

BALL VALVE SERIES



BALL VALVE SERIES Ball Valve Overview

Ball valve was available in the 1950 s, with the rapid development of science and technology, the continuous improvement of production technology and product structure. In short decades, it has rapidly developed into a kind of main valve. In western developed industrial countries, the use of the ball valve is constantly rising year by year.

In our country, the ball valve is widely used in petroleum refining, long pipeline, chemical industry, paper making, pharmacy, water conservancy, electric power, municipal, industries and so on, holding the pivotal status in the national economy. It has 90 degrees of rotation movement, the cock body for a sphere with a round hole or tunnel through its axis.

Ball valve in the line is mainly used for cutting, distribution, and changing the flow direction of medium, it just has to rotate 90 degrees of operating and small rotational torque to close tightly. The ball valve is suitable to be used as switch and cutting off valves.

Floating ball valve adopts two pieces of split type or an integral body design, according to ISO17292 standard. This series of ball valve are usually used in low pressure condition (150 ~ 300 lb), the temperature ranging from -196 to 500 degrees Celsius. This series of valves are all made of fire prevention design, and according to the manufacturing API607 and manufacturing according to API607 and API6FA fire-proof test.

Fixed ball valve with two or three pieces of fission side mounted or jacket structure design, accords with API6D standard. Soft sealing ball valves can meet the working temperature -46 ~ 200 degrees Celsius.

This series of fixed ball valve has double block and bleed function, and the tight sealing glue injection system ensures in urgent situation to block leakage from the stem and seat. Jacket type structure can realize online change in the component, and convenient maintenance. DBV trunnion mounted ball valve series include: two piece casting steel fission side type, jacket type casting steel, three pieces forged steel fission side mounted.

Welded ball valve adopts full welded body, especially suitable for gas transportation and storage industry. All welded body design making no conventional bolts to connect body and bonnet, ensures no hidden danger of body and bonnet leakage under any condition. In addition, forged steel valve body has the same size of the grain structure and uniform thickness to avoid the casting valve inherent defects of shrinkage cavity, air hole and so on.

Ball valve is widely used in recent years as a new type of valve, it has the following advantages:

1. The fluid resistance is small, its resistance coefficient with section of equal length.
2. Simple structure, small volume, lightweight.
3. Compact and reliable, the ball valve sealing surface material widely using metals or fluorine plastic, with good sealing, also has been widely used in the vacuum system.
4. Easy to operate, open and close quickly, from open to close just rotate 90°, convenient for far distance control.
5. Easy maintenance, simple structure of ball valve, active sealing ring, making the remove and replacement more convenient.
6. When in fully open or fully closed position, the ball and seat sealing surface are separated with the medium, so as the medium goes through, it will not cause the valve sealing surface erosion.
7. Applicable scope is wide, size from small to several millimeters, big to a few meters, from high vacuum to high pressure force can be used. This valve shall generally be installed horizontally in the pipeline.



BALL VALVE SERIES

Ball Valve Codes

Product model of DBV valves is coded according to standard JB/T308 "valves model designation method" and adjusted based on industry practices and product characteristics. As the product model does not fully present overall characteristics of the products, for special requirements, it is recommended that the user shall supplement it by words.

Example

Sample	DN200	Q	3	4	7	F	-	25	P
Code	I	II	III	IV	V	VI		VII	VIII

I	Valve Size	Sample
NPS	Nominal Pipe Size	NPS2, NPS3"
DN	Nominal Size	DN50, DN80
II	Valve Type	
Q	Normal	
BQ	Insulated	
DQ	Cryogenic ($\leq -29^{\circ}\text{C}$)	
FQ	Fire Proof	
KQ	Resist SSC	
PQ	Slag Discharged	
EQ	Emergency Shut-off	
WQ	Bellows Type	
HQ	Full Welded	

III	Operated
1	N/A for Lever Operated
2	Electro-hydraulic Operated
3	Worm-gear Operated
6	Pneumatic Operated
6s	Pneumatic Operated With Manual
7	Hydraulic Operated
7s	Hydraulic Operated With Manual
8	Pneumatic-Hydraulic Operated
9	General Electro Operated
9B	Explosion-Proof Electro Operated

IV	Type of Connection
1	Female Threaded End
2	Male Thread End
4	Flange End
6	Welding End
7	Wafer Type
8	Hoop End
9	Compression Joint Type

V	Type of Construction
1	Through-way Flow Path
2	Y-type 3 Way Flow Path
4	L-type 3 Way Flow Path
5	T-type 3 Way Flow Path

V	Type of Construction
7	Through-way Flow Path
6	Four-way Flow Path
8	Trunnion Ball T-type 3 Way Flow Path
9	L-type 3 Way Flow Path
0	Half-ball Through

VI	Material of Sealing Face
F	Fluoro Plastic
G	Ceramic
H	Martensitic Stainless Steel
M	Monel Metal
N	Nylon
PK	PEEK
PL	PPL
T	Copper Alloy
X	Rubber
Y	Stellite Alloy

VII	Pressure Code	Sample
NPS	Class	150Lb, 300Lb, ...
DN	PN ^a 10	16, 25, ...

VIII	Material of Shell
C	Carbon Steel (class and option PN 25 is not marked)
H	Martensitic SS
I	Chrome-Molybdenum steel
P	Chromium-Nickel SS
R	Chromium-Nickel-Molybdenum SS
T	Copper & Copper Alloy
Ti	Titanium & Titanium Alloy
V	Chrome-Molybdenum-Vanadium Steel

BALL VALVE SERIES

Technical Specifications/Main Parts and Materials

Technical Specifications

Design Basis		GB		API		ASME
Design Standard		GB/T 12237	GB/T 19672	API 608	API 6D	ASME B16.34
Face-to-Face Dimension		GB/T 12221	GB/T 19672	ASME B16.10	API 6D	ASME B16.10
Connection End ^a	Flanged	GB/T 9113		ASME B16.5/MSS SP-44/ASME B16.47 ^a		
	Butt-Welding	GB/T 12224		ASME B16.25		
Material		NACE MR0175				
Test and Inspection		JB/T 9092	GB/T 19672	API 598	API 6D	ASME B16.34
Fire resistance test		JB/T 6899		API 6FA/API 607		

^a The dimension of welded end connection can be designed and manufactured according to the buyers' request.

a. MSS SP-44 for size 22.
ASME B16.47 Series A for size 26 & over.

Main Parts and Materials

Conventional Type

Part Name	Carbon Steel		Low Temp. Steel		Stainless Steel	
	GB	ASTM	GB	ASTM	GB	ASTM
Body	WCB 25 A105	A216-WCB A105	LCB LCC 304 0Cr18Ni9	A352-LCB A352-LCC A350-LF2	CF8 CF8M 0Cr18Ni9 00Cr17Ni12Mo2	A351-CF8 A351-CF8M A182-F304 A182-F316
Bolt/Nut	35CrMo 45	A193-B7 A194-2H	304 304	A320-L7 A194-4	304 304	A193-B8 A194-8
Ball	25+ENP	A105+ENP	0Cr18Ni9	A350-LF2+ENP	0Cr18Ni9 00Cr17Ni12Mo2	A182-F304 A182-F316
Stem	1Cr13 2Cr13	A276-410 A276-420	304	A350-LF2 A276-304	304 316	A276-304 A276-316
Seat	Standard: PTFE OR NYLON Special: PEEK OR DEVLON		Standard: PTFE OR NYLON Special: PEEK OR DEVLON		Standard: PTFE OR NYLON Special: PEEK OR DEVLON	
O-Ring	NBR OR VITON		NBR OR VITON		VITON	
Gasket	Graphite+ Stainless steel		Graphite+ Stainless steel		Graphite+ Stainless steel	

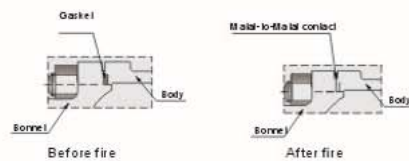
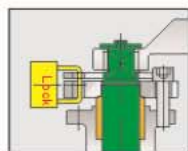
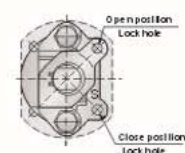
BALL VALVE SERIES

Floating Ball Valve

Structure Features

Use

It's mainly used for oil and natural gas storage and transportation, in chemical industry, metallurgy, paper making, food, shipbuilding and other industries to be as the opening and closing control devices of media, coupled with pneumatic or electrical device to achieve operation remotely, to ensure the operator safety.



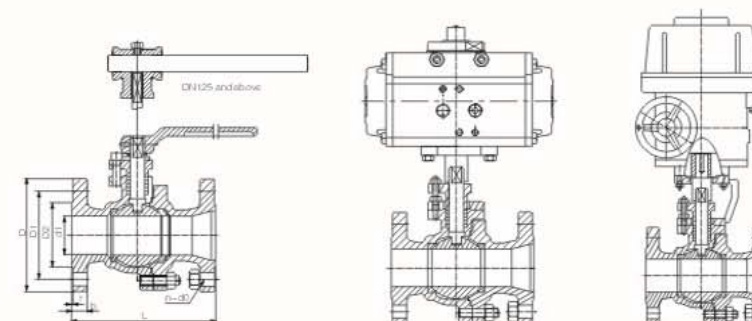
Standard ISO-5211 disk access design facilitate customer replacement operation at any time.

Connection with the implementation of ISO 5211 standard plate



BALL VALVE SERIES

Floating Ball Valve



MAIN CONNECTION DIMENSIONS

PN16

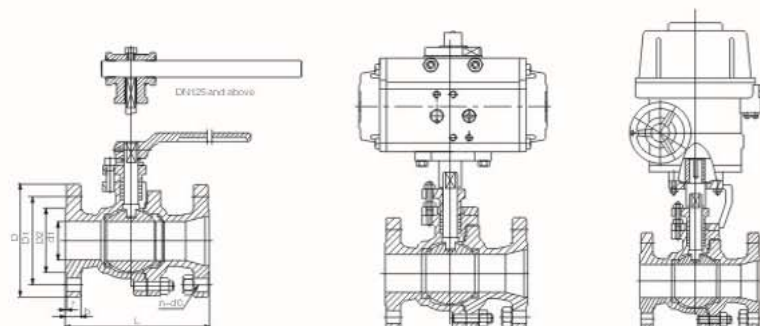
DN	d1	L	D	D1	D2	b	f	n-d0	H
20	20	130	105	75	55	14	2	4-14	75
25	25	140	115	85	65	14	2	4-14	85
32	32	165	140/135	100	78	16	2	4-18	110
40	40	165	150/145	110	85	16	3	4-18	135
50	50	203	165/160	125	100	16	3	4-18	142
65	65	222	185/180	145	120	18	3	4-18	173
80	80	241	200/195	160	135	20	3	8-18	183
100	100	305	220/215	180	155	20	3	8-18	255
125	125	356	250/245	210	185	22	3	8-18	264
150	150	394	285/280	240	210	24	3	8-23	290
200	200	457	340/335	295	265	26	3	12-23	395

PN25

20	20	152	105	75	55	16	2	4-14	75
25	25	165	115	85	65	16	2	4-14	85
32	32	178	140/135	100	78	18	2	4-18	110
40	40	190	150/145	110	85	18	3	4-18	135
50	50	216	165/160	125	100	20	3	4-18	142
65	65	241	185/180	145	120	22	3	8-18	173
80	80	283	200/195	160	135	22	3	8-18	183
100	100	305	230	190	160	24	3	8-23	250
125	125	381	270	220	188	28	3	8-25	315
150	150	403	300	250	218	30	3	8-25	340
200	200	502	360	310	278	34	3	12-25	395

BALL VALVE SERIES

Floating Ball Valve



MAIN CONNECTION DIMENSIONS

PN40

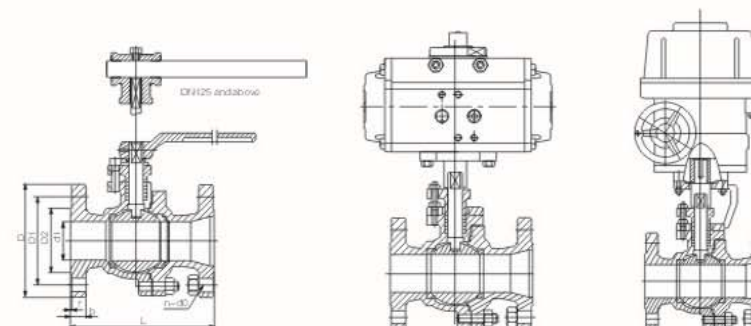
DN	d1	L	D	D1	D2	b	f	n-d0	H	f2	D6
20	20	130	105	75	55	16	2	4-14	75	4	51
25	25	140	115	85	65	16	2	4-14	85	4	58
32	32	165	140/135	100	78	18	2	4-18	110	4	66
40	40	165	150/145	110	85	18	3	4-18	135	4	76
50	50	203	165/160	125	100	20	3	4-18	142	4	88
65	65	222	185/180	145	120	22	3	8-18	173	4	110
80	80	241	200/195	160	135	22	3	8-18	183	4	121
100	100	305	235/230	190	160	24	3	8-23	255	4.5	150
125	125	356	270	220	188	28	3	8-25	264	4.5	176
150	150	394	300	250	218	30	3	8-25	290	4.5	204
200	200	457	375	320	282	38	3	12-30	395	4.5	260

PN64

20	20	190	13/125	90	68	20	2	4-18	75	4	51
25	25	216	140/135	100	78	22	2	4-18	85	4	58
32	32	229	155/15	110	82	24	2	4-23	110	4	66
40	40	241	170/165	125	95	24	3	4-23	135	4	76
50	50	292	180/175	135	105	26	3	4-23	142	4	88
65	65	330	205/200	160	130	28	3	8-23	173	4	110
80	80	356	215/210	170	140	30	3	8-23	183	4	121
100	100	406	250	200	168	32	3	8-25	250	4.5	150
125	125	-	295	240	202	36	3	8-30	315	4.5	176
150	150	495	345/340	280	240	38	3	8-34	340	4.5	204
200	200	597	405	345	300	44	3	12-34	395	4.5	260

BALL VALVE SERIES

Floating Ball Valve



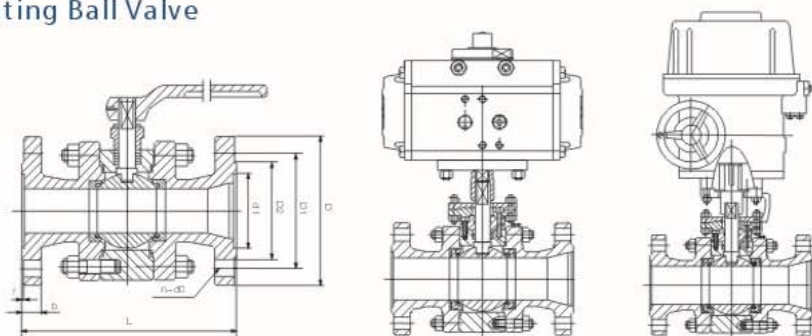
MAIN CONNECTION DIMENSIONS

PN20~110/Class150~600

ANSI	NPS(in)	DN	L	d1	D	D1	D2	n-φ	f	b	H
PN 20	1/2"	15	108	15	89	60.5	35	4-16	1.6	11.5	63
	3/4"	20	117	20	98	70	43	4-16	1.6	11.5	63
	1"	25	127	25	108	79.5	51	4-16	1.6	12	82
	1 1/4"	32	140	32	117	89	64	4-16	1.6	13	94
	1 1/2"	40	165	38	127	98.5	73	4-16	1.6	15	98
	2"	50	178	50	152	120.5	92	4-19	1.6	16	108
	2 1/2"	65	190	65	178	139.5	105	4-19	1.6	18	139.5
	3"	80	203	76	190	152.5	127	4-19	1.6	19	145
	4"	100	229	100	229	190.5	157	8-19	1.6	24	200
	5"	125	356	125	254	216	186	8-22	1.6	24	221
Class 150	6"	150	394	150	279	241.5	216	8-22	1.6	26	256
	8"	200	457	200	343	298.5	270	8-22	1.6	29	334
	10"	250	533	250	406	362	324	12-25	1.6	31	490
	1/2"	15	140	15	95	66.5	35	4-16	1.6	15	63
	3/4"	20	152	20	117	82.5	43	4-19	1.6	16	63
	1"	25	165	25	124	89	51	4-19	1.6	18	82
	1 1/4"	32	178	32	133	98.5	64	4-19	1.6	19	94
	1 1/2"	40	190	38	156	114.5	73	4-22	1.6	21	98
	2"	50	216	50	165	127	92	8-19	1.6	23	108
	2 1/2"	65	241	65	190	149	105	8-22	1.6	26	139.5
PN 50	3"	80	283	76	210	168.5	127	8-22	1.6	29	145
	4"	100	305	100	254	200	157	8-22	1.6	32	200
	5"	125	381	125	279	235	186	8-22	1.6	35	221
	6"	150	403	150	318	270	216	12-22	1.6	37	256
	8"	200	502	200	381	330	270	12-25	1.6	42	334
	1/2"	25	165	15	95	66.5	35	4-16	6.4	15	63
	3/4"	32	190	20	118	82.5	43	4-19	6.4	16	63
	1"	40	216	25	124	89	51	4-19	6.4	18	96
	1 1/4"	50	229	32	133	98.5	64	4-19	6.4	21	105
	1 1/2"	65	241	38	156	114.5	73	4-22	6.4	23	135
PN 110	2"	80	292	50	165	127	92	8-19	6.4	26	153
	2 1/2"	100	330	65	190	149	105	8-22	6.4	29	182
	3"	125	356	76	210	168	127	8-22	6.4	32	205
	4"	150	432	100	273	216	157	8-25	6.4	38	235
	1/2"	25	165	15	95	66.5	35	4-16	6.4	15	63
	3/4"	32	190	20	118	82.5	43	4-19	6.4	16	63
	1"	40	216	25	124	89	51	4-19	6.4	18	96
	1 1/4"	50	229	32	133	98.5	64	4-19	6.4	21	105
	1 1/2"	65	241	38	156	114.5	73	4-22	6.4	23	135
	2"	80	292	50	165	127	92	8-19	6.4	26	153
Class 600	2 1/2"	100	330	65	190	149	105	8-22	6.4	29	182
	3"	125	356	76	210	168	127	8-22	6.4	32	205
	4"	150	432	100	273	216	157	8-25	6.4	38	235
	1/2"	25	165	15	95	66.5	35	4-16	6.4	15	63
	3/4"	32	190	20	118	82.5	43	4-19	6.4	16	63
	1"	40	216	25	124	89	51	4-19	6.4	18	96
	1 1/4"	50	229	32	133	98.5	64	4-19	6.4	21	105
	1 1/2"	65	241	38	156	114.5	73	4-22	6.4	23	135
	2"	80	292	50	165	127	92	8-19	6.4	26	153
	2 1/2"	100	330	65	190	149	105	8-22	6.4	29	182

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Floating Ball Valve



MAIN CONNECTION DIMENSIONS

JIS10K-JIS20K

Nominal pressure	Nominal diameter DN	Size (mm)							Weight(kg)		
		L	d1	D	D1	D2	b	f	Z-Φd	Manual	Gearbox
JIS 10K	15	108	14	95	70	51	12	1	4-15	3	-
	20	117	19	100	75	56	14	1	4-15	4	-
	25	127	25	125	90	67	14	1	4-19	5	-
	32	140	32	135	100	76	16	2	4-19	7	-
	40	165	38	140	105	81	16	2	4-19	8	-
	50	178	51	155	120	96	16	2	4-19	12	-
	65	190	64	175	140	116	18	2	4-19	18	-
	80	203	76	185	150	126	18	2	8-19	24	-
	100	229	102	210	175	151	18	2	8-19	38	53
	125	356	127	250	210	182	20	2	8-23	60	79
JIS 20K	150	394	152	280	240	212	22	2	8-23	82	102
	200	457	203	330	290	262	22	2	12-23	145	185
	250	533	254	400	355	324	24	2	12-25	-	280
	15	140	14	95	70	51	14	1	4-15	3	-
	20	152	19	100	75	56	16	1	4-15	5	-
	25	165	25	125	90	67	16	1	4-19	6	-
	32	178	32	135	100	78	18	2	4-19	8	-
	40	190	38	140	105	81	18	2	4-19	11	-
	50	216	51	155	120	96	18	2	8-19	15	-
	65	241	64	175	140	116	20	2	8-19	23	-
JIS 20K	80	283	76	200	160	132	22	2	8-23	33	52
	100	305	102	225	185	160	24	2	8-23	53	76
	125	381	127	270	225	195	26	2	8-25	82	124
	150	403	152	305	280	230	28	2	12-25	120	163
	200	503	203	350	305	275	30	2	12-25	212	267

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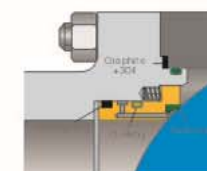
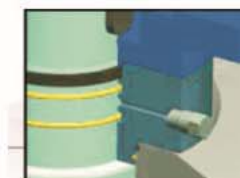
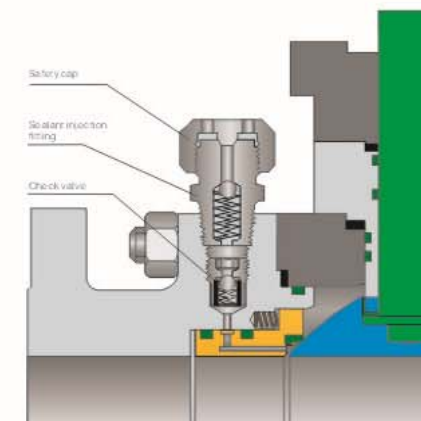
Construction and Features of Trunnion Ball Valve

Urgent Grease Injection Device

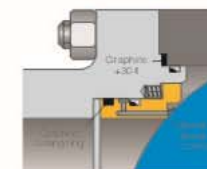
According to customers' requirement, the trunnion ball valves made by company are provided with devices for urgent grease injection, which are on both the stem and seat for the trunnion ball valves of DN>150mm (NPS6). When the O-ring of stem or the body seating is damaged due to accident, the medium leakage between seat and stem can be prevented by injecting the sealing grease through the device.

Blow-out Proof Stem

Blow-out proof structure is provided for the stem, which is positioned by the up-end cap and screw, being guaranteed not to be blown-out by the medium even if in abnormal rise in pressure in the cavity.



Before Fire



After Fire

Fire Proof Design

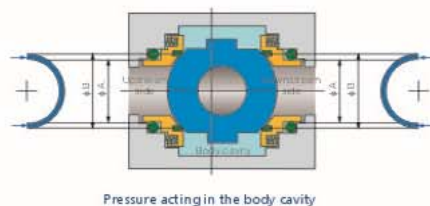
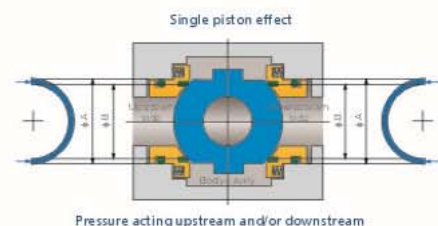
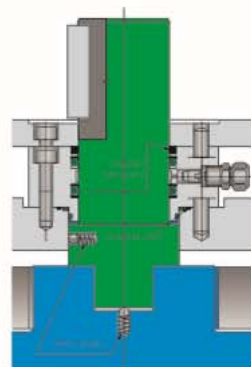
With the valve heated in a fire application, the nonmetal material parts such as seat sealing ring of PTFE, O-ring for the stem, and sealing gasket for body and bonnet, might be damaged due to high temperature. DBV special design of auxiliary metal to metal or the graphite seal is provided for the trunnion ball valve to effectively prevent both internal and external leakage of the valve. As required by customers, DBV fire safe design for the trunnion ball valve meets the requirement of API 607, API 6FA, BS 6755 and JB/T 6899.

BALL VALVE SERIES

Trunnion Mounted Ball Valve

Anti-static Design

By anti-static design, the ball, stem and body of the trunnion mounted ball valve forms a static channel through which the static electricity caused in the switching process of ball and seat will be guided to the ground. Thus it can prevent the valve from the potential fire and explosion risk.



Standard Single Piston Effect (self-relieving Seats)

Fluid pressure, both upstream and downstream, creates a resultant thrust that pushes the seat rings against the ball.

Fluid pressure acting in the body cavity creates a resultant thrust that pushes the seat rings away from the ball.

The single piston design permits the automatic release of any over pressure in the body cavity when the valve is in the fully open or fully closed position, therefore the seat rings are "self-relieving".

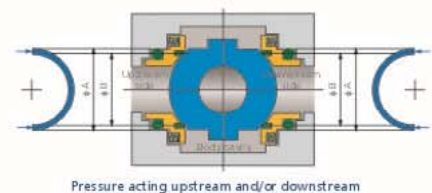
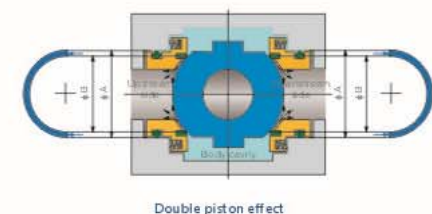
Optional Double Piston Effect

Fluid pressure, both upstream and downstream, as well as in the body cavity creates a resultant thrust that pushes the seat rings toward the ball.

Valves with double piston effect seat rings require a relief valve in order to reduce the build-up of over pressure in the body cavity.

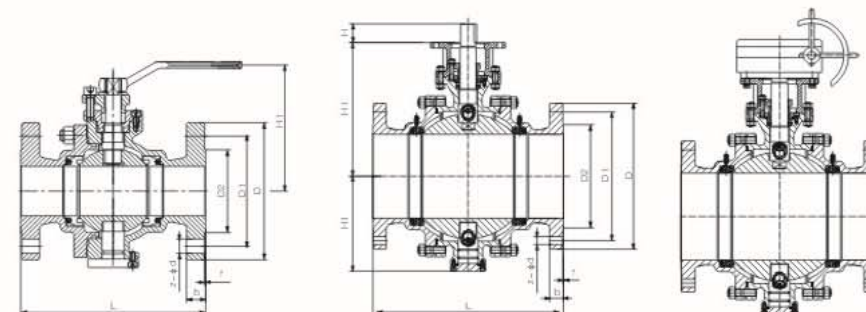
Installing Driving Platform Device

The trunnion ball valve each is equipped with a mounted yoke pad to install driving devices such as worm gear, pneumatic, electric, hydraulic and pneumatic-hydraulic actuators.



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Trunnion Mounted Ball Valve



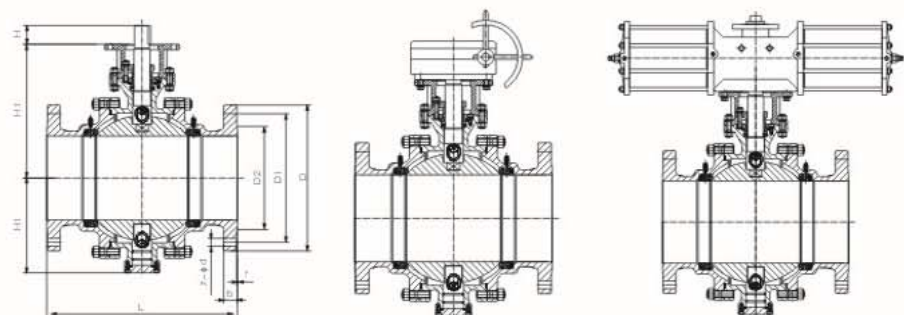
MAIN CONNECTION DIMENSIONS

PN16

DN (mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	203	165	125	102	18	3	4-18	20	96	92
65	222	185	145	122	18	3	8-18	25	125	105
80	241	200	160	138	20	3	8-18	25	150	120
100	305	220	180	158	20	3	8-18	30	200	160
125	356	250	210	188	22	3	8-18	40	220	200
150	394	285	240	212	22	3	8-22	45	245	210
200	457	340	295	268	24	3	12-22	50	280	224
250	533	405	355	320	26	3	12-26	60	320	278
300	610	460	410	378	28	4	12-26	70	337	306
350	686	520	470	438	30	4	16-26	75	374	334
400	762	580	525	490	32	4	16-30	75	408	358
450	864	640	585	550	40	4	20-30	80	439	390
500	914	715	650	610	44	4	20-33	90	492	434
600	1067	840	770	725	54	5	20-36	105	588	523
700	1245	910	840	795	58	5	24-36	115	644	658
800	1372	1025	950	900	62	5	24-39	125	742	746
900	1524	1125	1050	1000	64	5	28-39	140	812	807
1000	1753	1255	1170	1115	66	5	28-42	150	900	896
1200	2134	1485	1390	1330	78	5	32-48	170	1097	1066
1400	2388	1685	1590	1530	84	5	36-48	200	1302	1253

BALL VALVE SERIES

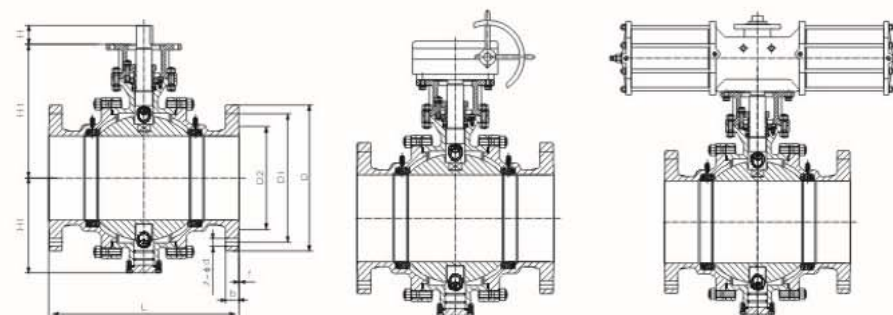
Trunnion Mounted Ball Valve



MAIN CONNECTION DIMENSIONS

PN25

DN (mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	216	165	125	102	20	3	4-18	20	96	92
65	241	185	145	122	22	3	8-18	25	125	105
80	283	200	160	138	24	3	8-18	25	150	120
100	305	235	190	158	24	3	8-22	30	200	160
125	381	270	220	188	26	3	8-26	40	220	200
150	403	300	250	218	28	3	8-26	45	245	210
200	502	360	310	278	30	3	12-26	50	280	224
250	568	425	370	335	32	3	12-30	60	320	278
300	648	485	430	395	34	4	16-30	70	337	306
350	762	555	490	450	38	4	16-33	75	374	334
400	838	620	550	505	40	4	16-36	75	408	358
450	914	670	600	555	46	4	20-36	80	439	390
500	991	730	660	615	48	4	20-36	90	492	434
600	1143	845	770	720	58	5	20-39	105	588	523
700	1346	960	875	820	60	5	24-42	115	644	658
800	1524	1085	990	930	66	5	24-48	125	742	746
900	1727	1185	1090	1030	70	5	28-48	140	812	807
1000	1930	1320	1210	1140	74	5	28-56	150	900	898
1200	2388	1530	1420	1350	86	5	32-56	170	1097	1066
1400	2642	1755	1640	1560	92	5	36-62	200	1302	1253

BALL VALVE SERIES
Trunnion Mounted Ball Valve

MAIN CONNECTION DIMENSIONS

PN40

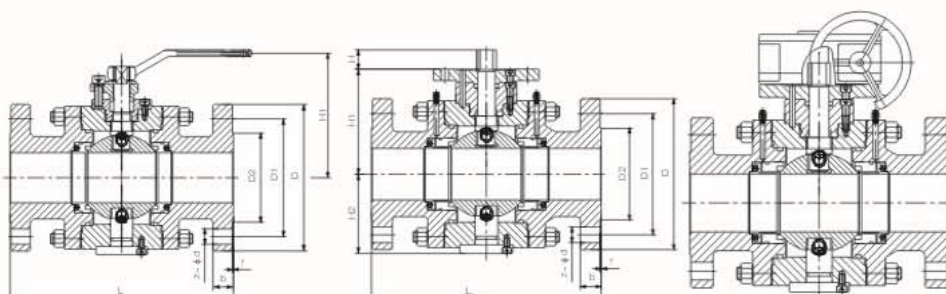
DN (mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	216	165	125	102	20	3	4-18	25	100	95
65	241	185	145	122	22	3	8-18	25	125	105
80	283	200	160	138	24	3	8-18	30	150	120
100	305	235	190	158	24	3	8-22	40	200	160
125	381	270	220	188	26	3	8-26	45	220	200
150	403	300	250	218	28	3	8-26	50	245	210
200	502	375	320	285	34	3	12-30	65	275	230
250	568	450	385	345	38	3	12-33	75	330	295
300	648	515	450	410	42	4	16-33	85	355	330
350	762	580	510	465	46	4	16-36	90	390	345
400	838	660	585	535	50	4	16-39	90	430	390
450	914	685	610	560	57	4	20-39	100	455	410
500	991	755	670	615	57	4	20-42	115	500	465
600	1143	890	895	735	72	5	20-48	135	590	545

PN63

DN (mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	292	180	135	102	26	3	4-22	25	102	98
65	330	205	160	122	26	3	8-22	25	130	115
80	356	215	170	138	28	3	8-22	30	165	128
100	406	250	200	158	30	3	8-26	40	210	160
125	432	295	240	188	34	3	8-30	45	230	180
150	495	345	280	218	36	3	8-33	50	250	200
200	597	415	345	285	42	3	12-36	50	288	255
250	673	470	400	345	40	3	12-36	55	330	308
300	762	530	460	410	52	4	16-36	70	378	348
350	826	600	525	465	56	4	16-39	85	394	360
400	902	670	585	535	60	4	16-42	95	430	410

BALL VALVE SERIES

Trunnion Mounted Ball Valve



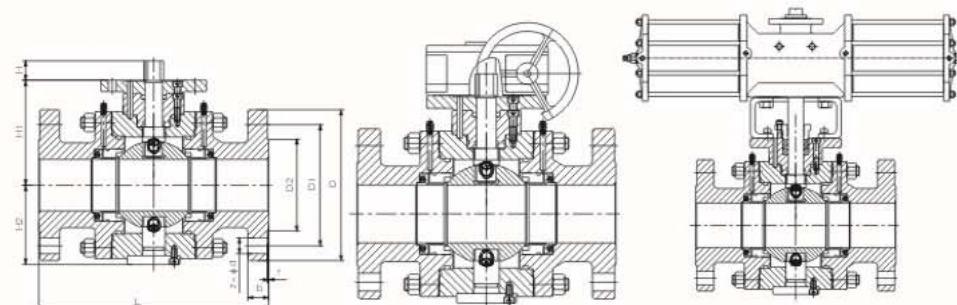
MAIN CONNECTION DIMENSIONS

PN100

DN(mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	292	195	145	102	30	3	4-26	30	102	98
65	330	220	170	122	34	3	8-26	35	130	115
80	356	230	180	138	36	3	8-26	40	165	128
100	432	265	210	158	40	3	8-30	45	210	160
125	508	315	250	188	40	3	8-33	50	230	180
150	559	355	290	218	44	3	12-33	55	250	200
200	660	430	360	285	52	3	12-36	70	288	255
250	787	505	430	345	60	3	12-39	85	330	308
300	838	585	500	410	68	4	16-42	95	378	348
350	889	655	560	465	74	4	16-48	110	394	360

PN160

DN(mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	368	195	145	102	30	3	4-26	40	104	103
65	419	220	170	122	34	3	8-26	40	135	115
80	381	230	180	138	36	3	8-26	45	163	132
100	457	265	210	158	40	3	8-30	50	211	169
125	559	315	250	188	44	3	8-33	6	235	185
150	610	355	290	218	50	3	12-33	70	259	213
200	737	430	360	285	60	3	12-36	95	297	264
250	838	515	430	345	68	3	12-42	95	342	333
300	965	585	500	410	78	4	16-42	110	384	379

BALL VALVE SERIES
Trunnion Mounted Ball Valve

MAIN CONNECTION DIMENSIONS

PN250

DN(mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	368	200	150	102	38	3	8-26	40	106	104
65	419	230	180	122	42	3	8-26	45	135	115
80	470	255	200	138	46	3	8-30	50	167	128
100	546	300	235	158	54	3	8-33	65	179	170
125	673	340	275	188	60	3	12-33	70	210	203
150	705	390	320	218	68	3	12-36	80	260	233
200	832	485	400	285	82	3	12-42	105	304	290
250	991	585	490	345	100	3	16-48	130	363	352
300	1130	690	590	410	120	4	16-52	145	417	425

PN320

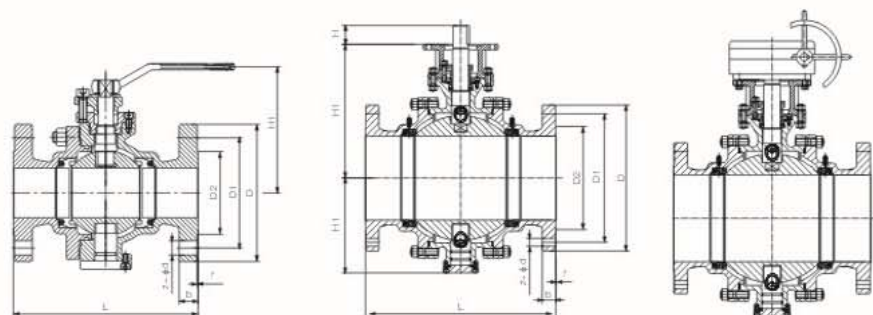
DN(mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	451	210	160	102	42	3	8-26	45	120	127
65	508	255	200	122	51	3	8-30	50	145	153
80	578	275	220	138	55	3	8-30	60	177	198
100	673	335	265	158	65	3	8-36	75	227	233
125	-	380	310	188	75	3	12-36	85	245	245
150	914	425	350	218	84	3	12-39	105	264	252
200	1022	525	440	285	103	3	16-42	130	383	339
250	1270	640	540	345	125	3	16-52	155	453	422

PN400

DN(mm)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	451	235	180	102	52	3	8-30	45	120	127
65	508	290	225	122	64	3	8-33	50	145	153
80	578	305	240	138	68	3	8-33	60	177	198
100	673	370	295	158	80	3	8-39	75	227	233
125	-	415	340	188	92	3	12-39	85	245	245
150	914	475	390	218	105	3	12-42	105	264	252
200	1022	585	490	285	130	3	16-48	130	383	339

BALL VALVE SERIES

Trunnion Mounted Ball Valve



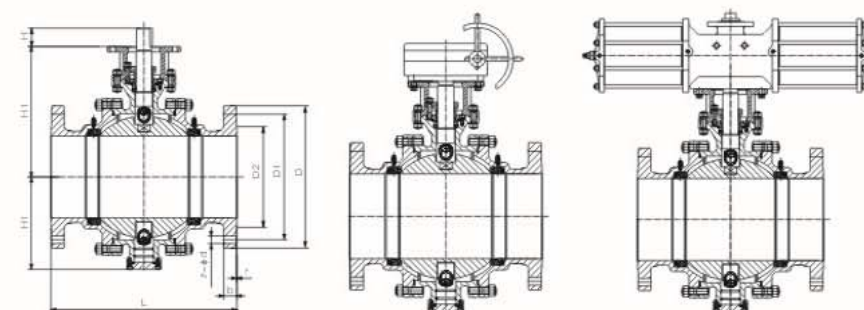
MAIN CONNECTION DIMENSIONS

PN20/Class150

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	178	150	120.7	92.1	14.3	2	4-19	20	96	92
65	2 1/2	191	180	139.7	104.8	15.9	2	4-19	25	125	105
80	3	203	190	152.4	127.0	17.5	2	4-19	25	150	120
100	4	229	230	190.5	157.2	22.3	2	8-19	30	200	160
125	5	356	255	215.9	185.7	22.3	2	8-22	40	220	200
150	6	394	280	241.3	215.9	23.9	2	8-22	45	245	210
200	8	457	345	298.5	269.9	27.0	2	8-22	50	280	224
250	10	533	405	362.0	323.8	28.6	2	12-26	60	320	278
300	12	610	485	431.8	381.0	30.2	2	12-26	70	337	306
350	14	686	535	476.3	412.8	33.4	2	12-29	75	374	334
400	16	762	595	539.8	469.9	35.0	2	16-29	75	408	358
450	18	864	635	577.9	533.4	38.1	2	16-32	80	439	390
500	20	914	700	635.0	584.2	41.3	2	20-32	90	492	434
600	24	1067	815	749.3	692.2	46.1	2	20-35	105	588	523
650	26	1143	870	806.4	749	66.7	2	24-35	110	627	564
700	28	1245	925	863.6	800	69.9	2	28-35	115	644	658
750	30	1295	985	914.4	857	73.1	2	28-35	120	691	704
800	32	1372	1060	977.9	914	79.4	2	28-41	125	742	746
850	34	1473	1110	1028.7	965	81.0	2	32-41	135	759	773
900	36	1524	1170	1085.8	1022	88.9	2	32-41	140	812	807
1000	40	1753	1290	1200.2	1124	88.9	2	36-41	150	900	898
1050	42	1855	1345	1257.3	1194	95.3	2	36-41	160	943	937
1200	48	2134	1510	1422.4	1359	106.4	2	44-41	170	1097	1066
1350	54	2325	1685	1593.8	1511	119.1	2	44-48	185	1150	1120
1400	56	2388	1745	1651	1575	122.3	2	48-48	200	1302	1253
1500	60	2540	1855	1759	1676	130.2	2	52-48	220	1350	1300

BALL VALVE SERIES

Trunnion Mounted Ball Valve



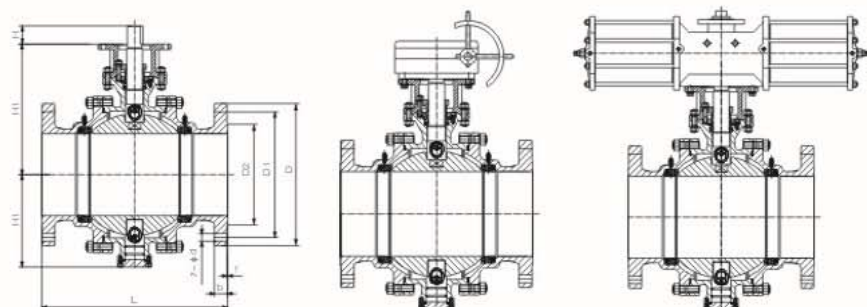
MAIN CONNECTION DIMENSIONS

PN50/Class300

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	216	165	127.0	92.1	20.7	2	8-19	25	100	95
65	2 1/2	241	190	149.2	104.8	23.9	2	8-22	25	125	105
80	3	283	210	168.3	127.0	27.0	2	8-22	30	150	120
100	4	305	255	200.0	157.2	30.2	2	8-22	40	200	160
125	5	381	280	235.0	185.7	33.4	2	8-22	45	220	200
150	6	403	320	269.9	215.9	35	2	12-22	50	245	210
200	8	502	380	330.2	269.9	39.7	2	12-26	65	275	230
250	10	568	445	387.4	323.8	46.1	2	16-29	75	330	295
300	12	648	520	450.8	381.0	49.3	2	16-32	85	355	330
350	14	762	585	514.4	412.8	52.4	2	20-32	90	390	345
400	16	838	650	571.5	469.9	55.6	2	20-35	90	430	390
450	18	914	710	628.6	533.4	58.8	2	24-35	100	455	410
500	20	991	775	685.8	584.2	62.0	2	24-35	115	500	465
600	24	1143	915	812.8	692.2	68.3	2	24-42	135	590	545
650	26	1245	970	876.3	749	77.8	2	28-45	145	630	580
700	28	1346	1035	939.8	800	84.2	2	28-45	150	640	665
750	30	1397	1090	997.0	857	90.5	2	28-48	155	700	730
800	32	1524	1150	1054.1	914	96.9	2	28-51	160	745	765
850	34	1626	1205	1104.9	965	100.1	2	32-51	175	760	800
900	36	1727	1270	1168.4	1022	103.2	2	32-54	190	805	825
1000	40	1930	1240	1155.7	1086	124.0	2	32-45	210	90	920
1050	42	2032	1290	1206.5	1137	129.0	2	32-45	215	968	950
1200	48	2388	1465	1372	1302	146.5	2	32-51	235	1100	1100
1350	54	2578	1660	1549	1467	166.0	2	28-60	250	1225	1210
1400	56	2642	1710	1600	1518	171.0	2	28-60	275	1285	1270
1500	60	2946	1810	1702	1626	181.0	2	32-60	290	1350	1310

BALL VALVE SERIES

Trunnion Mounted Ball Valve



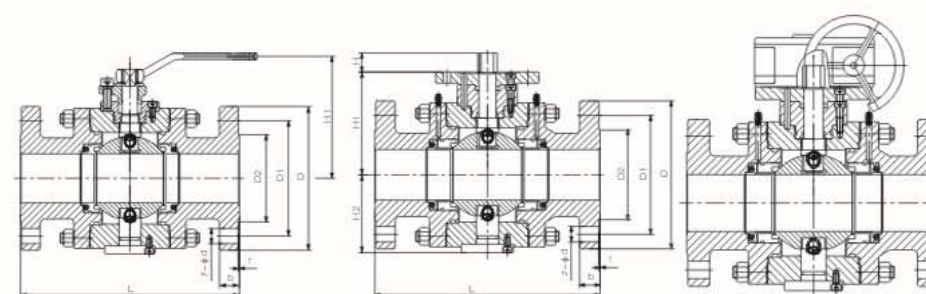
MAIN CONNECTION DIMENSIONS

PN63/Class400

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	292	165	127.0	92.1	25.4	7	8-19	25	102	98
65	2 1/2	330	190	149.2	104.8	28.6	7	8-22	25	130	115
80	3	356	210	168.3	127.0	31.8	7	8-22	30	165	128
100	4	406	255	200.0	157.2	35.0	7	8-22	40	210	160
125	5	457	280	235.0	185.7	38.1	7	8-22	45	230	180
150	6	495	320	269.9	215.9	41.3	7	12-22	50	250	200
200	8	597	380	330.0	269.9	47.7	7	12-26	50	288	255
250	10	673	445	387.4	323.8	54.0	7	16-29	55	330	308
300	12	762	520	450.8	381.0	57.2	7	16-32	70	378	348
350	14	826	585	514.4	412.8	60.4	7	20-32	85	394	360
400	16	902	650	571.5	469.9	63.5	7	20-35	95	430	410
450	18	978	710	628.6	533.4	66.7	7	24-35	110	467	430
500	20	1054	775	685.8	584.2	69.9	7	24-38	120	500	492
600	24	1232	915	812.8	692.2	76.2	7	24-45	130	594	570
650	26	1308	970	876.3	749	88.9	7	28-48	150	630	618
700	28	1397	1035	939.8	800	95.3	7	28-51	180	665	692
750	30	1524	1090	997.0	857	101.6	7	28-54	190	741	800
800	32	1651	1150	1054.1	914	108.0	7	28-54	205	756	804
850	34	1778	1205	1104.9	965	111.2	7	28-54	215	782	817
900	36	1880	1270	1168.4	1022	114.3	7	32-54	225	869	945
1000	40	-	1270	1174.8	1092	130.2	7	32-51	235	916	980
1050	42	-	1320	1225.6	1143	133.4	7	32-51	255	995	1110
1200	48	-	1510	1403.4	1308	152.4	7	28-60	280	1132	1265
1350	54	-	1700	1581.2	1470	169.9	7	28-67	300	1200	1280
1400	56	-	1755	1632.0	1527	174.7	7	32-67	325	1290	1350
1500	60	-	1885	1752.6	1635	185.8	7	32-73	360	1380	1420

BALL VALVE SERIES

Trunnion Mounted Ball Valve



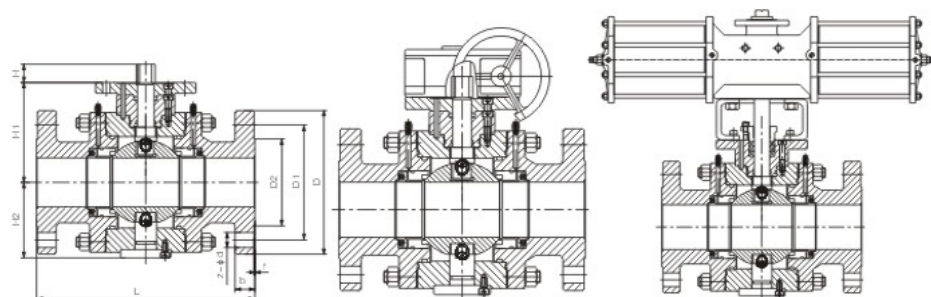
MAIN CONNECTION DIMENSIONS

PN110/Class600

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	292	165	127.0	92.1	25.4	7	8-19	30	102	98
65	2 1/2	330	190	149.2	104.8	28.6	7	8-22	35	130	115
80	3	356	210	168.3	127.0	31.8	7	8-22	40	165	128
100	4	432	275	215.9	157.2	38.1	7	8-26	45	210	160
125	5	508	330	266.7	185.7	44.5	7	8-29	50	230	180
150	6	559	355	292.1	215.9	47.7	7	12-29	55	250	200
200	8	660	420	349.2	269.9	55.6	7	12-32	70	288	255
250	10	787	510	431.8	323.8	63.5	7	16-35	85	330	308
300	12	838	560	489.0	381.0	66.7	7	20-35	95	378	348
350	14	889	605	527.0	412.8	69.9	7	20-39	110	394	360
400	16	991	685	603.2	469.9	76.2	7	20-42	120	430	410
450	18	1092	745	654.0	533.4	82.6	7	20-45	130	467	430
500	20	1194	815	723.9	584.2	88.9	7	20-45	150	500	492
600	24	1397	940	838.2	692.2	101.6	7	24-51	180	594	570
650	26	1448	1015	914.4	749	108.0	7	28-51	190	630	618
700	28	1549	1075	965.2	800	111.2	7	28-54	205	665	692
750	30	1651	1130	1022.1	857	114.3	7	28-54	215	741	800
800	32	1778	1195	1079.5	914	117.5	7	28-60	225	756	804
850	34	1930	1245	1130.3	965	120.7	7	28-60	235	782	817
900	36	2083	1315	1193.8	1022	123.9	7	28-67	255	869	945
1000	40	2337	1320	1212.8	1111	158.8	7	32-60	280	916	980
1050	42	2387	1405	1282.7	1168	168.3	7	28-67	300	995	1110
1200	48	2540	1595	1460.5	1334	189.0	7	32-73	325	1132	1265
1350	54	2635	1780	1632.0	1492	209.6	7	32-80	360	1200	1280
1400	56	2667	1855	1695.4	1543	217.5	7	32-86	395	1290	1350
1500	60	2950	1995	1822.4	1657	233.4	7	28-92	450	1380	1420

BALL VALVE SERIES

Trunnion Mounted Ball Valve



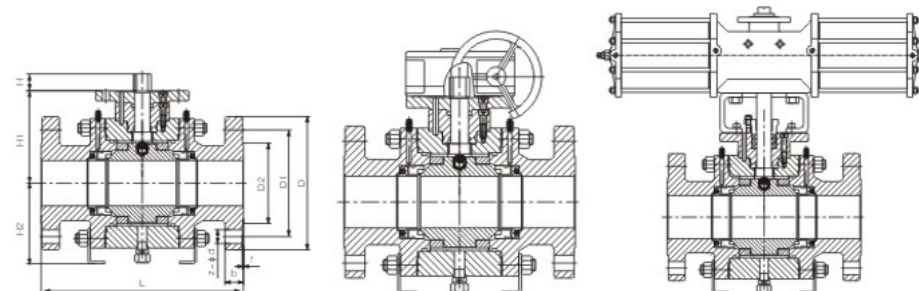
MAIN CONNECTION DIMENSIONS

PN150/Class900

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	368	215	165.1	92.1	38.1	7	8-26	40	104	103
65	2 1/2	419	245	190.5	104.8	41.3	7	8-29	40	135	115
80	3	381	240	190.5	127.0	38.1	7	8-26	45	163	132
100	4	457	290	235.0	157.2	44.5	7	8-32	50	211	169
125	5	-	350	279.4	185.7	50.8	7	8-35	6	235	185
150	6	610	380	317.5	215.9	55.6	7	12-32	70	259	213
200	8	737	470	393.7	269.9	63.5	7	12-39	95	297	264
250	10	838	545	469.9	323.8	69.9	7	16-39	95	342	333
300	12	965	610	533.4	381.0	79.4	7	20-39	110	384	379
350	14	1029	640	558.8	412.8	85.8	7	20-42	120	398	368
400	16	1130	705	616.0	469.9	88.9	7	20-45	145	436	437
450	18	1219	785	685.8	533.4	101.6	7	20-51	165	484	497
500	20	1321	855	749.3	584.2	108.0	7	20-54	200	532	503
600	24	1549	1040	901.7	692.2	139.7	7	20-67	220	617	633
650	26	1651	1085	952.5	749	139.7	7	20-73	230	645	660
700	28	1753	1170	1022.4	800	142.9	7	20-80	245	674	706
750	30	1880	1230	1085.8	857	149.3	7	20-80	260	723	777
800	32	2032	1315	1155.7	914	158.8	7	20-86	270	784	809
850	34	2159	1395	1225.6	965	165.1	7	20-92	285	807	852
900	36	2286	1460	1289.0	1022	171.5	7	20-92	300	848	898
1000	40	2410	1510	1339.8	1162	196.9	7	24-92	330	920	960
1050	42	2515	1560	1390.6	1213	206.4	7	24-92	350	1000	1060
1200	48	2620	1785	1587.5	1384	233.4	7	24-105	400	1140	1200

BALL VALVE SERIES

Trunnion Mounted Ball Valve



MAIN CONNECTION DIMENSIONS

PN260/Class1500

DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	368	215	165.1	92.1	38.1	7	8-26	40	106	104
65	2 1/2	419	245	190.5	104.8	41.3	7	8-29	45	135	115
80	3	470	265	203.2	127.0	47.7	7	8-32	50	167	128
100	4	546	310	241.3	157.2	54.0	7	8-35	65	179	170
125	5	-	375	292.1	185.7	73.1	7	8-42	70	210	203
150	6	705	395	317.5	215.9	82.6	7	12-39	80	260	233
200	8	832	485	393.7	269.9	92.1	7	12-45	105	304	290
250	10	991	585	482.6	323.8	108.0	7	12-51	130	363	352
300	12	1130	675	571.5	381.0	123.9	7	16-55	145	417	425
350	14	1257	750	635.0	412.8	133.4	7	16-60	165	437	426
400	16	1384	825	704.8	469.9	146.1	7	16-68	185	475	493
450	18	1537	915	774.7	533.4	162.0	7	16-74	200	563	608
500	20	1664	985	931.8	584.2	177.8	7	16-80	220	617	645
600	24	1943	1170	990.6	692.2	203.2	7	16-94	245	698	724

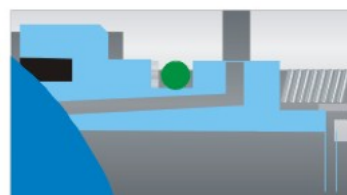
DN(mm)	NPS(in)	L	D	D1	D2	b	f	Z-d	H	H1	H2
50	2	451	235	171.4	92.1	50.9	7	8-29	45	120	127
65	2 1/2	508	265	196.8	104.8	57.2	7	8-32	50	145	153
80	3	578	305	228.6	127.0	66.7	7	8-35	60	177	198
100	4	673	355	273.0	157.2	76.2	7	8-42	75	227	233
125	5	-	420	323.8	185.7	92.1	7	8-48	85	245	245
150	6	914	485	368.3	215.9	108.0	7	8-54	105	264	252
200	8	1022	550	438.2	269.9	127.0	7	12-54	130	383	339
250	10	1270	675	539.8	323.8	165.1	7	12-67	155	453	422
300	12	1422	760	619.1	381.0	184.2	7	12-73	175	520	482

BALL VALVE SERIES

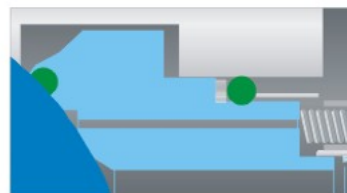
Full-welded Trunnion Pipeline Ball Valve

Structure Features

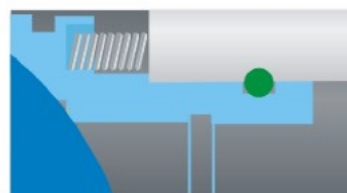
- Fully welded structure
- Designed in conformity with API 6D
- Floating self-centering seats structure with pre-tensioned spring elements
- Trunnion-mounted ball type
- Low torques
- Free of maintenance sealing structure
- Double block and bleed
- Single piston effect design (SPE) with self-relieving seat
- Optional double piston effect design (DPE)
- Optional sealing structure PMSS
- Dual and single adjustable stem seal
- Secondary sealant injection
- Blow-out protection at trunnions
- Drain and vent connections
- Electrostatic prevention
- Optional stem extension
- Fireproof design in conformity with API 6FA and BS 6755



Sealing system: soft-seated



Sealing system: PMSS, primary metallic/secondary soft-seated



Sealing system: metal to metal

Design

All-welded ball type body structure makes the body lightweight. The ideal ball type body can handle the higher pressure and bending moment, able to withstand the high internal and external pressure. Choose different material combinations to ensure that the valve is reliable in corrosive situations, such as acidic gases.

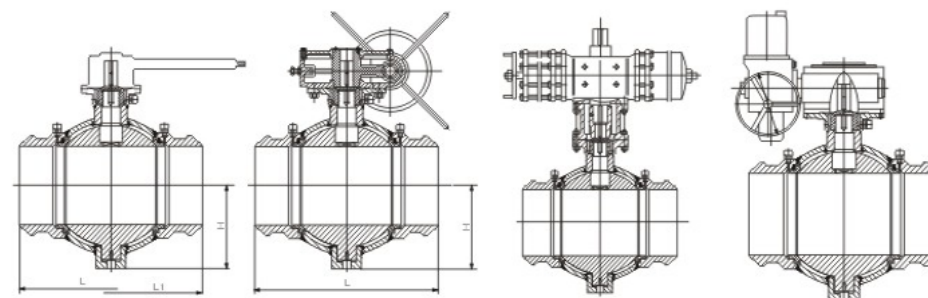
Replaceable Stem Seal

The stem seals on our ball valve can be replaced even when the pipeline is under maximum pressure.

The modular design enables us to provide various stem seal structure to meet your specific requirements.

BALL VALVE SERIES

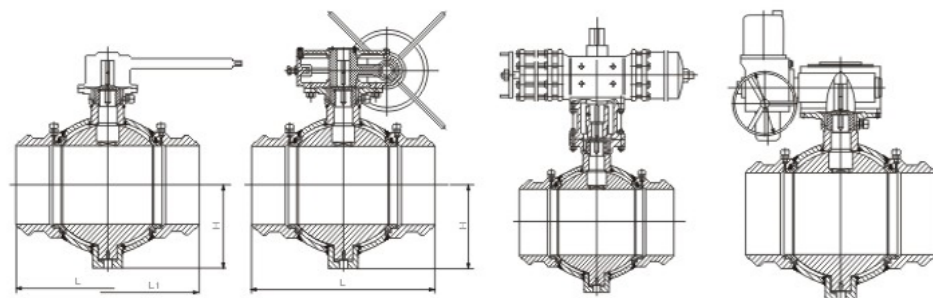
Full-welded Trunnion Pipeline Ball Valve



MAIN CONNECTION DIMENSIONS

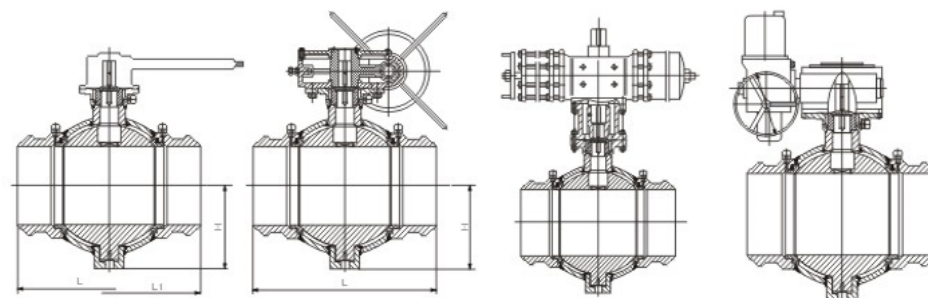
PN16/PN20/Class150

Full Bore						Unit: mm		
DN	NPS	L (RF)	L1 (BW)	C	H	WT(Kg)		Torque (N·M)
						Flange	BW	
50	2	178	216	103	100	18	20	57
65	2 1/2	191	241	115	110	22	24.5	71
80	3	203	283	129	130	28	34	95
100	4	229	305	147	151	52	45	192
150	6	394	457	194	201	91	102	485
200	8	457	521	252	254	194	204	832
250	10	533	559	303	308	320	295	1105
300	12	610	635	424	368	549	499	1655
350	14	686	762	450	372	603	558	2695
400	16	762	838	485	407	749	703	3164
450	18	864	914	564	489	1055	998	3793
500	20	914	991	603	529	1501	1252	5500
550	22	991	1092	641	566	1578	1592	6650
600	24	1067	1143	676	602	2096	1932	7529
650	26	1143	1245	752	673	2903	2540	8693
700	28	1245	1346	787	708	3266	2948	10770
750	30	1295	1397	829	750	4309	3992	12365
800	32	1372	1524	860	786	5060	4598	14070
850	34	1473	1626	896	817	6123	5443	21148
900	36	1524	1727	936	858	6972	6577	22987
1000	40	1753	1956	1124	1020	8222	7476	26059
1050	42	1855	2083	1166	1061	9595	8709	28149
1200	48	2134	2388	1271	1166	13556	12437	42776
1400	56	2489	2489	1360	1280	21301	19773	65654
1500	60	2640	2640	1430	1350	--	--	85654
1600	64	--	--	--	--	--	--	--

BALL VALVE SERIES**Full-welded Trunnion Pipeline Ball Valve Spherical Body Type****MAIN CONNECTION DIMENSIONS**

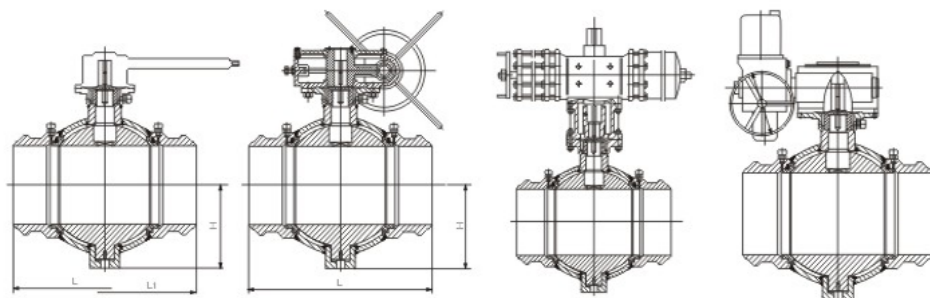
PN25/PN40/PN50/Class300

Full Bore		Unit: mm						
DN	NPS	L (RF)	L1 (BW)	C	H	WT(Kg)		Torque (N · M)
						Flange	BW	
50	2	216	216	103	100	23	20	99
65	2 1/2	241	241	115	110	27	29	124
80	3	283	283	129	130	36	34	212
100	4	305	305	147	151	57	45	335
150	6	403	457	194	201	113	102	544
200	8	502	521	252	254	206	204	1250
250	10	568	559	303	308	340	295	1736
300	12	648	635	424	368	578	499	2388
350	14	762	762	450	372	621	558	3224
400	16	838	838	485	407	782	703	5139
450	18	914	914	564	489	1225	998	7970
500	20	991	991	603	529	1542	1252	10570
550	22	1092	1092	641	566	1837	1592	12140
600	24	1143	1143	676	602	2445	1932	17240
650	26	1245	1245	752	673	3005	2540	20340
700	28	1346	1346	787	708	3504	2948	25069
750	30	1397	1397	829	750	4536	3992	27640
800	32	1524	1524	880	786	5402	4758	29550
850	34	1626	1626	886	817	6668	5443	31558
900	36	1727	1727	936	858	7494	7031	35170
1000	40	1956	1956	1124	1020	9584	8776	39115
1050	42	2083	2083	1166	1061	11084	9709	42414
1200	48	2170	2170	1271	1166	15092	13037	71868
1400	56	2743	2743	1360	1280	22905	20773	108550

BALL VALVE SERIES**Full-welded Trunnion Pipeline Ball Valve Spherical Body Type****MAIN CONNECTION DIMENSIONS**

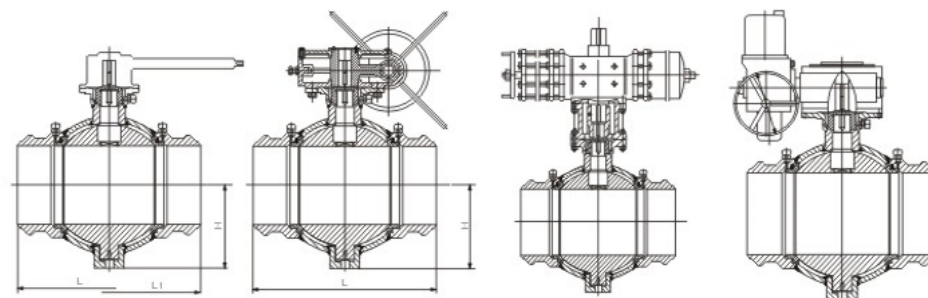
PN63/PN64/Class400

Full Bore									Unit: mm
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)		Torque (N · M)
							Flange	BW	
50	2	292	292	295	103	100	27	20	124
65	2 1/2	330	330	333	115	112	31	27	155
80	3	356	356	359	129	130	39	34	265
100	4	406	406	410	147	151	68	45	467
150	6	495	495	498	194	201	136	102	650
200	8	597	597	600	252	254	249	204	1806
250	10	673	673	676	303	308	386	295	2638
300	12	762	762	765	424	368	635	499	2929
350	14	826	826	829	450	382	748	558	3971
400	16	902	902	905	528	453	1009	803	6307
450	18	978	978	981	564	489	1293	998	9165
500	20	1054	1054	1060	641	562	1701	1361	12155
550	22	1143	1143	1153	680	600	2155	1792	15175
600	24	1232	1232	1241	716	636	2540	2155	21550
650	26	1308	1308	1321	752	673	3221	2540	25426
700	28	1397	1397	1410	787	708	3883	2948	31336
750	30	1524	1524	1537	829	750	4808	4002	34550
800	32	1651	1651	1667	915	822	5925	4983	36937
850	34	1778	1778	1794	998	894	6985	5679	39447
900	36	1880	1880	1895	1039	935	8165	7131	43962
1000	40	1981	1981	--	1124	1020	11567	10092	48894
1050	42	2057	--	--	1166	1061	13041	11226	50300
1200	48	2311	--	--	1372	1219	17592	15286	80302

BALL VALVE SERIES**Full-welded Trunnion Pipeline Ball Valve Spherical Body Type****MAIN CONNECTION DIMENSIONS**

PN100/PN110/Class600

Full Bore										Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)		Torque (N·M)		
							Flange	BW			
50	2	292	292	295	103	100	27	20	168		
65	2½	330	330	333	115	112	31	25	210		
80	3	356	356	359	129	130	39	34	360		
100	4	432	432	435	147	151	75	45	572		
150	6	559	559	562	194	201	163	102	912		
200	8	660	660	664	252	254	295	204	2177		
250	10	787	787	791	303	308	454	295	3093		
300	12	838	838	841	424	368	685	499	4282		
350	14	889	889	892	450	382	866	558	7458		
400	16	991	991	994	528	453	1089	803	9310		
450	18	1092	1092	1095	564	489	1340	998	14693		
500	20	1194	1194	1200	641	562	1860	1361	20011		
550	22	1295	1295	1305	680	600	2449	1792	24785		
600	24	1397	1397	1407	716	636	2971	2155	31226		
650	26	1448	1448	1461	752	673	3538	2540	35184		
700	28	1549	1549	1562	889	784	4309	3039	38987		
750	30	1651	1651	1664	931	826	5443	4137	41832		
800	32	1778	1778	1794	958	860	6285	4850	63865		
850	34	1930	1930	1946	998	894	7269	5579	71720		
900	36	2083	2083	2099	1039	935	8664	7031	89020		
1000	40	2337	2337	2366	1220	1067	12143	10433	109900		
1050	42	2439	2439	2467	1262	1109	13835	11567	121165		
1200	48	2540	2540	2540	1435	1300	18511	15011	145345		
1400	56	2949	2949	2949	1615	1505	27858	25358	169230		

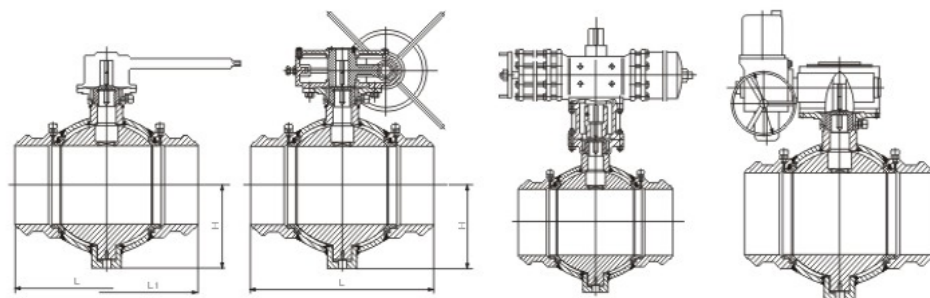
BALL VALVE SERIES**Full-welded Trunnion Pipeline Ball Valve Spherical Body Type****MAIN CONNECTION DIMENSIONS**

PN150/PN160/Class900

Full Bore										Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)		Torque (N·M)		
							Flange	BW			
50	2	368	368	371	103	100	45	20	228		
65	2½	419	419	422	116	110	53	35	263		
80	3	381	381	384	131	124	64	54	512		
100	4	457	457	460	168	172	113	86	946		
150	6	610	610	613	209	213	238	186	1784		
200	8	737	737	740	252	254	549	268	4116		
250	10	838	838	841	382	327	601	458	5910		
300	12	965	965	968	424	368	1021	612	10137		
350	14	1029	1029	1038	522	442	1474	977	14141		
400	16	1130	1130	1140	563	483	1814	1111	18866		
450	18	1219	1219	1232	604	524	2404	1792	22400		
500	20	1321	1321	1334	742	615	3221	2381	28544		
550	22	..	..	..	..	..	..	..	..		
600	24	1549	1549	1568	817	713	4763	2926	43276		
650	26	1651	1651	1673	845	743	5285	3245	48580		
700	28	1753	1753	1775	882	880	6511	4230	60000		
750	30	1880	1880	1902	931	826	7938	5216	76000		
800	32	2032	2032	2054	1003	905	9037	6355	90195		
850	34	2159	2159	2188	1058	940	10357	7486	100460		
900	36	2286	2286	2315	1134	981	11612	8538	131875		

BALL VALVE SERIES

Full-welded Trunnion Pipeline Ball Valve Spherical Body Type



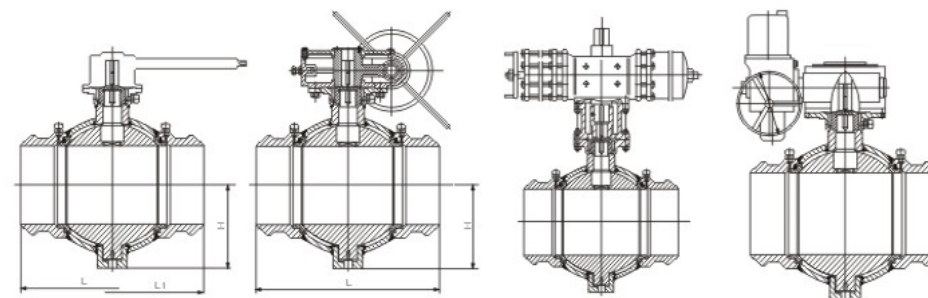
MAIN CONNECTION DIMENSIONS

PN250/PN260/Class1500

Full Bore		Unit: mm							
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)		Torque (N · M)
							Flange	BW	
50	2	368	368	371	103	100	45	20	390
65	2½	419	419	422	115	110	62	35	448
80	3	470	470	473	131	124	82	54	931
100	4	546	546	549	168	172	136	86	1524
150	6	705	705	711	209	213	324	186	2934
200	8	832	832	841	342	278	703	488	7215
250	10	991	991	1000	405	385	907	714	10990
300	12	1130	1130	1143	452	440	1474	828	16103
350	14	1257	1257	1276	522	442	1905	1157	24518
400	16	1384	1384	1407	563	483	2449	1338	29630
450	18	1537	1537	1559	704	576	2880	2325	34392
500	20	1664	1664	1686	742	615	4200	2733	40918
550	22	..	..	..	..	..	..	..	..
600	24	..	..	1972	817	713	7371	4264	65351

BALL VALVE SERIES

Full-welded Trunnion Pipeline Ball Valve Spherical Body Type



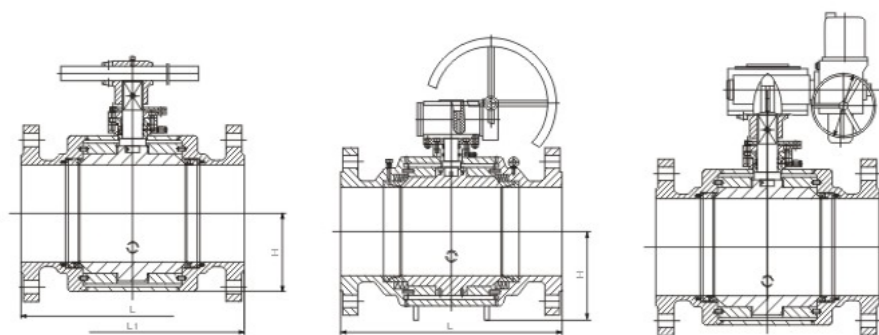
MAIN CONNECTION DIMENSIONS

PN420/Class2500

Full Bore		Unit: mm							
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)		Torque (N · M)
							Flange	BW	
50	2	451	451	454	119	115	52	43	589
65	2½	508	508	514	130	128	78	62	736
80	3	578	578	584	145	144	107	85	1577
100	4	673	673	683	175	184	214	173	1965
150	6	914	914	927	318	248	428	334	5501
200	8	1022	1022	1038	391	326	950	760	11786
250	10	1270	1270	1292	459	378	1325	983	13222
300	12	1422	1422	1445	498	423	2044	1478	20075

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



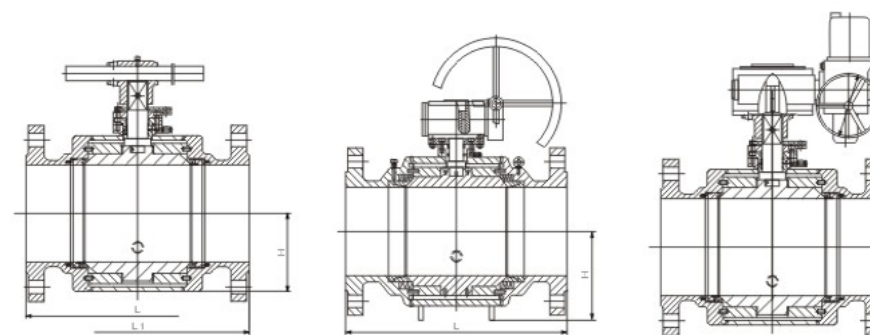
MAIN CONNECTION DIMENSIONS

PN16/PN20/Class150

Full Bore							Unit: mm
DN	NPS	L (RF)	L1 (BW)	C	H	WT(Kg)	Torque (N · M)
50	2	178	216	105	100	28	57
65	2 1/2	191	241	130	110	39	71
80	3	203	283	155	125	49	95
100	4	229	305	200	160	88	192
150	6	394	457	250	185	160	485
200	8	457	521	278	222	248	832
250	10	533	559	323	280	379	1105
300	12	610	635	340	303	571	1655
350	14	686	762	375	330	759	2695
400	16	762	838	410	355	1150	3164
450	18	864	914	440	390	1192	3793
500	20	914	991	495	430	1769	5500
550	22	991	1092	525	475	2367	6650
600	24	1067	1143	585	520	3450	7529
650	26	1143	1245	630	560	4050	8693
700	28	1245	1346	645	650	4830	10770
750	30	1295	1397	690	700	5960	12365
800	32	1372	1524	740	745	7480	14070
850	34	1473	1626	760	775	8032	21148
900	36	1524	1727	810	805	9100	22987
1000	40	1753	1956	895	900	14100	26059
1050	42	1790	2083	950	935	15320	28149
1200	48	1995	2388	1095	1070	22000	42776
1400	56	2489	2489	1300	1250	34150	65654
1500	60	2640	2640	1380	1350	42500	85654
1600	64	--	--	--	--	--	--

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



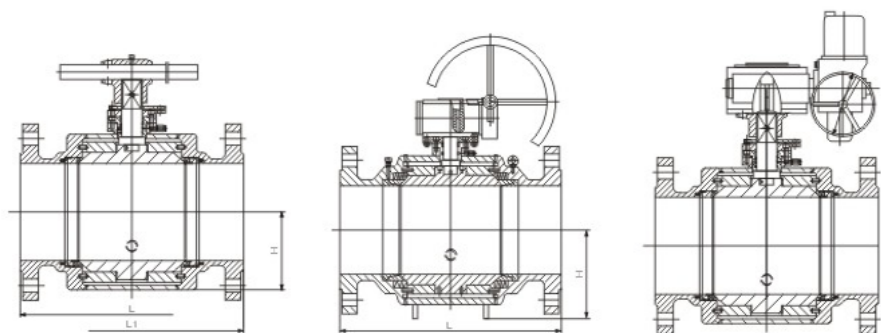
MAIN CONNECTION DIMENSIONS

PN25/PN40/PN50/Class300

Full Bore							Unit: mm
DN	NPS	L (RF)	L1 (BW)	C	H	WT(Kg)	Torque (N · M)
50	2	216	216	105	100	29	99
65	2 1/2	241	241	130	110	40	124
80	3	283	283	155	125	57	212
100	4	305	305	200	160	97	335
150	6	403	457	250	203	185	544
200	8	502	521	278	232	287	1250
250	10	568	559	333	298	507	1736
300	12	648	635	360	333	740	2388
350	14	762	762	395	350	1038	3224
400	16	838	838	433	398	1452	5139
450	18	914	914	460	410	1648	7970
500	20	991	991	505	470	2207	10570
550	22	1092	1092	530	485	2797	12140
600	24	1143	1143	590	550	3940	17240
650	26	1245	1245	635	585	4670	20340
700	28	1346	1346	645	670	5780	25069
750	30	1397	1397	700	730	6600	27640
800	32	1524	1524	750	770	7940	29550
850	34	1626	1626	760	800	9100	31558
900	36	1727	1727	810	825	10150	35170
1000	40	1956	1956	905	920	13800	39115
1050	42	2083	2083	960	955	16120	42414
1200	48	2170	2170	1100	1105	24070	71868
1400	56	2743	2743	1300	1275	38200	108550

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



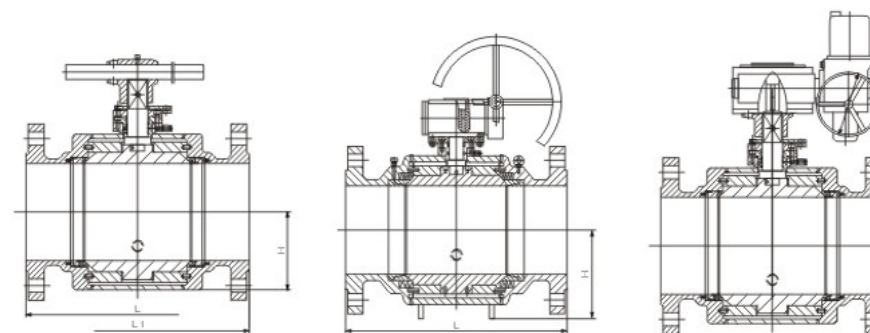
MAIN CONNECTION DIMENSIONS

PN63/PN64/Class400

Full Bore							Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)	Torque (N · M)
50	2	292	292	295	105	100	25	124
65	2½	330	330	333	135	115	35	155
80	3	356	356	359	165	130	56	265
100	4	406	406	410	210	162	90	467
150	6	495	495	498	243	203	249	650
200	8	597	597	600	285	257	458	1806
250	10	673	673	676	323	310	676	2638
300	12	762	762	765	370	350	939	2929
350	14	826	826	829	385	360	1166	3971
400	16	902	902	905	428	413	1397	6307
450	18	978	978	981	465	430	1960	9165
500	20	1054	1054	1060	500	490	2649	12155
550	22	1143	1143	1153	540	510	3286	15175
600	24	1232	1232	1241	590	570	3936	21550
650	26	1308	1308	1321	630	620	4990	25426
700	28	1397	1397	1410	660	690	5718	31336
750	30	1524	1524	1537	705	750	6850	34550
800	32	1651	1651	1667	748	780	7766	36937
850	34	1778	1778	1794	775	815	9507	39447
900	36	1880	1880	1895	810	840	11077	43962
1000	40	2250	2250	..	910	940	14138	48894
1050	42	..	..	..	965	980	16679	50300
1200	48	..	..	..	1100	1120	23179	80302

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



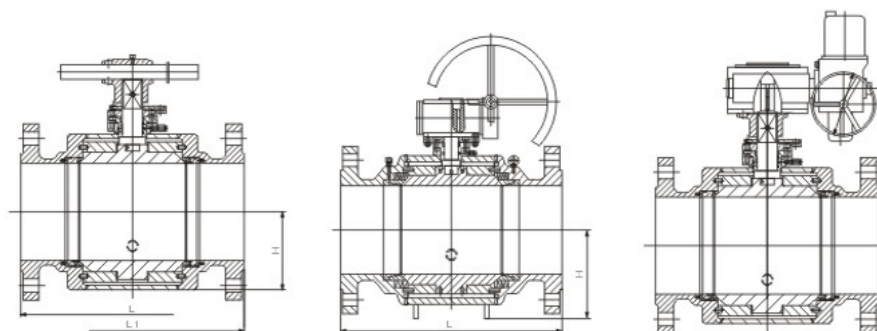
MAIN CONNECTION DIMENSIONS

PN100/PN110/Class600

Full Bore							Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)	Torque (N · M)
50	2	292	292	295	105	100	33	168
65	2½	330	330	333	135	115	43	210
80	3	356	356	359	165	130	64	360
100	4	432	432	435	210	162	124	572
150	6	559	559	562	253	203	255	912
200	8	660	660	664	290	257	487	2177
250	10	787	787	791	333	310	760	3093
300	12	838	838	841	380	350	984	4282
350	14	889	889	892	395	360	1266	7458
400	16	991	991	994	433	413	1532	9310
450	18	1092	1092	1095	470	430	2097	14693
500	20	1194	1194	1200	505	490	2640	20011
550	22	1295	1295	1305	545	510	3790	24785
600	24	1397	1397	1407	595	570	4740	31226
650	26	1448	1448	1461	635	620	5650	35184
700	28	1549	1549	1562	665	690	6760	38987
750	30	1651	1651	1664	710	750	8380	41832
800	32	1778	1778	1794	755	780	9740	63865
850	34	1930	1930	1946	780	815	11340	71720
900	36	2083	2083	2099	815	840	13300	89020
1000	40	2337	2337	2366	915	940	18340	109900
1050	42	2439	2439	2467	970	980	21550	121165
1200	48	2540	2540	2540	1105	1120	31500	145345
1400	56	2949	2949	2949	1300	1290	48050	169230

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



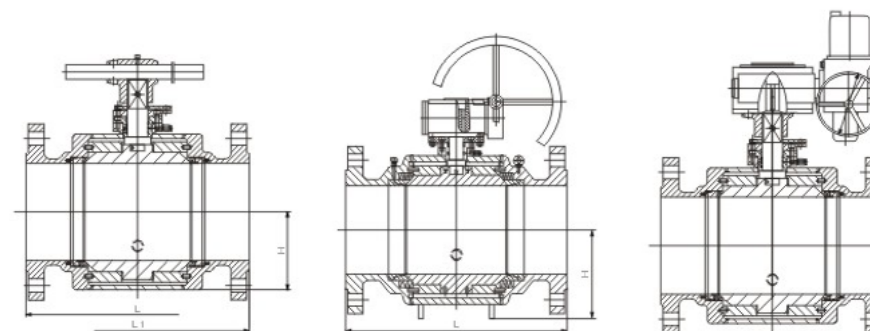
MAIN CONNECTION DIMENSIONS

PN150/PN160/Class900

Full Bore							Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)	Torque (N · M)
50	2	368	368	371	105	110	50	228
65	2½	419	419	422	135	118	61	263
80	3	381	381	384	165	130	76	512
100	4	457	457	460	210	167	150	946
150	6	610	610	613	260	251	367	1784
200	8	737	737	740	295	280	600	4116
250	10	838	838	841	345	340	1027	5910
300	12	965	965	968	384	390	1558	10137
350	14	1029	1029	1038	400	442	1765	14141
400	16	1130	1130	1140	440	490	2157	18866
450	18	1219	1219	1232	482	500	2860	22400
500	20	1321	1321	1334	530	500	4220	28544
550	22	..	..	..	..	..	..	..
600	24	1549	1549	1568	615	630	7150	43276
650	26	1651	1651	1673	650	650	8040	48580
700	28	1753	1753	1775	670	710	10840	60000
750	30	1880	1880	1902	725	780	12210	76000
800	32	2032	2032	2054	785	810	14992	90195
850	34	2159	2159	2188	805	850	17230	100460
900	36	2286	2286	2315	845	900	19920	131875
1000	40	2283	2100	2311	955	980	24251	..
1050	42	2438	2200	2461	986	990	28660	..
1200	48	2769	2300	2797	1150	1199	36156	..

BALL VALVE SERIES

Tube Shape Body Full Welded Trunnion Ball Valve



MAIN CONNECTION DIMENSIONS

PN250/PN260/Class1500

Full Bore							Unit: mm	
DN	NPS	L (RF)	L1 (BW)	L2 (RTJ)	C	H	WT(Kg)	Torque (N · M)
50	2	368	368	371	105	105	53	390
65	2½	419	419	422	138	120	63	448
80	3	470	470	473	165	130	98	931
100	4	546	546	549	215	167	200	1524
150	6	705	705	711	260	270	485	2934
200	8	832	832	841	300	300	827	7215
250	10	991	991	1000	365	360	1507	10990
300	12	1130	1130	1146	420	423	2272	16103
350	14	1257	1257	1276	440	460	2880	24518
400	16	1384	1384	1407	480	510	4120	29630
450	18	1537	1537	1559	550	600	6260	34392
500	20	1664	1664	1686	620	650	9120	40918
550	22	..	..	..	..	..	..	..
600	24	..	..	1972	700	720	14320	65351