BALL VALVE CATALOGUE

- Floating Ball Valve
- Trunnion Pipeline Ball Valve
  Double Block And Bleed Valve
- Full-Welded Ball Valve
- Top-Entry Ball Valve
- Metal Seated Ball Valve
- Orbit Ball Valve
  V-Type Ball Valve
- 3way / 4way Ball Valve

Established in 1985, DaeJu Control Co., Ltd has good standing
and reputation among korean companies

DAEJU CONTROL CO., LTD.

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Email : djc@aov.kr

Global Business
One of Leading Companies in Valve and Actuation industry field.

28" 300LB 304SS RF
Forging Trunnion ball valve

28" 150LB A105 BW
Forging Trunnion ball valve

10" 1500LB A105 RF
Forging Trunnion ball valve

28" 150LB A105 RF
Full weld ball valve

6" 300LB A105 BW
Full weld ball valve

10" 1500LB A105 RF
Metal to metal seat ball valve

36" 150LB WCB RF
Cast trunnion ball valve

14" 150LB WCB
Cast 3 way ball valve

12" 600LB WCB RF
Cast trunnion ball valve

14" 190LB WCB RF
Tope entry metal seat ball valve

10" 600LB CF8 RF
Top entry ball valve

6" 300LB A105 BW
Extension stem ball valve

2" 1500LB 316 RF
DBB ball valve

2" 600LB WCB
Orbit ball valve

3" 150LB A105 RF
Forging Floating ball valve

3" 150LB WCB
V Type ball valve

4" 600LB LCC RF
Cast Floating ball valve

2" 300LB CF8 RF
Cast Floating ball valve

1" 1000WOG FNPT
Floating ball valve

PRODUCTS COLLECTION

DJC DEDICATES TO APPLY LATEST TECHNIQUE FOR HIGH QUALITY OF VALVE

DAEJU CONTROL CO,.LTD

Ball Valve Model Description Chart

1	2	3	4	5	6	7	—	8	9	—	10

Unit No.	Meaning	Explanations to unit codes	
1	Main Function	GD-Orbit; D-Cryogenic; B-Jacket; S-Top entry; T-Regulative type; K-Valves with anti-sulfur requirement (NACE); the code is omitted if there is no special function	
2	Type Code	Q- Ball valve; FQ indicates non-standard ball valve	
3	Auxiliary Classification	Qs-Reduced bore; d-Forged steel; dH-Forged full welded; Z-Integral (one-piece), V-V type ball valve; the code is omitted for others	
4	Transmission Mode	Hand operation-omitted; 2-Electro-hydraulic operation; 3-Worm gear; 4-Spur gear; 5-Bevel gear, 6-Pneumatic operation; 7- Hydraulic operation; 8- Pneumatic-hydraulic operation; 9- Electric operation	
5	Type of Connection	1- FNPT; 2-MNPT; 4-FLANGED; 6-WELDED; 7- WAFER; 8- CLAMP; 9- SOCKET	
6	Structural Form	0-Hemisphere straight-through type; 1-floating ball straight-through type; 2- Floating ball Y-pattern three-way type; 4-Floating ball L-pattern three-way type; 5- Floating ball T pattern three-way type; 6- Trunnion ball four-way type; 7-Trunnion ball straight-through type; 8- Trunnion ball T-pattern three-way type; 9- Trunnion ball L-pattern three-way type;	
7	Sealing face Material	F-PTFE; RE-RPTFE; FS-PPL; PK-PEEK; N-Nylon; FC-Carbon fiber; H-Alloy steel; Y-Tungsten obalt alloy, nickel-based hard alloy; HF-Special surface treatment	
8	Preassure Rating	Nominal pressure	10-PN10; 16-PN16; 25-PN25; 40-PN40; 63-PN63; 100-PN100; 150-PN150; 250-PN250; 420-PN420
		Class	150-Class 150; 300-Class 300; 600-Class 600; 900-Class 900; 1500-Class 1500; 2500-Class 2500
		JIS-K Rating	10K; 20K; 30K; 40K
9	Body Material	C-WCB, 105; CC-WCC; C5-C5; C6-WC6, F11; C9-WC9, F22; CL-LCB, LF2; LC-LCC; L2-LC2; L3-LC3; P8-CF8, 304; P3-CF3, 304L; R8-CF8M, 316; R3-CF3M, 316L; A-CN7M, 20#Alloy steel; Ti-Ti or Ti alloy; T-Copper or copper alloy; Q-Ductile iron; Z- Gray cast iron	
10	Trim Material	The code is omitted if users have no special requirements (The carbon steel body is generally equipped with carbon steel trims, and the stainless steel body is equipped with stainless steel trims whose corrosion resistance is consistent with that of body material.) P8-304; P3-304L; R8-316, R3-316L; M-Monel; A-20#Alloy steel	

IMPORTANT NOTICE

1. EVERY DEMENSION AND FEATURE IN THIS BOOK COULD BE DIFFERENCE WITH REAL PRODUCT. AND COULD BE CHANGED WITHOUT ANY NOTICE.
2. DAEJU CONTROL WILL NOT HAVE RESPONSIBILITY FOR MISTAKES HAPPENED BY BEING PROVIDED NOT ENOUGH INFORMATION OF INQUIRY FROM THE CLIENT.
3. WHEN CLIENT NEEDS MORE DETAILED INFORMATION FOR THE CUSTOMIZED PRODUCT. PLEASE CONTACT US FOR GETTING CONFIRM.

CONTENTS

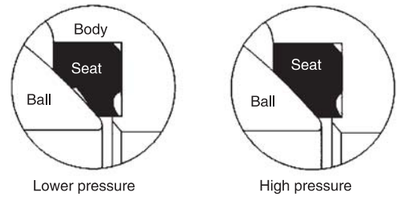
FLOATING BALL VALVE

STRUCTURAL FEATURES

1、Special Seat Design

The floating ball valve adopts the design of flexible seal ring structure. When the medium pressure is lower, the contact area of seal ring and ball is smaller, so higher sealing ratio is formed at the place where the seal ring and ball contact to ensure reliable sealing. When the medium pressure is higher, the contact area of seal ring and ball becomes bigger along with the elastic deformation of seal ring, so the seal ring can endure higher medium thrust without being damaged.

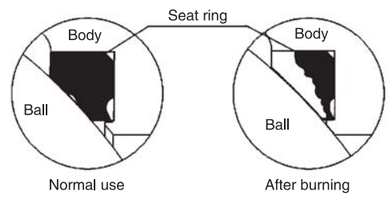
Elastic Seat



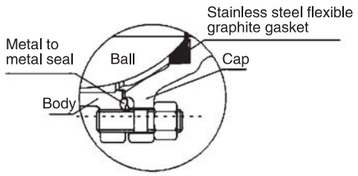
2、Fireproof Structure Design

In case of fire during the use of valve, the seat ring made of PTFE or other non-metal materials will be decomposed or damaged under high temperature and cause higher leakage. The fireproof seal ring is set between ball and seat so that after the valve seat is burnt, the medium will push the ball rapidly towards the downstream metal seal ring to form the auxiliary metal to metal sealing structure, which can effectively control valve leakage. In addition, the middle flange sealing gasket is made of metal wound gasket, which can ensure sealing even under high temperature. The fireproof structure design of floating ball valve conforms to requirements in API 607, API 6FA, BS 6755 and other standards.

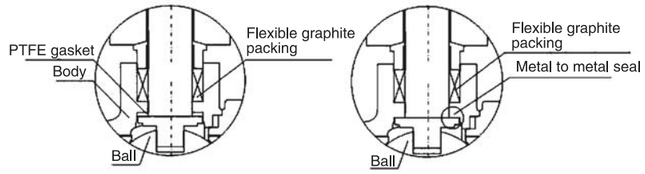
Fireproof Structure Design Of Seat



Fireproof Structure Of Middle Flange



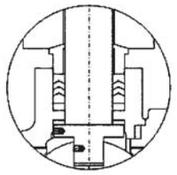
Fireproof Structure Design Of Seam



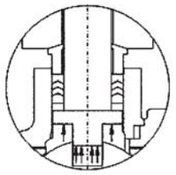
STRUCTURAL FEATURES

3、Reliable Sealing Of Valve Stem

The stem is provided with the shoulder at its bottom so that it will not be blown out by the medium even under the extreme conditions such as abnormal pressure rise inside the valve cavity, failure of gland plate and etc. In addition, to avoid leakage after the stem packing is burnt in case of fire, the thrust bearing is set at the place where the stem shoulder and body contact to form a reverse sealing seat. The sealing force of the reverse seal will increase according to the increase of medium pressure, so as to ensure reliable stem sealing under various pressure, prevent leakage and avoid accident spreading.



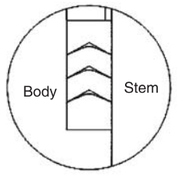
The bottom–mounted stem will not be blown out by medium pressure.



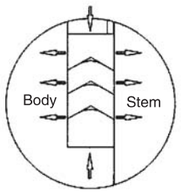
The top–mounted stem may be blown out by medium pressure.

The stem adopts V type packing sealing structure. The V type packing can effectively change the pressing force and medium force of the gland into the sealing force of the stem.

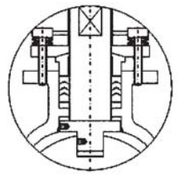
According to user requirements, the disc spring loaded packing pressing mechanism can be adopted to make the sealing of stem packing more reliable.



Before the packing is pressed



After the packing is pressed

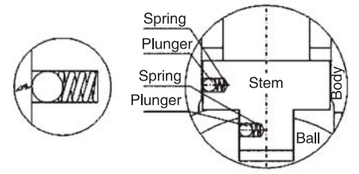


The disc spring loaded packing pressing mechanism is adopted.

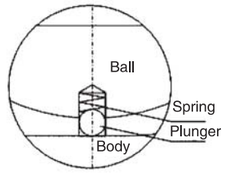
STRUCTURAL FEATURES

4、Anti–static Structure

The ball valve is provided with the anti-static structure and adopts the static electricity discharge device to directly form a static channel between the ball and body or form a static channel between the ball and body through the stem, so as to discharge the static electricity produced due to friction during the opening and closing of ball and seat through the pipeline, avoiding fire or explosion that may be caused by static spark and ensuring system safety.



Anti–static structure design of ball valve with Dn≥32

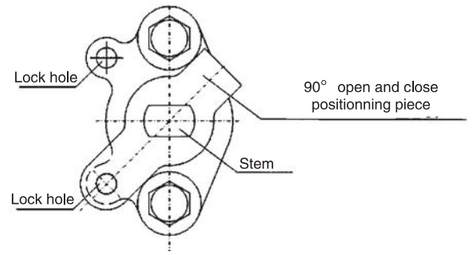


Anti–static structure design of ball valve with Dn≤25

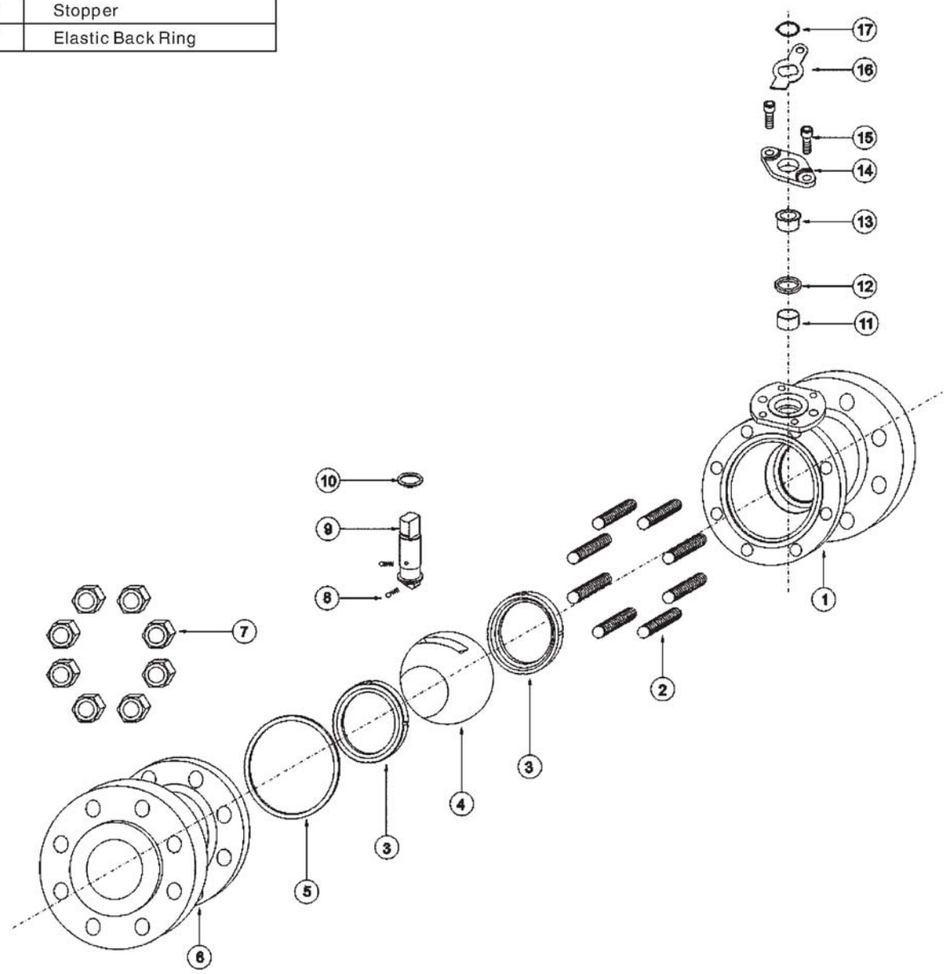
5、Lock And Misoperation Prevention

The manual ball valve can be locked by a lock when it is at the full open or full close position. The 90° open and close positioning piece with lock hole is designed to avoid valve misoperation caused due to handle operation by non-operators, and it can also prevent valve opening or closing, or other accidents caused by pipeline vibration or unpredictable factors. It is very effective especially for inflammable and explosive oil, chemical and medical working pipelines or field tubing. The part on the head of the stem that is installed with the handle adopts flat design. When the valve is opened, the handle is parallel to the pipeline, and when the valve is closed, the handle is vertical to the pipeline, so that the opening and closing indications of the valve are guaranteed to have no error.

Lock And Misoperation Prevention Structure



1	Body
2	Stud
3	Seat
4	Ball
5	Anti–fire Gasket
6	Bonnet
7	Hexagon Nut
8	Anti–static Ball
9	Anti–static Spring
10	Stem
11	Sliding Washer
12	Stem Bearing
13	Packing
14	Packing Gland
15	Hexagon Screw
16	Stopper
17	Elastic Back Ring



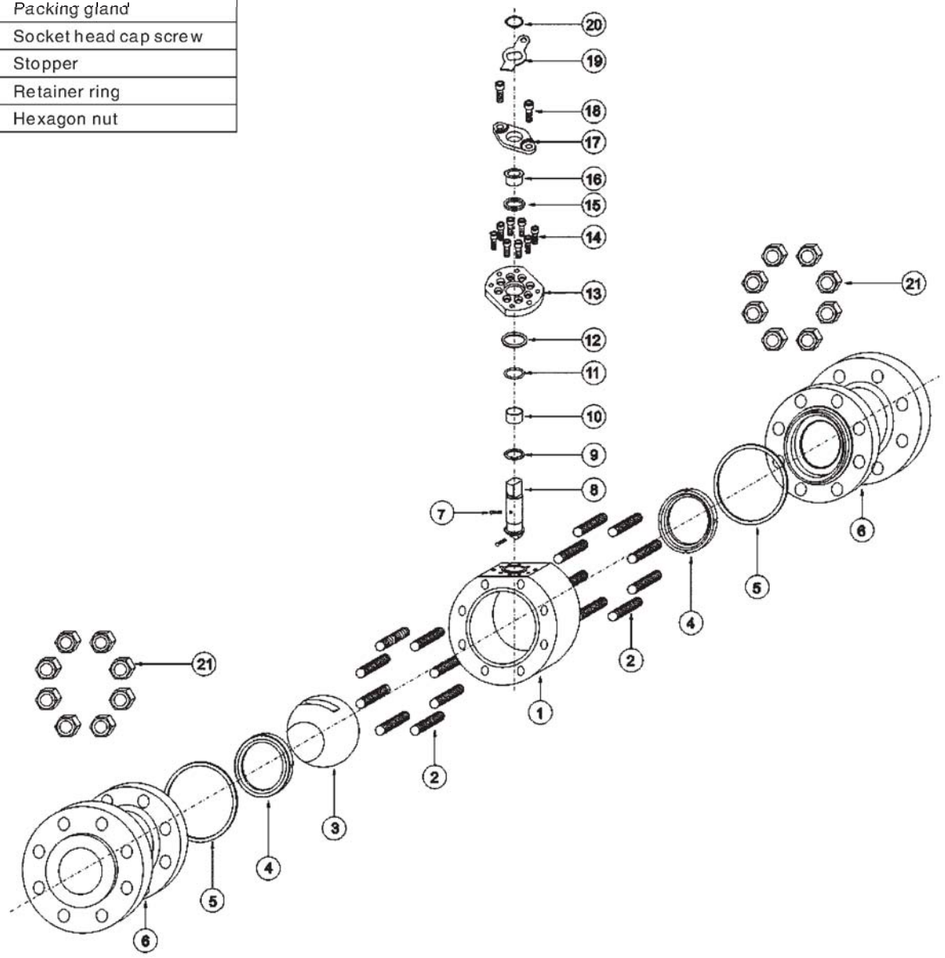
DAEJU CONTROL CO., LTD

CAST STEEL ● FLOATING BALL VALVE

PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 600				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	3	Seat	PTFE/NYLON/PEEK/PPL				
	4	Ball	ASTM A105・ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	Anti–fire gasket	SST+Graphite				
	6	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	7	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	8	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	9	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	10	Thrust bearing	PTFE				
	11	Sliding bearing	PTFE				
	12	Packing	Graphite				
	13	Packing bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	14	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	15	Socket head cap screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	16	Stopper	A3.Zn	A3.Zn	A3.Zn	A3.Zn	A3.Zn
	17	Retainer ring	65Mn	65Mn	65Mn	65Mn	65Mn
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong oxidizer	Urea
		Applicable temperature	⩽120℃(PTFE), ⩽80℃(NYLON), ⩽250℃(PEEK), ⩽250℃(PPL)				
Design and manufacturing			API 608				
Face–to–face dimensions			ASME B16.10				
Type of connection			Flange	ASME B16.5		Butt welding	ASME B16.25
Pressure test			API 598				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

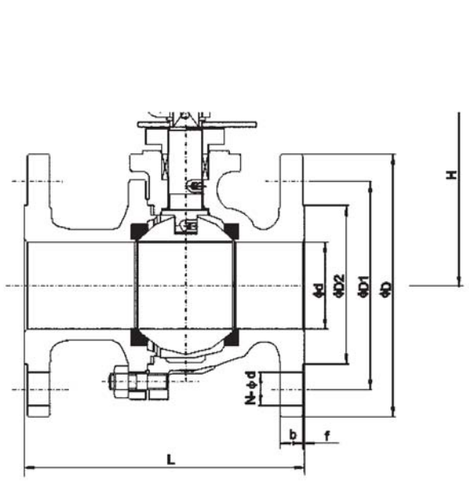
1	Body
2	Stud
3	Ball
4	Seat
5	Anti–fire gasket
6	Bonnet
7	Anti–static device
8	Stem
9	Thrust bearing
10	Sliding bearing
11	O ring
12	Anti–fire gasket
13	Seal gland
14	Socket head cap screw
15	Packing
16	Packing bushing
17	Packing gland
18	Socket head cap screw
19	Stopper
20	Retainer ring
21	Hexagon nut



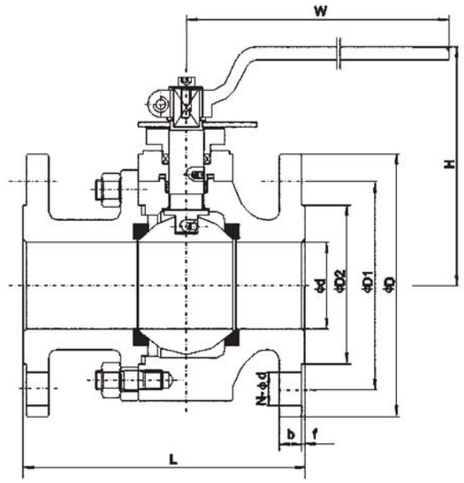
PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 600				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A351 CF8	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	2	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	3	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	4	Seat	PTFE/NYLON/PEEK/PPL				
	5	Anti–fire gasket	SST+Graphite				
	6	Bonnet	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	7	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	8	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	9	Thrust bearing	PTFE				
	10	Sliding bearing	PTFE				
	11	O ring	VITON				
	12	Anti–fire gasket	SST+Graphite				
	13	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	14	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	15	Packing	Graphite				
	16	Packing bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	17	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	18	Socket head cap screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	19	Stopper	A3.Zn	A3.Zn	A3.Zn	A3.Zn	A3.Zn
	20	Retainer ring	65Mn	65Mn	65Mn	65Mn	65Mn
	21	Hexagon nut	A194 2H	A194–8	A194–8M	A194–8	A194–8M
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong oxidizer	Urea
		Applicable temperature	≤120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608				
Face–to–face dimensions			ASME B16.10				
Type of connection			Flange	ASME B16.5		Butt welding	ASME B16.25
Pressure test			API 598				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

FORGED STEEL ● FLOATING BALL VALVE



Floating cast steel ball valve

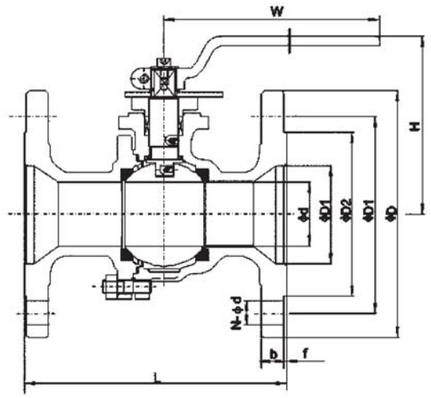


Floating forged steel ball valve

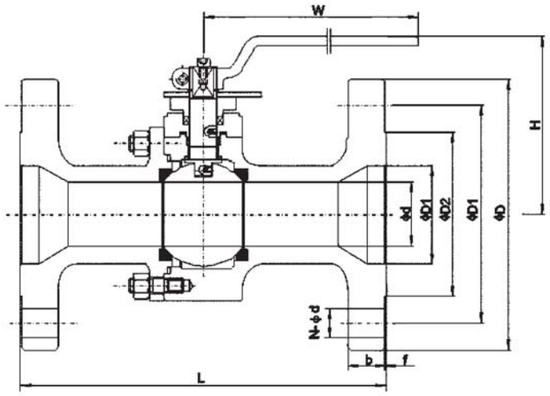
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange						W	Cast steel	Forged steel	Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	f	b	N– ϕ d		H	H	Cast steel	Forged steel
150	1/2"	15	13	108	–	140	90	60.5	35	2	9	4– ϕ 16	140	80	78	2	△
	3/4"	20	19	117	–	152	100	70	43	2	10	4– ϕ 16	140	86	82	2.5	△
	1"	25	25	127	–	165	110	79.5	51	2	11	4– ϕ 16	140	98	95	3.5	△
	1 1/4"	32	32	140	–	178	115	89	64	2	11	4– ϕ 16	180	106	100	6.5	△
	1 1/2"	40	38	165	–	190	125	98.5	73	2	13	4– ϕ 16	180	133	128	7.5	△
	2"	50	50	178	–	216	150	120.5	92	2	14.5	4– ϕ 19	200	138	137	9	△
	3"	80	75	203	191	283	190	152.5	127	2	17.5	4– ϕ 19	300	175	148	19	△
	4"	100	100	229	216	305	230	190.5	157	2	22.5	8– ϕ 19	650	235	223	36	△
	6"	150	150	394	241	457	280	241.5	216	2	24	8– ϕ 22	800	285	278	79	△
	8"	200	201	457	406	521	345	298.5	270	2	27	8– ϕ 22	1000	342	336	160	△
300	1/2"	150	13	140	470	140	95	66.5	35	2	13	4– ϕ 16	140	80	78	2.5	△
	3/4"	20	19	152	–	152	115	82.5	43	2	14.5	4– ϕ 19	140	86	82	3.6	△
	1"	25	25	165	–	165	125	89	51	2	16	4– ϕ 19	140	98	95	5	△
	1 1/4"	32	32	178	–	178	135	98.5	64	2	17.5	4– ϕ 19	180	106	100	8.5	△
	1 1/2"	40	38	190	–	190	155	114.5	73	2	19.5	4– ϕ 22	180	133	128	10	△
	2"	50	50	216	232	216	165	127	92	2	21	8– ϕ 19	200	138	137	12	△
	3"	80	75	283	298	283	210	168.5	127	2	27	8– ϕ 22	300	175	148	28	△
	4"	100	100	305	321	305	255	200	157	2	30.5	8– ϕ 22	650	235	223	46	△
	6"	150	150	403	419	457	320	270	216	2	35	12– ϕ 22	800	285	278	104	△
	8"	200	201	502	518	521	380	330	270	2	40	12– ϕ 25	1000	342	336	208	△
600	1/2"	15	13	165	–	165	95	66.5	35	7	14.5	4– ϕ 16	140	78	68	5	△
	3/4"	20	19	190	–	190	115	82.5	43	7	16	4– ϕ 19	140	80	76	7	△
	1"	25	25	216	–	216	125	89	51	7	17.5	4– ϕ 19	180	110	106	9	△
	1 1/4"	32	32	229	–	229	135	98.5	64	7	21	4– ϕ 19	200	115	110	13	△
	1 1/2"	40	38	241	–	241	155	114.5	73	7	22.5	4– ϕ 22	250	135	128	17	△
	2"	50	50	292	295	292	165	127	92	7	26	8– ϕ 19	300	152	140	21	△
	3"	80	75	356	359	356	210	168.5	127	7	32	8– ϕ 22	650	224	213	43	△
	4"	100	100	432	435	432	275	216	157	7	38.5	8– ϕ 25	800	248	238	85	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

FORGED STEEL ● FLOATING BALL VALVE



Floating cast steel ball valve



Floating forged steel ball valve

Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange						W	Cast steel	Forged steel	Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	f	b	N– ϕ d		H	H	Cast steel	Forged steel
150	3/4"x1/2"	20	13	19	–	152	100	70	43	2	10	4– ϕ 16	140	80	78	△	△
	1"x3/4"	25	19	25	–	165	110	79.5	51	2	11	4– ϕ 16	140	86	82	△	△
	1 1/4"x1"	32	25	32	–	178	115	89	64	2	11	4– ϕ 16	180	98	95	△	△
	1 1/2"x1 1/4"	40	32	38	–	190	125	98.5	73	2	13	4– ϕ 16	180	106	100	△	△
	2"x1 1/2"	50	38	50	191	216	150	120.5	92	2	14.5	4– ϕ 19	200	133	128	8	△
	3"x2"	80	50	75	216	283	190	152.5	127	2	17.5	4– ϕ 19	300	138	137	14	△
	4"x3"	100	75	100	241	305	230	190.5	157	2	22.5	8– ϕ 19	650	175	148	24	△
	6"x4"	150	100	150	279	403	280	241.5	216	2	24	8– ϕ 22	800	235	223	41	△
	8"x6"	200	150	201	305	419	345	298.5	270	2	27	8– ϕ 22	1000	285	278	68	△
300	3/4"x1/2"	20	13	19	–	152	115	82.5	43	2	14.5	4– ϕ 19	140	80	78	△	△
	1"x3/4"	25	19	25	–	165	125	89	51	2	16	4– ϕ 19	140	86	82	△	△
	1 1/4"x1"	32	25	32	–	178	135	98.5	64	2	17.5	4– ϕ 19	180	98	95	△	△
	1 1/2"x1 1/4"	40	32	38	–	190	155	114.5	73	2	19.5	4– ϕ 22	180	106	100	△	△
	2"x1 1/2"	50	38	50	232	216	165	127	92	2	21	8– ϕ 19	200	133	128	11	△
	3"x2"	80	50	75	298	283	210	168.5	127	2	27	8– ϕ 22	300	138	137	21	△
	4"x3"	100	75	100	321	305	255	200	157	2	30.5	8– ϕ 22	650	175	148	36	△
	6"x4"	150	100	150	419	457	320	270	216	2	35	12– ϕ 22	800	235	223	82	△
	8"x6"	200	150	201	435	419	380	330	270	2	40	12– ϕ 25	1000	285	278	126	△
600	3/4"x1/2"	20	13	19	–	190	115	82.5	43	7	16	4– ϕ 19	140	78	68	△	△
	1"x3/4"	25	19	25	–	216	125	89	51	7	17.5	4– ϕ 19	180	80	76	△	△
	1 1/4"x1"	32	25	32	–	229	135	98.5	64	7	21	4– ϕ 19	200	110	106	△	△
	1 1/2"x1 1/4"	40	32	38	–	241	155	114.5	73	7	22.5	4– ϕ 22	250	115	110	△	△
	2"x1 1/2"	50	38	50	295	292	165	127	92	7	26	8– ϕ 19	300	135	128	△	△
	3"x2"	80	50	75	359	356	210	168.5	127	7	32	8– ϕ 22	650	152	140	△	△
	4"x3"	100	75	100	435	432	275	216	157	7	38.5	8– ϕ 25	800	224	213	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

TRUNNION PIPELINE BALL VALVE

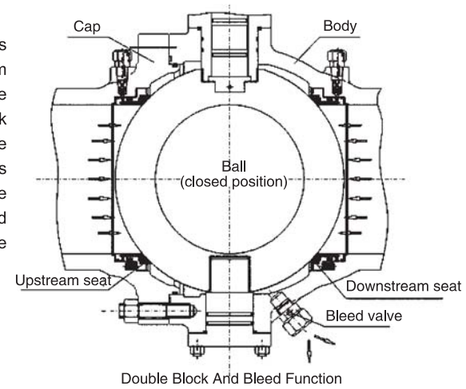
USAGE

The trunnion ball valve is used to cut off or connect the media in various pipelines of Class 150~Class 2500. The valves made of different materials are suitable for various media such as water, steam, oil, liquefied gas, natural gas, coal gas, nitric acid, oxidizer, urea and etc. The driving modes include manual operation, worm and worm gear transmission, pneumatic operation and electric operation. The connection ends can be flange or butt welding.

STRUCTURAL FEATURES

1、Double Block And Bleed (DBB)

When the valve is closed and the middle cavity is emptied through the discharge valve, the upstream and downstream seats will independently block the fluid at the inlet and outlet to realize double block function. Another function of the discharge device is that the valve seat can be checked if there is any leakage during the test. In addition, the deposits inside the body can be washed and discharged through the discharge device to reduce damage to the seat by impurities in the medium.



Double Block And Bleed Function

2、Low Operating Torque

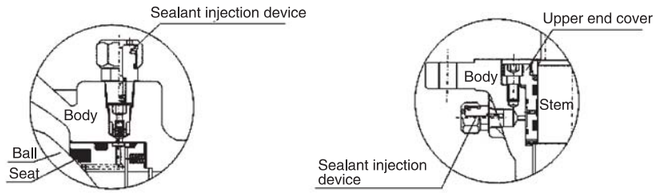
The trunnion pipeline ball valve adopts the trunnion ball structure and floating valve seat, so as to achieve lower torque under operating pressure. It uses self-lubricating PTFE and metal sliding bearing to reduce the friction coefficient to the lowest in conjunction with the high intensity and high fineness stem.

3、Emergency Sealing Device

The ball valves with the diameter more than or equal to 6"(DN150) are all designed with sealant injection device on stem and seat. When the seat ring or stem O ring is damaged due to accident, the corresponding sealant can be injected by the sealant injection device to avoid medium leakage on seat ring and stem. If necessary, the auxiliary sealing system can be used for washing and lubricating the seat to maintain its cleanliness.

STRUCTURAL FEATURES

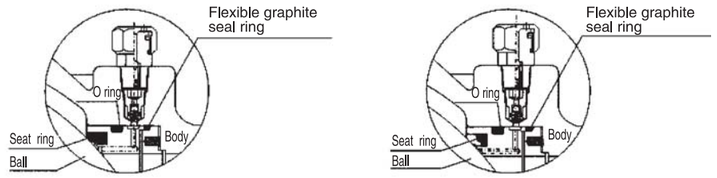
Sealant Injection Device



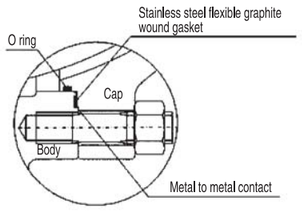
4、Fireproof Structure Design

In case of fire during the use of valve, the seat ring, stem O ring and middle flange O ring made of PTFE, rubber or other non-metal materials will be decomposed or damaged under high temperature. Under pressure of the medium, the ball valve will push the seat reatainer rapidly towards the ball to make the metal seal ring contact the ball and form the auxiliary metal to metal sealing structure, which can effectively control valve leakage. The fireproof structure design of trunnion pipeline ball valve conforms to requirements in API 607, API 6FA, BS 6755 and other standards.

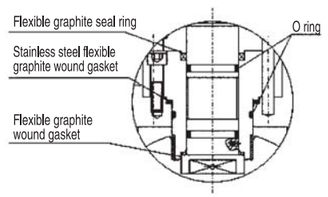
Fireproof Structure Of Seat



Fireproof Structure Of Middle Flange



Fireproof Structure Design Of Stem



DAEJU CONTROL CO., LTD

TRUNNION PIPELINE BALL VALVE

STRUCTURAL FEATURES

5、Anti-static Structure

The ball valve is provided with the anti-static structure and adopts the static electricity discharge device to directly form a static channel between the ball and body or form a static channel between the ball and body through the stem, so as to discharge the static electricity produced due to friction during the opening and closing of ball and seat through the pipeline, avoiding fire or explosion that may be caused by static spark and ensuring system safety.

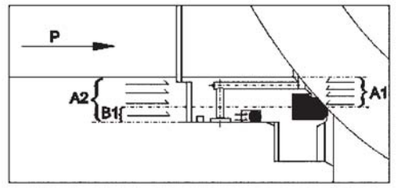
6、Reliable seat sealing structure

The seat sealing is realized through two floating seat retainers. They can float axially to block the fluid, including ball sealing and body sealing. The low pressure sealing of valve seat is realized by spring pre-tightening. In addition, the piston effect of valve seat is designed reasonably, which realizes high pressure sealing by the pressure of the medium itself. The following two kinds of ball sealing can be realized.

7、Single Sealing(automatic Pressure Relief In Middle Cavity Of Valve)

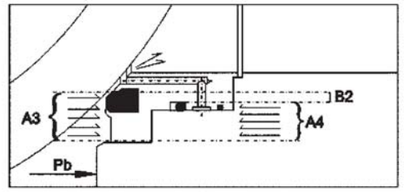
Generally, the single sealing structure is used, that is, there is only the upstream sealing. As the independent spring loaded upstream and downstream sealing seats are used, the over-pressure inside valve cavity can overcome the pre-tightening effect of the spring, so as to make the seat release from the ball and realize automatic pressure relief towards the downstream part.

The upstream side: When the seat moves axially along the valve, the pressure P exerted on the upstream part (inlet) produces a reverse force on A1. As A2 is higher than A1, A2-A1=B1, the force on B1 will push the seat to the ball and realize tight sealing of the upstream part.



A2>A1

The downstream side: Once the pressure Pb inside the valve cavity increases, the force exerted on A3 is higher than that on A4. As A3-A4=B2, the pressure differential on B2 will overcome the spring force to make the seat release from the ball and realize pressure relief of valve cavity to the downstream part. Aftenwards, the seat and ball will be sealed again under the spring action.



A3>A4

STRUCTURAL FEATURES

8、Double Sealing (double Piston)

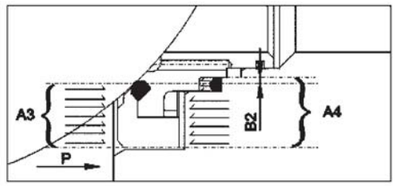
The Trunnion pipeline ball valve can be designed with the double sealing structure before and after the balll for some special service conditions and user requirements. It has double piston effect. Under normal condition, the valve generally adopts primary sealing. When the primary seat sealing is damaged and causes leakage, the secondary seat can play the function of sealing and enhance the sealing reliability.

The seat adopts the combined structure. The primary seal is metal to metal seal. The secondary seal is fluoring rubber O ring that can ensure the ball valve can reach the bubble level sealing. When the pressure differential is very low, the sealing seat will press the ball through the spring action to realize primary sealing. When the pressure differential rises, the sealing force of seat and body will increase accordingly so as to tightly seal the seat and ball and ensure good sealing perfomance.

Primary sealing: Upstream. When the pressure differential is lower or there is no pressure differential, the floating seat will move axially along the valve under the spring action and push the seat towards the ball to keep tight sealing. When the pipeline pressure P increases, the force exerted on the area A2 of valve seat is higher than the force exerted on the area A1, A2-A1=B1. Therefore, the force on B1 will push the seat towards the ball and realize tight sealing of the upstream part.

A2>A1

Secondary sealing: Downstream. When the pressure differential is lower or there is no pressure differential, the floating seat will move axially along the valve under the spring action and push the seat towards the ball to keep tight sealing. When the valve cavity pressure P increases, the force exerted on the area A4 of valve seat is higher than the force exerted on the area A3, A4-A3=B1. Therefore, the force on B1 will push the seat towards the ball and realize tight sealing of the upstream part.



A4>A3

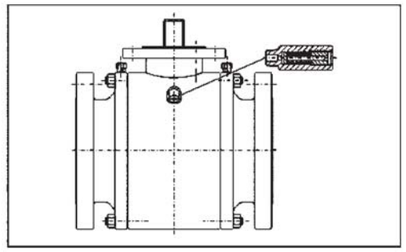
DAEJU CONTROL CO., LTD

TRUNNION PIPELINE BALL VALVE

STRUCTURAL FEATURES

9、Safety Relied Device

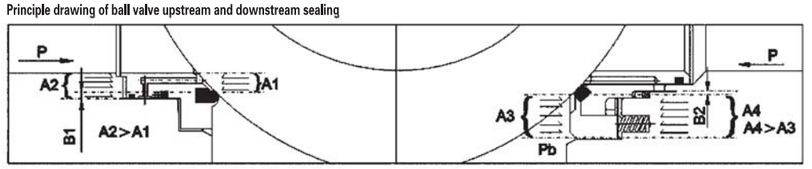
As the ball valve is designed with the advanced primary and secondary sealing that has double piston effect, and the middle cavity cannot realize automatic pressure relief, the safety relief valve must be installed on the body in order to prevent the danger of over-pressure damage inside the valve cavity that may occur due to thermal expansion of medium. The connection of the safety relief valve is generally NPT1/2. Another point to be noted is that the medium of the safety relief valve is directiy discharged into the atmosphere. In case direct discharging into the atmosphere is not allowed, we suggest that the ball valve with a special structure of automatic pressure relief towards upper stream should be used. Refer to the following for details. Please indicate it in the order if you do not need the safety relief valve or if you would like to use the ball valve with the special structure of automatic pressure relief towards upper stream.



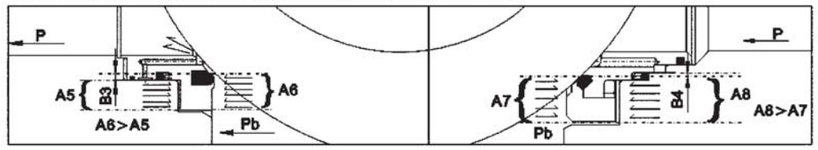
10、Secial Structure Of automatic Pressure Relief Towards Upper Stream

As the ball valve is designed with the advanced primary and secondary sealing that has double piston effect, and the middle cavity cannot realize automatic pressure relief, the ball valve with the special structure is recommended to meet the requirement of automatic pressure relief and ensure no pollution to the environment. In the structure, the upper stream adopts primary sealing and the lower stream adopts primary and secondary sealing. When the ball valve is closed, the pressure in the valve cavity can realize automatic pressure relief to the upper stream, so as to avoid the danger caused by cavity pressure. When the primary seat is damaged and leaks, the secondary seat can also play the function of sealing. But special attention shall be paid to the flow direction of the ball valve. During the installatio, note the upstream and downstream directions. Refer to the following drawings for sealing principle of the valve with the special structure.

Principle drawing of ball valve upstream and downstream sealing



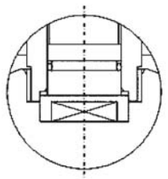
Principle drawing of ball valve cavity pressure relief to the upper stream and of downstream sealing



STRUCTURAL FEATURES

11、Blow-out Proof Stem

The stem adopts the blow-out proof structure. The stem is designed with the footstep at its bottom so that with the positioning of upper end cover and screw, the stem will not be blown out by the medium even in case of abnormal pressure rise in the valve cavity.



Blow-out proof stem

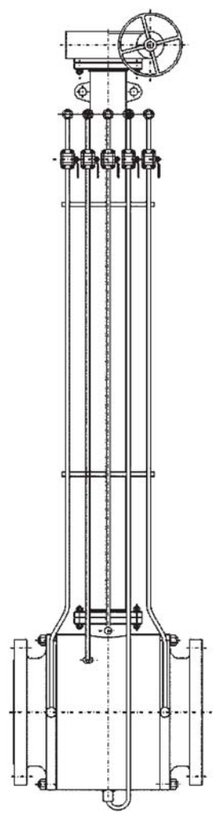
12、Corrosion Resistance And Sulfide Stress Resistance

Certain corrosion allowance is left for the body wall thickness. The carbon steel stem, fixed shaft, ball, seat and seat ring are subjected to chemical nickel plating according to ASTM B733 and B656. In addition, various corrosion resistant materials are available for users to select.

According to customer requirements, the valve materials can be selected according to NACE MR 0175/ ISO 15156 or NACE MR 0103, and strict quality control and quality inspection should be carried out during the manufacturing so as to fully meet the requirements in the standards and meet the service conditions in sulfurization environment.

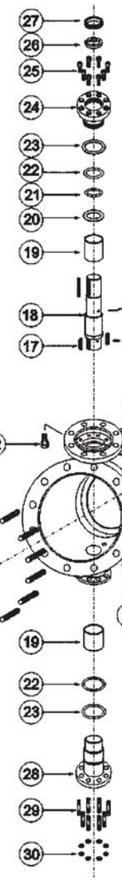
13、Extension Stem

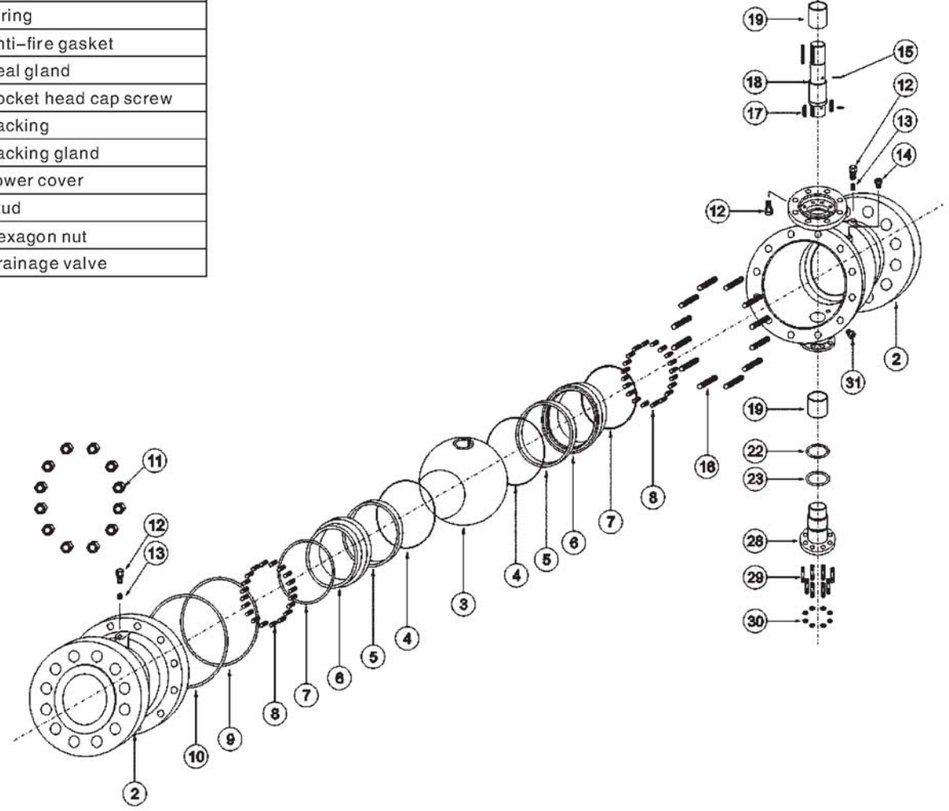
As for the embedded valves, the extension stem can be supplied if ground operation is needed. The extension stem is composed of stem, sealant injection valve, and drainage valve that can be extended to the top for the convenience of operation. Users should indicate the extension stem requirements and length when placing orders. For ball valves driven through electric, pneumatic and pneumatic-hydraulic operations, the extension stem length should be from the centre of pipeline to top flange.



Schematic diagram of extension stem

1	Body
2	Stud
3	Ball
4	Anti-fire packing
5	Seat
6	Seat support ring
7	O ring
8	Spring
9	O ring
10	Anti-fire gasket
11	Hexagon nut
12	Sealant injection valve
13	Check valve
14	Air release valve
15	Anti-static device
16	Stud
17	Flat key
18	Stem
19	Sliding bearing
20	Thrust bearing
21	O ring
22	O ring
23	Anti-fire gasket
24	Seal gland
25	Socket head cap screw
26	Packing
27	Packing gland
28	Lower cover
29	Stud
30	Hexagon nut
31	Drainage valve





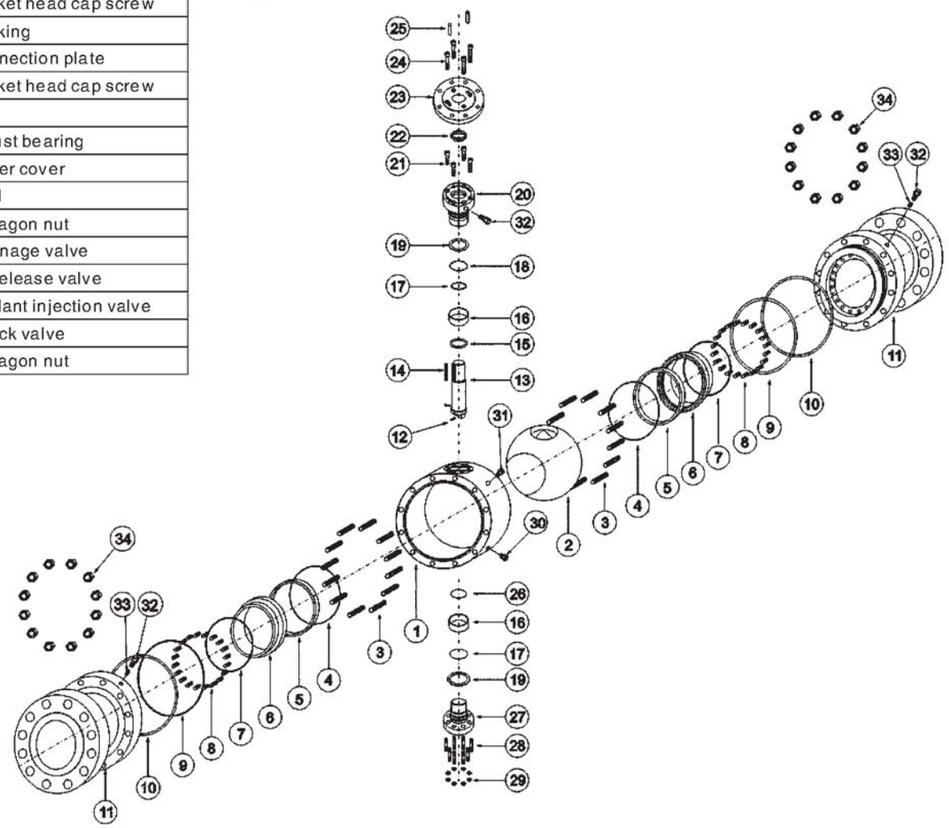
CAST ● TRUNNION PIPELINE BALL VALVE

PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 900				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Stud	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	3	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	4	Anti-fire packing	Graphite				
	5	Seat	PTFE/NYLON/PEEK/PPL				
	6	Seat support ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	7	O ring	VITON				
	8	Spring	17-7PH				
	9	O ring	VITON				
	10	Anti-fire gasket	SST+Graphite				
	11	Hexagon nut	A194 2HM	A194-8	A194-8M	A194-8	A194-8M
	12	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	13	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	14	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	15	Anti-static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	16	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	17	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	18	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	19	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	20	Thrust bearing	PTFE				
	21	O ring	VITON				
	22	O ring	VITON				
	23	Anti-fire gasket	SST+Graphite				
	24	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	25	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	26	Packing	Graphite				
	27	Packing gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	28	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	29	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	30	Hexagon nut	A194 2HM	A194-8	A194-8M	A194-8	A194-8M
	31	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric Acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	≤120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face-to-face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.25
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

FORGED ● TRUNNION PIPELINE BALL VALVE

1	Body
2	Ball
3	Stud
4	Anti-fire packing
5	Seat
6	Support ring
7	O ring
8	Spring
9	O ring
10	Anti-fire gasket
11	Bonnet
12	Anti-static device
13	Stem
14	Flat key
15	Thrust bearing
16	Sliding bearing
17	O ring
18	O ring
19	Anti-fire gasket
20	Seal gland
21	Socket head cap screw
22	Packing
23	Connection plate
24	Socket head cap screw
25	Pin
26	Thrust bearing
27	Lower cover
28	Stud
29	Hexagon nut
30	Drainage valve
31	Air release valve
32	Sealant injection valve
33	Check valve
34	Hexagon nut



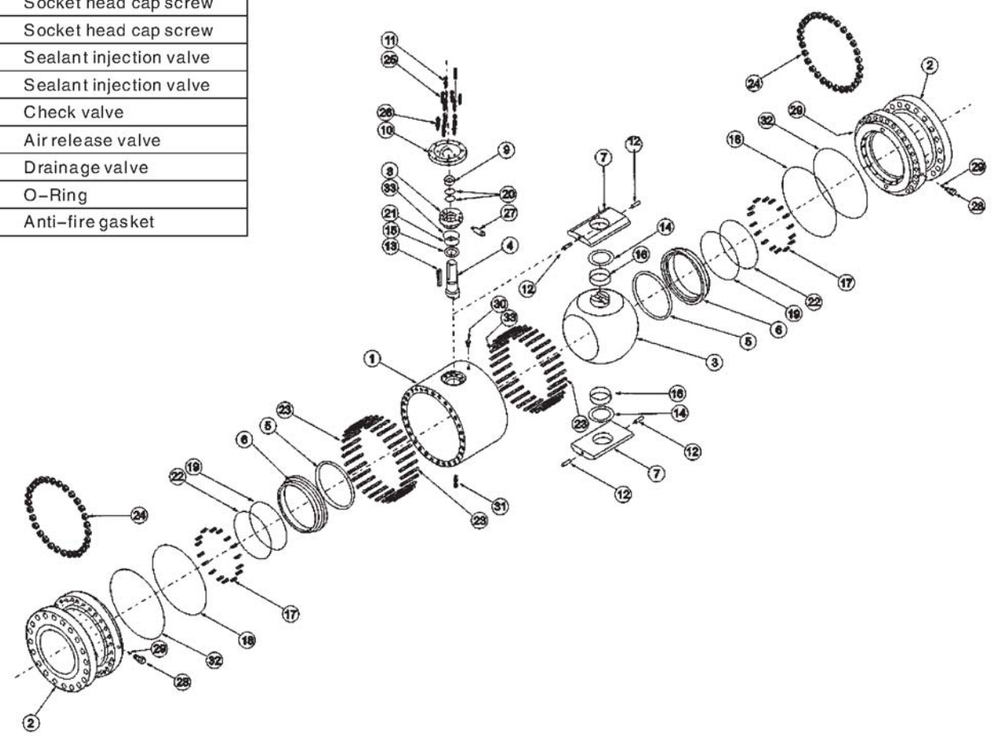
PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 900				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	2	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	3	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	4	Anti–fire packing	Graphite				
	5	Seat	PTFE/NYLON/PEEK/PPL				
	6	Support ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	7	O ring	VITON				
	8	Spring	17–7PH				
	9	O ring	VITON				
	10	Anti–fire gasket	SST+Graphite				
	11	Bonnet	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	12	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	13	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	14	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	15	Thrust bearing	PTFE				
	16	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	17	O ring	VITON				
	18	O ring	VITON				
	19	Anti–fire gasket	SST+Graphite				
	20	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	21	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	22	Packing	Graphite				
	23	Connection plate	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	24	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	25	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	26	Thrust bearing	PTFE				
	27	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	28	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	29	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	30	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	31	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	32	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	33	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	34	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric Acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.25
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

DAEJU CONTROL CO., LTD

FORGED ● TRUNNION PIPELINE BALL VALVE

1	Body
2	Bonnet
3	Ball
4	Stem
5	Seat
6	Seat ring
7	Bearing holder
8	Seal gland
9	Packing
10	Connection plate
11	Pin
12	Pin
13	Flat key
14	Thrust bearing
15	Thrust bearing
16	Sliding bearing
17	Spring
18	O–Ring
19	O–Ring
20	O–Ring
21	O–Ring
22	Anti–fire packing
23	Stud
24	Hexagon nut
25	Socket head cap screw
26	Socket head cap screw
27	Sealant injection valve
28	Sealant injection valve
29	Check valve
30	Air release valve
31	Drainage valve
32	O–Ring
33	Anti–fire gasket

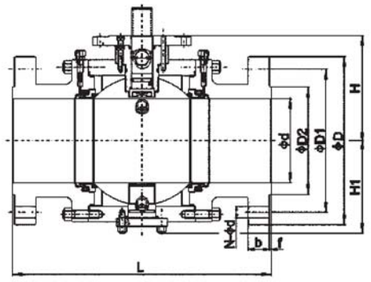


PART MATERIALS AND MAIN PARAMETERS

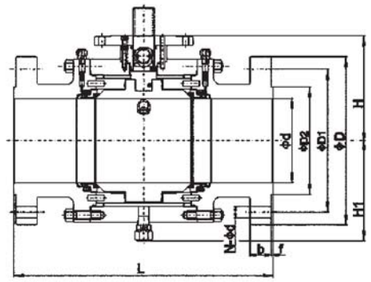
Nominal diameter (in)			NPS 2~48				
Nominal pressure (MPa)			Class 150~Class 2500				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	2	Bonnet	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	3	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	4	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	Seat	PTFE/NYOLN/PEEK/PPL				
	6	Seat ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	7	Bearing holder	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	8	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	9	Packing	Graphite				
	10	Connection plate	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	11	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	12	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	13	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	14	Thrust bearing	PTFE				
	15	Thrust bearing	PTFE				
	16	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	17	Spring	17–7PH				
	18	O–Ring	VITON				
	19	O–Ring	VITON				
	20	O–Ring	VITON				
	21	O–Ring	VITON				
	22	Anti–fire packing	Graphite				
	23	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	24	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	25	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	26	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	27	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	28	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	29	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	30	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	31	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	32	O–Ring	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	33	Anti–fire gasket	SST+Graphite				
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric Acid	Acetic Acid	Strong Oxidizer	Urea
		Applicable temperature	120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.25
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

DAEJU CONTROL CO., LTD

FORGED ● TRUNNION PIPELINE BALL VALVE



External supporting structure

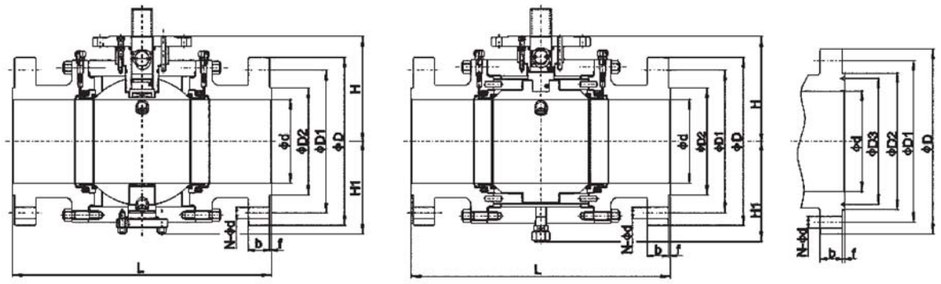


Internal supporting structure

Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N–ϕd	H	H1	H	H1	Cast steel	Forged steel
150	2"	50	50	178	191	216	150	120.5	92	–	2	14.5	4–ϕ19	93	88	–	–	19	–
	3"	80	75	203	216	283	190	152.5	127	–	2	17.5	4–ϕ19	118.5	117	–	–	28	–
	4"	100	100	229	241	305	230	190.5	157	–	2	22.5	8–ϕ19	143.5	137	–	–	50	–
	6"	150	150	394	406	457	280	241.5	216	–	2	24	8–ϕ22	208	178.5	–	–	160	–
	8"	200	201	457	470	521	345	298.5	270	–	2	27	8–ϕ22	248	222	248	235	270	284
	10"	250	252	533	546	559	405	362	324	–	2	29	12–ϕ25	294	265	294	288	415	436
	12"	300	303	610	622	635	485	432	381	–	2	30.5	12–ϕ25	344.5	308.5	345	330	660	693
	14"	350	334	686	699	762	535	476	413	–	2	33.5	12–ϕ29	377	334	377	360	890	935
	16"	400	385	762	775	838	595	540	470	–	2	35	16–ϕ29	418	375	418	400	1080	1134
	18"	450	436	864	876	914	635	578	533	–	2	38.5	16–ϕ32	463	410	463	435	1480	1554
	20"	500	487	914	927	991	700	635	584	–	2	41.5	20–ϕ32	502	458	502	484	1970	2069
	24"	600	589	1067	1080	1143	815	749.5	692	–	2	46.5	20–ϕ35	586	534	586	568	3000	3150
	26"	650	633	1143	–	1245	870	806.5	749	–	2	68	24–ϕ35	626	582	626	594	3612	3793
	28"	700	684	1245	–	1346	927	864	800	–	2	71	28–ϕ35	644	605	644	658	4402	4622
	30"	750	735	1295	–	1397	984	914.5	857	–	2	75	28–ϕ35	720	672	720	677	5112	5368
	32"	800	779	1372	–	1524	1060	978	914	–	2	81	28–ϕ41	742	704	742	746	6667	7000
	36"	900	874	1524	–	1727	1168	1086	1022	–	2	90	32–ϕ41	839	796	839	791	8627	9058
	40"	1000	976	1753	–	–	1289	1200	1124	–	2	90	36–ϕ41	913.5	866	913.5	863	12313	12929
	42"	1050	1020	1855	–	–	1346	1257	1194	–	2	97	36–ϕ41	943	881	943	937	14000	14700
	48"	1200	1166	2134	–	–	1511	1422	1359	–	2	108	44–ϕ41	1097	1016	1097	1066	21470	22544
	56"	1400	1360	2489	–	–	1746	1651	1575	–	2	124	48–ϕ48	1302	1186	1302	1253	33431	35103
300	2"	50	50	216	232	216	165	4127	92	–	2	21	8–ϕ19	93	88	–	–	22	–
	3"	80	75	283	298	283	210	168.5	127	–	2	27	8–ϕ22	118.5	117	–	–	38	–
	4"	100	100	305	321	305	255	200	157	–	2	30.5	8–ϕ22	143.5	137	–	–	60	–
	6"	150	150	403	419	457	320	270	216	–	2	35	12–ϕ22	208	178.5	–	–	180	189
	8"	200	201	502	518	521	380	330	270	–	2	40	12–ϕ25	248	222	248	235	295	310
	10"	250	252	568	584	559	445	387.5	324	–	2	46.5	16–ϕ29	294	265	294	288	450	473
	12"	300	303	648	664	635	520	451	381	–	2	49.5	16–ϕ32	344.5	308.5	345	330	700	735
	14"	350	334	762	778	762	585	514.5	413	–	2	52.5	20–ϕ32	377	334	377	360	1160	1218
	16"	400	385	838	854	838	650	571.5	470	–	2	56	20–ϕ35	423	380	423	345	1340	1407
	18"	450	436	914	930	914	710	628.5	533	–	2	59	24–ϕ35	463	410	463	431	1610	1691
	20"	500	487	991	1010	991	775	686	584	–	2	62	24–ϕ35	502	458	502	474	2200	2310
	24"	600	589	1143	1165	1143	915	813	692	–	2	68.5	24–ϕ41	592	549	592	561	3460	3633
	26"	650	633	1245	–	1245	972	876.5	749	–	2	79	28–ϕ45	633	590	633	601	4017	4218
	28"	700	684	1346	–	1346	1035	940	800	–	2	86	28–ϕ45	680	737	680	736	4974	5223
	30"	750	735	1397	–	1397	1092	997	857	–	2	92	28–ϕ48	730	682	730	681	5681	5965
	32"	800	779	1524	–	1524	1149	1054	914	–	2	98	28–ϕ51	765	720	765	716	6837	7179
	36"	900	874	1727	–	1727	1270	1168	1022	–	2	105	32–ϕ54	847	804	847	798	8700	9135
	40"	1000	976	1956	–	–	1238	1156	1086	–	2	114	32–ϕ45	921	877	921	871	12299	12914
	42"	1050	1020	2083	–	–	1289	1206.5	1137	–	2	119	32–ϕ45	936	900	936	890	14379	15098
	48"	1200	1166	2170	–	–	1467	1372	1302	–	2	134	32–ϕ51	1093	1052	1093	1040	21482	22556
	56"	1400	1360	2743	–	–	1708	1600	1518	–	2	154	28–ϕ60	1263	1216	1263	1203	34066	35769

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

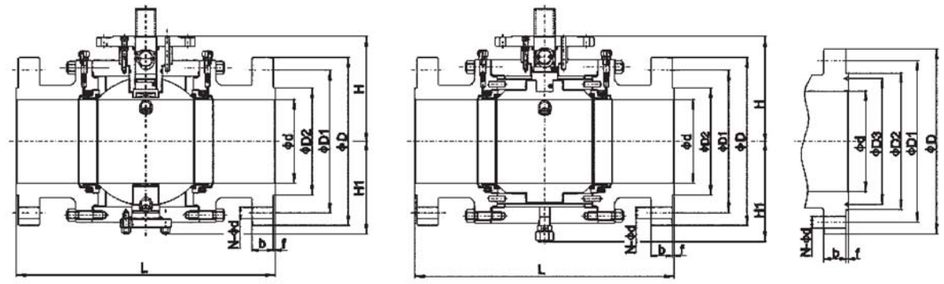
FORGED ● TRUNNION PIPELINE BALL VALVE



Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d	H	H1	H	H1	Cast steel	Forged steel
150	3"x2"	80	50	75	203	216	283	190	152.5	127	–	2	17.5	4– ϕ 19	93	88	–	–	28	–
	4"x3"	100	75	100	229	241	305	230	190.5	157	–	2	22.5	8– ϕ 19	118.5	117	–	–	45	–
	6"x4"	150	100	150	394	406	457	280	241.5	216	–	2	24	8– ϕ 22	143	137	–	–	95	–
	8"x6"	200	150	201	457	470	521	345	298.5	270	–	2	27	8– ϕ 22	208	178.5	–	–	170	179
	10"x8"	250	201	252	533	546	559	405	362	324	–	2	29	12– ϕ 25	248	222	248	235	313	329
	12"x10"	300	252	303	610	622	635	485	432	381	–	2	30.5	12– ϕ 25	294	265	294	288	470	494
	14"x10"	350	252	334	686	699	762	535	476	413	–	2	33.5	12– ϕ 29	294	265	294	288	521	580
	14"x12"	350	303	334	686	699	762	535	476	413	–	2	33.5	12– ϕ 29	344.5	308.5	345	330	760	840
	16"x12"	400	303	385	762	775	838	595	540	470	–	2	35	16– ϕ 29	344.5	308.5	345	330	834	920
	16"x14"	400	334	385	762	775	838	595	540	470	–	2	35	16– ϕ 29	377	334	377	360	930	1020
	18"x16"	450	385	436	864	876	914	635	578	533	–	2	38.5	16– ϕ 32	418	375	418	400	1120	1210
	20"x16"	500	385	487	914	927	991	700	635	584	–	2	41.5	20– ϕ 32	418	375	418	400	1480	1570
	20"x18"	500	436	487	914	927	991	700	635	584	–	2	41.5	20– ϕ 32	463	410	463	431	1620	1710
	24"x20"	600	487	589	1067	1080	1143	815	749.5	692	–	2	46.5	20– ϕ 35	502	458	502	484	2270	2384
	30"x24"	750	589	735	1295	–	1397	984	914.5	857	–	2	75	28– ϕ 35	586	534	586	568	3730	3917
	36"x30"	900	735	874	1524	–	1727	1168	1086	1022	–	2	90	32– ϕ 41	720	672	720	677	6740	7077
300	3"x2"	80	50	75	283	298	283	210	168.5	127	–	2	27	8– ϕ 22	93	88	–	–	42	–
	4"x3"	100	75	100	305	321	305	255	200	157	–	2	30.5	8– ϕ 22	118.5	117	–	–	62	–
	6"x4"	150	100	150	403	419	457	320	270	216	–	2	35	12– ϕ 22	143.5	137	–	–	115	120.8
	8"x6"	200	150	201	502	518	521	380	330	270	–	2	40	12– ϕ 25	208	178.5	–	–	196	206
	10"x8"	250	201	252	568	584	559	445	387.5	324	–	2	46.5	16– ϕ 29	248	222	248	235	350	368
	12"x10"	300	252	303	648	664	635	520	451	381	–	2	49.5	16– ϕ 32	294	265	294	288	552	580
	14"x10"	350	252	334	762	778	762	585	514.5	413	–	2	52.5	20– ϕ 32	294	265	294	288	644	684
	14"x12"	350	303	334	762	778	762	585	514.5	413	–	2	52.5	20– ϕ 32	344.5	308.5	345	330	780	860
	16"x12"	400	303	385	838	854	838	650	571.5	470	–	2	56	20– ϕ 35	344.5	308.5	345	330	908	988
	16"x14"	400	334	385	838	854	838	650	571.5	470	–	2	56	20– ϕ 35	377	334	377	360	1105	1180
	18"x16"	450	385	436	914	930	914	710	628.5	533	–	2	59	24– ϕ 35	423	380	423	345	1500	1575
	20"x16"	500	385	487	991	1010	991	775	686	584	–	2	62	24– ϕ 35	423	380	423	345	1600	1700
	20"x18"	500	487	436	991	1010	991	775	686	584	–	2	62	24– ϕ 35	463	410	463	431	1910	2053
	24"x20"	600	487	589	1143	1165	1143	915	813	692	–	2	68.5	24– ϕ 41	502	458	502	474	2940	3087
	30"x24"	750	589	735	1397	–	1397	1092	997	857	–	2	92	28– ϕ 48	592	549	592	561	4430	4652
	36"x30"	900	735	874	1727	–	1727	1270	1168	1022	–	2	105	32– ϕ 54	730	682	730	681	7520	7896

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

FORGED ● TRUNNION PIPELINE BALL VALVE



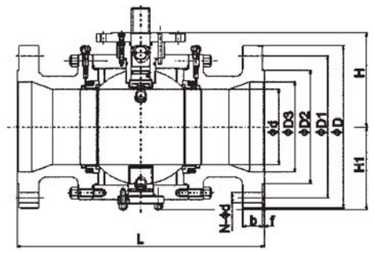
External supporting structure

Internal supporting structure

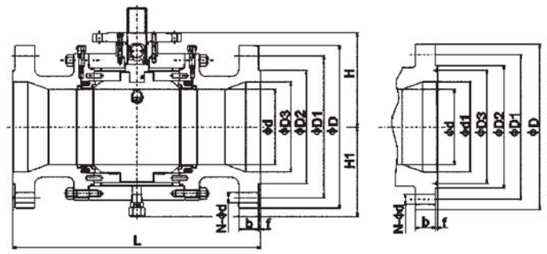
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d	H	H1	H	H1	Cast steel	Forged steel
600	2"	50	50	292	295	292	165	127	92	–	7	26	8– ϕ 19	107	91.5	–	–	38	–
	3"	80	75	356	359	356	210	168.5	127	–	7	32	8– ϕ 22	140	119	–	–	65	–
	4"	100	100	432	435	432	275	216	157	–	7	38.5	8– ϕ 25	164	150	–	–	118	–
	6"	150	150	559	562	559	355	292	216	–	7	48	12– ϕ 29	222	192.5	224	208	250	263
	8"	200	201	660	664	660	420	349	270	–	7	56	12– ϕ 32	271	235	272	248	430	452
	10"	250	252	787	791	787	510	432	324	–	7	64	16– ϕ 35	317.5	280	318	303	680	714
	12"	300	303	838	841	838	560	489	381	–	7	67	20– ϕ 35	360	320	355	341	985	1034
	14"	350	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	390	350	390	370	1287	1351
	16"	400	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	440	395	400	415	1640	1722
	18"	450	436	1092	1095	1092	745	654	533	–	7	83	20– ϕ 44	485	439	485	460	2268	2381
	20"	500	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	533	490	533	510	2830	2972
	24"	600	589	1397	1407	1397	940	838	692	–	7	102	24– ϕ 51	616	573	616	595	4400	4620
	26"	650	633	1448	–	1448	1016	914.5	749	–	7	108	28– ϕ 51	643.5	612	643.5	635	5455	5728
	28"	700	684	1549	–	1549	1073	965	800	–	7	112	28– ϕ 54	665	670	665	692	7610	7991
	30"	750	735	1651	–	1651	1130	1022	857	–	7	114	28– ϕ 54	753	710	753	690	8420	8841
	32"	800	779	1778	–	1778	1194	1079.5	914	–	7	118	28– ϕ 54	768	780	768	804	9230	9692
	36"	900	874	2083	–	2083	1314	1194	1022	–	7	124	28– ϕ 67	861	840	861	865	13000	13650
900	2"	50	50	368	371	368	215	165	124	95.25	7.92	38.5	8– ϕ 25	126.5	105	–	–	57	–
	3"	80	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8– ϕ 25	150	130	–	–	87	–
	4"	100	100	457	460	457	290	235	181	149.23	7.92	45	8– ϕ 32	172.5	158	–	–	193	–
	6"	150	150	610	613	610	380	317.5	241	211.12	7.92	56	12– ϕ 32	230	197	235	210	340	357
	8"	200	201	737	740	737	470	393.5	308	269.88	7.92	64	12– ϕ 39	285	250	290	255	570	598.5
	10"	250	252	838	841	838	545	470	362	323.85	7.92	70	16– ϕ 39	330	294	330	316	912	957.6
	12"	300	303	965	968	965	610	533.5	419	381	7.92	79.5	20– ϕ 39	366	334	366	351	1325	1391
	14"	350	322	1029	1038	1029	640	559	467	419.1	11.13	86	20– ϕ 42	415	368	415	376	1620	1701
	16"	400	373	1130	1140	1130	705	616	524	469.9	11.13	89	20– ϕ 45	452	408	452	421	1990	2090
	18"	450	423	1219	1232	1219	785	686	594	533.4	12.7	102	20– ϕ 51	501	461	501	463	2611	2742
	20"	500	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20– ϕ 54	544	506	544	505	3880	4074
	24"	600	570	1549	1568	1549	1040	901.5	772	692.15	15.88	140	20– ϕ 67	657	616	657	608	6296	6611
	26"	650	617	1651	–	1651	1086	952.5	749		7	124	20– ϕ 73	700	635	700	625	7280	8050
	28"	700	665	1753	–	1753	1168	1022	800		7	143	20– ϕ 79	727	685	727	673	9166	9624
	30"	750	712	1880	–	1880	1232	1086	857		7	149	20– ϕ 79	760	722	760	706	11277	11841
	32"	800	760	2032	–	2032	1314	1156	914		7	159	20– ϕ 86	795	755	795	734	12300	12915
	36"	900	855	2286	–	2286	1461	1289	1022		7	172	20– ϕ 92	886	846	886	822	17500	18375

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

FORGED ● TRUNNION PIPELINE BALL VALVE



External supporting structure



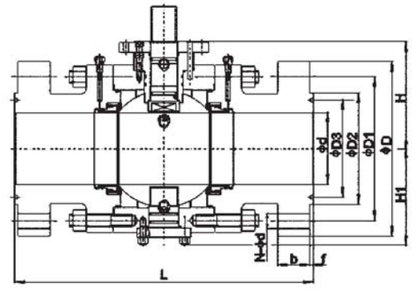
Internal supporting structure

Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N–ϕd	H	H1	H	H1	Cast steel	Forged steel
600	3"x2"	80	50	75	356	359	356	210	168.5	127	–	7	32	8–ϕ22	107	91.5	–	–	44	–
	4"x3"	100	75	100	432	435	432	275	216	157	–	7	38.5	8–ϕ25	140	119	–	–	85	–
	6"x4"	150	100	150	559	562	559	355	292	216	–	7	48	12–ϕ29	167	150	–	–	169	177
	8"x6"	200	150	201	660	664	660	420	349	270	–	7	56	12–ϕ32	222	192.5	224	208	280	294
	10"x8"	250	201	252	787	791	787	510	432	324	–	7	64	16–ϕ35	271	235	272	248	520	546
	12"x10"	300	252	303	838	841	838	560	489	381	–	7	67	20–ϕ35	317.5	280	318	303	790	830
	14"x10"	350	252	334	889	892	889	605	527	413	–	7	70	20–ϕ39	317.5	280	318	303	960	1050
	14"x12"	350	303	334	889	892	889	605	527	413	–	7	70	20–ϕ39	360	320	355	341	1070	1180
	16"x12"	400	303	385	991	994	991	685	603	470	–	7	77	20–ϕ41	360	320	355	341	1250	1370
	16"x14"	400	334	385	991	994	991	685	603	470	–	7	77	20–ϕ41	390	350	390	370	1367	1490
	18"x16"	450	385	436	1092	1095	1092	745	654	533	–	7	83	20–ϕ44	440	395	400	415	1840	1932
	20"x16"	500	385	487	1194	1200	1194	815	724	584	–	7	89	24–ϕ44	440	395	400	415	2177	2340
	20"x18"	500	436	484	1194	1200	1194	815	724	584	–	7	89	24–ϕ44	485	439	485	460	2390	2540
	24"x20"	600	487	589	1397	1407	1397	940	838	692	–	7	102	24–ϕ51	533	490	533	510	3560	3738
	30"x24"	750	589	735	1651	–	1651	1130	1022	857	–	7	114	28–ϕ54	616	573	616	595	5200	5460
	36"x30"	900	735	874	2083	–	2083	1314	1194	1022	–	7	124	28–ϕ67	753	710	753	690	9900	10395
900	3"x2"	80	50	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8–ϕ25	126.5	105	–	–	56	–
	4"x3"	100	75	100	457	460	457	290	235	181	149.23	7.92	45	8–ϕ32	150	130	–	–	97	–
	6"x4"	150	100	150	610	613	610	380	317.5	241	211.12	7.92	56	12–ϕ32	172.5	158	–	–	220	231
	8"x6"	200	150	201	737	740	737	470	393.5	308	269.88	7.92	64	12–ϕ39	230	197	235	210	436	458
	10"x8"	250	201	252	838	841	838	545	470	362	323.85	7.92	70	16–ϕ39	285	250	290	255	650	683
	12"x10"	300	252	303	965	968	965	610	533.5	419	381	7.92	79.5	20–ϕ39	330	294	330	316	1050	1103
	14"x10"	350	252	322	1029	1038	1029	640	559	467	419.1	11.13	86	20–ϕ42	330	294	330	316	1230	1390
	14"x12"	350	303	322	1029	1038	1029	640	559	467	419.1	11.13	86	20–ϕ42	366	334	366	351	1435	1565
	16"x12"	400	303	373	1130	1140	1130	705	616	524	469.9	11.13	89	20–ϕ45	366	334	366	351	1700	1820
	16"x14"	400	322	373	1130	1140	1130	705	616	524	469.9	11.13	89	20–ϕ45	415	368	415	376	1820	2080
	18"x16"	450	373	423	1219	1232	1219	785	686	594	533.4	12.7	102	20–ϕ51	452	408	452	421	2550	2678
	20"x16"	500	373	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20–ϕ54	452	408	452	421	2630	2765
	20"x18"	500	373	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20–ϕ54	501	461	501	463	3630	3900
	24"x20"	600	471	570	1549	1568	1549	1040	901.5	772	692.15	15.88	140	20–ϕ67	544	506	544	505	5030	5282
	30"x24"	750	570	712	1880	–	1880	1232	1086	857	–	7	149	20–ϕ79	657	616	657	608	8730	9167
	36"x30"	900	712	855	2286	–	2286	1461	1289	1022	–	7	172	20–ϕ92	760	722	760	706	15385	16154

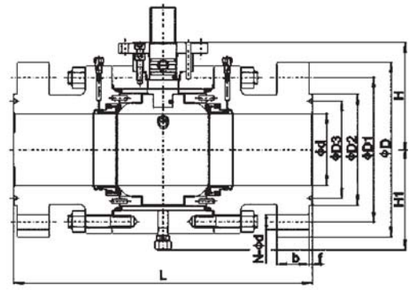
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

DAEJU CONTROL CO., LTD

FORGED ● TRUNNION PIPELINE BALL VALVE



External supporting structure

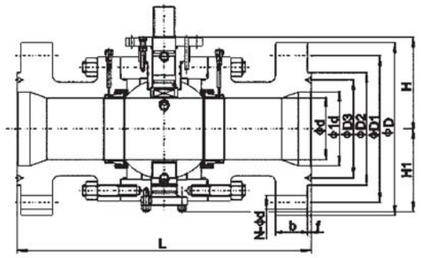


Internal supporting structure

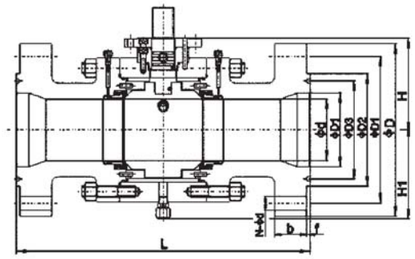
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N–ϕd	H	H1	H	H1	Cast steel	Forged steel
1500	2"	50	50	368	371	368	215	165	124	95.25	7.92	38.5	8–ϕ25	126.5	105	–	–	57	–
	3"	80	75	470	473	470	265	203.2	168	136.53	7.92	48	8–ϕ32	166	149	–	–	168	–
	4"	100	100	546	549	546	310	241.3	194	161.93	7.92	54	8–ϕ35	219	178	–	–	230	–
	6"	150	144	705	711	705	395	317.5	248	211.14	9.53	83	12–ϕ39	268	227	–	–	685	–
	8"	200	192	832	841	832	485	393.7	318	269.88	11.13	92	12–ϕ45	303	267	305	270	993	1043
	10"	250	239	991	1000	991	585	482.6	371	323.85	11.13	108	12–ϕ51	358	323	358	336	1781	1870
	12"	300	287	1130	1146	1130	675	571.5	438	381	14.27	124	16–ϕ54	414	381	414	395	2280	2394
	14"	350	315	1257	1276	1257	750	635	489	419.1	15.88	134	16–ϕ60	471	432	471	441	3000	3150
	16"	400	360	1384	1407	1384	825	704.8	546	469.9	17.48	146.5	16–ϕ67	498	453	498	456	3816	4007
	18"	450	406	1537	1559	–	915	774.7	613	533.4	17.48	162	16–ϕ73	570	530	570	535	6195	6505
	20"	500	454	1664	1686	–	985	831.8	673	584.2	17.48	178	16–ϕ79	611	569	611	561	9075	9529
2500	2"	50	42	451	454	451	235	171.4	133	101.6	7.92	51	8–ϕ29	149	123	–	–	140	–
	3"	80	62	578	584	578	305	228.6	168	127	9.53	67	8–ϕ35	215	171	–	–	216	–
	4"	100	87	673	683	673	355	273	203	157.18	11.13	76.5	8–ϕ42	245	206	–	–	328	–
	6"	150	131	914	927	914	485	368.3	279	228.6	12.7	108	8–ϕ54	306	263	306	265	1030	1082
	8"	200	179	1022	1038	1022	550	438.2	340	279.4	14.27	127	12–ϕ54	361	330	361	336	1570	1649
	10"	250	223	1270	1292	1270	675	539.8	425	342.9	17.48	166	12–ϕ67	426	388	426	394	2550	2678
	12"	300	265	1422	1445	1422	760	619.1	495	406.4	17.48	185	12–ϕ74	479	440	479	446	3872	4066

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

FORGED ● TRUNNION PIPELINE BALL VALVE



External supporting structure



Internal supporting structure

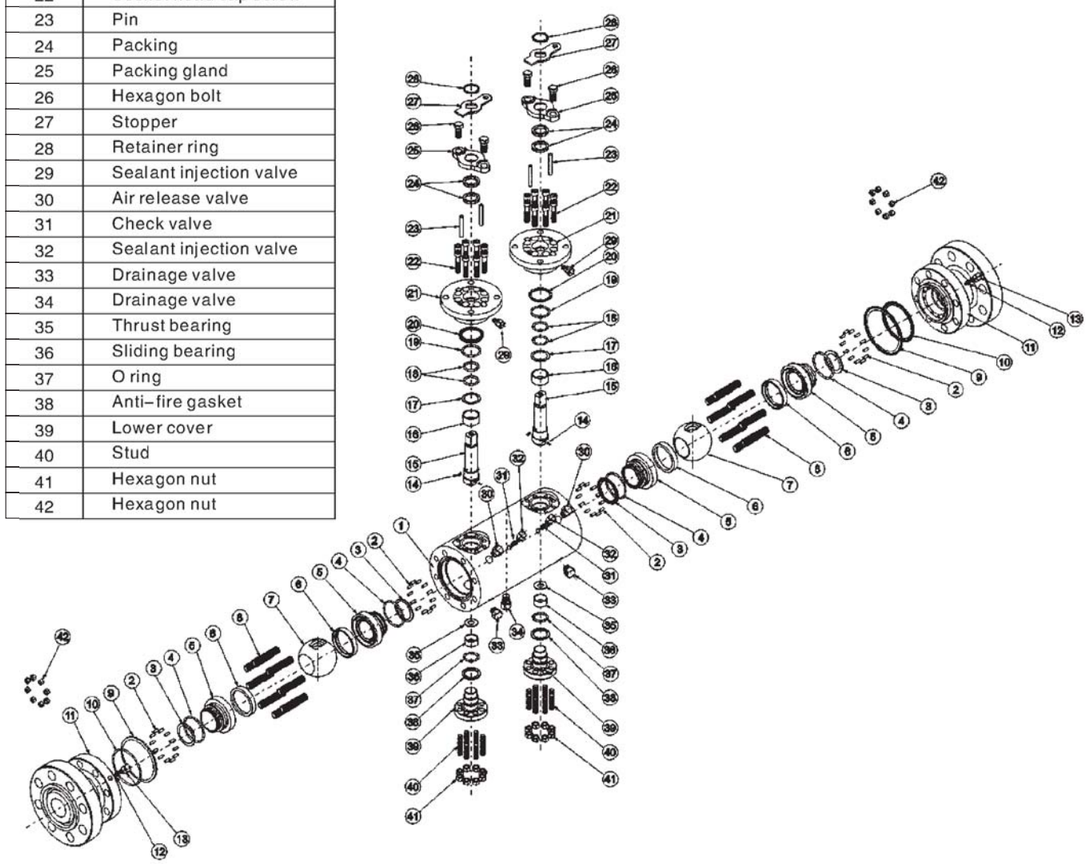
Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Raised face flange							General		Support Board		Weight(kg)	
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d	H	H1	H	H1	Cast steel	Forged steel
1500	3"x2"	80	50	75	470	473	470	265	203.2	168	136.53	7.92	38.5	8– ϕ 32	126.5	105	–	–	2	–
	4"x3"	100	74	100	546	549	546	310	241.3	194	161.93	7.92	54	8– ϕ 35	166	149	–	–	195	205
	6"x4"	150	100	144	705	711	705	395	317.5	248	211.14	9.53	83	12– ϕ 39	219	178	–	–	270	284
	8"x6"	200	144	192	832	841	832	485	393.7	318	269.88	11.13	92	12– ϕ 45	268	227	–	–	586	615
	10"x8"	250	192	239	991	1000	991	585	482.6	371	323.85	11.13	108	12– ϕ 51	303	267	305	270	1010	1061
	12"x10"	300	239	287	1130	1146	1130	675	571.5	438	381	14.27	124	16– ϕ 54	358	323	358	336	1760	1848
	14"x10"	350	239	315	1257	1276	1257	750	635	489	419.1	15.88	134	16– ϕ 60	358	323	358	336	2010	2238
	14"x12"	350	287	315	1257	1276	1257	750	635	489	419.1	15.88	134	16– ϕ 60	414	381	414	395	2680	2940
	16"x12"	400	287	360	1384	1407	1384	825	704.8	546	469.9	17.48	146.5	16– ϕ 67	414	381	414	395	2860	3180
	16"x14"	400	315	360	1384	1407	1384	825	704.8	546	469.9	17.48	146.5	16– ϕ 67	471	432	471	441	3530	3850
	18"x16"	450	360	406	1537	1559	–	915	774.7	613	533.4	17.48	162	16– ϕ 73	498	453	498	456	5030	5282
	20"x16"	500	360	454	1664	1686	–	985	831.8	673	584.2	17.48	178	16– ϕ 79	498	453	498	355	–	–
	20"x18"	500	406	454	1664	1686	–	985	831.8	673	584.2	17.48	178	16– ϕ 79	570	530	570	456	5380	5790
2500	3"x2"	80	42	62	578	584	578	305	228.6	168	127	9.53	67	8– ϕ 35	149	123	–	–	157	165
	4"x3"	100	62	87	673	683	673	355	273	203	157.18	11.13	76.5	8– ϕ 42	215	171	–	–	260	273
	6"x4"	150	87	131	914	927	914	485	368.3	279	228.6	12.7	108	8– ϕ 54	245	206	–	–	548	575
	8"x6"	200	131	179	1022	1038	1022	550	438.2	340	279.4	14.27	127	12– ϕ 54	306	263	306	265	1100	1155
	10"x8"	250	179	223	1270	1292	1270	675	539.8	425	342.9	17.48	166	12– ϕ 67	361	330	361	336	1890	1985
	12"x10"	300	223	265	1422	1445	1422	760	619.1	495	406.4	17.48	185	12– ϕ 74	426	388	426	394	2850	2993

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

DOUBLE BLOCK AND BLEED VALVE

● DOUBLE BLOCK AND BLEED VALVE

1	Body
2	Spring
3	Anti–fire packing
4	O ring
5	Seat ring
6	Seat
7	Ball
8	Stud
9	Anti–fire gasket
10	O ring
11	Bonnet
12	Check valve
13	Sealant injection valve
14	Anti–static device
15	Stem
16	Sliding bearing
17	Thrust bearing
18	O ring
19	O ring
20	Anti–fire gasket
21	Seal gland
22	Socket head cap screw
23	Pin
24	Packing
25	Packing gland
26	Hexagon bolt
27	Stopper
28	Retainer ring
29	Sealant injection valve
30	Air release valve
31	Check valve
32	Sealant injection valve
33	Drainage valve
34	Drainage valve
35	Thrust bearing
36	Sliding bearing
37	O ring
38	Anti–fire gasket
39	Lower cover
40	Stud
41	Hexagon nut
42	Hexagon nut

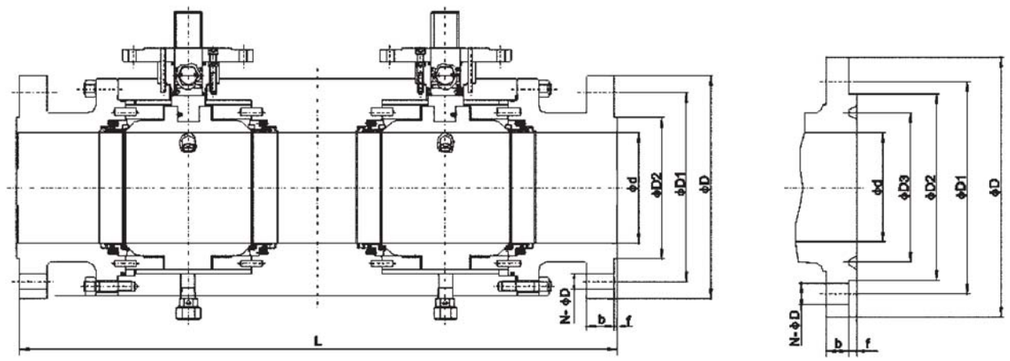


FORGED STEEL ● DOUBLE BLOCK AND BLEED VALVE

PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 2~16				
Nominal pressure (MPa)			Class 150~Class 2500				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	2	Spring	17–7PH				
	3	Anti–fire packing	Graphite				
	4	O ring	VITON	VITON	VITON	VITON	VITON
	5	Seat ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	6	Seat	PTFE/NYLON/PEEK/PPL				
	7	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	8	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	9	Anti–fire gasket	SST+Graphite				
	10	O ring	VITON				
	11	Bonnet	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	12	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	13	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	14	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	15	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	16	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	17	Thrust bearing	PTFE				
	18	O ring	VITON				
	19	O ring	VITON				
	20	Anti–fire gasket	SST+Graphite				
	21	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	22	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	23	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	24	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
	25	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	26	Hexagon bolt	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	27	Stopper	A3 · HZn	A3 · HZn	A3 · HZn	A3 · HZn	A3 · HZn
	28	Retainer ring	65Mn	65Mn	65Mn	65Mn	65Mn
	29	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	30	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	31	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	32	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	33	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	34	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	35	Thrust bearing	PTFE				
	36	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	37	O ring	VITON				
	38	Anti–fire gasket	SST+Graphite				
	39	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	40	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	41	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	42	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric Acid	Acetic Acid	Strong Oxidizer	Urea
		Applicable temperature	120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

FORGED STEEL ● DOUBLE BLOCK AND BLEED VALVE

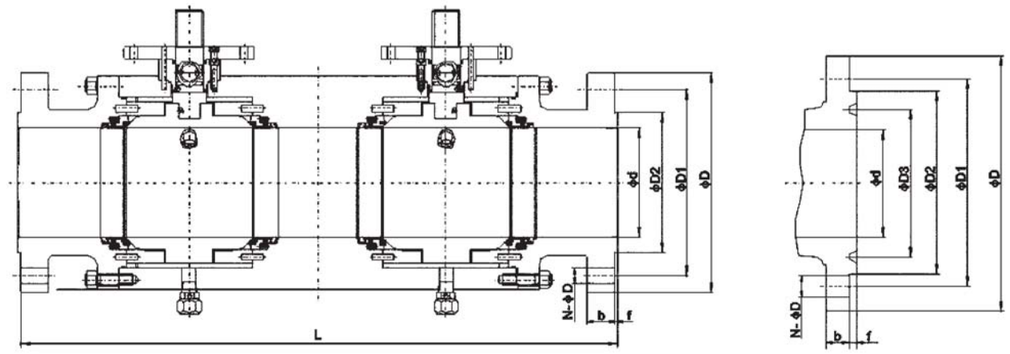


Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							H	H1	Weight (kg)
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N–ϕd			
150	2"	50	50	356	369	394	150	120.5	92	–	2	14.5	4–ϕ19	93	88	△
	3"	80	75	457	470	537	190	152.5	127	–	2	17.5	4–ϕ19	118.5	117	△
	4"	100	100	502	514	578	230	190.5	157	–	2	22.5	8–ϕ19	143.5	137	△
	6"	150	150	787	799	850	280	241.5	216	–	2	24	8–ϕ22	208	178.5	△
	8"	200	201	902	915	966	345	298.5	270	–	2	27	8–ϕ22	248	235	△
	10"	250	252	991	1004	1017	405	362	324	–	2	29	12–ϕ25	294	288	△
	12"	300	303	1130	1142	1155	485	432	381	–	2	30.5	12–ϕ25	345	330	△
	14"	350	334	1245	1258	1321	535	476	413	–	2	33.5	12–ϕ29	377	360	△
	16"	400	385	1372	1385	1448	595	540	470	–	2	35	16–ϕ29	418	400	△
300	2"	50	50	394	410	394	165	127	92	–	2	21	8–ϕ19	93	88	△
	3"	80	75	495	510	495	210	168.5	127	–	2	27	8–ϕ22	118.5	117	△
	4"	100	100	568	584	568	255	200	157	–	2	30.5	8–ϕ22	143.5	137	△
	6"	150	150	826	842	826	320	270	216	–	2	35	12–ϕ22	208	178.5	△
	8"	200	201	991	1007	991	380	330	270	–	2	40	12–ϕ25	248	235	△
	10"	250	252	1054	1070	1054	445	387.5	324	–	2	46.5	16–ϕ29	294	288	△
	12"	300	303	1194	1210	1194	520	451	381	–	2	49.5	16–ϕ32	345	330	△
	14"	350	334	1346	1362	1346	585	514.5	413	–	2	52.5	20–ϕ32	377	360	△
	16"	400	385	1473	1489	1473	650	571.5	470	–	2	56	20–ϕ35	423	345	△
600	2"	50	50	470	473	470	165	127	92	–	7	26	8–ϕ19	107	91.5	△
	3"	80	75	610	613	610	210	168.5	127	–	7	32	8–ϕ22	140	119	△
	4"	100	100	762	765	762	275	216	157	–	7	38.5	8–ϕ25	164	150	△
	6"	150	150	978	981	978	355	292	216	–	7	48	12–ϕ29	224	208	△
	8"	200	201	1143	1147	1143	420	349	270	–	7	56	12–ϕ32	272	248	△
	10"	250	252	1372	1376	1372	510	432	324	–	7	64	16–ϕ35	318	303	△
	12"	300	303	1448	1451	1448	560	489	381	–	7	67	20–ϕ35	355	341	△
	14"	350	334	1549	1552	1549	605	527	413	–	7	70	20–ϕ39	390	370	△
	16"	400	385	1778	1781	1778	685	603	470	–	7	77	20–ϕ41	400	415	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes Hand weight will not be notified otherwise.

DAEJU CONTROL CO., LTD

FORGED STEEL ● DOUBLE BLOCK AND BLEED VALVE



Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							H	H1	Weight (kg)
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N–ϕd			
900	2"	50	50	610	613	610	215	165	124	95.25	7.92	38.5	8–ϕ25	126.5	105	△
	3"	80	75	660	663	660	240	190.5	156	123.83	7.92	38.5	8–ϕ25	150	130	△
	4"	100	100	826	829	826	290	235	181	149.23	7.92	45	8–ϕ32	172.5	158	△
	6"	150	150	1054	1057	1054	380	317.5	241	211.12	7.92	56	12–ϕ32	230	210	△
	8"	200	201	1295	1298	1295	470	393.5	308	269.88	7.92	64	12–ϕ39	290	255	△
	10"	250	252	1473	1476	1473	545	470	362	323.85	7.92	70	16–ϕ39	330	316	△
	12"	300	303	1651	1654	1651	610	533.5	419	381	7.92	79.5	20–ϕ39	366	351	△
	14"	350	322	1880	1889	1880	640	559	467	419.1	11.13	86	20–ϕ42	415	376	△
	16"	400	373	1930	1940	1930	705	616	524	469.9	11.13	89	20–ϕ45	452	421	△
1500	2"	50	50	610	613	610	215	165	124	95.25	7.92	38.5	8–ϕ25	126.5	105	△
	3"	80	75	826	829	826	265	203.2	168	136.53	7.92	48	8–ϕ32	166	149	△
	4"	100	100	965	968	965	310	241.3	194	161.93	7.92	54	8–ϕ35	219	178	△
	6"	150	144	1232	1238	1232	395	317.5	248	211.14	9.53	83	12–ϕ39	268	234	△
	8"	200	192	1448	1457	1448	485	393.7	318	269.88	11.13	92	12–ϕ45	305	270	△
	10"	250	239	1778	1787	1778	585	482.6	371	323.85	11.13	108	12–ϕ51	358	336	△
	12"	300	287	2083	2099	2083	675	571.5	438	381	14.27	124	16–ϕ54	414	395	△
	14"	350	315	2286	2305	2286	750	635	489	419.1	15.88	134	16–ϕ60	471	441	△
	16"	400	360	2422	2445	2422	825	704.8	546	469.9	17.48	146.5	16–ϕ67	498	456	△
2500	2"	50	42	762	765	762	235	171.4	133	101.6	7.92	51	8–ϕ29	149	123	△
	3"	80	62	1029	1153	1029	305	228.6	168	127	9.53	67	8–ϕ35	215	171	△
	4"	100	87	1143	1562	1143	355	273	203	157.18	11.13	76.5	8–ϕ42	245	206	△
	6"	150	131	1549	1559	1549	485	368.3	279	228.6	12.7	108	8–ϕ54	306	265	△
	8"	200	179	1880	1896	1880	550	438.2	340	279.4	14.27	127	12–ϕ54	361	336	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes Hand weight will not be notified otherwise.

FULL WELDED BALL VALVE

STRUCTURAL FEATURES

1、Integral Valve Structure

It is welded by forged steel. The forging materials are subjected to ultrasonic examination according to ASME nondestructive flaw detection requirements. The welding slope on the connection face is subjected to liquid penetration examination.

13、Corrosion Resistance And Sulfide Stress Resistance

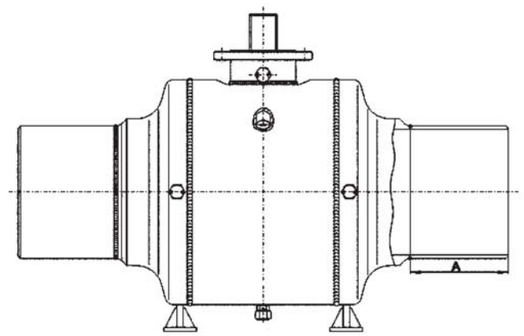
Certain corrosion allowance is left for the body wall thickness. The carbon steel stem, fixed shaft, ball, seat and seat ring are subjected to chemical nickel plating according to ASTM B733 and B656. In addition, various corrosion resistant materials are available for users to select.

According to customer requirements, the valve materials can be selected according to NACE MR 0175/ISO 15156 or NACE MR 0103, and strict quality control and quality inspection should be carried out during the manufacturing so as to fully meet the requirements in the standards and meet the service conditions in sulfurization environment.

STRUCTURAL FEATURES

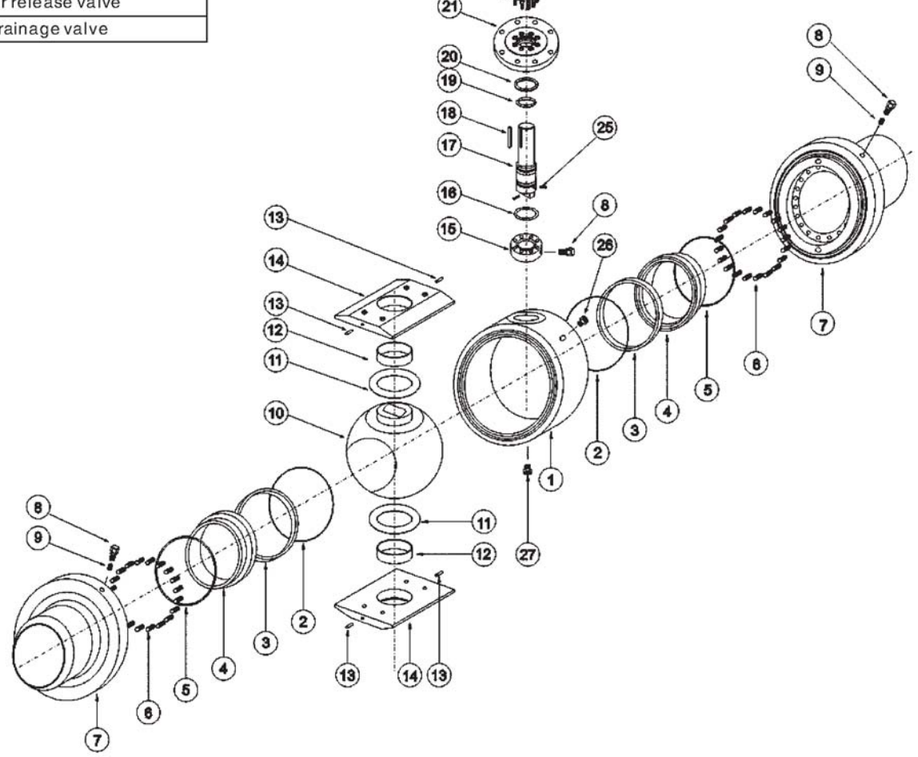
15、Welding Of Transition Pipe

During the manufacturing of the fully welded pipeline ball valve, the transition pipe can be welded for the welding ends valve. The transition pipe can be supplied by users or by our company according to user requirements. Please indicate the transition pipe diameter and length A when placing orders.



FULL WELDED BALL VALVE

1	Body
2	Anti–fire packing
3	Seat
4	Seat ring
5	O ring
6	Spring
7	Bonnet
8	Sealant injection valve
9	Check valve
10	Ball
11	Thrust gasket
12	Sliding bearing
13	Pin
14	Bearing holder
15	Seal gland
16	Thrust bearing
17	Stem
18	Flat key
19	Thrust bearing
20	Anti–fire gasket
21	Connection plate
22	Socket head cap screw
23	Packing
24	Packing gland
25	Anti–static device
26	Air release valve
27	Drainage valve

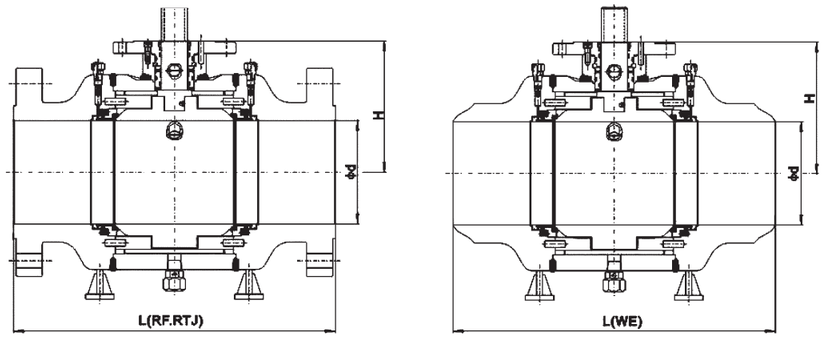


FULL WELDED BALL VALVE

PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 6~40				
Nominal pressure (MPa)			Class 150~Class 1500				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	2	Anti–fire packing	Graphite				
	3	Seat	PTFE/ NYOLN/ PEEK/ PPL				
	4	Seat ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	O ring	VITON				
	6	Spring	17–7PH				
	7	Bonnet	ASM A105	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	8	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	9	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	10	Ball	ASTM A105 · ENP	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	11	Thrust gasket	PTFE				
	12	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	13	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	14	Bearing holder	ASTM A105 · ENP	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	15	Seal gland	ASTM A105 · ENP	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	16	Thrust bearing	PTFE				
	17	Stem	ASTM A182 F6a	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	18	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	19	Thrust bearing	PTFE				
	20	Anti–fire gasket	SST+Graphite				
	21	Connection plate	ASTM A105	ASM A182 304	ASM A182 316	ASM A182 304L	ASM A182 316L
	22	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	23	Packing	Graphite	Graphite	Graphite	Graphite	Graphite
	24	Packing gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	25	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	26	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	27	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D, JIS B2002				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

FULL WELDED BALL VALVE

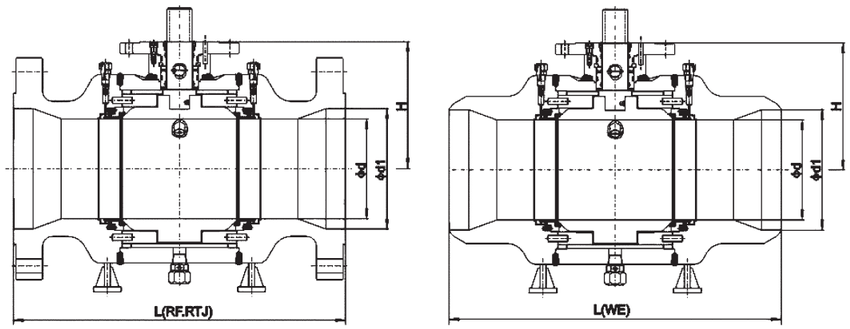


Pressure rating	Nominal Diameter		d	Flanged		Butt welding	H	Weight (kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)		WE	RF
150	6"	150	150	394	406	457	225	185	220
	8"	200	201	457	470	521	258	250	290
	10"	250	252	533	546	559	310	400	430
	12"	300	303	610	622	635	350	550	620
	14"	350	334	686	699	762	382	820	900
	16"	400	385	762	775	838	421	1100	1220
	18"	450	436	864	876	914	468	1400	1550
	20"	500	487	914	927	991	510	1750	1950
	24"	600	589	1067	1080	1143	592	2800	3050
	26"	650	633	1143	–	1245	635	2900	3250
	28"	700	684	1245	–	1346	675	3400	3700
	30"	750	735	1295	–	1397	723	4800	5300
	32"	800	779	1372	–	1524	751	5500	6000
	36"	900	874	1524	–	1727	858	7550	8370
	40"	1000	976	1753	–	1956	930	10290	11320
300	6"	150	150	403	419	457	225	185	230
	8"	200	201	502	518	521	258	250	300
	10"	250	252	568	584	559	310	400	460
	12"	300	303	648	664	635	350	550	670
	14"	350	334	762	778	762	382	820	1000
	16"	400	385	838	854	838	421	1100	1320
	18"	450	436	914	930	914	468	1400	1650
	20"	500	487	991	1010	991	510	1750	2000
	24"	600	589	1143	1165	1143	592	2800	2550
	26"	650	633	1245	–	1245	635	2900	3300
	28"	700	684	1346	–	1346	675	3400	3750
	30"	750	735	1397	–	1397	723	4800	5500
	32"	800	779	1524	–	1524	751	5500	6500
	36"	900	874	1727	–	1727	858	7980	8800
	40"	1000	976	1956	–	1956	930	10290	11900

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, and weight will not be notified otherwise.

DAEJU CONTROL CO., LTD

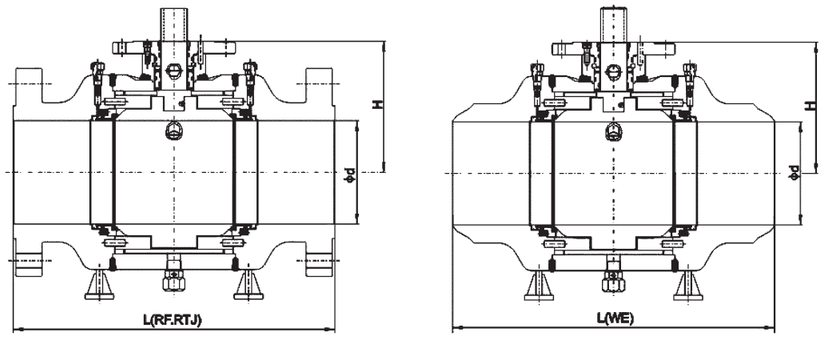
FULL WELDED BALL VALVE



Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	H	Weight (kg)	
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)		WE	RF
150	8"x6"	200	150	201	457	470	521	225	△	△
	10"x8"	250	201	252	533	546	559	258	△	△
	12"x10"	300	252	303	610	622	635	310	△	△
	14"x10"	350	252	334	686	699	762	310	△	△
	14"x12"	350	303	334	686	699	762	350	△	△
	16"x12"	400	303	385	762	775	838	350	△	△
	16"x14"	400	334	385	762	775	838	382	△	△
	18"x16"	450	385	436	864	876	914	421	△	△
	20"x16"	500	385	487	914	927	991	421	△	△
	20"x18"	500	436	487	914	927	991	468	△	△
	24"x20"	600	487	589	1067	1080	1143	510	△	△
	30"x24"	750	589	735	1295	–	1397	592	△	△
	36"x30"	900	735	874	1524	–	1727	723	△	△
300	8"x6"	200	150	201	502	518	521	225	△	△
	10"x8"	250	201	252	568	584	559	258	△	△
	12"x10"	300	252	303	648	664	635	310	△	△
	14"x10"	350	252	334	762	778	762	310	△	△
	14"x12"	350	303	334	762	778	762	350	△	△
	16"x12"	400	303	385	838	854	838	350	△	△
	16"x14"	400	334	385	838	854	838	382	△	△
	18"x16"	450	385	436	914	930	914	421	△	△
	20"x16"	500	385	487	991	1010	991	421	△	△
	20"x18"	500	436	487	991	1010	991	468	△	△
	24"x20"	600	487	589	1143	1165	1143	510	△	△
	30"x24"	750	589	735	1397	1422	1397	592	△	△
	36"x30"	900	735	874	1727	1756	1727	723	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes Hand weight will not be notified otherwise.

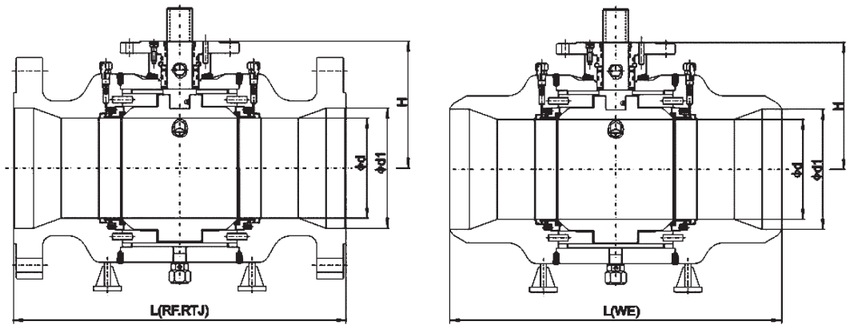
FULL WELDED BALL VALVE



Pressure rating	Nominal Diameter		d	Flanged		Butt welding	H	Weight (kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)		WE	RF
600	6"	150	150	559	562	559	255	250	330
	8"	200	201	660	664	660	290	340	450
	10"	250	252	787	791	787	320	570	710
	12"	300	303	838	841	838	380	850	1000
	14"	350	334	889	892	889	410	1100	1370
	16"	400	385	991	994	991	435	1350	1650
	18"	450	436	1092	1095	1092	495	2100	2400
	20"	500	487	1194	1200	1194	535	2600	3000
	24"	600	589	1397	1407	1397	642	3700	4300
	26"	650	633	1448	–	1448	665	3900	4500
	28"	700	684	1549	–	1549	704	4200	4900
	30"	750	735	1651	–	1651	745	6000	6900
	32"	800	779	1778	–	1778	785	6800	8000
	36"	900	874	2083	–	2083	875	9570	10850
900	6"	150	150	610	613	610	255	330	430
	8"	200	201	737	740	737	290	400	520
	10"	250	252	838	841	838	320	640	820
	12"	300	303	965	968	965	380	900	1050
	14"	350	322	1029	1038	1029	410	1020	1400
	16"	400	373	1130	1140	1130	435	1350	2050
	18"	450	423	1219	1232	1219	495	2600	3400
	20"	500	471	1321	1334	1321	535	3700	4200
	24"	600	570	1549	1568	1549	642	4400	5400
1500	6"	150	144	705	711	705	255	375	565
	8"	200	192	832	841	832	290	415	505
	10"	250	239	991	1000	991	320	525	640
	12"	300	287	1130	1146	1130	380	780	950
	14"	350	315	1257	1276	1257	410	1145	1380

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, and weight will not be notified otherwise.

FULL WELDED BALL VALVE



Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	H	Weight (kg)	
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)		WE	RF
600	8"x6"	200	150	201	660	664	660	255	△	△
	10"x8"	250	201	252	787	791	787	290	△	△
	12"x10"	300	252	303	838	841	838	320	△	△
	14"x10"	350	252	334	889	892	889	380	△	△
	14"x12"	350	303	334	889	892	889	380	△	△
	16"x12"	400	303	385	991	994	991	380	△	△
	16"x14"	400	334	385	991	994	991	410	△	△
	18"x16"	450	385	436	1092	1095	1092	435	△	△
	20"x16"	500	385	487	1194	1200	1194	435	△	△
	20"x18"	500	436	487	1194	1200	1194	495	△	△
	24"x20"	600	487	589	1397	1407	1397	535	△	△
	30"x24"	750	589	735	1651	–	1651	642	△	△
	36"x30"	900	735	874	2083	–	2083	745	△	△
900	8"x6"	200	150	201	737	740	737	255	△	△
	10"x8"	250	201	252	838	841	838	290	△	△
	12"x10"	300	252	303	965	968	965	320	△	△
	14"x10"	350	252	322	1029	1038	1029	320	△	△
	14"x12"	350	303	322	1029	1038	1029	380	△	△
	16"x12"	400	303	373	1130	1140	1130	380	△	△
	16"x14"	400	322	373	1130	1140	1130	410	△	△
	18"x16"	450	373	423	1219	1232	1219	435	△	△
	20"x16"	500	373	471	1321	1334	1321	435	△	△
	20"x18"	500	423	471	1321	1334	1321	495	△	△
	24"x20"	600	471	570	1549	1568	1549	535	△	△
1500	8"x6"	200	144	192	832	841	832	255	△	△
	10"x8"	250	192	239	991	1000	991	290	△	△
	12"x10"	300	239	287	1130	1146	1130	320	△	△
	14"x10"	350	239	315	1257	1276	1257	320	△	△
	14"x12"	350	287	315	1257	1276	1257	380	△	△
	16"x12"	400	287	360	1384	1407	1384	380	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes Hand weight will not be notified otherwise.

TOP ENTRY BALL VALVE

USAGE

The top entry ball valve is mainly used on pipelines and industrial systems. It has such advantages as top online maintenance function, small fluid resistance, simple structure, reliable sealing, convenient operation and maintenance, rapid on-off operation, flexible opening and closing, etc. The driving modes include manual operation, worm and worm gear transmission, pneumatic operation and electric operation. The connection ends can be flange or butt welding.

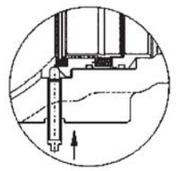
STRUCTURAL FEATURES

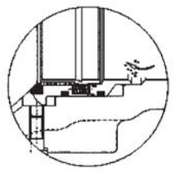
1、Integral structure

The body adopts the integral structure, so as to ensure that it has enough strength and rigidity under the maximum rated working pressure. The valve trims have been carefully designed and selected to ensure reliability under various service conditions. The sufficient wall thickness and the connection bolts of high strength are very helpful to the maintenance and servicing of valves and are able to endure pipeline stress.

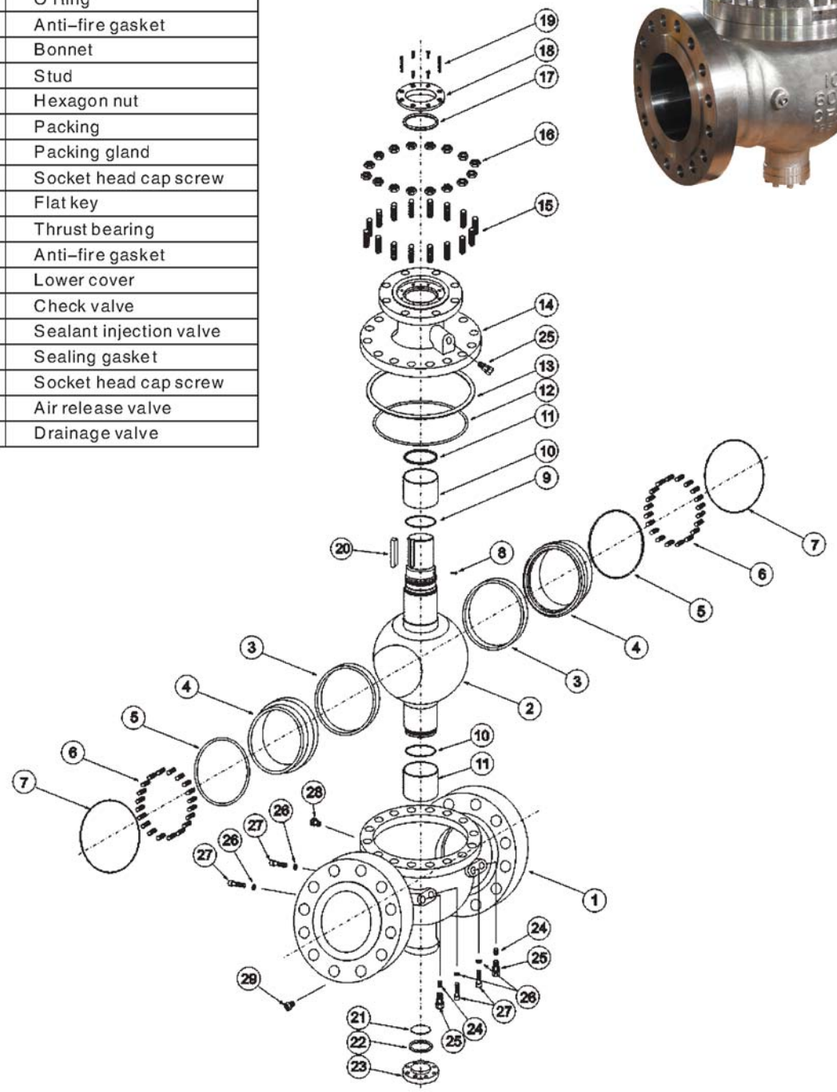
2、Top Entry Structure

The valve adopts the top entry structure. The most distinctive difference between this kind of valve and others is that the online maintenance function can be realized without the need of removing the valve from the pipeline. The seat adopts the concession type seat structure, and the rear end of the seat retainer is set as oblique angle to prevent impurities accumulated on the seat from influencing the concession of seat.





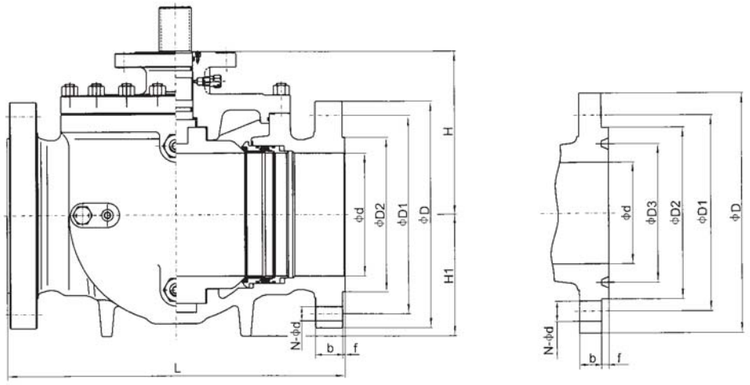
1	Body
2	Ball
3	Seat
4	Seat ring
5	O ring
6	Spring
7	Anti–fire packing
8	Anti–static device
9	O Ring
10	Sliding bearing
11	Thrust bearing
12	O Ring
13	Anti–fire gasket
14	Bonnet
15	Stud
16	Hexagon nut
17	Packing
18	Packing gland
19	Socket head cap screw
20	Flat key
21	Thrust bearing
22	Anti–fire gasket
23	Lower cover
24	Check valve
25	Sealant injection valve
26	Sealing gasket
27	Socket head cap screw
28	Air release valve
29	Drainage valve



PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 2~36				
Nominal pressure (MPa)			Class 150~Class 900				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	3	Seat	PTFE/ NYOLN/ PEEK/ PPL				
	4	Seat ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	O ring	VITON				
	6	Spring	17–7PH				
	7	Anti–fire packing	Graphite				
	8	Anti–static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	9	O Ring	VITON				
	10	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	11	Thrust bearing	PTFE				
	12	O Ring	VITON				
	13	Anti–fire gasket	SST+Graphite				
	14	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	15	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	16	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	17	Packing	Graphite				
	18	Packing gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	19	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	20	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	21	Thrust bearing	PTFE				
	22	Anti–fire gasket	SST+Graphite				
	23	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	24	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	25	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	26	Sealing gasket	SST+Graphite				
	27	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	28	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	29	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric Acid	Acetic Acid	Strong Oxidizer	Urea
		Applicable temperature	120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D, JIS B2002				
Type of connection			Flange	ASME B16.5/ASME B16.47		Butt welding	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, Gear, Pneumatic, Electric				

TOP ENTRY BALL VALVE

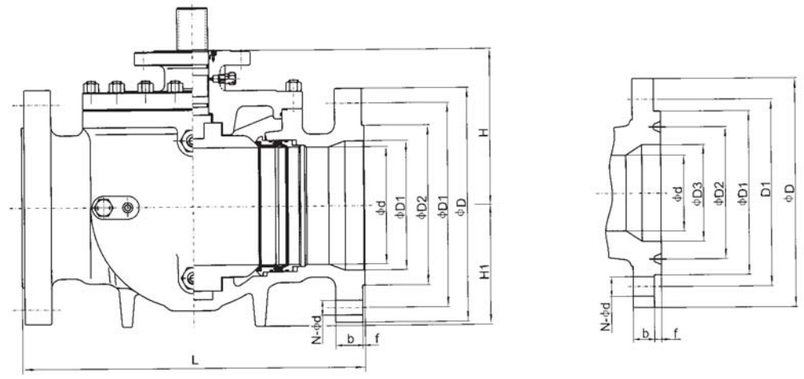


Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Flange							H	H1	Weight (kg)
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d			
150	2"	50	50	292	295	292	150	120.5	92	–	2	14.5	4– ϕ 19	130	102	△
	3"	80	75	283	298	283	190	152.5	127	–	2	17.5	4– ϕ 19	163	150	△
	4"	100	100	432	435	432	230	190.5	157	–	2	22.5	8– ϕ 19	177	175	△
	6"	150	150	559	562	559	280	241.5	216	–	2	24	8– ϕ 22	240	231	△
	8"	200	201	660	664	660	345	298.5	270	–	2	27	8– ϕ 22	266	256	△
	10"	250	252	787	791	787	405	362	324	–	2	29	12– ϕ 25	324	303.5	△
	12"	300	303	838	841	838	485	432	381	–	2	30.5	12– ϕ 25	383	310	△
	14"	350	334	889	892	889	535	476	413	–	2	33.5	12– ϕ 29	390	300	△
	16"	400	385	991	994	991	595	540	470	–	2	35	16– ϕ 29	435	340	△
	18"	450	436	1092	1095	1092	635	578	533	–	2	38.5	16– ϕ 32	522	410	△
	20"	500	487	1194	1200	1194	700	635	584	–	2	41.5	20– ϕ 32	565	445	△
	24"	600	589	1397	1407	1397	815	749.5	692	–	2	46.5	20– ϕ 35	618	480	△
	26"	650	633	1448	–	1448	870	806.5	749	–	2	68	24– ϕ 35	660	540	△
	28"	700	684	1549	–	1549	927	864	800	–	2	71	28– ϕ 35	690	596	△
	30"	750	735	1651	–	1651	984	914.5	857	–	2	75	28– ϕ 35	770	620	△
	32"	800	779	1778	–	1778	1060	978	914	–	2	81	28– ϕ 41	838	680	△
	36"	900	874	2083	–	2083	1168	1086	1022	–	2	90	32– ϕ 41	910	710	△
300	2"	50	50	292	295	292	165	127	92	–	2	21	8– ϕ 19	130	102	△
	3"	80	75	283	298	283	210	168.5	127	–	2	27	8– ϕ 22	163	150	△
	4"	100	100	432	435	432	255	200	157	–	2	30.5	8– ϕ 22	177	175	△
	6"	150	150	559	562	559	320	270	216	–	2	35	12– ϕ 22	240	231	△
	8"	200	201	660	664	660	380	330	270	–	2	40	12– ϕ 25	266	276	△
	10"	250	252	787	791	787	445	387.5	324	–	2	46.5	16– ϕ 29	324	303.5	△
	12"	300	303	838	841	838	520	451	381	–	2	49.5	16– ϕ 32	383	362	△
	14"	350	334	889	892	889	585	514.5	413	–	2	52.5	20– ϕ 32	390	300	△
	16"	400	385	991	994	991	650	571.5	470	–	2	56	20– ϕ 35	440	365	△
	18"	450	436	1092	1095	1092	710	628.5	533	–	2	59	24– ϕ 35	535	420	△
	20"	500	487	1194	1200	1194	775	686	584	–	2	62	24– ϕ 35	575	450	△
	24"	600	589	1397	1407	1397	915	813	692	–	2	68.5	24– ϕ 41	640	490	△
	26"	650	633	1448	–	1448	972	876.5	749	–	2	79	28– ϕ 45	680	560	△
	28"	700	684	1549	–	1549	1035	940	800	–	2	86	28– ϕ 45	720	610	△
	30"	750	735	1651	–	1651	1092	997	857	–	2	92	28– ϕ 48	808	640	△
	32"	800	779	1778	–	1778	1149	1054	914	–	2	98	28– ϕ 51	860	700	△
	36"	900	874	2083	–	2083	1270	1168	1022	–	2	105	32– ϕ 54	935	730	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

DAEJU CONTROL CO., LTD

TOP ENTRY BALL VALVE



Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Flange							H	H1	Weight (kg)
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d			
150	3"x2"	80	50	75	283	298	283	190	152.5	127	–	2	17.5	4– ϕ 19	130	102	△
	4"x3"	100	75	100	432	435	432	230	190.5	157	–	2	22.5	8– ϕ 19	163	150	△
	6"x4"	150	100	150	559	562	559	280	241.5	216	–	2	24	8– ϕ 22	177	175	△
	8"x6"	200	150	201	660	664	660	345	298.5	270	–	2	27	8– ϕ 22	240	231	△
	10"x8"	250	201	252	787	791	787	405	362	324	–	2	29	12– ϕ 25	266	256	△
	12"x10"	300	252	303	838	841	838	485	432	381	–	2	30.5	12– ϕ 25	324	303.5	△
	14"x10"	350	252	334	889	892	889	535	476	413	–	2	33.5	12– ϕ 29	324	303.5	△
	14"x12"	350	303	334	889	892	889	535	476	413	–	2	33.5	12– ϕ 29	383	310	△
	16"x12"	400	303	385	991	994	991	595	540	470	–	2	35	16– ϕ 29	383	310	△
	16"x14"	400	334	385	991	994	991	595	540	470	–	2	35	16– ϕ 29	390	300	△
	18"x16"	450	385	436	1092	1095	1092	635	578	533	–	2	38.5	16– ϕ 32	435	340	△
	20"x16"	500	385	487	1194	1200	1194	700	635	584	–	2	41.5	20– ϕ 32	435	340	△
	20"x18"	500	436	487	1194	1200	1194	700	635	584	–	2	41.5	20– ϕ 32	522	410	△
	24"x20"	600	487	589	1397	1407	1397	815	749.5	692	–	2	46.5	20– ϕ 35	565	445	△
	30"x24"	750	589	735	1651	–	1651	984	914.5	857	–	2	75	28– ϕ 35	618	480	△
	36"x30"	900	735	874	2083	–	2083	1168	1086	1022	–	2	90	32– ϕ 41	770	620	△
300	3"x2"	80	50	75	283	298	283	210	168.5	127	–	2	27	8– ϕ 22	130	102	△
	4"x3"	100	75	100	432	435	432	255	200	157	–	2	30.5	8– ϕ 22	163	150	△
	6"x4"	150	100	150	559	562	559	320	270	216	–	2	35	12– ϕ 22	177	175	△
	8"x6"	200	150	201	660	664	660	380	330	270	–	2	40	12– ϕ 25	240	231	△
	10"x8"	250	201	252	787	791	787	445	387.5	324	–	2	46.5	16– ϕ 29	266	276	△
	12"x10"	300	252	303	838	841	838	520	451	381	–	2	49.5	16– ϕ 32	324	303.5	△
	14"x10"	350	252	334	889	892	889	585	514.5	413	–	2	52.5	20– ϕ 32	324	303.5	△
	14"x12"	350	303	334	889	892	889	585	514.5	413	–	2	52.5	20– ϕ 32	383	362	△
	16"x12"	400	303	385	991	994	991	650	571.5	470	–	2	56	20– ϕ 35	383	362	△
	16"x14"	400	334	385	991	994	991	650	571.5	470	–	2	56	20– ϕ 35	390	300	△
	18"x16"	450	385	436	1092	1095	1092	710	628.5	533	–	2	59	24– ϕ 35	440	365	△
	20"x16"	500	385	487	1194	1200	1194	775	686	584	–	2	62	24– ϕ 35	440	365	△
	20"x18"	500	436	487	1194	1200	1194	775	686	584	–	2	62	24– ϕ 35	535	420	△
	24"x20"	600	487	589	1397	1407	1397	915	813	692	–	2	68.5	24– ϕ 41	575	450	△
	30"x24"	750	589	735	1651	–	1651	1092	997	857	–	2	92	28– ϕ 48	640	490	△
	36"x30"	900	735	874	2083	–	2083	1270	1168	1022	–	2	105	32– ϕ 54	808	640	△

△Please consult the factory:
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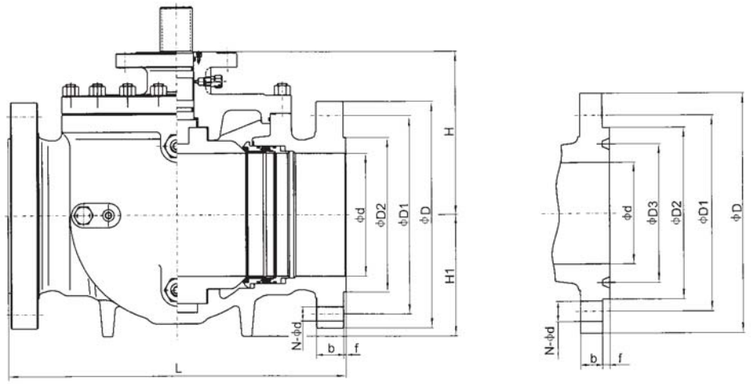
TOP ENTRY BALL VALVE



Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Flange							H	H1	Weight (kg)
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d			
600	2"	50	50	292	295	292	165	127	92	–	7	26	8– ϕ 19	142	110	△
	3"	80	75	356	359	356	210	168.5	127	–	7	32	8– ϕ 22	188	165	△
	4"	100	100	432	435	432	275	216	157	–	7	38.5	8– ϕ 25	205	193	△
	6"	150	150	559	562	559	355	292	216	–	7	48	12– ϕ 29	255	242	△
	8"	200	201	660	664	660	420	349	270	–	7	56	12– ϕ 32	282	268	△
	10"	250	252	787	791	787	510	432	324	–	7	64	16– ϕ 35	369	339	△
	12"	300	303	838	841	838	560	489	381	–	7	67	20– ϕ 35	402	300	△
	14"	350	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	410	320	△
	16"	400	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	467	360	△
	18"	450	436	1092	1095	1092	745	654	533	–	7	83	20– ϕ 44	560	430	△
	20"	500	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	633	490	△
	24"	600	589	1397	1407	1397	940	838	692	–	7	102	24– ϕ 51	692	536	△
900	2"	50	50	368	371	368	215	165	124	95.25	7.92	38.5	8– ϕ 25	160	112	△
	3"	80	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8– ϕ 25	213	168	△
	4"	100	100	457	460	457	290	235	181	149.23	7.92	45	8– ϕ 32	232	197.5	△
	6"	150	150	610	613	610	380	317.5	241	211.12	7.92	56	12– ϕ 32	289	258	△
	8"	200	201	737	740	737	470	393.5	308	269.88	7.92	64	12– ϕ 39	319	294	△
	10"	250	252	838	841	838	545	470	362	323.85	7.92	70	16– ϕ 39	407	372	△
	12"	300	303	965	968	965	610	533.5	419	381	7.92	79.5	20– ϕ 39	443	329	△
	14"	350	322	1029	1038	1029	640	559	467	419.1	11.13	86	20– ϕ 42	467	345	△
	16"	400	373	1130	1140	1130	705	616	524	469.9	11.13	89	20– ϕ 45	527	388	△
	18"	450	423	1219	1232	1219	785	686	594	533.4	12.7	102	20– ϕ 51	632	463	△
	20"	500	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20– ϕ 54	715	527	△
	24"	600	570	1549	1568	1549	1040	901.5	772	692.15	15.88	140	20– ϕ 67	782	573	△

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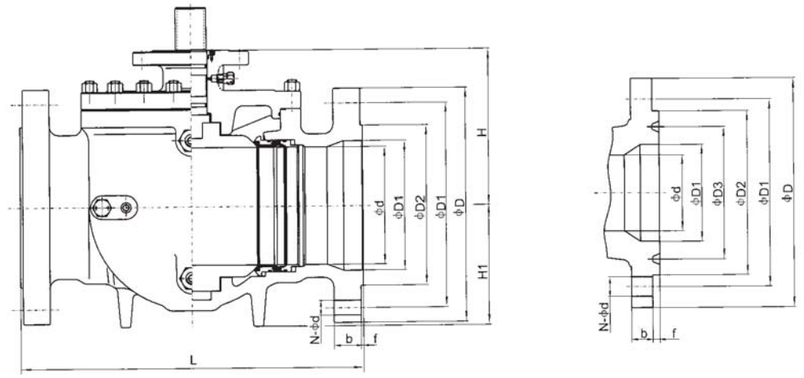
DAEJU CONTROL CO., LTD

TOP ENTRY BALL VALVE



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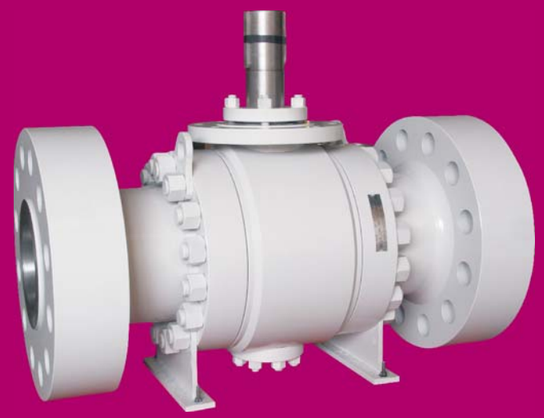
Class	NPS	DN			L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d			
600	3"x2"	80	50	75	356	359	356	210	168.5	127	–	7	32	8– ϕ 22	142	110	△
	4"x3"	100	75	100	432	435	432	275	216	157	–	7	38.5	8– ϕ 25	188	165	△
	6"x4"	150	100	150	559	562	559	355	292	216	–	7	48	12– ϕ 29	205	193	△
	8"x6"	200	150	201	660	664	660	420	349	270	–	7	56	12– ϕ 32	255	242	△
	10"x8"	250	201	252	787	791	787	510	432	324	–	7	64	16– ϕ 35	282	268	△
	12"x10"	300	252	303	838	841	838	560	489	381	–	7	67	20– ϕ 35	369	339	△
	14"x10"	350	252	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	369	339	△
	14"x12"	350	303	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	402	300	△
	16"x12"	400	303	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	402	300	△
	16"x14"	400	334	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	410	320	△
	18"x16"	450	385	436	1092	1095	1092	745	654	533	–	7	83	20– ϕ 44	467	360	△
	20"x16"	500	385	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	467	360	△
	20"x18"	500	436	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	560	430	△
	24"x20"	600	487	589	1397	1407	1397	940	838	692	–	7	102	24– ϕ 51	633	490	△
900	3"x2"	80	50	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8– ϕ 25	160	112	△
	4"x3"	100	75	100	457	460	457	290	235	181	149.23	7.92	45	8– ϕ 32	213	168	△
	6"x4"	150	100	150	610	613	610	380	317.5	241	211.12	7.92	56	12– ϕ 32	232	197.5	△
	8"x6"	200	150	201	737	740	737	470	393.5	308	269.88	7.92	64	12– ϕ 39	289	258	△
	10"x8"	250	201	252	838	841	838	545	470	362	323.85	7.92	70	16– ϕ 39	319	294	△
	12"x10"	300	252	303	965	968	965	610	533.5	419	381	7.92	79.5	20– ϕ 39	407	372	△
	14"x10"	350	252	322	1029	1038	1029	640	559	467	419.1	11.13	86	20– ϕ 42	407	372	△
	14"x12"	350	303	334	1029	1038	1029	640	559	467	419.1	11.13	86	20– ϕ 42	443	329	△
	16"x12"	400	303	373	1130	1140	1130	705	616	524	469.9	11.13	89	20– ϕ 45	443	329	△
	16"x14"	400	334	385	1130	1140	1130	705	616	524	469.9	11.13	89	20– ϕ 45	467	345	△
	18"x16"	450	373	423	1219	1232	1219	785	686	594	533.4	12.7	102	20– ϕ 51	527	388	△
	20"x16"	500	373	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20– ϕ 54	527	388	△
	20"x18"	500	423	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20– ϕ 54	632	463	△
	24"x20"	600	471	570	1549	1568	1549	1040	901.5	772	692.2	15.88	140	20– ϕ 67	715	527	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

METAL SEATED BALL VALVE



SUMMARY

With such features as small fluid resistance, smooth flow channel, rapening and closing, and easy automatic control, the ball valve has been widely used. But the seat of regular ball valves is generally made of PTFE and other nonmetal materials. Limited by seat materials, the regular valves cannot be used under the service condition of high temperature. Therefore, the use of regular ball valves is limited to a certain degree. The series of new style practical metal seated ball valve products are newly designed to solve the above problem, and have been widely applied in petroleum, chemical industry, electric power, metallurgy, light industry and etc.

USAGE

The metal seated ball valve is used to cut off or connect the media in various pipelines. It is suitable for severe service conditions containing granules, slurry, coal powder, cinder and etc.

STRUCTURAL FEATURES

1、Advanced Ball And Seat Hardening Technology

The ball and seat of the metal seated ball valve absolutely adopts the sealing mode of metal to metal. According to different service conditions and requirements of users, various advanced ball and seat hardening technologies can be adopted, including HVOF coating, nickel-base alloy spray welding, high nickey alloy spray welding, nickel-base tungsten carbide alloy spray welding, cobalt-base hard alloy spray welding, etc. Generally. the ball and seat surface hardness can reach HRC55~60 with the maximum value of HRC70. Generally, the heat resistance of the sealing face material can reach 540℃ with the maximum value of 980℃. The sealing face material has also good wear resistant and impact resistant performances.

STRUCTURAL FEATURES

2、Flexible Valve Opening And Closing

Under the service condition of hight temperature, the ball and seat will expand too much because of thermal expansion, and thus causing that the valve cannot be opened. The ball valve adopts the disc spring or spring loaded sealing structure so that thermal expansion of parts under high temperature can be absorbed by the disc spring or spring, and itis ensured that the valve will be flexibly opened and closed under high temperature without expanding too much under high temperature.

3、Fireproof Structure Design

In the metal to metal sealing structure for the valve, the gasket is the stainless steel+flexible graphite and the packing is the flexible graphite. Therefore, reliable sealing of the valve can be ensured even in case of fire.

4、Double Block And Bleed (Metal Seated Trunnion Ball Valve)

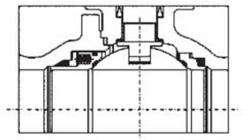
The metal seated trunnion ball valve usually adopts the sealing structure before the ball. When the valve is closed and the middle cavity is emptied through the discharge valve, the upstream and downstream seats will independently block the fluid at the inlet and outlet to realize double block function.

The metal seated floating ball valve usually adopts the sealing structure after the ball. Unidirectional sealing is generally adopted with flow direction marked on the body. If users have special requirements, bidirectional sealing structure can be adopted.

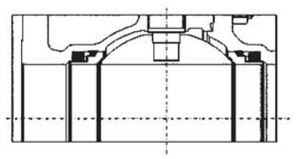
5、Reliable Sealing Performance

The unique ball grinding technology is adopted. Through rotation of the ball and the grinder at different positions, the ball surface will achieve high roundness and fineness. The low pressure sealing of valve seat is realized by spring pre-tightening. In addition, the piston effect of valve seat is designed reasonably, which realizes high pressure sealing by the pressure of the medium itself. The sealing level of the valve meets the requirement of level IV in ANSI B16.104.

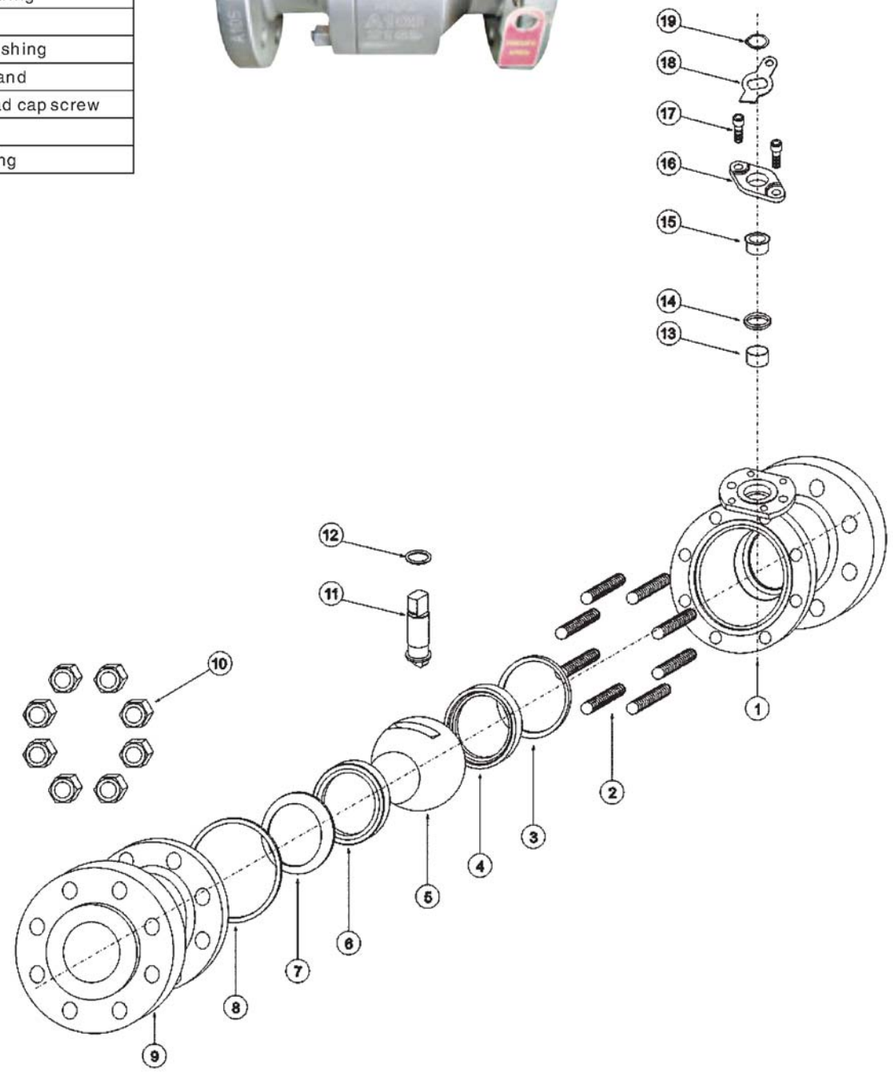
Metal seated floating ball valve



Metal seated trunnion ball valve



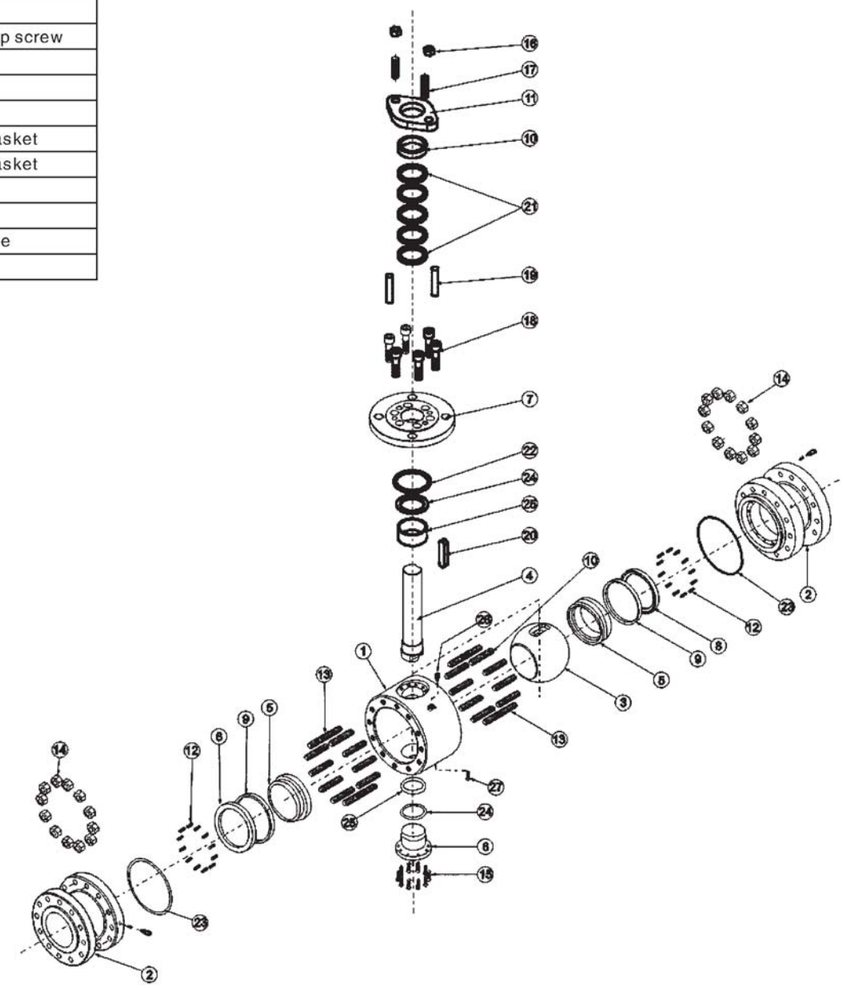
1	Body
2	Stud
3	Sealing gasket
4	Back seat
5	Ball
6	Front seat
7	Disc spring
8	Sealing gasket
9	Bonnet
10	Hexagon nut
11	Stem
12	Thrust bearing
13	Sliding bearing
14	Packing
15	Packing bushing
16	Packing gland
17	Socket head cap screw
18	Stopper
19	Retainer ring



PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 600				
Materials of Parts	No.	Part Name	Material				
			Carbon steel	Stainless steel			
	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	3	Sealing gasket	Graphite				
	4	Back seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	5	Ball	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	6	Front seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	7	Disc spring	17–7PH				
	8	Sealing gasket	Graphite				
	9	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	10	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8
	11	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	12	Thrust bearing	SST+Graphite				
	13	Sliding bearing	TF–2				
	14	Packing	Graphite				
	15	Packing bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	16	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	17	Socket head cap screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	18	Stopper	A3.Zn	A3.Zn	A3.Zn	A3.Zn	A3.Zn
	19	Retainer ring	65Mn	65Mn	65Mn	65Mn	65Mn
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	–29~+425℃	≤200℃			
Design and manufacturing			ASME B16.34				
Face–to–face dimensions			ASME B16.10				
Type of connection			Flange	ASME B16.5		Butt welding	ASME B16.25
Pressure test			API 598				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

1	Body
2	Bonnet
3	Ball
4	Stem
5	Seat
6	Lower cover
7	Connection plate
8	Spring seat
9	Sealing gasket
10	Packing bushing
11	Packing gland
12	Spring
13	Stud
14	Hexagon nut
15	Hexgon bolt
16	Hexagon nut
17	Stud
18	Socket head cap screw
19	Pin
20	Flat key
21	Packing
22	Metal wound gasket
23	Metal wound gasket
24	Thrust bearing
25	Sliding bearing
26	Air release valve
27	Drainage valve

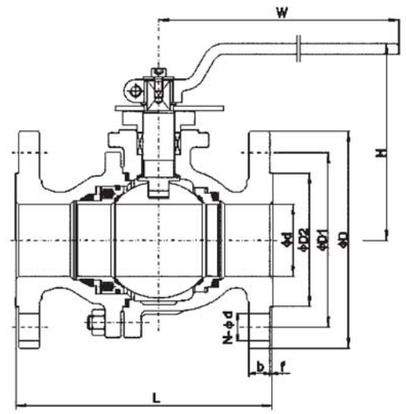


PART MATERIALS AND MAIN PARAMETERS

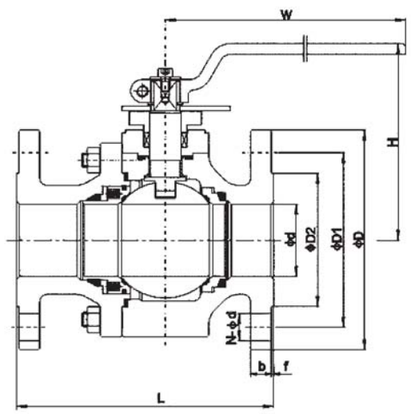
Nominal diameter (in)			NPS 1/2~8				
Nominal pressure (MPa)			Class 150~Class 600				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A105	ASTM A182 304L	ASTM A182 316	ASTM A182 304	ASTM A182 316L
	2	Bonnet	ASTM A105	ASTM A182 304L	ASTM A182 316	ASTM A182 304	ASTM A182 316L
	3	Ball	ASTM A105+HF	ASTM A182 304L+HF	ASTM A182 316+HF	ASTM A182 304+HF	ASTM A182 316L+HF
	4	Stem	ASTM A182 F6a	ASTM A182 304L	ASTM A182 316	ASTM A182 304	ASTM A182 316L
	5	Seat	ASTM A105+HF	ASTM A182 304L+HF	ASTM A182 316+HF	ASTM A182 304+HF	ASTM A182 316L+HF
	6	Lower cover	ASTM A105・CHR	ASTM A182 304L	ASTM A182 316	ASTM A182 304	ASTM A182 316L
	7	Connection plate	ASM A105	ASM A182 304L	ASM A182 316	ASM A182 304	ASM A182 316L
	8	Spring seat	ASTM A105・CHR	ASTM A182 304L	ASTM A182 316	ASTM A182 304	ASTM A182 316L
	9	Sealing gasket	Graphite				
	10	Packing bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	11	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	12	Spring	17-7PH				
	13	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	14	Hexagon nut	A194 2HM	A194-8	A194-8M	A194-8	A194-8M
	15	Hexgon bolt	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	16	Hexagon nut	A194 2H	A194-8	A194-8	A194-8	A194-8
	17	Stud	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	18	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	19	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	20	Flat key	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	21	Packing	Graphite				
	22	Metal wound gasket	SST+Graphite				
	23	Metal wound gasket	SST+Graphite				
	24	Thrust bearing	SST+Graphite				
	25	Sliding bearing	TF-2				
	26	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	27	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	≤200℃				
Design and manufacturing			API 6D				
Face-to-face dimensions			ASME B16.10				
Type of connection			Flange	ASME B16.5		Butt welding	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

DAEJU CONTROL CO., LTD

TRUNNION ● METAL SEATED BALL VALVE



Floating cast steel ball valve

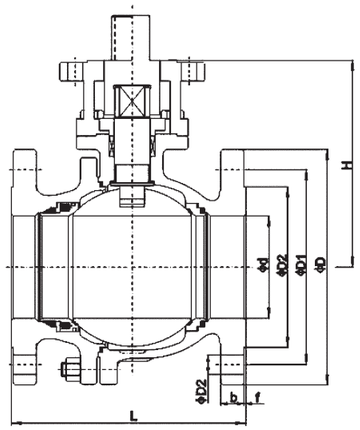


Floating forged steel ball valve

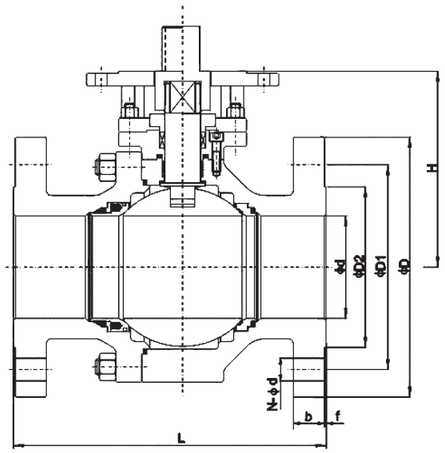
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange						W	Cast steel	Forged steel	Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	f	b	N-Φd		H	H	Cast steel	Forged steel
150	1/2"	15	13	108	–	140	90	60.5	35	2	9	4-Φ16	140	80	63	2.3	△
	3/4"	20	19	117	–	152	100	70	43	2	10	4-Φ16	140	86	82.5	3	△
	1"	25	25	127	–	165	110	79.5	51	2	11	4-Φ16	140	95	93.5	4.5	△
	1 1/4"	32	32	140	–	178	115	89	64	2	11	4-Φ16	180	101	96	5.5	△
	1 1/2"	40	38	165	–	190	125	98.5	73	2	13	4-Φ16	180	128.5	128	7	△
	2"	50	50	178	–	216	150	120.5	92	2	14.5	4-Φ19	200	136	136	9.5	△
	3"	80	75	203	191	283	190	152.5	127	2	17.5	4-Φ19	300	145	145	19	△
	4"	100	100	229	216	305	230	190.5	157	2	22.5	8-Φ19	650	197.5	204	33	△
300	1/2"	15	13	140	241	140	95	66.5	35	2	13	4-Φ16	140	80	63	2.5	△
	3/4"	20	19	152	–	152	115	82.5	43	2	14.5	4-Φ19	140	82	82.5	3.5	△
	1"	25	25	165	–	165	125	89	51	2	16	4-Φ19	140	84	93.5	5.5	△
	1 1/4"	32	32	178	–	178	135	98.5	64	2	17.5	4-Φ19	180	102	96	8	△
	1 1/2"	40	38	190	–	190	155	114.5	73	2	19.5	4-Φ22	180	128.5	128	10.5	△
	2"	50	50	216	232	216	165	127	92	2	21	8-Φ19	200	136	136	15	△
	3"	80	75	283	298	283	210	168.5	127	2	27	8-Φ22	300	145	145	30	△
	4"	100	100	305	321	305	255	200	157	2	30.5	8-Φ22	650	197.5	204	55	△
600	1/2"	15	13	165	–	165	95	66.5	35	7	14.5	4-Φ16	140	88	78	3.5	△
	3/4"	20	19	190	–	190	115	82.5	43	7	16	4-Φ19	140	98	92.5	6.5	△
	1"	25	25	216	–	216	125	89	51	7	17.5	4-Φ19	180	115	102	8.5	△
	1 1/4"	32	32	229	–	229	135	98.5	64	7	21	4-Φ19	200	125	110	10.5	△
	1 1/2"	40	38	241	–	241	155	114.5	73	7	22.5	4-Φ22	250	142	128	13.5	△
	2"	50	50	292	295	292	165	127	92	7	26	8-Φ19	300	160	142	△	△
	3"	80	75	356	359	356	210	168.5	127	7	32	8-Φ22	650	178	156	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

TRUNNION ● METAL SEATED BALL VALVE



Floating cast steel ball valve

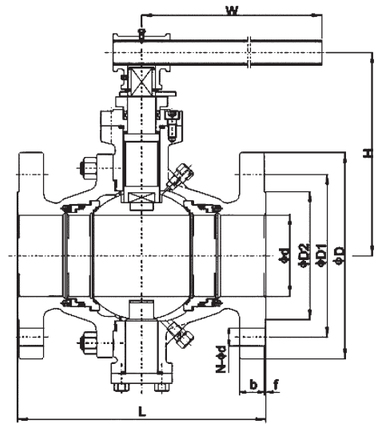


Floating forged steel ball valve

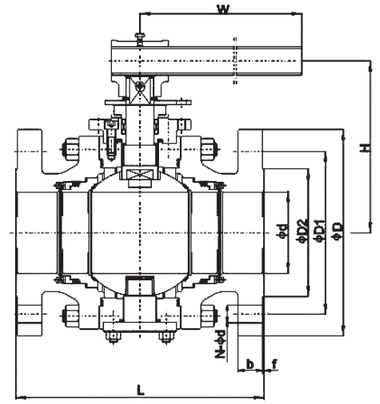
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange						Cast steel	Forged steel	Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	f	b	N– ϕ d	H	H	Cast steel	Forged steel
150	4"	100	100	229	241	305	230	190.5	157	2	22.5	8– ϕ 19	220	197	33	△
	6"	150	150	394	406	457	280	241.5	216	2	24	8– ϕ 22	300	250	93	△
	8"	200	201	457	470	521	345	298.5	270	2	27	8– ϕ 22	355	290	160	△
300	4"	100	100	305	321	305	255	200	157	2	30.5	8– ϕ 22	220	197	55	△
	6"	150	150	403	419	457	320	270	216	2	35	12– ϕ 22	300	250	118	△
	8"	200	201	502	519	521	380	330	270	2	40	12– ϕ 25	355	290	200	△
600	4"	100	100	432	435	432	275	216	157	7	38.5	8– ϕ 25	230	205	△	△
	6"	150	150	559	562	559	355	292	216	7	48	12– ϕ 29	310	260	△	△
	8"	200	201	660	664	660	420	349	270	7	56	12– ϕ 32	370	310	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

TRUNNION ● METAL SEATED BALL VALVE



Trunnion cast steel ball valve

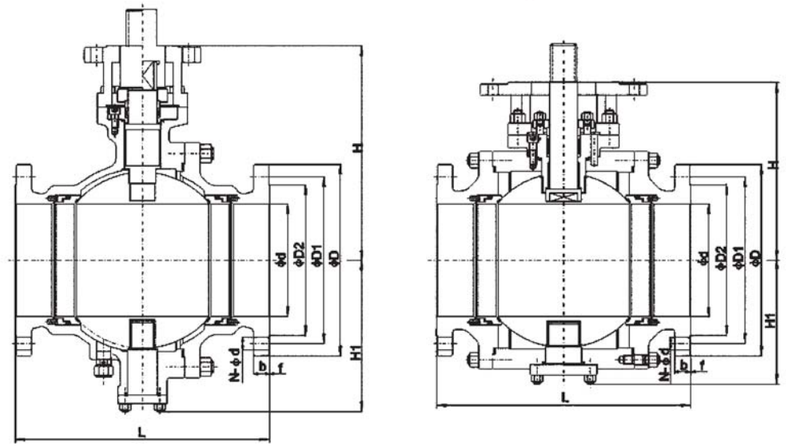


Trunnion forged steel ball valve

Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							W	Cast steel	Forged steel	Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d		H	H	Cast steel	Forged steel
150	2"	50	50	178	191	216	150	120.5	92	–	2	14.5	4– ϕ 19	200	174	153	14	19
	3"	80	75	203	216	283	190	152.5	127	–	2	17.5	4– ϕ 19	300	178	162	26	28
	4"	100	100	229	241	305	230	190.5	157	–	2	22.5	8– ϕ 19	650	288	240	45	48
300	2"	50	50	216	232	216	165	127	92	–	2	21	8– ϕ 19	200	174	153	17	22
	3"	80	75	283	298	283	210	168.5	127	–	2	27	8– ϕ 22	300	178	162	35	38
	4"	100	100	305	321	305	255	200	157	–	2	30.5	8– ϕ 22	650	288	240	55	60
600	2"	50	50	292	295	292	165	127	92	–	7	26	8– ϕ 19	300	178	153	28	28
	3"	80	75	356	359	356	210	168.5	127	–	7	32	8– ϕ 22	300	283	244	55	65
900	2"	50	50	368	371	368	215	165	124	95.25	7.92	38.5	8– ϕ 25	650	233	222	△	57
	3"	80	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8– ϕ 25	800	276	255	△	87

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

TRUNNION ● METAL SEATED BALL VALVE



Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							Cast steel		Forged steel		Weight(kg)	
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d	H	H1	H	H1	Cast steel	Forged steel
150	6"	150	150	394	406	457	280	241.5	216	–	2	24	8– ϕ 22	310	213.5	276	178.5	120	170
	8"	200	201	457	470	521	345	298.5	270	–	2	27	8– ϕ 22	384.5	272	319	222	300	300
	10"	250	252	533	546	559	405	362	324	–	2	29	12– ϕ 25	434	363	370	265	315	430
	12"	300	303	610	622	635	485	432	381	–	2	30.5	12– ϕ 25	513	412	419.5	310	500	680
	14"	350	334	686	699	762	535	476	413	–	2	33.5	12– ϕ 29	535	436	432	334	670	930
	16"	400	385	762	775	838	595	540	470	–	2	35	16– ϕ 29	575	462	515	375	900	1130
	18"	450	436	864	876	914	635	578	533	–	2	38.5	16– ϕ 32	615	507	560	410	1080	1560
	20"	500	487	914	927	991	700	635	584	–	2	41.5	20– ϕ 32	685	536	623	458	1560	2020
300	6"	150	150	403	419	457	320	270	216	–	2	35	12– ϕ 22	310	213.5	276	178.5	160	180
	8"	200	201	502	518	521	380	330	270	–	2	40	12– ϕ 25	384.5	272	319	222	260	258
	10"	250	252	568	584	559	445	387.5	324	–	2	46.5	16– ϕ 29	434	363	370	265	380	413
	12"	300	303	648	664	635	520	451	381	–	2	49.5	16– ϕ 32	513	412	419.5	310	570	629
	14"	350	334	762	778	762	585	514.5	413	–	2	52.5	20– ϕ 32	535	436	432	334	750	887
	16"	400	385	838	854	838	650	571.5	470	–	2	56	20– ϕ 35	575	462	515	375	1120	1340
	18"	450	436	914	930	914	710	628.5	533	–	2	59	24– ϕ 35	615	507	560	410	1460	1610
	20"	500	487	991	1010	991	775	686	584	–	2	62	24– ϕ 35	685	536	623	458	2030	2200
600	4"	100	100	432	435	432	275	216	157	–	7	38.5	8– ϕ 25	234	165	261	150	102	118
	6"	150	150	559	562	559	355	292	216	–	7	48	12– ϕ 29	335	251	283	192.5	250	250
	8"	200	201	660	664	660	420	349	270	–	7	56	12– ϕ 32	430	290	339.5	235	430	430
	10"	250	252	787	791	787	510	432	324	–	7	64	16– ϕ 35	466	334	380	280	680	680
	12"	300	303	838	841	838	560	489	381	–	7	67	20– ϕ 35	528	383	432	320	985	985
	14"	350	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	600	398	473	350	1002	1002
	16"	400	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	630	434	515	395	1160	1160
	18"	450	436	1092	1095	1092	745	654	533	–	7	83	20– ϕ 44	685	473	560	439	1611	1611
	20"	500	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	740	506	617	490	2985	2985
900	4"	100	100	457	460	457	290	235	181	149.23	7.92	45	8– ϕ 32	310	186	267	267	△	△
	6"	150	150	610	613	610	380	317.5	241	211.12	7.92	56	12– ϕ 32	372	262	288.5	200	△	△
	8"	200	201	737	740	737	470	393.5	308	269.88	7.92	64	12– ϕ 39	428	300	300	250	△	△
	10"	250	252	838	841	838	545	470	362	323.85	7.92	70	16– ϕ 39	477	346	410	300	△	△
	12"	300	303	965	968	965	610	533.5	419	381	7.92	79.5	20– ϕ 39	543	388	432	320	△	△
	14"	350	322	1029	1038	1029	640	559	467	419.1	11.13	86	20– ϕ 42	558	402	△	△	△	△
	16"	400	373	1130	1140	1130	705	616	524	469.9	11.13	89	20– ϕ 45	605	442	△	△	△	△
	18"	450	423	1219	1232	1219	785	686	595	533.4	12.7	102	20– ϕ 51	657	489	△	△	△	△
	20"	500	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20– ϕ 54	729	538	△	△	△	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

ORBIT BALL VALVE

SUMMARY

The valve is suitable for use in petrochemical industry, liquefied petroleum gas storage, refinery, natural gas, compressor system, oil and gas transportation pipeline, light industry, textile and other industries.

STRUCTURAL FEATURES

1、Top Entry Structure

The valve adopts the top entry structure. The most distinctive difference between this kind of valve and others is that the online maintenance function can be realized without the need of removing the valve from the pipeline.

2、Integral Structure

The body adopts the integral structure, so as to ensure that it has enough strength and rigidity under the maximum rated working pressure. The valve trims have been carefully designed and selected to ensure reliability under various service conditions. The sufficient wall thickness and the connection bolts high strength are very helpful to the maintenance and servicing of valves and are able to endure pipeline stress.

3、Lower Torque Operation

The stem structure is specially desisgned and there is no friction between seat and ball sealing faces. Therefore the stem can turn easily with low opening and closing torque.

WORK PRINCIPLE

Opening Of Orbit Ball Valve

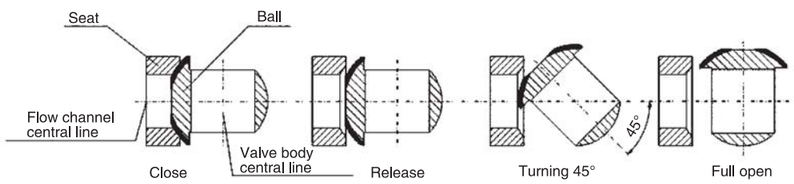
When it is at the closed position, the ball is closely pressed onto the seat under the mechanical pressure of stem. When the handwheel is turned counterclockwise, the stem will move upward, and the angular plane at the bottom of stem will make the ball sealing face leave the seat. The stem will continue rising and interact with the guide pin in the stem spiral groove to make the ball turn 90° itout friction until the stem rises to the ultimate position and the ball hole is aligned with the valve channel.

Closing Of Ball Valve

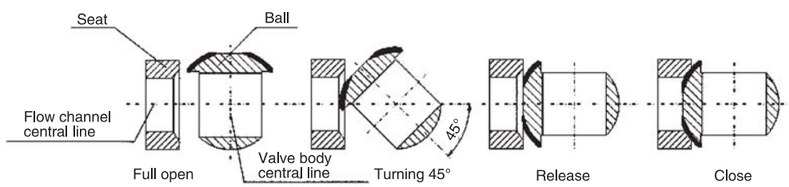
During the closing, turn the handwheel clockwise, the stem will move downward and make the ball start rotation. Continue turning the handwheel, and the stem will make the stem and ball turn 90° together under the action of guide pin in the spiral groove embedded in the stem. When it is nearly closed, the ball has turned 90° without contact with the seat. The stem will continue moving downward, the ball sways to press the seat so as to make the sealing face in the seat produce elastic deformation and closely fit the ball sealing face, and therefore, ensuring safe and reliable zero leakage.

Opening And Closing Schematic Diagram

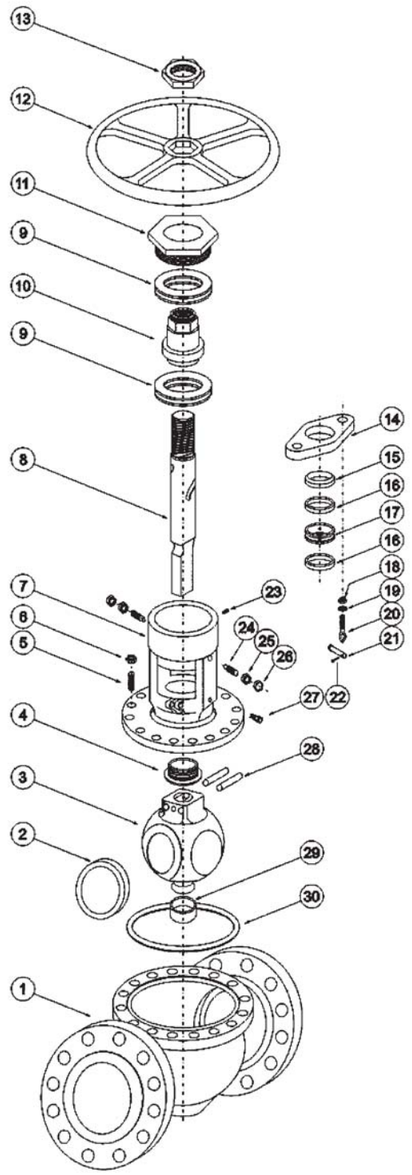
Opening Process



Closing Process

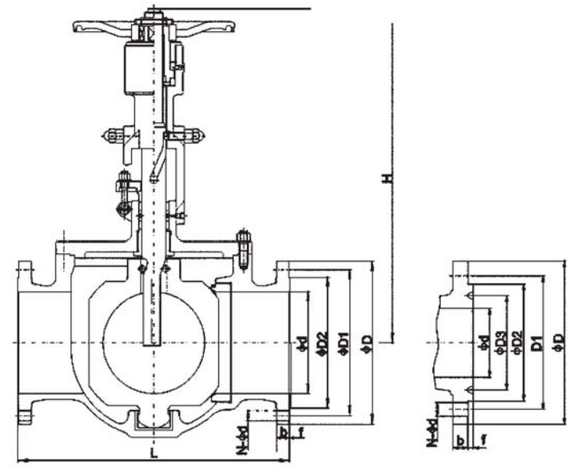


1	Body
2	Seat
3	Ball
4	Upper bearing sleeve
5	Stud
6	Hexagon nut
7	Bonnet
8	Stem
9	Rolling bearing
10	Stem nut
11	Nut gland
12	Handwheel
13	Anchor nut
14	Packing gland
15	Bushing
16	Packing
17	Lantern ring
18	Hexagon nut
19	Flat washer
20	Eye bolt
21	Pin
22	Forelock
23	Oil cap
24	Holding screw
25	Hexagon nut
26	Cap nut
27	Sealant injection valve
28	Rolling pin
29	Locating bush
30	Metal wound gasket



PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 2~20				
Nominal pressure (MPa)			Class 150~Class 600				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	3	Ball	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	4	Upper bearing sleeve	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	6	Hexagon nut	A194 2HM	A194–8	A194–8M	A194–8	A194–8M
	7	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	8	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	9	Rolling bearing	Bearing steel	Bearing steel	Bearing steel	Bearing steel	Bearing steel
	10	Stem nut	A429 D–2	A429 D–2	A429 D–2	A429 D–2	A429 D–2
	11	Nut gland	ASTM A105	ASTM A105	ASTM A105	ASTM A105	ASTM A105
	12	Handwheel	QT400–17	QT400–17	QT400–17	QT400–17	QT400–17
	13	Anchor nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
	14	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	15	Bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	16	Packing	Graphite				
	17	Lantern ring	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	18	Hexagon nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
	19	Flat washer	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
	20	Eye bolt	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	21	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	22	Forelock	A3	A3	A3	A3	A3
	23	Oil cap	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	24	Holding screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	25	Hexagon nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
	26	Cap nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
	27	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	28	Rolling pin	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	29	Locating bush	TF–2	TF–2	TF–2	TF–2	TF–2
	30	Metal wound gasket	SST+Graphite	SST+Graphite	SST+Graphite	SST+Graphite	SST+Graphite
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	–29~+425℃	≤200℃			
Design and manufacturing			API 6D				
Face–to–face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5		Butt welding	ASME B16.25
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				



Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Raised face flange							H	Weight (kg)
Class	NPS	DN		L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3	f	b	N– ϕ d		
150	2"	50	50	292	295	292	150	120.5	92	–	2	14.5	4– ϕ 19	360	28
	3"	80	75	356	359	356	190	152.5	127	–	2	17.5	4– ϕ 19	490	41
	4"	100	100	406	410	406	230	190.5	157	–	2	22.5	8– ϕ 19	525	55
	6"	150	150	403	419	457	280	241.5	216	–	2	24	8– ϕ 22	611	115
	8"	200	201	597	600	597	345	298.5	270	–	2	27	8– ϕ 22	750	215
	10"	250	252	673	676	673	405	362	324	–	2	29	12– ϕ 25	826	270
	12"	300	303	762	765	762	485	432	381	–	2	30.5	12– ϕ 25	920	385
	14"	350	334	826	829	826	535	476	413	–	2	33.5	12– ϕ 29	990	502
	16"	400	385	902	905	902	595	540	470	–	2	35	16– ϕ 29	1090	876
	18"	450	436	978	981	978	635	578	533	–	2	38.5	16– ϕ 32	1200	980
	20"	500	487	1054	1060	1054	700	635	584	–	2	41.5	20– ϕ 32	1320	1240
300	2"	50	50	292	295	292	160	127	92	–	2	21	8– ϕ 19	360	32
	3"	80	75	356	359	356	210	168.5	127	–	2	27	8– ϕ 22	490	48
	4"	100	100	406	410	406	255	200	157	–	2	30.5	8– ϕ 22	525	65
	6"	150	150	403	419	457	320	270	216	–	2	35	12– ϕ 22	611	130
	8"	200	201	597	600	597	380	330	270	–	2	40	12– ϕ 25	750	235
	10"	250	252	673	676	673	445	387.5	324	–	2	46.5	16– ϕ 29	826	305
	12"	300	303	762	765	762	520	451	381	–	2	49.5	16– ϕ 32	920	410
	14"	350	334	826	829	826	585	514.5	413	–	2	52.5	20– ϕ 32	990	550
	16"	400	385	902	905	902	650	571.5	470	–	2	56	20– ϕ 35	1090	925
	18"	450	436	978	981	978	710	628.5	533	–	2	59	24– ϕ 35	1200	1135
	20"	500	487	1054	1060	1054	775	686	584	–	2	62	24– ϕ 35	1320	1365
600	2"	50	50	292	295	292	165	127	92	–	7	26	8– ϕ 19	430	50
	3"	80	75	356	359	356	210	168.5	127	–	7	32	8– ϕ 22	490	74
	4"	100	100	432	435	432	275	216	157	–	7	38.5	8– ϕ 25	570	101
	6"	150	150	559	562	559	355	292	216	–	7	48	12– ϕ 29	645	202
	8"	200	201	660	664	660	420	349	270	–	7	56	12– ϕ 32	780	364
	10"	250	252	787	791	787	510	432	324	–	7	64	16– ϕ 35	860	473
	12"	300	303	838	841	838	560	489	381	–	7	67	20– ϕ 35	985	636
	14"	350	334	889	892	889	605	527	413	–	7	70	20– ϕ 39	1050	853
	16"	400	385	991	994	991	685	603	470	–	7	77	20– ϕ 41	1160	1434
	18"	450	436	1092	1095	1092	745	654	533	–	7	83	20– ϕ 44	1275	1759
	20"	500	487	1194	1200	1194	815	724	584	–	7	89	24– ϕ 44	1410	2116

Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

V TYPE BALL VALVE

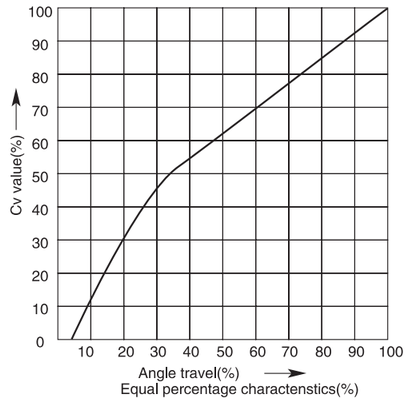
USAGE

The V type ball valve is suitable for use on various pipelines of Class 150~Class 300. According to different user requirements, the V type ball can be used for two purposes. One is it can be used to cut off or connect the medium in the pipeline. The other is it can serve as a control valve for controlling parameters such as flow rate of medium in the pipeline. The V type ball valve for cut-off purpose can adopt different driving modes such as manual operation, worm and worm gear transmission. pneumatic operation and electric operation. The V type ball valve for control purpose adopt the driving modes such as pneumatic operation and electric operation. By using different materials, the V type ball valve can be used for various media such as water, steam, oil, liquefied gas, natural gas, coal gas, nitric acid, acetic acid, oxidizing medium, urea and etc.
The connection ends of V type ball valve can be wafer or flange.

STRUCTURAL FEATURES

1.The V type ball valve adopts disc spring or cylindrical spring loaded moveable metal seat structure provided with compensation character, so no problems such as blocking or release of V type ball and seat will occur. The sealing is reliable and the service life is long.
2. The V type notch of the ball plays the shearing function between the metals, so the valve is especially suitable for media of high viscosity, containing fiber, solid granules, slurry and paper pulp.
3. According to different service conditions, the metal seated ball and seat sealing face can be susbjected to various advanced technologies such as nickel-base alloy (HRC≥ 60) spray welding, tungsten cobalt alloy (HRC≥ 70)HVOF coating, suitable for various severe service conditions.
4. When the valve is fully opened, the flow is high and pressure loss is low, and the media will not deposit in the middle cavity of valve. The valve has flow characteristics of equal percentage, and the V type ball valve for control purpose has a wide adjusting range with the maximum adjusting ratio of 100:1. In addition, the valve is also provided with precise control and reliable positioning functions.
5. Compact structure, strong adaptability. The V type ball valve for cut-off purpose has good sealing performance and can replace various valves such as gate valve, globe valve, ordinary ball valve and etc.

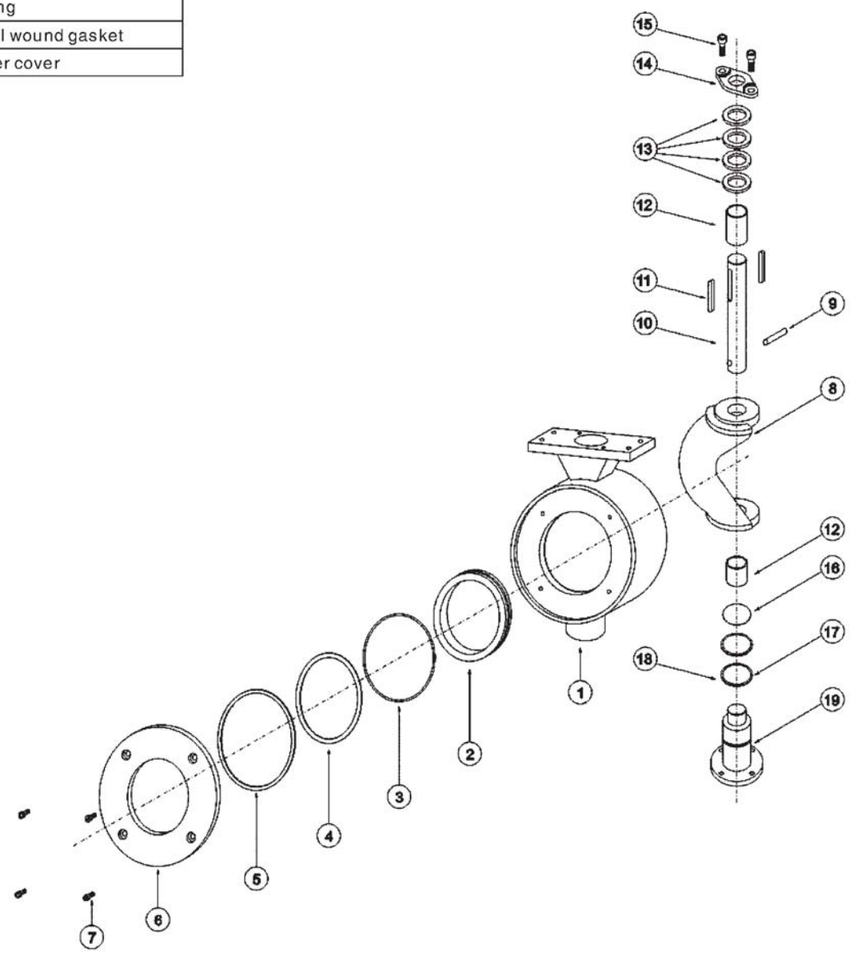
Flow coefficient chart



Relation of relative opening and flow coefficient Cv of the V type ball valve for control purpose

inside nominal diameter		relative opening					
		10%	30%	50%	70%	90%	100%
DN	NPS	discharge coefficient Cv					
25	1	0.33	1.6	4.6	10	20	33
40	1 1/2	0.85	4.5	15	29	60	90
50	2	1.36	7.6	22	48	100	145
65	2 1/2	2.3	12	37	80	165	250
80	3	3.1	16.5	50	108	215	330
100	4	5	27	80	178	365	530
125	5	7	36	108	238	488	710
150	6	10	53	160	356	740	1080
200	8	16	85	258	573	1195	1750
250	10	31	148	396	825	1460	2170
300	12	42	202	552	1110	2130	3120

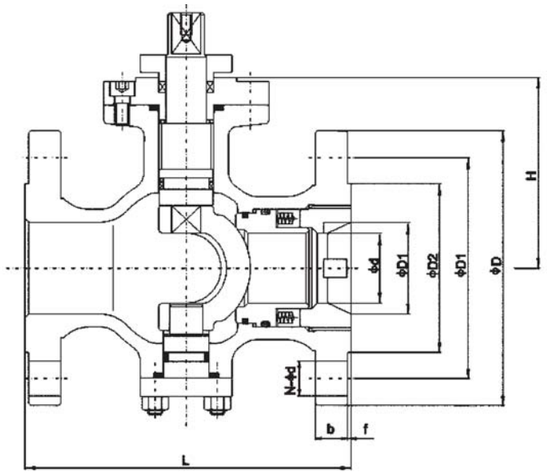
1	Body
2	Seat
3	O Ring
4	Disc spring
5	Metal wound gasket
6	Clamping ring
7	Socket head cap screw
8	Ball
9	Pin
10	Stem
11	Flat Key
12	Sliding bearinjg
13	Packing
14	Packing gland
15	Socket head cap screw
16	Thrust bearing
17	O Ring
18	Metal wound gasket
19	Lower cover



PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 1~12				
Nominal pressure (MPa)			Class 150~Class 300				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
	3	O Ring	VITON				
	4	Disc spring	17–7PH				
	5	Metal wound gasket	SST+Graphite				
	6	Clamping ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	7	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	8	Ball	ASTM A216 WCB+HF	ASTM A351 CF8+HF	ASTM A351 CF8M+HF	ASTM A351 CF3+HF	ASTM A351 CF3M+HF
	9	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
	10	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	11	Flat Key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	12	Sliding bearinjg	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	13	Packing	Graphite				
	14	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
	15	Socket head cap screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
	16	Thrust bearing	PTFE				
	17	O Ring	VITON				
	18	Metal wound gasket	SST+Graphite				
	19	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic acid	Strong Oxidizer	Urea
		Applicable temperature	Regular products:=200℃, special orders:=425℃(carbon steel)or=540℃(Cr–Mo steel, Cr–Mo–V steel, stainless steel)				
Design and manufacturing			API 608, API 6D				
Face–to–face dimensions			ASME B16.10, API 6D				
Type of connection			Flange	ASME B16.5		Wafer	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

V TYPE BALL VALVE



Pressure rating	Nominal Diameter		d	d1	L	Flange						H	Weight (kg)
Class	NPS	DN				D	D1	D2	f	b	N– ϕ d		
150	1"	25	19	25	127	110	79.5	51	2	11	4– ϕ 16	80	△
	1 1/4"	32	25	32	140	115	859	64	2	11	4– ϕ 16	86	△
	1 1/2"	40	32	38	165	125	98.5	73	2	13	4– ϕ 16	95	△
	2"	50	38	50	178	150	120.5	92	2	14.5	4– ϕ 19	104	△
	3"	80	50	75	203	190	152.5	127	2	17.5	4– ϕ 19	114	△
	4"	100	75	100	229	230	190.5	157	2	22.5	8– ϕ 19	160	△
	6"	150	100	150	267	280	241.5	216	2	24	8– ϕ 22	200	△
	8"	200	150	201	292	345	298.5	270	2	27	8– ϕ 22	240	△
	10"	250	201	252	330	405	362	324	2	29	12– ϕ 25	275	△
	12"	300	252	303	356	485	432	381	2	30.5	12– ϕ 25	330	△
300	1"	25	19	25	127	125	89	51	2	16	4– ϕ 19	80	△
	1 1/4"	32	25	32	140	135	98.5	64	2	17.5	4– ϕ 19	86	△
	1 1/2"	40	32	38	165	155	114.5	73	2	19.5	4– ϕ 22	95	△
	2"	50	38	50	178	165	127	92	2	21	8– ϕ 19	104	△
	3"	80	50	75	203	210	168.5	127	2	27	8– ϕ 22	114	△
	4"	100	75	100	229	255	200	157	2	30.5	8– ϕ 22	160	△
	6"	150	100	150	267	320	270	216	2	35	12– ϕ 22	200	△
	8"	200	150	201	292	380	330	270	2	40	12– ϕ 25	240	△
	10"	250	201	252	330	445	387.5	324	2	46.5	16– ϕ 29	275	△
	12"	300	252	303	356	520	451	381	2	49.5	16– ϕ 32	330	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

3-WAY/4-WAY BALL VALVE

USAGE

The three-way/four-way ball valve is used for switching, converging and diverging pipeline medium flow direction. It is wedely applied in metallurgy, mine, petroleum, chemical industry, electric power, light industry, shipping industry and automation control systems, suitable for service conditions such as switching, mixing and diverging of fluid, gas and powder.

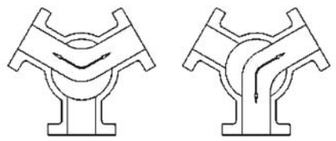
STRUCTURAL CHARACTERISTICS

The three-way/four-way ball valve is provided with reliable sealing and smooth flow channel so as to ensure accuracy of opening and closing through small fluid pressure loss and stable flow channel. According to the forms of flow channel, the valve can be classified into "Y" pattem three-way ball valve, "L" pattern three-way ball valve, "T" pattern three-way ball valve and "LL" pattern four-way ball valve.

"Y" pattern Three-way ball Valve (Q42 Type)

The form of flow channel is "Y" pattern, which can effectively realize switching from service condition 1 to service condition 2. It is mainly used for switching "Y" pattern pipeling flow direction.

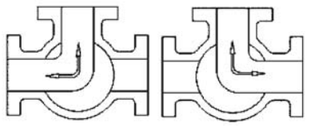
Two service conditions of "Y" pattern three-way ball valve



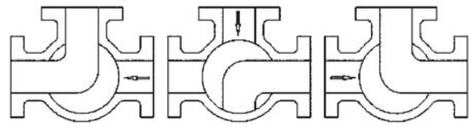
"L" Pattern Three-way Ball Valve (Q44 Floating Type, Q49 Trunnion type)

The "L" pattern three-way ball valve is used for switching pipeline medium flow direction. It can connect two channels that are vertical with each other. The ordinary "L" pattern floating three-way ball valve may not be suitable for some service conditions, which shall be paid special attention to when users select it.

Two service conditions of "L" pattern three-way ball valve



Several service conditions for which the ordinary "L" pattern floating three-way ball valve is not suitable



DAEJU CONTROL CO., LTD

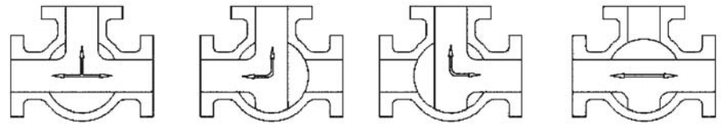
3-WAY/4-WAY BALL VALVE

STRUCTURAL FEATURES

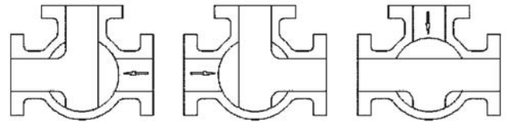
"T" Pattern Three-way Ball Valve (Q45 Floating Type, Q48 Trunnion Type)

The "T" pattern three-way ball valve is used for switching, converging and diverging medium flow direction. The "T" pattern ball channel can make three channels connect with each other or two of them connect with each other to realize two, three or found kinds of functions. Different valve designs are adopted to realize different functions. Therefore, users shall make detailed descriptions to the service requirements when selecting and ordering the "T" pattern three-way ball valve, so that our company can make designs and configurations correctly. The ordinary "T" pattern floating three-way ball valve may not be suitable for some service conditions, which shall be paid special attention to when users select it.

Several service conditions of "T" pattern three-way ball valve



Several service conditions for which the ordinary "T" pattern floating three-way ball valve is not suitable

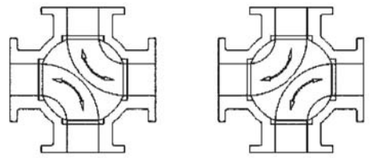


"LL" Pattern Four-way Ball Valve

The "LL" pattern Four-way ball valve is provided with four seats to realize switching from service condition 1 to service condition. 2. It can simultaneously switch the flow direction of two media, which realizes the effect of multiple functions in one valve with convenience and swiftness.

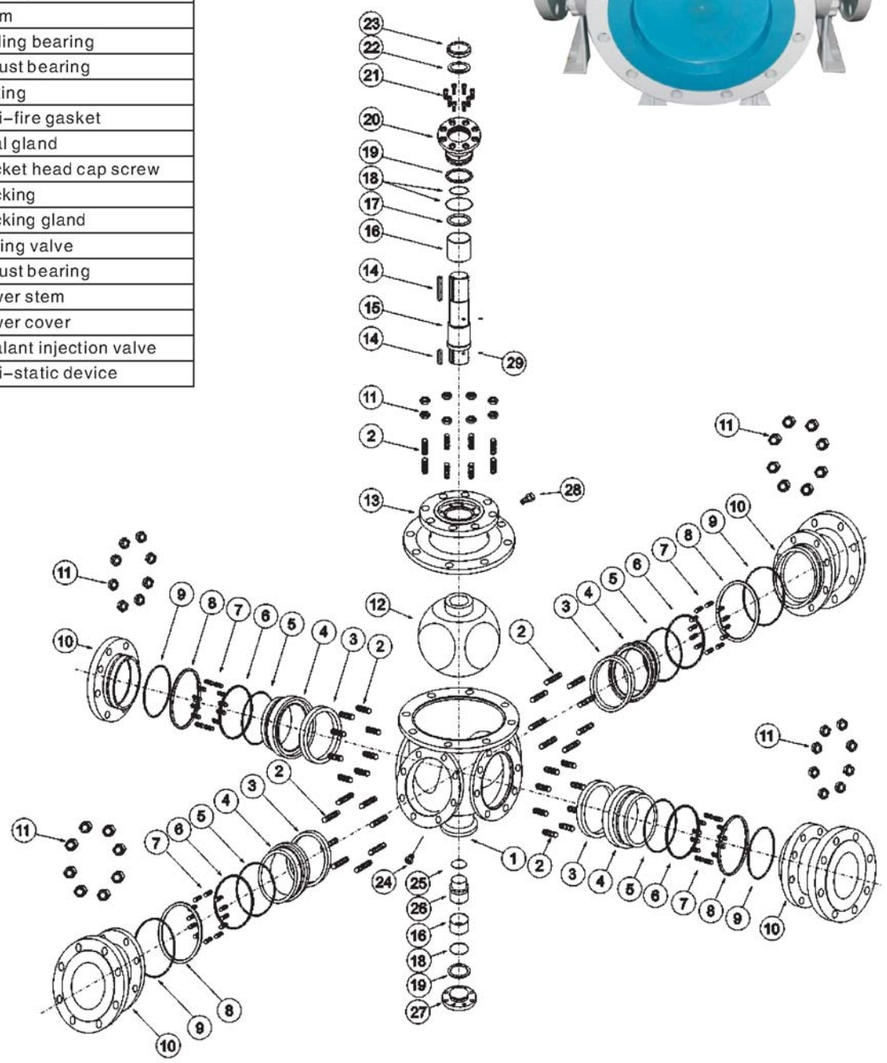
The work form is shown as follows:
1. When A(C) is the inlet, the two connections of A→B (C→D) or A→C (C→A) can be realized.
3. A cannot be realized.
A→D (C→B) or D→A (B→C) is impossible.

Several conditions of "LL" pattern four-way ball valve



3-WAY/4-WAY BALL VALVE
T PATTERN THREE-WAY BALL VALVE

1	Body
2	Stud
3	Seat
4	Seat ring
5	O Ring
6	Anti-fire packing
7	Spring
8	Anti-fire gasket
9	O Ring
10	Bonnet
11	Hexagon nut
12	Ball
13	Bonnet
14	Flat key
15	Stem
16	Sliding bearing
17	Thrust bearing
18	O Ring
19	Anti-fire gasket
20	Seal gland
21	Socket head cap screw
22	Packing
23	Packing gland
24	Draing valve
25	Thrust bearing
26	Lower stem
27	Lower cover
28	Sealant injection valve
29	Anti-static device

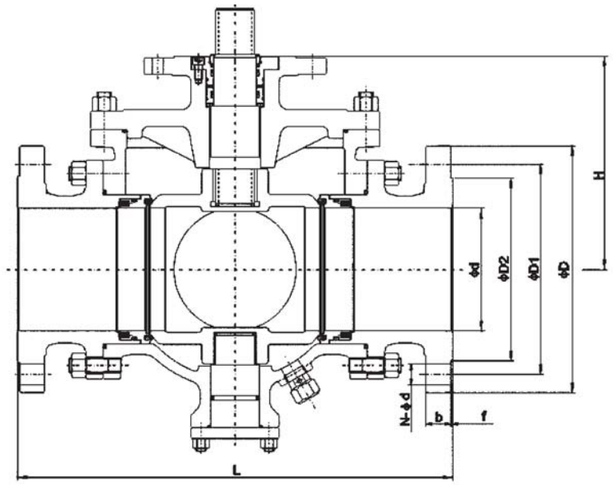


3-WAY/4-WAY BALL VALVE
T PATTERN THREE-WAY BALL VALVE

PART MATERIALS AND MAIN PARAMETERS

Nominal diameter (in)			NPS 2~20				
Nominal pressure (MPa)			Class 150~Class 300				
	No.	Part Name	Material				
			Carbon steel	Stainless steel			
Materials of Parts	1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	2	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	3	Seat	PTFE/ NYOLN/ PEEK/ PPL				
	4	Seat ring	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	5	O Ring	VITON				
	6	Anti-fire packing	Graphite				
	7	Spring	17-7PH				
	8	Anti-fire gasket	SST+Graphite				
	9	O Ring	VITON				
	10	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	11	Hexagon nut	A194 2HM	A194-8	A194-8M	A194-8	A194-8M
	12	Ball	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	13	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
	14	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
	15	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	16	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
	17	Thrust bearing	PTFE				
	18	O Ring	VITON				
	19	Anti-fire gasket	SST+Graphite				
	20	Seal gland	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	21	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
	22	Packing	Graphite				
	23	Packing gland	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
	24	Draing valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	25	Thrust bearing	PTFE				
	26	Lower stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	27	Lower cover	ASTM A105 · ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
	28	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
	29	Anti-static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions		Applicable media	Water,steam,oil,gas liquefied gas,natural gas,etc	Nitric acid	Acetic Acid	Strong Oxidizer	Urea
		Applicable temperature	≤120℃(PTFE), ≤80℃(NYLON), ≤250℃(PEEK), ≤250℃(PPL)				
Design and manufacturing			API 608, API 6D				
Type of connection			Flange	ASME B16.5		Wafer	ASME B16.5
Pressure test			API 598, API 6D				
Transmission mode			Manual, worm and worm gear transmission, pneumatic, electric				

3-WAY/4-WAY BALL VALVE
T PATTERN THREE-WAY BALL VALVE



Pressure rating	Nominal Diameter		d	L	Flange							H	Weight (kg)
Class	NPS	DN			D	D1	D2	D3	f	b	N– ϕ d		
150	2"	50	50	260	150	120.5	92	–	2	14.5	4– ϕ 19	205	△
	3"	80	75	320	190	152.5	127	–	2	17.5	4– ϕ 19	245	△
	4"	100	100	370	230	190.5	157	–	2	22.5	8– ϕ 19	305	△
	6"	150	150	510	280	241.5	216	–	2	24	8– ϕ 22	340	△
	8"	200	201	580	345	298.5	270	–	2	27	8– ϕ 22	425	△
	10"	250	252	670	405	362	324	–	2	29	12– ϕ 25	450	△
	12"	300	303	760	485	432	381	–	2	30.5	12– ϕ 25	530	△
	14"	350	334	850	535	476	413	–	2	33.5	12– ϕ 29	630	△
	16"	400	385	980	595	540	470	–	2	35	16– ϕ 29	680	△
	18"	450	436	1080	635	578	533	–	2	38.5	16– ϕ 32	625	△
	20"	500	487	1220	700	635	584	–	2	41.5	20– ϕ 32	670	△
	24"	600	589	1360	815	749.5	692	–	2	46.5	20– ϕ 35	705	△
300	2"	50	50	260	165	127	92	–	2	21	8– ϕ 19	205	△
	3"	80	75	320	210	168.5	127	–	2	27	8– ϕ 22	245	△
	4"	100	100	370	255	200	157	–	2	30.5	8– ϕ 22	305	△
	6"	150	150	510	320	270	216	–	2	35	12– ϕ 22	340	△
	8"	200	201	580	380	330	270	–	2	40	12– ϕ 25	425	△
	10"	250	252	670	445	387.5	324	–	2	46.5	16– ϕ 29	450	△
	12"	300	303	760	520	451	381	–	2	49.5	16– ϕ 32	530	△
	14"	350	334	850	585	514.5	413	–	2	52.5	20– ϕ 32	630	△
	16"	400	385	980	650	571.5	470	–	2	56	20– ϕ 35	680	△
	18"	450	436	1080	710	628.5	533	–	2	59	24– ϕ 35	625	△
	20"	500	487	1220	775	686	584	–	2	62	24– ϕ 35	670	△
	24"	600	589	1360	915	813	692	–	2	68.5	24– ϕ 41	705	△

△Please consult the factory:
Note: The weight value is only for flanged valve. Please consult our factory for higher nominal diameter or weight. Any modification to sizes H, H1 and weight will not be notified otherwise.

DAEJU CONTROL CO., LTD

Every process from technical & price quotation to production and Delivery firmly comply with ISO 9001 Quality Control System.

Best Partner for your way

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