JOINT VENTURE

Alka-Tech

INDUSTRIAL VALVES & FITTINGS CO.

LIBERTY VALVES

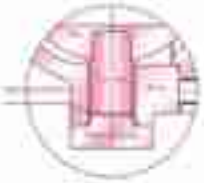
IBR | FIRE SAFE APPROVED |

BALL VALVE DESIGN FEATURES

VALVE DESIGN

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

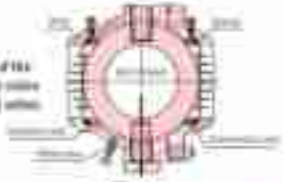
FLOATING & TRUNNION MOUNTED BALL



Liberty Manufacturers both floating and trunnion mounted ball valves. Floating ball design is a standard design, where sealing takes place by allowing the ball and/or pressure to move towards the downstream seat to effect 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

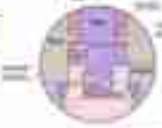


Each seat shuts off the process media independently as the upstream and downstream side of the ball, allowing double block operation. When the pressure is simultaneously applied to both sides of the ball in the closed position, the valve bore and the body cavity will be isolated from each other, and 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, reduces wear and valve torque.

BLOW-OUT PROOF STEM WITH ANTI-STATIC DEVICE

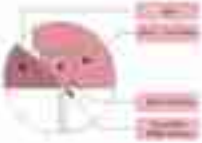


A Spring Loaded Pin ensures the electrical continuity between the ball, stem and body to avoid sparking during the running of the stem to open and close the valve. The blow-out proof stem ejection the valve safely even at high differential pressure. A bottom stem seal enabling replacement of gland packing even the valve way under pressure.

EMERGENCY SEALANT INJECTION SYSTEM

Ball valve 150NB & above shall be provided an emergency sealant injection system if required by customer. The lubricant & Sealant fittings are located seat seal & 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

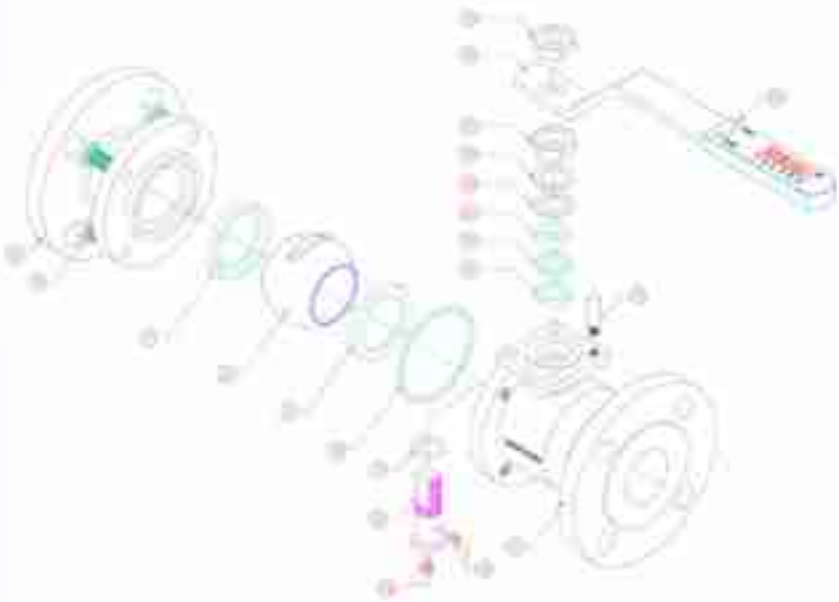


Fire safe valves are designed and tested to the requirements of API 607, API 6FA and BS 6755 Part II specifications. Fire safe design valves are provided with an integral secondary metal to metal seat that protects the leakage from the seat in case of disintegrated or deteriorated of soft seat during 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 ISO 5211 for direct mounting of actuators and Gear operators.

BALL VALVE



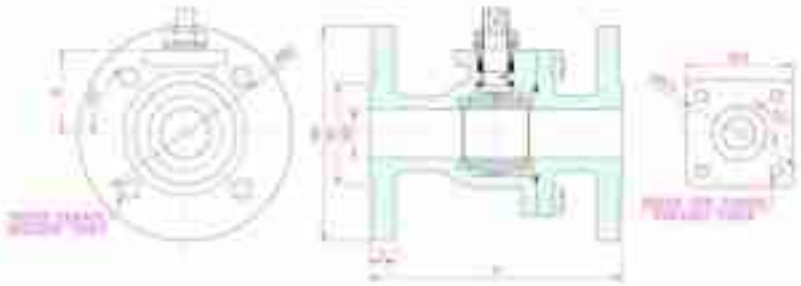
MATERIAL SPECIFICATION

SR. NO.	PART NAME	MATERIAL	QTY.
1	BODY	ASTM A 351 / CF8M / 316 / 1.4408 / SS316 / ANSI 316	1 NO.
2	ADAPTOR	ASTM A 351 / CF8M / 316 / 1.4408 / SS316 / ANSI 316	1 NO.
3	BALL	STEM / STEM / 316 / 1.4408 / SS316 / ANSI 316	1 NO.
4	SEAT RING	PTFE / RPTFE / PEEK / DELRIN	2 NO.
5	BODY RING	PTFE / RPTFE / GRAPHITE	2 NO.
6	STEM / STEM	ASTM A 351 / CF8M / 316 / 1.4408 / SS316 / ANSI 316 / MATERIAL	1 NO.
7	SPINDLE THRUST SEAL	PTFE / RPTFE / GRAPHITE	1 NO.
8	GLAND PACKING	PTFE / RPTFE / GRAPHITE	2 NO.
9	GLAND RING	ASTM A 351 / CF8M / 316 / 1.4408 / SS316 / ANSI 316 / MATERIAL	1 NO.
10	BOLT & NUT GLAND	SPRING STEEL	2 NO.
11	LOCKING NUT	CARBON STEEL / ZINC PLATED / SS316 / ANSI 316 / ALLOY 20	1 NO.
12	HANDLE	CARBON STEEL / STAINLESS STEEL	1 NO.
13	LOCK NUT	CARBON STEEL / ZINC PLATED / SS316 / ANSI 316 / ALLOY 20	1 NO.
14	HANDLE NUT	ASTM A 351 GR. M CF8M, IS, ASTM A 194 GR. 8M	1 NO.
15	STOPPER PIN	CARBON STEEL / STAINLESS STEEL	1 NO.
16	ANTI STATIC DEVICE	STAINLESS STEEL	1 NO.
17	WASHER	PTFE	1 NO.

NOTES:-

1. WE RESERVE THE RIGHT TO CHANGE MATERIAL & DESIGN WITHOUT PRIOR NOTICE.

BALL VALVE (FULL BORE)



FULL BORE BALL VALVE CLASS : 150#

SIZE		A	T	B1	B2	FLANGED END			BW ENDS		
DN	INCH	(RF)				D	D1 X n	(RF)	D1	D1 X n	(RF)
15	1/2"	108	13.1	12	35	88.9	60.3	16	4	35	M6	4
20	3/4"	117	14.3	20	43	98.4	69.9	16	4	42	M8	4
25	1"	127	15.8	25	51	108	79.4	16	4	42	M8	4
40	1 1/2"	165	19.7	38	73	127	98.4	18	4	50	M10	4
50	2"	178	20.3	50	94	152.4	120.7	20	4	50	M8	4
65	2 1/2"	190	17.9	63	105	177.8	139.7	20	4	70	M8	4
80	3"	203	20.3	75	127	190.5	152.4	20	4	70	M8	4
100	4"	229	24.9	100	157	228.6	190.5	24	8	100	M10	4
150	6"	267 / 394	35.8	150	216	279.4	241.3	24.2	8	125	M12	4
200	8"	292 / 457	23.9	200	270	342.9	298.5	27.2	8	125	M12	4
250	10"	330	35.8	250	324	406.4	362.0	29.4	12	140	M16	4
300	12"	356	42.2	300	381	482.6	431.8	32.4	12	140	M16	4

NOTE:

1. [illegible]
2. [illegible]

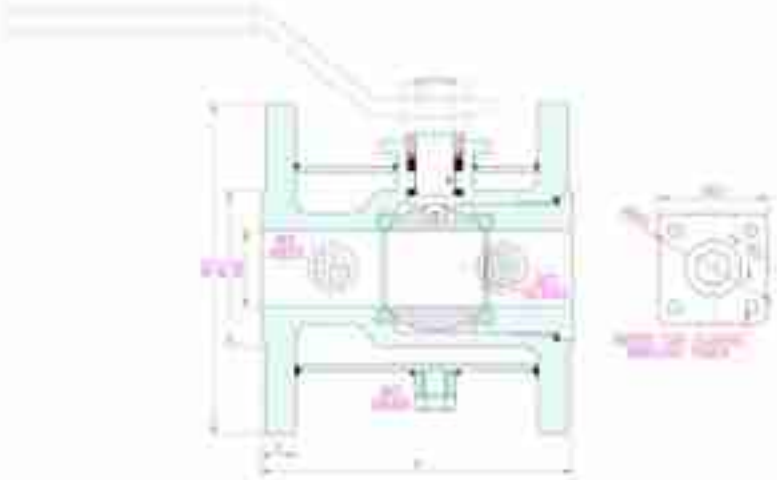
FULL BORE BALL VALVE CLASS : 300#

SIZE		A	T	B1	B2	FLANGED END			BW ENDS		
DN	INCH	(RF)				D	D1 X n	(RF)	D1	D1 X n	(RF)
15	1/2"	140	14.7	12	35	95.3	66.7	16	4	42	M8	4
20	3/4"	152	16.3	20	43	117.5	82.6	18	4	42	M8	4
25	1"	165	17.9	25	51	123.8	88.9	18	4	50	M8	4
40	1 1/2"	190	23.1	38	73	155.6	114.3	22.3	4	70	M8	4
50	2"	216	23.7	50	92	165.1	127.0	18	8	70	M8	4
65	2 1/2"	241	23.9	63	105	190.5	149.3	22.3	8	70	M8	4
80	3"	283	27.0	75	127	209.5	168.3	22.3	8	100	M10	4
100	4"	305	32.3	100	157	254	200.0	24.2	8	100	M10	4
150	6"	403	37.0	150	216	317.5	269.9	27.2	12	125	M12	4
200	8"	419 / 502	41.7	200	270	381	330.2	31.8	12	140	M16	4
250	10"	568	48.1	250	324	444.5	387.4	34.9	16	165	M16	4
300	12"	648	51.3	300	381	520.7	450.8	37.9	16	254	M16	8

NOTE:

1. [illegible]
2. [illegible]

JACKETED BALL VALVE



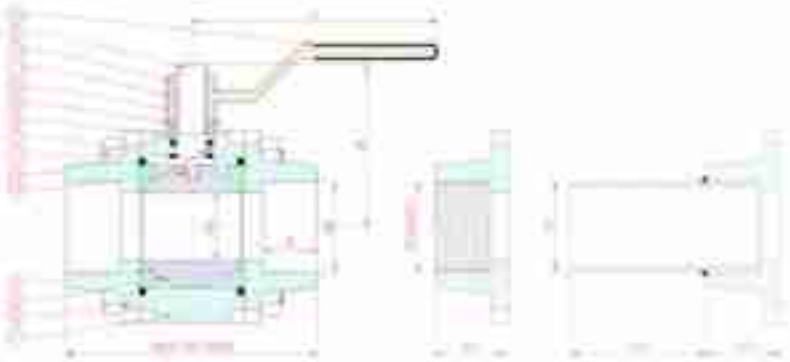
JACKETED BALL VALVE CLASS : 150#

SIZE												
DN	INCH	A	C	ØD	ØE	ØF	A	B	C	D	E	F
15x25	1/2"x1"	108	23.6	21	51	108	75.5	1.15	8	35	M5	4
25x25	1"x1"	115	23.6	33	51	108	75.5	1.5	8	42	M5	4
25x40	1"x1.1/2"	127	23.7	33	73	127	84.5	1.5	8	42	M5	4
40x40	1.1/2"x1.1/2"	140	23.7	48	73	127	84.5	1.5	8	42	M5	4
40x50	1.1/2"x2"	165	30.5	48	92	152.4	120.7	1.5	8	52	M6	4
50x50	2"x2"	178	30.5	60	92	152.4	120.7	1.5	8	52	M6	4
50x65	2"x2.1/2"	191	37.2	60	105	177.8	139.7	1.5	8	55	M6	4
65x65	2.1/2"x2.1/2"	216	37.2	73	105	177.8	139.7	1.5	8	55	M6	4
65x80	2.1/2"x3"	241	44.5	90	127	190.5	152.4	1.5	8	60	M8	4
80x80	3"x3"	283	44.5	90	127	190.5	152.4	1.5	8	60	M8	4
80x100	3"x4"	305	54.5	90	157	228.6	190.5	1.5	8	70	M10	4
100x100	4"x4"	305	54.5	110	157	228.6	190.5	1.5	8	70	M10	4
100x150	4"x6"	403	70.0	110	215	279.4	241.3	2.0	8	110	M12	4
150x150	6"x6"	457	70.0	160	215	342.9	298.5	2.0	8	110	M12	4
200x200	8"x8"	521	70.0	210	215	406.4	362.0	2.0	8	110	M12	4

NOTE:

1. Standard bolt length 3.0mm

BALL VALVE (FORGED/CAST)



SOCKET SCREWED EXTENDED PUPS

FORGED / CASTING VALVE

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 / A105 / 304 / 316	1 NO.
4	SEAT RING	PTFE / RPTFE / PEEK / DELRIN	2 NO.
5	BODY SEAL	PTFE / RPTFE / GRAPHITE	1 NO.
6	STEM / STEM	CF8M / 316L / 316TA / 316TA1 / A105 / 20 / MONEL	1 NO.
7	STEM SEAL	PTFE / RPTFE / GRAPHITE	1 NO.
8	CLAMP RING	CARBON STEEL / 316M / 316L / 304 / 316 / 316M / ALLOY 20 / MONEL	1 NO.
9	STEM WASHER	SPRING STEEL	2 NO.
10	LOCKING NUT	CARBON STEEL / 316M / 316L / 304 / 316 / 316M / ALLOY 20 / MONEL	1 NO.
11	HANDLE	CARBON STEEL / CAST IRON / STEEL	1 NO.
12	CHECK NUT	CARBON STEEL / 316M / 316L / 304 / 316 / 316M / ALLOY 20 / MONEL	1 NO.
13	FASTENERS	ASTM A 193 GR. B7/M, B, ASTM A 194 GR. 2H/B	4 NO.
14	ANTI STATIC DEVICE	STAINLESS STEEL	1 NO.
15	SLEEVE	PVC	1 NO.

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

VALVE SIZE		RAISED FACE (R.F.)		W		H		ADAPTOR				L	H
INCH	MM	DIAMETER	THICKNESS	INCH	MM	INCH	MM	BSP (INCH)	BSP (MM)	NPT (MM)	NPT (INCH)		
1/4"	8	28	2	14.3	36	36	36	1/4" BSP	1/4" BSP	1/4" NPT	1/4" NPT	108	42
3/8"	10	33	2	14.3	36	36	36	3/8" BSP	3/8" BSP	3/8" NPT	3/8" NPT	108	42
1/2"	15	38	2	20.6	52	36	36	1/2" BSP	1/2" BSP	1/2" NPT	1/2" NPT	108	42
3/4"	20	48	2	20.6	52	36	36	3/4" BSP	3/4" BSP	3/4" NPT	3/4" NPT	108	42
1"	25	54	2	25.4	64	36	36	1" BSP	1" BSP	1" NPT	1" NPT	108	42
1 1/4"	32	64	2	31	80	36	36	1 1/4" BSP	1 1/4" BSP	1 1/4" NPT	1 1/4" NPT	108	42
1 1/2"	40	73	2	31	80	36	36	1 1/2" BSP	1 1/2" BSP	1 1/2" NPT	1 1/2" NPT	108	42
2"	50	92	2	37.8	96	36	36	2" BSP	2" BSP	2" NPT	2" NPT	108	42

NOTE:

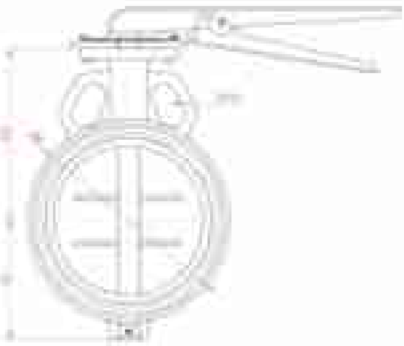
1. ALL THE DIMENSIONS ARE IN MM UNLESS OTHERWISE NOTED.

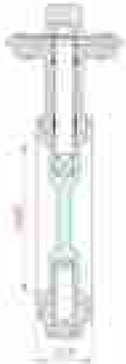
BUTTERFLY VALVE

LEVER / GEAR OPERATED

WAFER TYPE

CENTER DISC





TECHNICAL SPECIFICATIONS : SIZE RANGE : 1 ½" TO 48"

[illegible]

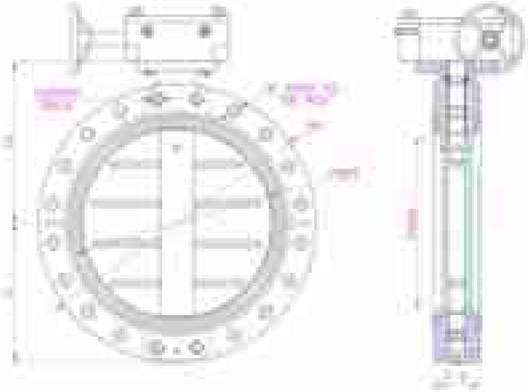
DESIGN STANDARDS :

- DESIGN & MFG. : [illegible]
- FACE TO FACE : [illegible]
- TOP FLANGE DRILLING : [illegible]
- INSPECTION & TESTING : [illegible]
- FLANGE DIMENSIONS CONFORMITY : [illegible]

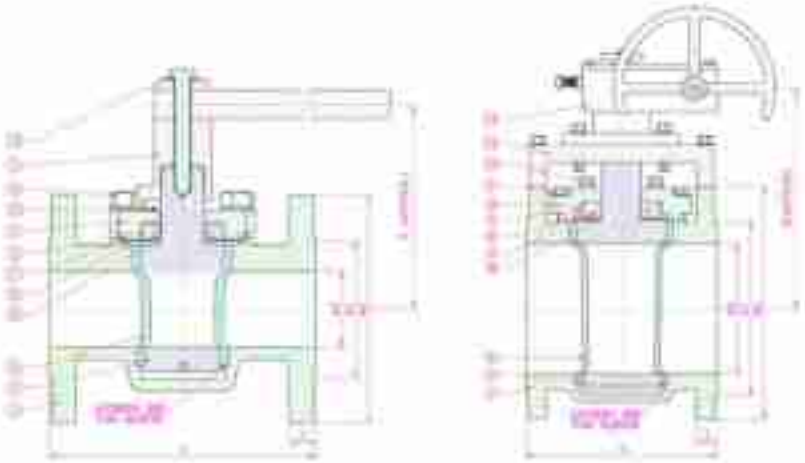
DIMENSIONS :

[illegible]

BUTTERFLY VALVE



PLUG VALVE



MATERIAL SPECIFICATION :

SR. NO.	PART NAME	MATERIAL	QTY.
1	BODY		1 NO.
2	PLUG		1 NO.
3	COVER		1 NO.
4	STEM		1 NO.
5	THRUST COLLAR		1 NO.
6	WASHER		1 NO.
7	METAL GASKET		1 NO.
8	GLAND BUSH		1 NO.
9	GLAND NUT		1 NO.
10	STUD BOLT		4 NO.
11	GLAND BOLT		2 NO.
12	HANDLE		1 NO.
13	WASHER		1 NO.
14	SPRING		1 NO.
15	GLAND BUSH		2 NO.

DIMENSIONS

VALVE SIZE		A	L	ØD	ØE	ØH	FLANGE DRILLING			H
MM	INCH						BC	HOLE Ø	THK.	
15	1/2"	108	11.5	21	35	88.9	60.3	15	4	75
20	3/4"	117	11.5	27	44	98.4	69.9	15	4	75
25	1"	127	11.5	34	51	108	79.4	15	4	85
40	1 1/2"	165	14.7	48	73	127	98.4	15	4	95
50	2"	178	19.5	60	92	152.4	120.7	19	4	130
65	2 1/2"	190	17.9	73	105	177.8	139.7	19	4	130
80	3"	203	19.5	76	127	190.5	152.4	19	4	150
100	4"	229	19.5	100	127	228.6	190.5	19	8	150
150	6"	267	25.9	150	216	279.4	241.3	23	8	210
200	8"	292	29.6	200	270	342.9	298.5	23	8	310
250	10"	330	30.6	250	324	406.4	362.0	25.4	12	390
300	12"	356	32.3	300	381	482.6	431.8	25.4	12	—

NOTE:

1.
2.

FEP / PFA LINED VALVES

PLUG VALVE

BALL VALVE (2 PIECE BODY)

PTFE SEAT BUTTERFLY VALVE (SPLIT BODY)

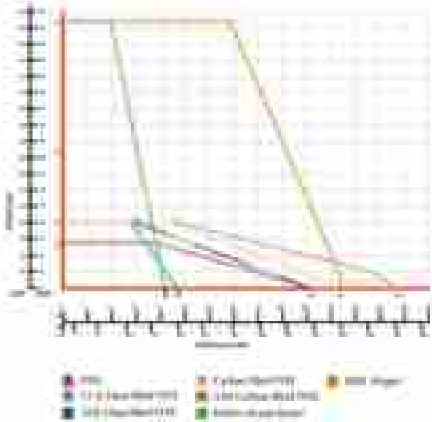
LINED BUTTERFLY VALVE (SPLIT BODY)

NON RETURN VALVE (WAFER TYPE)

NON RETURN VALVE (SPLIT BODY) FLANGED END

ENGINEERING DATA (BALL VALVE)

PRESSURE - TEMPERATURE GRAPH



SEAT APPLICATION

PTFE

[illegible]

15% glass filled PTFE

[illegible]

25% glass filled PTFE

[illegible]

25% Carbon filled PTFE

[illegible]

Carbon filled PTFE

[illegible]

Metal Seats

[illegible]

Virgin PTFE

[illegible]

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

[illegible]				
ASME CLASS	[illegible]	[illegible]	[illegible]	[illegible]
150	22 (450)	22 (315)	22 (315)	7 (100)
300	79 (1125)	57 (825)	57 (825)	7 (100)
600	156 (2225)	115 (1650)	115 (1650)	7 (100)
800	198 (2825)	141 (2050)	141 (2050)	7 (100)
900	234 (3350)	172 (2445)	172 (2445)	7 (100)
1500	392 (5575)	287 (4080)	287 (4080)	7 (100)
2500	652 (9275)	477 (6780)	477 (6780)	7 (100)

BODY MATERIAL :

[illegible]	[illegible]	[illegible]	[illegible]		[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FLOW COEFFICIENT (CV VALUE) SPECIFICATION :

[illegible]	[illegible]	20	25	40	50	80	100	150	200	250	300	350	400
[illegible]	[illegible]	3/4"	1"	1.1/2"	2"	3"	4"	6"	8"	10"	12"	14"	16"
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	24	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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)

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

Regd. Office & Works : 15 & 16, Bhavani Industrial Estate,
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Dist. Thane – 401 208, India. Tel.: +91 8830892418 / +91 8329999487
E-mail : jshingalkarelectricals.com Website : www.alkarelectricals.com

AUTHORISED DEALER / STOCKIST :