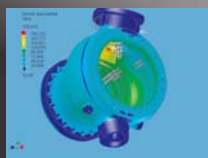


VALVULAS INDUSTRIALES

FEVISA

FEVISA

VALVULAS DE BOLA / BALL VALVE



Calle de la Siderurgia, Parcela 4 - 1. Apartado 29
Ciudad industrial "VALNALON" 33930 LA FELGUERA (ASTURIAS) Spain
Teléfonos: +34 985 69 05 79 - Fax: +34 985 69 85 04
E-mail: info@valvulasfevisa.com - info@talleresjesusalvarez.com

CODIFICACIÓN / CODIFICATION

02	EXTREMOS ROSCADOS 2VIAS	2	WAY THREADED ENDS
03	EXTREMOS ROSCADOS 3VIAS	3	WAY THREADED ENDS
04	EXTREMOS ROSCADOS 4VIAS	4	WAY THREADED ENDS
22	EXTREMOS ROSCADOS 2VIAS	2	WAY THREADED ENDS
33	EXTREMOS ROSCADOS 3VIAS	3	WAY THREADED ENDS
44	EXTREMOS ROSCADOS 4VIAS	4	WAY THREADED ENDS
VB	VÁLVULA DE BOLA		BALL VALVE
MS	MONTAJE SUPERIOR		TOP ENTRY
ML	MONTAJE LATERAL		END ENTRY
T	PASO TOTAL		FULL BORE
C	MODELO CORTO		SHORT PATTERN
A	AROLADA		TRUNNION
EV	ENCAMISADA PARAVAPOR		VALVE WITHA HEATING-JACKET
AP	ALTA PRESIÓN		HIGH PRESSURE
R	ROSCADA		SCREWED
SW	ENCHUFE Y SOLDADURA		SOCKET-WELDING
BW	SOLDADURA TOPE		BUTT-WELDING
Re	MANDO DESMULTIPLICADOR POR REDUCTOR		GEAR WPERATED

Ejemplo / Example: N°22 VB - MS - T- Re

Extremosbridados 2Visa

2-way flanged ends

Válvula de bola

Ball valve

Montaje superior

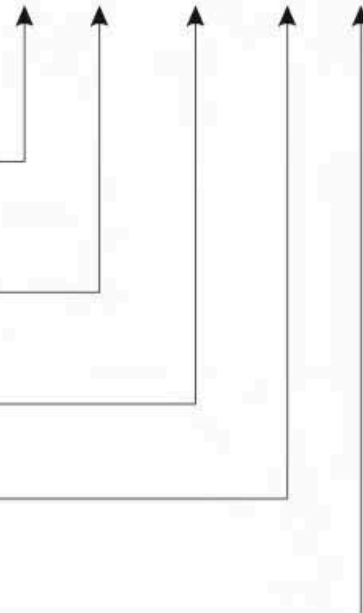
Top entry

Pasototal

Full bore

Accionado por reductor

Gear operated



Example:

16	TC	1	RF	C	22F22	-G	-NC
1	2	3	4	5	6	7	8

i.e.

Size: 16" Cast steel Trunnion Mounted Ball Valve, Class 150Lb, Flanged RF Ends, Body: A216 WCB, Ball & Stem SS304, Seat ring: SS304, Seat: PTFE, O-ring: Viton, Gear Op.

1 VALVE SIZE

Full Bore

NPS	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"
DN	15	20	25	40	50	65	80	100	125	150	200	250	300
Symbol	1/2	3/4	1	1-1/2	2	2-1/2	3	4	5	6	8	10	12
NPS	14"	16"	18"	20"	22"	24"	26"	28"	30"	30"	34"	36"	40"
DN	350	400	450	500	550	600	650	700	750	800	850	900	1000
Symbol	14	16	180	20	22	24	26	28	30	32	34	36	40

Reduced Bore

NPS	3/4x1/2"	1x3/4"	1-1/2x1"	2x1-1/2"	3x2"	4x3"	6x4"	8x6"	10x8"
DN	20x15	25x20	40x25	50x40	80x50	100*80	150x100	200*150	250x200
Symbol	3/4x1/2	1x3/4	1-1/2x1	2x1-1/2	3x2	4x3	6x4	8x6	10x8
NPS	12x10"	14x12"	16x14"	18x16"	20x18"	24x20"	30x24"	36x30"	40x34"
DN	300x250	350x300	400x350	450x400	500x450	600x500	750x600	900x750	1000x850
Symbol	12x10	14x12	16x14	18x16	20x18	24x20	30x24	36x30	40x34

2 VALVE TYPE

Symbol	Type	Symbol	Type
FC	Cast Steel Floating Ball Valve	FT	Top Entry Cast Floating Ball Valve
TC	Cast Steel Trunnion Mounted Ball Valve	TT	Top Entry Trunnion Mounted Ball Valve
RF	1PC Cast Steel Floating Ball Valve	CT	"T" Shaped Three way Ball Valve
FF	Forged Steel Floating Ball Valve	CL	"L" Shaped Three way Ball Valve
TF	Forged Steel Trunnion Mounted Ball Valve	CF	Four Way Ball Valve
FM	Metal To Metal Seat Floating Ball Valve	FS	Small Size Forged Steel Floating Ball Valve
TM	Metal To Metal Seat Trunnion Mounted Ball Valve	TW	Full Welded Ball Valve

3 NOMINAL PRESSURE

Class	125	150	250	300	400	600	800	900	1500	2500
Symbol	0	1	2	3	4	6	8	9	15	25

4 END CON.

Symbol	Type	Symbol	Type
RF	Raised Face Flange	M	Convex side Flange
RJ	Ring Joint Flange	SW	Socket Welding End
FF	Flat Face Flange	N	Screwed End(NPT)
BW	Butt-welding	SW x N	Socket Welding End X Screwed End
FM	Concave side Flange	TH	Male Thread

5 BODY/BONNET MATERIAL

Material	Cast	WCB	LCB	CF8	CF8M	CF3M	CF3	CF8	WCC	LCC	MONEL	B62	HT200
Symbol		C	B	P	R	H	I	J	D	E	M	T	Q
Material	Forged	A105	LF2	F304	F316	F316L	F304L	F347	F51	F321			
Symbol		A	C	F	G	S	U	O	K	N			

6 TRIM MATERIAL

Ball		Stem		Seat		Seat ring		O-Ring seals	
Symbol	Material	Symbol	Material	Symbol	Material	Symbol	Material	Symbol	Material
1	F51	1	F51	F	PTFE	1	F51	1	NBR
2	304	2	304	E	RTPFE	2	304	2	Viton
3	F6	3	F6	P	PPL	3	F6	3	
4	316	4	316	N	Nylon	4	316	4	
5	304L	5	304L	D	Delrin	5	304L		
6	316L	6	316L	Y	STL	6	316L		
7	17-4PH	7	17-4PH	K	PEEK	7	17-4PH		
8	A105+ENP	8	A105+ENP			8	A105+ENP		
9	LF2+ENP	9	LF2+ENP			9	LF2+ENP		

7 VALVE ACTUATOR

Type	Lever	Gear	Pneumatic Actuator	Electric Actuator	Bare Stem
Symbol	L	G	P	E	B

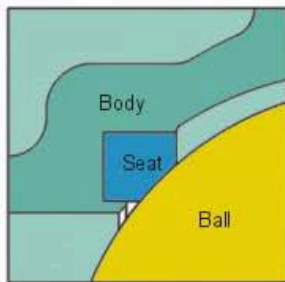
Type	Hydro-Dynamically drive	Interlock of Pneumatic and Hydro-Dyannically Driven
Symbol	H	PH

8 SPECIAL REQUIREMENT

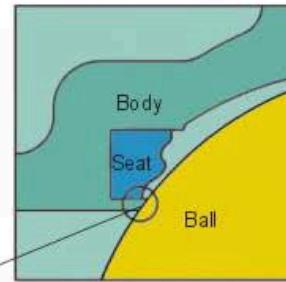
Description	Extend Stem	Locking Device	Degrease Processing	With Bypass
Symbol	ES	LD	DP	BP

*Just omit if there is no requirement to this clause.

Fire Safe Seat Sealing



Before Fire Sealing

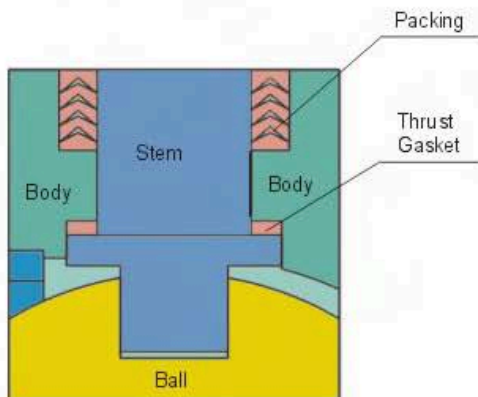


After Fire Sealing

Metal to Metal Contact

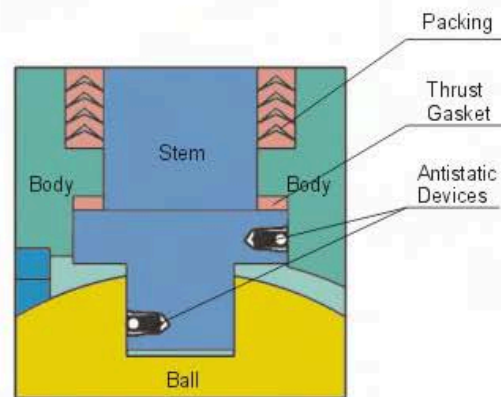
Valvulas FEVISA ball valves' fire safe is designed in accordance with API 607 & API SPEC 6FA, When non-metal resilient seats are destroyed in a fire, the upstream medium pressure push the ball into the downstream metal seat lip to cut off the line fluid and prevent the internal leakage due to a secondary metal-to-metal seals.

Blow-out Proof Stem



The stem is designed with integral T-type shoulder to provide blow-out proof effectively. It is internally inserted as the backseat function to assure stem sealing safety at all pressures.

Anti-Static Device



used the spring&stainless ball combined between the valve ball&stem and stem&body, it is ensure all valve matel parts are grounding.

The effective sealing for valve seat

a) The sealing for upstream seat.

The seat ring can be moved slightly along the valve axis, the pressure of upstream line and the spring thrust force acted on the seat ring area (A1), it is caused the piston action when the pressure is over the area (d1), which pushed the seat ring tightly against the surface of ball, and resulting an effective seal for valve seat.

B) The sealing for downstream seat.

When the pressure in body cavity is lower than the downstream line and the thrust force, the net difference of pressure acted over the area (A2), it is caused the piston action when the pressure is over the area (d2), which pushed the seat ring tightly against the surface of ball, and resulting an effective seal for valve seat. (fig. 1)

Self Relieving Seat

When the body cavity pressure exceeds the downstream seat spring preloaded force, the differential force in the area (d2) pushes the downstream seat away from the ball, the body cavity pressure will automatically relieved. And then the seat returns to the ball under spring action. (Fig. 1)

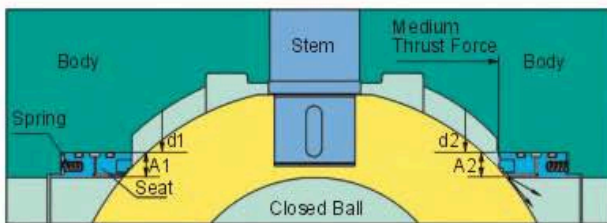


Fig.1

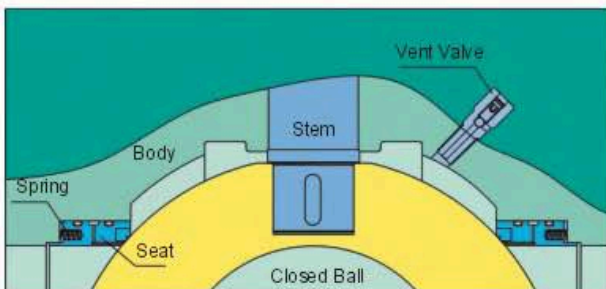


Fig.2

Double Block and Bleed

When the ball is in the closed position, each seat of the ball valve can cut off the medium independently on the upstream and downstream side to realize double-block functions. The body cavity are isolated from each side of the valve, the body cavity pressure could be released through the vent valve. (Fig. 2)

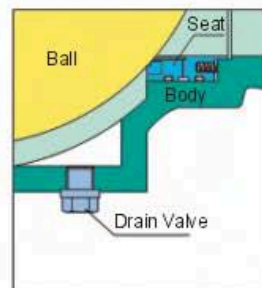


Fig.2

Blow-out Proof Stem

The stem with integral T-type shoulder, supported by gland, which can be guaranteed not to be blow-out by the medium even if at abnormal risen pressure from the cavity. (Fig.3)

Anti-Static Device

During turning of the stem to open or closing the valve, static electricity is easily caused by sparks generated by friction. Antistatic devices, assembled by a spring & a grounding plunger, which assure the electrical continuance between ball & stem and stem & body, to prevent the possible risk of fire or explosion. (Fig.3)

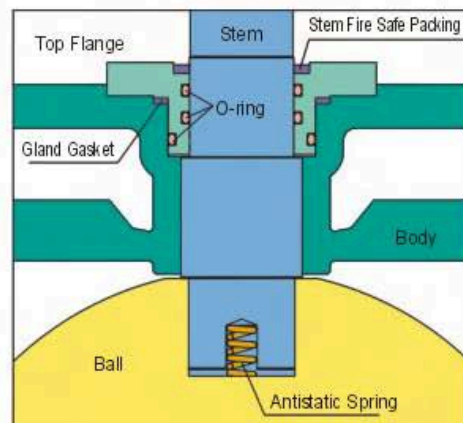


Fig.3

Emergency Sealant Injection System

trunnion mounted ball valves, special sealants could be injected through a sealant injection fittings which are located on the bonnet and the gland to obtain emergency sealing. In case of seat or stem O-ring are damaged and leakage occurs by fire or other accidental. Fittings also internally installed a secondary check to provide backup sealing.(Fig.4)

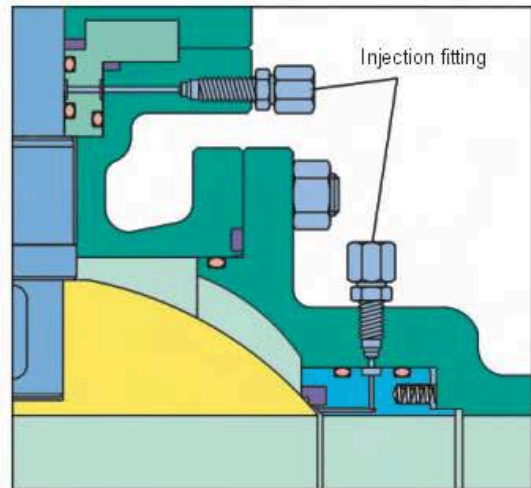


Fig.4

Firesafe Design

a) Internal leakage prevention

When seat insert, O-ring and spacer are damaged in a fire, the line pressure and the seat preloaded spring push the seat metal lip onto the ball surface to cut off the line fluid and prevent the internal leakage to reach the fire-safe purpose. Besides, the seat graphite packing can prevent fluid leakage between the valve body and the seat. (Fig.5)

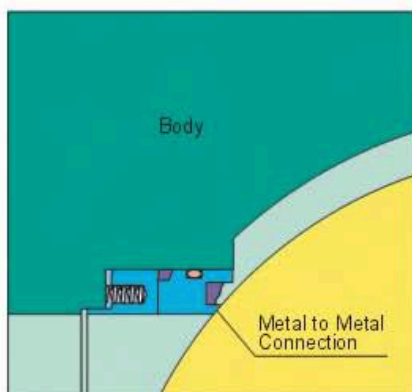
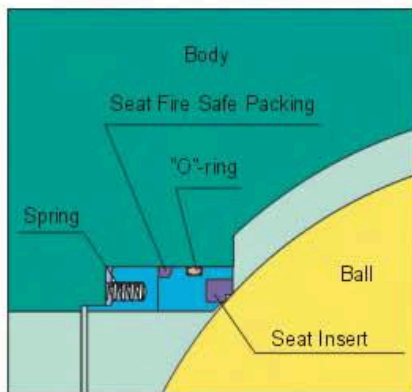


Fig.5

b) External leakage prevention

A combination of O-ring and graphite gasket on body & bonnet connection, body&gland connection, and stem&gland joint, can prevent the external leakage. When O-rings are damaged after a fire, body gasket, gland gasket, and stem packing, it is still on the performance of sealing and prevents external fluid leakage.(Fig.6)

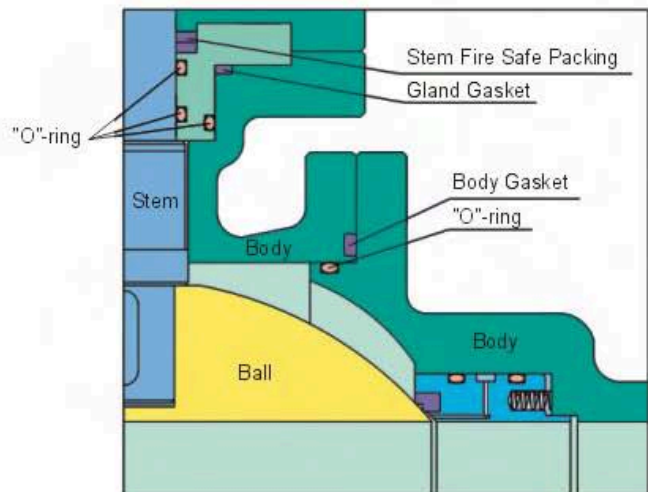
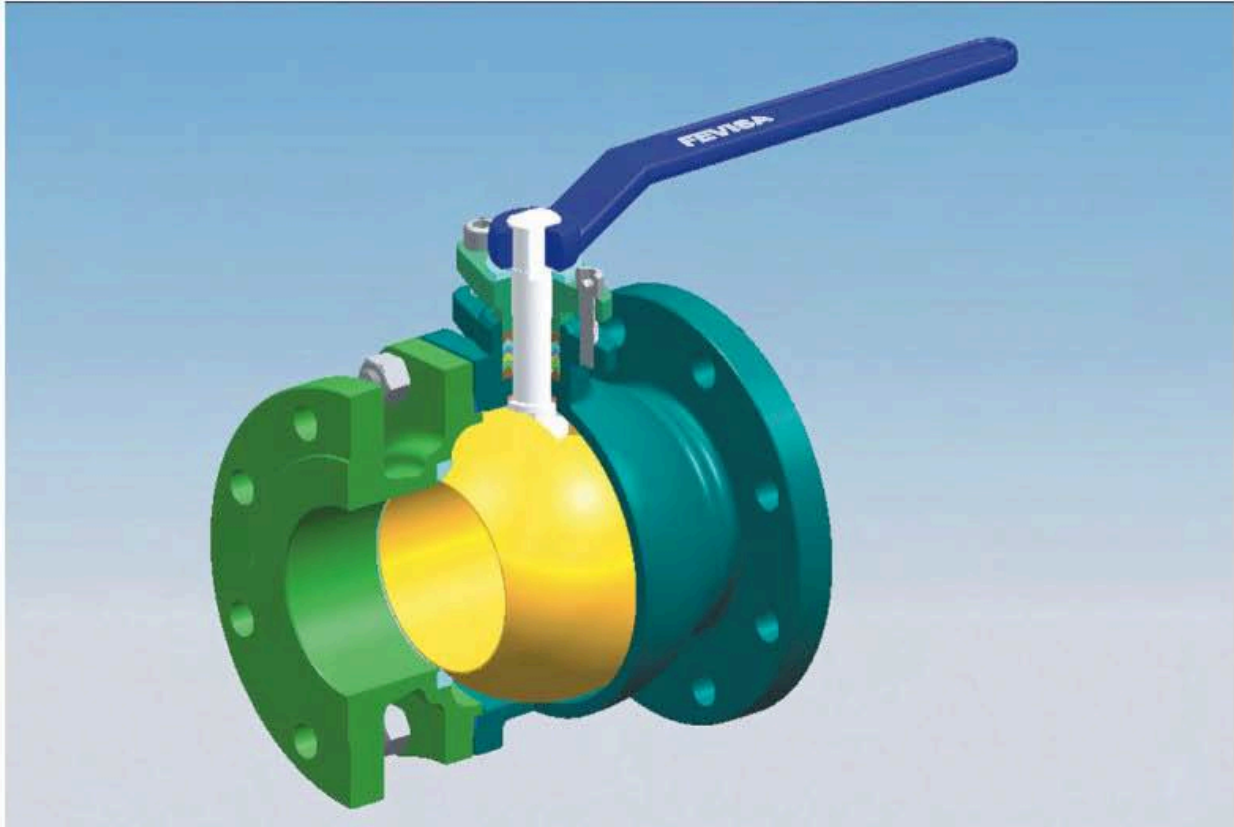


Fig.6

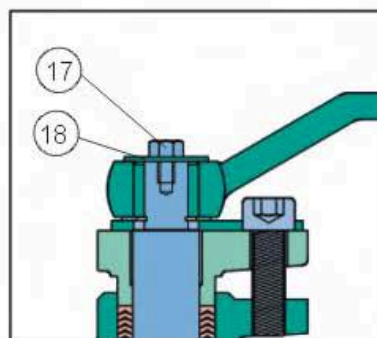
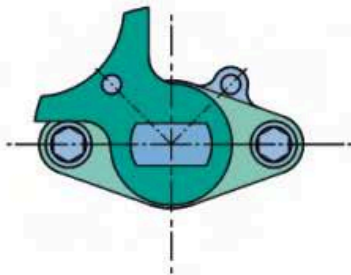
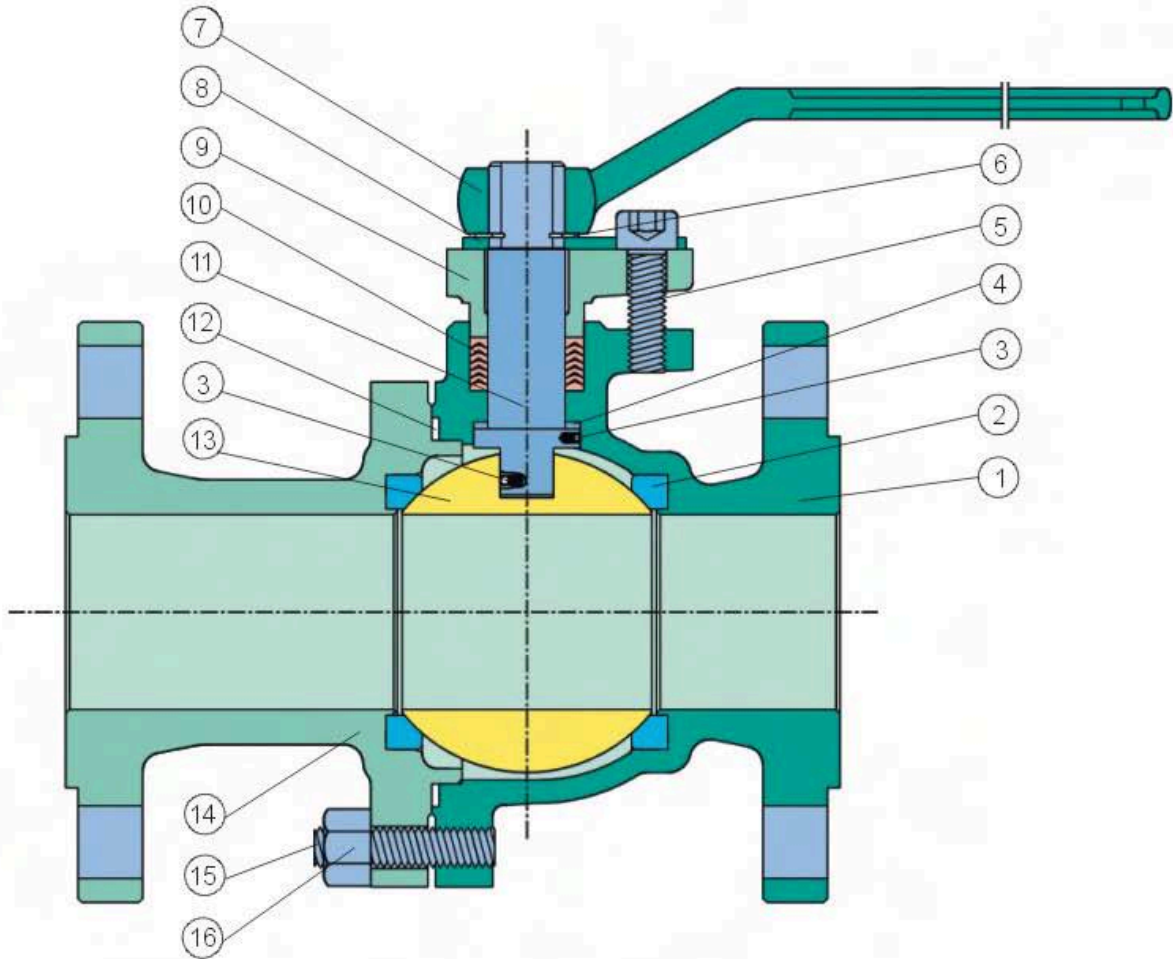


FEATURES

Size: 1/2" -10"
Class:150~600Lb
Two Pieces Cast Steel Body
Floating Ball, Full & Reduced Bore
Anti-static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

SPECIFICATIONS

Design	ASME B16.34/BS 5351
Face to Face	ASME B16.10
End Flange	ASME B16.5
Bw End	ASME B16.25
Test	API 598/ BS 6755
Fire Safe Test	API 607/ API6FA
Special	NACE MR-01-75

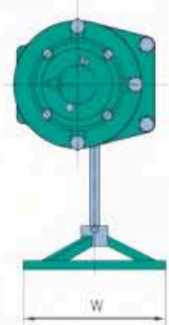
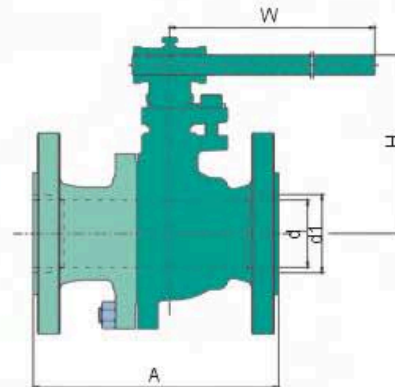
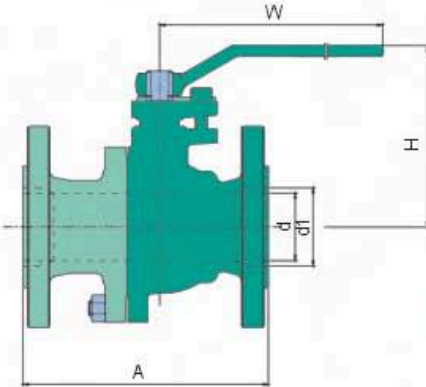


MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M
2	Seat	PTFE RTPFE PEEK PPL
3	Antistatic Spring	Stainless Steel Ss316
4	Thrust Washer	PTFE
5	Screw	ASTM A193-B7, B8
6	Retainer	Carbon Steel
7	Lever	A216-WCB
8	Limited Plate	1015+Cr Carbon Steel+Cr
9	Gland Flange	A216-WCB A351-CF8
10	Packing	PTFE Graphite
11	Stem	ASTM A105+ENP A182-F6, F316, F316L, F304L 17-4PH
12	Body Gasket	PTFE SS304+Graphite SS316+Graphite
13	Ball	A361-CF8, CF8M, CF3, CF3M
14	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M CF3, CF3M
15	Stud	ASTM A193-B7, B7M, B8, B8M
16	Nut	ASTM A194-2H, 2HM, 8, 8M
17	Stop Screw	1035+Cr
18	Steel Gasket	1025+Cr

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS



FULL BORE

Class 150

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	108	75	130	2.3
3/4	19	117	84	170	2.5
1	25	127	90	170	3.5
1-1/2	38	165	127	250	7.3
2	51	178	140	250	9.8
2-1/2	64	190	164	350	15
3	76	203	177	350	18
4	102	229	206	420	33
5	125	356	292	700	57
6	152	394	320	*1000	66
8	203	457	365	*1300	102
10	254	533	420	*1800	166

REDUCED BORE

Class 150

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	117	75	130	2.7
1x3/4	19	25	127	84	170	3.0
1-1/2x1	25	38	165	90	170	4.3
2x1-1/2	38	51	178	127	250	9.5
2-1/2x2	51	64	190	140	250	12
3x2	51	76	203	140	250	16.5
4x3	76	102	229	177	350	24
6x4	102	152	394	206	420	43
8x6	152	203	457	320	*1000	85.5
10x8	203	254	533	365	*1300	132.6

*Gear Operated

FULL BORE

Class 300

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	140	75	130	3.5
3/4	19	152	84	170	4.2
1	25	165	90	170	5.8
1-1/2	38	191	127	250	10.5
2	51	216	140	250	14
2-1/2	64	241	164	350	19
3	76	283	177	350	31
4	102	305	206	420	54
5	125	381	292	700	75.5
6	152	403	320	*1000	90
8	203	502	365	*1300	151

REDUCED BORE

Class 300

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	152	75	130	4.0
1x3/4	19	25	165	84	170	5.0
1-1/2x1	25	38	190	90	170	7.0
2x1-1/2	38	51	216	127	250	12
2-1/2x2	51	64	241	140	250	17
3x2	51	76	283	140	250	21.5
4x3	76	102	305	177	350	37
6x4	102	152	403	206	420	66
8x6	152	203	419	320	*1000	127
10x8	203	254	457	365	*1300	196.5

*Gear Operated

FULL BORE

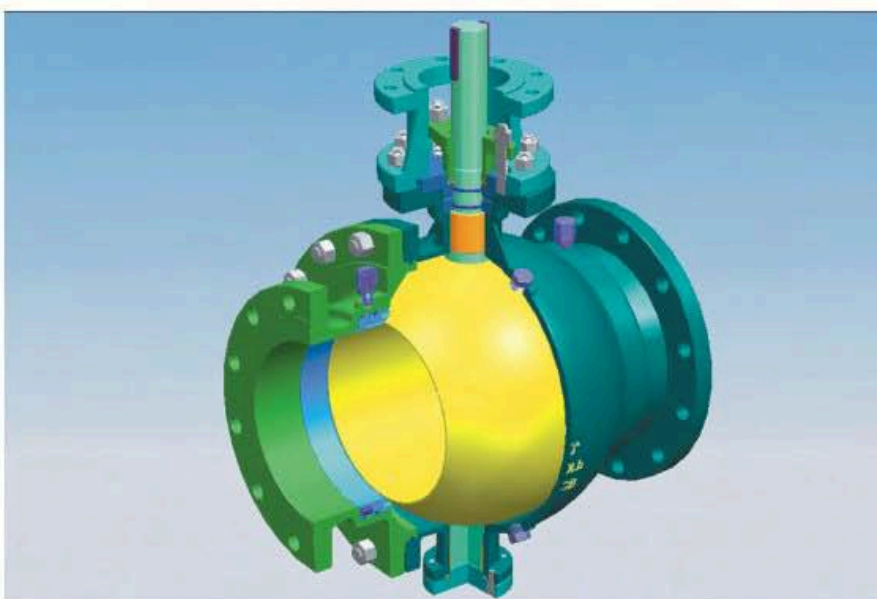
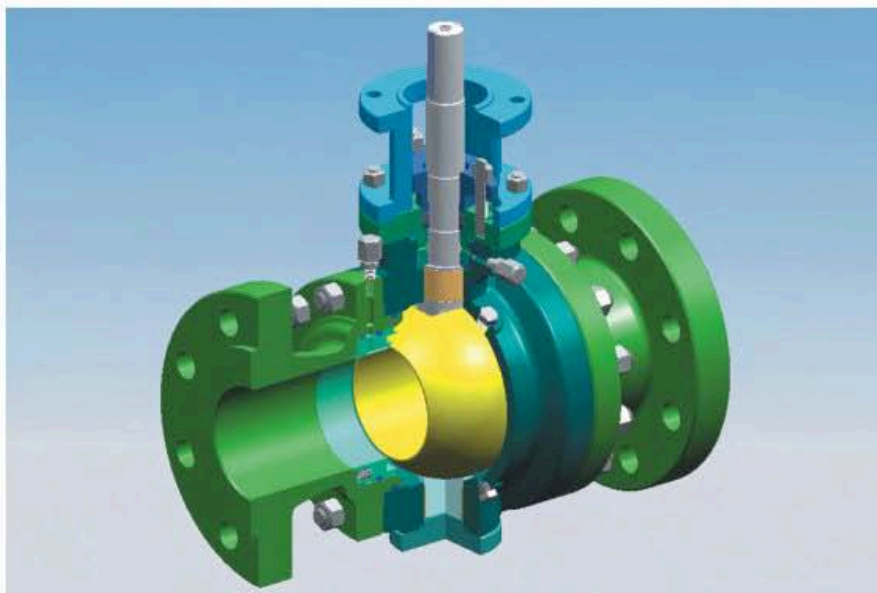
Class 600

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	160	80	170	3.5
3/4	19	191	89	200	5.0
1	25	216	95	200	7.5
1-1/2	38	241	132	350	15.0
2	51	292	145	350	20.8
3	76	356	182	420	41
4	102	432	211	700	76

REDUCED BORE

Class 600

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	191	80	170	4.0
1x3/4	19	25	216	89	200	5.0
1-1/2x1	25	38	216	95	200	10.5
2x1-1/2	38	51	292	132	350	14.7
3x2	51	76	356	145	350	29.0
4x3	76	102	432	182	420	56.0
6x4	102	152	559	211	700	95.0

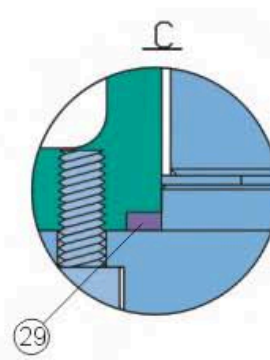
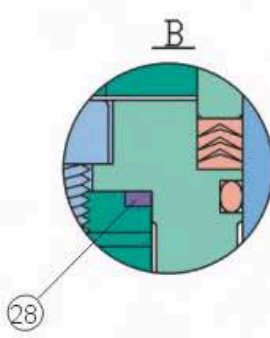
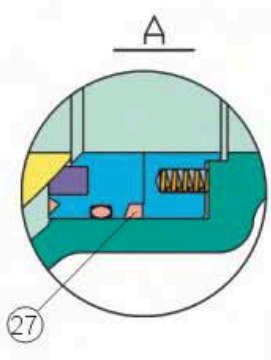
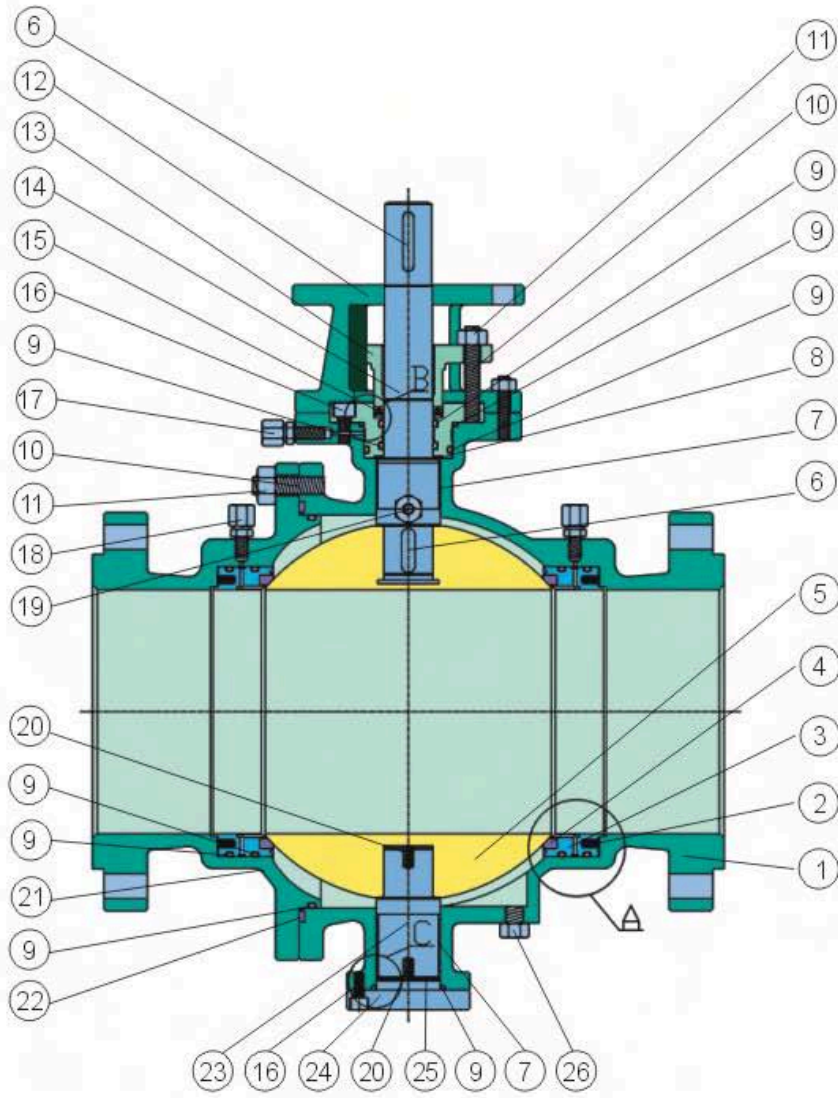


FEATURES

Size: 2" -40"
Class:150~900Lb
Three & Two Pieces Cast Steel Body
Trunnion Mounted Ball, Full & Reduced Bore
Anti-static Device
Blow-out Proof Stem
Fire Safe Design
Emergency Sealant Injector
Vent valve, drain valve
Lifting lugs and supporting feets (8" & larger).

SPECIFICATIONS

Design	ASME B16.34/API 6D
Face to Face	ASME B16.10
End Flange	ASME B16.5
B/W End	ASME B16.25
Test	API 598
Fire Safe Test	API 607/API 6FA
Special	NACE MR-01-75

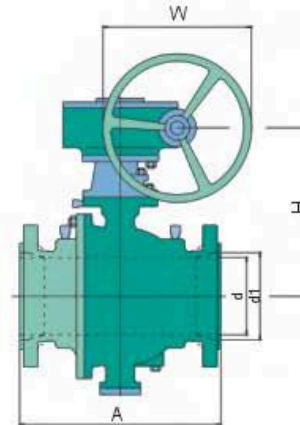
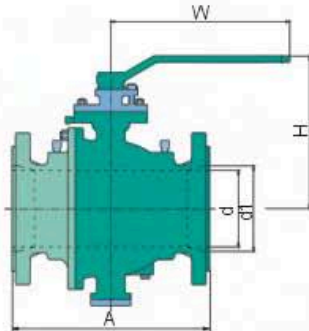


MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body	ASTM A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
2	Seat Spring	Inconel X-7505 SS304 SS316
3	Seat Ring	ASTM A105+ENP ASTM A182-F304, F316, F316L, F6, F51
4	Seat	PTFE RPTFE PEEK PPL
5	Ball	ASTM A105+ENP ASTM A182-F6, F304, F316, F316L, F51
6	KEY	1045 A182-F304, F316, F316L, F304L
7	Sliding Bearing	Stainless Steel+PTFE SS316+PTFE
8	Thrust Washer	PTFE
9	O-ring	NBR Viton
10	Stud	ASTM 193-B7, B7M, B8, B8M
11	Nut	ASTM 194-2H, 2HM, 8, 8M
12	Yoke	A216-WCB
13	Gland Flange	A216-WCB A351-CF8
14	Stem	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
15	Packing	PTFE Graphite
16	Screw	ASTM A193-B7, B8
17	Stem Injection	1020+ZN A182-F304, F316, F316L
18	Seat Injection	1020+ZN A182-F304, F316, F316L
19	Vent Valve	1020+ZN A182-F304, F316, F316L
20	Antistatic Spring	Stainless Steel SS316
21	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
22	Body Gasket	PTFE SS304+Graphite SS316+Graphite
23	Trunnion	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
24	Bottom Cover	ASTM A105+NEP A182-F304, F316, F316L
25	Lower Gasket	PTFE
26	Drain Valve	1020+ZN A182-F304, F316, F316L
27	Seat Sealing	Graphite
28	Gand Gasket	SS304+Graphite
29	Bottom Cover Gasket	SS304+Graphite

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS



FULL BORE Class 150

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
2	51	178	140	250	15
3	76	203	177	350	24
4	102	229	206	420	40
6	152	394	305	*280	95
8	203	457	398	*320	170
10	254	533	495	*350	255
12	305	610	580	*400	390
14	337	686	625	*500	510
16	387	762	720	*500	820
18	438	864	770	*500	1010
20	489	914	840	*500	1828
24	591	1067	920	*600	2100

REDUCED BORE Class 150

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3x2	51	76	203	140	250	21
4x3	76	102	229	177	350	30
6x4	102	152	394	206	420	68
8x6	152	203	457	305	*280	115
10x8	203	254	533	398	*320	214
12x10	254	305	610	495	*350	284
14x12	305	337	686	580	*400	418
16x14	337	387	762	625	*500	612
18x16	387	438	864	720	*500	970
20x18	428	489	914	770	*500	1137
24x20	489	591	1067	840	*500	2000

*Gear Operated

FULL BORE Class 300

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
2	51	216	140	250	18
3	76	283	177	350	33
4	102	305	206	420	55
6	152	403	305	*280	135
8	203	502	398	*320	210
10	254	568	495	*350	391
12	305	648	580	*400	550
14	337	762	625	*500	710
16	387	838	720	*500	1250
18	438	914	770	*500	1300
20	489	991	840	*500	2180
24	591	1143	920	*600	2930

REDUCED BORE Class 300

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3x2	51	76	283	140	250	25
4x3	76	102	305	177	350	41
6x4	102	152	403	206	420	92
8x6	152	203	502	305	*280	164
10x8	203	254	568	398	*320	350
12x10	254	305	648	495	*350	400
14x12	305	337	762	580	*400	590
16x14	337	387	838	625	*500	850
18x16	387	438	914	720	*500	1220
20x18	428	489	991	770	*500	1460
24x20	489	591	1143	840	*500	2220

*Gear Operated

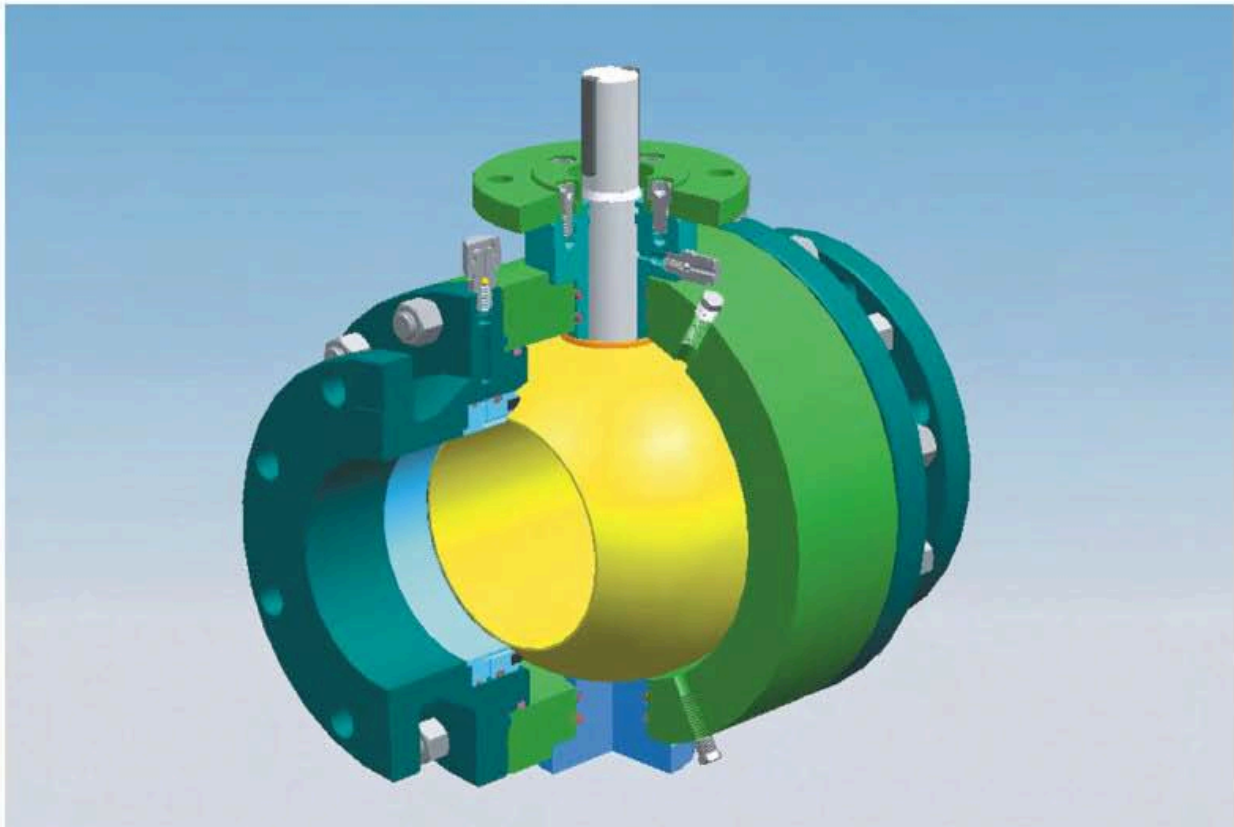
FULL BORE Class 600

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
2	51	292	145	350	25
3	76	356	182	420	50
4	102	432	211	700	56
6	152	559	435	*400	250
8	203	660	530	*500	437
10	254	787	615	*500	735
12	305	838	680	*500	1050
14	337	889	720	*600	1300
16	387	991	540	*600	1775
18	438	1092	590	*600	2100
20	489	1194	925	*600	3100
24	591	1397	980	*600	4750

REDUCED BORE Class 600

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3x2	51	76	356	145	350	39
4x3	76	102	432	182	420	65
6x4	102	152	559	211	700	136
8x6	152	203	660	435	*400	292
10x8	203	254	787	530	*500	505
12x10	254	305	838	615	*500	760
14x12	305	337	889	680	*500	1105
16x14	337	387	991	420	*600	1417
18x16	387	438	1092	840	*600	1955
20x18	428	489	1194	890	*600	2380
24x20	489	591	1397	925	*600	3640

*Gear Operated

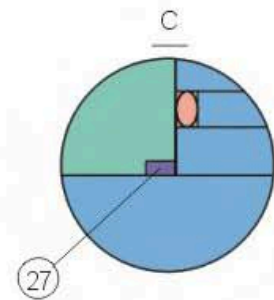
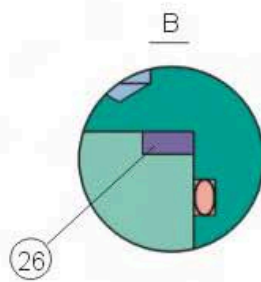
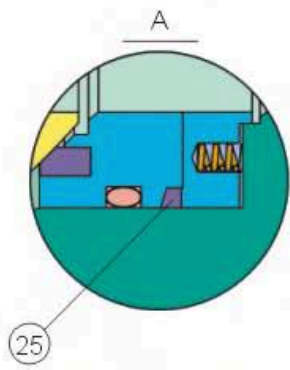
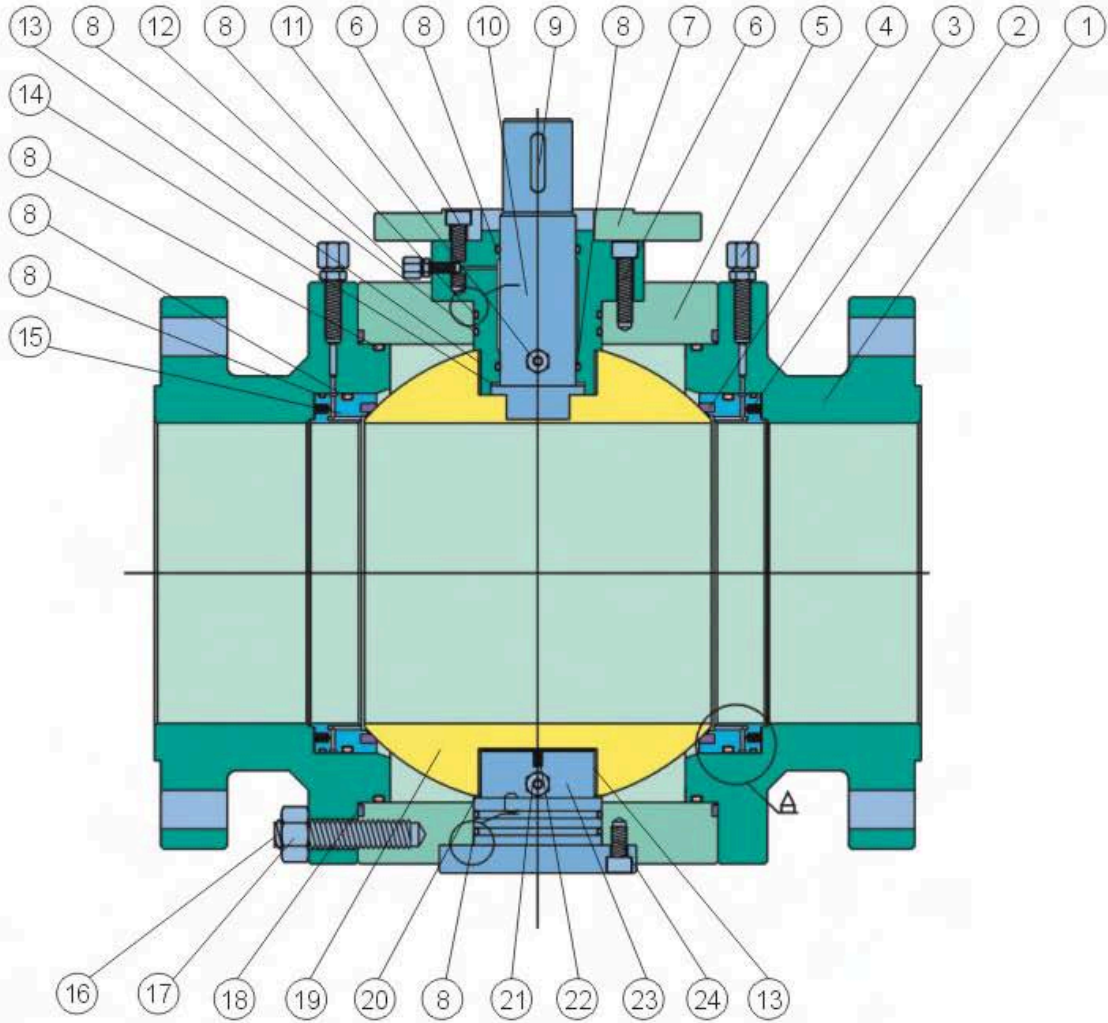


FEATURES

Size: 2" -24"
Class:150~2500Lb
Three Pieces Forged Steel Body
Trunnion Mounted Ball, Full & Reduced Bore
Anti-static Device
Blow-out Proof Stem
Double Block and Bleed
Fire Safe Design
Emergency Sealant Injector Vent Valve
Vent valve, drain valve
Lifting Lugs & Supporting Feet(8" & Larger)

SPECIFICATIONS

Design	ASME B16.34/API 6D
Face to Face	ASME B16.10/API 6D
End Flange	ASME B16.5
BW End	ASME B16.25
Test	API 6D
Fire Safe Test	API 607/API 6FA
Special	NACE MR-01-75

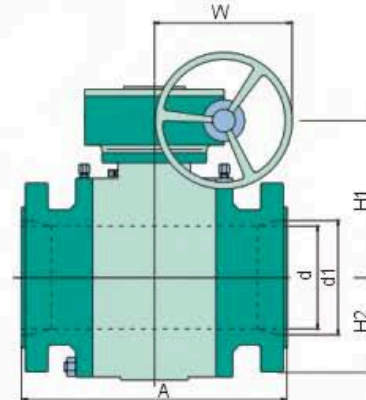
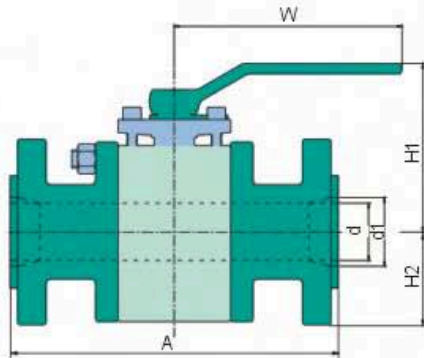


MATERIAL SPECIFICATIONS

No.	Part	Material
1	Bonnet	ASTM A105 A182-F304, F316, F316L, F304L, F51
2	Seat Spring	Inconel X-7505 SS304 SS316
3	Seat	PTFE RPTFE PEEK PPL
4	Seat Injection	1020+ZN A182-F304, F316, F316L
5	Body	ASTM A105 A182-F304, F316, F316L, F304L, F51
6	Screw	ASTM A193-B7, B8
7	Top Flange	ASTM A105 A182-F304
8	"o"-ring	NBR Viton
9	Key	1045 A182-F304, F316, F316L, F304L
10	Stem	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
11	Vent Valve	1020+ZN A182-F304, F316, F316L
12	Stem Injection	1020+ZN A182-F304, F316, F316L
13	Sliding Bearing	Stainless Steel+PTFE SS316+PTFE
14	Thrust Washer	PTFE
15	Seat Ring	A105+ENP ASTM A182-F6, F304, F316, F316L, F304L, F6, F51
16	Stud	ASTM 193-B7, B7M, B8, B8M
17	Nut	ASTM 194-2H, 2HM, 8, 8M
18	Body Gasket	PTFE SS304+Graphite SS316+Graphite
19	Ball	A105+ENP ASTM A182-F6, F304, F316, F316L, F51
20	Lower Gasket	PTFE
21	Drain Valve	1020+ZN A182-F304, F316, F316L
22	Antistatic Spring	Stainless Steel SS316
23	Trunnion	A105+ENP A182-F6, F304, F316, F316L, F304L, F51
24	Screw	ASTM A193-B7, B8
25	Seat Sealing	Graphite
26	Gand Gasket	SS304+Graphite
27	Bottom Cover Gasket	SS304+Graphite

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS



FULL BORE

Class 150

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	170	180	138	265	30
3	76	203	190	150	285	60
4	102	229	212	170	285	92
6	152	394	277	183	*400	190
8	203	457	301	216	*400	345
10	254	533	359	260	*500	495
12	305	610	419	287	*600	705
14	337	686	460	338	*600	859
16	387	762	494	375	*600	1020
18	438	864	521	402	*600	1440
20	489	914	656	427	*600	1918
22	540	991	733	480	*600	2352
24	591	1067	795	518	*700	2803
26	635	1143	870	535	*800	3200
28	686	1245	935	542	*800	4045
30	737	1295	1010	605	*800	4820
32	781	1372	1060	650	*800	5490
34	832	1473	1077	650	*800	6704
36	876	1524	1115	700	*800	7615
40	978	1727	1400	865	*800	10271

REDUCED BORE

Class 150

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	178	140	110	250	26
3x2	51	76	203	180	130	265	34
4x3	76	102	229	190	150	285	62
6x4	102	152	394	212	170	285	102
8x6	152	203	457	277	183	*400	225
10x8	203	254	533	301	216	*400	373
12x10	254	305	610	359	260	*500	533
14x12	305	337	686	419	287	*600	730
16x14	337	387	762	460	338	*600	790
18x16	387	438	864	494	375	*600	1095
20x18	438	489	914	521	402	*600	1152
22x18	438	540	991	521	402	*600	2343
24x20	489	591	1067	656	427	*600	2060
26x22	540	635	1143	733	480	*600	2215
28x24	591	686	1245	795	518	*700	2700
30x24	591	737	1295	795	518	*700	2918
32x26	635	781	1372	870	535	*800	4005
34x28	686	832	1473	935	542	*800	4445
36x30	737	876	1524	1010	605	*800	4995
40x34	832	978	1727	1077	650	*800	8200

*Gear Operated

FULL BORE

Class 300

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	216	180	130	265	31
3	76	283	190	150	285	69
4	102	305	212	170	285	110
6	152	403	277	183	*400	211
8	203	502	308	217	*500	376
10	254	568	381	265	*600	540
12	305	648	429	307	*600	763
14	337	762	460	338	*600	900
16	387	838	581	375	*600	1300
18	438	914	674	414	*700	1715
20	489	991	713	450	*700	2090
22	540	1092	780	492	*700	2220
24	591	1143	850	531	*700	2890
28	686	1346	958	556	*800	4575
30	737	1397	1035	620	*800	5590
32	781	1524	1087	666	*800	6240
34	832	1626	1104	666	*800	7370
36	876	1727	1143	718	*800	8435
40	978	1930	1435	887	*800	11200

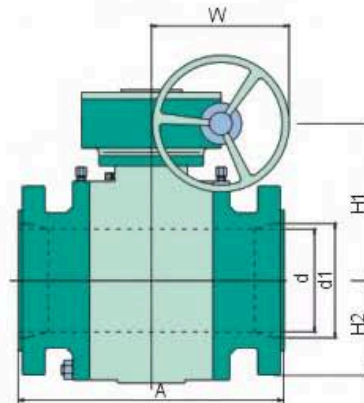
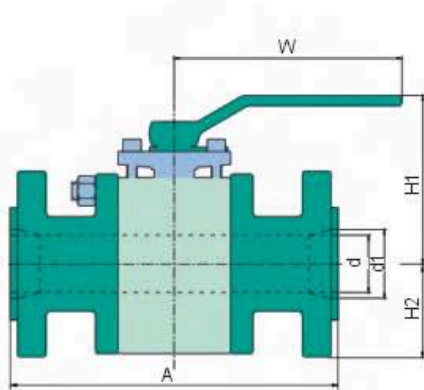
REDUCED BORE

Class 300

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	216	140	110	250	30
3x2	51	76	283	180	130	265	37
4x3	76	102	305	190	150	285	74
6x4	102	152	403	212	170	400	142
8x6	152	203	502	277	183	*400	253
10x8	203	254	568	308	217	*500	410
12x10	254	305	648	381	265	*600	580
14x12	305	337	762	429	307	*600	830
16x14	337	387	838	460	338	*600	970
18x16	387	438	914	581	375	*600	1530
20x18	438	489	991	674	414	*700	1830
22x18	438	540	1092	674	414	*700	2010
24x20	489	591	1143	713	450	*700	2220
28x24	591	686	1346	850	531	*760	3200
30x24	591	737	1397	850	531	*760	3200
34x28	686	832	1626	958	556	*800	4845
36x30	737	876	1727	1035	620	*800	6100
40x34	832	978	1930	1104	666	*800	8200

*Gear Operated

DIMENSIONS AND WEIGHTS



FULL BORE

Class 600

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	172	130	285	45
3	76	356	205	150	400	80
4	102	432	308	170	755	150
6	152	559	274	185	*500	248
8	203	660	342	223	*600	438
10	254	787	393	270	*600	701
12	305	838	522	310	*600	925
14	337	889	551	340	*600	1230
16	387	991	637	378	*700	1535
18	438	1092	683	418	*760	2135
20	489	1194	719	451	*760	2640
22	540	1295	754	492	*800	3370
24	591	1397	823	539	*800	3960
28	686	1549	958	556	*800	6060
30	737	1651	1035	620	*800	6690
32	781	1778	1087	666	*800	7825
34	832	1930	1104	666	*800	8460
36	876	2083	1143	718	*800	10650
40	978	2337	1435	887	*800	14700

REDUCED BORE

Class 600

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	292	164	110	265	40
3x2	51	76	356	172	130	285	54
4x3	76	102	432	205	150	400	99
6x4	102	152	559	308	170	755	212
8x6	152	203	660	274	185	*500	304
10x8	203	254	787	342	223	*600	510
12x10	254	305	838	393	270	*600	902
14x12	305	337	889	522	310	*600	1090
16x14	337	387	991	551	340	*600	1310
18x16	387	438	1092	637	378	*700	1640
20x18	438	489	1194	683	418	*760	2270
22x18	438	540	1295	683	418	*760	2430
24x20	489	591	1397	719	451	*760	3440
28x24	591	686	1549	823	539	*800	4250
30x24	591	737	1651	823	539	*800	4730
34x28	686	832	1930	958	556	*800	7200
36x30	737	876	2083	1035	620	*800	8600
40x34	832	978	2337	1104	666	*800	10020

*Gear Operated

FULL BORE

Class 900

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	368	193	136	400	52
3	76	381	302	158	755	87
4	102	457	332	180	*400	160
6	152	610	320	187	*600	385
8	203	737	365	226	*600	560
10	254	838	495	280	*600	820
12	305	965	600	329	*700	1125
14	324	1029	625	390	*760	1610
16	375	1130	675	407	*760	2010
18	425	1219	715	526	*760	2810
20	473	1321	750	600	*760	3460
22	524	1422	780	640	*800	4410
24	572	1549	800	690	*800	5497
28	667	1753	987	573	*800	10202
30	714	1880	1066	638	*800	11442
32	762	2032	1120	686	*800	12102
34	810	2159	1137	688	*800	17462
36	857	2286	1177	739	*800	20154

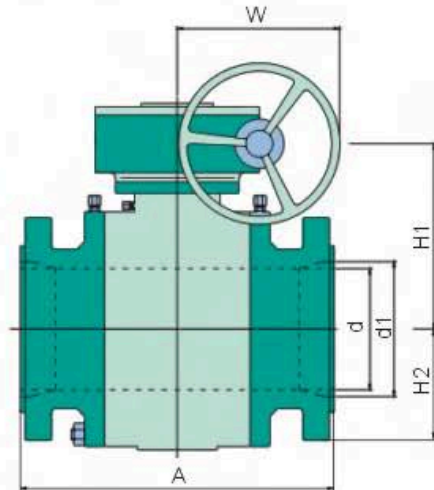
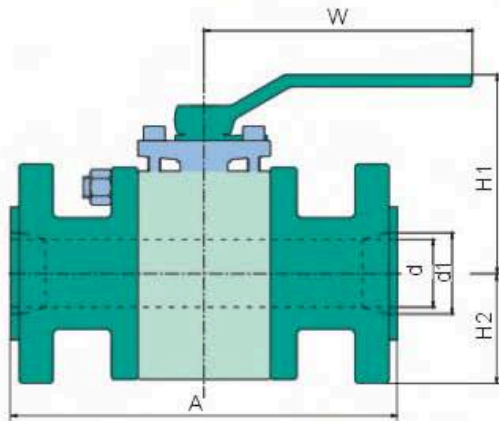
REDUCED BORE

Class 900

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	368	175	110	285	45
3x2	51	76	381	193	136	400	56
4x3	76	102	457	302	158	755	94
6x4	102	152	610	332	180	*400	226
8x6	152	203	737	320	187	*600	480
10x8	203	254	838	365	226	*600	650
12x10	254	305	965	495	280	*600	868
14x12	305	324	1029	600	329	*700	1310
16x14	324	375	1130	625	390	*760	1830
18x16	375	425	1219	675	407	*760	2205
20x18	425	473	1321	715	526	*760	3140
22x18	425	524	1422	715	526	*760	3288
24x20	473	572	1549	750	600	*760	3810
28x24	572	667	1753	800	690	*800	7580
30x24	572	714	1880	945	547	*800	7981
34x28	667	810	2159	987	573	*800	11202
36x30	714	857	2286	1066	638	*800	15653

*Gear Operated

DIMENSIONS AND WEIGHTS



FULL BORE

Class 1500

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	368	193	150	400	60
3	76	470	270	168	1135	115
4	102	546	275	176	*500	194
6	146	705	325	203	*600	580
8	194	832	501	248	*700	752
10	241	991	536	297	*700	1195
12	289	1130	614	357	*760	1970
14	318	1257	662	383	*760	2250
16	362	1384	700	434	*760	2760
18	407	1537	750	506	*760	3646
20	457	1664	864	586	*800	4497
22	495	1816	925	631	*800	5731
24	534	2045	1065	675	*800	7151

REDUCED BORE

Class 1500

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	368	183	110	285	56
3x2	51	76	470	193	150	400	82
4x3	76	102	546	270	168	1135	150
6x4	102	146	705	275	176	*500	295
8x6	146	194	832	325	203	*600	690
10x8	194	241	991	501	248	*700	930
12x10	241	289	1130	536	297	*700	1340
14x12	289	318	1257	614	357	*760	2070
16x14	318	362	1384	662	383	*760	2470
18x16	362	407	1537	700	434	*760	2950
20x18	407	457	1664	750	506	*760	3350
22x18	407	495	1816	750	506	*800	3600
24x20	457	534	2045	864	586	*800	5850

FULL BORE

Class 2500

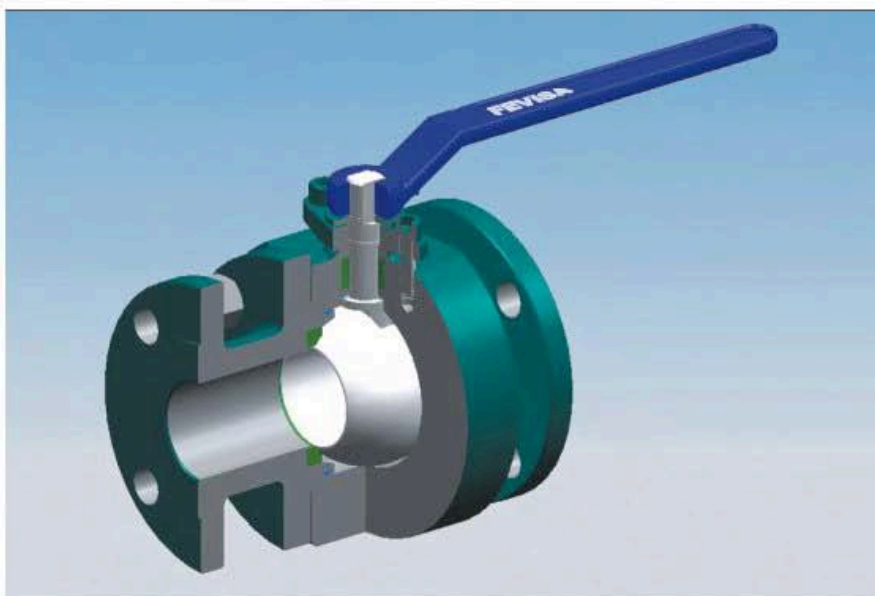
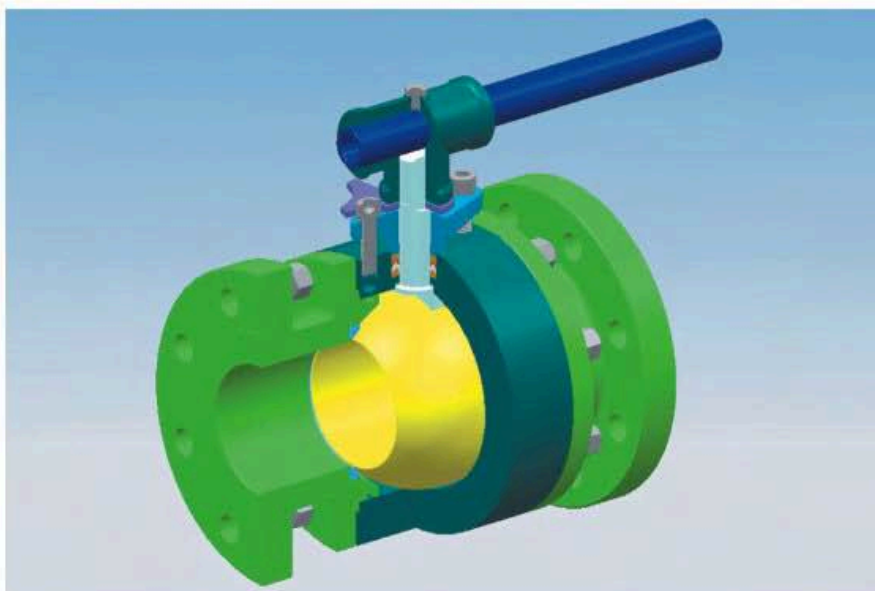
Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	44	451	230	121	815	90
3	64	578	284	146	*500	200
4	89	673	303	164	*500	385
6	133	914	394	220	*600	778
8	181	1022	488	312	*760	1352
10	225	1270	600	425	*760	2137
12	267	1422	872	629	*760	3267

REDUCED BORE

Class 2500

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	44	454	170	100	400	80
3x2	44	64	584	230	121	815	160
4x3	64	89	683	284	146	*500	320
6x4	89	133	927	303	164	*500	640
8x6	133	181	1038	360	365	*600	1170
10x8	181	225	1292	420	410	*760	1919
12x10	225	267	1445	509	470	*760	2972

*Gear Operated



FEATURES

Size: 1/2" - 4"
Class: 150~2500Lb
Three & Two Pieces Forged Steel Body
Floating Ball, Full & Reduced Bore
Anti-static Device
Blow-out Proof Stem
Fire Safe Design
Low Emission

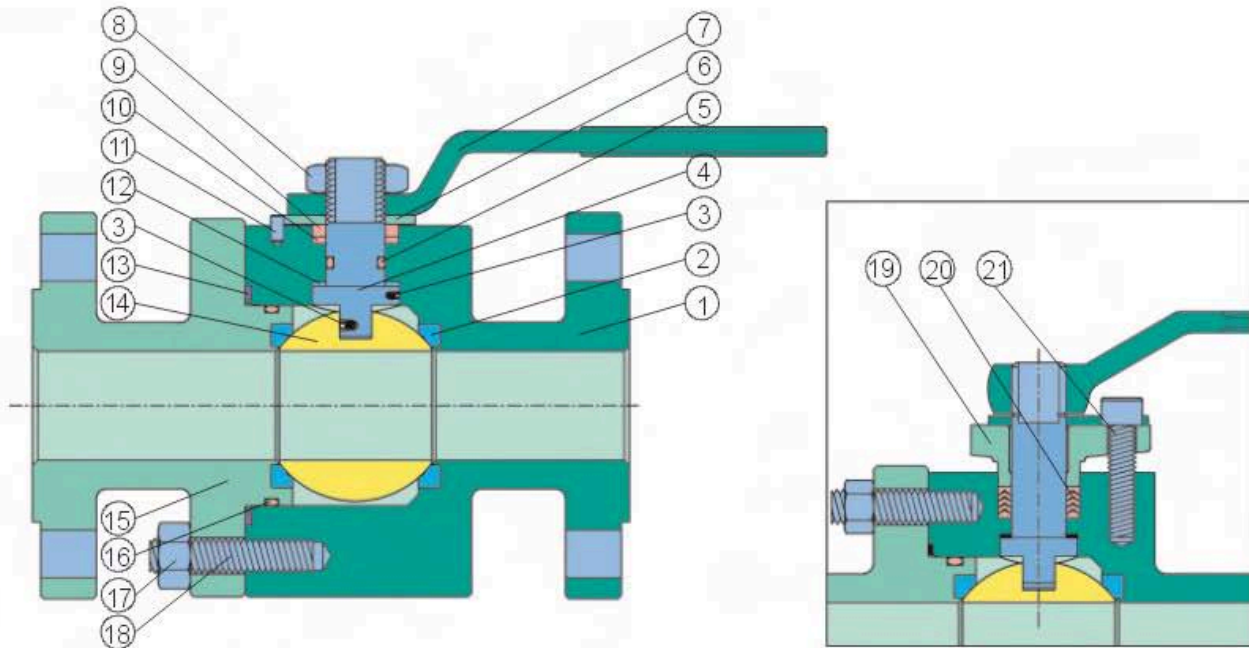
SPECIFICATIONS

Design	ASME B16.34/BS 5351
Face to Face	ASME B16.10
End Flange	ASME B16.5
Bw End	ASME B16.25
Test	API 598/ BS 6755
Fire Safe Test	API 607/ API6FA
Special	NACE MR-01-75

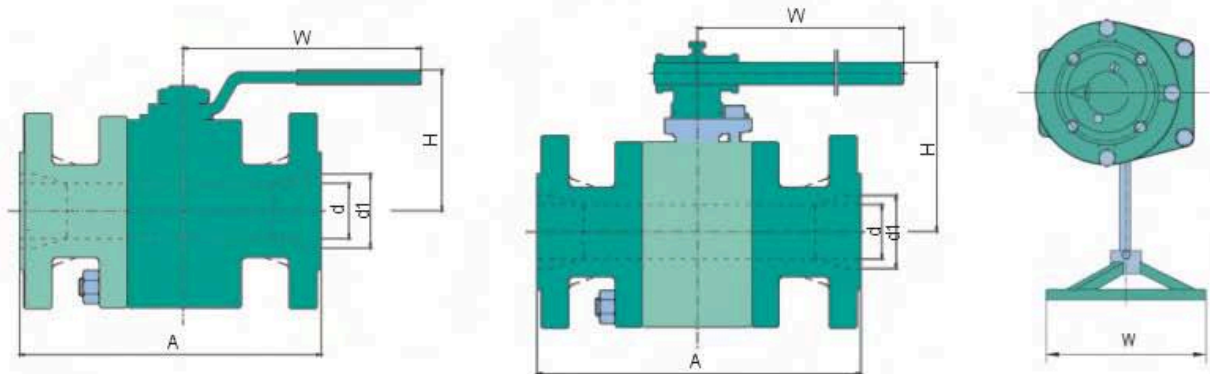
MATERIAL SPECIFICATIONS

No .	Part	Material
1	Body	ASTM A105+ENP A182-F6, F304, F316, F316L, F304L, F51
2	Seat	PTFE RTPFE PEEK PPL
3	Antistatic Spring	Stainless Steel Ss316
4	Stem	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
5	"O"-Ring	NBR Viton
6	Limited Plate	1015+Cr Carbon Steel+Cr
7	Lever	A216-WCB 1025+Cr
8	Fix Nut	Stainless Steel
9	Backup Ring	ASTM A182-F304, F316
10	Packing	PTFE Graphite
11	Positioning Pin	Stainless Steel
12	Thrust Washer	PTFE
13	Gasket	PTFE Graphite
14	Ball	ASTM A105+ENP ASTM A182-F6, F304, F316, F316L, F51
15	Bonnet	ASTM A105+ENP A182-F6, F304, F316, F316L, F304L, F51
16	"O" Ring	NBR Viton
17	Stud	ASTM A193-B7, B7M, B8, B8M
18	Nut	ASTM A194-2H, 2HM, 8, 8M

*Recommended Spare Parts



DIMENSIONS AND WEIGHTS



FULL BORE

Class 150

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	108	75	130	2.8
3/4	19	117	84	170	3.7
1	25	127	90	170	5.3
1-1/2	38	165	127	250	8.3
2	51	178	140	250	11.2
2-1/2	64	191	164	350	18.4
3	76	203	177	350	23.0
4	102	229	206	420	39.3

REDUCED BORE

Class 150

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	117	75	130	3.5
1x3/4	19	25	127	84	170	5.0
1-1/2x1	25	38	162	90	170	7.5
2x1-1/2	38	51	178	127	250	10.0
2-1/2x2	51	64	190	140	250	16.0
3x2	51	76	203	140	250	21.0
4x3	76	102	229	177	350	35.0
6x4	102	152	267	206	420	73.0

FULL BORE

Class 300

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	108	75	130	3.0
3/4	19	117	84	170	4.0
1	25	127	90	170	6.6
1-1/2	38	165	127	250	12.9
2	51	178	140	250	18.9
2-1/2	64	191	164	350	28.0
3	76	203	177	350	39.0
4	102	229	206	420	60.0

REDUCED BORE

Class 300

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	117	75	130	3.7
1x3/4	19	25	127	84	170	5.8
1-1/2x1	25	38	162	90	170	10.5
2x1-1/2	38	51	178	127	250	16.1
2-1/2x2	51	64	190	140	250	24.5
3x2	51	76	203	140	250	34.7
4x3	76	102	229	177	350	53.0
6x4	102	152	267	206	420	100.0

FULL BORE

Class 600

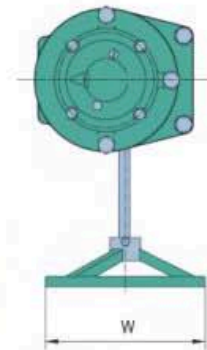
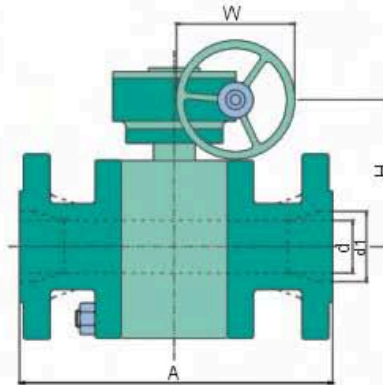
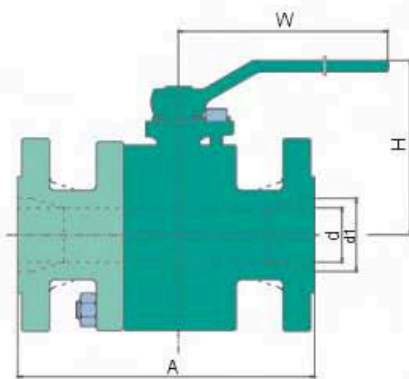
Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	165	80	170	3.5
3/4	19	191	89	200	5.0
1	25	216	95	200	7.5
1-1/2	38	241	132	350	15.0
2	51	292	145	350	23.0
3	76	356	182	420	48.0
4	102	432	211	700	80.0

REDUCED BORE

Class 600

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	191	80	170	4.0
1x3/4	19	25	216	89	200	5.5
1-1/2x1	25	38	241	95	200	10.5
2x1-1/2	38	51	292	132	350	20.0
3x2	51	76	356	145	350	29.0
4x3	76	102	432	182	420	59.0
6x4	102	152	559	211	700	95.0

DIMENSIONS AND WEIGHTS



FULL BORE

Class 900

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/ 2	13	216	75	140	5.0
3/ 4	19	229	91	180	8.0
1	25	254	108	250	10.0
1-1/2	38	305	133	400	20.0
2	51	368	150	500	30.0
3	76	381	160	500	55.0

REDUCED BORE

Class 900

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	229	75	140	7.0
1x3/4	19	25	254	91	180	9.5
1-1/2x1	25	38	305	108	250	16.5
2x1-1/2	38	51	368	133	400	23.0
3x2	51	76	381	150	500	42.0
4x3	76	102	457	160	500	65.0

FULL BORE

Class1500

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/ 2	13	216	75	140	5.0
3/ 4	19	229	91	180	8.0
1	25	254	108	250	10.0
1-1/2	38	305	133	400	20.0
2	51	368	150	500	30.0
3	76	470	160	500	65.0

REDUCED BORE

Class 1500

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	229	75	140	7.0
1x3/4	19	25	254	91	180	9.5
1-1/2x1	25	38	305	108	250	16.5
2x1-1/2	38	51	368	133	400	23.0
3x2	51	76	470	150	500	60.0
4x3	76	102	546	160	500	78.0

FULL BORE

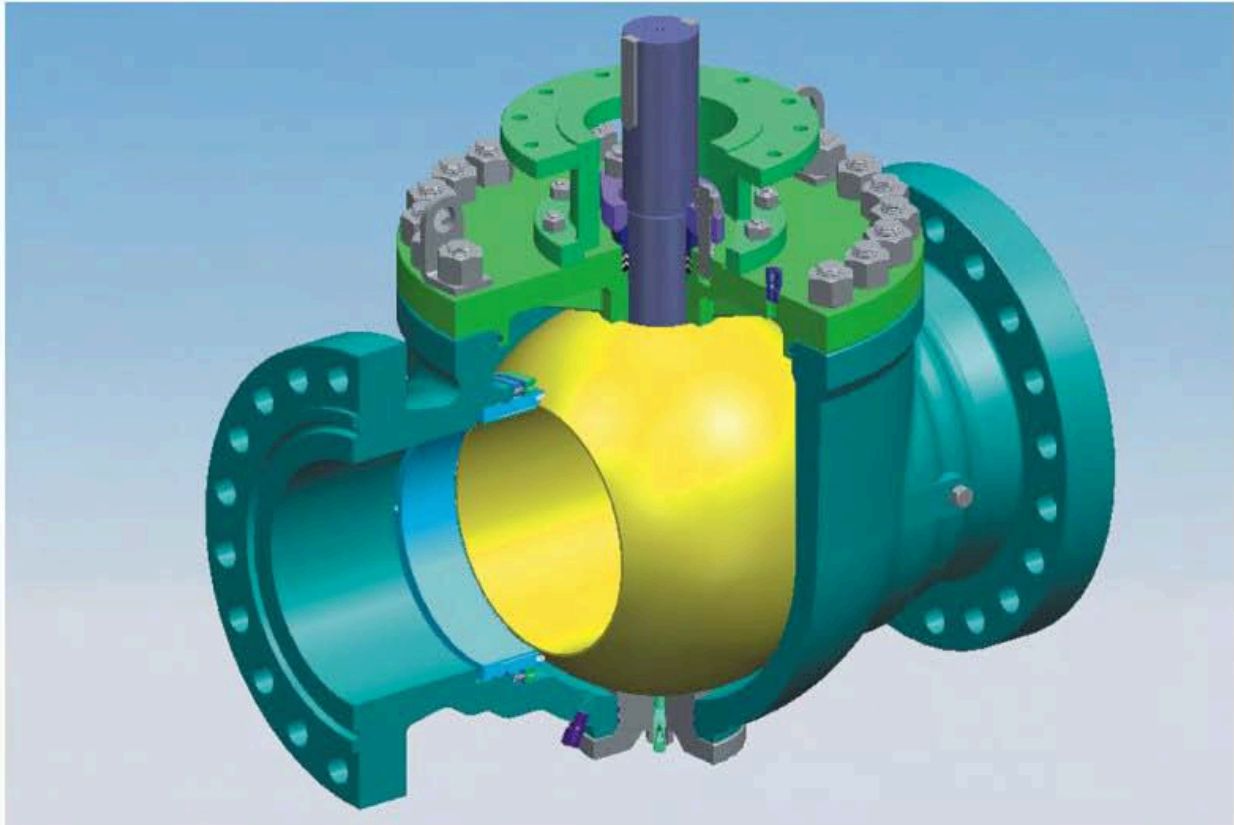
Class 2500

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/ 2	13	264	88	230	7.5
3/ 4	19	273	117	230	12.0
1	25	308	128	300	15.0
1-1/2	38	384	148	400	30.0
2	51	451	183	500	37.5

REDUCED BORE

Class 2500

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	273	88	230	11.0
1x3/4	19	25	308	117	230	14.0
1-1/2x1	25	38	384	128	300	25.0
2x1-1/2	38	51	451	148	400	35.0
3x2	51	76	578	183	500	60.0



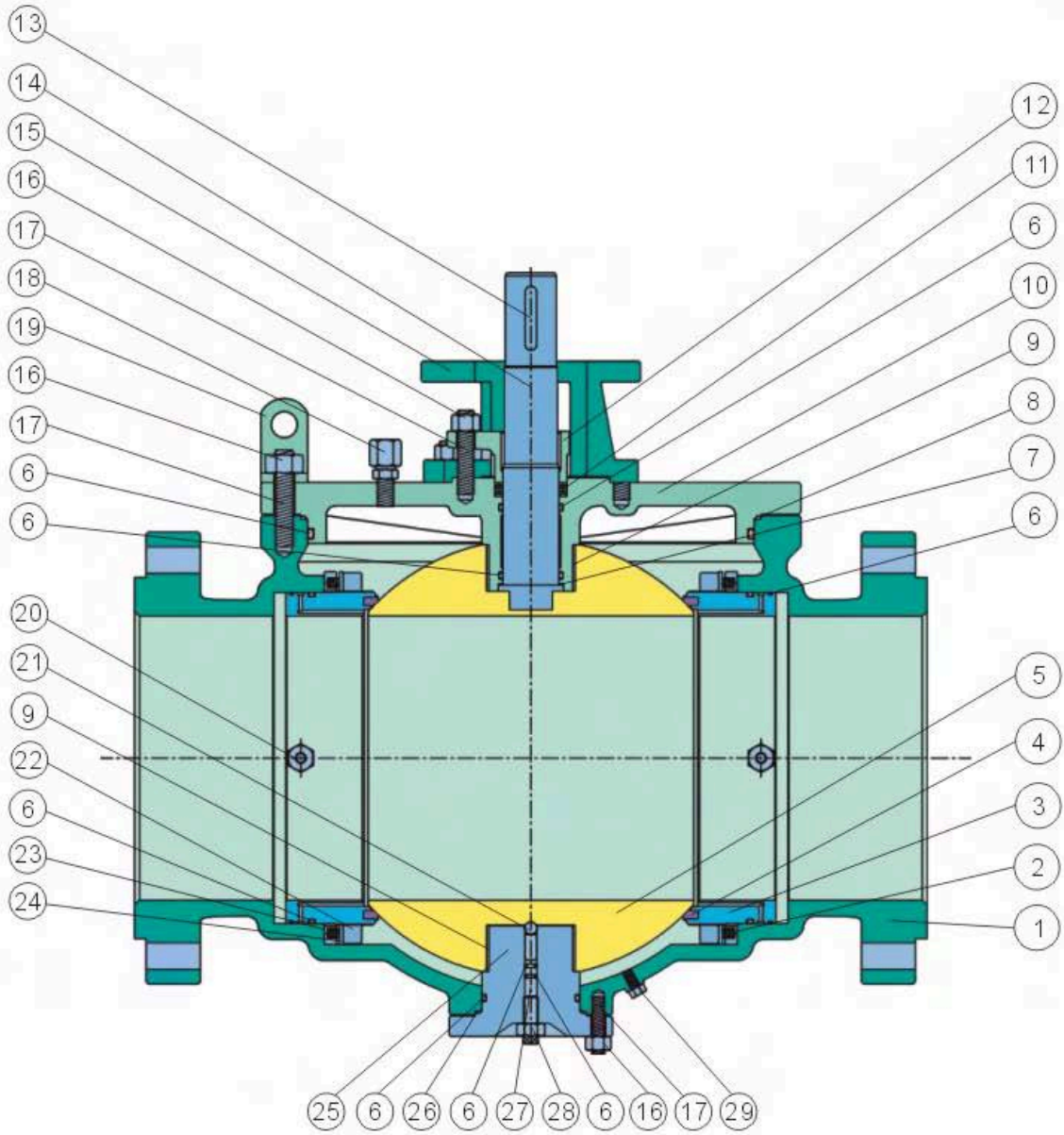
FEATURES

Size: 2" -24"
Class:150~1500Lb
The Monolithic Cast Steel Body
Floating&Trunnion Mounted Ball, Full & Reduced Bore
Anti-static Device
Blow-out Proof Stem
Fire Safe Design
Emergency Sealant Injector

SPECIFICATIONS

Design	ASME B16.34/API 6D
Face to Face	ASME B16.10
End Flange	ASME B16.5
BW End	ASME B16.25
Test	API 598
Fire Safe Test	API 607/API 6FA
Special	NACE MR-01-75

Top Entry Cast Steel Ball Valve

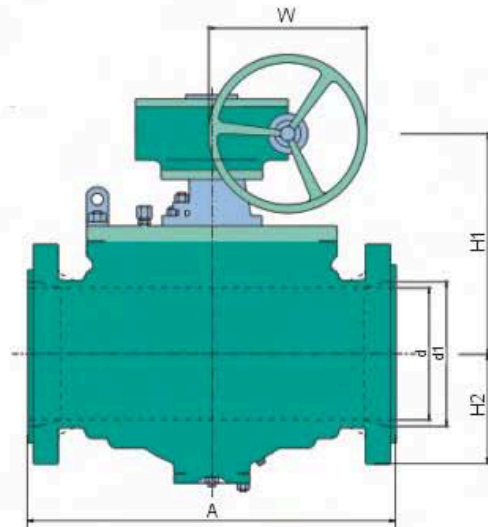
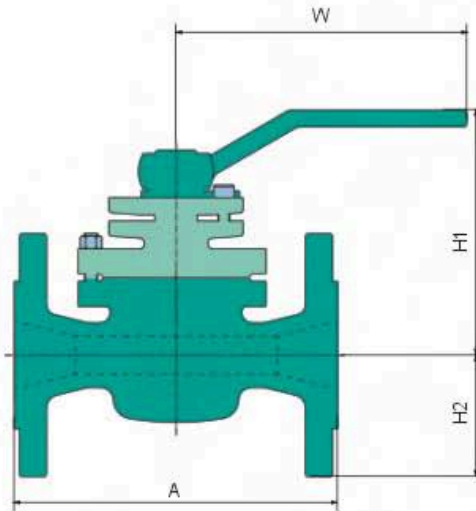


MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
2	Seat Spring	Inconel X-7505 SS304 SS316
3	Seat Ring	ASTM A105+ENP ASTM A182-F304, F316, F316L, F6, F51
4	Seat	PTFE RPTFE PEEK PPL
5	Ball	ASTM A105+ENP ASTM A182-F6, F304, F316, F316L, F51
6	O-ring	NBR Viton
7	Thrust Washer	PTFE
8	Body Gasket	Stainless Steel+PTFE SS316+PTFE
9	Sliding Bearing	PTFE SS304+Graphite SS316+Graphite
10	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
11	Packing	PTFE Graphite
12	Gland Flange	A216-WCB A351-CF8
13	KEY	1045 A182-F304, F316, F316L, F304L
14	Stem	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
15	Yoke	A216-WCB
16	Nut	ASTM 194-2H, 2HM, 8, 8M
17	Stud	ASTM 193-B7, B7M, B8, B8M
18	Vent Valve	1020+ZN A182-F304, F316, F316L
19	Lifting Lug	1020
20	Seat Inection	1020+ZN A182-F304, F316, F316L
21	Steel Ball	Stainless Steel
22	Adjusting Ring	1045+N A182-F304, F316, F316L
23	Seat Spring	1045+N A182-F304, F316, F316L
24	Steel Gasket	1045+N A182-F304, F316, F316L1
25	Trunnion	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
26	Trunnion Gasket	PTFE SS304+Graphite
27	Adjusting Nut	ASTM A194-2H, 8
28	Adjusting Stud	A182-F6, F304
29	Drain Valve	1020+ZN A182-F304, F316, F316L

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS



FULL BORE

Class 150

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	76	285	46
3	76	356	210	95	285	83
4	102	432	250	115	400	156
6	152	559	265	140	*400	256
8	203	660	355	172	*400	453
10	254	787	385	203	*600	622
12	305	838	400	242	*600	747
14	337	889	450	267	*600	959
16	387	991	510	299	*600	1220
18	438	1092	565	318	*600	1640
20	489	1194	620	349	*600	2118
24	591	1397	680	407	*700	2950

REDUCED BORE

Class 150

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	292	165	76	265	41
3x2	51	76	356	170	95	285	58
4x3	76	102	432	210	115	285	104
6x4	102	152	559	250	140	400	228
8x6	152	203	660	265	172	*400	320
10x8	203	254	787	355	203	*400	536
12x10	254	305	838	385	242	*600	685
14x12	305	337	889	400	267	*600	840
16x14	337	387	991	450	299	*600	1070
18x16	387	438	1092	510	318	*600	1430
20x18	438	489	1194	565	349	*600	1850
24x20	489	591	1397	620	407	*600	2450

*Gear Operated

FULL BORE

Class 300

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	170	83	285	49
3	76	356	210	105	285	87
4	102	432	250	127	400	164
6	152	559	265	159	*400	272
8	203	660	355	191	*500	479
10	254	787	385	222	*600	657
12	305	838	400	261	*600	783
14	337	889	450	292	*600	1007
16	387	991	510	324	*600	1281
18	438	1092	565	356	*700	1722
20	489	1194	620	388	*700	2224
24	591	1397	680	457	*760	3100

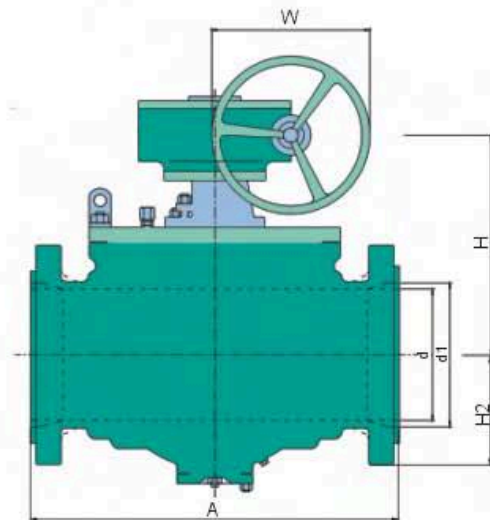
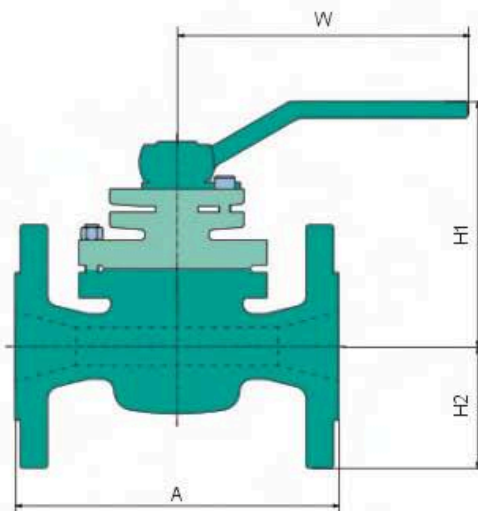
REDUCED BORE

Class 300

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	292	165	83	265	44
3x2	51	76	356	170	105	285	62
4x3	76	102	432	210	127	285	110
6x4	102	152	559	250	159	400	243
8x6	152	203	660	265	191	*400	343
10x8	203	254	787	355	222	*400	559
12x10	254	305	838	385	261	*600	725
14x12	305	337	889	400	292	*600	890
16x14	337	387	991	450	324	*600	1120
18x16	387	438	1092	510	356	*600	1480
20x18	438	489	1194	565	388	*700	1960
24x20	489	591	1397	620	457	7600	2650

*Gear Operated

DIMENSIONS AND WEIGHTS



FULL BORE

Class 600

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	292	180	83	285	52
3	76	356	220	105	285	92
4	102	432	260	137	400	173
6	152	559	275	175	*400	285
8	203	660	370	210	*400	504
10	254	787	398	254	*600	680
12	305	838	410	280	*700	819

REDUCED BORE

Class 600

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	292	174	83	285	46
3x2	51	76	356	180	105	285	74
4x3	76	102	432	220	137	760	120
6x4	102	152	559	260	178	1140	249
8x6	152	203	660	275	210	*500	380
10x8	203	254	787	370	254	*600	587
12x10	254	305	838	398	280	*600	752

*Gear Operated

FULL BORE

Class 900

Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	368	190	108	760	60
3	76	381	230	121	1140	100
4	102	457	270	146	*400	204
6	152	610	320	191	*500	420
8	203	737	375	235	*600	644
10	254	838	440	273	*700	943
12	305	965	498	305	*700	1295

REDUCED BORE

Class 900

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	368	182	108	760	54
3x2	51	76	381	190	121	760	80
4x3	76	102	457	230	146	1140	148
6x4	102	152	610	270	191	*400	305
8x6	152	203	737	320	235	*500	552
10x8	203	254	838	375	273	*600	748
12x10	254	305	965	440	305	*700	1048

*Gear Operated

FULL BORE

Class 1500

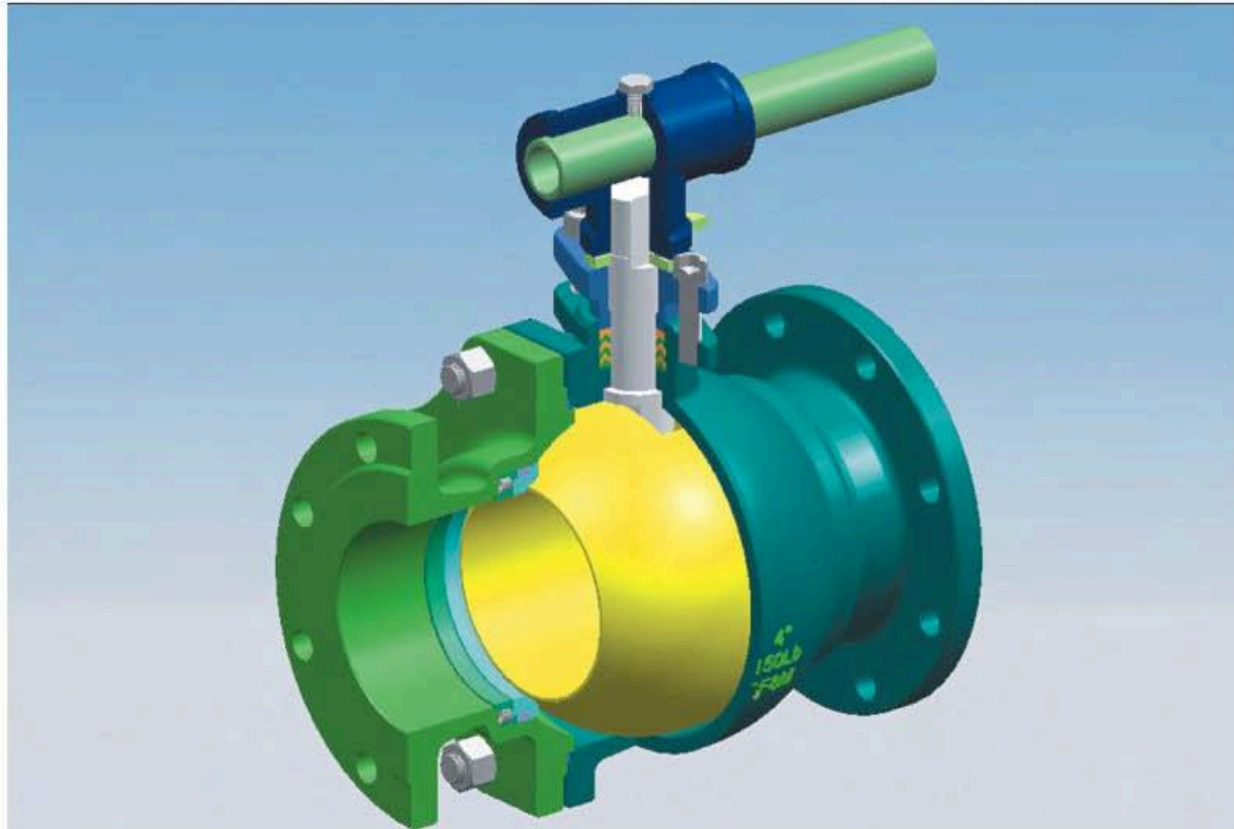
Size	d	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	kg
2	51	368	195	108	760	69
3	76	470	233	134	*400	133
4	102	546	276	156	*500	253
6	146	705	324	197	*600	667
8	194	832	397	242	*700	865
10	241	991	462	292	*700	1375
12	289	1130	493	337	*760	2175

REDUCED BORE

Class 1500

Size	d	d1	A	H1	H2	W	Weight
in	mm	mm	mm	mm	mm	mm	kg
2x1-1/2	38	51	368	189	108	760	63
3x2	51	76	470	195	134	760	95
4x3	76	102	546	233	156	*400	183
6x4	102	146	705	276	197	*500	359
8x6	146	194	832	324	242	*600	794
10x8	194	241	991	397	292	*700	1070
12x10	241	289	1130	462	337	*700	1541

*Gear Operated



High Temperature Service

General soft seat ball valves working temperature is limited up to 400° F, but metal-seat ball valves are guaranteed for a maximum service temperature of 800° F.

Low Pressure Reliable Sealing

Valvulas FEVISA metal-seat ball valves adopt seat spring structure, which can push upstream seat tightly against the ball surface creating a reliable sealing even if extremely low pressure

Pressure Test

Metal-seat ball valves maximum allowable seat leakage:

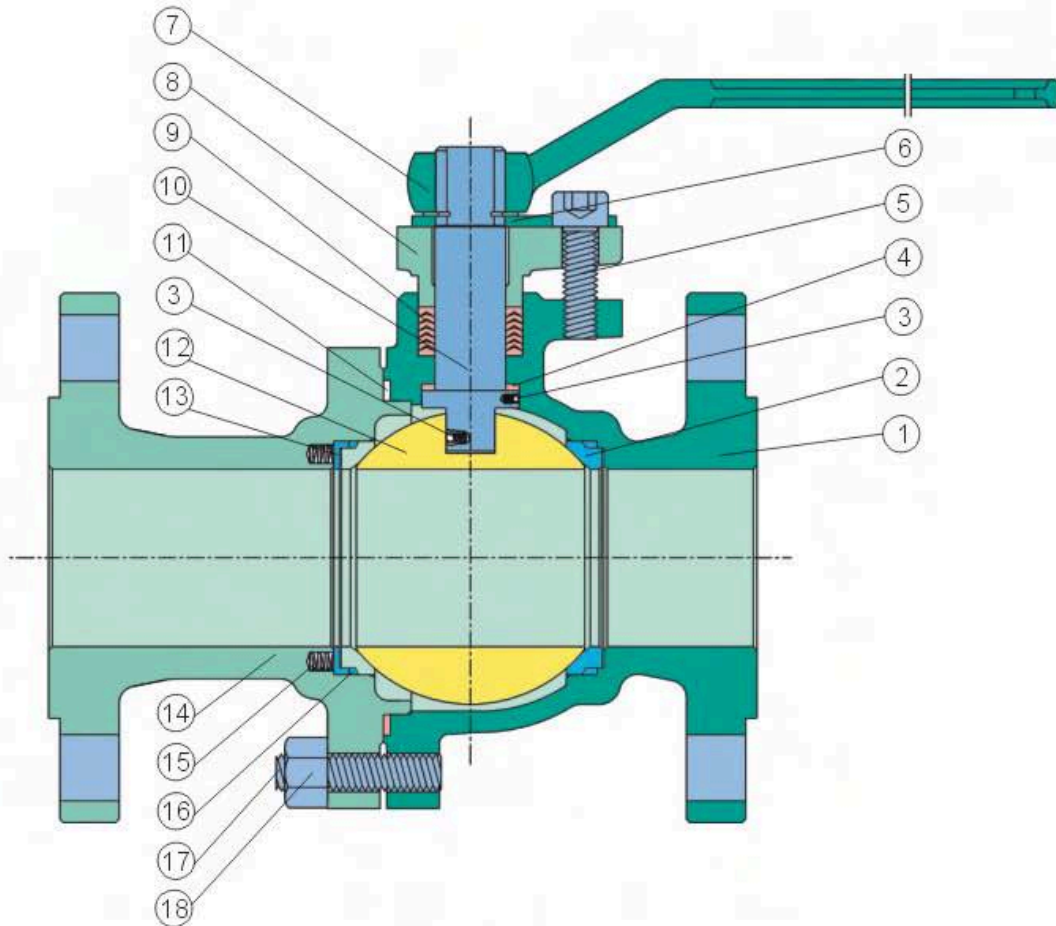
Air: ANSI/FC170-2 Class V

Absolute Fire Safe Guarantee

Valvulas FEVISA metal-seated ball valves are absolute fire safe design. Metal-to-metal contact is designed between ball and seat, where is unconditional fire safe function. Flexible graphite gasket can prevent fluid leakage from between body & seat or body & bonnet even if high temperature environments to reach fire-safe purpose. In addition, other sealing components such as stem packing can also reach fire-safe function and prevent external leakage. So all parts of the valve will not be damaged by high temperature service.

Blow-out Proof Stem & Anti-Static Device

As general ball valves, metal-seated ball valves are provided with blow-out proof stem & anti-static device.

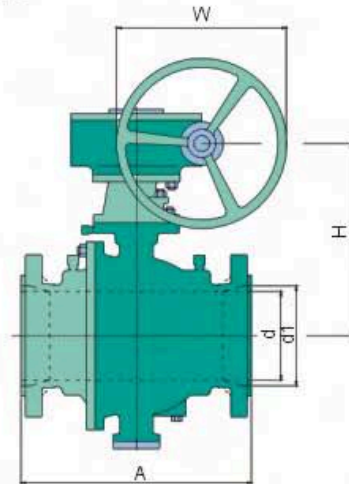
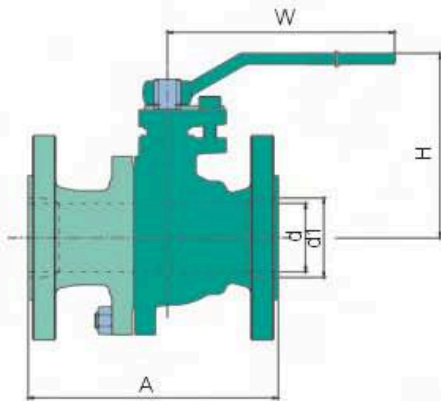


MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
2	Seat	ASTM A182-F6+STL, F304+STL, F316+STL, F316L+STL
3	Antistatic Spring	Stainless Steel Ss316
4	Thrust Washer	PTFE PPL
5	Screw	ASTM A193-B7, B8
6	Limited Plate	1015+Cr Carbon Steel+Cr
7	Lever	A216-WCB
8	Gland Flange	A216-WCB A351-CF8
9	Packing	Graphite PTFE
10	Stem	A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
11	Body Gasket	Stainless Steel+PTFE SS316+PTFE
12	Ball	ASTM A182-F6+N, F304+N, F316+N, F304L, NF51+N
13	Seat Gasket	ASTM A182-F6, F304+, F316, F316L
14	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M,
15	Seat Spring	Inconel X-7505 SS304 Ss316
16	Seat Sealing	Graphite
17	Stud	ASTM 193-B7, B7M, B8, B8M
18	Nut	ASTM 194-2H, 2HM, 8, 8M

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS



FULL BORE

Class 150

Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	108	75	130	2.3
3/4	19	117	84	170	2.5
1	25	127	90	170	3.5
1-1/2	38	165	127	250	7.3
2	51	178	140	250	9.8
2-1/2	64	190	164	350	15
3	76	203	177	350	18
4	102	229	206	420	33
5	125	356	292	700	57
6	152	394	320	*1000	66
8	203	457	398	*320	170
10	254	533	495	*350	255
12	305	610	580	*400	390
14	337	686	625	*500	510
16	387	762	720	*500	820
18	438	864	770	*500	1010
20	489	914	840	*500	1828

REDUCED BORE

Class 150

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	117	75	130	2.7
1x3/4	19	25	127	84	170	3.0
1-1/2x1	25	38	165	90	170	4.3
2x1-1/2	38	51	178	127	250	9.5
2-1/2x2	51	64	191	140	250	12
3x2	51	76	203	140	250	16.5
4x3	76	102	229	177	350	24
6x4	102	152	394	206	420	43
8x6	152	203	457	320	*1000	85.5
10x8	203	254	533	398	*320	214
12x10	254	305	610	495	*350	284
14x12	305	337	686	580	*400	418
16x14	337	387	762	625	*500	612
18x16	387	438	864	720	*500	970
20x18	428	489	914	770	*500	1137
24x20	489	591	1067	840	*500	2000

*Trunnion Mounted Gear Operated

FULL BORE

Class 300

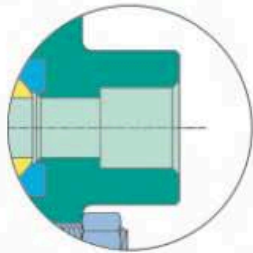
Size	d	A	H	W	Weight
in	mm	mm	mm	mm	kg
1/2	13	140	75	130	3.5
3/4	19	152	84	170	4.2
1	25	165	90	170	5.8
1-1/2	38	191	127	250	10.5
2	51	216	140	250	14
2-1/2	64	241	164	350	19
3	76	283	177	350	31
4	102	305	206	420	54
6	152	403	305	*280	135
8	203	502	398	*320	210
10	254	568	495	*350	391
12	305	648	580	*400	550
14	337	762	625	*500	710
16	387	838	720	*500	1250
18	438	914	770	*500	1300
20	489	991	840	*500	2180
24	591	1143	920	*600	2930

REDUCED BORE

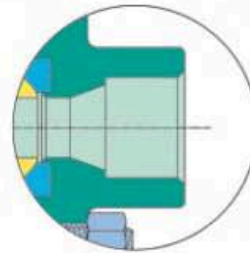
Class 300

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
3/4x1/2	13	19	152	75	130	4.0
1x3/4	19	25	165	84	170	5.0
1-1/2x1	25	38	190	90	170	7.0
2x1-1/2	38	51	216	127	250	12
2-1/2x2	51	64	241	140	250	17
3x2	51	76	283	140	250	21.5
4x3	76	102	305	177	350	37
6x4	102	152	403	206	420	66
8x6	152	203	502	305	*280	164
10x8	203	254	568	398	*320	350
12x10	254	305	648	495	*350	400
14x12	305	337	762	580	*400	590
16x14	337	387	838	625	*500	850
18x16	387	438	914	720	*500	1220
20x18	428	489	991	770	*500	1460
24x20	489	591	1143	840	*500	2220

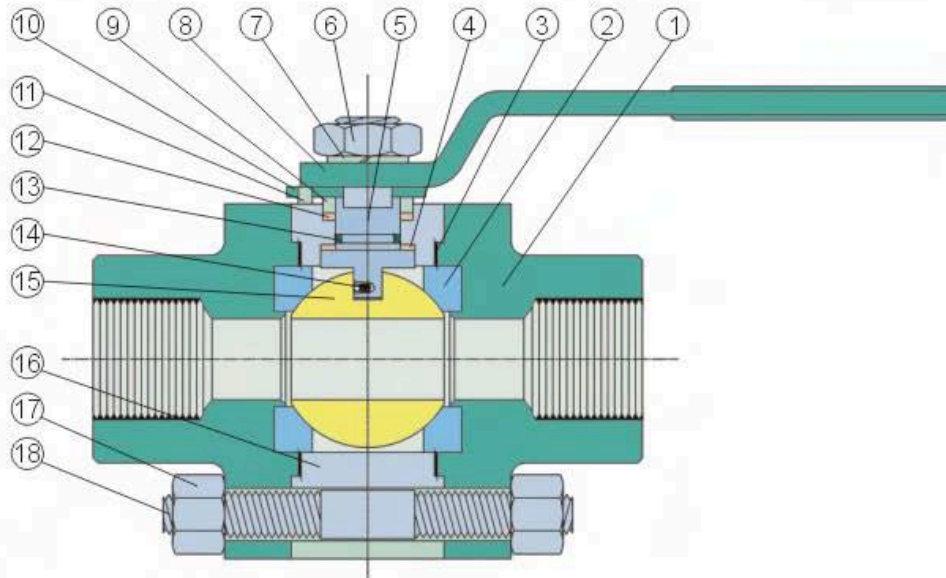
*Trunnion Mounted Gear Operated



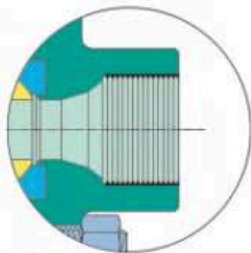
Full Bore Socket Welding End



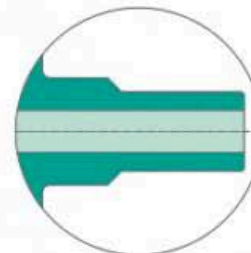
Reduced Bore Socket Welding



Full Bore Screwed End



Reduced Bore Screwed End



Extended Bonnet(nipple)

FEATURES

Size: 1/4" - 2"
Class: 800Lb ~ 2500Lb
Three, Two-Pieces Casting Body
Floating Type, Full & Reduced Bore
Blow-out Proof Stem
Fire Safe Design

SPECIFICATIONS

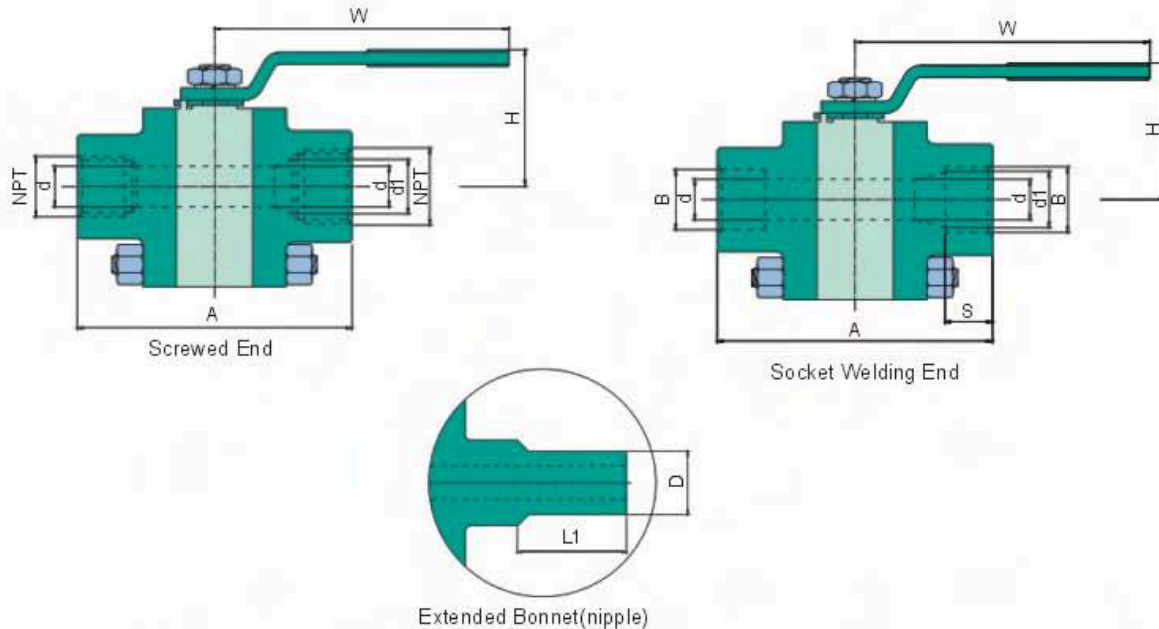
Design	ASME B16.34/BS 5351
Face to Face	Manufacturer Standard
Screwed End	ASME B1.20.1
S/W, B/W, End	ASME B16.11
Test	API 598
Fire Safe Test	API 607/API 6FA

MATERIAL SPECIFICATIONS

No.	Part	Material
1	Bonnet	ASTM A105+ENP A182-F6, F304, F316, F316L, F304L, F51
2	Seat	PTFE RTPFE PEEK PPL
3	Body Gasket	PTFE Graphite
4	Thrust Washer	A105+ENP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
5	Stem	Stainless Steel
6	Stop Nut	Carbon Steel
7	Spring Gasket	A216-WCB 1025+Cr
8	Lever	ASTM A182-F304, F316
9	Backup Ring	1015+Cr Carbon Steel+Cr
10	Limited Plate	Stainless Steel
11	Positioning Pin	PTFE Graphite
12	Packing	PTFE
13	"O"-ring	NBR Viton
14	Antistatic Spring	Stainless Steel SS316
15	Ball	ASTM A105+ENP ASTM A182-F6, F304, F316, F316L, F51
16	Body	ASTM A105+ENP A182-F6, F304, F316, F316L, F304L, F51
17	Stud	ASTM A193-B7, B7M, B8, B8M
18	Nut	ASTM A194-2H, 2HM, 8, 8M

*Recommended Spare Parts

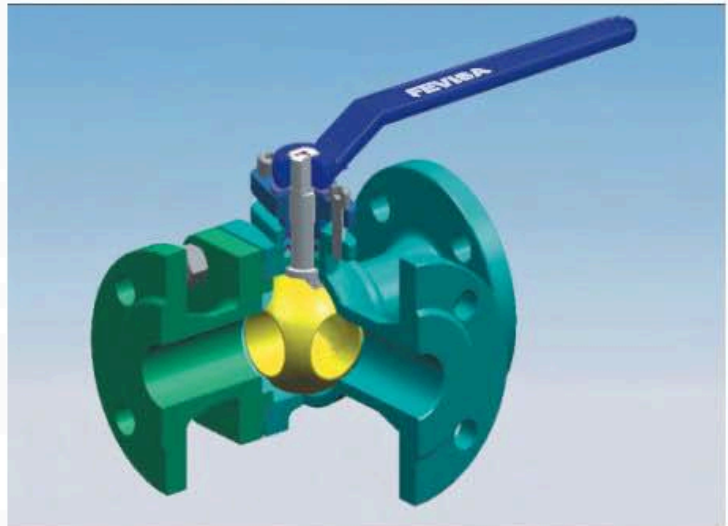
DIMENSIONS AND WEIGHTS



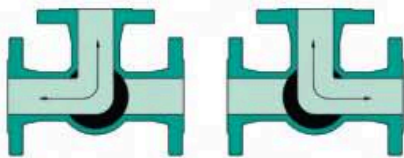
Class 800/2500

Size	d	d1	A	B	S	NPT	H	W	L1	D	Weight
in	mm	mm	mm	mm	mm	in	mm	mm	mm	in	kg
1/2	10	14	92	21.8	9.6	1/2"	65	130	AS REQUEST	21.3	1.7
3/4	14	18	111	27.2	12.7	3/4"	75	160		26.9	2.5
1	18	24	127	33.9	12.7	1"	80	220		33.7	4.5
1-1/4	24	30	140	42.7	12.7	1-1/4"	100	250		42.4	7
1-1/2	30	38	152	48.8	12.7	1-1/2"	110	250		48.3	8.8
2	38	48	152	61.2	15.7	2"	125	290		60.3	10

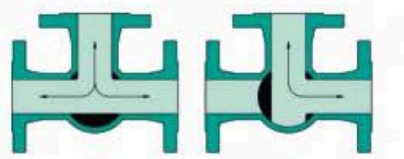
Note:butt Welding End is on request



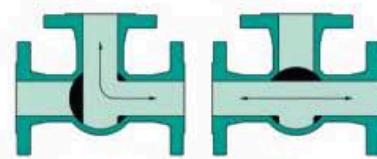
Flow Graph A



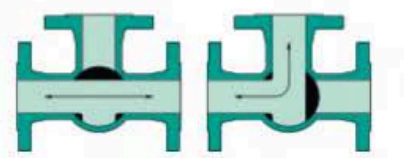
Flow Graph B



①



②



③



④

FEATURES

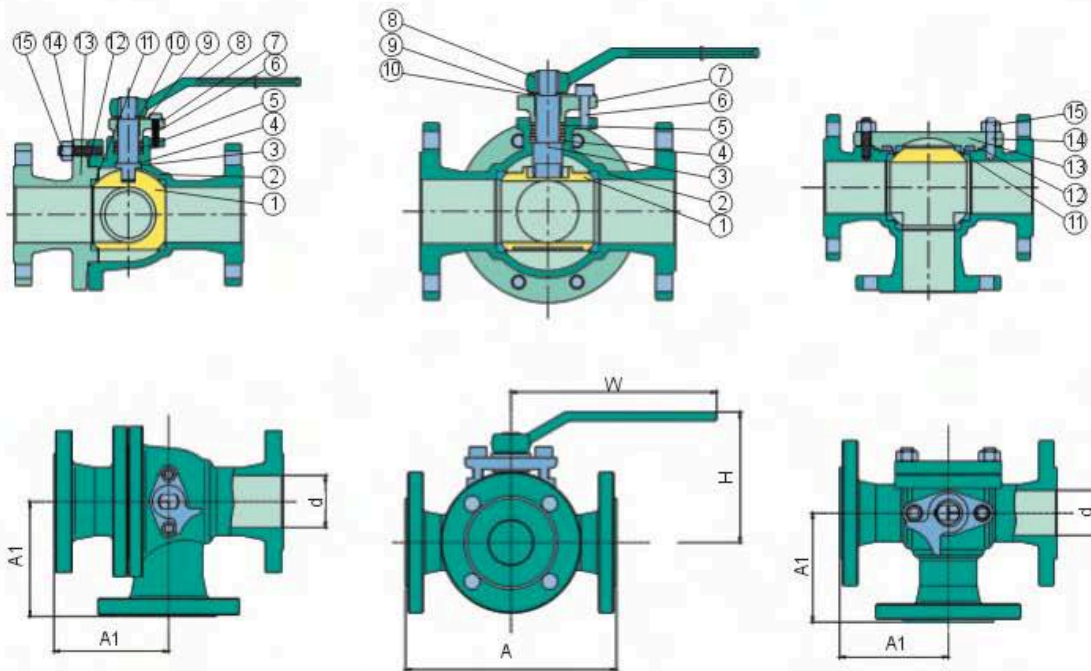
Size: 1/2 " -8 "
Class: 150~300Lb
The monolithic & Two Pieces Cast Body
Floating Ball Full Bore
Blow-out Proof Stem

SPECIFICATIONS

Design	API 6D ASME B16.34
Face to Face	Manufacturer Standard
End to End	ASME B16.5
Test	API 598

MATERIAL SPECIFICATIONS

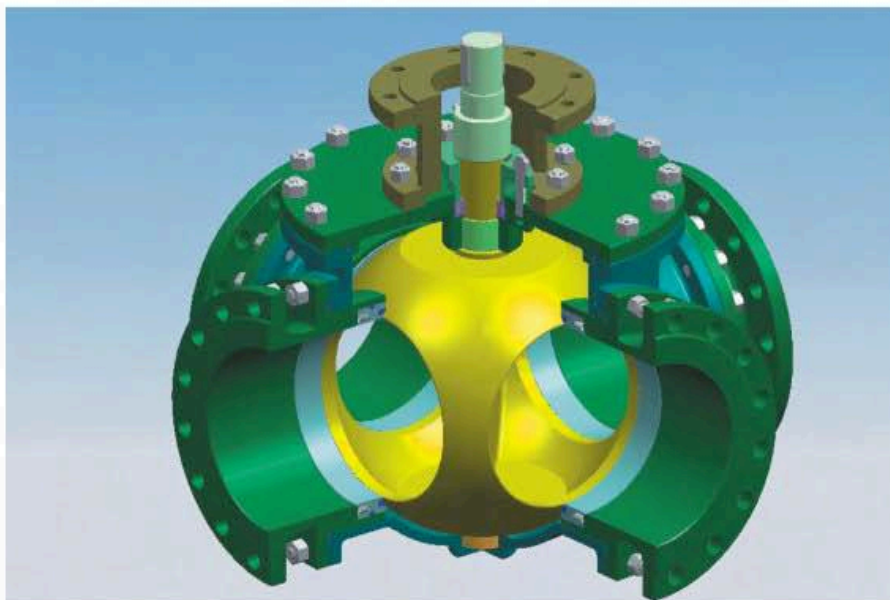
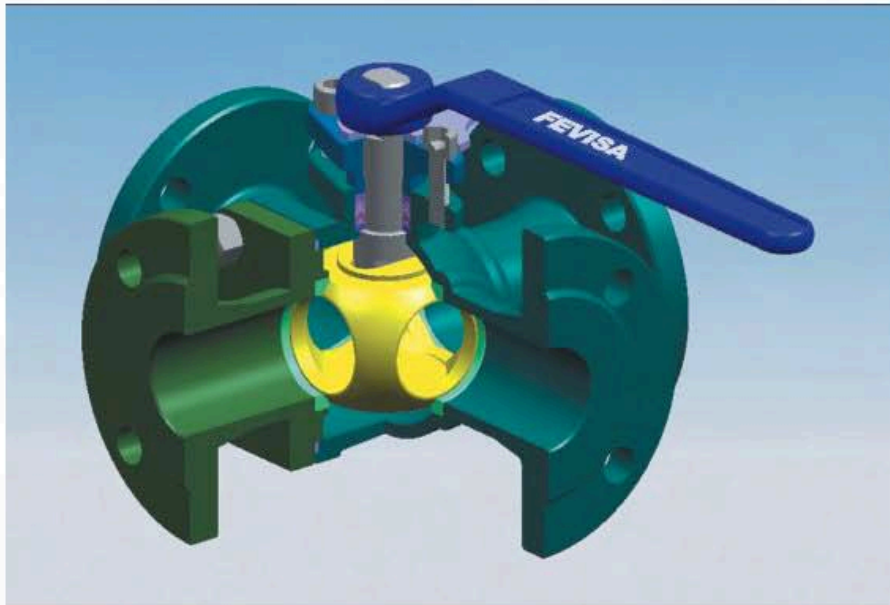
No .	Part	Material
1	Ball	A351-CF8, CF8M, CF3, CF3M, Duplex
2	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
3	Stem	A105+NEP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
4	Thrust Washer	PTFE
5	Packing	PTFE Graphite
6	Screw	ASTM A193-B7, B8
7	Gland Flange	A216-WCB A351-CF8
8	Lever	A216-WCB
9	Limited Plate	1015+Cr Carbon Steel+Cr
10	Retainer	Carbon Steel
11	Seat	PTFE RPTFE PEEK PPL
12	Body Gasket	Stainless Steel+PTFE SS316+PTFE
13	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
14	Stud	ASTM 193-B7, B7M, B8, B8M
15	Nut	ASTM 194-2H, 2HM, 8, 8M



DIMENSION

Class 150/300

Size	d	A	A1	H	W
1/2"	14	150	75	90	140
3/4"	19	150	75	90	140
1"	25	180	90	102	155
1-1/4"	38	200	100	115	250
1-1/2"	48	220	110	135	250
2"	50	240	120	140	350
2-1/2"	65	260	130	155	350
3"	78	280	140	185	420
4"	100	320	160	210	700
5"	125	380	190	270	1000
6"	148	440	220	305	1300
8"	198	550	275	335	1800

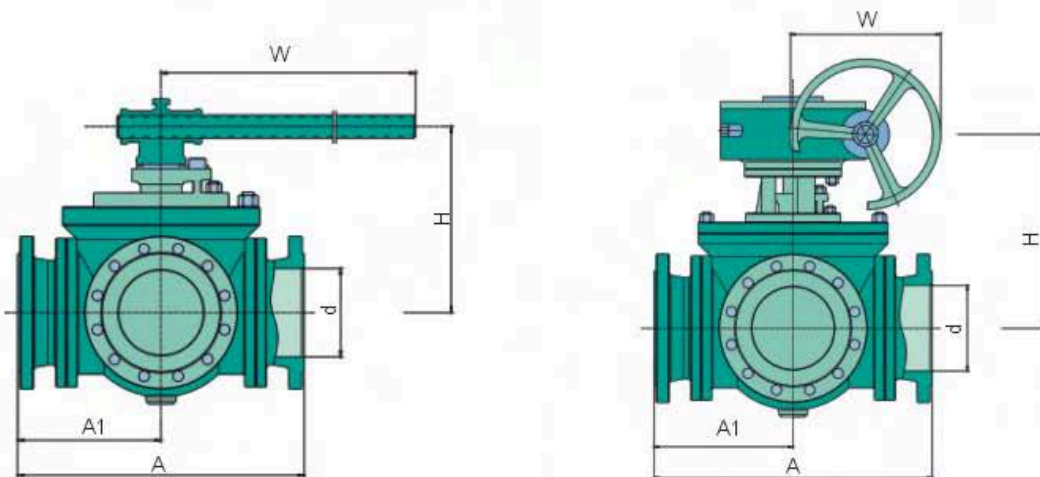
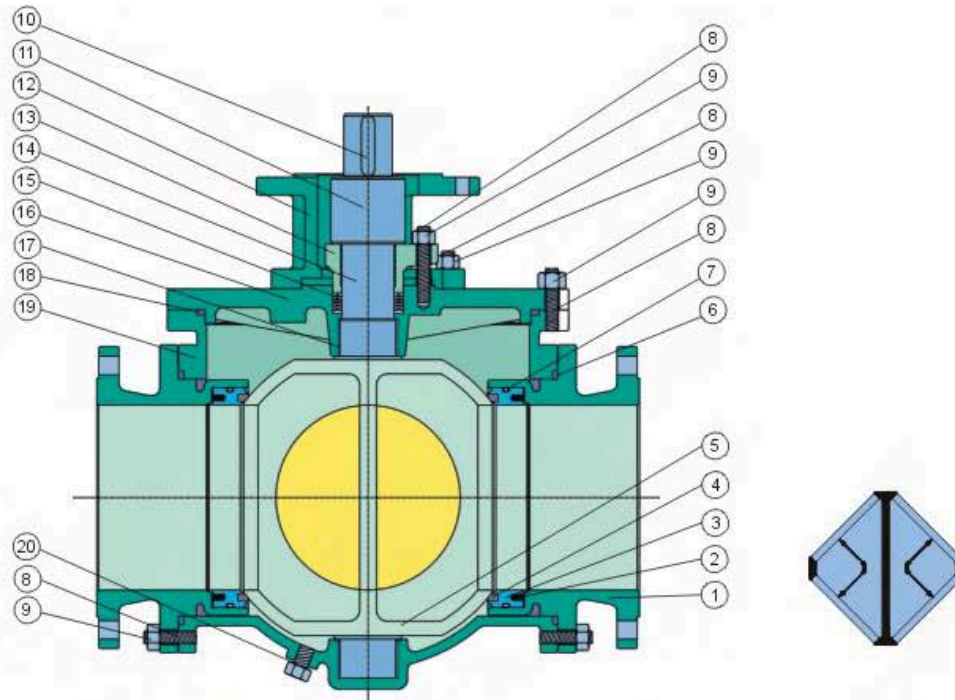


FEATURES

Size: 1/2" -20"
Class:150~300Lb
Two pieces & Multi-pieces Cast Body
Blow-out Proof Stem

SPECIFICATIONS

Design	API 6D ASME B16.34
Face to Face	Manufacturer Standard
End to End	ASME B16.5
Test	API 598



DIMENSION

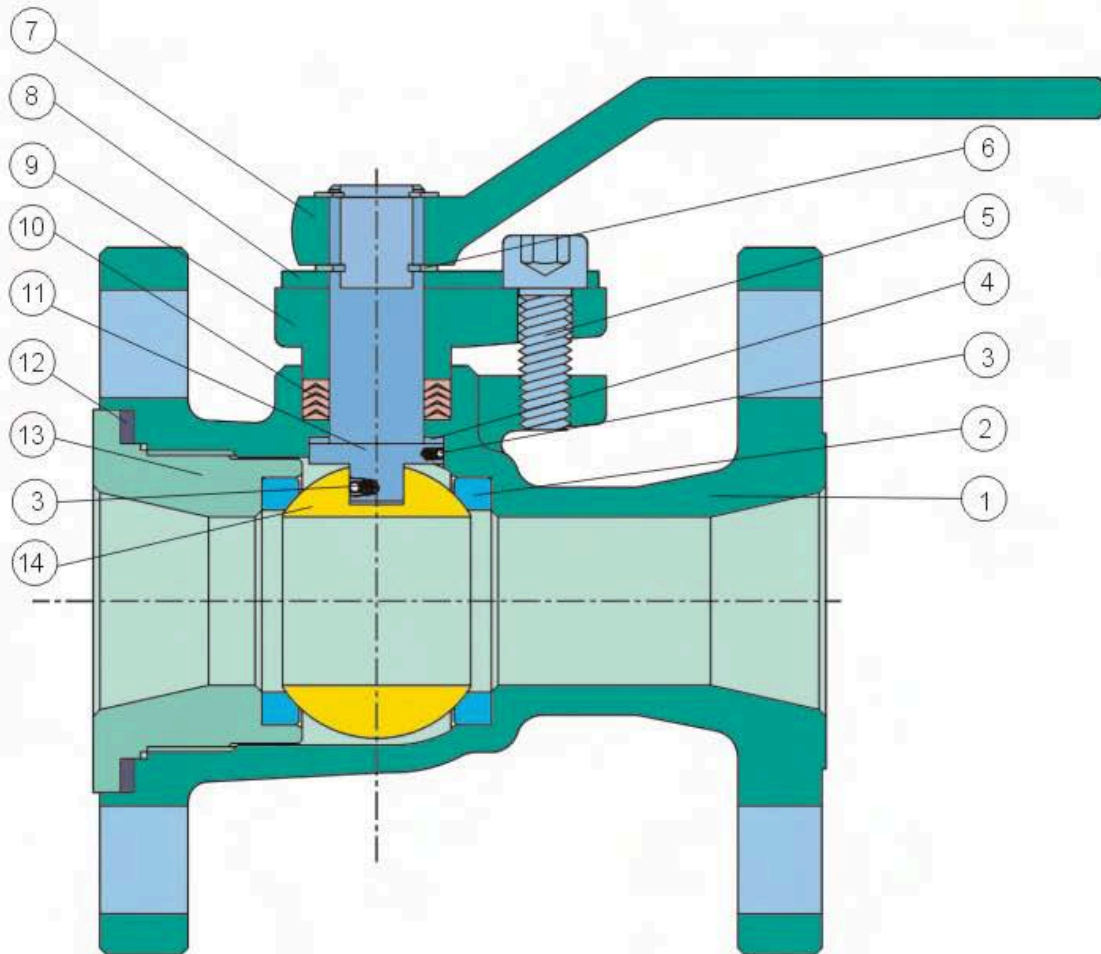
Class 150/300

Size	d	A	A1	H	W
1/2"	14	150	75	90	140
3/4"	19	150	75	90	140
1"	25	180	90	102	155
1-1/4"	38	200	100	115	250
1-1/2"	48	220	110	135	250
2"	50	240	120	140	350
2-1/2"	65	260	130	155	350
3"	78	280	140	185	420
4"	100	320	160	210	700
5"	125	360	190	270	1000
6"	148	440	220	305	1300
8"	198	550	275	335	1800
10"	248	730	365	480	3350
12"	298	850	425	510	4400
14"	337	960	490	560	5500
16"	387	1100	550	620	5500
20"	489	1250	625	680	5500

*Gear Operated

MATERIAL SPECIFICATIONS

No.	Part	Material
1	Bonnet	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
2	Seat Spring	Incenel X-750 SS304 SS316
3	Seat Ring	ASTM A105+ENP ASTM A182-F304, F316, F316L, F6
4	Seat	PTFE RPTFE PEEK PPL
5	Ball	A351-CF8, CF8M, CF3, CF3M, Duplex
6	Body Gasket	PTFE SS304+Graphite SS316+Graphite
7	O-ring	NBR Viton
8	Stud	ASTM 193-B7, B7M, B8, B8M
9	Nut	ASTM 194-2H, 2HM, 8, 8M
10	Key	1045 Stainless Steel
11	Coupling	ASTM A105+ENP A182-F6
12	Yoke	A216-WCB A351-CF8
13	Gland Flange	A216-WCB A351-CF8, CF8M
14	Stem	A105+NEP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
15	Packing	PTFE Graphite
16	Cover	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
17	Sliding Bearing	Stainless Steel+PTFE SS316+PTFE
18	Gasket	PTFE SS304+Graphite SS316+Graphite
19	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
20	Vent Valve	Carbon Steel+ENP A182-F304, F304, F316, F316L, F304L



FEATURES

Size: 1/2" - 4"
Class: 150~300Lb
One Pieces Cast Steel Body
Floating Ball, Reduced Bore
Anti-static Device
Blow-out Proof Stem
Fire Safe Design

SPECIFICATIONS

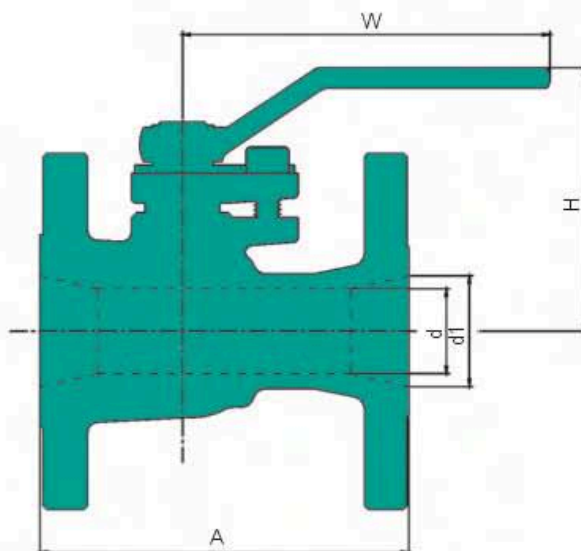
Design	ASME B16.34/API 608
Face to Face	ASME B16.10
End Flange	ASME B16.5
Test	API 598
Fire Safe Test	API 607/ API6FA
Special	NACE MR-01-75

MATERIAL SPECIFICATIONS

No.	Part	Material
1	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M
2	Seat	PTFE RTPFE PEEK PPL
3	Antistatic Spring	Stainless Steel SS316
4	Thrust Washer	PTFE
5	Screw	ASTM A193-B7, B8
6	Retainer	Carbon Steel
7	Lever	A216-WCB
8	Stop Plate	1015+Cr Carbon Steel+Cr
9	Gland Flange	A216-WCB A351-CF8
10	packing	PTFE Graphite
11	Stem	ASTM A105+ENP A182-F6, F316, F316L, F304L 17-4PH
12	Gasket	PTFE Graphite
13	Screwed cover	A216-WCB A352-LCB A351-CF8, CF8M CF3, CF3M
14	Ball	A351-CF8, CF8M, CF3, CF3M

*Recommended Spare Parts

DIMENSIONS AND WEIGHTS

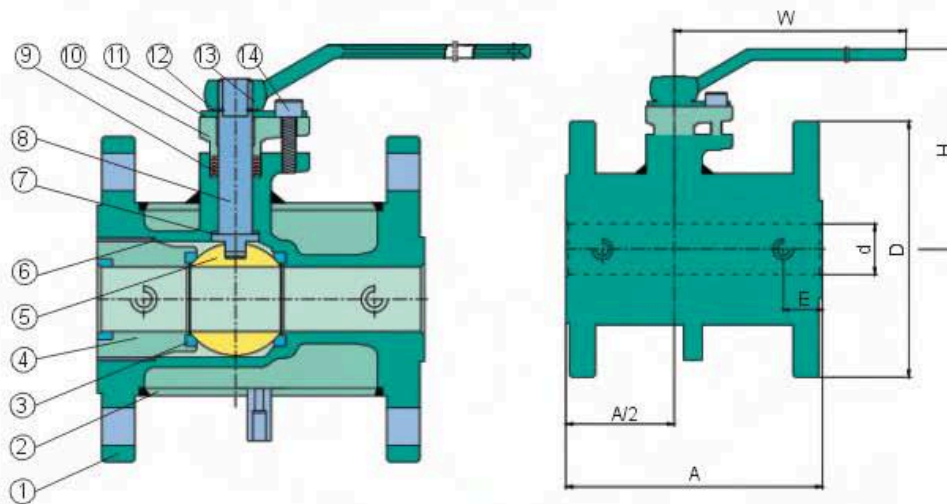


Class 150

Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
1/2	10	13	10	89	129	5.4
3/4	15	18	15	89	129	6.0
1	19	25	19	90	170	6.6
1-1/2	32	40	32	106	224	7.8
2	38	50	38	111	224	12
3	59	80	59	146	356	23
4	76	102	76	171	356	38

Class 300

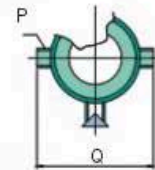
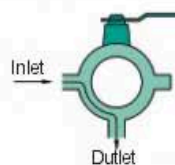
Size	d	d1	A	H	W	Weight
in	mm	mm	mm	mm	mm	kg
1/2	10	13	140	89	129	6.0
3/4	15	18	152	89	129	6.6
1	19	25	165	90	170	7.2
1-1/2	32	40	191	106	224	13
2	38	50	216	111	224	18
3	59	80	283	160	356	36
4	76	102	305	186	506	54



Correct Installation Method



Incorrect Installation Method



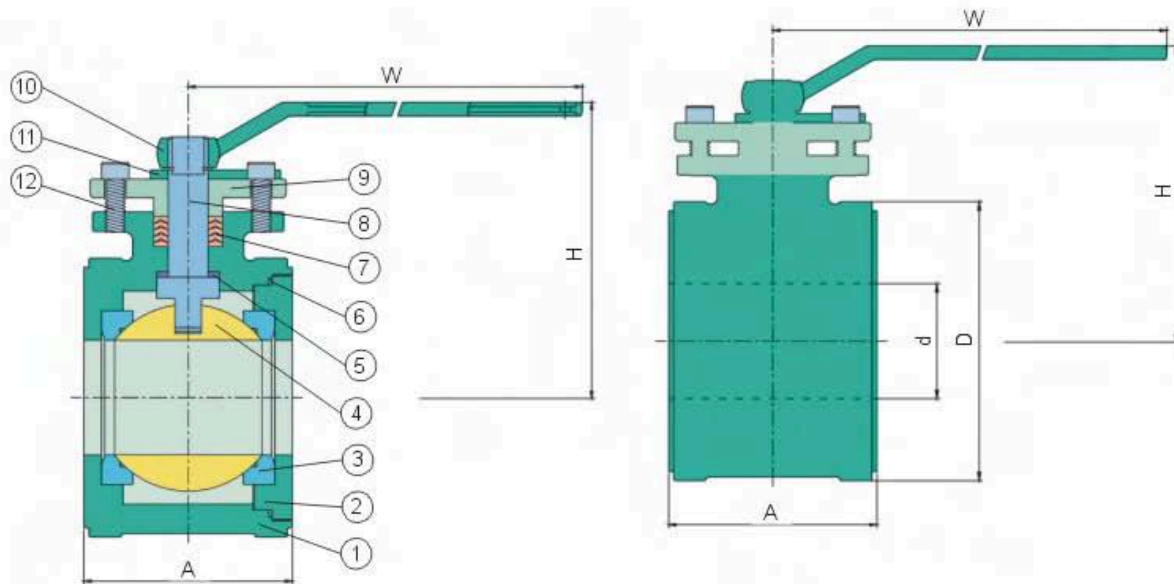
MATERIAL SPECIFICATIONS

No .	Part	Material
1	Body	A216-WCB A 352-LCB A 351-CF8, CF8M, CF3, CF3M, Duplex
2	Jacket	1015 Stainless Steel
3	Seat	PTFE RPTFE PEEK PPL
4	Screwed cover	A216-WCB A 352-LCB A 351-CF8, CF8M, CF3, CF3M, Duplex
5	Ball	A351-CF8, CF8M, CF3, CF3M, Duplex
6	Gasket	PTFE Graphite
7	Thrust Washer	PTFE
8	Stem	A105+NEP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
9	Packing	PTFE Graphite
10	Gland Flange	A216-WCB A 351-CF8
11	Limited Plate	1015+Cr Carbon Steel+Cr
12	Retainer	Carbon Steel
13	Lever	A216-WCB
14	Screw	ASTM A193-B7, B8

DIMENSION

Class 150/300

Size	d	A	D	E	Q	H	W	P
1/2"	14	110	1-1/2"	58,5	147	101	170	3/4"
3/4"	19	117	1-1/2"	58,5	147	101	170	3/4"
1"	25	127	2"	62,5	156	106	170	3/4"
1-1/2"	38	165	2-1/2"	63,5	181	125	250	3/4"
2"	51	178	3"	68	218	135	250	3/4"
3"	76	229	6"	82	275	193	350	3/4"
4"	102	254	8"	83	300	265	420	3/4"
6"	152	292	10"	95	403	355	1000	3/4"
8"	203	330	12"	100	492	410	1300	3/4"



MATERIAL SPECIFICATIONS

No .	Part	Material
1	Body	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
2	Screwed Cover	A216-WCB A352-LCB A351-CF8, CF8M, CF3, CF3M, Duplex
3	Seat	PTFE RPTFE PEEK PPL
4	Ball	A351-CF8, CF8M, CF3, CF3M, Duplex
5	Thrust Washer	PTFE
6	Gasket	PTFE Graphite
7	Packing	PTFE Graphite
8	Stem	A105+NEP A182-F6, F304, F316, F316L, F304L, 17-4PH, F51
9	Gland Flange	A216-WCB A351-CF8
10	Lever	A216-WCB
11	Limited Plate	1015+Cr Carbon Steel+Cr
12	Screw	ASTM A193-B7, B8

DIMENSION

CLASS 150Lb, PN16, 10K

Size	D			A	H	W
	150Lb	PN16	10K			
1/2"	47	53	58	40	80	130
3/4"	57	63	63	45	80	170
1"	66	73	74	50	100	170
1-1/4"	75	84	84	60	110	200
1-1/2"	85	94	89	70	120	250
2"	103	109	104	80	130	250
2-1/2"	122	129	124	110	140	350
3"	135	144	134	120	150	350
4"	173	170	159	140	180	420

FLOATING BALL VALVE TORQUE FORM (N.M)

Size(mm) Class(MPa)	15	20	25	40	50	65	80	100	125	150	200
1.6	3	5	10	16	25	50	65	125	250	340	485
2.5	3	5	11	18	30	60	80	140	300	400	680
4.0	5	10	24	35	50	100	150	250	450	585	996
6.4	15	30	30	80	100	200	300	400	-	-	-
10.0	19	35	68	130	190	360	460	700	-	-	-
Size(mm) Class(MPa)	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	5"	6"	8"
150	3	5	5	16	25	50	65	125	250	410	700
300	7	12	12	38	60	120	160	280	600	950	1550
400	15	30	30	90	140	240	350	540	-	-	-
600	19	35	35	130	190	360	460	770	-	-	-

TRUNNION TYPE BALL VALVE TORQUE FORM (N.M)

Size(mm) Class(MPa)	50	65	80	100	125	150	200	250	300	350	400	450	500	600	700	800
PN1.6	25	50	65	125	250	340	485	125	1310	1910	2860	4500	5860	8920	13320	24000
PN2.5	30	60	80	140	300	400	680	140	1870	2740	4150	6500	7800	13210	19830	35420
PN4.0	50	100	150	250	450	585	996	250	2800	4110	6300	8900	12000	20380	30670	55200
PN6.4	100	200	300	400	650	890	1500	400	4290	6320	9750	13500	18660	21820	48020	85830
PN10.0	190	300	460	770	1050	1980	3280	700	7200	9860	14500	19600	29000	42500	58000	82000
Size(mm) Class(MPa)	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"	28"	32"
150	25	50	65	125	250	410	700	1100	1750	2600	3900	6200	7500	10500	14500	21000
300	60	120	160	280	600	950	1550	2000	3300	5000	7500	11800	14400	19600	28200	29800
400	140	240	350	540	740	1260	1910	3250	5340	7500	10000	12400	18500	29500	40500	53000
600	190	360	460	770	1050	1980	3280	5250	7200	9860	14500	19600	29000	42500	58000	62000

THREE-WAY BALL VALVE TORQUE FORM (N.M)

Size(mm) Class(MPa)	15	20	25	40	50	65	80	100	125	150	200	250	300
PN1.6	5	8	15	24	35	75	100	180	350	500	730	1210	1950
PN2.5	5	8	16	27	45	90	120	210	450	600	1000	1600	2800
PN4.0	8	15	36	50	75	145	220	350	650	850	1450	2400	4200
Size(mm) Class(MPa)	1/2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"
150	5	8	16	24	38	75	95	185	380	600	1050	1650	2625
300	8	18	38	58	90	180	240	420	900	1425	2300	3000	4950

Notes: The data in the form are not practically, just for reference.

SPECIFICATIONS FOR SEAT MATERIALS

	PTFE	RPTFE	Molon(Nylon+MoS2)	PEEK
Tensile Strength(MPa)	24.8	25.4	75~100	91
Compressive Strength(MPa)	35	52	100~14	137
Elongation(%)	250	120	10~30	50
Hardness(SHA)	56	60	78	82
Water Absorption(%)	<0.01	<0.01	0.7	0.12
Specific Gravity(G/cm3)	2.2	2.2	1.2	1.35
Temperature Range(F)	-300~400	-150~425	-40~300	-150~500
Pressure Rating(Class)	150-600	150-600	150~1500	150~2500
Service Application	Chemical & Cryogenic	Chemical & Cryogenic	High Pressure & Low Temperature	High Pressure & Low Temperature

	Nylon 1010	Nylon 12	Devlon V	Delrin
Tensile Strength(MPa)	55	60	80	68
Compressive Strength(MPa)	70	79	140	110
Elongation(%)	150	200	5.37	220
Hardness(SHA)	70	75	78	78
Water Absorption(%)	0.3	0.2	0.1	0.2
Specific Gravity(G/cm3)	1.04	1.01	1.14	1.41
Temperature Range(F)	-40~200	-58~250	-150~300	-58~230
Pressure Rating(Class)	600~1500	600~1500	150~1500	150~1500
Service Application	High Pressure & Low Temperature	High Pressure & Low Temperature	High Pressure & Low Temperature	High Pressure & Low Temperature

SPECIFICATIONS FOR SEAL MATERIALS

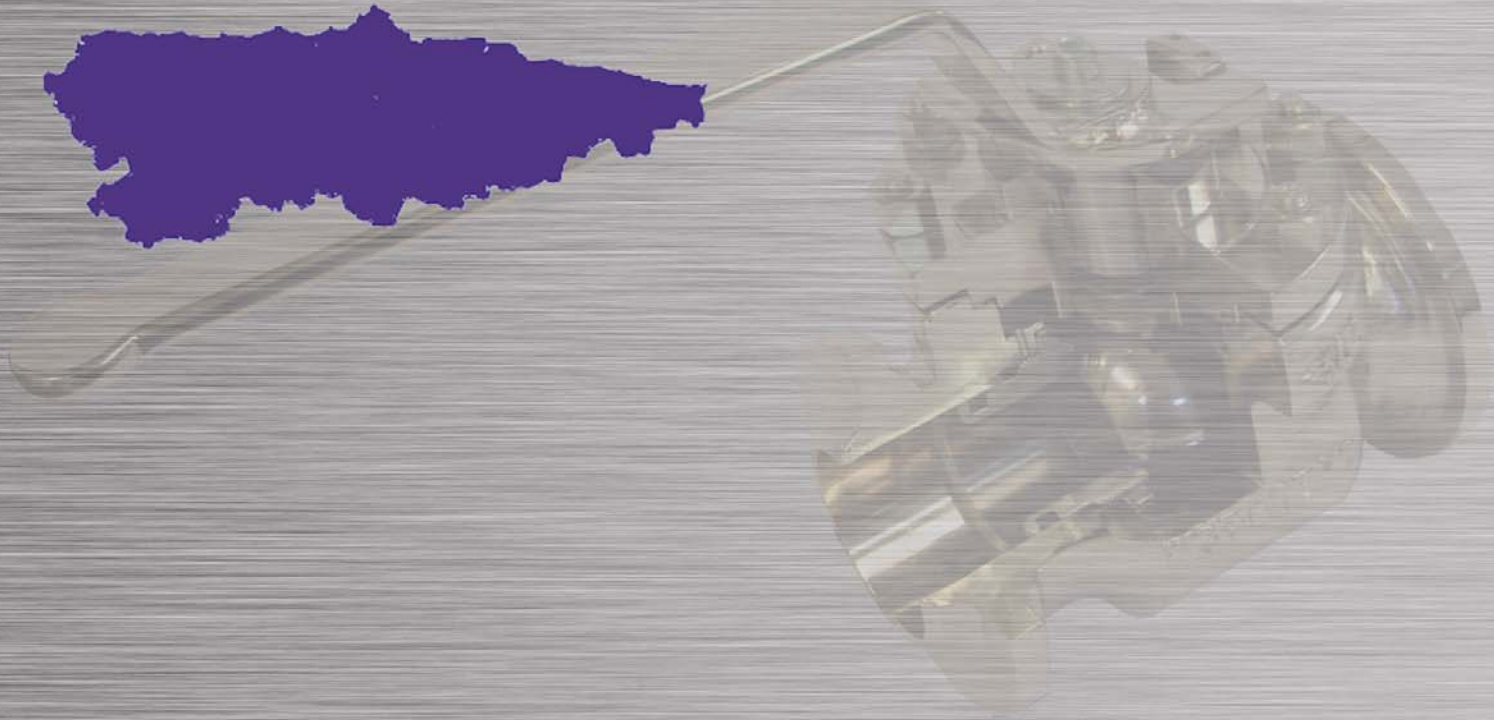
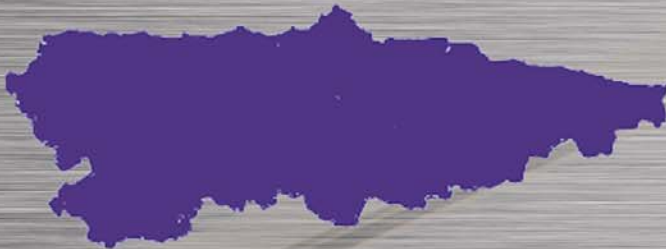
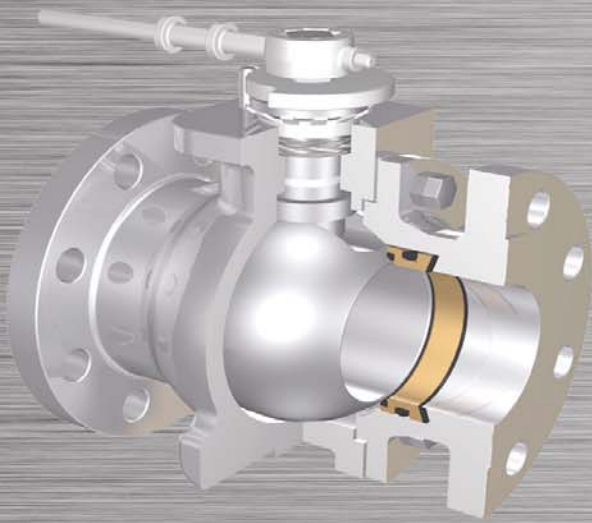
	Viton A	NBR	Viton B	HNBR(HSN)	Viton AED
Temperature Range(° F)	-20~400	-50~250	-20~400	-40~320	-20~480
Hardness(SHA)	70	70	70	80	90
Specific Gravity(G/cm3)	1.85	1.2	1.85	1.33	1.9
Service Application	Petroleum Oils, Gasoline, Transmission Fluid	Petroleum Oils, Water, Hydraulic Oils	Mineral Acid, Steam, MTBE	Petroleum Oils, H2S & Co2	Anti-Explosive Decompression

SPECIFICATIONS FOR GASKET MATERIALS

	Flexible Graphite	Spiral Wound 316+Graphite	PTFE	Spiral Wound Monel+PTFE
Temperature Range(° F)	-300~900	-300~900	-300~400	-300~400
PH	0~14	0~14	0~14	0~14
Service Application	Fire-safe	Fire-safe	Cryogenic, High Corrosive	High Corrosive

*Due to quick develop,
we reserve the right to institute changes in material,
design and specifications for all Valvulas FEVISA designed valves without prior notice.

FE
VISA



Calle de la Siderurgía, Parcela 4 - 1. Apartado 29
Ciudad industrial "VALNALON" 33930 LA FELGUERA (ASTURIAS) Spain
Teléfonos: +34 985 69 05 79 - Fax: +34 985 69 85 04
E-mail: info@valvulasfevisa.com - info@talleresjesusalvarez.com