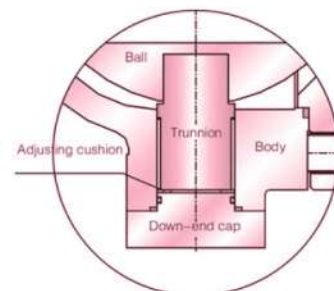
## VALVE DESIGN

Design generally conforms to ASME B16.34 / API 6D / BS EN ISO 17292 (BS 5351)

## FLOATING & TRUNNION MOUNTED BALL

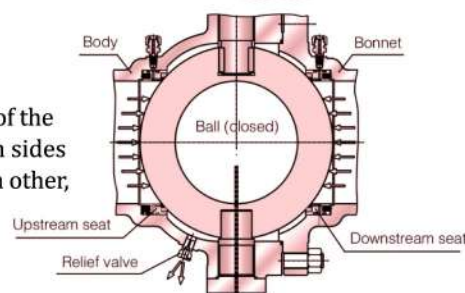
Liberty Manufacture both floating and trunnion mounted ball valves. Floating ball design is a standard design, where sealing takes place by allowing the ball under pressure to move towards the downstream seat to affect a tight seal. The floating ball design is the universal choice for most process and utility applications.

**For higher sizes and pressure ratings & for special services that require Double –Block and Bleed features,** trunnion-mounted ball valves are preferred by users.



## DOUBLE BLOCK & BLEED

Each seat shuts off the process media independently on the upstream and downstream side of the ball, allowing double block operation. When the pressure is simultaneously applied to both sides of the ball in the closed position, the valve bore and the body cavity will be isolated from each other, and the pressure within the body cavity can be released through the drain plug.



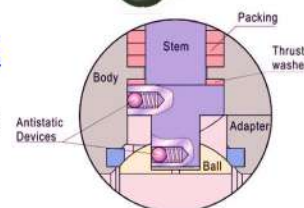
## PTFE SEATS WITH SLOTS

PTFE / RPTFE seats are provided with slots to relieve the pressure past the upstream seat and prevent it from being forced against the ball. This seat design provides tight shutoff at high and low pressure, reduce wear and valve torque.



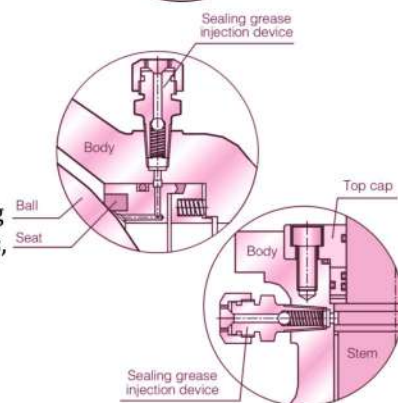
## BLOW-OUT PROOF STEM WITH ANTI-STATIC DEVICE

A Spring Loaded Pin assures the electrical continuity between the ball, stem and body, to avoid sparking during the turning of the stem to open and close the valve. The blow out proof stem operate the valve safely even at high differential pressure. A bottom stem seal enabling replacement of Gland packing even the valve may under pressure.



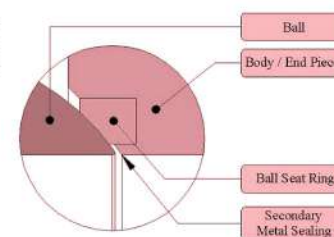
## EMERGENCY SEALANT INJECTION SYSTEM

Ball valve 150MM & above shall be provided an emergency sealant injection system if required by customer. The lubricant & Sealant fittings are located near seat & at stem neck. When the sealing materials (Soft Seat Ring or Stem O Ring) are damaged by fire or some other accidental causes, the seat and stem leakage can be prevented by the injection of sealant into these fittings.



## FIRE SAFE DESIGN

Fire safe valves are designed and tested to the requirements of API 607, API 6FA and BS 6755 Part II specifications. Fire safe design valves are provided with an integral secondary metal to metal seat that protects the leakage from the seat in case of decomposed or deteriorated of soft seat during the fire. Fire safe stem packing & Gaskets are used to avoid the body leakage after the fire.



## ISO 5211 MOUNTING PAD

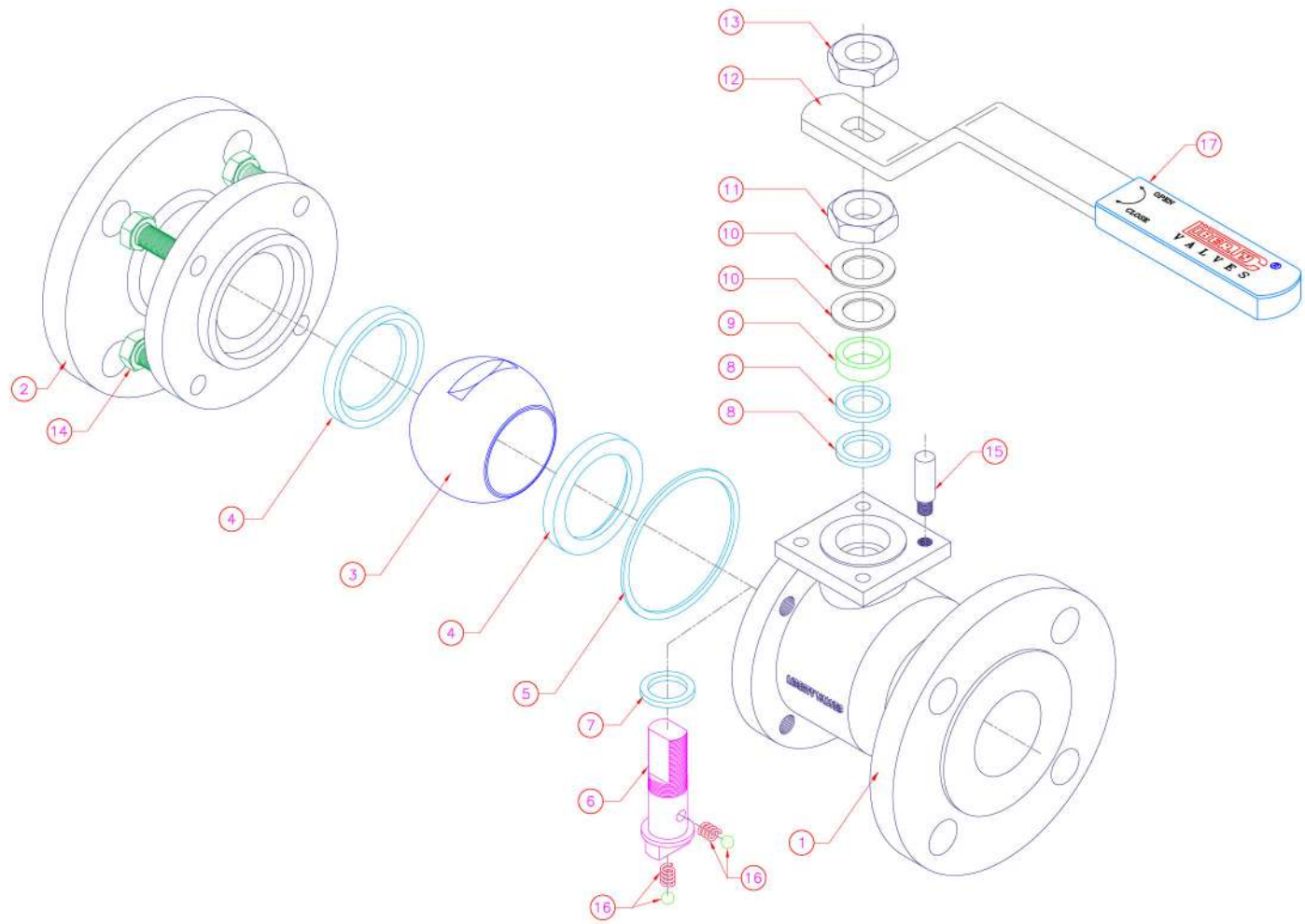
Top flange is designed as per EN ISO 5211 for direct mounting of actuators and Gear operators.

DESIGN FEATURES

# BALL VALVE

2 PIECE DESIGN

ANTI-STATIC ARRANGEMENT



## MATERIAL SPECIFICATION :-

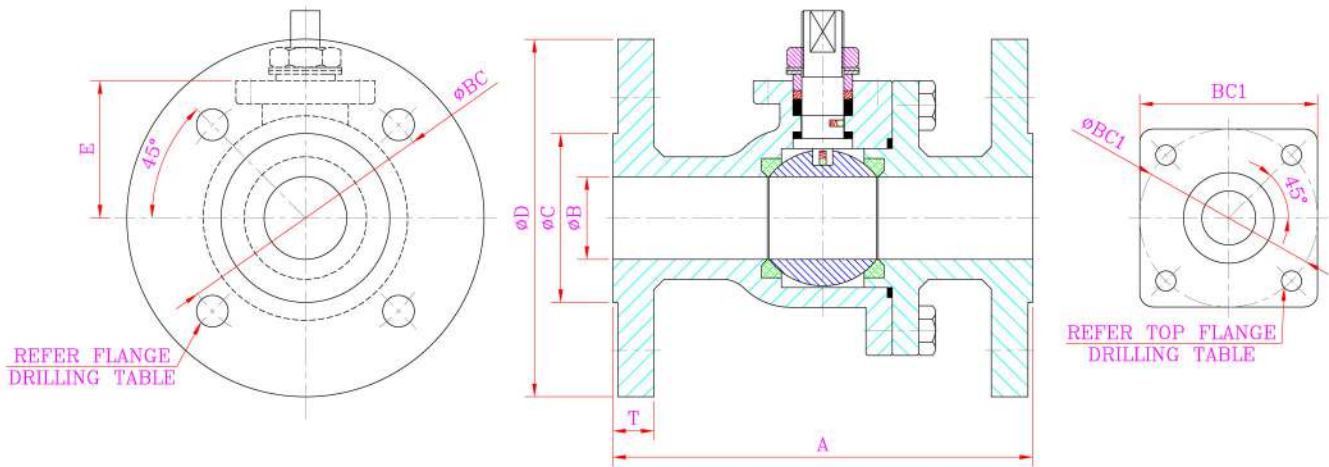
SR. NO.	PART NAME	MATERIAL	QTY.
1	BODY	WCB / CI / CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
2	ADAPTOR	WCB / CI / CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
3	BALL	CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
4	SEAT RING	PTFE / RPTFE / PEEK / DELRIN	2 NO.
5	BODY SEAL	PTFE / RPTFE / GRAPHOIL	1 NO.
6	SPINDLE / STEM	CF8 / CF8M / CF3 / CF3M / ALLOY-20 / HASTALLOY	1 NO.
7	SPINDLE THRUST SEAL	PTFE / RPTFE / GRAPHOIL	1 NO.
8	GLAND PACKING	PTFE / RPTFE / GRAPHOIL	2 NO.
9	GLAND RING	SS304 / SS304L / SS316 / SS316L / ALLOY-20 / HASTALLOY	1 NO.
10	BELLEVILLE WASHER	SPRING STEEL	2 NO.
11	LOCKING NUT	CARBON STEEL / SS304 / SS304L / SS316 / SS316L / ALLOY-20	1 NO.
12	HANDLE	CARBON STEEL / STAINLESS STEEL	1 NO.
13	CHECK NUT	CARBON STEEL / SS304 / SS304L / SS316 / SS316L / ALLOY-20	1 NO.
14	FASTENERS	ASTM A 193 GR. B7/B8 & ASTM A 194 GR. 2H/8	AS REQ.
15	LOCKING PIN	CARBON STEEL / STAINLESS STEEL	1 NO.
16	ANTI-STATIC DEVICE	STAINLESS STEEL	2 NO.
17	SLEEVE	PVC	1 NO.

**NOTE:-**

1. WE ALSO OFFER DUPLEX, SUPER DUPLEX, MONEL & INCONEL MATERIALS ON REQUEST.

FIRE SAFE DESIGN

# BALL VALVE (FULL BORE)



## FULL BORE BALL VALVE CLASS :- 150#

ALL THE DIMENSIONS ARE IN MM. UNLESS OTHERWISE STATED.

VALVE SIZE		A	T	øB	øC	øD	FLANGE DRILLING			TOP FLANGE DRILLING		
NB	INCH						SP/LP	BC	HOLE ø	NOS.	BC1	HOLE ø
15	1/2"	108	11.1	15	35	88.9	60.3	16	4	35	M5	4
20	3/4"	117	11.1	20	43	98.4	69.9	16	4	42	M6	4
25	1"	127	11.6	25	51	108	79.4	16	4	42	M6	4
40	1.1/2"	165	14.7	38	73	127	98.4	16	4	50	M6	4
50	2"	178	16.3	50	92	152.4	120.7	19	4	50	M6	4
65	2.1/2"	190	17.9	65	105	177.8	139.7	19	4	70	M8	4
80	3"	203	19.5	75	127	190.5	152.4	19	4	70	M8	4
100	4"	229	24.3	100	157	228.6	190.5	19	8	102	M10	4
150	6"	267 / 394	25.9	150	216	279.4	241.3	22.2	8	125	M12	4
200	8"	292 / 457	29.0	200	270	342.9	298.5	22.2	8	125	M12	4
250	10"	533	30.6	250	324	406.4	362.0	25.4	12	140	M14	4
300	12"	610	32.2	300	381	482.6	431.8	25.4	12	140	M14	8

**NOTE:-**

1. RAISED FACE HEIGHT IS 2mm
2. 100NB & ABOVE DETACHABLE TYPE LEVER WILL BE PROVIDED.

## FULL BORE BALL VALVE CLASS :- 300#

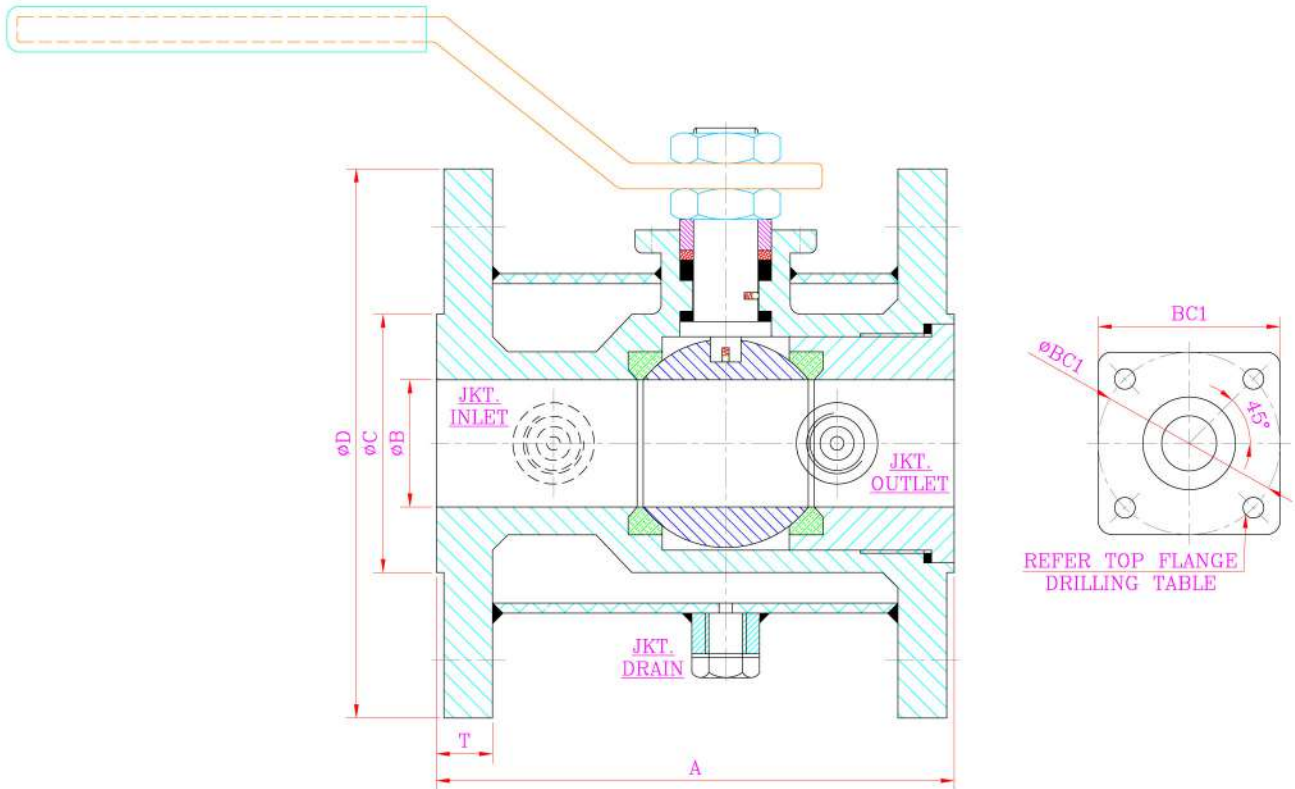
ALL THE DIMENSIONS ARE IN MM. UNLESS OTHERWISE STATED.

VALVE SIZE		A	T	øB	øC	øD	FLANGE DRILLING			TOP FLANGE DRILLING		
NB	INCH						SP/LP	BC	HOLE ø	NOS.	BC1	HOLE ø
15	1/2"	140	14.7	15	35	95.3	66.7	16	4	42	M6	4
20	3/4"	152	16.3	20	43	117.5	82.6	19	4	42	M6	4
25	1"	165	17.9	25	51	123.8	88.9	19	4	50	M6	4
40	1.1/2"	190	21.1	38	73	155.6	114.3	22.2	4	50	M6	4
50	2"	216	22.7	50	92	165.1	127.0	19	8	70	M8	4
65	2.1/2"	241	25.9	65	105	190.5	149.2	22.2	8	70	M8	4
80	3"	282	29.0	75	127	209.5	168.3	22.2	8	102	M10	4
100	4"	305	32.2	100	157	254	200.0	22.2	8	102	M10	4
150	6"	403	37.0	150	216	317.5	269.9	22.2	12	125	M12	4
200	8"	419 / 502	41.7	200	270	381	330.2	25.4	12	140	M14	4
250	10"	568	48.1	250	324	444.5	387.4	28.5	16	165	M18	4
300	12"	648	51.3	300	381	520.7	450.8	31.8	16	254	M18	8

**NOTE:-**

1. RAISED FACE HEIGHT IS 2mm
2. 600 #, 900 # & 1500 # VALVES ARE PROVIDED ON REQUEST.

# JACKETED BALL VALVE



## JACKETED BALL VALVE CLASS :- 150#

ALL THE DIMENSIONS ARE IN MM. UNLESS OTHERWISE STATED.

VALVE SIZE		A	T	øB	øC	øD	FLANGE DRILLING			TOP FLANGE DRILLING		
NB	INCH						BC	HOLE ø	NOS.	BC1	HOLE ø	NOS.
15x25	1/2"x1"	108	11.6	15	51	108	79.4	16	4	35	M5	4
20x25	3/4"x1"	118	11.6	20	51	108	79.4	16	4	42	M6	4
25x40	1"x1.1/2"	127	14.7	25	73	127	98.4	16	4	42	M6	4
25x50	1"x2"	127	16.3	25	92	152.4	120.7	19	4	42	M6	4
40x50	1.1/2"x2"	165	16.3	40	92	152.4	120.7	19	4	50	M6	4
40x65	1.1/2"x2.1/2"	165	17.9	40	105	177.8	139.7	19	4	50	M6	4
50x80	2"x3"	178	19.5	50	127	190.5	152.4	19	4	50	M6	4
50x100	2"x4"	178	24.3	50	157	228.6	190.5	19	8	50	M6	4
80x100	3"x4"	203	24.3	75	157	228.6	190.5	19	8	102	M10	4
100x150	4"x6"	229	25.9	100	216	279.4	241.3	22.2	8	102	M10	4
150x200	6"x8"	267	29.0	150	270	342.9	298.5	22.2	8	125	M12	4
200x250	8"x10"	292	30.6	200	324	406.4	362.0	25.4	12	125	M12	4

**NOTE:-**

1. RAISED FACE HEIGHT IS 2mm

**PNEUMATICALLY OPERATED**



**3-WAY BALL VALVE**



**2 PIECE BALL VALVE**



**2 PIECE DESIGN JACKETED BALL VALVE**



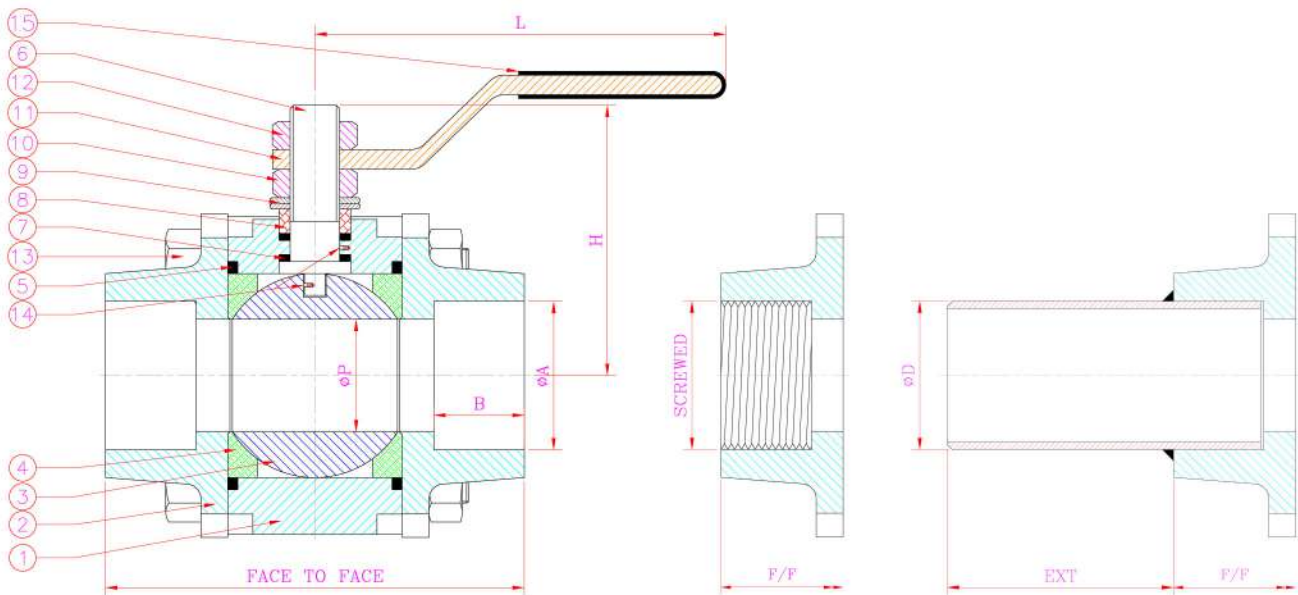
**1 PIECE BALL VALVE**



**2 PIECE 600# BALL VALVE**



# BALL VALVE (FORGED/CAST)



**SOCKET**

**SCREWED**

**EXTENDED PUPS**

## MATERIAL SPECIFICATION :-

SR. NO.	PART NAME	MATERIAL	QTY.
1	BODY	A105 / CF8 / CF8M / CF3 / CF3M / CN7M	1 NO.
2	ADAPTOR	A105 / CF8 / CF8M / CF3 / CF3M / CN7M	2 NO.
3	BALL	CF8 / CF8M / CF3 / CF3M / ALLOY-20 / MONEL	1 NO.
4	SEAT RING	PTFE / RPTFE / PEEK / DELRIN	2 NO.
5	BODY SEAL	PTFE / RPTFE / GRAPHOIL	2 NO.
6	SPINDLE / STEM	SS304 / SS304L / SS316 / SS316L / ALLOY-20 / MONEL	1 NO.
7	SPINDLE SEAL	PTFE / RPTFE / GRAPHOIL	2 NO.
8	GLAND RING	CARBON STEEL / SS304 / SS304L / SS316 / SS316L / ALLOY-20 / MONEL	1 NO.
9	SPRING WASHER	SPRING STEEL	2 NO.
10	LOCKING NUT	CARBON STEEL / SS304 / SS304L / SS316 / SS316L / ALLOY-20 / MONEL	1 NO.
11	HANDLE	CARBON STEEL / STAINLESS STEEL	1 NO.
12	CHECK NUT	CARBON STEEL / SS304 / SS304L / SS316 / SS316L / ALLOY-20 / MONEL	1 NO.
13	FASTENERS	ASTM A 193 GR. B7/B8 & ASTM A 194 GR. 2H/8	4 NO.
14	ANTI-STATIC DEVICE	STAINLESS STEEL	2 NO.
15	SLEEVE	PVC	1 NO.

## REDUCED BORE (FORGED BODY)/FULL BORE (CAST BODY) BALL VALVE CLASS :- 800#

VALVE SIZE		FACE TO FACE (F/F)		φP		B		ADAPTOR				L	H
NB	INCH	FORGED	CAST	FORGED	CAST	FORGED	CAST	φA (SOCKET)	SCREWED	EXT.	φD		
15	1/2"	68	72	10.5	13	10	10	21.8	1/2" BSP	100	21.3	128	42
20	3/4"	72	85	14.5	19	13	13	27.2	3/4" BSP	100	26.7	128	44
25	1"	96	104	20.5	25	13	13	33.9	1" BSP	100	33.4	155	59
32	1.1/4"	116	118	31	31	13	13	42.7	1.1/4" BSP	100	42.2	175	78
40	1.1/2"	116	118	31	38	13	13	48.8	1.1/2" BSP	100	48.3	175	78
50	2"	128	127	37.8	50	16	16	61.2	2" BSP	100	60.3	175	85

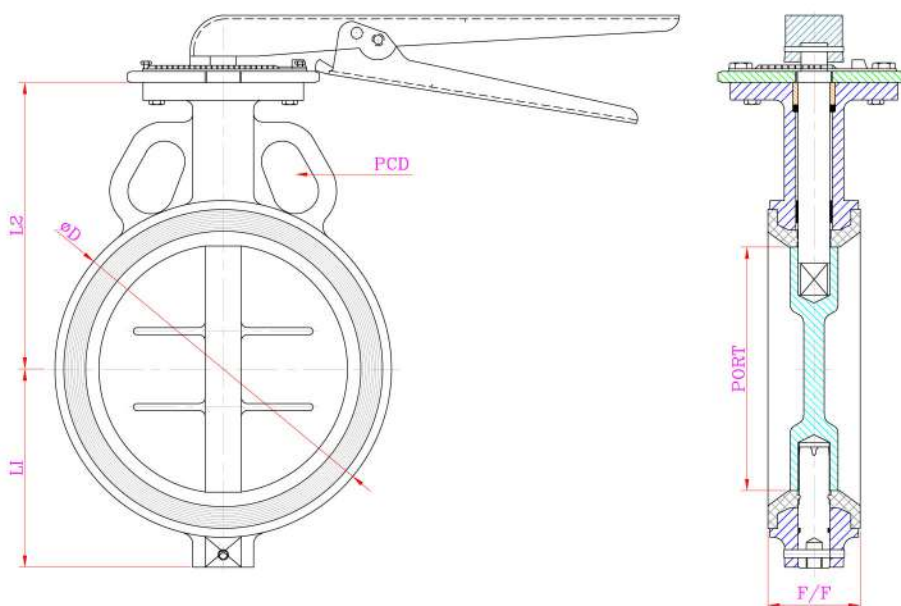
### NOTE:-

1. ALL THE DIMENSIONS ARE IN MM. UNLESS OTHERWISE STATED.

FORGED / CAST BALL VALVE

# BUTTERFLY VALVE

LEVER/GEAR OPERATED



WAFER TYPE

## TECHNICAL SPECIFICATIONS :-

SIZE RANGE :- 1 1/2" TO 48"

<b>BODY</b>	ASTM A 126 GRADE B (GRY IRON) ASTM A 216 GRADE WCB (CAST STEEL) ASTM A 536 GRADE 65-45-12 (DUCTILE IRON) ASTM A 351 GRADE CF8 / CF8M / CF3 / CF3M / CD4MCuN
<b>DISC</b>	ASTM A 126 GRADE B (GRY IRON) + POWDER COATED ASTM A 216 GRADE WCB (CAST STEEL) + POWDER COATED ASTM A 536 GRADE 65-45-12 (DUCTILE IRON) + POWDER COATED ASTM A 351 GRADE CF8 / CF8M / CF3 / CF3M / CD4MCuN S.G. IRON WITH TEFLON / POWDER / NYLON COATED & RUBBER LINED BODY
<b>SEAT</b>	NITRILE / EPDM / VITON / HYPELON / SILICON / NEOPREN
<b>SHAFT</b>	AISI 410 / AISI 304 / AISI 304L / AISI 316 / AISI 316L
<b>VALVE TYPE</b>	CENTRIC DISC BUTTERFLY VALVE WITH SINGLE PIECE RUBBER LINED BODY
<b>BODY TYPE</b>	SHORT WAFER TYPE
<b>SEAT TYPE</b>	INTEGRALLY MOULDED WITH THE BODY (RENEWABLE SEAT)
<b>END CONNECTION</b>	WAFER TYPE SUIT 150#, TABLE 'D', TABLE 'E' & IS 6392 TABLE 11 (PN 10 / PN 16)
<b>PRESSURE RATING</b>	PN 10 / PN 16 / PN 20 (ON REQUEST)
<b>SEAT LEAKAGE</b>	TIGHT SHUT OFF
<b>OPERATION</b>	LEVER OPERATED / GEAR OPERATED / CHAIN OPERATED / PNEUMATIC OPERATED

## DESIGN STANDARDS :-

- \* DESIGN & MFG. :- API 609 CAT-A / IS 13095 / BS EN 593
- \* FACE TO FACE :- SHORT WAFER AS PER ISO 5752 TAB 5 / API 609 CAT-A / ISO 5752 TAB 1 (BS 5155)
- \* TOP FLANGE DRILLING :- ISO 5211
- \* INSPECTION & TESTING :- API 598 / BS EN 12266-1
- \* FLANGE STANDARD CONFORMITY :- ASME B 16.5 / ASME B 16.47 CLASS 150, BS 10, TAB A, B, D, E & F

## DIMENSIONS :-

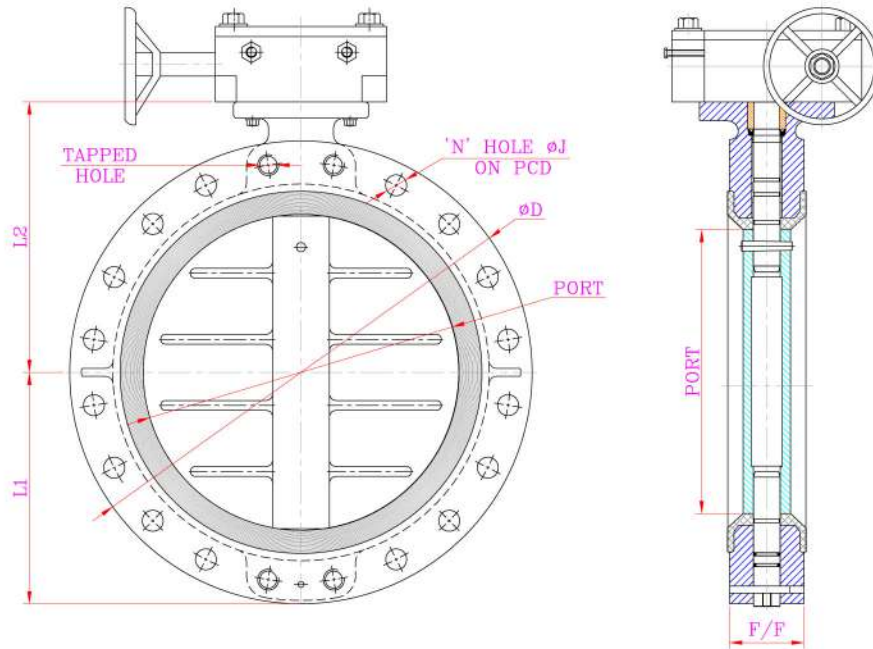
ALL THE DIMENSIONS ARE IN MM, UNLESS OTHERWISE STATED.

VALVE SIZE		PORT	L1	L2	FACE TO FACE F/F	(REEB) ØD	PCD	TAPPED HOLE
MM	Inch							
40	1. 1/2"	40	57	106	34	81.5	-	-
50	2"	50	64	117	44	95	-	-
65	2. 1/2"	65	73	128	46	108	-	-
80	3"	80	78	129.5	46	124	-	-
100	4"	100	99.5	150	52	150	-	-
125	5"	125	113	161	56	182	-	-
150	6"	150	123.5	177	56	207	-	-
200	8"	200	156	206	60	258.5	-	-
250	10"	241	220	266	68	315	-	-
300	12"	286	246	287	78	365	-	-
350	14"	333	270	304	78	443	-	-
400	16"	382	295	365	102	488	-	-
450	18"	433	331	382	114	562	577.9	1. 1/8" UNC
500	20"	476	371	420	127	600	635	1. 1/8" UNC
600	24"	590	444	488	154	695	749.3	1. 1/4" UNC
650	26"	635	463	497	165	757	806.4	1. 1/4" UNC
700	28"	680	497	532	165	811	863.6	1. 1/4" UNC
750	30"	725	534	580	190	881	914.4	1. 1/4" UNC
800	32"	785	569	618	190	933	977.9	1. 1/2" UNC
850	34"	810	615	645	190	989	1028.7	1. 1/2" UNC
900	36"	885	665	695	203	1039	1085.8	1. 1/2" UNC
950	38"	935	684	703	216	1105	1149.4	1. 1/2" UNC
1000	40"	965	723	732	216	1145	1200.2	1. 1/2" UNC
1100	44"	1145	797.5	797.5	254	1260	1314.4	1. 1/2" UNC
1200	48"	1170	841	851	254	1364	1422.4	1. 1/2" UNC



CENTER DISC

# BUTTERFLY VALVE



### TECHNICAL SPECIFICATIONS :-

SIZE RANGE :- 3" TO 48"

<b>BODY</b>	ASTM A 126 GRADE B (GRY IRON) ASTM A 216 GRADE WCB (CAST STEEL) ASTM A 536 GRADE 65-45-12 (DUCTILE IRON) ASTM A 351 GRADE CF8 / CF8M / CF3 / CF3M / CD4MCuN
<b>DISC</b>	ASTM A 126 GRADE B (GRY IRON)+ POWDER COATED ASTM A 216 GRADE WCB (CAST STEEL) + POWDER COATED ASTM A 536 GRADE 65-45-12 (DUCTILE IRON) + POWDER COATED ASTM A 351 GRADE CF8 / CF8M / CF3 / CF3M / CD4MCuN S.G. IRON WITH TEFLON / POWDER / NYLON COATED & RUBBER LINED BODY
<b>SEAT</b>	NITRILE / EPDM / VITON / HYPELON / SILICON / NEOPREN
<b>SHAFT</b>	AISI 410 / AISI 304 / AISI 304L / AISI 316 / AISI 316L
<b>VALVE TYPE</b>	CENTRIC DISC BUTTERFLY VALVE WITH SINGLE PIECE RUBBER LINED BODY
<b>BODY TYPE</b>	SHORT WAFER TYPE DOUBLE FLANGE
<b>SEAT TYPE</b>	INTEGRALLY MOULDED WITH THE BODY (RENEWABLE SEAT)
<b>END CONNECTION</b>	WAFER TYPE DOUBLE FLANGE SUIT 150#, TABLE 'D', TABLE 'E' & IS 6392 TABLE 11 (PN 10 / PN 16)
<b>PRESSURE RATING</b>	PN 10 / PN 16 / PN 20 (ON REQUEST)
<b>SEAT LEAKAGE</b>	TIGHT SHUT OFF
<b>OPERATION</b>	LEVER OPERATED / GEAR OPERATED / CHAIN OPERATED / PNEUMATIC OPERATED

### DESIGN STANDARDS :-

- \* DESIGN & MFG. :- API 609 CAT-A / IS 13095 / BS EN 593
- \* FACE TO FACE :- SHORT WAFER AS PER ISO 5752 TAB 5 / API 609 CAT-A / ISO 5752 TAB 1 (BS 5155)
- \* TOP FLANGE DRILLING :- ISO 5211
- \* INSPECTION & TESTING :- API 598 / BS EN 12266-1
- \* FLANGE STANDARD :- ASME B 16.5 / ASME B 16.47 CLASS 150, BS 10, TAB A, B, D, E & F CONFORMITY

### DIMENSIONS :-

ALL THE DIMENSIONS ARE IN MM, UNLESS OTHERWISE STATED.

VALVE SIZE		PORT	L1	L2	FACE TO FACE F/F	ØD	N	ØJ	PCD	TAPPED HOLE
MM	Inch									
80	3"	80	95	129	46	190	4	19.05	152.4	-
100	4"	100	113	147	52	230	8	19.05	190.5	-
150	6"	150	136	177	56	280	8	22.2	241.3	-
200	8"	200	174	214	60	345	88	22.2	298.5	-
250	10"	241	201	265	68	405	12	25.4	362	-
300	12"	286	236	303	78	485	12	25.4	431.8	-
350	14"	333	248	345	78	535	12	28.6	476.3	-
400	16"	382	300	364	102	595	16	28.6	539.8	-
450	18"	433	322	381	114	635	16	31.75	577.9	1. 1/8" UNC
500	20"	476	354	436	127	700	20	31.75	635	1. 1/8" UNC
600	24"	590	405	515	154	815	20	34.9	749.3	1. 1/4" UNC
650	26"	635	435	490	165	870	24	34.9	806.4	1. 1/4" UNC
700	28"	680	462	543	165	925	28	34.9	863.6	1. 1/4" UNC
750	30"	725	482	576	190	985	28	34.9	914.4	1. 1/4" UNC
800	32"	785	533	618	190	1060	28	41.3	977.9	1. 1/2" UNC
900	36"	885	576	675	203	1170	32	41.3	1085.8	1. 1/2" UNC
1000	40"	965	640	720	216	1290	36	41.3	1200.2	1. 1/2" UNC
1200	48"	1170	750	865	254	1510	44	41.3	1422.4	1. 1/2" UNC

### NOTE:-

1. VALVE FACE TO FACE (F / F) WILL BE AS PER WAFER TYPE
2. FLANGE THICKNESS NON-STD. AS PER MFG. STD. WAFER SHORT DOUBLE FLANGE BODY

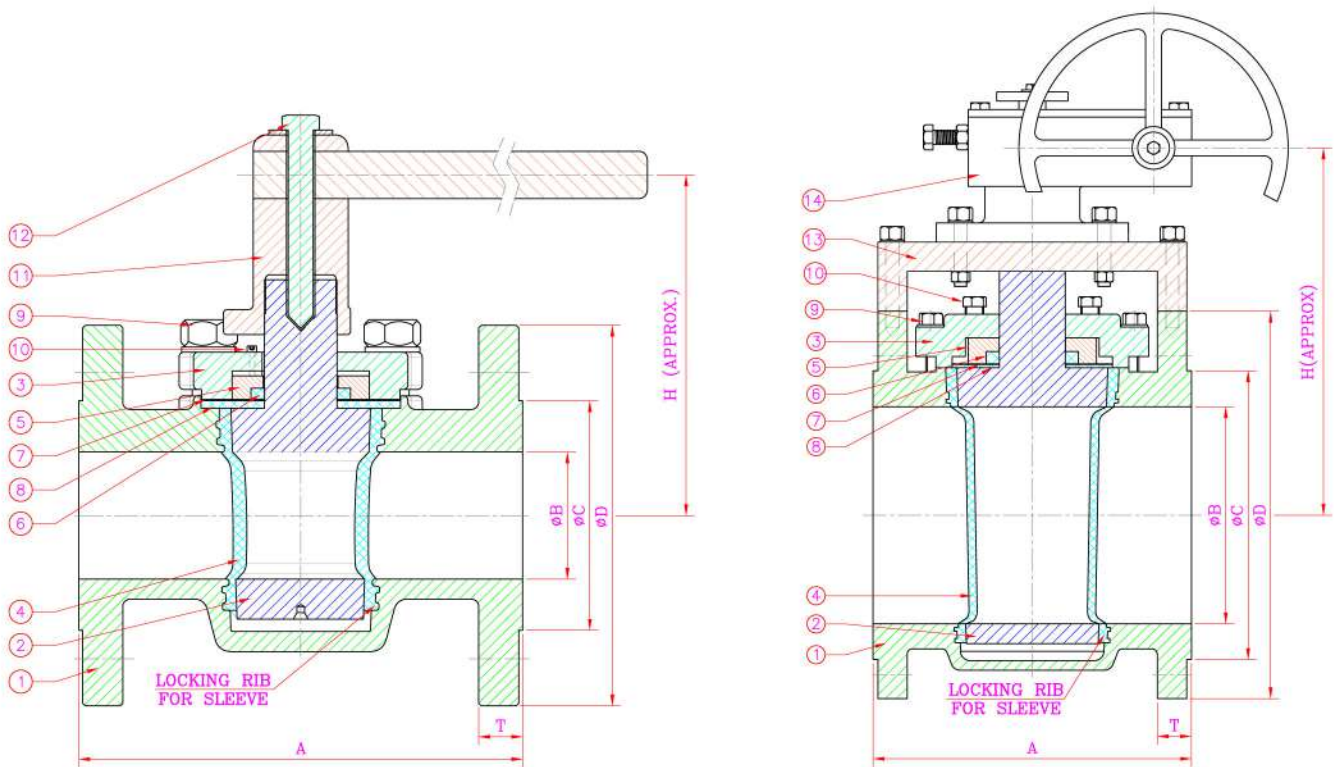
LEVER/GEAR OPERATED

DOUBLE FLANGE TYPE

CENTER DISC



# PLUG VALVE



## MATERIAL SPECIFICATION :-

SR. NO.	PART NAME	MATERIAL	QTY.
1	BODY	WCB / CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
2	PLUG	CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
3	COVER	WCB / CF8 / CF8M / CF3 / CF3M / CN7M / HASTALLOY	1 NO.
4	SLEEVE	PTFE / RPTFE	1 NO.
5	THRUST COLLAR	CARBON STEEL / STAINLESS STEEL	1 NO.
6	WEDGE RING	PTFE / RPTFE	1 NO.
7	METAL DIAPHRAGM	SS316	1 NO.
8	DIAPHRAGM	PTFE / RPTFE	1 NO.
9	COVER BOLT	ASTM A 193 GR.B7/ B8	4 NO.
10	ADJUSTING BOLT	ASTM A 193 GR.B7/ B8	3 NO.
11	WRENCH	CARBON STEEL / STAINLESS STEEL	1 NO.
12	WRENCH BOLT	CARBON STEEL / STAINLESS STEEL	1 NO.
13	BRACKET	M.S. FABRICATED	1 NO.
14	GEAR BOX	STANDARD	1 NO.

## DIMENSIONS

ALL THE DIMENSIONS ARE IN MM, UNLESS OTHERWISE STATED.

VALVE SIZE		A	T	øB	øC	øD	FLANGE DRILLING			H
NB	INCH						BC	HOLE ø	NOS.	
15	1/2"	108	11.1	15	35	88.9	60.3	16	4	70
20	3/4"	117	11.1	20	43	98.4	69.9	16	4	75
25	1"	127	11.6	25	51	108	79.4	16	4	80
40	1.1/2"	165	14.7	38	73	127	98.4	16	4	95
50	2"	178	16.3	50	92	152.4	120.7	19	4	130
65	2.1/2"	190	17.9	65	105	177.8	139.7	19	4	130
80	3"	203	19.5	75	127	190.5	152.4	19	4	130
100	4"	229	24.3	100	157	228.6	190.5	19	8	160
150	6"	267	25.9	150	216	279.4	241.3	22.2	8	315
200	8"	292	29.0	200	270	342.9	298.5	22.2	8	350
250	10"	330	30.6	250	324	406.4	362.0	25.4	12	390
300	12"	356	32.2	300	381	482.6	431.8	25.4	12	-

### NOTE:-

1. RAISED FACE HEIGHT IS 2mm
2. 150NB & ABOVE WILL BE GEAR OPERATED.

# FEP / PFA LINED VALVES



PLUG VALVE



BALL VALVE ( 2 PIECE BODY)



PTFE SEAT BUTTERFLY VALVE  
(SPLIT BODY)



LINED BUTTERFLY VALVE  
(SPLIT BODY)



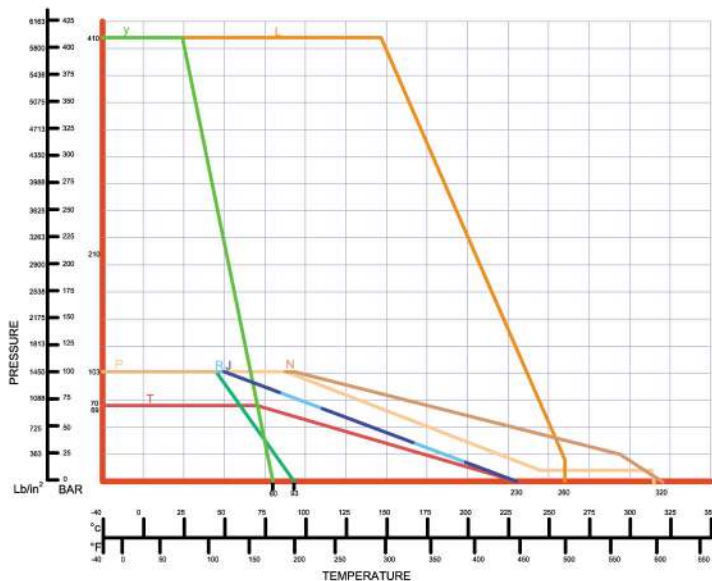
NON RETURN VALVE  
(WAFER TYPE)



NON RETURN VALVE (SPLIT BODY)  
FLANGED END

# ENGINEERING DATA (BALL VALVE)

## PRESSURE - TEMPERATURE GRAPH



- T - PTFE
- R - 15 % Glass filled PTFE
- J - 25% Glass filled PTFE
- P - Carbon filled PTFE
- N - 33% Carbon filled PTFE
- Y - Delrin (Acetal Resin)
- L - PEEK (Virgin)

## SEAT APPLICATION

- T PTFE**  
 Inert to most chemicals, low coefficient of friction, recommended for water, foodstuff and corrosive chemicals.  
 Colour: White
- R 15% glass filled PTFE**  
 Withstands higher pressures than virgin PTFE. Good resistance to wear and deformation under load.  
 Colour: Off-White
- J 25% glass filled PTFE**  
 Similar to 15% glass filled PTFE seats but better resistance to wear and deformation under load.  
 Colour: Gray-White
- N 33% Carbon filled PTFE**  
 Specially for steam and vegetable oils, low coefficient of friction.  
 Colour: Black
- P Carbon filled PTFE**  
 Specially for steam and thermal oil, low coefficient of friction, inert to most media.  
 Colour: Pale Black
- Y Acetal Resin(Delrin)**  
 Suitable for high pressures, good resistance to wear and deformation under load, temperature limit 80° C. Must not be used in presence of oxygen.  
 Colour: Creamy White
- L Virgin PEEK**  
 Similar to filled PEEK but higher coefficient of friction, suitable for nuclear, Tobacco, FDA and clean applications.  
 Colour: Beige

## HYDROSTATIC TEST PRESSURE (API 598/BS 6755 PART-1)

HYDROSTATIC PRESSURE Kg/cm <sup>2</sup> (Psig)				
ASME CLASS	BODY	BACK SEAT	SEAT	AIR TEST (SEAT)
150	32 (455)	22 (315)	22 (315)	7 (100)
300	79 (1125)	57 (815)	57 (815)	7 (100)
600	156 (2225)	115 (1630)	115 (1630)	7 (100)
800	208 (3000)	141 (2000)	141 (2000)	7 (100)
900	236 (3350)	172 (2445)	172 (2445)	7 (100)
1500	392 (5575)	287 (4080)	287 (4080)	7 (100)
2500	652 (9275)	477 (6790)	477 (6790)	7 (100)

## BODY MATERIAL :-

MATERIAL	CLASSIFICATION STEEL	ASTM REF.	RECOMMENDED TEMPERATURE LIMITS		APPLICATION
			°C	°F	
WCB / A105	Carbon	A 216 Gr. WCB	-25 TO 425	-20 TO 800	Steam, Water Oil, Oil Vapour, Gas & General Services
LCB / LF2	Carbon	A 352 Gr. LCB	-46 TO 350	-50 TO 650	Low Temperature
LCC	Carbon	A 352 Gr. LCC	-46 TO 350	-50 TO 650	Low Temperature
WC6 / F11	Chromium Moly 1.25% Cr, 0.5% Mo	A 217 Gr. WC6	-29 TO 590	-20 TO 1100	Steam, Water Oil, Oil Vapour, Gas & General Services
WC9 / F22	Chromium Moly 2.25% Cr, 1% Mo	A 217 Gr. WC9	-29 TO 590	-20 TO 1100	Steam, Water Oil, Oil Vapour, Gas & General Services
C5	Chromium Moly 5% Cr, 0.5% Mo	A 217 Gr. C5	-29 TO 650	-20 TO 1200	Corrosive / Errosive Oil Refinery Services
CF8M / SS316	Stainless 18% Cr, 9% Ni, 2% Mo	A 351 Gr. CF8M	-196 TO 815	-320 TO 1500	High & Low Temperature Corrosive Resistance
CF8 / SS304	Stainless 18% Cr, 8% Ni	A 351 Gr. CF8	-196 TO 815	-320 TO 1500	High & Low Temperature Corrosive Resistance
CF3M / SS316L	Low Carbon Stainless 18% Cr, 9% Ni, 2% Mo	A 351 Gr. CF3M	-196 TO 815	-320 TO 1500	Cryogenic Service is also available on Request
CF3 / SS304L	Low Carbon Stainless 18% Cr, 8% Ni	A 351 Gr. CF3	-196 TO 815	-320 TO 1500	Cryogenic Service is also available on Request
CN7M ALLOY 20	Stainless 19% Cr, 29% Ni	A 351 Gr. CN7M	-196 TO 425	-320 TO 800	Corrosive Resistance

## FLOW COEFFICIENT (CV VALUE) SPECIFICATION :-

NB	15	20	25	40	50	80	100	150	200	250	300	350	400
INCH	1/2"	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"
150#	23	54	92	303	495	1350	2500	5300	10700	17400	26700	31800	44000
300#	23	54	92	303	420	1050	1950	5225	10050	16790	25900	30850	42550

NOTE :- THE FLOW COEFFICIENT 'CV' VALUE IS THE FLOW RATE OF WATER (gallons/min) THROUGH A FULLY OPENED VALVE, WITH A PRESSURE DROP OF 1 Psi ACROSS THE VALVE.  
 ALL SIZES ARE FULL PORT.

IMPORTANT DATA

# ACCESSORIES

Other additional accessories can be provided with the valve as per requirement

## 1. SOLENOID VALVE



## 2. MANUAL OVER-RIDE



## 3. POSITION INDICATOR WITH LIMIT SWITCH BOX



## 4. I/P (CURRENT TO PNEUMATIC) TRANSDUCER



## 5. PNEUMATIC VALVE POSITIONER



## 6. MOUNTING BRACKETS



## 7. FILTER + REGULATOR + LUBRICATOR UNIT (FRL)





**LIBERTY PREMISES**



**WORKSHOP**



**TESTING**



**STORE**



**DISPATCH**



**DESIGN**



**PAINTING**

The manufacturer reserves the right to change product designs and specifications without notice.



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