JDV CONTROL VALVES

JBT / JBTM Series

Trunnion Type Soft Metal Seat Ball Valve





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Trunnion Type Soft Metal Seat Ball Valve

Full Bore Three Piece Flanged Ends

ANSI 150/300/600LB

Product Features:

1. Trunnion ball design keeps the seats touch ball tightly to keep stable and lower torque.
2. Double Block and Bleed design keeps the ball to fully open and fully close.
3. Optional soft seat or metal seat for different using conditions.
4. Cavity pressure relief
5. Fire Safe Design
6. Anti Blow-Out Stem
7. Anti-Static Device
8. Locking Device
9. ISO 5211 Mounting Pad Design
10. Gear Device/Actuator Device





API 607 4th Fire Safe Test



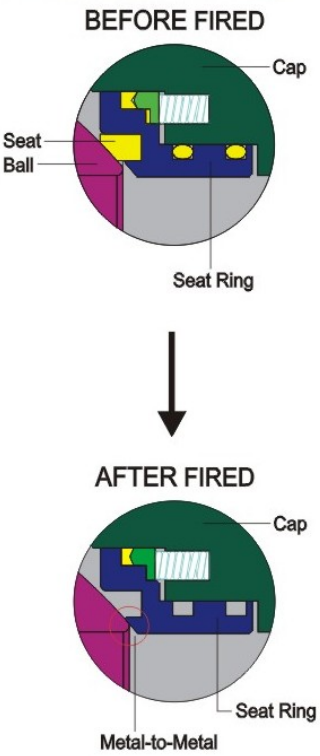
HVOF Thermal Spray

Applicable Standards:

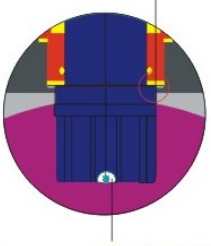
- Body material：Standard in WCB, CF8, CF8M
  Special material is available according to requirements.
- Nominal size：2" to 24"(DN50 to DN600)
- Pressure rating：ANSI 150/300/600LB
- End connections：RF, RTJ
- Temperature range for Soft Seat (JBT Series)：- 29 Deg C ~ 180 Deg C
  Temperature range for Metal Seat (JBTM Series)：- 29 Deg C ~ 500 Deg C
- Face-To-Face Dimensions：ANSI B16.10
- Flanged Dimensions：ANSI B16.5
- Body Pressure Test Rating：ANSI B16.34 / API 598
- Seat Leakage (JBT Series)：ANSI B16.34 / API 598
  (JBTM Series)：ANSI B16.104 / FCI70-2 CLASS V
- Casting：MSS-SP-25 / MSS-SP-55
- Fire Test：API 607 4TH EDITION
- Sour Service: NACE MR-01-75

Design & Structures

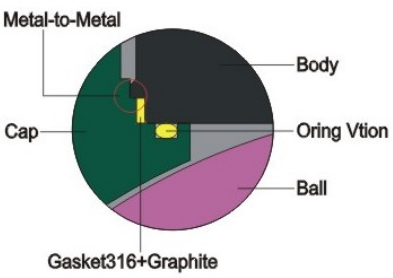
Fire Safe Design



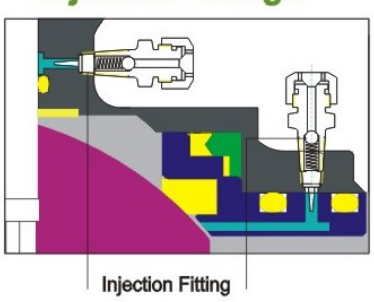
Anti Blow-out Stem



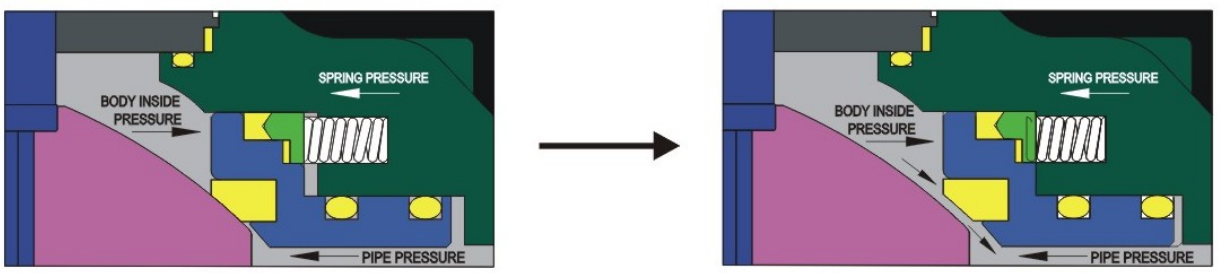
Anti Static Device



Emergency Sealant Injection Design



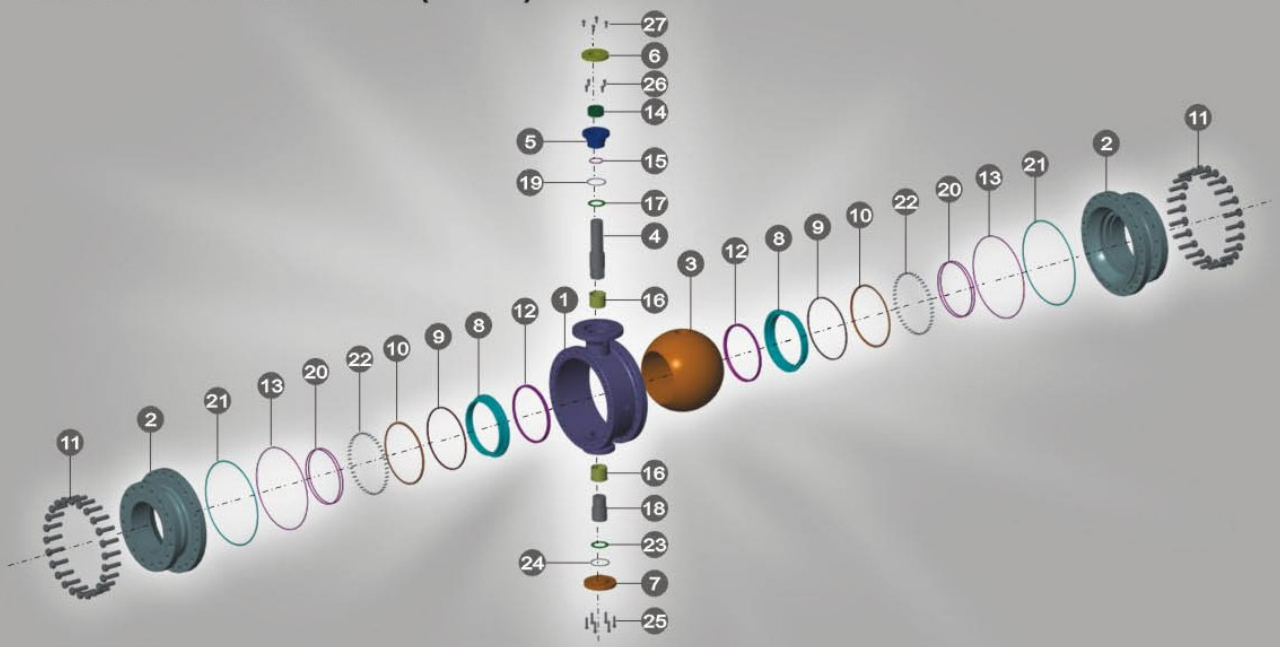
Valve Cavity Pressure Relief



BEFORE PRESSURE RELIEF

AFTER PRESSURE RELIEF

JBT SERIES DN50~DN350 (2"~14")

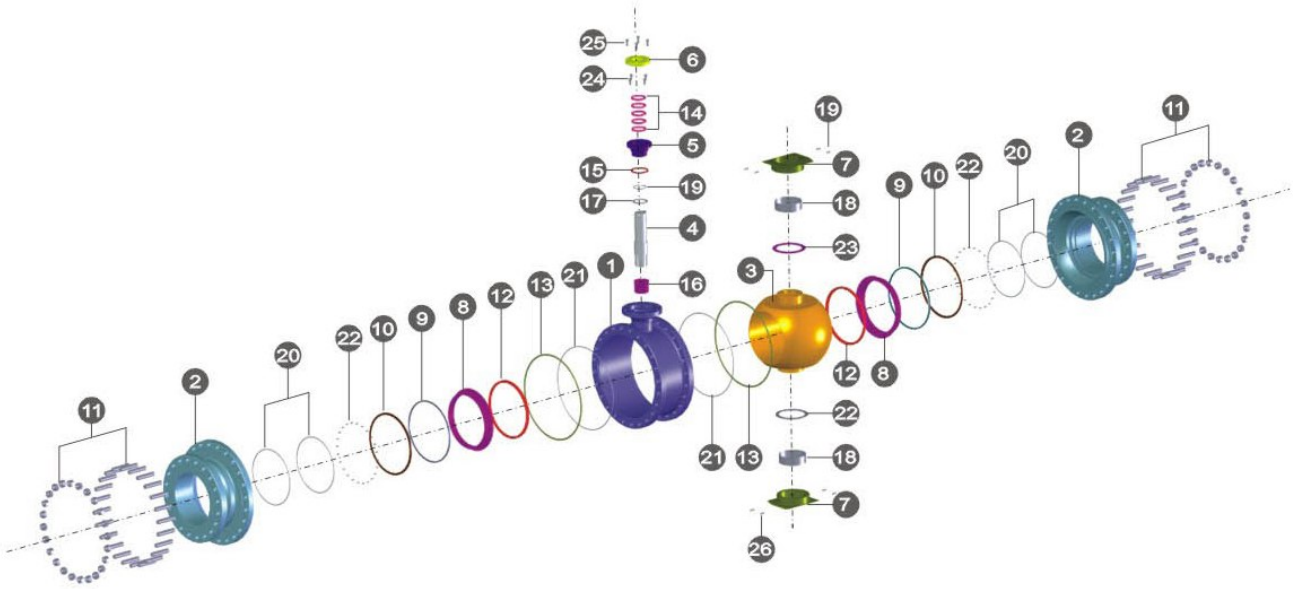


MATERIAL

NO	PART NAME	MATERIAL		
1	BODY	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
2	CAP	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
3	BALL	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
4	STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
5	BODY GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
6	GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
7	BEARING RETAINER	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
8	SEAT RING	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
9	SEAT RING SEAL	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
10	SEAT RING RETAINER	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
11	BOLT&NUT	B7 & 2H	B8 & 8	B8 & 8
12	SEAT	15%G-PTFE/TFM-1600	15%G-PTFE/TFM-1600	15%G-PTFE/TFM-1600
13	BODY GASKET	GRAPHITE	GRAPHITE	GRAPHITE
14	GLAND PACKING	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
15	GLAND THRUST WASHER	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
16	BEARING	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
17	STEM THRUST WASHER	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
18	TRUNNION STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
19	STEM O-RING	VITON	VITON	VITON
20	SEAT RING O-RING	VITON	VITON	VITON
21	CAP O-RING	VITON	VITON	VITON
22	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750
23	TRUNNION STEM WASHER	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
24	TRUNNION STEM GASKET	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
25	RETAINER BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
26	GLAND BODY BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
27	GLAND BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL

Above materials may vary with different using conditions.

JBT SERIES DN400~DN600 (16"~24")



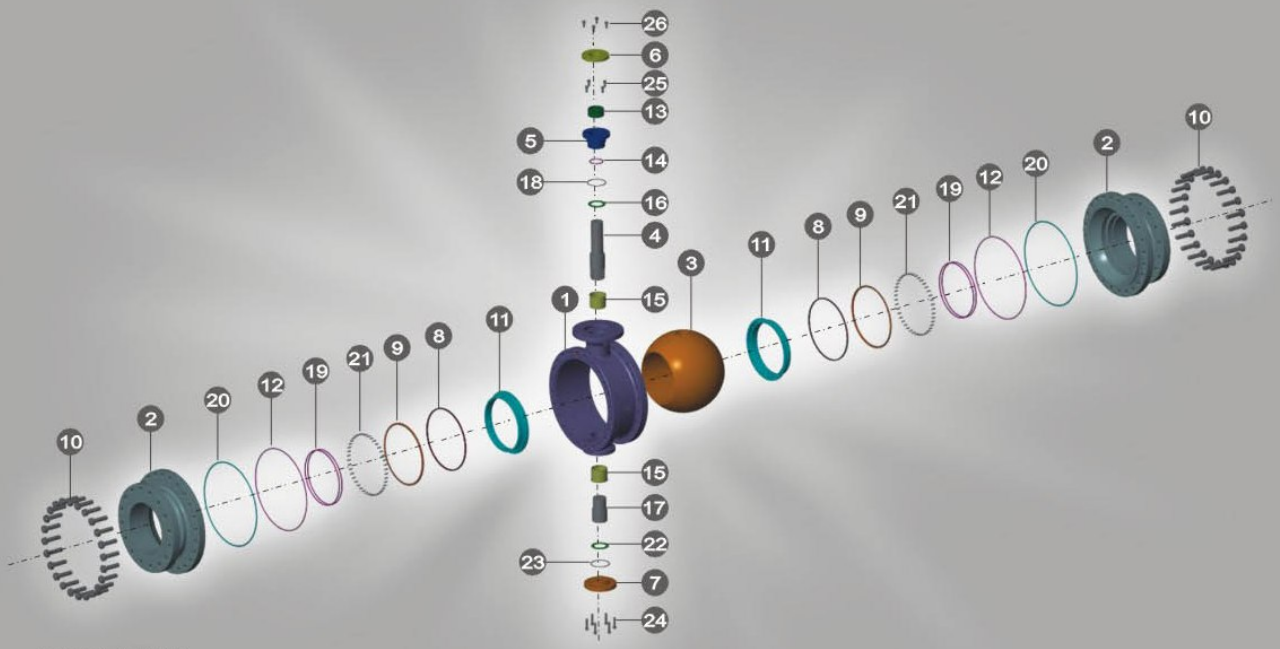
MATERIAL

NO	PART NAME	MATERIAL		
1	BODY	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
2	CAP	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
3	BALL	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
4	STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
5	BODY GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
6	GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
7	TRUNNION	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
8	SEAT RING	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
9	SEAT RING SEAL	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
10	SEAT RING RETAINER	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
11	BOLT&NUT	B7 & 2H	B8 & 8	B8 & 8
12	SEAT	15%G-PTFE/TFM-1600	15%G-PTFE/TFM-1600	15%G-PTFE/TFM-1600
13	BODY GASKET	GRAPHITE	GRAPHITE	GRAPHITE
14	GLAND PACKING	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%/G-PTFE/GRAPHITE
15	GLAND THRUST WASHER	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
16	BEARING	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
17	STEM THRUST WASHER	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
18	TRUNNION BEARING	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
19	STEM O-RING	VITON	VITON	VITON
20	SEAT RING O-RING	VITON	VITON	VITON
21	CAP O-RING	VITON	VITON	VITON
22	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750
23	WASHER	SUS316+PTFE	SUS316+PTFE	SUS316+PTFE
24	GLAND BODY BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
25	GLAND BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
26	PIN	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL

Above materials may vary with different using conditions.

JDV CONTROL VALVES

JBTM SERIES DN50~DN350 (2"~14")



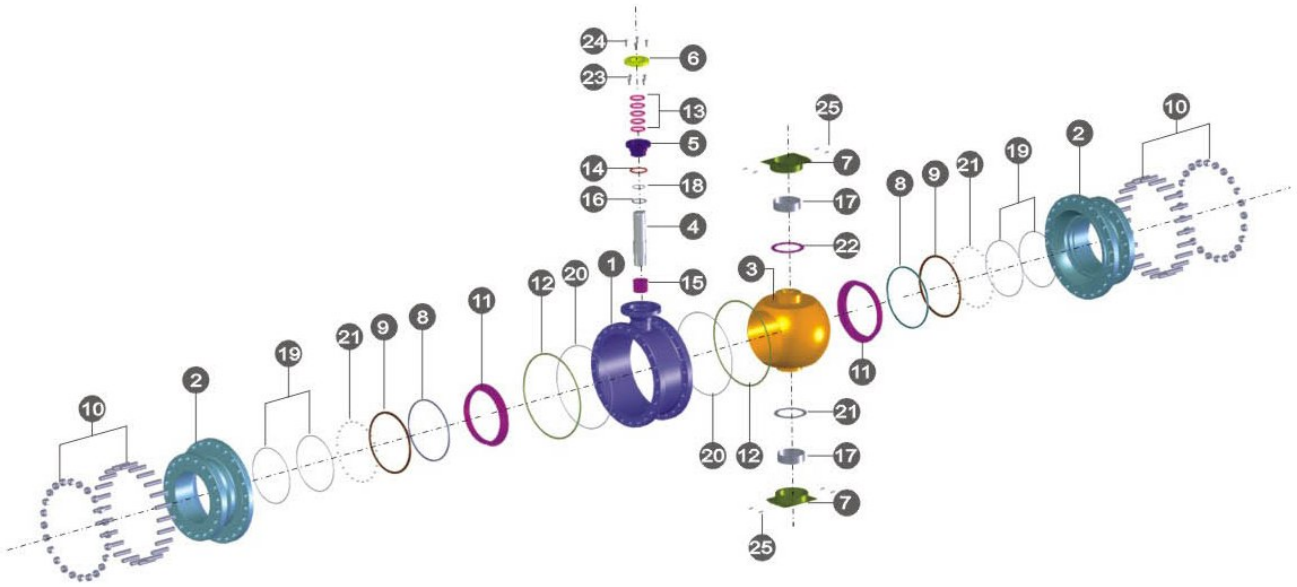
MATERIAL

NO	PART NAME	MATERIAL		
1	BODY	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
2	CAP	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
3	BALL	ASTM A351-CF8+HCr/TC	ASTM A351-CF8+HCr/TC	ASTM A351-CF8M+HCr/TC
4	STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
5	GLAND BODY	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
6	GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
7	BEARING RETAINER	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
8	SEAT RING SEAL	GRAPHITE	GRAPHITE	GRAPHITE
9	SEAT RING RETAINER	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
10	BOLT&NUT	B7 & 2H	B8 & 8	B8 & 8
11	SEAT	ASTM A351-CF8+STELLITE/TC	ASTM A351-CF8+STELLITE/TC	ASTM A351-CF8M+STELLITE/TC
12	BODY GASKET	GRAPHITE	GRAPHITE	GRAPHITE
13	GLAND PACKING	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
14	GLAND THRUST WASHER	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
15	BEARING	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
16	STEM THRUST WASHER	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
17	TRUNNION STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
18	STEM O-RING	VITON	VITON	VITON
19	SEAT RING O-RING	VITON	VITON	VITON
20	CAP O-RING	VITON	VITON	VITON
21	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750
22	TRUNNION STEM WASHER	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
23	TRUNNION STEM GASKET	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
24	RETAINER BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
25	GLAND BODY BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
26	GLAND BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL

Notes:
HCr = Hard Chrome Plated
TC = Tungsten Carbide Coated

Above materials may vary with different using conditions.

JBTM SERIES DN400~DN600 (16"~24")



MATERIAL

NO	PART NAME	MATERIAL		
1	BODY	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
2	CAP	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
3	BALL	ASTM A351-CF8+HCr/TC	ASTM A351-CF8+HCr/TC	ASTM A351-CF8M+HCr/TC
4	STEM	ASTM A182 F304	ASTM A182 F304	ASTM A182 F316
5	BODY GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
6	GLAND	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
7	TRUNNION	ASTM A216-WCB	ASTM A351-CF8	ASTM A351-CF8M
8	SEAT RING SEAL	GRAPHITE	GRAPHITE	GRAPHITE
9	SEAT RING RETAINER	ASTM A351-CF8	ASTM A351-CF8	ASTM A351-CF8M
10	BOLT&NUT	B7 & 2H	B8 & 8	B8 & 8
11	SEAT	ASTM A351-CF8+STELLITE/TC	ASTM A351-CF8+STELLITE/TC	ASTM A351-CF8M+STELLITE/TC
12	BODY GASKET	GRAPHITE	GRAPHITE	GRAPHITE
13	GLAND PACKING	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
14	GLAND THRUST WASHER	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE	15%G-PTFE/GRAPHITE
15	BEARING	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
16	STEM THRUST WASHER	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
17	TRUNNION BEARING	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
18	STEM O-RING	VITON	VITON	VITON
19	SEAT RING O-RING	VITON	VITON	VITON
20	CAP O-RING	VITON	VITON	VITON
21	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750
22	WASHER	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE	SUS316+PTFE /HARD FACE
23	GLAND BODY BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
24	GLAND BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL
25	PIN	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL

Notes:
HCr = Hard Chrome Plated
TC = Tungsten Carbide Coated

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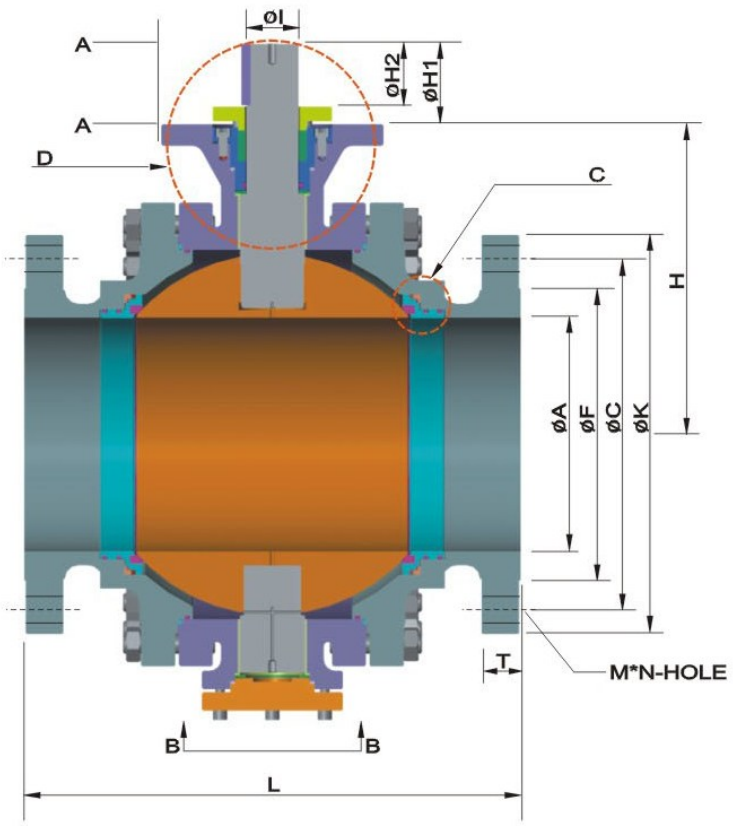
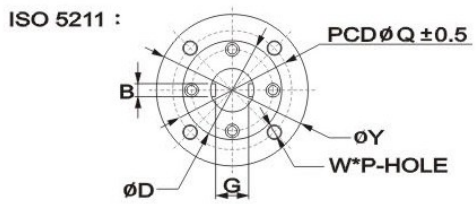
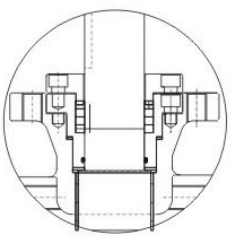
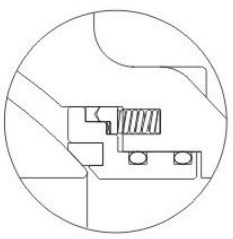
JBT / JBTM SERIES DN50~DN350 (2"~14")

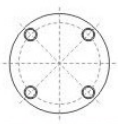












DIMENSION (ANSI-150LB FLANGED) (M.M.)

SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
50	2"	49	92	120.6	152	177.8	19.1	120	60	40	19	4	102	M10	27	8	17	4	130	80
80	3"	74	127	152.5	190	203.2	23.9	155	61	45	19	4	102	M10	36.3	10	26.3	4	130	88
100	4"	100	157	190.5	229	228.6	23.9	180	84	60	19	8	125	M12	40	10	30	4	153	102
150	6"	150	216	241.5	279	393.7	25.4	235	91	66	22	8	165	M20	48	14	37	4	210	124
200	8"	201	270	298.5	343	457.2	28.6	300	95	74	22	8	165	M20	60	18	46	4	210	128
250	10"	252	324	362	406	533.4	30.2	340	95	74	25	12	165	M20	60	18	46	4	210	128
300	12"	303	381	432	483	609.6	31.8	405	120	95	25	12	254	M16	70	20	55	8	290	156
350	14"	334	413	476.5	533	685.8	35.0	440	146	110	29	12	254	M16	75	20	59	8	300	170

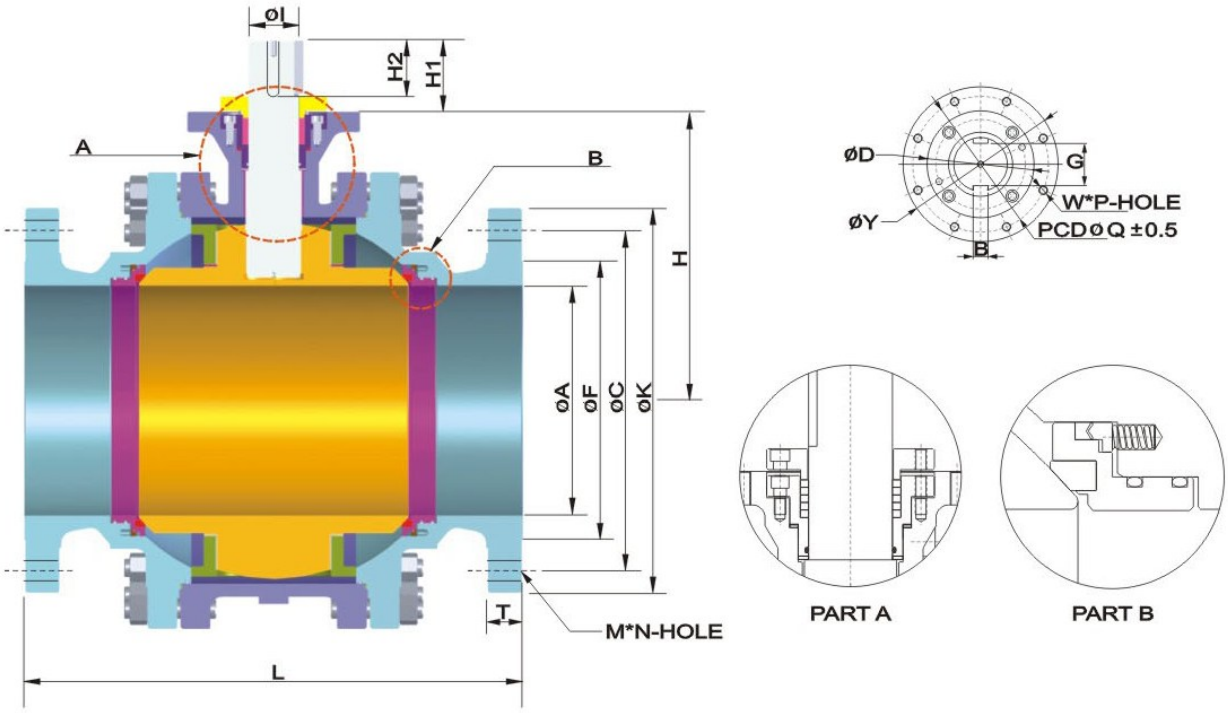
DIMENSION (ANSI-300LB FLANGED) (M.M.)

SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
50	2"	49	92	127	165	216	22.3	120	60	40	19	8	102	M10	27	8	17	4	130	80
80	3"	74	127	168	210	282	28.6	155	61	45	22	8	102	M10	36.3	10	26.3	4	130	88
100	4"	100	157	200	254	304.8	31.8	180	84	60	22	8	125	M12	40	10	30	4	153	102
150	6"	150	216	270	318	403	36.6	235	91	66	22	12	165	M20	48	14	37	4	210	124
200	8"	201	270	330	381	502	41.3	300	95	74	25	12	165	M20	60	18	46	4	210	128
250	10"	252	324	387.5	444	569	47.7	340	95	74	29	16	165	M20	60	18	46	4	210	128
300	12"	303	381	451	521	647.7	50.8	405	120	95	32	16	254	M16	70	20	55	8	290	156
350	14"	334	413	514.5	584	762	54.0	440	146	110	32	20	254	M16	75	20	59	8	300	170

DIMENSION (ANSI-600LB FLANGED) (M.M.)

SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
50	2"	49	92	127	165	292	31.8	116.5	60	40	19	8	102	M10	27	8	17	4	130	73
80	3"	74	127	168	210	356	38.2	155	61	45	22	8	102	M10	36.3	10	26.3	4	130	88
100	4"	100	157	216	273	431.8	44.5	180	84	60	25	8	125	M12	40	10	30	4	153	102
150	6"	150	216	292	356	558.8	54.1	235	91	66	29	12	165	M20	48	14	37	4	210	124
200	8"	201	270	349	419	660	62	300	95	74	32	12	165	M20	60	18	46	4	210	128
250	10"	252	324	432	508	787	69.9	340	95	74	35	16	254	M16	60	18	46	8	290	128
300	12"	303	381	489	559	838	73.1	405	120	95	35	20	254	M16	70	20	55	8	290	156
350	14"	334	413	527	603	889	76.2	440	146	110	38	20	254	M16	75	20	59	8	300	170

JBT / JBTM SERIES DN400~DN600 (16"~24")



DIMENSION (ANSI-150LB FLANGED) (M.M.)

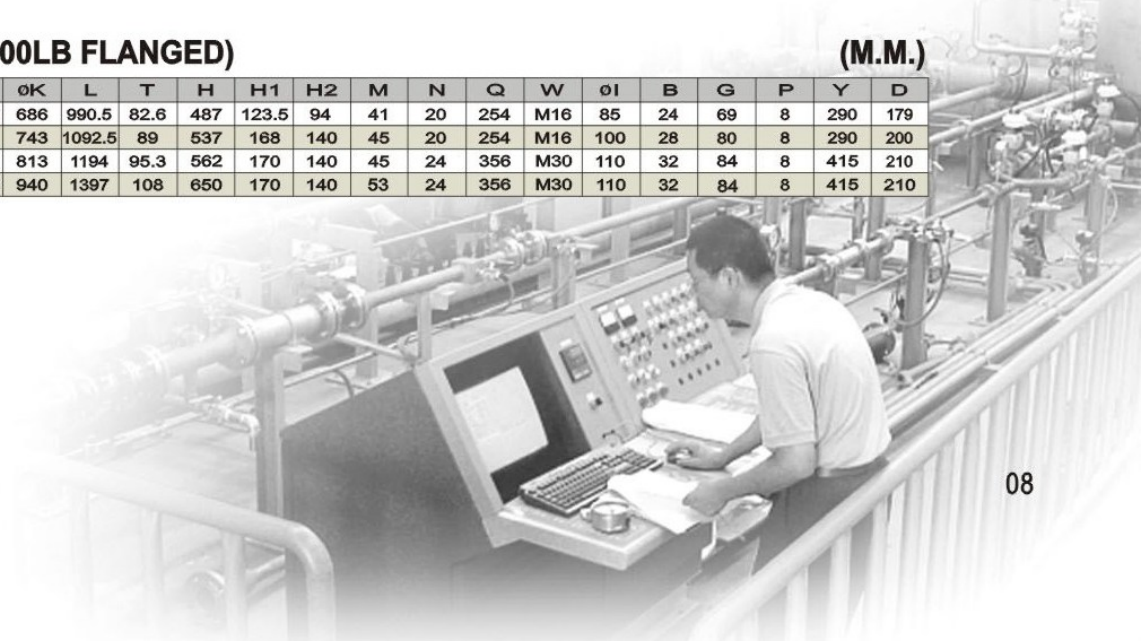
SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
400	16"	385	470	539.8	597	762	36.6	487	123.5	94	29	16	254	M16	85	24	69	8	290	179
450	18"	436	533	578	635	863.6	39.7	531	168	140	32	16	254	M16	100	28	80	8	290	200
500	20"	487	584	653	698	914.5	42.9	562	170	140	32	20	356	M30	110	32	84	8	415	210
600	24"	589	692	749.5	813	1067	47.8	650	170	140	35	20	356	M30	110	32	84	8	415	210

DIMENSION (ANSI-300LB FLANGED) (M.M.)

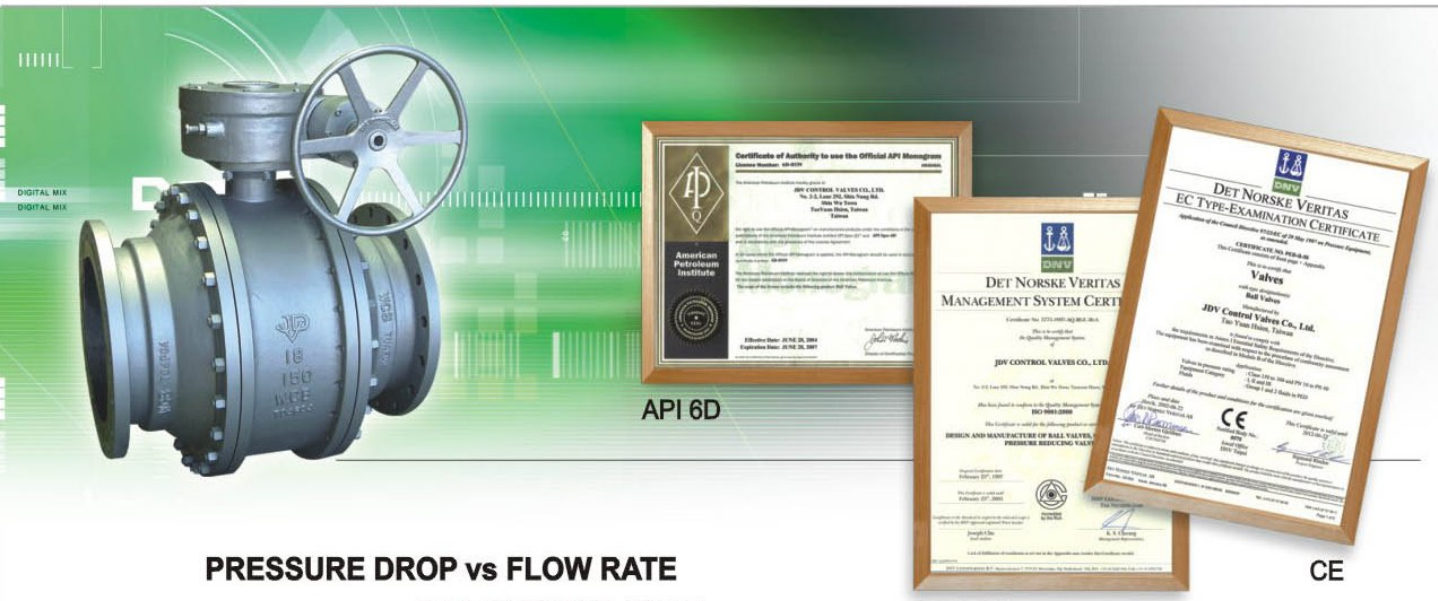
SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
400	16"	385	470	571.5	648	838.2	57.2	487	123.5	94	35	20	254	M16	85	24	69	8	290	179
450	18"	436	533	628.7	711	914.4	60.5	537	168	140	35	24	254	M16	100	28	80	8	290	200
500	20"	487	584	686	775	990.6	63.5	562	170	140	35	24	356	M30	110	32	84	8	415	210
600	24"	589	692	813	914	1092.5	69.9	650	170	140	41	24	356	M30	110	32	84	8	415	210

DIMENSION (ANSI-600LB FLANGED) (M.M.)

SIZE		øA	øF	øC	øK	L	T	H	H1	H2	M	N	Q	W	øI	B	G	P	Y	D
400	16"	385	470	603.3	686	990.5	82.6	487	123.5	94	41	20	254	M16	85	24	69	8	290	179
450	18"	436	533	654	743	1092.5	89	537	168	140	45	20	254	M16	100	28	80	8	290	200
500	20"	487	584	724	813	1194	95.3	562	170	140	45	24	356	M30	110	32	84	8	415	210
600	24"	589	692	838.2	940	1397	108	650	170	140	53	24	356	M30	110	32	84	8	415	210

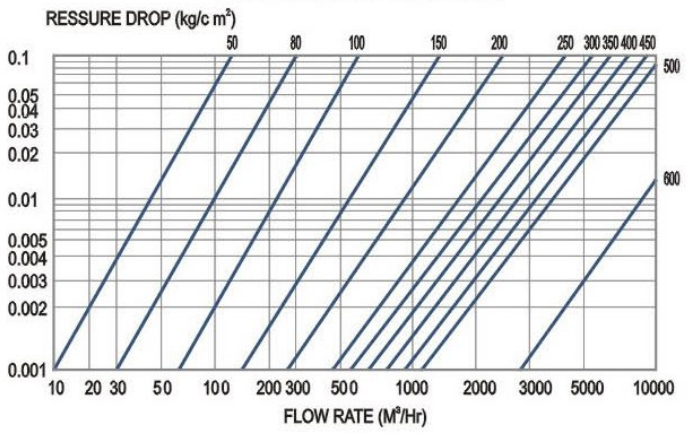


JDV CONTROL VALVES



PRESSURE DROP vs FLOW RATE

FULL BORE BALL VALVE

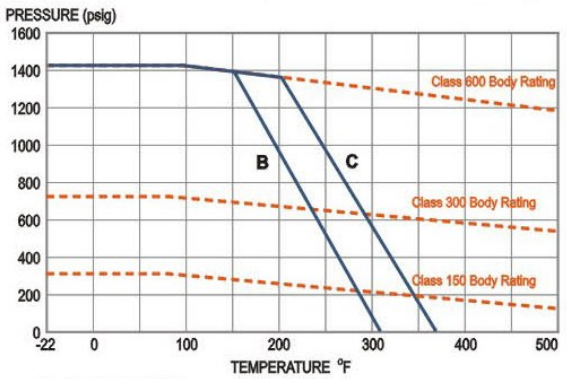


Cv VALUE

SIZE(MM)	50	80	100	150	200	250	300	350	400	450	500	600
150#	500	1350	2500	5300	10500	17500	26300	31850	43300	57300	74500	112300
300#	460	1150	2200	5290	9600	16750	25500	30050	41700	55300	72300	109150
600#	400	1050	1850	4460	8730	14250	22550	28400	38150	50950	65600	98150

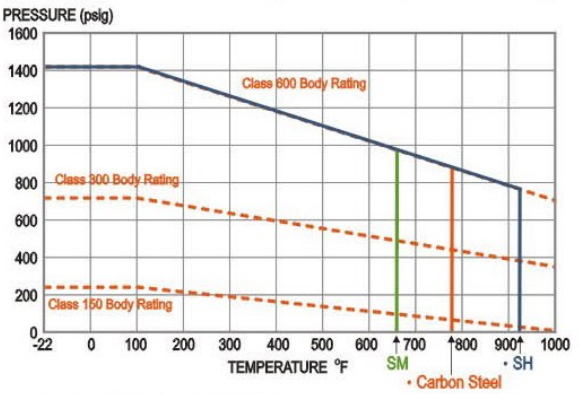
TEMPERATURE & PRESSURE CURVE

JBT DN50~DN600(Class 150 & 300 & 600)



B= Glass Fiber PTFE
C= Carbon Fiber PTFE

JBTM DN50~DN600(Class 150 & 300 & 600)



SM= Max Temperature 661°F (350°C)
• SH= Max Temperature 932°F (500°C)
Carbon Steel Max Temperature 797°F (425°C)

HOW TO ORDER

JBT → A → B C D → E → F → G

Ex: JBT → C1 → 04 C G → 250 → FGES → RF

A. SPECIFICATION

C1	ANSI 150LB
C2	ANSI 300LB
C3	ANSI 600LB
C4	ANSI 900LB
C5	ANSI 1500LB
C6	ANSI 2500LB

B. BODY MAT'L

02	WCB
03	CF8
04	CF8M
05	CF3
06	CF3M
07	CG8M
08	CG3M
11	LCB
12	LCC

C. BALL & STEM MAT'L

A	CF8
C	CF8M
D	CF3
E	CF3M
F	CG8M
H	CG3M

D. SEAT MAT'L

G	GLASS FIBER 15%+PTFE
C	CARBON 15%+PTFE
T	TFM-1600

E. SIZE

050	2"
080	3"
100	4"
150	6"
200	8"
250	10"
300	12"
350	14"
400	16"
450	18"
500	20"
600	24"

F. OPTION

F	FIRE SAFE
L	LONG STEM
I	LIFE LOADING
H	LEVER
G	GEAR
N	NACE
ES	EMERGENCY GREASE SEALS

G. END CONNECT

RF	RF FLANGED
RT	RTJ FLANGED

JBTM → A → B → C D → E → F → GH

Ex: JBTM → C1 → 04 → C C → 250 → FGES → RFSM

A. SPECIFICATION

C1	ANSI 150LB
C2	ANSI 300LB
C3	ANSI 600LB
C4	ANSI 900LB
C5	ANSI 1500LB
C6	ANSI 2500LB

B. BODY MAT'L

02	WCB
03	CF8
04	CF8M
05	CF3
06	CF3M
07	CG8M
08	CG3M
11	LCB
12	LCC

C. BALL & STEM MAT'L

A	CF8
C	CF8M
D	CF3
E	CF3M
F	CG8M
H	CG3M

D. SEAT MAT'L

A	CF8
C	CF8M
D	CF3
E	CF3M
F	CG8M
H	CG3M

E. SIZE

050	2"
080	3"
100	4"
150	6"
200	8"
250	10"
300	12"
350	14"
400	16"
450	18"
500	20"
600	24"

F. OPTION

F	FIRE SAFE
L	LONG STEM
I	LIFE LOADING
H	LEVER
G	GEAR
N	NACE
ES	EMERGENCY GREASE SEALS

G. END CONNECT

RF	RF FLANGED
RT	RTJ FLANGED

H. TEMPERATURE

SM	-29°C ~ 350°C
SH	-29°C ~ 500°C (CARBON STEEL MAX 425°C)

HOW TO ORDER

HEAD OFFICE
JDV CONTROL VALVES CO., LTD

NO. 2-2, LANE 292, SHIN NUNG ROAD, SHIN WU TOWN 327, TAOYUAN HSIEN, TAIWAN.
■ FACTORY
TEL: 886-3-4203366 FAX: 886-3-4202268 E-MAIL: webmaster@jdv.com.tw
■ SALES DEPARTMENT
TEL: 886-3-4205707 FAX: 886-3-4206818 E-MAIL: sales@jdv.com.tw

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