

**JC<sup>®</sup> - T<sup>®</sup>**

**METAL TO METAL BALL VALVES CATALOGUE**



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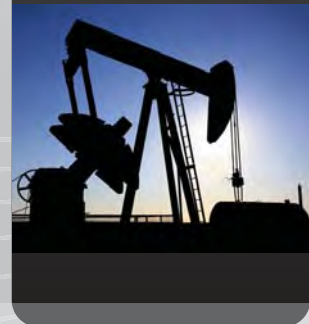
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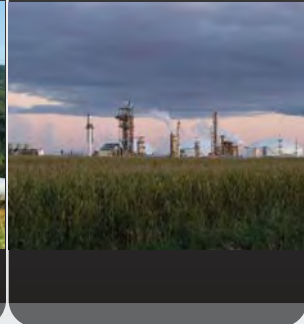
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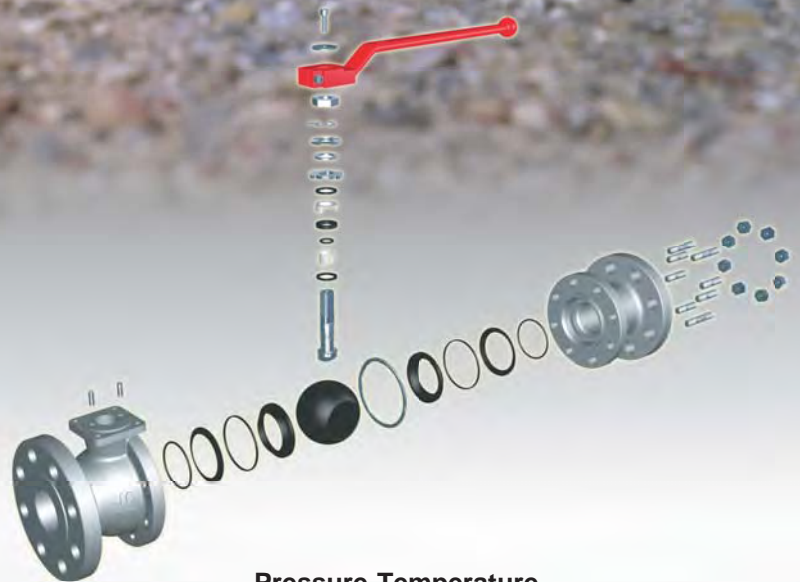
JC-TL is an international dynamic company renowned for its ability to design, develop and produce ball valves for Oil and Gas, Petrochemical, Pulp and Paper, Energy and General industries for forty years. Modern production methods as well as continuous process improvement result in highly efficient production in accordance with the highest international standards.

JC-TL has invested in the development of new products, quality assurance and protection against fugitive emissions in order to assist customers in safely controlling their processes. This is supported by numerous references from satisfied customers located throughout the world.

Additionally personalized technical service is offered worldwide by experienced staff through our extensive network of distributors.

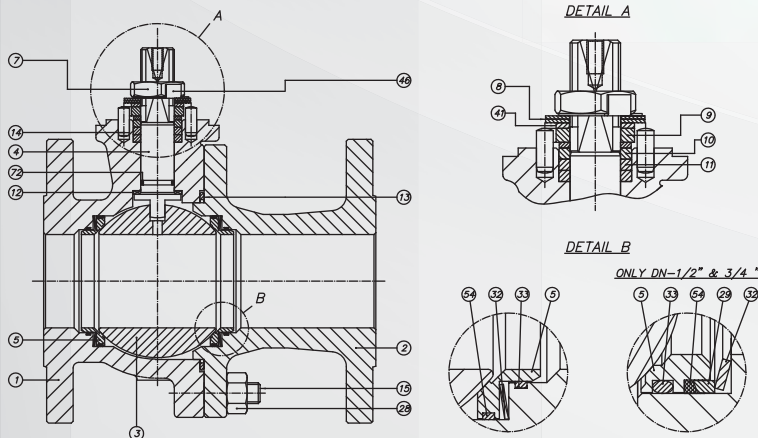
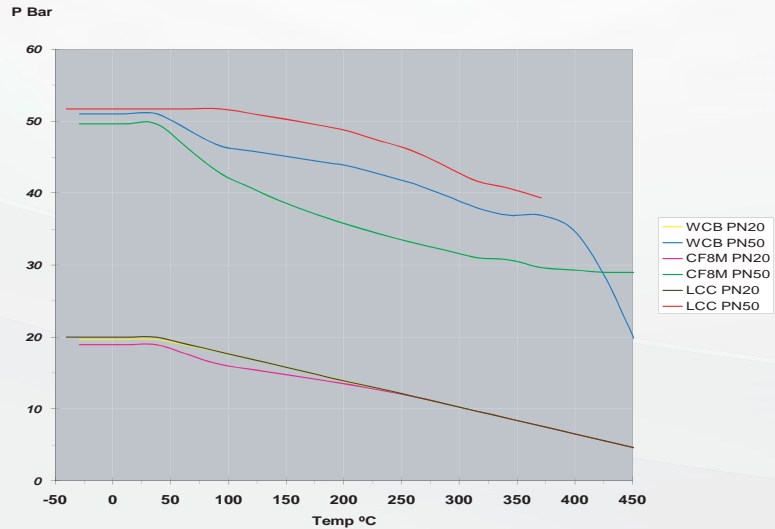


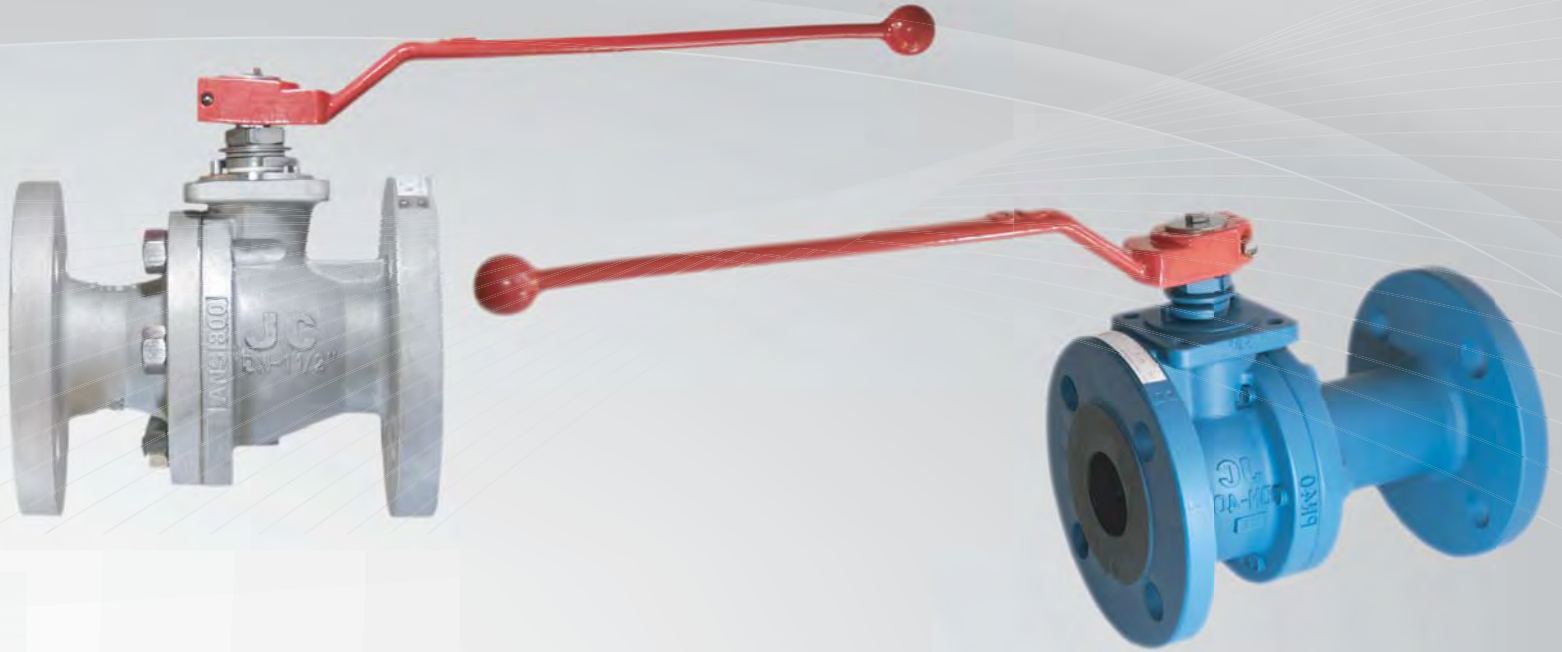
Item	Description	Material	
		AIM	IIM
1	Body	A216 Gr.WCB (C≤0.25%)	A351 Gr. CF8M
2	Body connector	A216 Gr.WCB (C≤0.25%)	A351 Gr. CF8M
3	Ball	316 S.S. + HT-65 Lapped	
4	Stem	See options	
5	Seat ring	316 S.S. + HT-65 Lapped	
7	Gland nut	Zinc plated carbon steel	AISI 303
8	Disk spring	Carbon steel	ENP Carbon Steel
9	Stop plate	Carbon steel	AISI 304
10	Gland	AISI 303	AISI 316
11	Gland packing	Graphite	
12	Stem thrust seal	316 S.S. + HT-65	
13	Body connector seal	AISI 316L +Graphite	
14	Stop pin	Carbon St.	Stainless St.
15	Stud	A193Gr. B7M	A193 Gr. B8M
28	Nut	A194 Gr. 2HM	A194 Gr. 8M
29	Washer (Only DN-15" & 20")	316 S.S. + HT-65	
32	Seat disk spring	Inconel X-750	
33	Seat Seal	See options	
41	Spacer (DN 40 to DN200)	Carbon steel	AISI 304
46	Locking washer	AISI 304	
54	Seat Seal	Graphite	
72	Stem "O" Ring	See options	



### Pressure-Temperature

For other materials consult ASME B16.34





## Ball Valves (Class 150/300)

### General Characteristics, Torque & CV, P&T Rating

GENERAL CHARACTERISTICS	Fig 515/3530 Series SFF	Split Body	Floating Ball	Full Bore	
<b>DESIGN STANDARDS</b>					
Valves design	API 6D / ISO 14313	ASME B16.34	BS 5351	NF E 29-470	ISO 17292
Body design	ASME VIII Div.1				
Shell thickness	ASME B16.34	BS 5351	ISO 17292		
Flanges	ASME B16.5 Raised face				
Face to face dimensions	ASME B16.10 Long pattern	API 6D / ISO 14313 EN 558-2 Series 3, 4 & 12			
Actuator mounting flange	ISO 5211				
Wetted parts materials and bolting	NACE MR.01.75				
Shell finishing quality	MSS SP 55				
Marking	API 6D / ISO 14313	BS 5351	ISO 17292	CE - PED	EN 19
<b>TESTS AND CERTIFICATES</b>					
Quality Assurance	ISO 9001	API Q1	CE - PED		
Fire Safe design	BS 6755 Part 2	API 6FA	ISO 10497	API 607 5 <sup>TH</sup> Edition	
Pressure testing	API 598	BS 6755 Part 1	ISO 5208 / ISO 17292	NF E 29-203	EN 12266
Other	ISO 14001	ATEX			

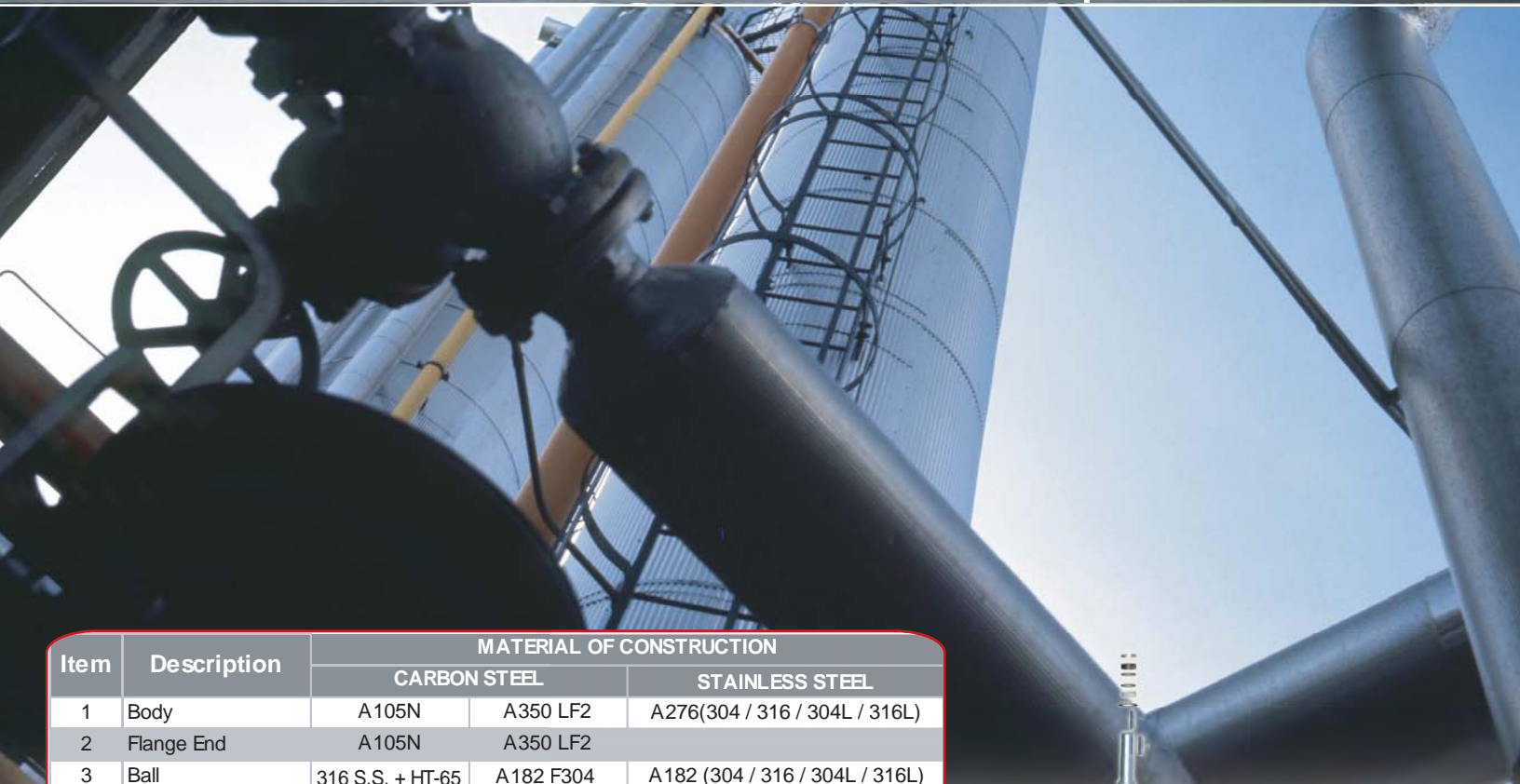
### Torque Values in lbf-ft

VALVE SIZE	AT DIFFERENTIAL PRESSURE		VALVE SIZE	AT DIFFERENTIAL PRESSURE	
	Class 150	Class 300		Class 150	Class 300
	20 bar	50 bar		20 bar	50 bar
DN 15 (½")	19	23	DN 65 (2½")	103	***
DN 20 (¾")	23	30	DN 80 (3")	125	211
DN 25 (1")	28	33	DN 100 (4")	201	***
DN 40 (1½")	40	52	DN 150 (6")	573	***
DN 50 (2")	66	100	DN 200 (8")	968	***

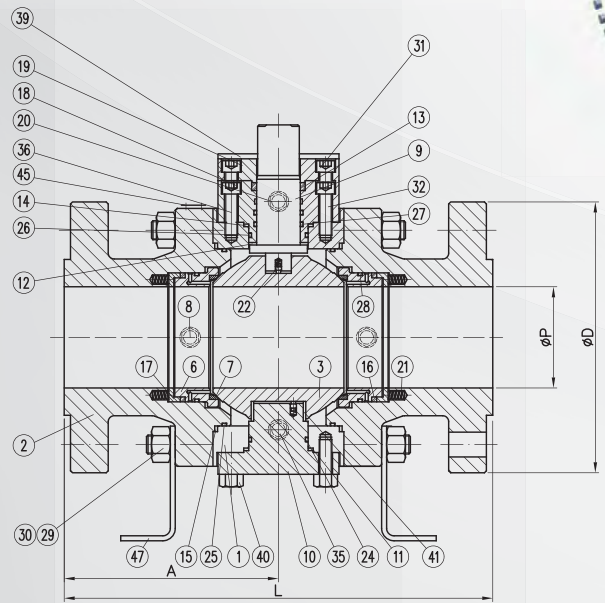
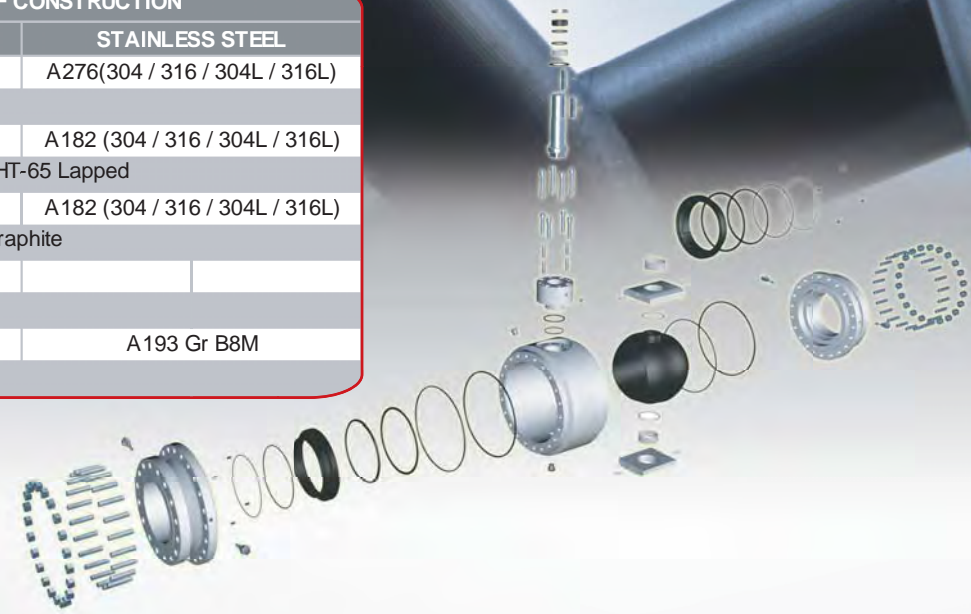
### Cv Values in Gallons/min

DN 15 (½")	DN 20 (¾")	DN 25 (1")	DN 40 (1½")	DN 50 (2")
25	45	90	200	315
DN 65 (2½")	DN 80 (3")	DN 100 (4")	DN 150 (6")	DN 200 (8")
640	1,160	1,915	4,870	10,440

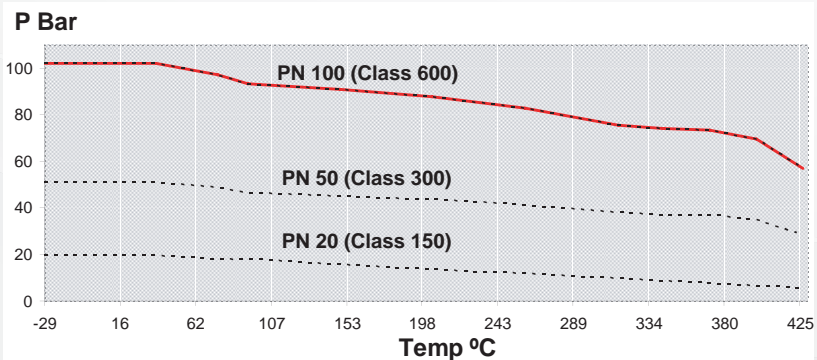
\*\*\* Consult Factory



Item	Description	MATERIAL OF CONSTRUCTION		
		CARBON STEEL		STAINLESS STEEL
1	Body	A105N	A350 LF2	A276(304 / 316 / 304L / 316L)
2	Flange End	A105N	A350 LF2	
3	Ball	316 S.S. + HT-65	A182 F304	A182 (304 / 316 / 304L / 316L)
7	Seat ring	316 S.S. + HT-65 Lapped		
8	Stem	316 S.S. + HT-65	A182 F304	A182 (304 / 316 / 304L / 316L)
13	Gland packing	Graphite		
12	Stem thrust seal	316 S.S. + HT-65		
14	Stop pin	Carbon St.	Stainless St.	
29	Stud	A193 Gr B7M	A320 L7	A193 Gr B8M
28	Nut	A194 Gr 2HM	A194 Gr. 8M	



Pressure-Temperature For A 216 Gr. WCB For other materials consult ASME B16.34





**Ball Valves (Class 150/300)**

General Characteristics, Torque & CV, P&T Rating

GENERAL CHARACTERISTICS	Fig 6015/6060	Split Body	Trunnion Ball	Full Bore/ Reduce Bore
<b>STANDARDS COMPLIANCE</b>				
Valves design	API 6D	ASME B16.34	ISO 17292	En 1983
Body design	ASME VIII Div. 1			
Shell thickness	ASME B16.34			
Flanges	ASME B16.5 Raised Face			
Face to Face	ASME B16.10			
Actuator mounting flange	ISO 5211			
Wetted parts materials and bolting	NACE MR.01.75			
Shell finishing quality	MSS SP 55			
Marking	API 6D	ISO 17292	EN 19	CE - PED
<b>TESTS AND CERTIFICATES</b>				
Quality Assurance	ISO 9001	API Q1	CE - PED	
Fire Safe design	API 607 5 <sup>TH</sup> Ed.	BS 6755 Part 2		
Pressure testing	API 598	EN 12266		
Other	ISO 14001	ATEX		

**Torque Values in lbf-ft**

Valve Size	AT DIFFERENTIAL PRESSURE		Valve Size	AT DIFFERENTIAL PRESSURE	
	Class 150	Class 300		Class 150	Class 300
DN 50 (2")	48	102	DN 300 (12")	2,867	7,287
DN 80 (3")	119	255	DN 350 (14")	3,392	8,561
DN 100 (4")	208	479	DN 400 (16")	4,399	11,160
DN 150 (6")	491	1,223	DN 450 (18")	6,616	16,430
DN 200 (8")	987	2,492	DN 500 (20")	8,296	20,950
DN 250 (10")	1,461	3,658			

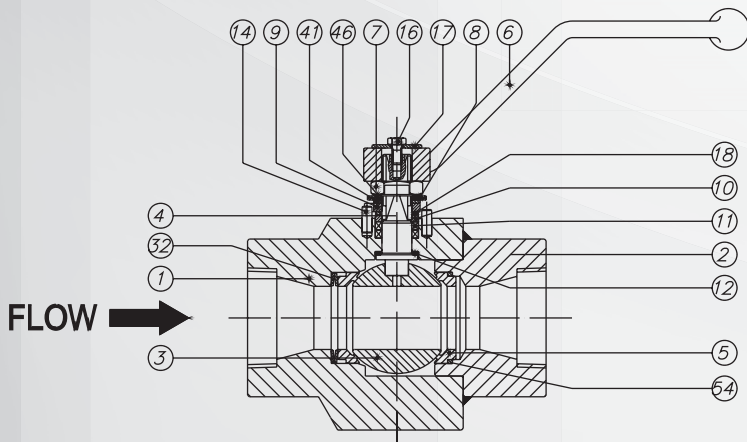
**Cv Values in Gallons/min**

DN 50 (2")	DN 80 (3")	DN 100 (4")	DN 150 (6")	DN 200 (8")	DN 250 (10")
352	802	1,465	3,385	6,038	9,454
DN 300 (12")	DN 350 (14")	DN 400 (16")	DN 450 (18")	DN 500 (20")	
13,453	17,239	21,946	28,111	34,895	



Item	Description	Material	
		C.S. BODY	S.S. BODY
1	Body	A 105	A 479 Type 316
2	Body connector	A 105	A 479 Type 316
3	Ball	AISI 316 + HT-65 (*)	
4	Stem	17-4 PH + HT-65 (*)	
5	Seat ring	AISI 316 + HT-65	
6	Wrench	GGG-40	
7	Gland nut	Zinc plated carbon st.	AISI 303
8	Disk spring	Carbon St.	E.N.P. Carbon St.
9	Stop plate	Carbon St.	AISI 304
10	Gland	AISI 316 + HT-65	
11	Gland packing	Graphite	
12	Stem thrust seal	AISI 316 + HT-65	
14	Stop pin	Carbon St.	Stainless St.
16	Bolt	DIN 933 5.6 Zinc plated	DIN 933 A2
17	Washer	Carbon St.	Stainless St.
18	Thrust washer	AISI 316 + HT-65	
32	Disk spring	Inconel 718	
41	Spacer	Carbon St.	Stainless St.
46	Washer	AISI 304	
54	Seat gasket	Graphite	

(\*) For high temperature supply: SA 479 XM-19 (Nitronic 50)

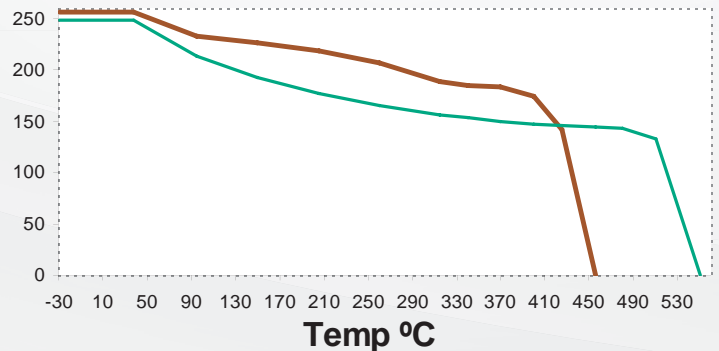


Pressure-Temperature

— A105 CLASS 1500

— A479 - Type 316 CLASS 1500

P Bar



\* Not recommended for prolonged use above 427° C





## Ball Valves (Class 800/1500)

### General Characteristics, Torque & CV, P&T Rating

GENERAL CHARACTERISTICS	Fig.UDV, Series WFR	Welded	Floating	Reduced
<b>DESIGN STANDARDS</b>				
Valves design	BS 5351	ISO 17292		
Shell thickness	BS 5351	ISO 17292		
End to end dimensions	Manufacturer's standard			
Actuator mounting piece	ISO 5211			
Marking	BS 5351	CE Mark > DN1"	ATEX	ISO 17292
<b>TESTS AND CERTIFICATES</b>				
Quality Assurance	ISO 9001			
Fire Safe	ISO 10497	BS 6755 Part 2	API 6FA	
Pressure testing	API 598	BS 6755 Part 1	ISO 5208 / 17292	EN 12266
Other	ISO 14001	ATEX		

### Torque Values in lbf-ft

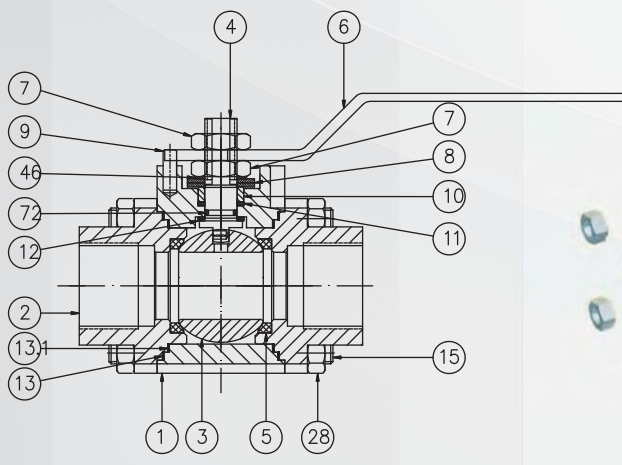
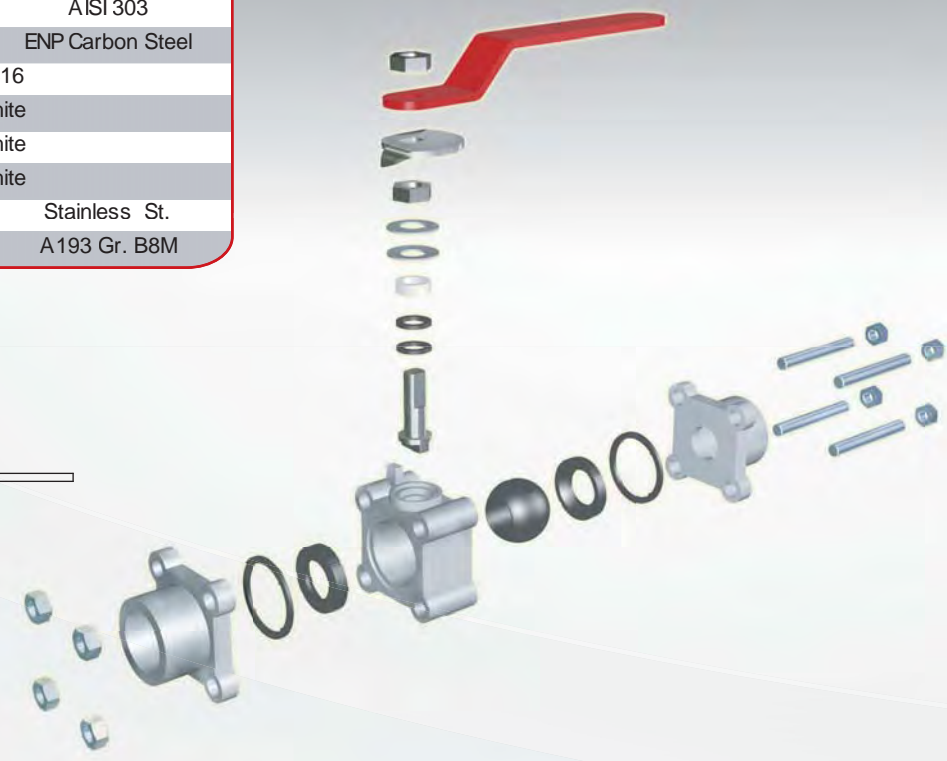
VALVE SIZE	AT DIFFERENTIAL PRESSURE			
	300 psi	800 psi	2000 psi	3600 psi
DN 15 (½")	15	18	22	29
DN 20 (¾")	15	18	22	29
DN 25 (1")	15	18	27	40
DN 40 (1½")	30	43	75	119
DN 50 (2")	39	65	128	212

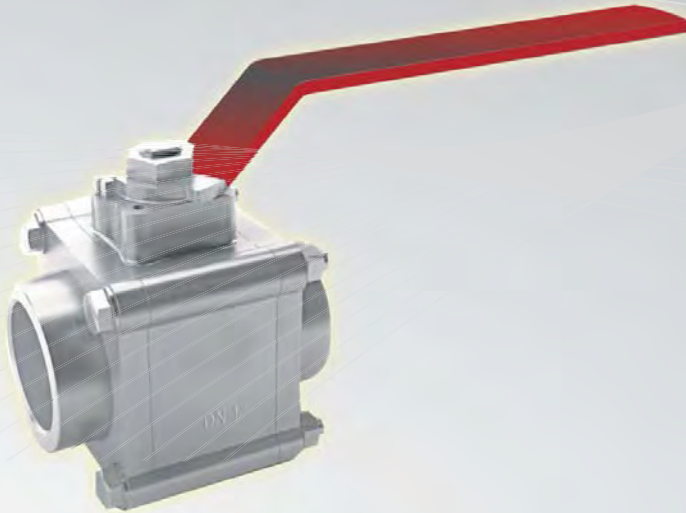
### Cv Values in Gallons/min

DN ½"	DN ¾"	DN1"
13	13	16
DN 1½"	DN 2"	***
35	85	***



Item	Description	Material	
		AIM	IIM
1	Body	A216 Gr.WCB (C≤0,25%)	A351 Gr. CF8M
2	End Connector	A216 Gr.WCB (C≤0,25%)	A351 Gr. CF8M
3	Ball	304 S.S. + HT-65 Lapped	
4	Stem	316 S.S. + HT-65	
5	Seat ring	316 S.S. + HT-65 Lapped	
6	Wrench	Zinc plated carbon steel	
7	Gland nut	Zinc plated carbon steel	AISI 303
8	Disk spring	Carbon steel	ENP Carbon Steel
10	Gland	AISI 316	
11	Gland packing	Graphite	
12	Stem thrust seal	Graphite	
13	Body connector seal	Graphite	
14	Stop pin	Carbon St.	Stainless St.
15	Stud	A193Gr. B7M	A193 Gr. B8M





### Ball Valves ANSI (Class 900)

General Characteristics, Torque & CV, P&T Rating

GENERAL CHARACTERISTICS	Fig. N652				
<b>STANDARDS COMPLIANCE</b>					
Valves design	ASME B16.34				
Body design	ANME B16.11				
Shell thickness	ASME B16.34				
Butt Welding Ends	ASME B16.25	BS 21	DIN 2999	ISO 228	ISO 7-1
Threaded Ends	ASME 1.20.1 (NPT)				
Actuator mounting flange	ISO 5211				
Marking	API 6D / ISO 14313	BS 5351	ISO 17292	CE - PED	EN 19
<b>TESTS AND CERTIFICATES</b>					
Quality Assurance	ISO 9001		CE - PED		
Pressure testing	ASME / FCI 70-2 Class IV	API 598			

#### Torque Values in lbf-ft

VALVE SIZE	AT DIFFERENTIAL PRESSURE	
	Class 900	
DN 8 (¼")	5	
DN 10 (⅜")	5	
DN 15 (½")	6	
DN 20 (¾")	7	
DN 25 (1")	10	
DN 40 (1½")	17	
DN 50 (2")	23	

#### Cv Values in Gallons/min

VALVE SIZE	Cv	
	Full Bore	Reduce
DN 15 (½")	37	16
DN 20 (¾")	68	38
DN 25 (1")	110	70
DN 40 (1½")	267	190
DN 50 (2")	485	280



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- Automatic Test Machine With Abrasive
- High Pressure Test
- Torque Test
- Leakage Test
- Automatic Lapping Machine up to 24"
- Automactic Polish Unit



# HOW TO ORDER METAL SEATED BALL VALVES

## How To Order Metal Seated Ball Valves



NOTE: X + XI are to accommodate customer's special requirements.

### A SIZE

1/2"-24"

### C RATING

15	150	60	600	150	1500
30	300	90	900		

### D BODY MATERIAL

I = 316 SS	Hb = Hastelloy "B"	LCC = Low carbon
A = CS WCB/A105/a216/a182	Hc = Hastelloy "C". Specify Gr. 22 or 276	C5 = 5 Chromium
M = Monel	Ti = Titanium	C9 = 9 Chromium
I7 = 317 SS	Ti-Ps = Palladium stabilized titanium	WC6 = Chromium moly
IL = 316 L	Al = Alloy 20	C12 = Chromium moly C12
I7L = 317 L	Zir = Zirconium	DPL = Duplex 2205 - SS
X = Special -Specify-	25 = 254 SMO	

### B PORT SIZE

5 Full port floating ball (2 pc)	7 Reduce port floating ball
15 Full port semi trunnion (2 pc)	17 Reduce port semi trunnion
25 Full port trunnion ball (2pc)	
60 Full port trunnion (3 pc)	70 Reduce port trunnion (3pc)

### F BALL AND STEM (TRIM)

I = 316 SS c/w HT-65*	Hc = Hastelloy "C". Specify Gr. 22 or 276	In = Inconel 600/800
A = CS WCB/A105/1026/410	Ti = Titanium	Inc = Incolloy/718
M = Monel	Ti-Ps = Palladium stabilized titanium	C5 = 5 Chromium
I7 = 317 SS	Al = Alloy 20	C9 = 9 Chromium
IL = 316 L	Zir = Zirconium	WC6 = Chromium moly
I7L = 317 L	25 = 254 SMO	C12 = Chromium moly C12
X = Special -Specify-	LCC = Low carbon	DPL = Duplex 2205 - SS

\* HT-2200 is also available. (Must use special Ball Base Material. Please consult factory.)

### F SEAT MATERIAL

HT-65 = 316 c/w HT-65	56 = Stellite	HT22 = HT2200*
CC50 = Chromium carbide 56	CC60 = Chromium carbide 6	HTCR = HTCR-70
TC70 = Tungsten carbide	X = Special -Specify-	

\* Must use special Seat Base Material. Please consult factory.

### G SPECIAL DESIGN

X = Special design + construction	17.4 = 17.4 PH SS stem material	XI = If more than special design required
BT = Bubble tight - Zero leakage	INC = Inconel stem material	-specify the design required-
KL = KALREZ® "O" ring to 620°F	DP = Double packing with monitoring port	SL = Slurry option
AF = AFLAS® "O" ring to 450°F	SP = Special packing - (stem) specify	SJ = Steam jacket -specify- full or partial jacket
V = VITON® "O" ring to 400°F	G = Graphite seals to 1000°F	
Ni = Nitronic 50 stem material		

Selection of Body Materials are governed by ASME (ANSI).

For Material selection based on specific temperature and pressure charts, please consult factory.





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