



**JDV
CONTROL
VALVES**



Double Offset Butterfly JTD Series





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JTD Series

Double Offset Butterfly

Wafer Ends ASME CLASS 150/300JIS 10/20KDIN PN16/40

Lug Ends ASME CLASS 150/300

Industrial Fields:

Oil & Gas
Refinery / Petrochemical
Chemical
Pulp & Paper
Power Plant
Steel Mill
Food
Mining



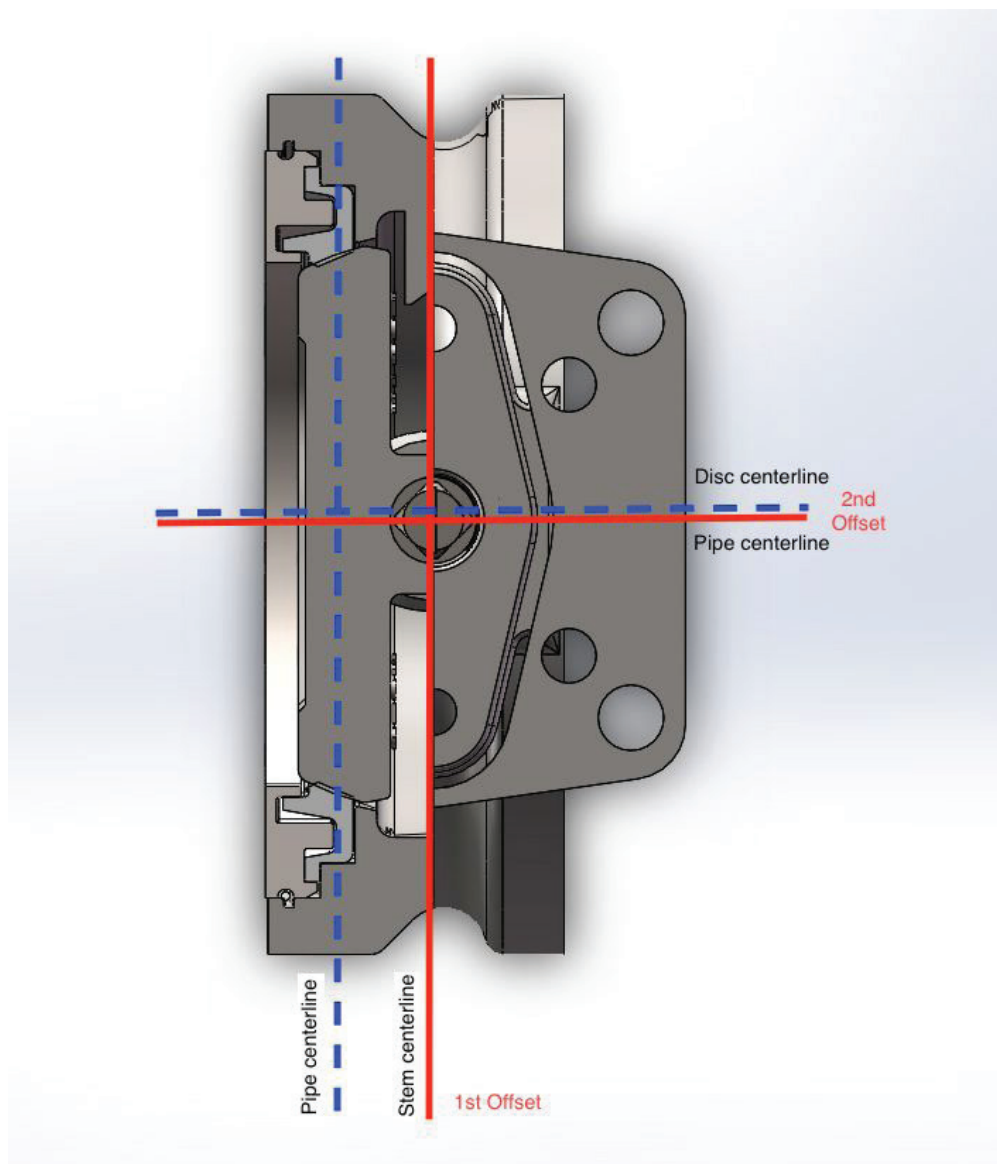
The Double Offset Geometry

1st Offset

The centerline of the stem is moved behind the seat axis, in order to offer an optimum sealing contact.

2nd Offset

The centerline of the disc is offset from the centerline of the valve body, allowing the disc seal to move away freely during the opening.





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Applicable Standards

- Body Material: Standard in WCB, CF8, CF8M
Other materials are available according to requirements.
- Nominal Size: 21/2" to 24"(DN65 to DN600) are on request.
- Pressure Rating: ASME CLASS 150/300, JIS 10K/20K, DIN PN16/40 are on request.
- End Connection: Wafer / Lug Short Pattern AND Long Pattern.
- Temperature Range: -320~446 °F (-196~220 °C), higher temperatures are on request.
- Design Standard: API 609 / ASME B16.34 / BS EN593 / EN 12516
- Flanged Dimensions: ASME B16.5 / EN 1092-1 / JIS B2003
- Face-To-Face Dimensions: API 609 Category B for Lug /Wafer
- Anti-blowout Stem Design: Complied with API 609 Sec 4.9
- Casting: MSS SP-55
- Marking : MSS SP-25 / EN19
- Mounting Pad: ISO 5211
- Screw Thread: ASME b1.1 / BS 2643
- Body Pressure Test: API 598 / ISO 5208 / EN 12266-1
- Cryogenic Temperature Test: BS 6364
- Fire safe design: Certificated according to API 607
- Low Emission Design: Certificated according to VDI 2440 (TA-Luft)

Valve body temperature and pressure ratings

ASME B16.34								
Materials	1.1 Group (WCB)		2.1 Group (CF8)		2.2 Group (CF8M)		2.3 Group (CF3M)	
Temperature(°C)	150LB	300LB	150LB	300LB	150LB	300LB	150LB	300LB
-29~38	19.6	51.1	19	49.6	19	49.6	15.9	41.4
50	19.2	50.1	18.3	47.8	18.4	48.1	15.3	40.0
100	17.7	46.6	15.7	40.9	16.2	42.2	13.3	34.8
150	15.8	45.1	14.2	37.0	14.8	38.5	12.0	31.4
200	13.8	43.8	13.2	34.5	13.7	35.7	11.2	29.2
250	12.1	41.9	12.1	32.5	12.1	33.4	10.5	27.5

(Bar)

EN 12516								
Materials	1C1 Group (1.0619)		2C1 Group (1.4308)		2C2 Group (1.4408)		2C3 Group (1.4404)	
Temperature(°C)	PN16	PN40	PN16	PN40	PN16	PN40	PN16	PN40
-10~50	16.1	40.3	15.7	39.2	15.7	39.2	13.1	32.7
50	15.8	39.5	15.1	37.8	15.2	38.0	12.6	31.5
100	14.6	36.6	12.9	32.3	13.3	33.3	10.9	27.2
150	14.3	35.7	11.7	29.3	12.2	30.4	9.9	24.6
200	13.8	34.6	10.9	27.2	11.3	28.2	9.1	22.6
250	13.2	32.9	10.3	25.6	10.5	26.3	8.4	21.1

(Bar)

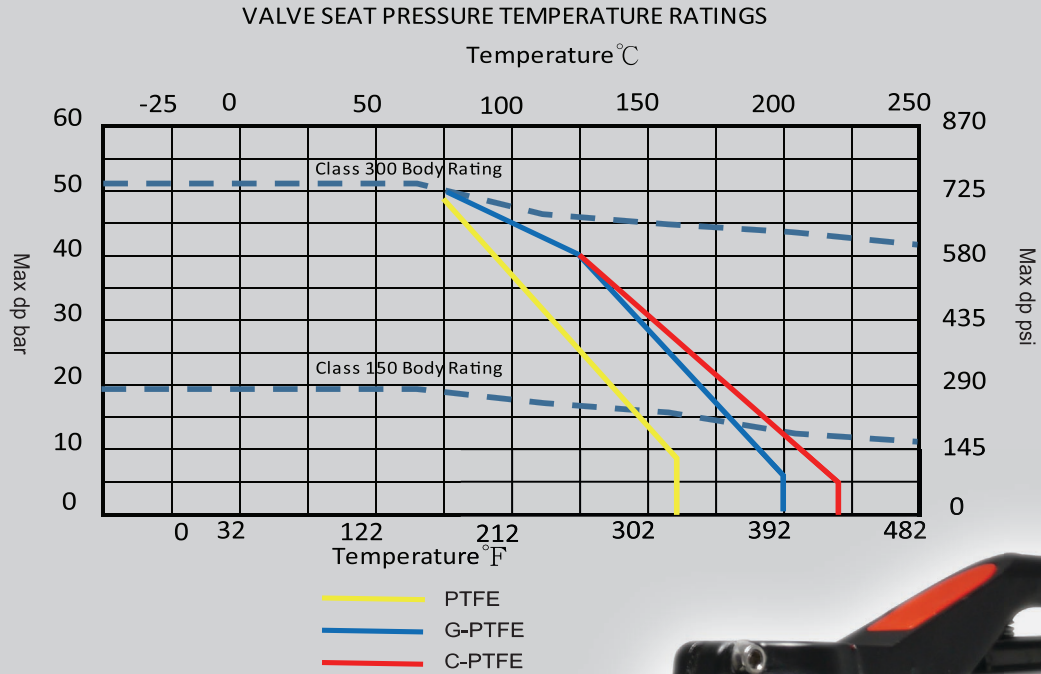
JIS B2220								
Materials	003a Group (SCPH2)		021a Group (SCS13A)		022a Group (SCS14A)		022b Group (SCS16A)	
Temperature(°C)	10K	20K	10K	20K	10K	20K	10K	20K
TL~120	14	34	14	34	14	34	14	34
220	12	31	12	31	12	31	12	31
300	10	29	10	29	10	29	10	29

(Bar)



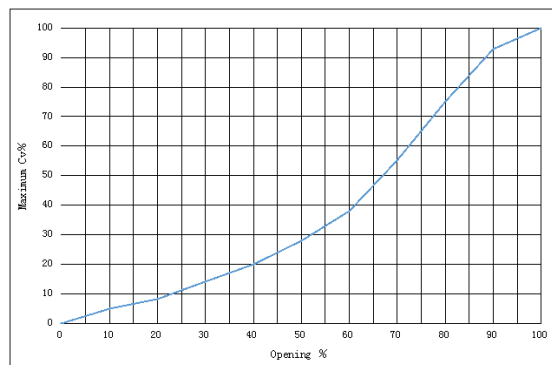
JDV CONTROL VALVES

Valve seat Temperature and pressure ratings



Cv VALUES:

When valve is fully open,
pressure difference ΔP is 1 pound/inch,
the flow amount gallon/min based on
water medium at 60 °F .



Cv=1.167K

150LB/10K/PN16

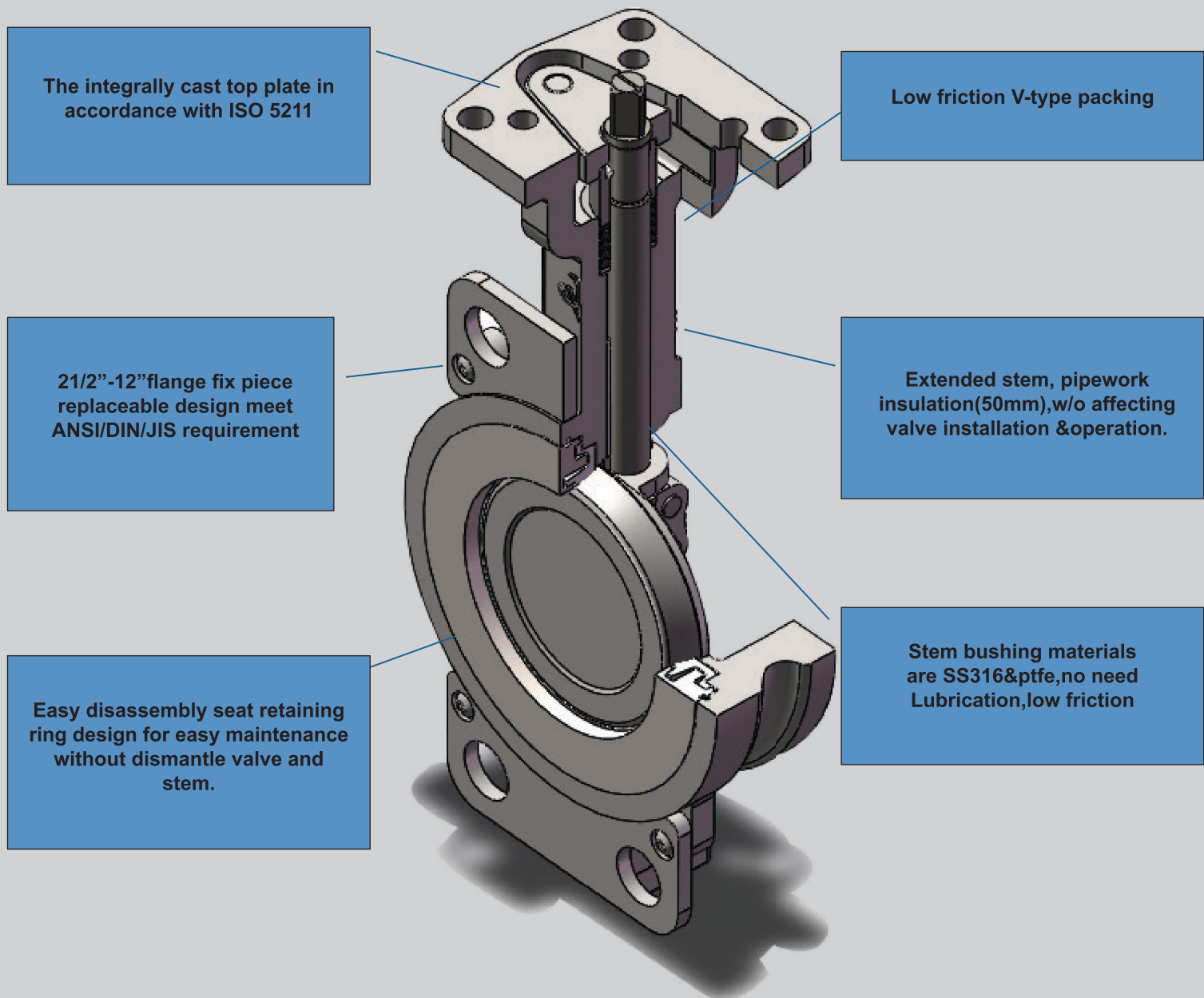
SIZE		OPENING (%)									
		10	20	30	40	50	60	70	80	90	100
2 1/2"	65	4	6	11	16	22	26	42	60	74	80
3"	80	8	13	24	34	47	55	89	126	155	168
4"	100	21	33	57	82	115	135	217	308	377	410
5"	125	33	52	92	131	183	216	347	491	603	655
6"	150	55	88	155	221	309	365	586	829	1017	1105
8"	200	108	172	301	430	602	710	1140	1613	1978	2150
10"	250	163	260	455	650	910	1073	1723	2438	2990	3250
12"	300	260	416	728	1040	1456	1716	2756	3900	4784	5200
14"	350	290	465	815	1160	1625	1915	3074	4350	5336	5800
16"	400	403	644	1127	1610	2254	2657	4267	6038	7406	8050
18"	450	523	836	1463	2090	2926	3449	5539	7838	9614	10450
20"	500	705	1128	1974	2820	3948	4653	7473	10575	12972	14100
24"	600	1090	1744	3052	4360	6104	7194	11554	16350	20056	21800

300LB/20K/PN40

SIZE		OPENING (%)									
		10	20	30	40	50	60	70	80	90	100
2 1/2"	65	4	6	11	16	22	26	42	60	74	80
3"	80	8	13	24	34	47	55	89	126	155	168
4"	100	21	33	57	82	115	135	217	308	377	410
5"	125	33	52	92	131	183	216	347	491	603	655
6"	150	53	84	147	210	294	347	557	788	966	1050
8"	200	93	148	259	370	518	611	981	1388	1702	1850
10"	250	160	256	448	640	896	1056	1696	2400	2944	3200
12"	300	235	376	658	940	1316	1551	2491	3525	4324	4700
14"	350	260	416	728	1040	1456	1716	2756	3500	4874	5200
16"	400	343	548	959	1370	1918	2261	3631	5138	6302	6850
18"	450	468	748	1309	1870	2618	3086	4956	7013	8602	9350
20"	500	570	912	1596	2280	3192	3762	6042	8550	10488	11400
24"	600	928	1484	2597	3710	5194	6122	9832	13913	17066	18550



JDV CONTROL VALVES



The integrally cast top plate in accordance with ISO 5211

Low friction V-type packing

21/2"-12" flange fix piece replaceable design meet ANSI/DIN/JIS requirement

Extended stem, pipework insulation(50mm), w/o affecting valve installation & operation.

Easy disassembly seat retaining ring design for easy maintenance without dismantle valve and stem.

Stem bushing materials are SS316&ptfe, no need Lubrication, low friction

APPLICATION:

- jacket service
- Steam service
- Cryogenic service
- Abrasive service, high-cycle option
- Oxygen service, chlorine service
- Vacuum service

Special service

Live-loading Design

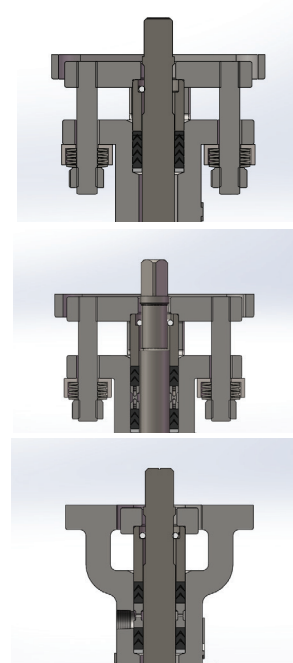
A Belleville spring provides the abrasion compensation by compressing the packing constantly; this guarantees the longest life cycle.

Low emission Design

Double packing design guarantees the safety.

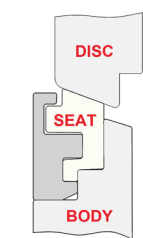
Leakage detection on request.

Emergency sealing injection on request.

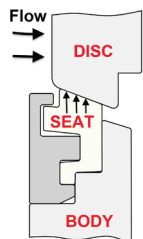


Seat designs

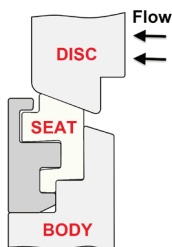
- Lip-seal design compensates for temperature and pressure changes
- No additional o-rings or metal parts required to maintain tightness
- In accordance with the use of operating conditions can choose Many kinds of valve seat material
- Bi-directional tight sealing design



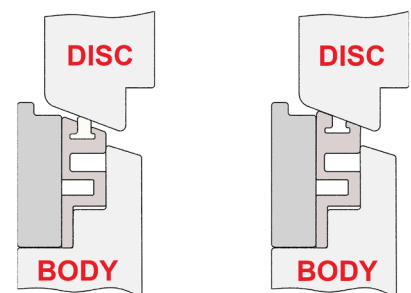
When the valve is shut, the disc slightly deflects the seat. So that the valve seat sealing surface on the disc.



When pressure is on the insert side, pressure is applied under the disc. This further amplifies the sealing force between the disc and the seat.



When pressure is on the non-insert side, the disc moves into the seat. Due to the spherical profile of the disc, the more the disc moves into the seat, the tighter the shut-off. If the elastic end to the valve seat ring, the valve seat is not fixed.



Fire-safe seats



TORQUE DATA (Nm) & SHUT-OFF DIFFERENTIAL PRESSURE (Mpa)

(Please note: the test condition of the torque value: clean water at room temperature)

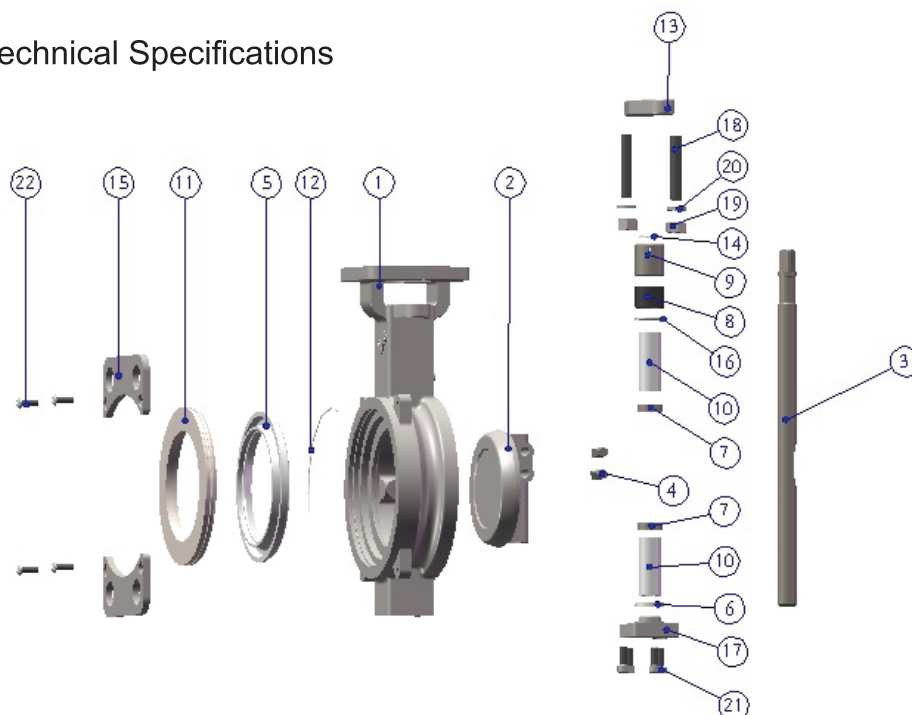
150LB/PN16/10K

Mpa		0.5	1	1.5	2
DN65	2-1/2"	26	28	31	33
DN80	3"	32	35	38	41
DN100	4"	50	56	63	69
DN125	5"	63	72	80	85
DN150	6"	93	109	115	129
DN200	8"	157	182	198	220
DN250	10"	209	245	282	321
DN300	12"	266	335	408	488
DN350	14"	455	588	717	858
DN400	16"	566	740	820	1100
DN450	18"	735	966	1250	1440
DN500	20"	988	1300	1622	1950
DN600	24"	1509	2008	2505	3023

300LB/PN40/20K

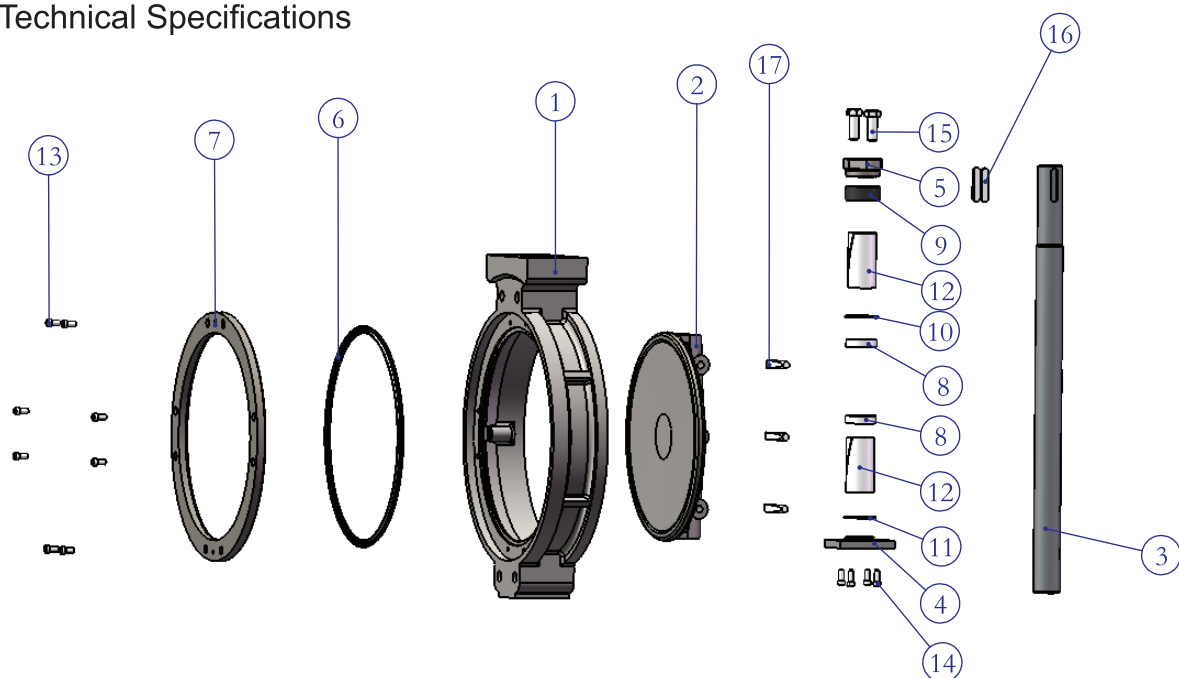
Mpa		0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
DN65	2-1/2"	26	28	31	33	36	38	41	44	45	49
DN80	3"	32	35	38	41	45	48	51	54	56	61
DN100	4"	50	56	63	69	76	82	89	95	99	108
DN125	5"	76	88	101	113	125	137	150	162	170	187
DN150	6"	101	120	139	158	178	197	216	236	247	274
DN200	8"	190	228	268	308	347	387	426	466	491	545
DN250	10"	273	337	403	470	537	604	670	737	779	871
DN300	12"	391	476	565	655	743	833	921	1011	1066	1189
DN350	14"	544	722	906	1092	1275	1461	1645	1831	1946	2201
DN400	16"	661	872	1090	1311	1529	1749	1967	2188	2324	2626
DN450	18"	872	1140	1416	1696	1972	2252	2529	2809	2982	3365
DN500	20"	1129	1497	1877	2262	2642	3027	3407	3792	4029	4556
DN600	24"	1537	2032	2542	3060	3571	4088	4599	5117	5436	6145

2-1/2"~12" Technical Specifications



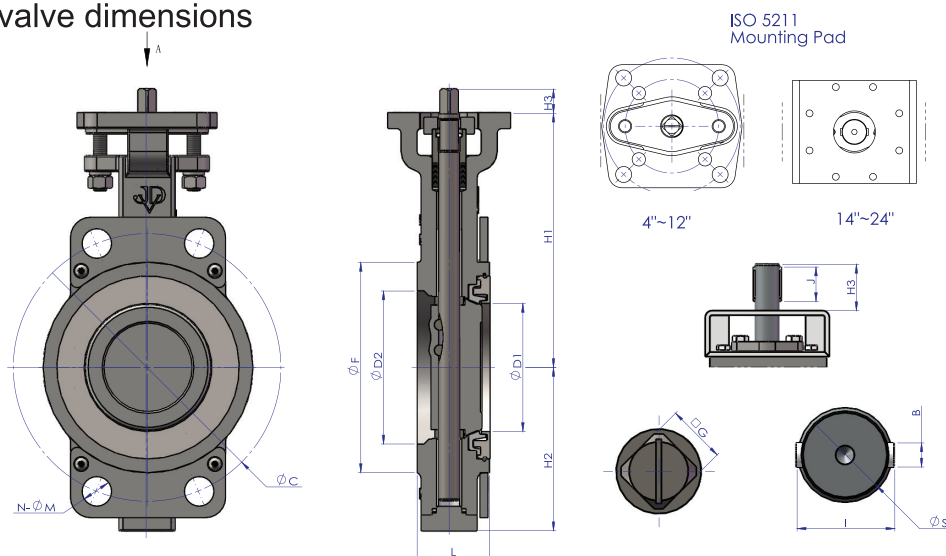
NO	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF8	A351 CF8M
2	DISC	A351 CF8	A351 CF8	A351 CF8M
3	STEM	A564 630	A564 630	A564 630
4	PIN	A564 630	A564 630	A564 630
5	SEAT	RPTFE	RPTFE	RPTFE
6	COVER GASKET	GRAPHITE	GRAPHITE	GRAPHITE
7	RING	A182 F316+HARD FACE		
8	GLAND PACKING	GRAPHITE	GRAPHITE	GRAPHITE
9	GLAND	A182 F304	A182 F304	A182 F316
10	THRUST BEARING	316+PTFE	316+PTFE	316+PTFE
11	BODY RETAINER	304SS	304SS	316SS
12	BODY RETAINER SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750
13	GLAND FLANGE	A216 WCB	A351 CF8	A351 CF8M
14	FIXED RING	INCONEL X-750	INCONEL X-750	INCONEL X-750
15	POSITIONING PALTE	304SS	304SS	304SS
16	PACKING SEAT	304SS	304SS	316SS
17	END COVER	A216 WCB	A351 CF8	A351 CF8M
18	GLAND FLANGE BOLT	A193 B7	A193 B8	A193 B8
19	GLAND FLANGE NUT	A194 2H	A194 B8	A194 B8
20	SPRING WASHER	304SS	304SS	316SS
21	END COVER SCREW	A193 B7	A193 B8	A193 B8
22	BODY RETAINER SCREW	A193 B8	A193 B8	A193 B8

14"~24" Technical Specifications



NO	PART NAME	MATERIAL		
1	BODY	A216 WCB	A351 CF8	A351 CF8M
2	DISC	A351 CF8	A351 CF8	A351 CF8M
3	STEM	A564 630	A564 630	A564 630
4	END COVER	A216 WCB	A351 CF8	A351 CF8M
5	CLAND	A216 WCB	A351 CF8	A351 CF8M
6	SEAT	RPTFE	RPTFE	RPTFE
7	BODY RETAINER	A182 F304	A182 F304	A182 F316
8	RING	A182 F316+HARD FACE		
9	GLAND PACKING	GRAPHITE	GRAPHITE	GRAPHITE
10	PACKING SEAT	A182 F304	A182 F304	A182 F316
11	COVER GASKET	GRAPHITE	GRAPHITE	GRAPHITE
12	THRUST BEARING	316+PTFE	316+PTFE	316+PTFE
13	BODY RETAINER SCREW	A193 B8	A193 B8	A193 B8
14	END COVER SCREW	A193 B7	A193 B8	A193 B8
15	GLAND BOLT	A193 B7	A193 B8	A193 B8
16	KEY	AISI-1045	AISI-1045	AISI-1045
17	PIN	A564 630	A564 630	A564 630

wafer ends valve dimensions



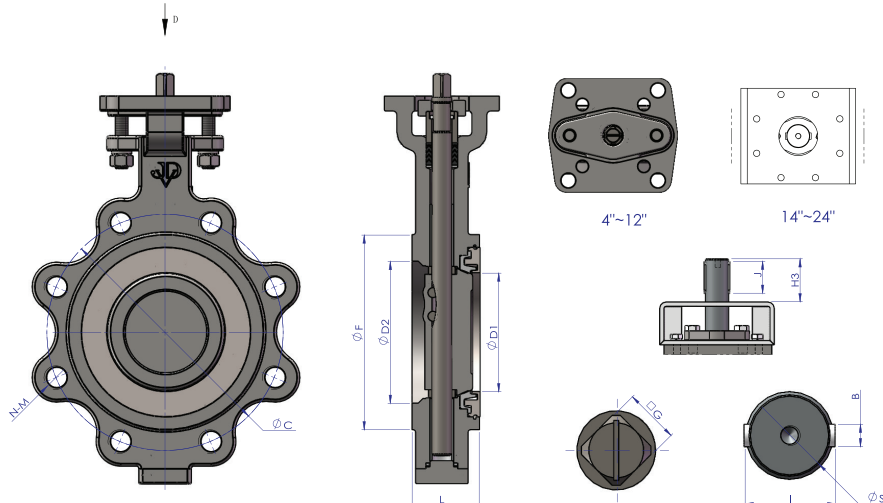
SIZE		L	D1	D2	F	150LB		PN16		10K		H1	H2	H3	H4	□G	S	B×I×J	ISO5211	Wt(Kg)
						C	N-M	C	N-M	C	N-M									
65	2-1/2"	48	59	74.6	104.8	139.7	4-19	145	4-18	140	4-19	158	109	18	30	11	14	5×18×25	F07/F10	5
80	3"	48	73.1	88.9	127	152.4	4-19	160	4-18	150	4-19	168	116	18	30	11	14	5×18×25	F07/F10	5.8
100	4"	54	95.6	114.3	157.2	190.5	4-19	180	4-18	175	4-19	190	122	18	30	11	14	5×18×25	F07/F10	8.2
125	5"	57	111.4	130	185.7	215.9	4-22	210	4-18	210	4-23	203	132	18	30	11	14	5×18×25	F07/F10	10.6
150	6"	57	141.5	158.8	215.9	241.3	4-22	240	4-22	240	4-23	208	144	23	36	14	18	6×23×30	F07/F10	13.4
200	8"	64	188	209.6	269.9	298.5	4-22	295	4-22	290	4-23	235	181	25	36	17	22	6×27×30	F10/F12	22
250	10"	71	235.9	254	323.8	362	4-25	355	4-26	355	4-25	295	211	36	36	22	28	8×34×30	F12/F14	36
300	12"	81	281.5	304.8	381	431.8	4-25	410	4-26	400	4-25	325	246	40	40	27	32	10×38×35	F14/F16	53
350	14"	92	314.3	343	412.8	476.3	4-29	470	4-26	445	4-25	399	286	50	50	27	36	10×42×45	F14	69
400	16"	102	362.8	387.4	469.9	539.8	4-30	525	4-30	510	4-27	451	316	70	70	36	45	14×52×60	F16	102
450	18"	114	413.3	444.5	533.4	577.9	4-30	585	4-30	565	4-27	474	340	80	80	36	48	14×55×70	F16	132
500	20"	127	454.9	492.1	584.2	635	4-1 1/8-8UN	650	4-33	620	4-27	497	385	90	90	46	55	16×63×80	F20	155
600	24"	154	548.8	495.3	692.2	749.3	4-1 1/4-8UN	770	4-36	730	4-33	610	465	100	100	55	60	18×68×90	F20	300

SIZE		L	D1	D2	F	300LB		PN40		20K		H1	H2	H3	H4	□G	S	B×I×J	ISO5211	Wt(Kg)
						C	N-M	C	N-M	C	N-M									
65	2-1/2"	48	59	74.6	104.8	149.2	4-22	145	4-18	140	4-19	158	109	18	30	11	14	5×18×25	F07/F10	5
80	3"	48	73.1	88.9	127	168.3	4-22	160	4-18	160	4-23	168	116	18	30	11	14	5×18×25	F07/F10	5.8
100	4"	54	95.6	114.3	157.2	200	4-22	190	4-22	185	4-23	190	122	18	30	11	14	5×18×25	F07/F10	8.2
125	5"	59	111.4	130	185.7	235	4-22	220	4-26	225	4-25	213	158	23	36	14	18	6×23×30	F07/F10	10.8
150	6"	59	141.5	158.8	215.9	269.9	4-22	250	4-26	260	4-25	223	160	25	36	17	22	6×27×30	F10/F12	14
200	8"	73	188	209.6	269.9	330.2	4-25	320	4-30	305	4-25	260	213	36	36	22	28	8×34×30	F12/F14	28
250	10"	83	235.9	254	323.8	387.4	4-29	385	4-33	380	4-27	325	245	40	40	27	32	10×38×35	F14/F16	43
300	12"	92	281.5	304.8	381	450.8	4-32	450	4-33	430	4-27	365	285	50	50	27	36	10×42×45	F14/F16	63
350	14"	117	314.3	343	412.8	514.4	4-1 1/8-8UN	510	4-36	480	4-33	415	302	80	80	36	48	14×55×70	F16	125
400	16"	133	362.8	387.4	469.9	571.5	4-1 1/4-8UN	585	4-39	540	4-33	450	330	90	90	46	55	16×63×80	F20	138
450	18"	149	413.3	444.5	533.4	628.6	4-1 1/4-8UN	610	4-39	605	4-33	545	400	100	100	55	60	18×68×90	F20	175
500	20"	159	454.9	492.1	584.2	685.8	4-1 1/4-8UN	670	4-42	660	4-33	566	425	120	120	—	65	18×73×100	F25	204
600	24"	181	548.8	495.3	692.2	812.8	4-1 1/2-8UN	795	4-48	770	4-39	625	480	140	140	—	70	20×79×120	F25	350



JDV CONTROL VALVES

Lug ends valve dimensions



150LB

SIZE		L	D1	D2	C	F	N	M	H1	H2	H3	H4	□ G	S	B×I×J	ISO5211	Wt(Kg)
65	2-1/2"	48	59	74.6	139.7	104.8	4	5/8"-11UNC	158	109	18	30	11	14	5×18×25	F07/F10	6.5
80	3"	48	73.1	88.9	152.4	127	4	5/8"-11UNC	168	116	18	30	11	14	5×18×25	F07/F10	7.8
100	4"	54	95.6	114.3	190.5	157.2	8	5/8"-11UNC	190	122	18	30	11	14	5×18×25	F07/F10	12
125	5"	57	111.4	130	215.9	185.7	8	5/8"-11UNC	203	132	18	30	11	14	5×18×25	F07/F10	14
150	6"	57	141.5	158.8	241.3	215.9	8	3/4"-10UNC	208	144	23	36	14	18	6×23×30	F07/F10	18
200	8"	64	188	209.6	298.5	269.9	8	3/4"-10UNC	235	181	25	36	17	22	6×27×30	F10/F12	29
250	10"	71	235.9	254	362	323.8	12	7/8"-9UNC	295	211	36	36	22	28	8×34×30	F12/F14	48
300	12"	81	281.5	304.8	431.8	381	12	7/8"-9UNC	325	246	40	40	27	32	10×38×35	F14/F16	73
350	14"	92	314.3	343	476.3	412.8	12	1"-8UNC	399	286	50	50	27	36	10×42×45	F14	120
400	16"	102	362.8	387.4	539.8	469.9	16	1"-8UNC	451	316	70	70	36	45	14×52×60	F16	138
450	18"	114	413.3	444.5	577.9	533.4	16	1-1/8"-8UN	474	340	80	80	36	48	14×55×70	F16	188
500	20"	127	454.9	492.1	635	584.2	20	1-1/8"-8UN	497	385	90	90	46	55	16×63×80	F20	227
600	24"	154	548.8	495.3	749.3	692.2	20	1-1/4"-8UN	610	465	100	100	55	60	18×68×90	F20	340

300LB

SIZE		L	D1	D2	C	F	N	M	H1	H2	H3	H4	□ G	S	B×I×J	ISO5211	Wt(Kg)
65	2-1/2"	48	59	74.6	149.2	104.8	8	3/4"-10UNC	158	109	18	30	11	14	5×18×25	F07/F10	9
80	3"	48	73.1	88.9	168.3	127	8	3/4"-10UNC	168	116	18	30	11	14	5×18×25	F07/F10	9
100	4"	54	95.6	114.3	200	157.2	8	3/4"-10UNC	190	122	18	30	11	14	5×18×25	F07/F10	12
125	5"	59	111.4	130	235	185.7	8	3/4"-10UNC	213	158	23	36	14	18	6×23×30	F07/F10	14
150	6"	59	141.5	158.8	269.9	215.9	12	3/4"-10UNC	223	160	25	36	17	22	6×27×30	F10/F12	25
200	8"	73	188	209.6	330.2	269.9	12	7/8"-9UNC	260	213	25	36	22	28	8×34×30	F12/F14	36
250	10"	83	235.9	254	387.4	323.8	16	1"-8UNC	325	245	40	40	27	32	10×38×35	F14/F16	62
300	12"	92	281.5	304.8	450.8	381	16	1-1/8"-8UN	365	285	50	50	27	36	10×42×45	F14/F16	84
350	14"	117	314.3	343	514.4	412.8	20	1-1/8"-8UN	415	302	80	80	36	48	14×55×70	F16	154
400	16"	133	362.8	387.4	571.5	469.9	20	1-1/4"-8UN	450	330	90	90	46	55	16×63×80	F20	196
450	18"	149	413.3	444.5	628.6	533.4	24	1-1/4"-8UN	545	400	100	100	55	60	18×68×90	F20	250
500	20"	159	454.9	492.1	685.8	584.2	24	1-1/4"-8UN	566	425	120	120	—	65	18×73×100	F25	386
600	24"	181	548.8	495.3	812.8	692.2	24	1-1/2"-8UN	625	480	140	140	—	70	20×79×120	F25	580

HOW TO ORDER

A. SPECIFICATION		B. BODY MAT'L		C. DISC MAT'L		D. STEM MAT'L	
A1	10K	02	WCB(1.0619)	S	WCB(1.0619)	22	630(1.4542)
A2	20K	03	CF8(1.4308)	A	CF8(1.4308)	25	XM-19
C1	ASME CLASS 150	04	CF8M(1.4408)	C	CF8M(1.4408)		
C2	ASME CLASS 300	05	CF3(1.4306)	D	CF3(1.4306)		
D2	DIN PN16	06	CF3M(1.4404)	E	CF3M(1.4404)		
D3	DIN PN25						
D4	DIN PN40						
E. SEAT MAT'L		F. SIZE		G . OPTION		H. END CONNECTION	
G	G-PTFE(15% GLASS FIBER+PTFE)	65	2-1/2"	F	FIRE SAFE	W	WAFER
C	C-PTFE(15% CARBON+PTFE)	80	3"	L	LEVER	L	LUG
S	S-PTFE(50% 316+PTFE)	100	4"	G	GEAR		
T	TFM-1600	125	5"	A	BARE SHAFT		
E	PEEK	150	6"	N	NACE		
F	PCTFE	200	8"	C	CRYOGENIC		
		250	10"				
		300	12"				
		350	14"				
		400	16"				
		450	18"				
		500	20"				
		600	24"				