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- Main Connection Dimensions Table

ENGINEERING DATA

超特阀门
CHAOTE VALVE

Chemical Components of Raw Materials

Material	Chemical Components %											Mechanical Features				Hardness	
	C ≤	Mn ≤	P ≤	S ≤	Si ≤	Cr ≤	Mo ≤	Ni ≤	Cu ≤	V ≤	Nb ≤	Tensile Strength (Mpa)	Yield Strength (Mpa)	Tensile Stretch % ≥	Shrinkage % ≥	Brinell Hardness HB, ≤	J, ≥
A105	0.35	0.60~1.05	0.035	0.040	0.10~0.35	0.30	0.12	0.4	0.40	0.08	0.02	485	250	30	30	187	
A182 F11	0.05~0.15	0.30~0.60	0.030	0.030	0.50~1.00	1.00~1.50	1.44~0.65					415	205	20	45	121~174	
A182 F22	0.05~0.15	0.30~0.60	0.040	0.040	0.50	2.00~2.50	0.87~1.13					415	205	20	35	170	
A182 F304	0.08	2.00	0.045	0.030	1.00	18.00~20.0		8.00~11.0				515	205	30	50		
A182 F304L	0.030	2.00	0.045	0.030	1.00	18.00~20.0		8.00~13.0				485	170	30	50		
A182 F316	0.08	2.00	0.045	0.030	1.00	16.00~18.0	2.00~3.0	10.00~14.0				515	205	30	50		
A182 F316L	0.030	2.00	0.045	0.030	1.00	16.00~18.0	2.00~3.0	10.00~15.0				485	170	30	50		
A182 F51	0.030	2.00	0.030	0.020	1.00	21.00~23.0	2.5~3.5	4.5~6.5				620	450	25	45		
A182 F6A	0.15	1.00	0.040	0.030	1.00	11.5~13.5		0.50				585	380	18	35	167~229	
A193 B7	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.2						860	720	16	50	321	
A193 B7M	0.37~0.49	0.65~1.10	0.035	0.040	0.15~0.35	0.75~1.2	0.15~0.25					690	550	18	50	235	
A193 B8	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~11.0				515	205	30	50	223	
A193 B8M	0.08	2.00	0.045	0.030	1.00	16.0~18.0	2.00~3.00	10.0~14.0				515	205	30	50	223	
A193 B16	0.36~0.47	0.45~0.70	0.035	0.040	0.15~0.35	0.80~1.15	0.50~0.65			0.25~0.35		860	720	18	50	321	
A194 2H	≥0.40	1.00	0.040	0.050	0.040												
A194 2HM	≥0.40	1.00	0.040	0.050	0.040												
A194 8	0.08	2.00	0.045	0.030	1.00	18.0~20.0		8.0~10.0									
A194 8M	0.08	2.00	0.045	0.030	1.00	16.0~18.0	0.45~0.65	10.0~14.0									
A216 WCB	0.30	1.20	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		250	22	35			
A216 WCC	0.25	1.00	0.04	0.045	0.60	0.50	0.20	0.50	0.30	0.03		275	22	35			
A217 C5	0.20	0.40~0.70	0.04	0.045	0.75	4.0~6.5	0.45~0.65	0.50	0.50			415	22	35			
A217 CA15	0.15		0.04	0.040	1.50	11.5~14.0	0.50	1.00				450	18	30			
A217 WC6	0.05~0.20	0.50~0.80	0.04	0.045	0.60	1.00~1.50	0.45~0.65	0.50	0.50			275	20	35			
A217 WC9		0.40~0.70	0.04	0.045	0.60	2.00~2.75	0.90~1.20		0.50			275	20	35			
A276 410	0.08~0.15		0.040	0.030	1.00	11.5~13.5						480	275	20	45		
A276 420			0.040	0.030	1.00	12.0~14.0										241	
A320 L7	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					860	725	16	50		Avg:27; min:20
A320 L7M	0.38~0.048	0.75~1.00	0.035	0.040	0.15~0.35	0.80~1.10	0.15~0.25					690	550	18	50	235	Avg:27; min:20
A336 F22	0.05~0.15	0.30~0.60	0.025	0.025	0.25	2.00~2.50	0.90~1.10					310	19	40			
A350 LF1	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	205	28	38			Avg:18; min:14
A350 LF2	0.30	0.60~1.35	0.035	0.040	0.15~0.30	0.30	0.12	0.40	0.40	0.08	0.02	250	30	30			Avg:20; min:16
A351 CF3	0.03	0.15	0.040	0.040	2.00	17.0~21.0	0.50	8.0~12.0				485	205	35			
A351 CF3M	0.03	0.15	0.040	0.040	1.50	17.0~21.0	2.0~3.0	9.0~13.0				485	205	30			
A351 CF8	0.08	0.15	0.040	0.040	2.00	18.0~21.0	0.50	8.0~11.0				485	205	35			
A351 CF8M	0.08	0.15	0.040	0.040	1.50	18.0~21.0	2.0~3.0	9.0~12.0				485	205	30			
A351 CF8C	0.08	0.15	0.040	0.040	2.00	18.0~21.0	0.50	9.0~12.0				485	205	30			
A351 CN7M	0.07	0.15	0.040	0.040	1.50	19.0~22.0	2.0~3.0	27.5~30.5	3.0~4.0			425	170	35			
A352 LC1	0.25	0.50~0.80	0.040	0.045	0.60		0.45~0.65					450~620	240	24	35		Avg:18; min:14
A352 LC2	0.25	0.50~0.80	0.040	0.045	0.60			2.0~3.0				485~655	275	24	35		Avg:20; min:16
A352 LC3	0.15	0.50~0.80	0.040	0.045	0.60			3.0~4.0				485~655	275	24	35		Avg:20; min:16
A352 LCB	0.30	1.00	0.040	0.045	0.60	0.50	0.20	0.50	0.30	0.03		450~620	240	24	35		Avg:18; min:14
A352 LCC	0.25	1.20	0.040	0.045	0.60	0.50	0.20	0.50		0.03		485~655	275	22	35		Avg:20; min:16

Characteristics of Soft Seal Materials

■ Seat ring

Characteristics		Nylon	PTFE	PEEK	Molom	PPL
Temperature Range-℃		-35~94	-196~205	-196~230	-35~150	-46~200
Pressure Rating		900~1500	150~600	150~2500	150~2500	150~600
Mechanical Features	Hardness	D75	D58	D85	D78	D65
	Tensile MPa	80	25	96	90	25
	Tensile Stretch	60	250	50	30	250
Physical Property	Proportion	1.14	2.2	1.4	1.15	2.0
	Water Solubility	0.2	0.01	0.18	0.15	0.1~0.2
	Divergence Rate	5*10 ⁶ RAD	10 ⁴ RAD	10RAD		9*10 ⁶ RAD
Applied Range		High Pressure & Low Temperature Working Condition	Various Chemical Medium and Low Temperature Condition	High Temperature, High Pressure and Steam Divergence.	Low Pressure and Low Temperature	High Pressure and High Corrosive

■ Sealing Ring

Types	Fluororubber	Flexible graphite	PTFE	NBR	Buna
Temperature Range-℃	-35~105	-51~260	-101~220	-34~149	-34~149
Proportion	1.85	——	2.2	1.2	1.31
Hardness	D75	D90	D65	D50	D90

■ Gasket

Types	EPR	SS316+Graphite Gasket	SS316+PTFE Gasket
Temperature Range-℃	-200~260	-200~260	-200~260
Applied Range	Fire proof(100%)	Water proof(100%)	Lowest Temperature & Highest Corrosive
Hardness	0~14	0~14	0~14

Ball Valve Torques Table

■ Designing Torques of Ball Valve

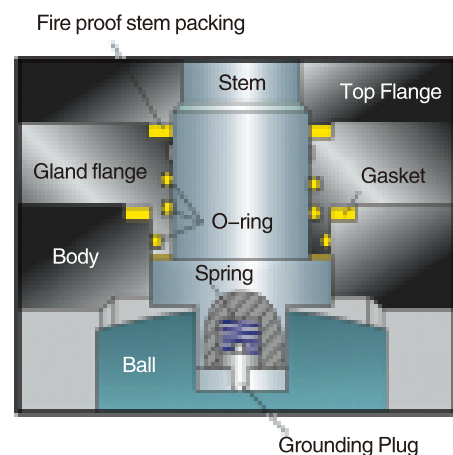
Size (In)	Designing Torques (N.M)				
	150LB	300LB	600LB	900LB	1500LB
1 / 2	3	7	19	25	42
3 / 4	5	12	35	55	72
1	11	26	68	108	155
1-1 / 2	16	38	130	195	275
2	25	60	190	264	420
2-1 / 2	50	120	360	435	568
3	65	160	460	650	836
4	125	280	770		
6	410	950			
8	700				

■ Designing Torques of Trunnion Ball Valve

Size (In)	Designing Torques (N.M)				
	150LB	300LB	600LB	900LB	1500LB
2	25	60	190	268	426
3	65	160	460	646	1032
4	125	280	770	1092	1758
6	410	950	1980	2790	4088
8	700	1550	3280	4625	7349
10	1109	2010	5250	7665	12164
12	1750	3320	7219	10152	16293
14	2669	5010	9860	13804	21907
16	3910	7530	14500	20445	31894
18	6220	11819	19610	27636	44190
20	7530	14400	29030	40890	64933
22	8750	16800	35750	50372	79587
24	10570	19600	42520		
26	12250	24340	49518		
28	14521	28200	58500		
32	21052	29800	62015		
36	28040	54510	109502		
40	35030	65800	137510		

- Notes:
- 1、The torques is based on common temperature, PTF for Class 150 to 300, and Nylon for Class 600 to 1500Lb.
 - 2、For ultralow temperature working condition, the torques will be increased to 2 to 2.5 times.
 - 3、The torques in the table is for reference, determining the type and size of the actuators. We recommend a safety factor of 1.3 to 1.5.
 - 4、The torques will vary with the medium and the materials.

Designing Characteristics of Trunnion Ball Valve



■ Designing of Anti-blow Out Stem

The stem is designed separately from the ball with integral T-type round shoulder, retained by gland.

■ Anti-static Device

Spring plug graphite type anti-static device are applied between the ball, stem, gland flange and body, to keep the electrical continuity between all the metallic components, and ensure the resistance lower than the most severe service requirement.

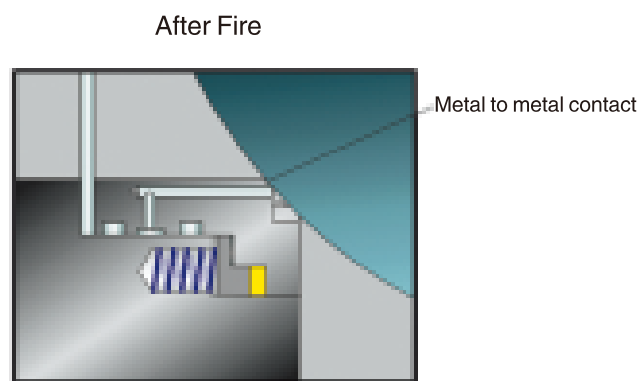
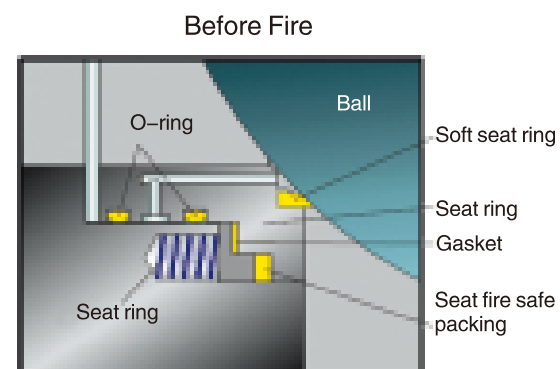
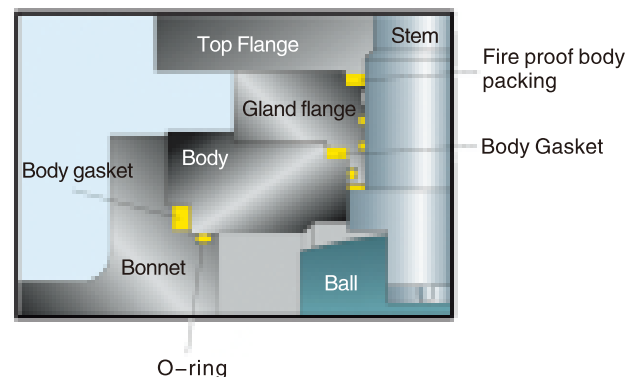
■ Fire Proof Design

External leakage prevention

All the possible external leakage point between stem and gland flange, gland flange and body, body and adapter are sealed with primary O-ring, then secondary graphite gasket. When fire burns out the primary o-ring seal, the secondary graphite gasket seal still can prevent the process medium from external leakage.

Internal Leakage Prevention

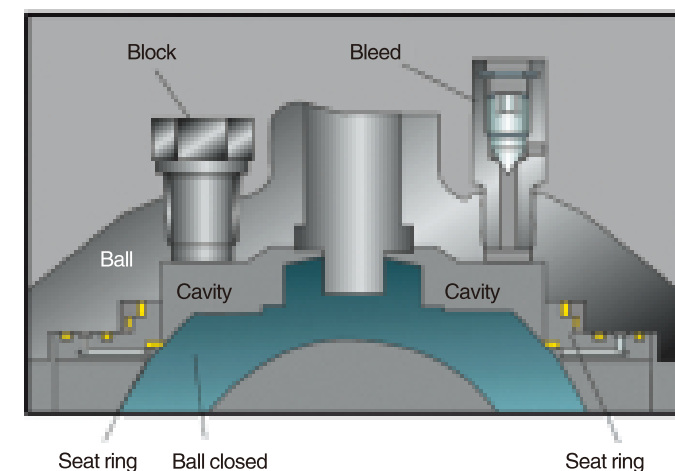
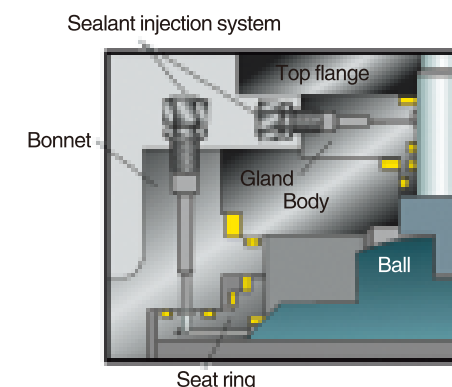
When fire burns out the primary o-ring seal between the floating seat ring and adapter, also the seal insert between seat ring and ball, the secondary graphite seal between seat ring and adapter, and seat ring & ball metal to metal contact preloaded by spring will minimize the internal process medium leakage.



Designing Characteristics of Trunnion Ball Valve

■ Emergent Sealant Injection System

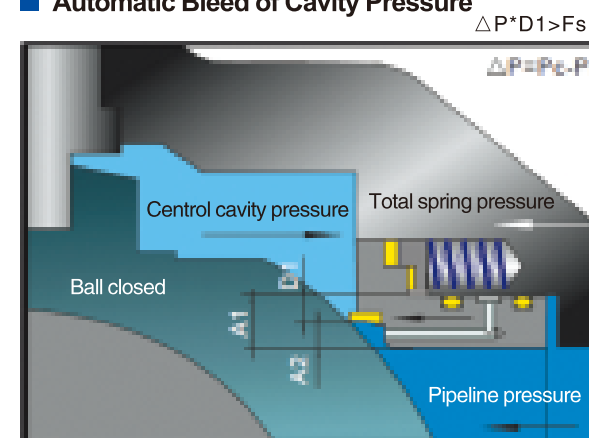
Each valve of NPS 6" and larger is equipped with sealant injection located at stem and seats area. The injection is integrated with check valve to provide backup sealing, also a check valve is equipped at front of the sealant injection to avoid blowing out in case wrong operation. When the soft sealing materials(seat inserts and o-rings) are damaged and leakage happened by fire o other accident, the sealant can be injected the injection fittings.



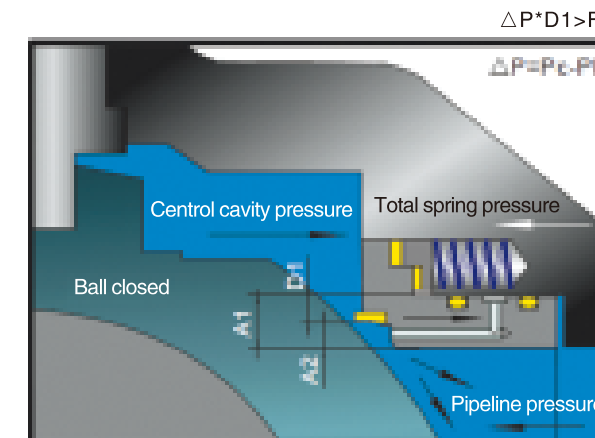
■ Double Block and Bleed

When the ball is in the closed position, each seat seals off the process medium independently at the same time between the up/down stream and body cavity; it allows bleeding of the trapped cavity pressure trough drain or vent valve. The double block and bleed function makes it possible to flush the valve under pressure and verify that seats are sealing properly.

■ Automatic Bleed of Cavity Pressure

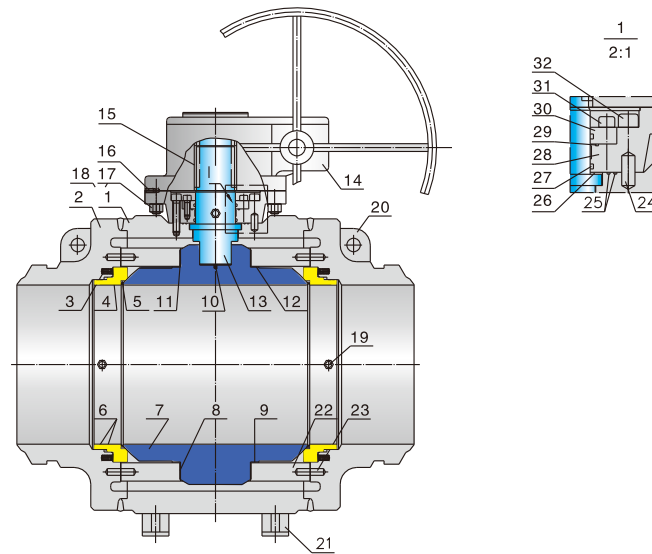
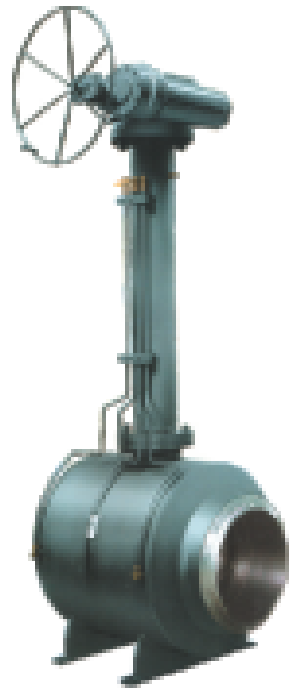


When the cavity pressure (P_c) is less than force of preload of spring (F_s) and the pressure of medium of piping lines (P_1), that is $\Delta P * D1 < F_s$, ball and seat preload contact ensuring the sealing.



Otherwise, when the pressure of cavity (P_c) is larger than force of spring and the pressure of medium of piping lines (P_1), that is $\Delta P * D1 > F_s$, the pressure of cavity pushes seat ring, leaving a small space between seat ring and the ball, so that the over load pressure of cavity is automatically drained to the pipelines, recovering to the pressure balance of valve cavity and the pipelines.

Full Welded Ball Valve



Pressure Test

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	
900	15.0	23.0	16.5	
1500	25.0	37.0	27.5	

General Description

Our company brought in advanced technology and automatic welder to weld with minimized deformation of the valves. This type of valve is designed according to API 6D, with continuous improvement to meet the open/close. The body is made up of three pieces welded, lighter, higher hardness, compact structure, not only diminishing the flange between bonnet and body, but also decrease the overall dimension and outside leakage point. Various standard materials are used to improve the valves to meet customers' request. Full welded ball valves have been used widely in transportation of coal gas, gas, district heat supply network, offset plat and oil field, etc.

Technical Requirements

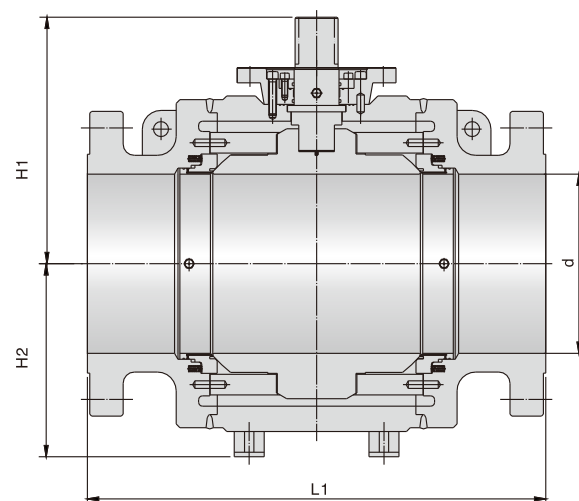
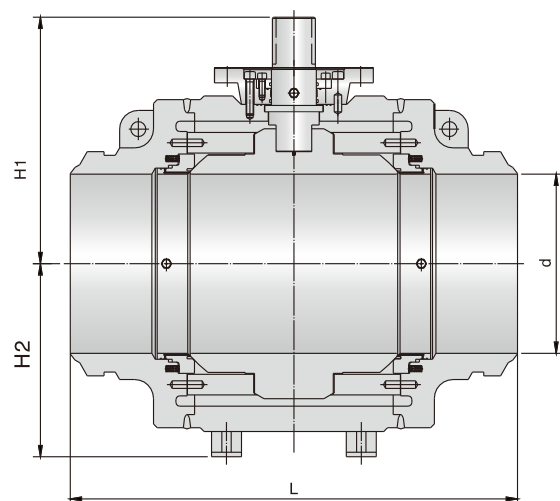
Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/ T9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Butt Welding	GB/T 12224	ASME B16.25	DIN 3239
	Structure Length	GB/T 12221	API 6D	DIN 3202
Applied Conditions	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃ ~ 150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.		

Full Welded Ball Valve

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Body	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
2	Left, Right Body	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
3	Spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
4	Seat	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
5	Seal ring	RPTFE	RPTFE	RPTFE	RPTFE
6	O-ring	Fluoro rubber	Fluoro rubber	Fluoro rubber	Fluoro rubber
7	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
8	Bearing	SF-1	SF-1	SF-1	SF-1
9	Thrust Bearing	SF-1	SF-1	SF-1	SF-1
10	Anti-static spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
11	Bearing	SF-1	SF-1	SF-1	SF-1
12	Anti-static spring	SF-1	SF-1	SF-1	SF-1
13	Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
14	Worm Gear	Assembly	Assembly	Assembly	Assembly
15	Key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
16	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
17	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
18	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
19	Sealant Injection Valve	Assembly	Assembly	Assembly	Assembly
20	Lug	A3	304	A3	A3
21	Foot Stool	A3	304	A3	A3
22	Support Plate	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
23	Pin	A276-420	304	A276-420	304
24	Position Pin	A276-420	304	A276-420	304
25	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
26	Stem Gasket	SF-1	SF-1	SF-1	SF-1
27	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
28	Connection Plate	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
29	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
30	Gland	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
31	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
32	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M

Full Welded Ball Valve



■ Dimensions

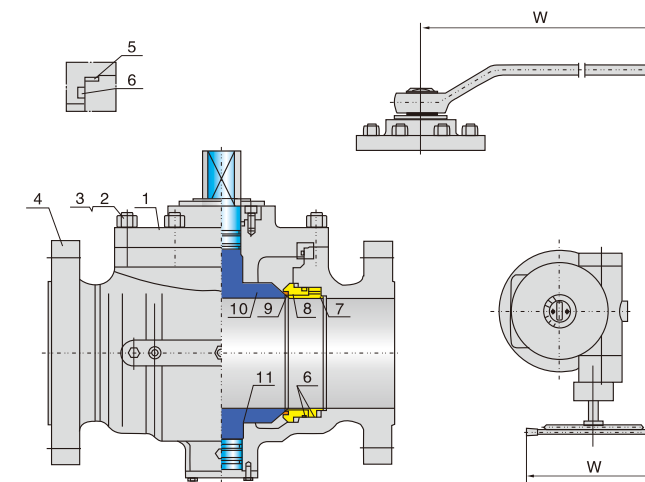
Class	NPS	Dimensions (mm)						Wt. Welded (Kg)
		d	L	L1	H1	H2	W	
150LB 300LB	6	152	403	394/403	303	185	460	185
	8	203	521	457/502	342	226	460	276
	10	254	559	533/568	379	272	705	385
	12	305	635	610/648	418	311	705	535
	14	337	762	686/762	455	348	705	735
	16	387	838	762/838	558	417	800	1585
	18	438	914	864/914	598	453	800	2340
	20	489	991	914/991	630	479	800	2520
	24	591	1143	1067/1143	705	587	800	3985
	26	635	1245	1143/1245	777	600	800	4800
	28	686	1346	1245/1346	800	650	800	5760
	30	737	1397	1295/1397	860	692	800	6715
	32	781	1524	1372/1524	908	736	800	8120

Class	NPS	Dimensions (mm)						Wt. Welded (Kg)
		d	L	L1	H1	H2	W	
900LB	6	152	610	610	305	300	705	330
	8	203	737	737	395	400	800	595
	10	254	838	838	430	430	800	935
	12	305	965	965	465	455	800	1485
	14	324	1029	1029	545	545	800	1955
	16	375	1130	1130	615	615	800	2975
	18	426	1219	1219	685	645	800	4010
	20	473	1321	1321	750	685	800	4710
	24	571	1549	1549	895	775	800	8285

Class	NPS	Dimensions (mm)						Wt. Welded (Kg)
		d	L	L1	H1	H2	W	
600LB	6	152	559	559	309	245	460	230
	8	203	660	660	358	300	705	445
	10	254	787	787	409	340	705	658
	12	305	838	838	474	390	800	952
	14	337	889	889	502	428	800	1330
	16	387	991	991	532	475	800	2040
	18	438	1092	1092	636	545	800	2890
	20	489	1194	1194	674	570	800	3350
	22	540	1295	1295	725	628	800	4165
	24	591	1397	1397	765	700	800	5650

Class	NPS	Dimensions (mm)						Wt. Welded (Kg)
		d	L	L1	H1	H2	W	
1500LB	6	146	705	705	380	300	800	503
	8	194	832	832	490	400	800	795
	10	241	991	991	510	430	800	1615
	12	289	1130	1130	560	460	800	1945
	14	317	1257	1257	635	550	800	3350
	16	362	1384	1384	685	620	800	4615

Top Entry Trunnion Mounted Ball Valve



■ Technical standards

Pressure-temperature rating: ASME B16.34

Thickness : ASME B16.34

Port: API 6D

Structure length: ASME B16.10, API6D

Butt-welding ends: ASME B16.25

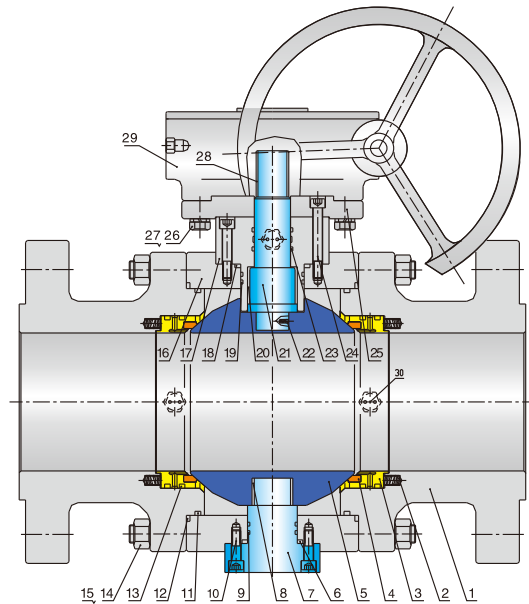
Test and inspection: API 6D

Body materials: WCB, LCB, LCC, CF8, CF8M, CF3, CF3M, A105, LF2

■ Main Parts Material Table

No.	Name	Carbon Steel	Cryogenic Carbon Steel	Stainless Steel
1	Body	ASTM A216-WCB	ASTM A352-LCB/LCC	ASTM A351-CF8/CF8M
2	Bonnet	ASTM A216-WCB	ASTM A352-LCB/LCC	ASTM A351-CF8/CF8M
3	Nut	ASTM A194-2H/2HM	ASTM A194 4	ASTM A194-2HM/8
4	Bolt	ASTM A193-B7/B7M	ASTM A320 L7	ASTM A193-B7M/B8
5	Gasket	304+Flexible Graphite	304+Flexible Graphite	304+Flexible Graphite
6	O-ring	VITON	VITON	VITON
7	Spring	INCONELX-750	INCONELX-750	INCONELX-750
8	Seat Support Ring	ASTM A105	ASTM A182 LF2	ASTM A182 F304/F316
9	Seal ring	RPTFE	RPTFE	RPTFE
10	Ball	ASTM A182-F6a	ASTM A182-F304	ASTM A182 F304/F316
11	Stem Bearing	SF-1	SF-1	SF-1

Forged Steel Ball Valve



Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	
900	15.0	23.0	16.5	
1500	25.0	37.0	27.5	

Technical Requirements

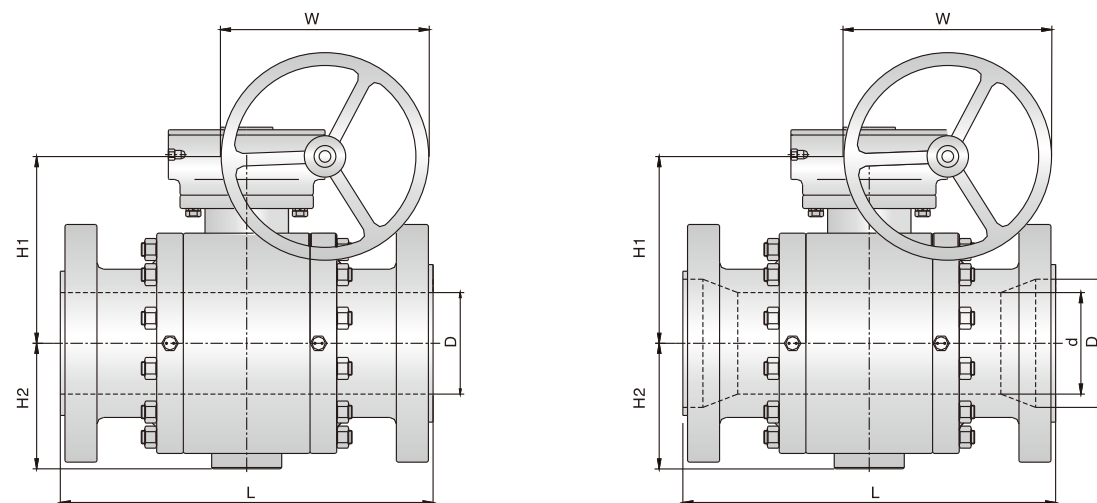
Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Pressure Test	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃~150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic		

Forged Steel Ball Valve

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Left, Right Body	ASTM A05	ASTM A182 F316	ASTM A105	ASTM A350 Lf2
2	Spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
3	Seat	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
4	Seal ring	RPTFE	RPTFE	RPTFE	RPTFE
5	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
6	Seal Gasket	304+Graphite	316+Graphite	304+Graphite	304+Graphite
7	Bottom Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2 F6a
8	Bearing	SF-1	SF-1	SF-1	SF-1
9	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
10	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
11	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
12	Seal Gasket	304+Graphite	316+Graphite	304+Graphite	304+Graphite
13	Seal Gasket	Fluororubber	Fluororubber	Fluororubber	Fluororubber
14	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7	ASTM A320 L7M
15	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
16	Central Body	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
17	Front Bonnet	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
18	Seal Gasket	304+Graphite	316+Graphite	304+Graphite	304+Graphite
19	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
20	Bearing	SF-1	SF-1	SF-1	SF-1
21	Top Stem	ASTM A182F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 Lf2
22	Anti-static Spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
23	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
24	Bolt	ASTM A183 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A193 L7M
25	Connection Plate	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
26	Nut	ASTM A193B7	ASTM A193 B8	ASTM A193 B7M	ASTM A193 L7M
27	Spring Gasket	65Mn	65Mn	65Mn	65Mn
28	Key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
29	Worm Gear	Assembly	Assembly	Assembly	Assembly
30	Sealant Injection Valve	Assembly	Assembly	Assembly	Assembly

Forged Steel Ball Valve

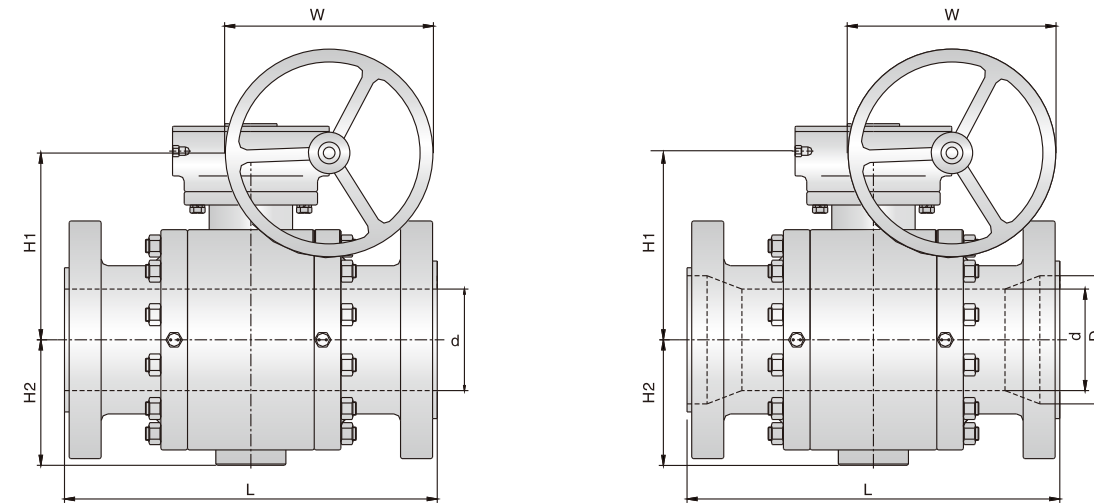


■ Dimensions

NPS (in)	Class 150LB Full Port					W.T. Kg
	d mm	L mm	H1 mm	H2 mm	W mm	
2	51	178	200	110	265	21
3	76	203	300	126	285	32
4	102	229	315	165	285	52
6	152	394	335	165	300*	164
8	203	457	405	200	300*	345
10	254	533	427	220	300*	440
12	305	610	465	265	500*	577
14	337	686	506	293	600*	859
16	387	762	622	341	600*	1144
18	438	864	666	392	600*	1440
20	489	914	730	435	600*	1944
22	540	991	833	480	600*	2352
24	591	1067	795	518	800*	2803
28	686	1245	935	542	800*	4045
30	737	1295	1010	605	800*	6200
32	781	1372	1060	650	800*	6490
34	835	1473	1077	650	800*	6704
36	876	1524	1115	700	800*	7935
40	978	1727	1400	865	800*	10271
42	1022	1855	1598	900	800*	12110
48	1168	2134	1722	1042	800*	18360

*Worm Gear Operated

Forged Steel Ball Valve



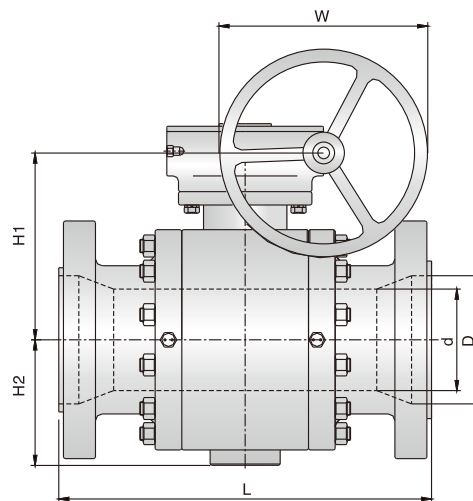
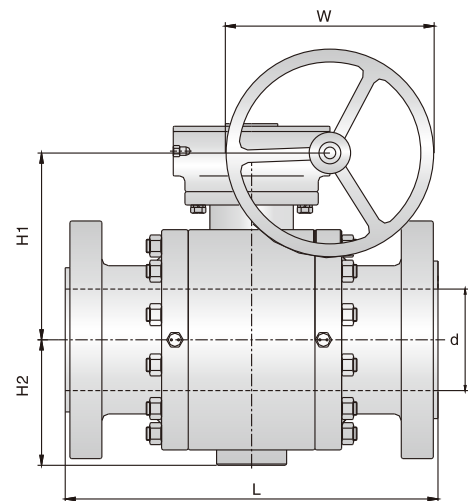
■ Dimensions

NPS (in)	Class 300LB Full Port					W.T. Kg
	d mm	L mm	H1 mm	H2 mm	W mm	
2	51	216	206	113	265	25
3	76	283	315	129	400	46
4	102	305	330	169	750	77
6	152	405	345	178	300*	211
8	203	502	415	185	300*	322
10	254	568	427	226	400*	512
12	305	648	465	269	500*	758
14	337	762	519	300	600*	975
16	387	838	638	350	600*	1350
18	438	914	683	402	600*	1715
20	489	991	748	446	600*	2090
22	540	1092	854	492	600*	2220
24	591	1143	917	531	800*	2990
28	686	1346	958	556	800*	4575
30	737	1397	1035	620	800*	6990
32	781	1524	1087	666	800*	7240
34	832	1626	1104	666	800*	7370
36	876	1727	1143	718	800*	8435
40	978	1930	1435	887	800*	11200
42	1022	2032	1638	923	800*	13050
48	1168	2692	1765	1068	800*	19000

*Worm Gear Operated

NPS (in)	Class 300LB Red. Port						W.T. Kg
	d mm	D mm	L mm	H1 mm	H2 mm	W mm	
3*2*3	51	76	283	206	113	265	36
4*3*4	76	102	305	315	129	400	55
6*4*6	102	152	405	330	169	750	112
8*6*8	152	203	502	345	148	300*	222
10*8*10	203	254	568	415	185	300*	381
12*10*12	254	305	648	427	226	500*	619
14*12*14	305	337	762	465	269	600*	920
16*14*16	337	387	838	519	300	600*	1050
18*16*18	387	438	914	638	350	600*	1530
20*18*20	438	489	991	683	402	600*	1830
22*18*22	438	540	1092	683	402	600*	2010
24*20*24	489	591	1143	748	446	600*	2220
28*24*28	591	686	1346	917	531	800*	3200
30*24*30	591	737	1397	917	531	800*	3400
34*28*34	686	832	1626	958	556	800*	4845
36*30*36	737	876	1727	1035	620	800*	6100
40*34*40	832	978	1930	1104	666	800*	8200
42*36*42	876	1022	2032	1143	718	800*	9200
48*40*48	978	1168	2692	1435	887	800*	15000

Forged Steel Ball Valve

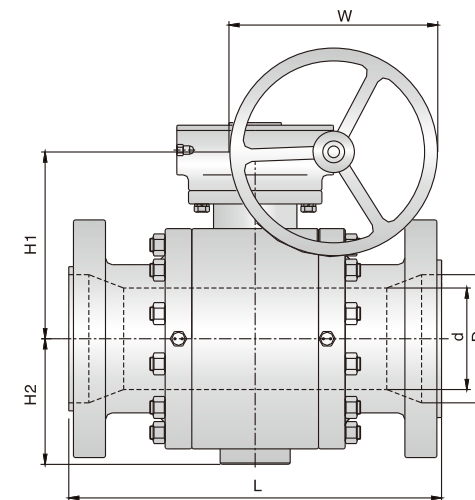
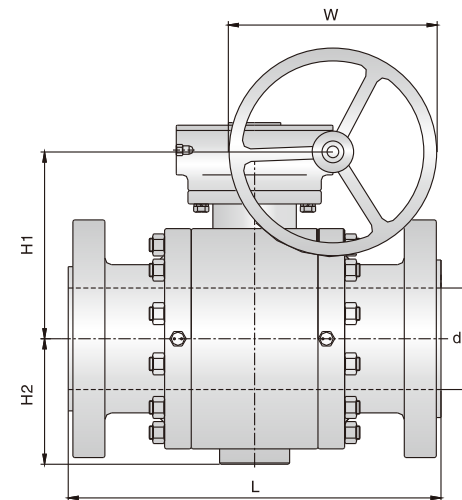


■ Dimensions

NPS (in)	Class 600LB Full Port					W.T. Kg
	d mm	L mm	H1 mm	H2 mm	W mm	
2	51	292	206	113	400	33
3	76	356	315	129	750	64
4	102	432	330	169	1000	117
6	152	559	345	178	300*	285
8	203	660	415	185	300*	452
10	254	787	427	226	500*	736
12	305	838	465	269	600*	1000
14	337	889	519	300	600*	1329
16	387	991	638	350	600*	1730
18	438	1092	683	402	600*	2285
20	489	1194	748	446	600*	2814
22	540	1295	854	492	800*	3370
24	591	1397	917	531	800*	4920
28	686	1549	958	556	800*	6060
30	737	1651	1035	620	800*	6690
32	781	1778	1087	666	800*	7825
34	832	1930	1104	666	800*	8460
36	876	2083	1143	718	800*	10650
40	978	2337	1435	887	800*	14700
42	1022	2438	1638	923	800*	16410
48	1168	2845	1765	1068	800*	24200

*Worm Gear Operated

Forged Steel Ball Valve

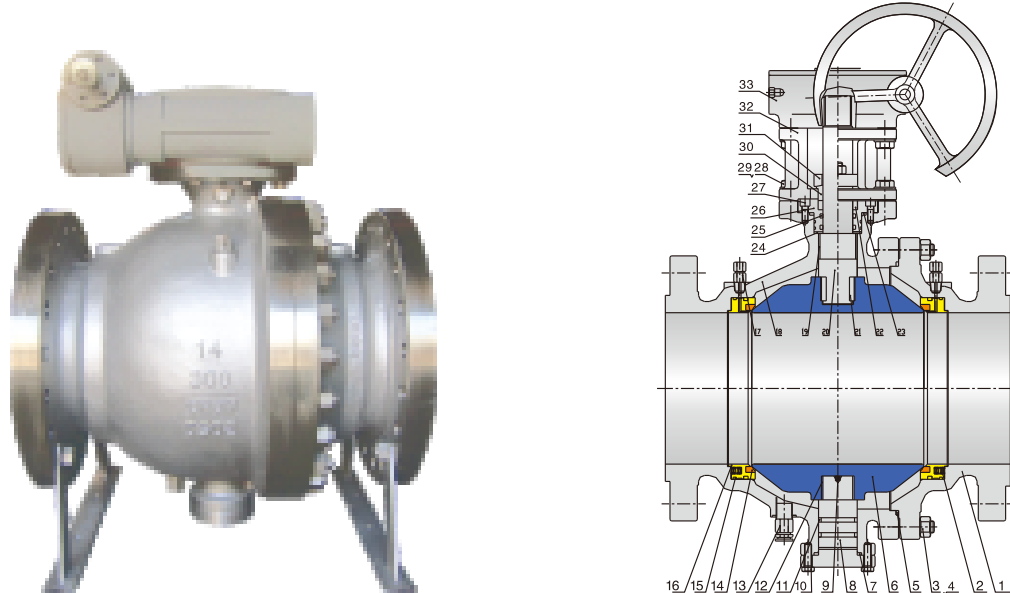


■ Dimensions

NPS (in)	Full Port					W.T. Kg		NPS (in)	Red. Port						W.T. Kg
	d mm	L mm	H1 mm	H2 mm	W mm				d mm	D mm	L mm	H1 mm	H2 mm	W mm	
2	51	368	217	119	460	65	9001LB	3*2*3	51	76	381	217	119	460	71
3	76	381	327	133	1000	92		4*3*4	76	102	457	327	133	1000	111
4	102	457	343	176	1500	154		6*4*6	102	152	610	343	176	1500	214
6	152	610	358	153	300*	392		8*6*8	152	203	737	358	153	300*	480
8	203	737	431	193	400*	613		10*8*10	203	254	838	431	193	400*	650
10	254	838	443	235	500*	820		12*10*12	254	305	965	443	235	500*	868
12	305	965	484	280	600*	1125		14*12*14	305	324	1029	484	280	600*	1310
14	324	1029	540	312	600*	1610		16*14*16	324	375	1130	540	312	600*	1830
16	375	1130	660	365	600*	2010		18*16*18	375	425	1219	660	365	600*	2205
18	425	1219	700	414	600*	2810		20*18*20	425	473	1321	700	414	600*	3140
20	473	1321	770	459	600*	3460		22*18*22	425	524	1422	700	414	600*	3288
22	524	1422	880	507	800*	4410		24*20*24	473	572	1549	770	459	600*	4800
24	572	1549	945	547	800*	5497		28*24*28	572	667	1753	945	547	800*	7580
28	667	1753	987	573	800*	10202		30*24*30	572	714	1880	945	547	800*	7981
30	714	1880	1066	638	800*	11620		34*28*34	667	810	2159	987	573	800*	11202
32	762	2032	1120	686	800*	12102		36*30*36	714	857	2286	1068	638	800*	15653
34	810	2159	1137	688	800*	17462									
36	857	2286	1177	739	800*	20154									
2	51	368	221	130	750	65	1500LB	3*2*3	51	76	470	221	130	460	85
3	76	470	297	152	1500	145		4*3*4	76	102	546	297	152	1000	169
4	102	546	345	166	300*	259		6*4*6	102	146	705	345	166	1500	345
6	146	705	365	192	400*	475		8*6*8	146	194	832	365	192	300*	599
8	194	832	423	238	500*	821		10*8*10	194	241	991	423	238	400*	1196
10	252	991	560	274	600*	1826		12*10*10	241	289	1130	560	274	500*	1340
12	289	1130	608	318	600*	2170		14*12*14	289	318	1257	608	318	600*	2070
14	318	1257	662	483	600*	2250		16*14*16	318	362	1384	662	485	600*	2470
16	362	1384	796	534	600*	2760		18*16*18	362	406	1537	796	534	600*	2950
18	406	1537	849	606	600*	3646		20*18*20	406	451	1664	849	606	600*	3350
20	451	1664	964	686	800*	4497		22*18*22	406	495	1816	849	606	600*	3600
22	495	1816	1025	731	800*	5731		24*20*24	451	533	2043	964	686	800*	5850
24	533	2043	1065	775	800*	7151									

*Worm Gear Operated

Cast Steel Ball Valve



Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	
900	15.0	23.0	16.5	
1500	25.0	37.0	27.5	

Technical Requirements

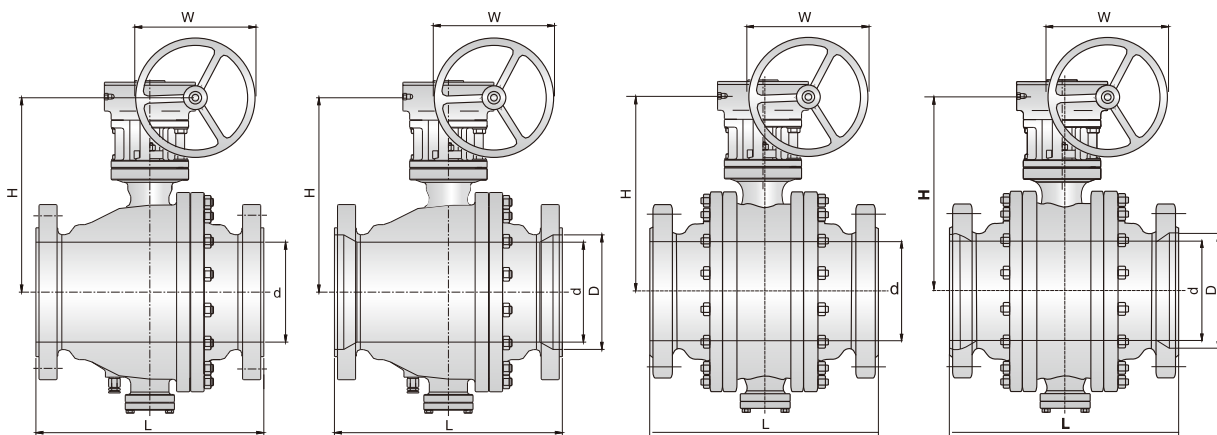
Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃ ~ 150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic		

Cast Steel Ball Valve

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Bonnet	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
2	Spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
3	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
4	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
5	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
6	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
7	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
8	Bottom Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
9	Anti-static spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
10	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
11	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
12	Bearing	SF-1	SF-1	SF-1	SF-1
13	Drain Valve	Assembly	Assembly	Assembly	Assembly
14	Sealing ring	RPTFE	RPTFE	RPTFE	RPTFE
15	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
16	Seat ring	ASTM A105/ENP	ASTM A182F316	ASTM A105/ENP	ASTM A350 LF2/ENP
17	Sealant Injection	Assembly	Assembly	Assembly	Assembly
18	Body	ASTM A182 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
19	Bearing	SF-1	SF-1	SF-1	SF-1
20	Top Entry	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
21	Key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
22	Graphite Packing	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite
23	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
24	Thrust Washer	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite
25	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
26	Stuffing	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
27	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
28	Spring Gasket	65Mn	65Mn	65Mn	65Mn
29	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
30	Bush	A276 420	ASTM A182 F316	A276 420	ASTM A182 F304
31	Gland	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
32	Support	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
33	Worm Gear	Assembly	Assembly	Assembly	Assembly

Cast Steel Ball Valve

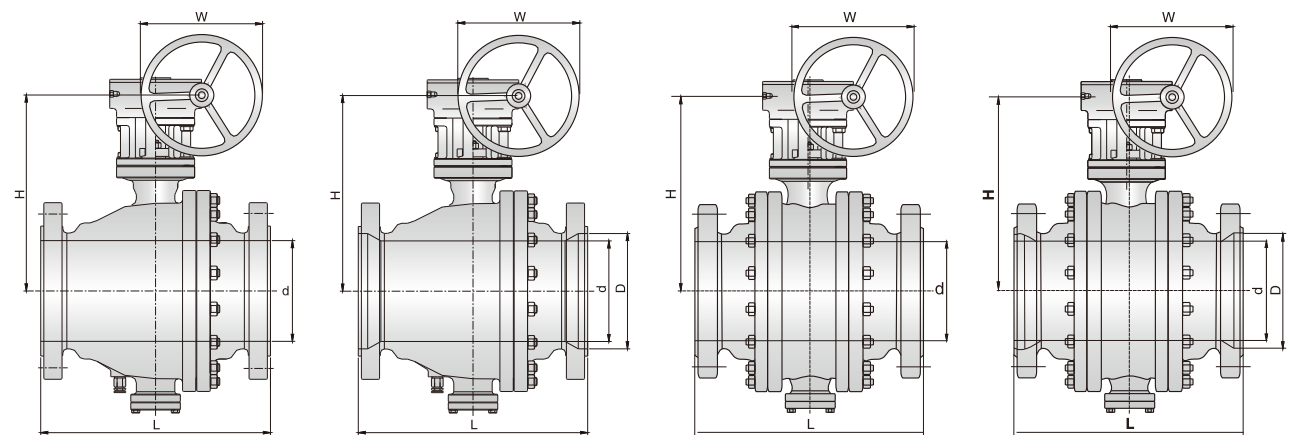


■ Dimensions

NPS (in)	Full Port				W.T. Kg		NPS (in)	Red. Port					W.T. Kg
	D mm	L mm	H1 mm	W mm				d mm	D mm	L mm	H1 mm	W mm	
2	51	178	165	230	17	150LB	3*2*3	51	76	203	165	230	30
3	76	203	193	400	33		4*3*4	76	102	229	193	400	47
4	102	229	231	460	50		6*4*6	102	152	394	231	400	90
6	152	394	329	500*	93		8*6*8	152	203	457	329	460*	161
8	203	457	393	500*	166		10*8*10	203	254	533	393	500*	268
10	254	533	401	500*	273		12*10*12	254	305	610	393	500*	467
12	305	610	441	500*	475		14*12*14	305	337	686	441	500*	560
14	337	686	481	500*	570		16*14*16	337	387	762	481	500*	766
16	387	762	598	500*	778		18*16*18	387	438	864	597	500*	902
18	438	864	643	500*	935		20*18*20	438	489	914	643	500*	1130
20	489	914	708	500*	1190		22*18*22	489	540	1016	643	500*	1300
22	541	1016	798	500*	1346		24*20*24	489	591	1067	708	500*	1520
24	591	1067	863	500*	1579	300LB	3*2*3	51	76	283	165	230	38
2	51	216	165	230	18		4*3*4	76	102	305	193	400	60
3	76	283	193	400	40		6*4*6	102	152	403	231	750	147
4	102	305	231	750	63		8*6*8	152	203	502	329	500*	234
6	152	403	329	500*	150		10*8*10	203	254	568	393	500*	295
8	203	502	393	500*	240		12*10*12	254	305	648	393	500*	488
10	254	568	401	500*	305		14*12*14	305	337	762	441	500*	570
12	305	648	441	500*	507		16*14*16	337	387	838	481	500*	910
14	337	762	481	500*	602		18*16*18	387	438	914	598	500*	1020
16	387	838	598	500*	1000		20*18*20	438	489	991	643	500*	1280
18	438	914	643	500*	1160		22*18*22	489	540	1092	643	500*	1360
20	489	991	708	500*	1320		24*20*24	489	591	1143	708	500*	1670
22	540	1092	798	500*	1540								
24	591	1143	863	500*	1874								

*Worm Gear Operated

Cast Steel Ball Valve

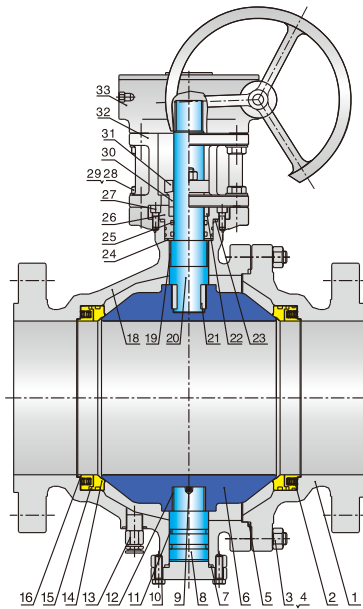


■ Dimensions

NPS (in)	Full Port				W.T. Kg		NPS (in)	Red. Port					W.T. Kg
	d mm	L mm	H1 mm	W mm				d mm	D mm	L mm	H1 mm	W mm	
2	51	292	176	400	27	600LB	3*2*3	51	76	356	176	400	41
3	76	356	247	750	50		4*3*4	76	102	432	247	750	70
4	102	432	276	1000	80		6*4*6	102	152	559	276	1000	122
6	152	559	363	500*	251		8*6*8	152	203	660	363	500*	255
8	203	660	363	500*	350		10*8*10	203	254	787	363	500*	440
10	254	787	426	500*	600		12*10*12	254	305	838	426	500*	620
12	305	838	548	500*	820		14*12*14	305	337	889	548	500*	1060
14	337	889	598	500*	1130		16*14*16	337	387	991	598	500*	1440
16	387	991	648	500*	1550		18*16*18	387	438	1092	648	500*	1860
18	438	1092	740	500*	2100		20*18*20	438	489	1194	740	500*	2400
20	489	1194	810	500*	2800		24*20*24	489	591	1397	810	500*	3240
24	591	1397	920	500*	3626	900LB	3*2*3	51	76	381	192	400	83
2	51	368	192	460	52		4*3*4	76	102	457	279	1000	103
3	76	381	279	1000	97		6*4*6	102	152	610	315	1500	201
4	102	457	315	1500	138		8*6*8	152	203	737	323	500*	348
6	152	610	323	500*	288		10*8*10	203	254	838	381	500*	598
8	203	737	381	500*	448		12*10*12	254	305	965	518	500*	788
10	254	838	518	500*	748		14*12*14	305	324	1029	568	500*	1100
12	305	965	568	500*	1018		16*14*16	324	375	1130	665	500*	1420
14	324	1029	665	500*	1398		18*16*18	375	425	1219	730	500*	1928
16	375	1130	730	500*	1828		20*18*20	425	473	1321	795	500*	2428
18	426	1219	795	500*	2328		24*20*24	473	572	1549	825	610*	3578
20	473	1321	825	610*	2928								
24	572	1549	973	610*	4178								

*Worm Gear Operated

Metal Seat Ball Valves



Structure Features and Usages

1. Smaller Operating Torques: The force on the ball caused by the medium pressure is completely passed to the top bearing and bottom bearing, and the ball does not move and the seat rings on the both sides have equal force. Therefore the operating torque is smaller.
2. The movable metal seat ring with spring preload can apply to high temperature, high pressure and various medium pipelines.
3. The ball of metal seated ball valves has special hardness treatment. Seat is integral made hard alloy or is partially welded with hard alloy to ensure the hard difference between the seals. Therefore, the valves can endure the erode of the medium during the closure and opening. Moreover, the other seal materials are flexible graphite, metal spiral wound gaskets, and others enable the valves to apply to high temperature and high pressure conditions, and have fire proof functions.

Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	
900	15.0	23.0	16.5	
1500	25.0	37.0	27.5	

Technical Requirements

Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5/ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-196℃~550℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic		

Metal Seat Ball Valves

Materials Standards

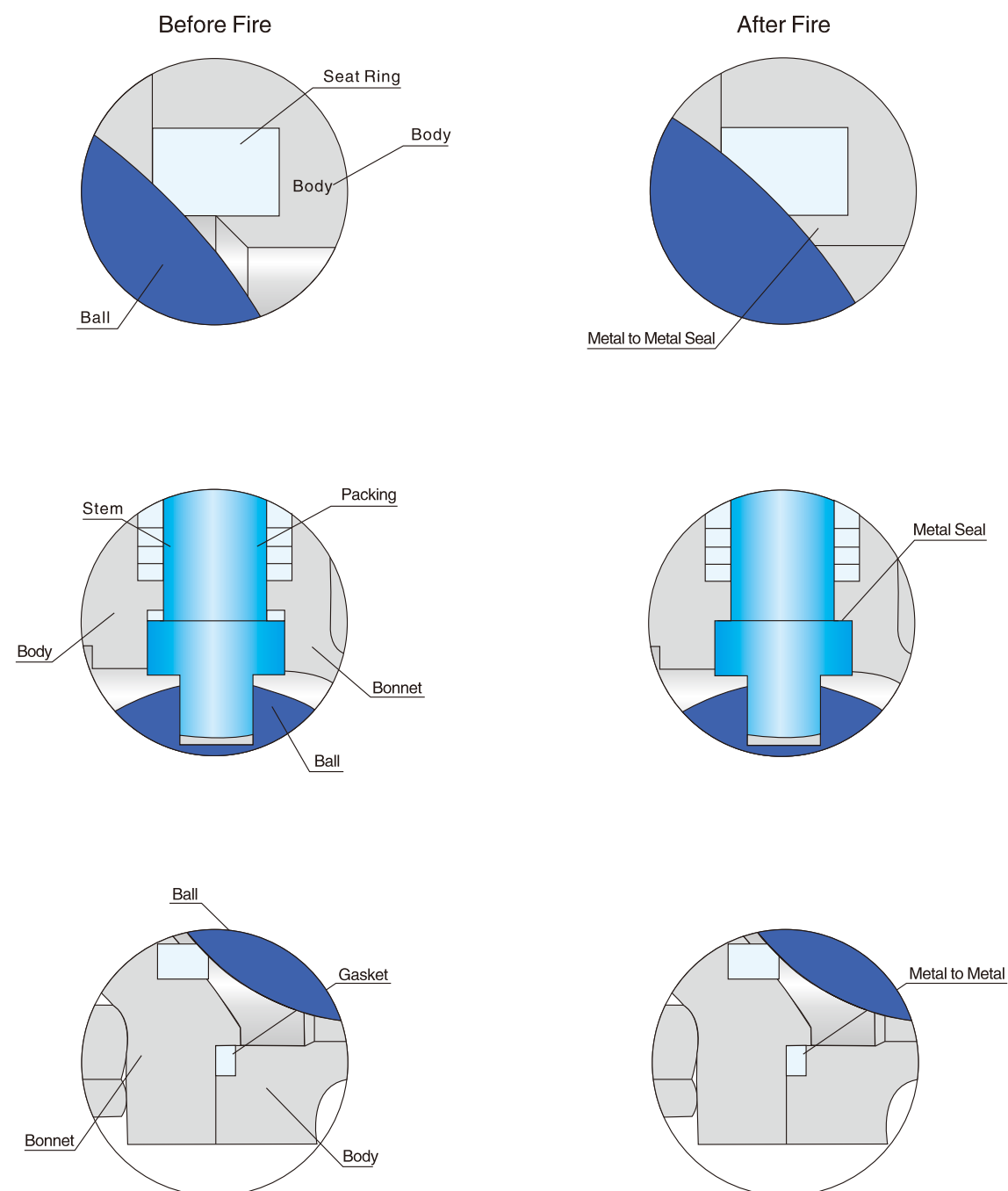
No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Bonnet	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
2	Spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
3	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
4	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
5	Seal Gasket	304+Flexible Graphite	316+Flexible Graphite	304+Flexible Graphite	304+Flexible Graphite
6	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 Lf2/ENP
7	Seal Gasket	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite
8	Bottom Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
9	Anti-static spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
10	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
11	Seal Gasket	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite
12	Bearing	SF-1	SF-1	SF-1	SF-1
13	Drain Valve	Assembly	Assembly	Assembly	Assembly
14	Seat ring	ASTM A105+STL	ASTM A182 F316+STL	ASTM A105+STL	ASTM A105+STL
15	Seal Gasket	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite
16	Spring seat	ASTM A276 420	ASTM A182 F316	ASTM A276 420	ASTM A276 420
18	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A216 LCB
19	Bearing	SF-1	SF-1	SF-1	SF-1
20	Top Entry	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
21	Key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
22	Graphite Packing	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite
23	Seal Gasket	304+Flexible Graphite	316+Flexible Graphite	304+Flexible Graphite	304+Flexible Graphite
24	Thrust Washer	SF-1	SF-1	SF-1	SF-1
25	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
26	Stuffing	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
27	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
28	Spring Gasket	65Mn	65Mn	65Mn	65Mn
29	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
30	Bush	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
31	Gland	ASTM A216 WCB	ASTM A351CF8M	ASTM A216 WCB	ASTM A352 LCB
32	Support	ASTM A216 WCB	ASTM A351CF8M	ASTM A216 WCB	ASTM A352 LCB
33	Worm Gear	Assembly	Assembly	Assembly	Assembly

Designing Features of Floating Ball Valves

■ Fire Proof Seat Ring

When non-metal resilient seats are destroyed in a fire in factory, the upstream medium pressure pushes the ball into the downstream metal seal lip to cut off the line fluid and prevent the internal leakage due to a secondary metal-to-metal seals.

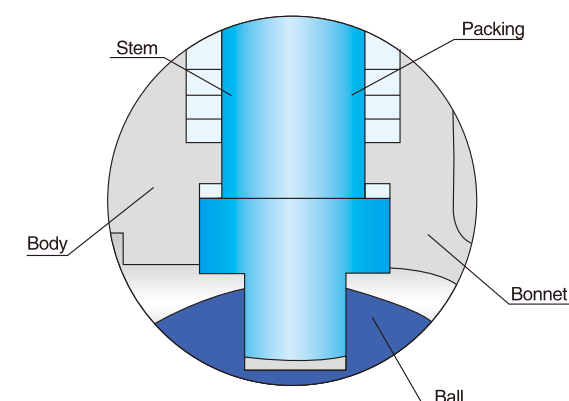
The fire proof design of all floating ball valves are designed according to API 607, and passed the fire test.



Designing Features of Floating Ball Valves

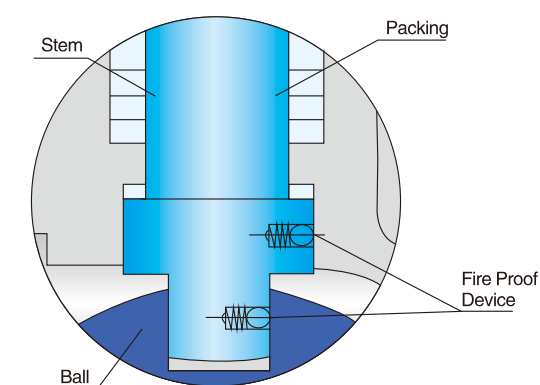
■ Anti-blow out stem

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



■ Fire Proof Device

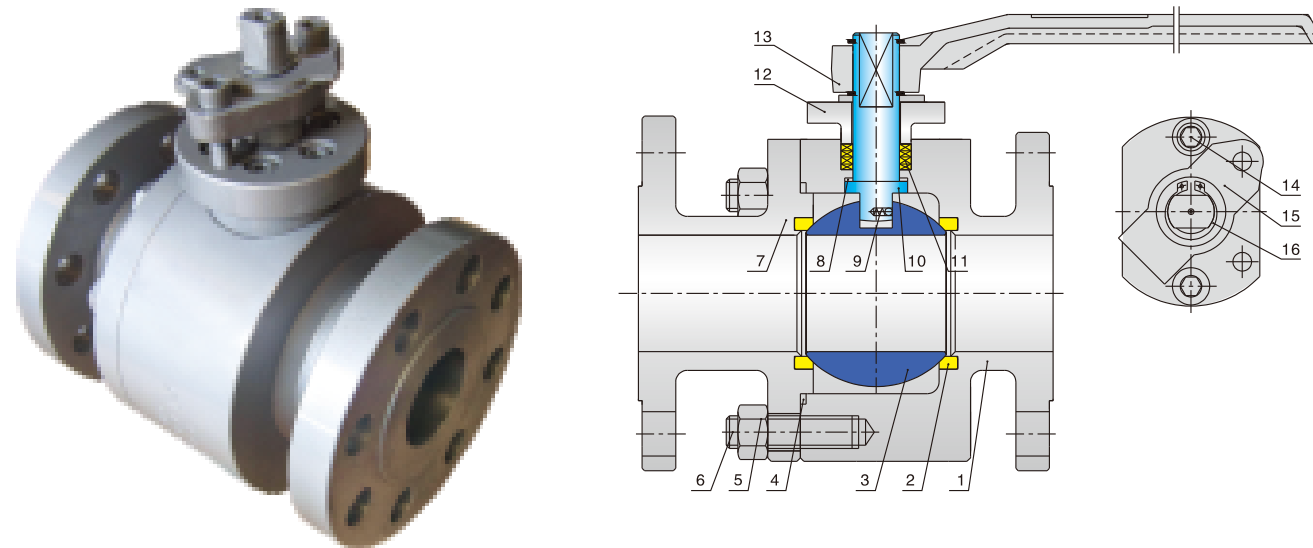
According to customer's request, ball valves can be designed as anti-static structure, that is, a spring is set between stem and ball, and stem and the ball, so that the electricity generated during the opening and closing of the valves is conducted through the electricity channel to the below the ground, diminishing the static. This prevents the lighter of static to burn the medium, and ensure the safety of the system.



■ Wrong-operation Prevention

For the valve installed outdoors, o easy to operate wrong, and in the condition that shocks heavily to make the hand wheel operates wrong, a lock hole is set where the valve opens and closes. If necessary, the valves will be locked to ensure safety.

Forged Steel Floating Ball Valves



Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	

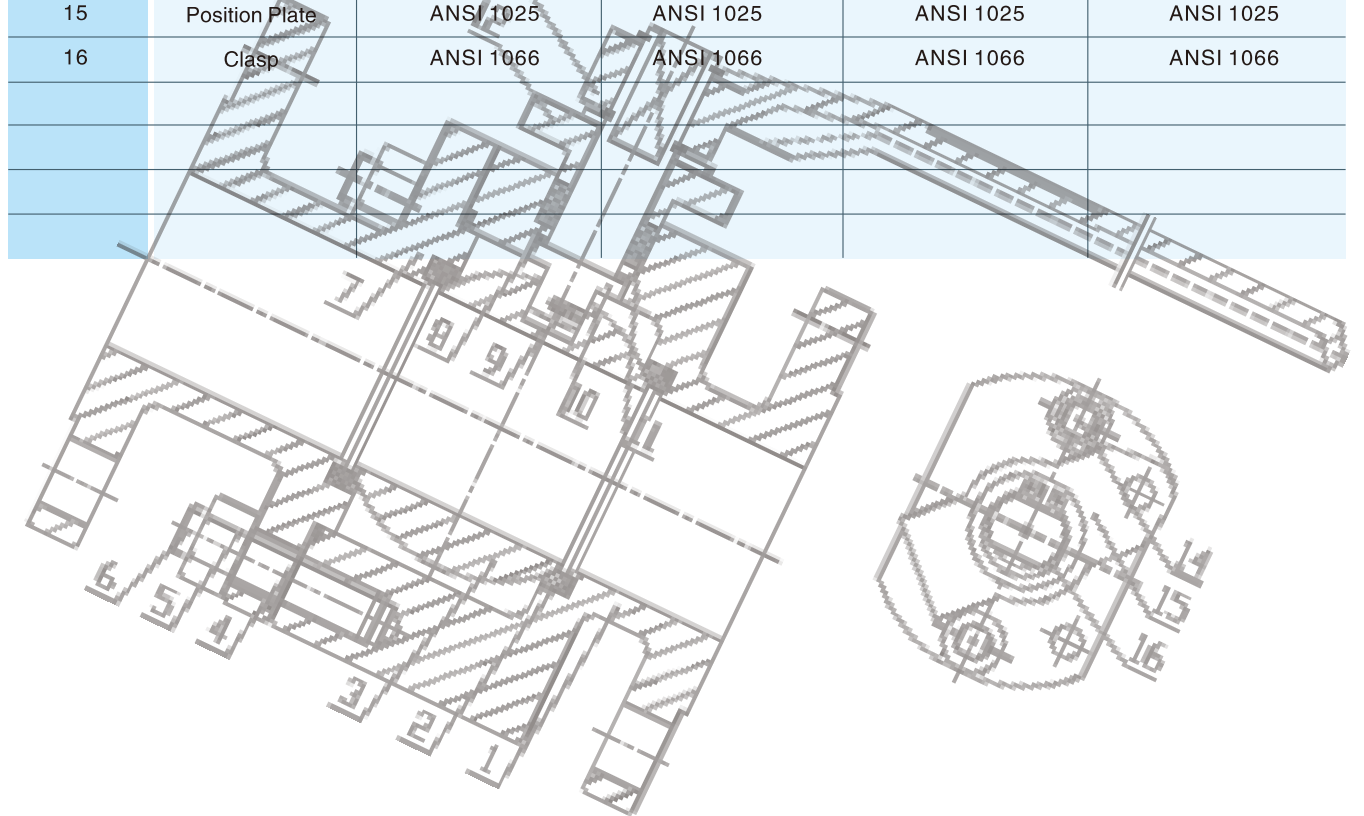
Technical Requirements

Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃~150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic		

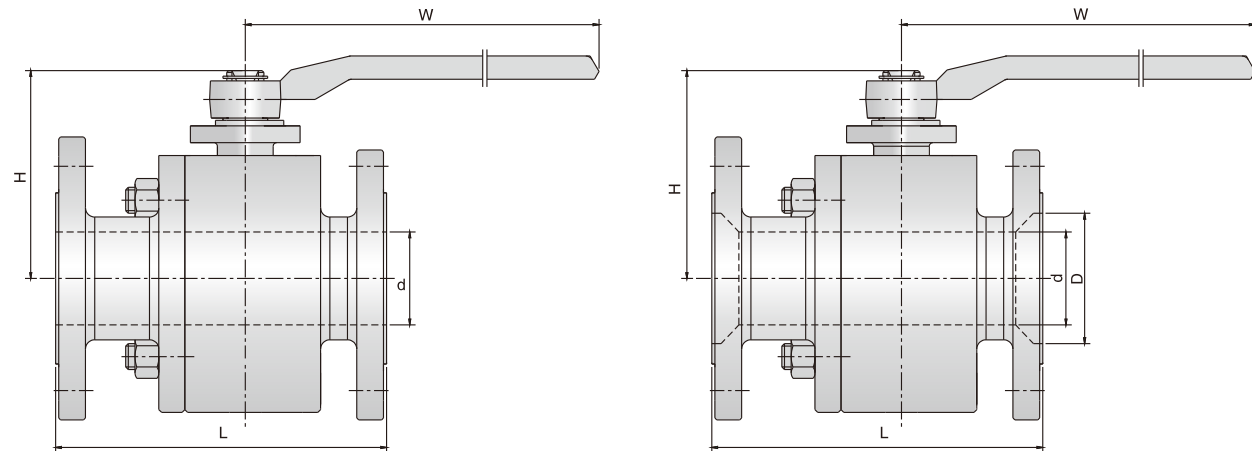
Forged Steel Floating Ball Valves

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Body	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
2	Seat ring	PTFE	PTFE	PTFE	PTFE
3	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
4	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber
5	Seal Gasket	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
6	Nut	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
7	Bolt	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
8	Bonnet	304	304	304	304
9	Fire-proof Metal Gasket	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
10	Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
11	Packing	PTFE	PTFE	PTFE	PTFE
12	Gland	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
13	Wrench	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
14	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
15	Position Plate	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
16	Clasp	ANSI 1066	ANSI 1066	ANSI 1066	ANSI 1066



Forged Steel Floating Ball Valves

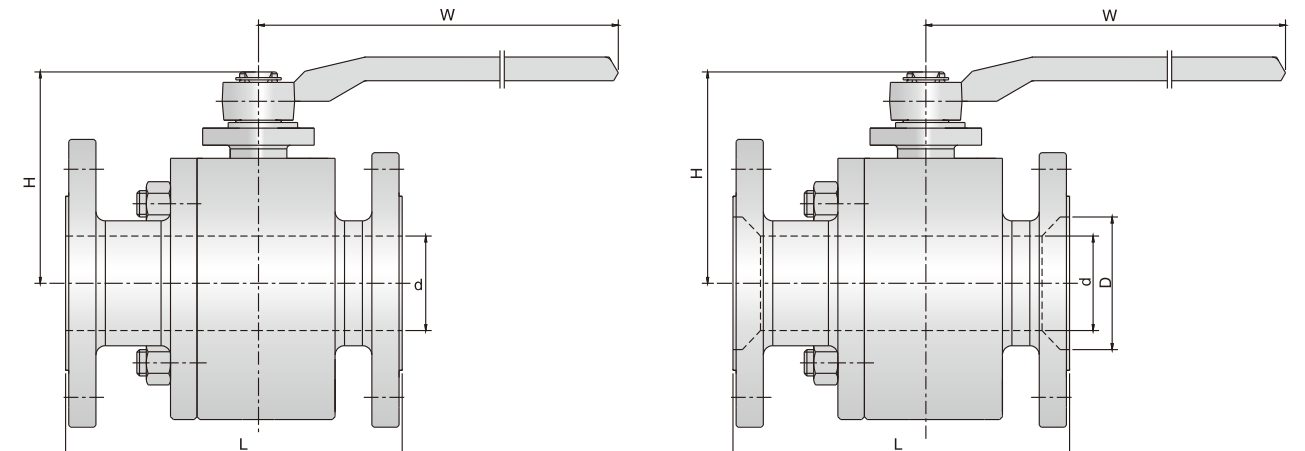


■ Dimensions

NPS (in)	Full Port				W.T. Kg	150LB	NPS (in)	Red. Port					W.T. Kg
	d mm	L mm	H mm	W mm				d mm	D mm	L mm	H mm	W mm	
1/2	13	108	52	130	2.5		3/4*1/2*3/4	13	19	117	60	130	3.5
3/4	19	117	60	130	3.5		1*3/4*1	19	25	127	71	130	5.1
1	25	127	71	160	5.2		1-1/2*1-1/2	25	38	165	92	160	8
1-1/2	38	165	92	230	8.5		2*1-1/2*2	38	51	178	100	230	9.8
2	51	178	100	230	19		2-1/2*2*2-1/2	51	64	190	135	230	13
2-1/2	64	190	135	400	22		3*2*3	51	76	203	148	400	25
3	76	203	148	400	29		4*3*4	76	102	229	170	400	40
4	102	229	170	700	46		6*4*6	102	152	394	240	460	48
5	127	356	240	1100		300LB	8*6*8	152	203	457	263	300	157
6	152	394	263	300*			10*8*10	203	254	533	337	300	364
8	203	457	337	300*			12*10*12	254	305	610	345	400	450
10	254	533	345	400*									
12	305	610	454	600*									
1/2	13	140	52	130	3.1		3/4*1/2*3/4	13	19	152	60	130	4
3/4	19	152	60	130	4.2		1*3/4*1	19	25	165	71	130	6.2
1	25	165	71	160	5.8		1-1/2*1-1/2	25	38	190	92	160	9
1-1/2	38	190	92	230	12		2*1-1/2*2	38	51	216	100	230	12
2	51	216	100	230	22		2-1/2*2*2-1/2	51	64	241	135	230	17
2-1/2	64	241	135	400	26		3*2*3	51	76	283	148	400	31
3	76	283	148	400	37		4*3*4	76	102	305	170	400	50
4	102	305	170	700	61		6*4*6	102	152	403	240	460	78
5	127	381	240	1100	124		8*6*8	152	203	502	263	300*	188
6	152	403	263	300*	157		10*8*10	203	254	568	337	400*	387
8	203	502	337	400*	350								
10	254	568	345	400*	479								

*Worm Gear Operated

Forged Steel Floating Ball Valves

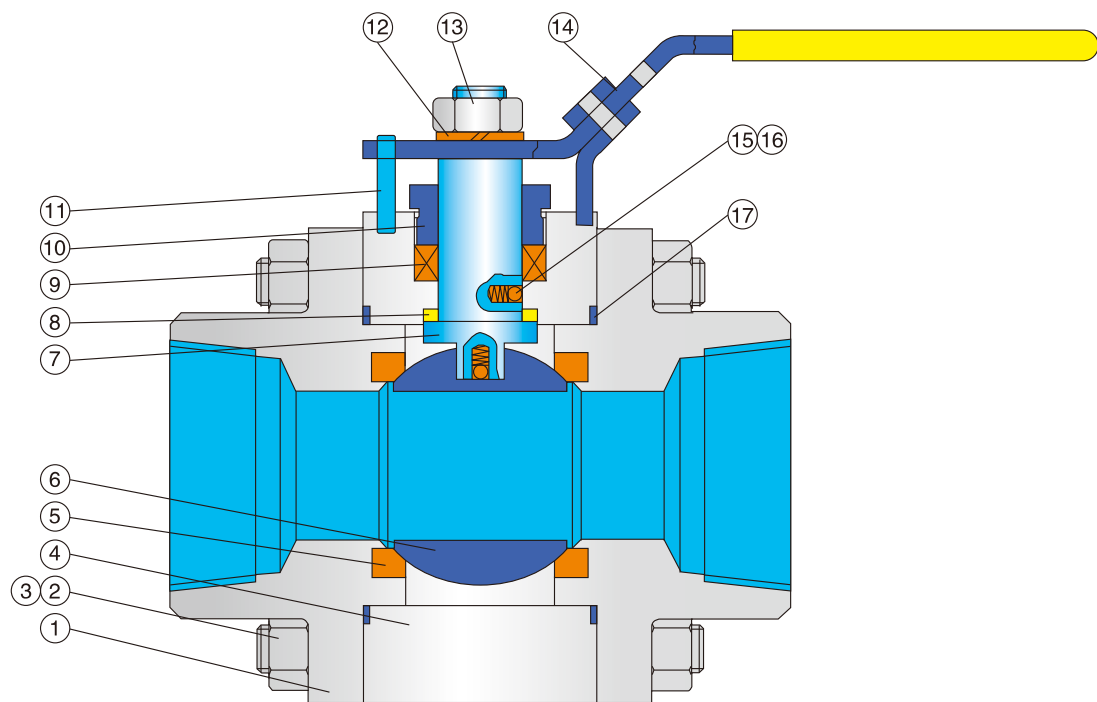


■ Dimensions

NPS (in)	Full Port				W.T. Kg	600LB	NPS (in)	Red. Port					W.T. Kg
	d mm	L mm	H mm	W mm				d mm	D mm	L mm	H mm	W mm	
1/2	13	165	80	160	3.5		3/4*1/2*3/4	13	19	191	80	160	5
3/4	19	191	89	170	5.8		1*3/4*1	19	25	216	89	170	5.3
1	25	216	95	170	6.5		1-1/2*1-1/2	25	38	241	95	170	10.6
1-1/2	38	241	132	280	13		2*1-1/2*2	38	51	292	132	280	25
2	54	292	145	300	29		2-1/2*2*2-1/2	51	64	330	145	400	34
2-1/2	64	330	169	400	45		3*2*3	51	76	256	169	400	42
3	76	356	182	400	60		4*3*4	76	102	432	182	550	82
4	102	432	211	500	135								

*Worm Gear Operated

Small Size Forged Steel Ball Valves



Features

Size:1/2"~2"
Class:800~1500
3 Pieces Forged Steel Body
Floating Ball Valve
Anti-static Device
Anti-blow out Stem

Specification

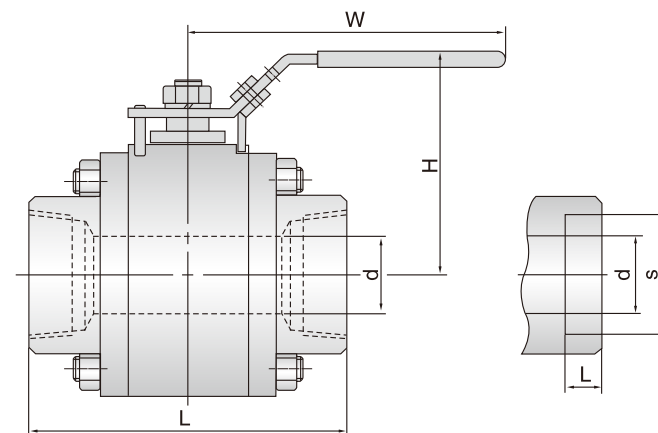
Design Standard	ASME B16.34/BS 5351
Structure Length (end to end)	Manufacturer's
Screw End	ASME B1.20.1
Butt-welding	ASME B16.11
Test	API598/BS 6755
Special	NACE MR-01-075

Small Size Forged Steel Ball Valves

Materials Standards

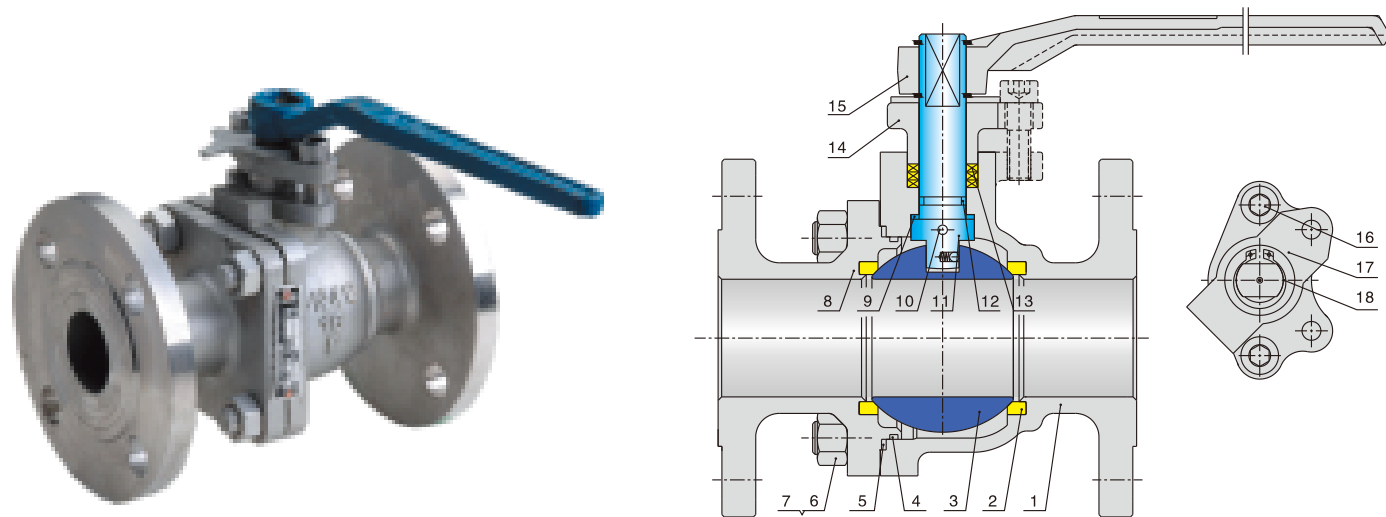
No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Body	ASTM A105	ASTM A105	ASTM A182-F316	ASTM A350-LF2
2	Bolt	ASTM A193-B7	ASTM A193 B8	STM A193 B7	ASTM A320 L7M
3	Nut	AASTM A194 2H	ASTM A194 8	AASTM A194 2HM	AASTM A194 4
4	Body	ASTM A105	STM A182 F316	AASTM A105	AASTM A350 LF2
5	Seal ring	RPTFE	RPTFE	RPTFE	RPTFE
6	Ball	ASTM A105/ENP	AASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
7	Top stem	ASTM A182F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2
8	Fire-proof metal gasket	304	304	304	304
9	Packing	PTFE	PTFE	PTFE	PTFE
10	Gland	ASTM A105	ASTM A182 F316	ASTM A105	ASTM A350 LF2
11	Position Plate	304	304	304	304
12	Spring Gasket	65Mn	65Mn	65Mn	65Mn
13	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
14	Wrench	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
15	Anti-static spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
16	Anti-static bearing	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
17	O-ring	Fluororubber	Fluororubber	Fluororubber	Fluororubber

Dimensions and Weight



Class 800/1500								
NPS	d	L	H	W	S	T	NPT	Weight
in	mm	mm	mm	mm	mm	mm	in	Kg
1/2	12	92	65	140	21.8	9.6	1/2	1.5
3/4	17	111	75	140	27.1	12.7	3/4	1.7
1	22	127	80	200	33.8	12.7	1	3.0
1-1/4	32	140	85	250	42.6	12.7	1-1/4	7.0
1-1/2	36	152	95	250	48.7	12.7	1-1/2	8.0
2	47	152	95	250	61.2	15.7	2	11.0

Cast Steel Floating Ball Valves



Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	

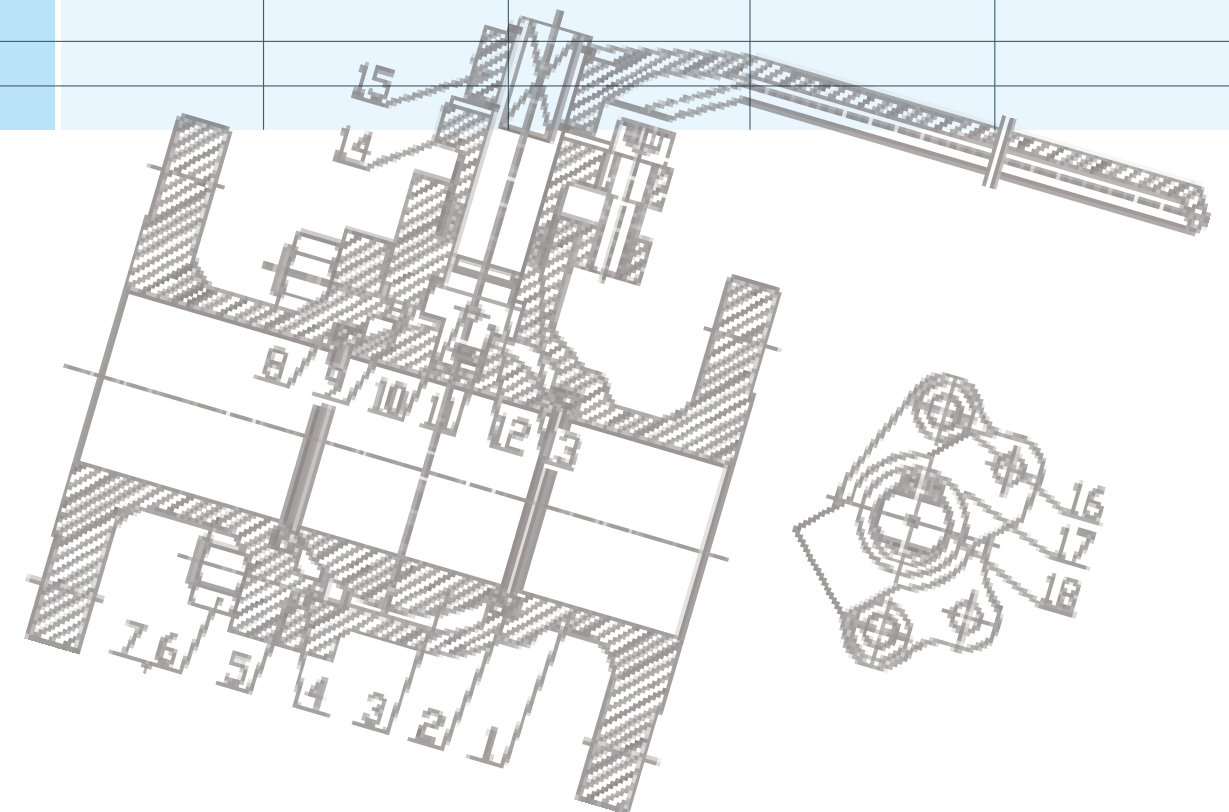
Technical Requirements

Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃~150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic		

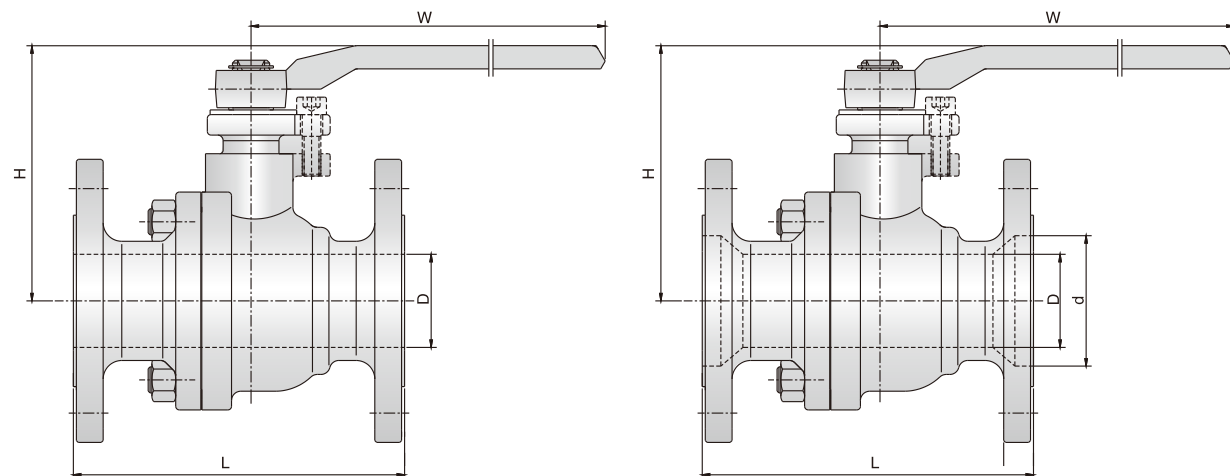
Cast Steel Floating Ball Valves

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A358 LCB
2	Bolt	PTFE	PTFE	PTFE	PTFE
3	Nut	ASTM A105/ENP	ASTM A182 F316	ASTM A105/ENP	ASTM A350 LF2/ENP
4	Body	Fluororubber	Fluororubber	Fluororubber	Fluororubber
5	Seal ring	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite	316+Flexible Graphite
6	Ball	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
7	Top stem	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
8	Fire-proof metal gasket	ASTM A216 WCB	ASTM A351 Cf8	ASTM A216 WCB	ASTM A352WCB
9	Packing	304	304	304	304
10	Gland	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
11	Position Plate	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F6a	ASTM A350 LF2/ENP
12	Spring Gasket	Fluororubber	Fluororubber	Fluororubber	Fluororubber
13	Nut	PTFE	PTFE	PTFE	PTFE
14	Wrench	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
15	Anti-static spring	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
16	Anti-static bearing	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
17	O-ring	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025



Cast Steel Floating Ball Valves

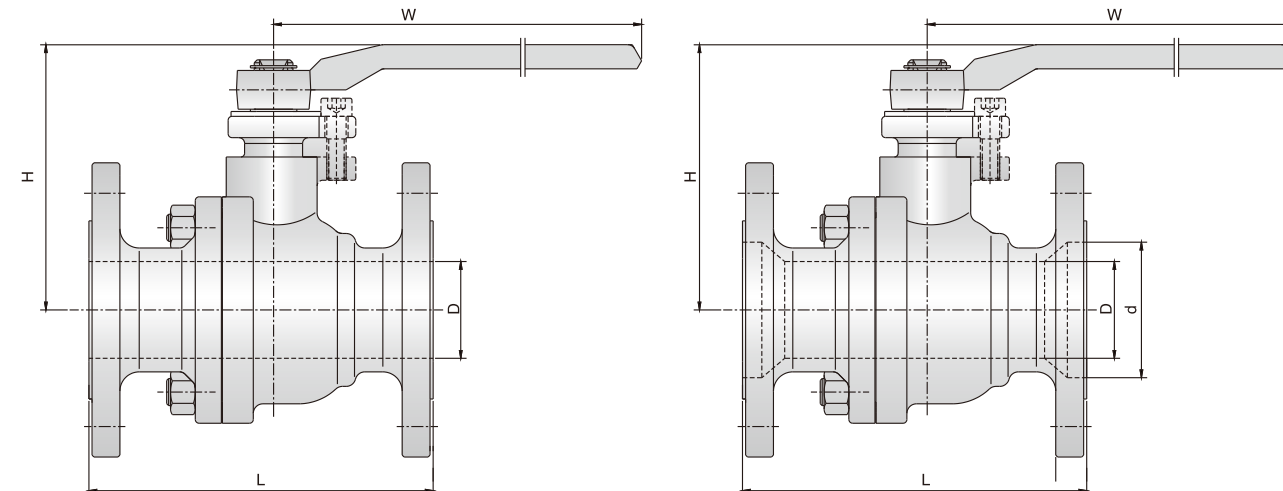


■ Dimensions

NPS (in)	Full Port				W.T. Kg		NPS (in)	Red. Port					W.T. Kg
	D mm	L mm	H mm	W mm				d mm	D mm	L mm	H mm	W mm	
1/2	13	108	59	130	1.8	150LB	3/4*1/2*3/4	13	19	117	82	130	3
3/4	19	117	63	130	2		1*3/4*1	19	25	127	85	130	4.5
1	25	127	76	160	3.5		1-1/2*1*1-1/2	25	38	165	100	160	7
1-1/2	38	165	97	230	7.2		2*1-1/2*2	38	51	178	115	230	9
2	51	178	107	230	11		2-1/1-1/2	51	64	190	120	230	15
2-1/2	64	190	142	400	14		3*2*3	51	76	203	153	400*	16
3	76	203	152	400	22		4*3*4	76	102	229	162	400*	30
4	102	229	178	700	53		6*4*6	102	152	394	191	460*	48
5	127	356	252	1100	58		8*6*8	152	203	457	290	300*	123
6	152	394	272	300*	108		10*8*10	203	254	533	340	300*	218
8	203	457	342	300*	195		12*10*12	254	305	610	442	400*	230
10	254	533	345	400*	312								
12	305	610	479	600*	346	300LB	3/4*1/2*3/4	13	19	152	62	130	3.5
1/2	13	140	59	130	2.3		1*3/4*1	19	25	165	85	130	5.5
3/4	19	152	63	130	3.6		1-1/2*1*1-1/2	25	38	190	100	160	9.8
1	25	165	76	160	5.4		2*1-1/2*2	38	51	216	115	230	11
1-1/2	38	190	97	230	10		2-1/1-1/2	51	64	241	120	230	24
2	51	216	107	230	14		3*2*3	51	76	283	153	400	30
2-1/2	64	241	142	400	23		4*3*4	76	102	305	162	400	39
3	76	283	152	400	31		6*4*6	102	152	403	191	460	73
4	102	305	178	700	51		8*6*8	152	203	502	290	300*	146
5	127	381	252	1100	93		10*8*10	203	254	568	340	400*	320
6	152	403	272	300*	116								
8	203	502	342	400*	235								
10	254	568	345	400*	493								

*Worm Gear Operated

Cast Steel Floating Ball Valves

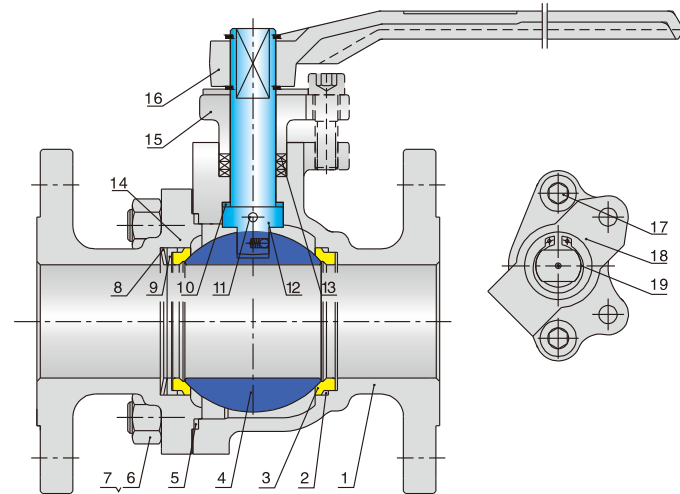


■ Dimensions

NPS (in)	Full Port				W.T. Kg		NPS (in)	Red. Port					W.T. Kg
	D mm	L mm	H mm	W mm				d mm	D mm	L mm	H mm	W mm	
1/2	13	165	80	160	3.5	600LB	3/4*1/2*3/4	13	19	191	80	160	4.5
3/4	19	191	89	170	5.5		1*3/4*1	19	25	216	89	170	6.2
1	25	216	95	170	7		1-1/2*1*1-1/2	25	38	241	95	170	9.8
1-1/2	38	241	132	280	12		2*1-1/2*2	38	51	292	132	280	17
2	51	292	145	300	23		2-1/2*2*2-1/2	51	64	330	145	300	28
2-1/2	64	330	169	400	31		3*2*3	51	76	356	169	400	33
3	76	356	182	450	46		4*3*4	76	102	432	182	450	62
4	102	432	211	500	75								

*Worm Gear Operated

Metal Seal Floating Ball Valve



Structural Features and Usages

1. The opening and closing and the opening extent is usually determined by the position of the wrench. When the wrench is parallel with the pipelines, the valve is at opening position; when vertical with the pipelines, the valve is closed.
2. Design 90° position plate and install lock when necessary, to prevent wrong operation.
3. Seat is designed with spring-loading metal seal, which separates the bottom of the seat from the inner wall of the body and leaves a space. When the ball presses at the seat surface, seat presses the bottom spring to get preload and make up. Therefore, this decreases the damage of seal surface.
4. Use T-type stem to prevent the stem blowing out due to the increase of the pressure of the cavity. Back seat is designed to ensure the packing seal. The valve is widely used in the pipes of food, pharmacy, petroleum, chemical, gas, steel, environment protection, paper to transfer the medium or cut it off.

Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	
6.4	6.4	9.6	7.0	
10.0	10.0	15.0	11.0	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	
600	10.0	15.0	11.0	

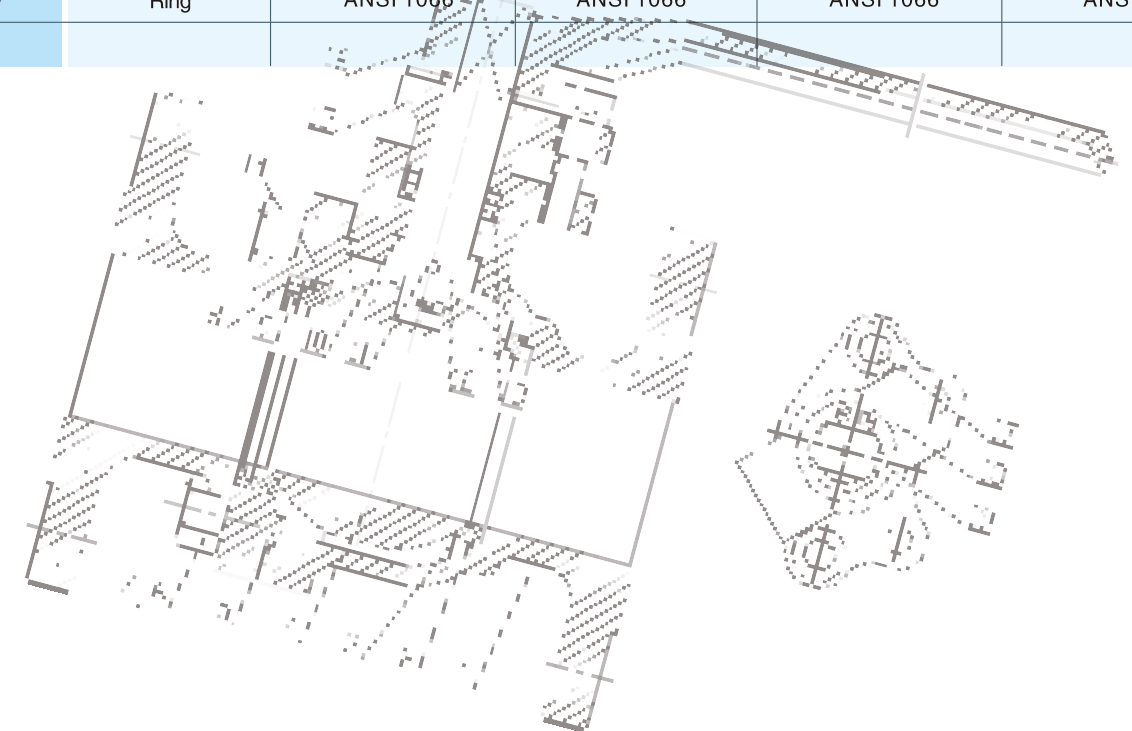
Technical Requirements

Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-196℃~450℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.		

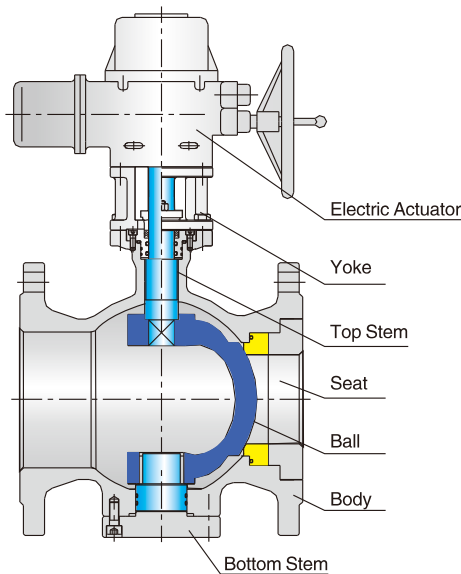
Metal Seal Floating Ball Valve

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352LCB
2	Seal ring	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
3	Seat ring	ASTM A276 420	ASTM A182 F316	ASTM A276 420	ASTM A276 420
4	Ball	ASTM A276 420	ASTM A182 F316	ASTM A276 420	ASTM A276 420
5	Seal gasket	316+Graphite	316+Graphite	316+Graphite	316+Graphite
6	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
7	Nut	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 4
8	Spring	65Mn	65Mn	65Mn	65Mn
9	Spring seat	ASTM A276 420	ASTM A182 F316	ASTM A276 420	ASTM A276 420
10	Fire-proof metal gasket	304	304	304	304
11	Anti-static spring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
12	Stem	ASTM A182 F6a	ASTM A182 F316	ASTM A182 F6a	ASTM A350 LF2/ENP
13	Packing	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
14	Bonnet	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
15	Gland	ASTM A216 WCB	ASTM A351CF8M	ASTM A216WCB	ASTM A352 LCB
16	Wrench	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216WCB	ASTM A352 LCB
17	Bolt	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A193 L7M
18	Position card	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
19	Ring	ANSI 1066	ANSI 1066	ANSI 1066	ANSI 1066



Double Eccentric Semi-ball Valve



General Description

Double eccentric semi-ball valve, is made up of eccentric body, eccentric ball and seat. Stem, while turning, can automatically centers in the common orbit. The ball and the seat are completely separated, diminishing the damage of the seat. Such valve is widely used for industries of steel, aluminum, paper making, gas, oil, etc.

Product Features

- 1.The structure, based on eccentric principal, transmits to reach tighten, regulation, closure. The sealing is metal seal ring with hard faced.
- 2.The semi-ball is made of double metal, with alloy welded on the primary material, and the seat with special welding treatment. The seal surface can meet customer's various request.
- 3.O leakage.
- 4.Seat can be replaced.

Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	

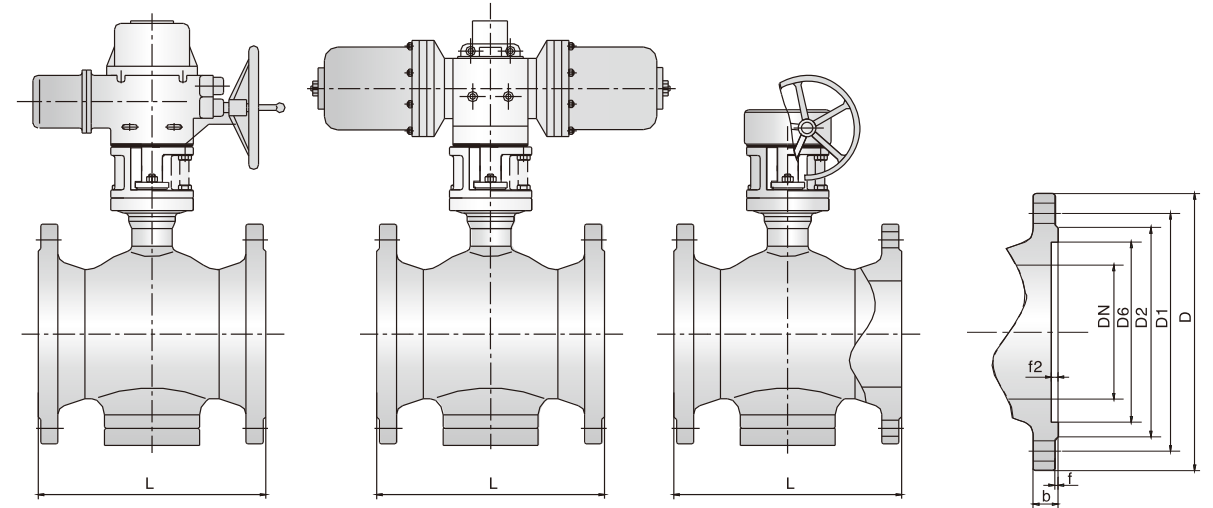
Technical Requirements

Design Standard	Design Standard	GB/T 12237	API608
	End Connection	GB/T79	ANSI B16.5
	Structure Length	GB/T12221	ANSI B16.10
	Test and Inspect	GB/T13927	API608
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas	
	Applied Temperature	-196℃~550℃	
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.	

Materials Standards

No.	Parts	Standard	Stainless Steel	Weak Acid	Low temperature
1	Bottom Stem	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F6a	ASTM A350 LF2/ENP
2	Body	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A352 LCB
3	Ball	ASTM A216 WCB	ASTM A182 F304	ASTM A216 WCB	ASTM A352 LCB
4	Seat ring	ASTM A105	ASTM A182 F304	ASTM A105/ENP	ASTM A350 LF2
5	Top Stem	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F6a	ASTM A350 LF2/ENP
6	Yoke	ASTM A216 WCB	ASTM A351 CF8M	ASTM A216 WCB	ASTM A350 LCB

Double Eccentric Semi-ball Valve



Dimensions

1.0MPa								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
50	178	50	160	125	100	16	3	4-18
65	190	65	180	145	120	18		4-18
80	203	80	195	160	135	20		4-8
100	229	100	215	180	155	20		8-18
125	254	125	245	210	185	22		8-18
150	267	150	280	240	210	24		8-23
200	292	200	335	295	265	26		8-23
250	394	250	390	350	320	30		12-23
300	419	300	440	400	368	30	4	12-23
350	550	350	500	460	428	34		16-23
400	600	400	565	515	482	36		16-23
450	650	450	615	565	532	40		20-23
500	700	500	670	620	585	44		20-23
600	800	600	780	725	685	48	5	20-30
700	900	700	895	840	800	50		24-30
800	1000	800	1010	950	905	52		24-34
2.5MPa								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
50	178	50	160	125	100	20	3	4-18
65	190	65	180	145	120	22		8-18
80	203	80	195	160	135	22		8-18
100	229	100	230	190	160	24		8-23
125	254	125	270	220	188	28		8-25
150	267	150	300	250	218	30		8-25
200	292	200	360	310	278	34		12-23
250	394	250	425	370	332	36		12-30
300	419	300	485	430	390	40	4	16-30
350	550	350	550	490	448	44		16-34
400	600	400	610	550	505	48		16-34

1.6MPa								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
50	178	50	160	125	100	16	3	4-18
65	190	65	180	145	120	18		4-18
80	203	80	195	160	135	20		8-18
100	229	100	215	180	155	20		8-18
125	254	125	245	210	185	22		8-18
150	267	150	280	240	210	24		8-23
200	292	200	335	295	265	26		12-23
250	394	250	405	355	320	30		12-25
300	419	300	490	410	375	30	4	12-25
350	550	350	520	470	435	34		16-23
400	600	400	580	525	485	36		16-30
450	650	450	640	585	545	40		20-30
500	700	500	705	650	608	44	5	20-34
600	800	600	840	770	718	48		20-41
700	900	700	910	840	788	50		24-41
800	1000	800	1020	950	898	52		24-41
4.0MPa								
NPS	L	DN	D	D1	D2/D6	b	f/f1	Z-Φd
50	178	50	160	125	100/88	20	3/4	4-18
65	190	65	180	145	120/110	22		8-18
80	203	80	195	160	135/121	22		8-18
100	229	100	230	190	160/150	24	3/4.5	8-23
125	254	125	270	220	188/176	28		8-25
150	267	150	300	250	218/204	30		8-25
200	292	200	375	320	282/260	38		12-30
250	394	250	445	385	345/313	42		12-34
300	419	300	510	450	408/364	46		16-34
350	550	350	570	510	465/422	52	4/5	16-34
400	600	400	655	585	535/471	58		16-34

V-type Regulating Valve



■ Structure Features and usage

V-type Regulating Valve is a kind of advanced control valve with right angle turning. Its main purpose is to regulate, and also has cut-off purpose, especially widely used for control of medium containing staples. Therefore, such valves are widely used in paper making, chemical, petroleum, fiber, electricity, metallurgy, pharmacy, environmental protection.

1. Integral design can prevent leakage due to flanged design.
2. Sealing is pre-tighten spring, and make the seat ring is closed to closure, achieving better seal. Soft seat PTFE and replaceable metal seat is also available for various mediums.
3. The ball is designed to V-type which has good function of cutting and clearing.

■ Pressure Test

PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	

■ Technical Requirements

Design Standard	Design Standard	GB/T 12237	API 6D	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-29℃ ~ 150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.		

Three-way Transmission Ball Valves



■ Structure Features and usage

Such valve is made up of one worm gear, manual operating stem, and double three-way ball valves. The feature is that the two ball valves are set symmetrically, with one common stem, reliably and efficiently solving synchronous switching for two symmetrical ball valves. Such valve is easy to operate, and works reliably.

■ Pressure Test

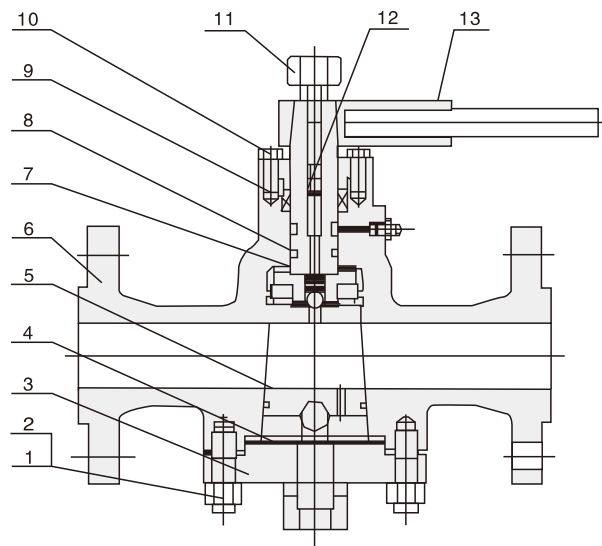
PN(MPa)	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
1.6	1.6	2.4	1.76	0.6
2.5	2.5	3.75	2.75	
4.0	4.0	6.0	4.4	

Class	Max. Applied Pressure (Mpa)	Pressure Test (Mpa)		
		Shell Test	Max. Applied Pressure	Low Pressure Seal
150	2.0	3.0	2.2	0.6
300	5.0	7.5	5.5	

■ Technical Requirements

Design Standard	Design Standard	GB/T 12237	API6D / ASME B16.34	DIN 3357-1 EN 12516-1
	End Connection	GB/T 9113 JB/T 79	ASME B16.5 / ASME B16.47	DIN 2542-2545
	Structure Length	GB/T 12221	API 6D	DIN 3202
	Test and Inspect	GB/T 9092	API 6D / API 598	DIN 3230/3 EN 12266
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas		
	Applied Temperature	-28℃~150℃		
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.		

API Pressure-balanced Inverted Lubricated Plug Valve



Product Description

API pressure-balanced inverted lubricated plug valve, Class 150–1500, and –29~180°C, is used to cut off or opening the medium of pipelines of petroleum, chemical, pharmacy, electricity.

Product Features

1. Reasonable structure, reliable seal, good performance and good model.
2. Pressure-balanced inverted structure makes it easy to operate the valve.
3. Between the body and the seal surface is set oil sink by which sealant can be injected through nozzle to seat and strengthen the seal.
4. The materials of the parts and dimensions of the flanges can be arranged according to specific working conditions and customers' requests.

Pressure Test

Class	Shell Test (Mpa)	Low Pressure Seal (Mpa)
150	3.0	2.2
300	7.5	5.5
600	15.0	11.0
900	23	16.5

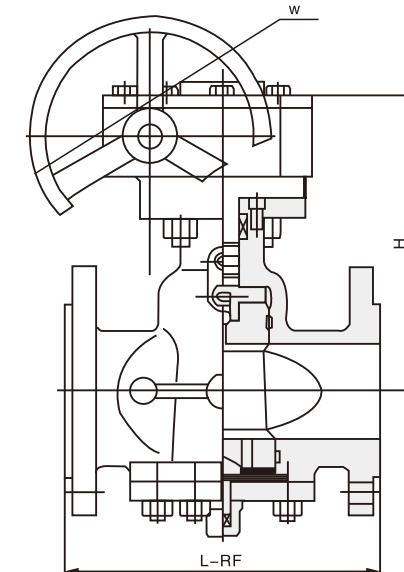
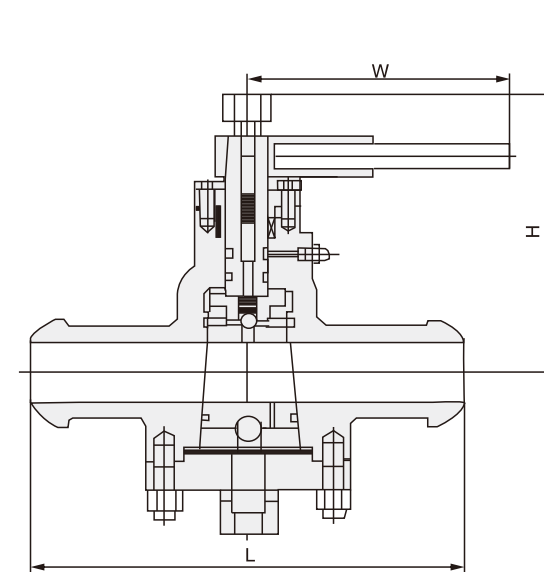
Technical Requirements

Structure type	BC	
Design Standard	Design Standard	API 599, API 6D
	End Connection	ASME B16.10
	Structure Length	ASME B16.5
	Test and Inspect	API 598 / API 6D
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas
	Applied Temperature	≤ 180°C
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.

Materials Standards

No.	Parts	Materials
1	Bolt	ASTM 193-B7、A193-B8、A193-B8M
2	Nut	ASTM A194-2H、A194-8、A194-8M
3	Bonnet	ASTM A216-WCB ASTM A351-CF8、CF8M、CF3、CF3M
4	Gasket	Flexible graphite+Stainless Steel
5	Plug	ASTM A182-Gr.F6a ASTM A182-F22 ASTM A182-F304、F316、F321、F304L、F316L
6	Body	ASTM A216-WCB ASTM A351-CF8、CF8M、CF3、CF3M
7	Stem	ASTM A182-Gr.F6a ASTM A182-F22 ASTM A182-F304、F316、F321、F304L、F316L
8	O-ring	NBR、Fluororubber
9	Packing	Flexible graphite
10	Packing gland	ASTM A216-WCB ASTM A351-CF8、CF8M、CF3、CF3M
11	Nozzle	
12	Check valve	
13	Wrench	ASTM A47-32510、A216 WCB

API Pressure-balanced Inverted Lubricated Plug Valve



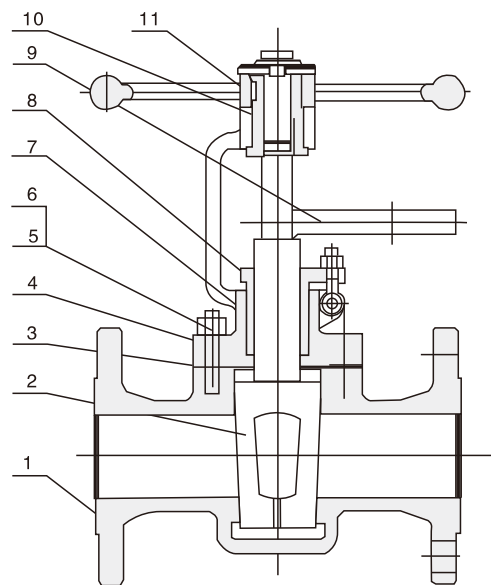
Dimensions

150LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	108	180	400	10
20	1/2	117	180	400	12
25	1	127	185	500	14
32	1 1/4	140	200	500	17
40	1 1/2	165	214	600	19
50	2	178	215	600	21
65	2 1/2	190	250	820	29
80	3	203	270	820	33
100	4	229	300	300	48
125	5	254	340	300	75
150	6	267	365	320	98
200	8	292	400	320	125
250	10	330	450	350	171
300	12	356	510	380	230
350	14	381	590	380	370
600LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	165	180	400	14
20	1/2	190	180	400	16
25	1	216	185	500	18
32	1 1/4	229	200	500	20
40	1 1/2	241	210	600	24
50	2	292	215	600	29
65	2 1/2	330	250	820	35
80	3	356	270	820	47
100	4	432	300	300	91
125	5	508	340	300	129
150	6	559	365	320	210
200	8	660	400	320	320
250	10	787	450	350	660
300	12	838	510	380	920
350	14	889	590	380	1250

300LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	140	180	400	12
20	1/2	152	180	400	14
25	1	165	185	500	16
32	1 1/4	178	200	600	19
40	1 1/2	190	210	600	21
50	2	216	215	800	24
65	2 1/2	241	250	1000	31
80	3	283	270	1000	36
100	4	305	300	300	61
125	5	381	340	300	86
150	6	403	365	320	130
200	8	419	400	320	190
250	10	457	450	350	255
300	12	502	510	380	380
350	14	762	590	380	560
900LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	229	180	400	17
20	1/2	229	180	400	29
25	1	254	185	500	21
32	1 1/4	279	200	600	24
40	1 1/2	305	210	600	30
50	2	368	215	800	37
65	2 1/2	419	250	1000	44
80	3	381	270	1000	65
100	4	457	300	300	110
125	5	559	340	300	160
150	6	610	365	320	255
200	8	737	400	320	380
250	10	838	450	350	810
300	12	965	510	380	1050
350	14	1029	590	380	1460

Notes: NPS 4 and larger needs worm gear operation.

API Lift Type Plug Valve



Product Description

API lift type metal seated plug valve, Class 150–2500, and –29~550°C, is used to cut off or opening the medium of pipelines of petroleum, chemical, pharmacy, electricity.

Product Features

1. Reasonable structure, reliable seal, good performance and good model.
2. The opening and close process is separated from the seal surface, without damage to the seal surface.
3. Flanged lift type hard seated plug valve is bi-direction flowing, much convenient to install.
4. The materials of the parts and dimensions of the flanges can be arranged according to specific working conditions and customers' requests.

Pressure Test

Class	Pressure Test	Shell Test	Low Pressure Seal
	MPa	MPa	MPa
150	3.0	2.2	0.4–0.7
300	7.7	5.7	
600	15.3	11.3	
900	23.0	17.0	
1500	38.4	28.2	
2500	64.0	47.0	

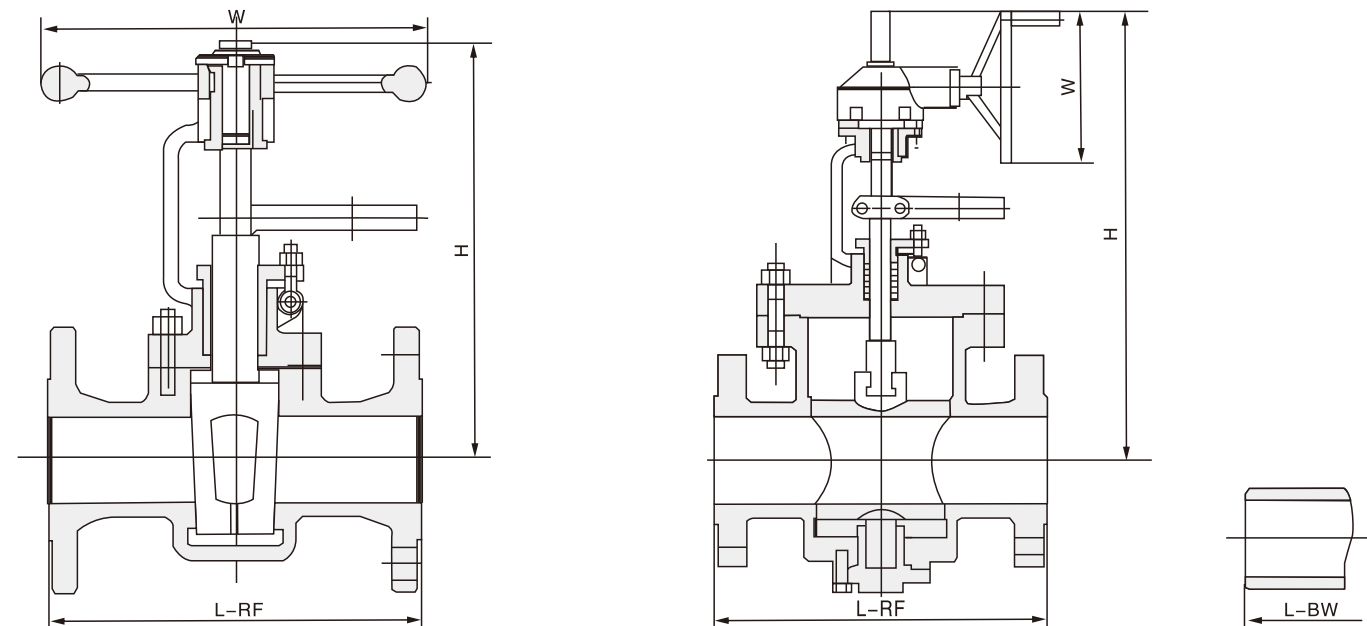
Technical Requirements

Design Standard	Design Standard	API 599、API 6D
	Design Standard	ASME B 16.10
	End Connection	ASME B 16.5
	Structure Length	ASME B 16.34
	Test and Inspect	API 598、API 6D

Materials Standards

No.	Parts	Materials
1	Body	ASTM A216–WCB ASTM A217–WC1、WC6、WC9、C5 ASTM A351–CF8、CF8M、CF3、CF3M
2	Plug	ASTM A182–Gr.F6a ASTM A182–F22 ASTM A182–F304、F316、F321、F304L、F316L
3	Gasket	Flexible graphite+Stainless Steel
4	Bonnet	ASTM A216–WCB ASTM A217–WC1、WC6、WC9、C5 ASTM A351–CF8、CF8M、CF3、CF3M
5	Bolt	ASTM A193–B7、A193–B8A、A193–B8M
6	Nut	ASTM A194–2H、A194–8、A194–8M
7	Packing	Flexible graphite
8	Packing gland	ASTM A216–WCB ASTM A217–WC1、WC6、WC9、C5 ASTM A351–CF8、CF8M、CF3、CF3M
9	Wrench	ASTM A216–WCB ASTM A351–CF8、CF8M、CF3、CF3M
10	Stem nut	Bronze alloy ZQA19–4
11	Hand wheel	ASTM A536 Gr.60–40–18 ASTM A216–WCB

API Lift Type Plug Valve



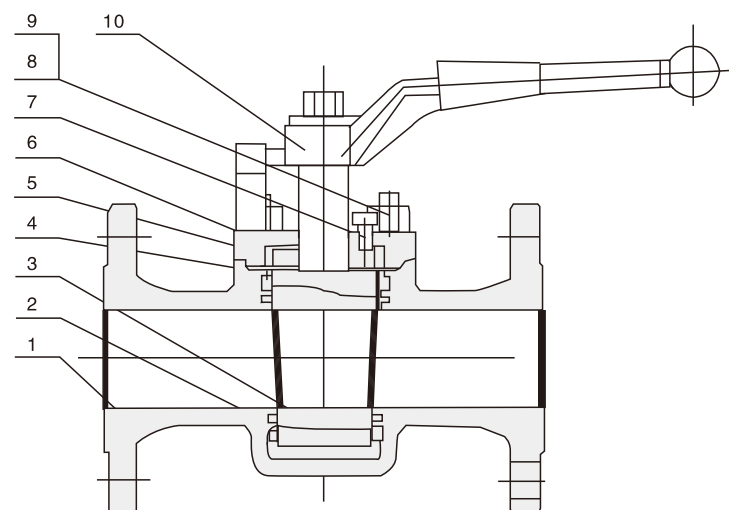
Dimensions

150LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	108	190	280	9
20	1/2	117	195	280	10
25	1	127	225	280	11
32	1 1/4	140	260	300	17
40	1 1/2	165	280	300	19
50	2	178	310	300	23
65	2 1/2	190	340	300	25
80	3	203	395	300	32
100	4	229	435	300	55
125	5	254	470	340	82
150	6	267	535	400	98
200	8	292	590	450	130
250	10	330	630	450	178
300	12	356	680	500	250
350	14	381	720	500	380
600LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	165	190	280	13
20	1/2	190	195	280	14
25	1	216	225	280	19
32	1 1/4	229	260	300	23
40	1 1/2	241	280	300	25
50	2	292	310	300	32
65	2 1/2	330	340	300	40
80	3	356	395	300	55
100	4	432	435	300	105
125	5	508	470	340	139
150	6	559	535	400	300
200	8	660	590	450	440
250	10	787	630	450	730
300	12	838	680	500	1150
350	14	889	720	500	1570

300LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	140	190	280	10
20	1/2	152	195	280	12
25	1	165	225	280	14
32	1 1/4	178	260	300	19
40	1 1/2	190	280	300	21
50	2	216	310	300	28
65	2 1/2	241	340	300	34
80	3	283	395	300	39
100	4	305	435	300	75
125	5	381	470	340	95
150	6	403	535	400	135
200	8	419	590	450	200
250	10	457	630	450	255
300	12	502	680	500	415
350	14	762	720	600	650
900LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	229	190	280	16
20	1/2	229	195	280	17
25	1	254	225	280	26
32	1 1/4	279	260	300	30
40	1 1/2	305	280	300	33
50	2	368	310	300	39
65	2 1/2	419	340	300	50
80	3	381	395	300	70
100	4	457	435	300	137
125	5	559	470	340	181
150	6	610	535	400	397
200	8	737	590	450	590
250	10	838	630	450	860
300	12	965	680	500	1470
350	14	1029	720	500	1880

Notes: NPS 4 and larger needs worm gear operation.

API Sleeve-type Soft Seal Plug Valve



Product Description

API Sleeve-type Soft Seal Plug Valve, Class 150–900, and –29~180℃, is used to cut off or opening the medium of pipelines of petroleum, chemical, pharmacy, electricity.

Product Features

1. Reasonable structure, reliable seal, good performance and good model.
2. The seal is obtained by the seal surface of sleeve, unique 360° metal protecting and fix the sleeve.
3. No hollow cavity is left for medium to collect.
4. The metal edge has automatic clearing while plug turns, suitable for working conditions of viscous and scaling.
4. Bi-directional flowing and convenient installs.
5. The materials of the parts and dimensions of the flanges can be arranged according to specific working conditions and customers' requests.

Pressure Test

Class	Shell Test (Mpa)	Low Pressure Seal (Mpa)
150	3.0	2.2
300	7.5	5.5
600	15.0	11.0
900	22.5	16.5

Technical Requirements

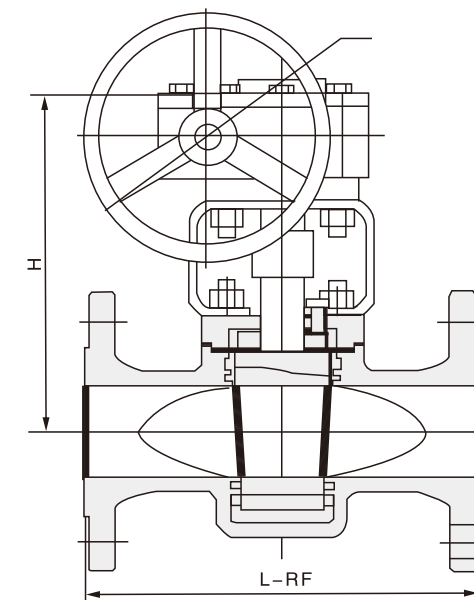
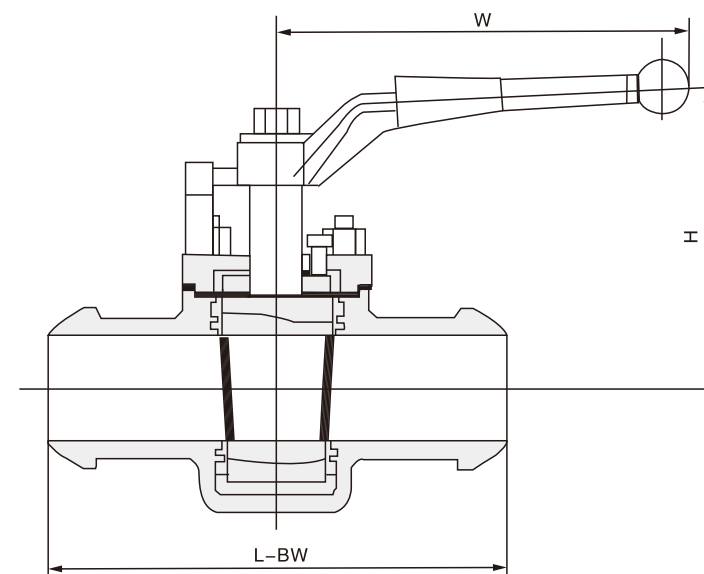
Structure type	BC	
Design Standard	Design Standard	API599、API6D
	End Connection	ASME B16.10
	Structure Length	ASME B16.5
	Test and Inspect	API598.API 6D
Applied Conditions	Applied Medium	Natural gas, liquefied petroleum gas
	Applied Temperature	≤180℃
	Operation	Worm Gear, Pneumatic, Electric, Pneumatic-hydraulic.

Notes: The flanged end connection can be designed according to customers' request.

Materials Standards

No.	Parts	Materials
1	Body	ASTM A216-WCB ASTM A351-CF8、CF8M、CF3、CF3M
2	Plug	PTFE
3	Gasket/Bonnet	ASTM A182-Gr.F6a ASTM A182-F22 ASTM A182-F304、F316、F321、F304L、F316L
4	Bolt	Flexible graphite+Stainless Steel
5	Nut	ASTM A182-Gr.F6a ASTM A182-F22 ASTM A182-F304、F316、F321、F304L、F316L
6	Packing	ASTM A216-WCB ASTM A351-CF8、CF8M、CF3、CF3M
7	Packing gland	ASTM A 193-B7、A193-B8、A193-B8M
8	Wrench	ASTM A194-2H、A194-8、A194-8M
9	Stem nut	ASTM A193-B7、A193-B8、A193-B8M
10	Hand wheel	ASTM A105-WCB

API Sleeve-type Soft Seal Plug Valve



Dimensions

150LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	108	110	175	8.5
20	1/2	117	115	175	9.5
25	1	127	115	175	10.5
32	1 1/4	140	135	220	12
40	1 1/2	165	140	280	14
50	2	178	150	305	18
65	2 1/2	190	165	350	22
80	3	203	180	405	26
100	4	229	380	300	40
125	5	254	460	300	60
150	6	267	520	320	70
200	8	292	580	320	130
250	10	330	620	350	219
300	12	356	680	380	381
350	14	381	760	450	570
600LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	165	110	175	11
20	1/2	190	115	175	13
25	1	216	115	175	17
32	1 1/4	229	135	220	20
40	1 1/2	241	140	280	23
50	2	292	150	305	27
65	2 1/2	330	165	350	31
80	3	356	180	405	36
100	4	432	380	300	72
125	5	508	460	300	98
150	6	559	520	320	141
200	8	660	580	320	245
250	10	787	620	350	330
300	12	838	680	380	515
350	14	889	760	450	710

Notes: NPS 4 and larger needs worm gear operation.

300LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	140	110	175	9.5
20	1/2	152	115	175	10.5
25	1	165	115	175	12
32	1 1/4	178	135	220	14
40	1 1/2	190	140	280	16
50	2	216	150	305	20
65	2 1/2	241	165	350	24
80	3	283	180	405	29
100	4	305	380	300	53
125	5	381	460	300	75
150	6	403	502	320	85
200	8	419	580	320	185
250	10	457	620	350	230
300	12	502	680	380	390
350	14	762	760	450	550
900LB					
NPS		L	H	W	W.T. (Kg)
mm	in				
15	1/4	229	110	175	13
20	1/2	229	115	175	16
25	1	254	115	175	21
32	1 1/4	279	135	220	24
40	1 1/2	305	140	280	28
50	2	368	150	305	32
65	2 1/2	419	165	350	40
80	3	381	180	405	47
100	4	457	380	300	91
125	5	559	460	300	117
150	6	610	520	320	165
200	8	737	580	320	285
250	10	838	620	350	420
300	12	965	680	380	610
350	14	1029	760	450	860

Gate Valve Designing Standards and Features

■ Standards

Design and Manufacture:

Cast Carbon Steel Gate Valve: API 600(ISO 10434), API 6D.

Cast Stainless Steel Gate Valve: API 603, API 600.

Forged Steel Gate Valve: API 602.

Test and Inspect: API 598, API 600, o API 6D.

End connection: NPS $\leq$ 24" as per ASME B16.5;

NPS $>$ 24" as per ASME B16.47, API 605,
MSS SP-44

Butt-welding: ASME B16.25

Socket: ASME B16.11

Structure length: ASME 16.10

Pressure & Temperature: ASME B6.34

■ Wedge Type

NP $\geq$ 2" Flexible Wedge, NPS $<$ 2" Solid Wedge

■ Bonnet type

Bolted Bonnet for Class 150 to 900,

Pressure Seal bonnet for Class 1500 to 2500.

■ Central Flange Gasket

Carbon steel+ Flexible Graphite for Class 150.

Stainless Steel+ Flexible Graphite for Class 300 to 600.

Metal Ring Gasket for Class 900.

Pressure seal bonnet for Class 1500 to 2500.

■ Operation Method

Hand wheel or Gear operation. Electric actuator and pneumatic for customers' request



■ Packing seal

Graphite, PTFE, Metal+flexible gasket.

■ Back seat

All gate valves has back seat. Carbon steel gate valve has a replaceable back seat. Stainless steel generally has integral back seat on the body o welded on the body to constitute back seat.

■ Seat

Forged steel seat is for carbon steel gate valve. Body and seat of gate valve of NPS $\leq$ 10 has replaceable screw connection, or welded connection as customers request. For NPS $\geq$ 12,the body and the seat are welding connection. Stainless steel gate valve has integral seat from the body, or alloy surfacing, or screw and welding seat as customers request.

■ Stem

The stem is integral forged. The minimum diameter of stem is designed according to standards. Stem and body are connected by T-type, where the hardness is higher than the screwed T-type of stem according to API 591.

■ Stem nut

Stem nut is general ASTM A439 D2, o bronze as customers request.



Standards



■ Standards

Design and Manufacture: Cast steel gate valve to API 600 (ISO 10434) or API 6D; Cast stainless steel gate valve to API 603 or API 600; Forged steel gate valve to API 602.

Inspection and Test: API 598, API 600 or API 6D.

End flange dimension: ASME B 16.5 (for NPS $\leq$ 24) ; ASME B 16.47 series B、API605 or ASME B 16.47 series A、MSS SP-44(for NPS $>$ 24).

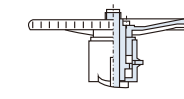
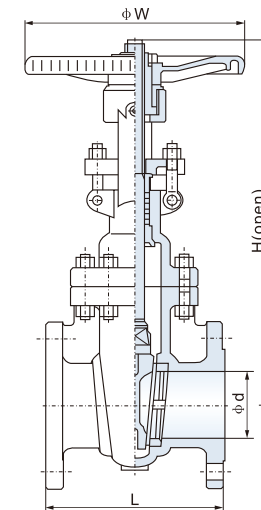
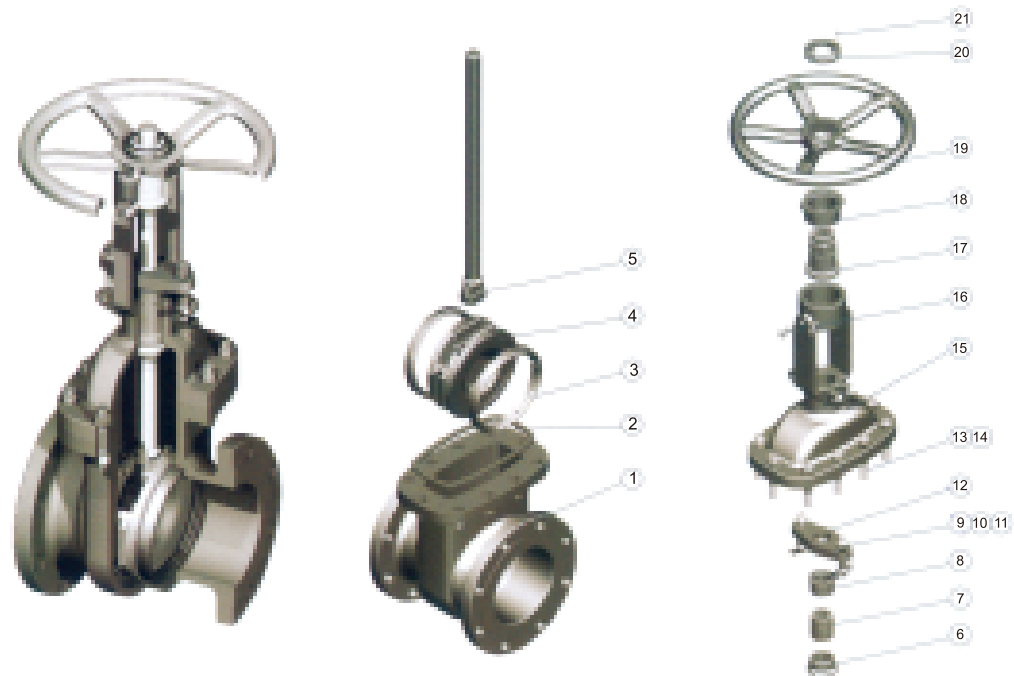
BW end dimension: ASME B 16.25.

Socket-weld dimension: ASME B 16.11.

Face to face and end to end:ASME B 16.10.

Pressure-temperature ratings:ASME B 16.34.

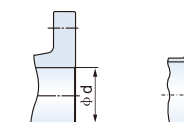
Class150 Cast Steel Gate Valve



≥NPS 10 Valve

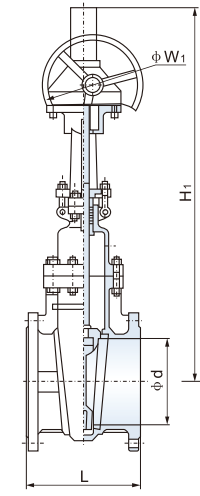


≥NPS 10 Valve



RTJ

BW



Gear Operation

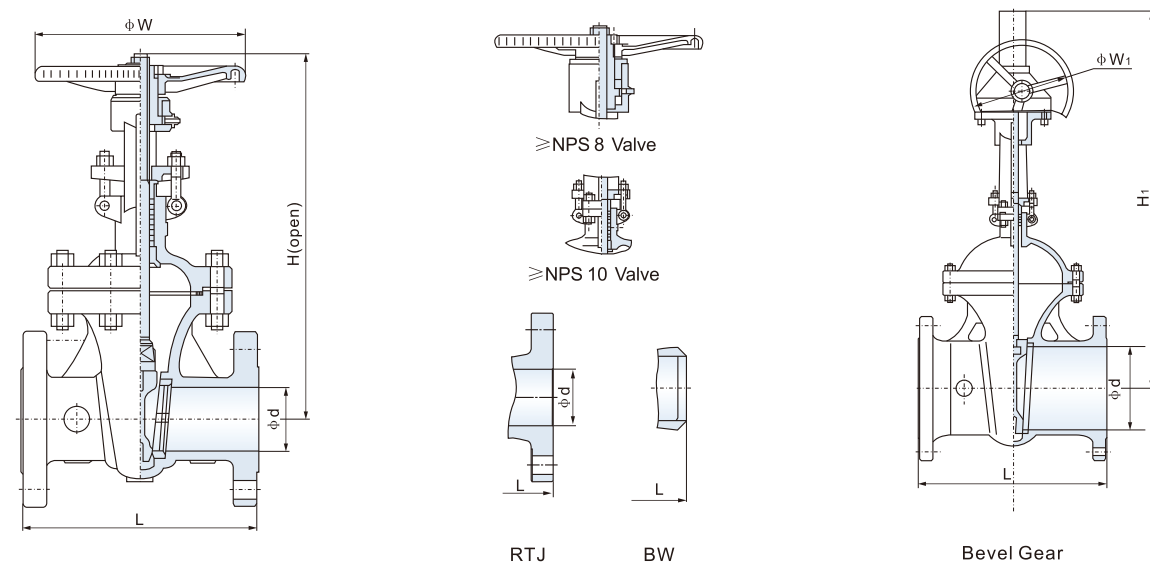
Main Parts and Materials

No.	Parts	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M
2	Gasket	Soft Iron + Graphite or 304 + Graphite			304 + Graphite	316 + Graphite
3	Seat	A105+13Cr	A105+STL	A105+STL	ASTM A351 CF8	ASTM A351 CF8M
4	Wedge	ASTM A216 WCB+13Cr	ASTM A216 WCB+STL	ASTM A216 WCB+13Cr	ASTM A351 CF8	ASTM A351 CF8M
5	Stem	ASTM A182F6a	ASTM A182F6a	ASTM A182F6a	ASTM A182 F304	ASTM A182 F316
6	Back Seat	ASTM A182F6a	ASTM A182F6a	ASTM A182F6a	ASTM A351 CF8	ASTM A351 CF8M
7	Packing	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite	Flexible Graphite
8	Packing sleeve	ASTM A182F6a	ASTM A182F6a	ASTM A182 F6a	ASTM A182 F304	ASTM A182 F316
9	Gland bolt	ASTM A193B7	ASTM A193B7	ASTM A193 B7	ASTM A193B8	ASTM A193B8M
10	Nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
11	Pin	ASTM A36	ASTM A36	ASTM A36	304ss	316ss
12	Packing gland	ASTM A216WCB	ASTM A216WCB	ASTM A216WCB	ASTM A351 CF8	ASTM A351 CF8M
13	Bolt	ASTM A193 B7	ASTM A193B7	ASTM A193B7	ASTM A193B8	ASTM A193B8M
14	Bonnet nut	ASTM A194 2H	ASTM A194 2H	ASTM A194 2H	ASTM A194 8	ASTM A194 8M
15	Bonnet	ASTM A216WCB	ASTM A216WCB	ASTM A216WCB	ASTM A351 CF8	ASTM A351 CF8M
16	Oil cup	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
17	Stem nut	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2	ASTM A439 D2
18	Gland nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
19	Hand wheel	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron
20	Nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel
21	Bolt	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7	ASTM A193 B7

Notes: The table only lists the common materials of cast steel gate valve. We can also supply such valve with other various types of materials conforming to customers' request or practical working conditions.

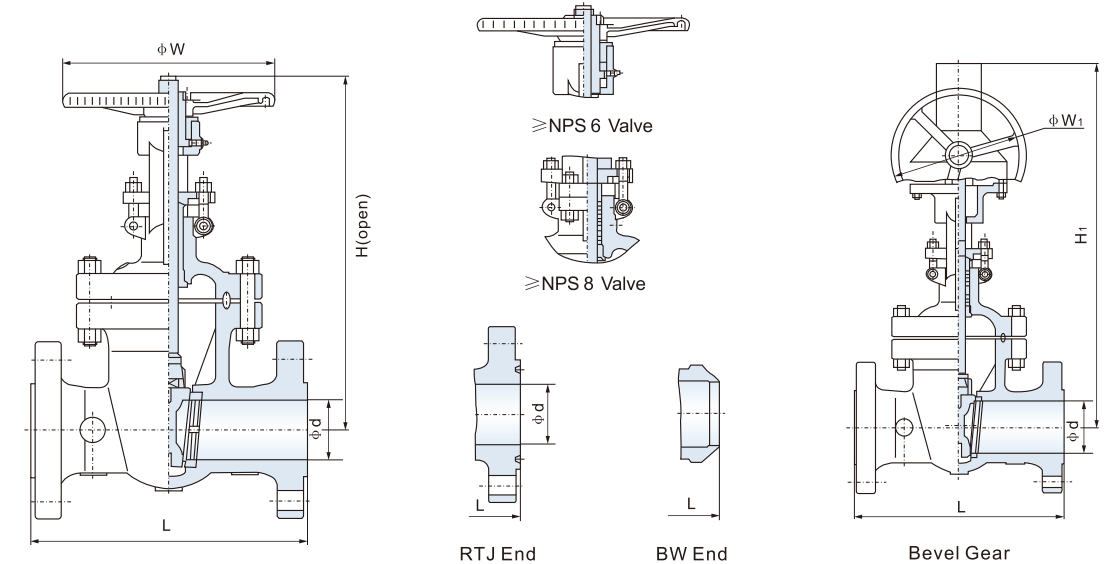
Class	NPS		Dimensions(mm)								Weight(Kg)	
	NPS	DN	L			d	H	H1	W	W1	Hand wheel	Bevel Gear
			RF	RTJ	BW							
Class 150	1/2	15	108	119	108	14	195	-	120	-	4	-
	3/4	20	117	130	117	19	210	-	120	-	5	-
	1	25	127	140	127	25	240	-	140	-	7	-
	1 1/4	32	140	153	140	32	300	-	180	-	10	-
	1 1/2	40	165	178	165	38	395	-	200	-	14	-
	2	50	178	191	216	51	400	-	200	-	19	-
	2 1/2	65	190	203	241	64	435	-	200	-	25	-
	3	80	203	216	283	76	515	-	250	-	33	-
	4	100	229	241	305	102	595	-	280	-	49	-
	5	125	254	267	381	127	725	-	280	-	62	-
	6	150	267	279	403	152	780	820	300	310	77	104
	8	200	292	305	419	203	975	1020	350	310	123	150
	10	250	330	343	457	254	1150	1200	400	310	188	215
	12	300	356	368	502	305	1380	1430	450	310	288	315
	14	350	381	394	572	337	1545	1580	500	310	385	435
	16	400	406	419	610	387	1733	1780	500	460	500	552
	18	450	432	445	660	438	1915	1990	500	460	601	653
	20	500	457	470	711	489	2122	2220	600	460	764	816
	24	600	508	521	813	591	2520	2600	600	460	1007	1185
	26	650	559	-	864	633	-	2800	-	600	-	1550
	28	700	610	-	914	684	-	3050	-	600	-	1880
	30	750	610	-	914	735	-	3130	-	600	-	2300
	32	800	711	-	965	779	-	3280	-	600	-	2550
	34	850	762	-	1016	830	-	3500	-	600	-	2950
	36	900	711	-	1016	874	-	3720	-	600	-	3390

Class300 Cast Steel Gate Valve



Class	NPS		Dimensions (mm)								Weight (Kg)	
	NPS	DN	L			d	H	H1	W	W1	Hand wheel	Bevel Gear
			R F	RTJ	BW							
Class 300 PN110	1/2	15	140	151	140	14	198	-	120	-	6	-
	3/4	20	152	165	152	19	215	-	140	-	7	-
	1	25	165	178	165	25	245	-	160	-	10	-
	1 1/4	32	178	191	178	32	306	-	180	-	15	-
	1 1/2	40	190	203	190	38	400	-	200	-	21	-
	2	50	216	232	216	51	420	-	200	-	25	-
	2 1/2	65	241	257	241	64	446	-	200	-	30	-
	3	80	283	298	283	76	537	-	250	-	48	-
	4	100	305	321	305	102	619	650	280	310	73	100
	5	125	381	397	381	127	722	750	300	310	99	126
	6	150	403	419	403	152	806	835	350	310	130	186
	8	200	419	435	419	203	1000	1030	400	310	208	235
	10	250	457	473	457	254	1240	1280	450	310	334	386
	12	300	502	518	502	305	1425	1460	500	310	450	502
	14	350	762	778	762	337	1585	1620	600	460	704	756
	16	400	838	854	838	387	1790	1830	500	460	923	965
	18	450	914	930	914	438	1960	2000	650	460	1131	1224
	20	500	991	1010	991	489	2158	2220	750	460	1345	1400
	24	600	1143	1165	1143	591	2576	2620	900	600	2122	2385
	26	650	1245	1270	1245	633	-	2850	-	600	-	3000
	28	700	1346	1372	1346	684	-	3080	-	600	-	3300
	30	750	1397	1422	1397	735	-	3180	-	600	-	3550
	32	800	1524	1553	1524	779	-	3300	-	600	-	4400
	34	850	1626	1654	1626	830	-	3550	-	600	-	5200
	36	900	1727	1756	1727	874	-	3760	-	600	-	6050

Class 600 Cast Steel Gate Valve



Class	NPS		Dimensions (mm)								Weight (Kg)	
	NPS	DN	L			d	H	H1	W	W1	Hand wheel	Bevel Gear
			R F	RTJ	BW							
Class 600 PN110	2	50	292	295	292	51	444	-	200	-	32	-
	2 1/2	65	330	333	330	64	500	-	250	-	52	-
	3	80	356	359	356	76	558	585	280	310	60	87
	4	100	432	435	432	102	665	695	300	310	107	134
	5	125	508	511	508	127	760	790	350	310	175	227
	6	150	559	562	559	152	868	900	450	310	216	268
	8	200	660	664	660	203	1073	1110	500	310	399	451
	10	250	787	791	787	254	1263	1300	650	460	605	657
	12	300	838	841	838	305	1600	1650	700	460	851	893
	14	350	889	892	889	337	1705	1750	900	460	1177	1232
	16	400	991	994	991	387	1835	1900	900	460	1513	1568
	18	450	1092	1095	1092	438	-	2020	-	600	-	1980
	20	500	1194	1200	1194	489	-	2172	-	600	-	2460
	24	600	1397	1407	1397	591	-	2650	-	600	-	3650
Class 900 PN150	2	50	368	371	368	51	500	-	280	-	70	-
	2 1/2	65	419	422	419	64	550	-	280	-	110	-
	3	80	381	384	381	76	610	660	300	310	140	167
	4	100	457	460	457	102	702	750	350	310	200	227
	5	125	559	562	559	127	850	900	400	310	258	285
	6	150	610	613	610	152	980	1060	500	460	358	410
	8	200	737	740	737	203	1100	1140	650	460	550	600
	10	250	838	841	838	254	1320	1370	700	460	1000	1100
	12	300	965	968	965	305	1500	1560	900	460	1215	1310
	14	350	1029	1038	1029	322	1900	1950	900	600	1600	1700
	16	400	1130	1140	1130	373	2050	2100	900	600	2150	2330

Check Valve Designing Standards and Features

Standards

Design and Manufacture: Cast Steel Check Valve as per BS1868, API 6D,
API 594 Forged Steel Check Valve as per API 602.

Test and Inspect: API 598 or API 6D.

End connection: NPS≤24" as per ASME B16.5;

NPS > 24" as per ASME B16.47, MSS SP-44

Butt-welding: ASME B16.25

Socket: ASME B16.11

Structure length: ASME 16.10

Pressure & Temperature: ASME B6.34

Wall thickness: API 600, BS 1868.

Features

Bolted bonnet, Swing type and lift type, metal seated

Bonnet type

Bolted bonnet for Class 150 to 900, Pressure seal bonnet for
Class 1500 to 2500.

Central Flange Gasket:

Carbon steel+ Flexible Graphite for Class 150 to 300.

Stainless Steel+ Flexible Graphite for Class 600.

Metal Ring Gasket for Class 900.

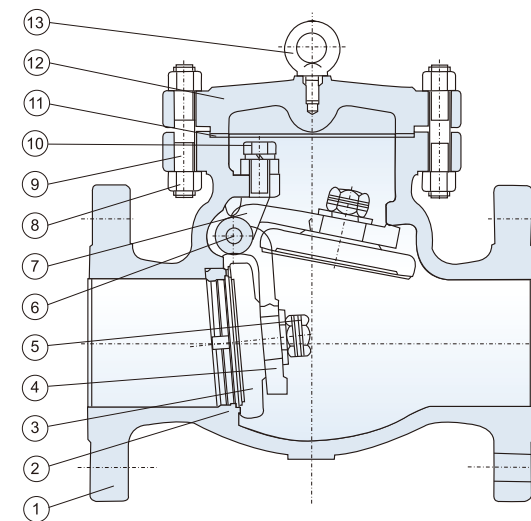
Pressure seal bonnet for Class 1500 to 2500.

Seat

Forged steel seat is for carbon steel gate valve. Body and seat of
gate valve of NPS ≤10 has replaceable screw connection, or welded
connection as customers request. For NPS ≥12, the body and the
seat are welding connection. Stainless steel gate valve has integral
seat from the body, or alloy surfacing, or screw and welding seat as
customers request.



CAST STEEL SWING CHECK VALVE



Standards

Design and Manufacture: Cast Steel Check Valve as per BS1868, API 6D

Test and Inspect: API 598 or API 6D.

End connection: NPS≤24" as per ASME B16.5; NPS > 24" as per ASME B16.47, MSS SP-44

Butt-welding: ASME B16.25

Structure length: ASME 16.10

Pressure & Temperature: ASME B6.34

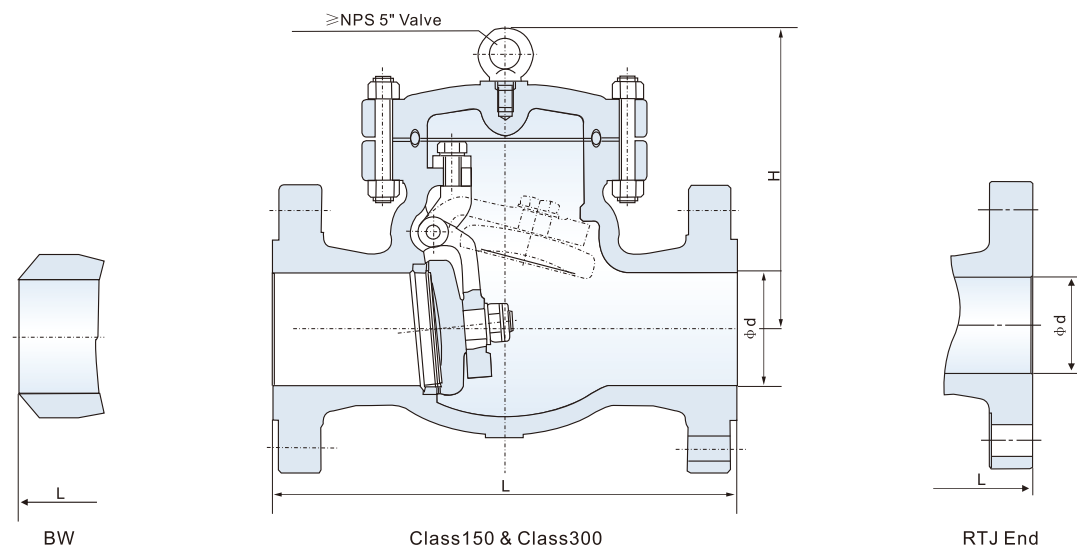
Wall thickness: API 600, BS 1868.

Main parts and materials

No.	Parts	Materials				
		WCB/Trim1	WCB/Trim5	WCB/Trim8	CF8/304	CF8M/316
1	Body	ASTMA216 WCB	ASTMA216 WCB	ASTMA216 WCB	ASTMA351 CF8	ASTMA351 CF8M
2	Seat	A105+13Cr	A105+Alloy	A105+Alloy	ASTMA351 CF8	ASTMA351 CF8M
3	Disc	ASTMA216 WCB+13Cr	ASTMA216 WCB+STL	ASTMA216 WCB+13Cr	ASTMA351 CF8	ASTMA351 CF8M
4	Hinge pin	ASTMA216WCB	ASTMA216WCB	ASTMA216WCB	ASTMA351 CF8	ASTMA351 CF8M
5	Nut	ASTMA194 2H	ASTMA194 2H	ASTMA194 2H	ASTMA 1948	ASTMA 1948M
6	Pin	ASTMA182 F6a	ASTMA182 F6a	ASTMA182 F6a	ASTMA182 F304	ASTMA182 F316
7	Yoke	ASTMA 216 WCB	ASTMA 216 WCB	ASTMA 216 WCB	ASTMA351 CF8	ASTMA351 CF8M
8	Bonnet nut	ASTMA194 2H	ASTMA194 2H	ASTMA194 2H	ASTMA1948	ASTMA1948M
9	Bolt	ASTMA 193 B7	ASTMA 193 B7	ASTMA 193 B7	ASTMA193 B8	ASTMA193 B8M
10	Bolt	ASTMA193 B7	ASTMA193 B7	ASTMA193 B7	ASTMA193B8	ASTMA193B8M
11	Gasket	304 sheet+Flexible Graphite	304 sheet+Flexible Graphite	304 sheet+Flexible Graphite	304+Flexible Graphite	304+Flexible Graphite
12	Bonnet	ASTMA216 WCB	ASTMA216 WCB	ASTMA216 WCB	ASTMA351 CF8	ASTMA351 CF8M
13	Lug bolt	ASTMA181	ASTMA181	ASTMA181	ASTMA 181	ASTMA 181

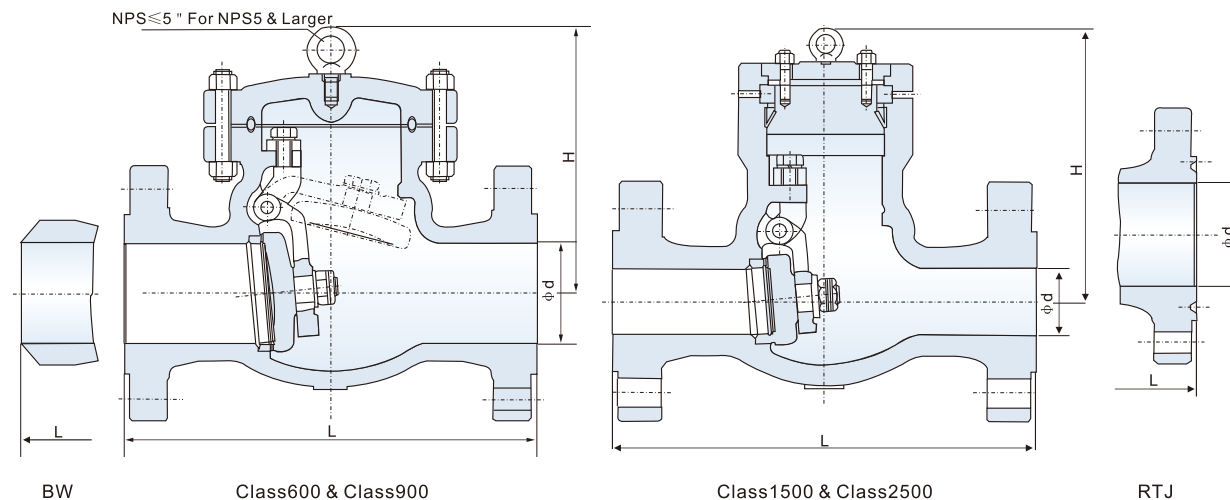
Notes: The table only lists the common materials of cast steel gate valve. We can also supply such valve with other various types of materials
conforming to customers' request or practical working conditions.

Class 150 to 300 Cast Steel Swing Type Check Valve



NPS		Class150						Class300					
NPS	DN	Dimensions(mm)					Weight (kg)	Dimensions(mm)					Weight (kg)
		L			d	H		L			d	H	
		RF	RTJ	BW				RF	RTJ	BW			
2	50	203	216	203	51	132	15	267	283	267	51	144	20
2½	65	216	229	216	64	147	20	292	308	292	64	169	35
3	80	241	254	241	76	176	27	318	333	318	76	210	40
4	100	292	305	292	102	198	45	356	371	356	102	260	61
5	125	330	343	330	127	255	58	400	416	400	127	295	80
6	150	356	368	356	152	320	69	445	460	445	152	326	130
8	200	495	508	495	203	380	131	533	549	533	203	380	190
10	250	622	635	622	254	440	219	622	638	622	254	440	296
12	300	699	711	699	305	480	321	711	727	711	305	520	450
14	350	787	800	787	337	530	380	838	854	838	337	540	640
16	400	864	876	864	387	580	560	864	879	864	387	588	850
18	450	978	991	978	438	618	630	978	994	978	438	670	1030
20	500	978	991	978	489	657	770	1016	1035	1016	489	720	1330
24	600	1295	1308	1295	591	760	960	1346	1368	1346	591	850	1950
26	650	1295	-	1295	633	840	1250	1346	1372	1346	633	920	2300
28	700	1448	-	1448	684	920	1580	1499	1524	1499	684	1150	2600
30	750	1524	-	1524	735	980	1950	1594	1619	1594	735	1260	3200

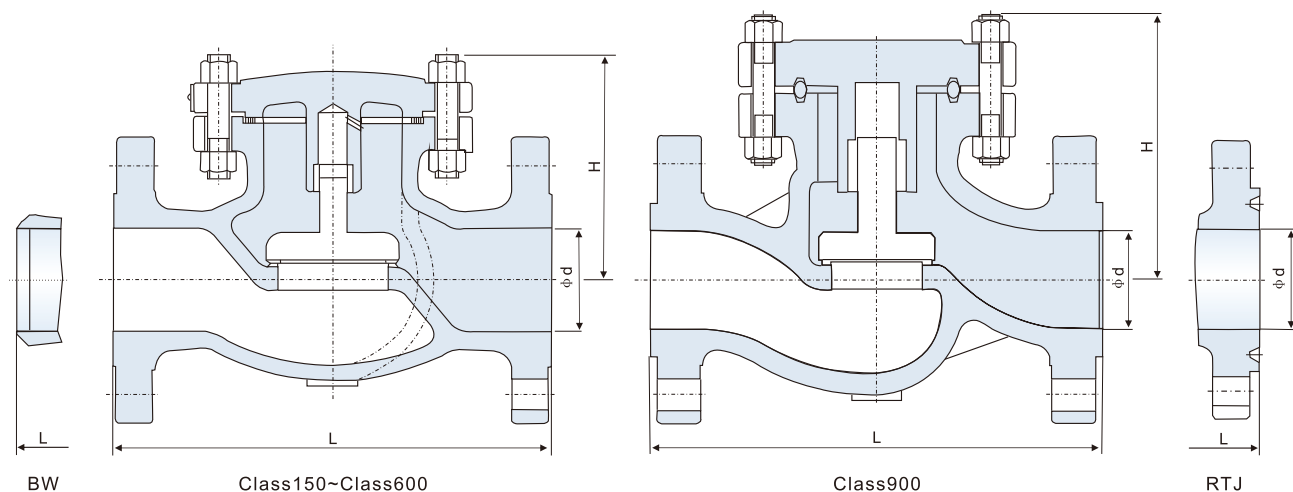
Class 600 to 2500 Cast Steel Swing Type Check Valve



NPS		Class 600						Class900					
NPS	DN	Dimensions(mm)					Weight (kg)	Dimensions(mm)					Weight (kg)
		L			d	H		L			d	H	
		R F	RTJ	B W				RF	RTJ	BW			
2	50	292	295	292	51	170	28	368	371	368	51	200	48
2 1/2	65	330	333	330	64	178	40	419	422	419	64	220	75
3	80	356	359	356	76	246	68	381	384	381	76	280	95
4	100	432	435	432	102	290	117	457	460	457	102	320	135
5	125	508	511	508	127	320	155	559	562	559	127	360	200
6	150	559	562	559	152	360	192	610	613	610	152	400	264
8	200	660	664	660	203	430	340	737	740	737	203	480	424
10	250	787	791	787	254	502	515	838	841	838	254	560	730
12	300	838	841	838	305	554	750	965	968	965	305	632	1070
14	350	889	892	889	337	595	890	1029	1038	1029	322	680	1180
16	400	991	994	991	387	680	1303	1130	1140	1130	373	780	1790
18	450	1092	1095	1092	438	778	1800	1219	1232	1219	423	880	2500
20	500	1194	1200	1194	489	970	2150	1321	1334	1321	471	1050	3080
24	600	1397	1407	1397	591	1100	3200	1549	1568	1549	522	1200	4600

NPS		Class 1500						Class2500					
NPS	DN	Dimensions(mm)					Weight (kg)	Dimensions(mm)					Weight (kg)
		L			d	H		L			d	H	
		R F	RTJ	B W				R F	RTJ	B W			
2	50	368	371	368	51	210	48	451	454	451	42	230	68
2½	65	419	422	419	64	240	75	508	514	508	52	260	100
3	80	470	473	470	76	303	120	578	584	578	62	330	165
4	100	548	549	546	102	340	180	673	683	673	87	370	260
5	125	673	676	673	127	380	294	794	807	794	96	410	440
6	150	705	711	705	144	430	365	914	927	914	131	460	580
8	200	832	841	832	192	500	634	1022	1038	1022	179	530	970
10	250	991	1000	991	239	590	1140	1270	1292	1270	223	620	1700
12	300	1130	1146	1130	287	660	1650	1422	1445	1422	265	690	2600
14	350	1257	1276	1257	315	710	2000	-	-	-	-	-	-
16	400	1384	1407	1384	360	820	2700	-	-	-	-	-	-

Class 150 to 900 Cast Steel Lift Type Check Valve



Size		Class 150						Class 300					
NPS	DN	Dimensions(mm)					Weight (kg)	Dimensions(mm)					Weight (kg)
		L			d	H		L			d	H	
		R F	RTJ	B W				R F	RTJ	B W			
1/2	15	108	119	108	13	76	3	152	162	152	13	78	5
3/4	20	117	130	117	19	76	4	178	191	178	19	82	6
1	25	127	140	127	25	98	5	203	216	203	25	102	8
1 1/4	32	140	153	140	32	102	7	216	229	216	32	106	11
1 1/2	40	165	178	165	38	115	8	229	242	229	38	118	13
2	50	203	216	203	51	140	15	267	283	267	51	140	26
2 1/2	65	216	229	216	64	162	22	292	308	292	64	164	33
3	80	241	254	241	76	168	28	318	333	318	76	178	50
4	100	292	305	292	102	194	42	356	371	356	102	195	86
5	125	356	368	356	127	210	60	400	416	400	127	223	120
6	150	406	419	406	152	226	75	445	460	445	152	245	180
8	200	495	508	495	203	250	118	533	549	533	203	280	220
10	250	622	635	622	254	275	194	622	638	622	254	336	310
12	300	699	711	699	305	332	320	711	727	711	305	380	510

NPS		Class600						Class900					
NPS	DN	Dimensions(mm)					Weight (kg)	Dimensions(mm)					Weight (kg)
		L			d	H		L			d	H	
		RF	RTJ	BW				R F	RTJ	B W			
2	50	292	295	292	51	152	32	368	371	368	50	180	50
2 1/2	65	330	333	330	64	167	45	419	422	419	64	200	65
3	80	356	359	356	76	178	68	381	384	381	74	235	88
4	100	432	435	432	102	215	98	457	460	457	100	270	140
5	125	508	511	508	125	240	155	559	562	559	125	300	210
6	150	559	562	559	152	279	230	610	613	610	150	350	300
8	200	660	664	660	200	328	300	737	740	737	200	400	390

Globe Valve Designing Standards and Features

Standards

Design and Manufacture: Cast Carbon Steel Globe Valve: BS 1873.
 Forged Steel Gate Valve: API 602.
 Test and Inspect: API 598.
 End connection: NPS ≤ 24" as per ASME B16.5;
 Butt-welding: ASME B16.25
 Socket: ASME B16.11
 Structure length: ASME 16.10
 Pressure & Temperature: ASME B6.34

Features

Bolted bonnet, OS&Y, Lift stem, metal seat.

Bonnet type:

Bolted Bonnet for Class 150 to 900,
 Pressure Seal bonnet for Class 1500 to 2500.

Central Flange Gasket:

Carbon steel+ Flexible Graphite for Class 150.
 Stainless Steel+ Flexible Graphite for Class 300 to 600.
 Metal Ring Gasket for Class 900.
 Pressure seal bonnet for Class 1500 to 2500.

Operation Method

Hand wheel or Gear operation. Electric actuator and pneumatic for customers' request

Packing seal

Graphite, PTFE, Metal+flexible gasket.

Back seat

All gate valves has back seat. Carbon steel gate valve has a replaceable back seat. Stainless steel generally has integral back seat on the body o welded on the body to constitute back seat.

Seat

Forged steel seat is for carbon steel gate valve. Body and seat of gate valve of NPS ≤ 10 has replaceable screw connection, or welded connection as customers request. For NPS ≥ 12, the body and the seat are welding connection. Stainless steel gate valve has integral seat from the body, or alloy surfacing, or screw and welding seat as customers request.

Stem

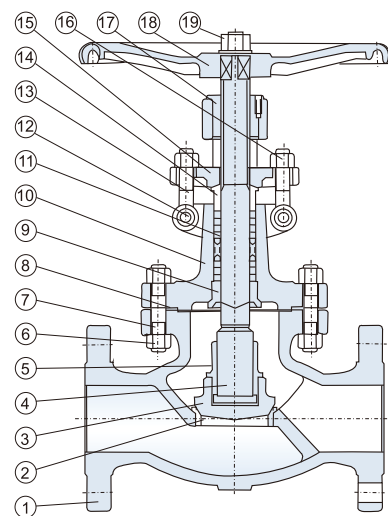
The stem is integral forged. The minimum diameter of stem is designed according to standards. Stem and body are connected by T-type, where the hardness is higher than the screwed T-type of stem according to API 591.

Stem nut

Stem nut is general ASTM A439 D2, o bronze as customers request.



Cast Steel Globe Valve



Standards

Design and Manufacture: Cast Carbon Steel Globe Valve: BS 1873.
Forged Steel Gate Valve: API 602.
Test and Inspect: API 598.
End connection: NPS≤24" as per ASME B16.5;

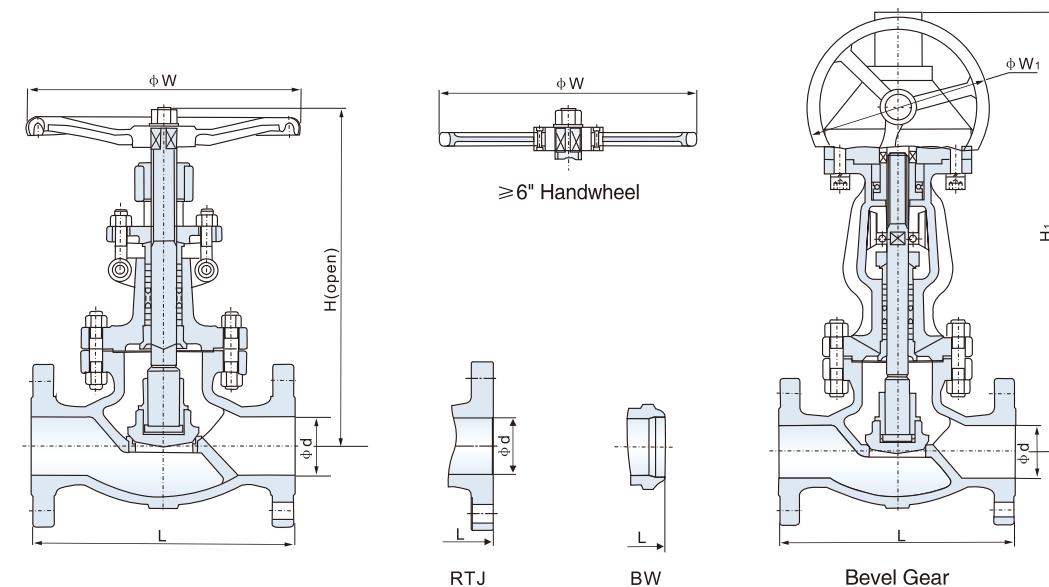
Butt-welding: ASME B16.25
Socket: ASME B16.11
Structure length: ASME 16.10
Pressure & Temperature: ASME B6.34

Main parts and materials

No.	Parts	Materials				
		WCB/Trim 1	WCB/Trim 5	WCB/Trim 8	CF8/304	CF8M/316
1	Body	ASTMA216WCB	ASTMA216WCB	ASTMA216WCB	ASTMA351 CF8	ASTMA351 CF8M
2	Seat	A105+13Cr	A105+Alloy	A105+Alloy	ASTMA351 CF8	ASTMA351 CF8M
3	Disc	ASTMA216WCB+13Cr	ASTMA216WCB+STL	ASTMA216WCB+13Cr	ASTMA351 CF8	ASTMA351 CF8M
4	Stem	ASTMA182F6a	ASTMA182F6a	ASTMA182F6a	ASTMA182 F304	ASTMA182 F316
5	Disc cover	ASTMA216WCB	ASTMA216WCB	ASTMA216WCB	ASTMA351 CF8	ASTMA351 CF8M
6	Bonnet nut	ASTMA1942H	ASTMA194 2H	ASTMA194 2H	ASTMA194 8	ASTMA194 8M
7	Bolt	ASTMA193 B7	ASTMA193 B7	ASTMA193 B7	ASTMA193 B8	ASTMA193 B8M
8	Gasket	304steel+Flexible graphite	304steel+Flexible graphite	304steel+Flexible graphite	304+Flexible graphite	304+Flexible graphite
9	Back Seat	ASTMA182F6a	ASTMA182F6a	ASTMA182F6a	ASTMA351 CF8	ASTMA351 CF8M
10	Bonnet	ASTMA216 WCB	ASTMA216 WCB	ASTMA216 WCB	ASTMA351 CF8	ASTMA351 CF8M
11	Packing	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite	Flexible graphite
12	Pin	ASTMA36	ASTMA36	ASTMA36	304ss	316ss
13	Bolt	ASTMA193B7	ASTMA193B7	ASTMA193B7	ASTMA 193 B8	ASTMA 193 B8M
14	Packing sleeve	ASTMA182F6a	ASTMA182F6a	ASTMA182F6a	ASTMA182F304	ASTMA182F316
15	Packing gland	ASTMA216WCB	ASTMA216WCB	ASTMA216WCB	ASTMA351 CF8	ASTMA351 CF8M
16	Lug ring	ASTMA194 2H	ASTMA194 2H	ASTMA194 2H	ASTMA194 8	ASTMA194 8M
17	Stem nut	ASTM A439 D2	ASTMA439 D2	ASTMA439 D2	ASTMA439 D2	ASTMA439 D2
18	Hand wheel	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron	Ductile Iron
19	Handwheel nut	Carbon steel	Carbon steel	Carbon steel	Carbon steel	Carbon steel

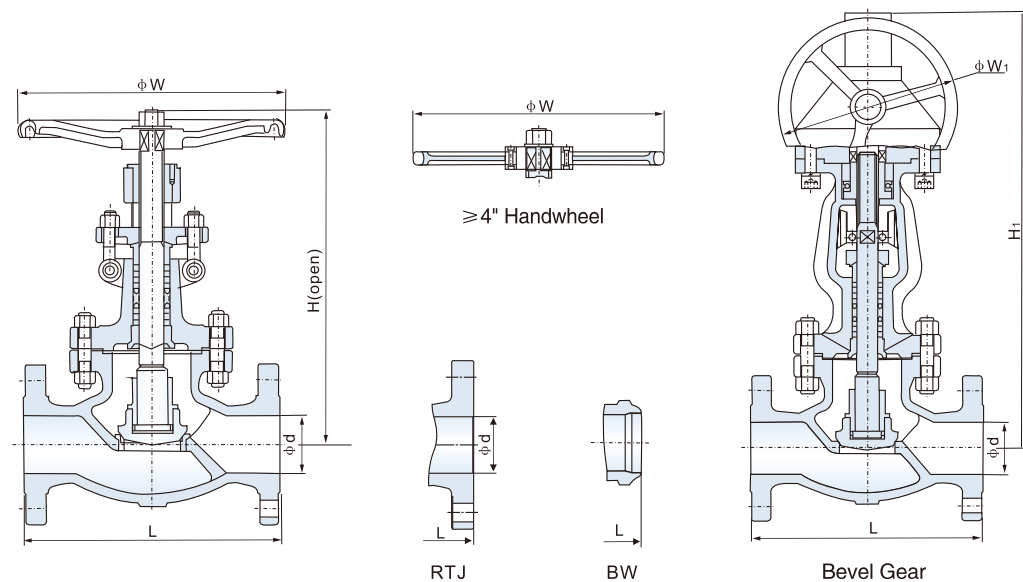
Notes: The table only lists the common materials of cast steel gate valve. We can also supply such valve with other various types of materials conforming to customers' request or practical working conditions.

Class 150 Cast Steel Globe Valve

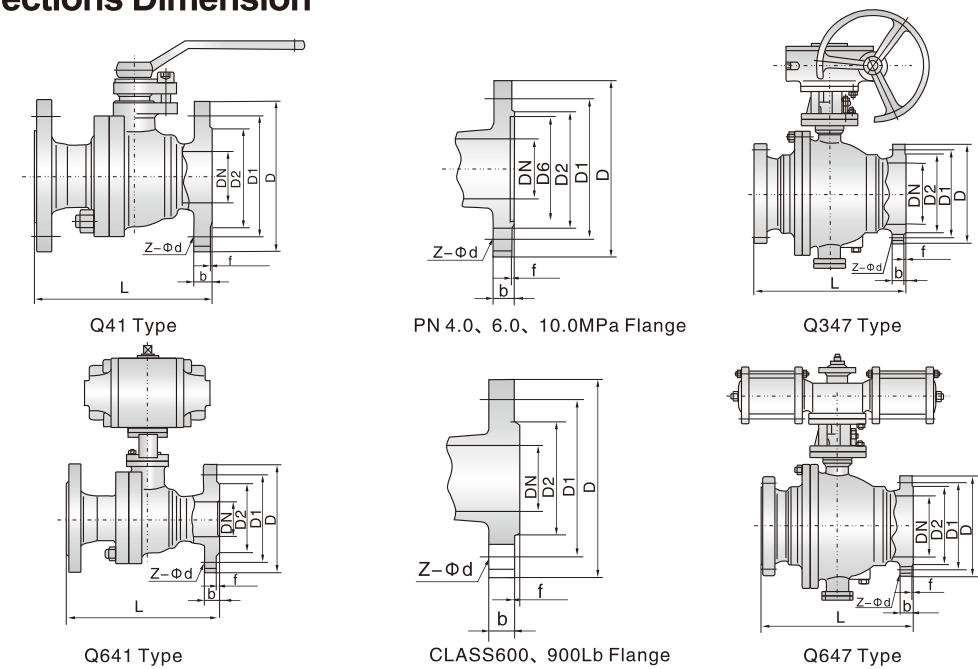


Class	NPS		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H1	W	W1	Hand wheel	Bevel Gear
			RF	RTJ	BW							
150	1/2	15	108	119	108	13	182	-	100	-	4	-
	3/4	20	117	130	117	19	193	-	100	-	6	-
	1	25	127	140	127	25	217	-	100	-	8	-
	1 1/4	32	140	152	140	32	235	-	135	-	12	-
	1 1/2	40	165	178	165	38	258	-	135	-	16	-
	2	50	203	216	203	51	330	-	200	-	25	-
	2 1/2	65	216	229	216	64	360	-	250	-	42	-
	3	80	241	254	241	76	390	-	280	-	46	-
	4	100	292	305	292	102	445	-	300	-	74	-
	5	125	356	369	356	127	480	-	350	-	111	-
	6	150	406	419	406	152	520	556	350	310	165	126
	8	200	495	508	495	203	600	658	400	310	275	180
	10	250	622	635	622	254	773	805	450	460	400	291
	12	300	698	711	698	305	880	955	500	460	624	480

Class 300 Cast Steel Globe Valve



Main Connections Dimension



Main dimensions (manufacturer's) of Principal Types and Specifications of Ball Valves

During the long production practice, structure length of our current ball valve can not conform to customers' request. Therefore, based on the business principal that all is for customers, we summarize the general requests of clients and the practical structure lengths as the reference of structure length. It is necessary to require the dimensions of this table in the orders.

Class	NPS		Dimensions(mm)								Weight(kg)	
	NPS	DN	L			d	H	H1	W	W1		
			RF	RTJ	BW						Hand wheel	Bevel Gear
300	1/2	15	152	164	152	14	185	-	100	-	5	-
	3/4	20	178	191	178	19	195	-	100	-	7	-
	1	25	203	216	203	25	220	-	135	-	10	-
	1 1/4	32	216	229	216	32	240	-	135	-	14	-
	1 1/2	40	229	241	229	38	260	-	160	-	19	-
	2	50	267	283	267	51	385	-	200	-	25	-
	2 1/2	65	292	308	292	64	420	-	200	-	42	-
	3	80	318	333	318	76	440	-	280	-	46	-
	4	100	356	371	356	102	515	-	350	-	74	-
	5	125	400	416	400	127	580	-	350	-	111	-
	6	150	444	460	444	152	660	690	400	310	165	195
	8	200	559	575	559	203	900	950	550	460	275	327
	10	250	622	638	622	254	950	990	600	460	400	452
	12	300	711	727	711	305	1030	1080	700	460	624	725

Principal Type	Nominal Size DN	Structure Length							
		PN1.6MPa		PN2.5MPa		PN4.0MPa		PN6.4MPa	
		41Type	47 Type	41 Type	47 Type	41 Type	47 Type	41 Type	47 Type
Q41F Q47F Q341F Q347F Q641F Q647F Q941F Q947F	15	130	108	130	140	130	-	140	165
	20	140	117	140	152	140	-	152	191
	25	150	127	150	165	150	-	180	216
	32	165	140	165	178	180	-	200	229
	40	180	165	180	190	200	-	220	241
	50	200	178	200	216	220	216	250	292
	65	220	191	220	241	250	241	280	330
	80	250	203	250	283	280	283	320	356
	100	280	229	280	305	320	305	360	406
	125	320	356	320	381	400	381	381	508
	150	360	394	360	403	400	403	403	495
	200	400	457	400	502	502	502	-	597
	250	450	533	-	568	-	568	-	673
	300	-	610	-	648	-	648	-	762
	350	-	686	-	762	-	762	-	826
	400	-	762	-	838	-	838	-	902
	450	-	864	-	914	-	914	-	1054
	500	-	914	-	991	-	991	-	1232
	600	-	1067	-	1143	-	1143	-	

Main Connections Dimension

JB Series Main Connections Dimensions

1.6MPa								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
15	108	13	95	65	45	14	2	4-14
20	117	19	105	75	55	14		4-14
25	127	25	115	85	65	14		4-14
32	140	32	135	100	78	16		4-18
40	165	38	145	110	85	16	3	4-18
50	178	51	160	125	100	16		4-18
65	191	64	180	145	120	18		4-18
80	203	76	195	160	135	20		8-18
100	229	100	215	180	155	20		8-18
125	356	125	245	210	185	22		8-18
150	394	150	280	240	210	24		8-23
200	457	201	335	295	265	26		12-23
250	533	252	405	355	320	30		12-25
300	610	303	460	410	375	30	4	12-25
350	686	334	520	470	435	34		16-25
400	762	385	580	525	485	36		16-30
450	864	436	640	585	545	40		20-30
500	914	487	705	650	608	44	5	20-34
600	1067	589	840	770	718	48		20-41
700	1245	684	910	840	788	50		24-41
4.0MPa								
NPS	L	DN	D	D1	D2/D6	b	f/f1	Z-Φd
15	140	13	95	65	45/40	16	2/4	4-14
20	152	19	105	75	55/51	16		4-14
25	165	25	115	85	65/58	16		4-14
32	178	32	135	100	78/66	18		4-18
40	191	38	145	110	85/76	18	3/4	4-18
50	216	51	160	125	100/88	20		4-18
65	241	64	180	145	120/110	22		8-18
80	283	76	195	160	135/121	22		8-18
100	305	100	230	190	160/150	24	3/4.5	8-23
125	381	125	270	220	188/176	28		8-25
150	403	150	300	250	218/204	30		8-25
200	502	201	375	320	282/260	38		12-30
250	568	252	445	385	345/313	42	4/4.5	12-34
300	648	303	510	450	408/364	46		16-34
350	762	334	570	510	465/422	52		16-34
400	838	385	655	585	535/474	58		16-41
450	914	436	680	610	560/524	60	4/5	20-41
500	991	487	755	670	612/576	62		20-48
600	1143	589	890	795	730/678	62	5/6	20-54
700	1346	684	995	900	835/768	68		24-54

2.5MPa									
NPS	L	DN	D	D1	D2	b	f	Z-Φd	
15	140	13	95	65	45	16	2	4-14	
20	152	19	105	75	55	16		4-14	
25	165	25	115	85	65	16		4-14	
32	178	32	135	100	78	18		4-18	
40	191	38	145	110	85	18	3	4-18	
50	216	51	160	125	100	20		4-18	
65	241	64	180	145	120	22		8-18	
80	283	76	195	160	135	22		8-18	
100	305	100	230	190	160	24		8-23	
125	381	125	270	220	188	28		8-25	
150	403	150	300	250	218	30		8-25	
200	502	201	360	310	278	34		12-25	
250	568	252	425	370	332	36	12-30	4	
300	648	303	485	430	390	40	16-30		
350	762	334	550	490	448	44	16-34		
400	838	385	610	550	505	48	16-34		
450	914	436	660	600	555	50	20-34		
500	991	487	730	660	610	52	20-41		
600	1143	589	840	770	718	56	5	20-41	
700	1346	684	955	875	815	60		24-48	
6.4MPa									
NPS	L	DN	D	D1	D2	b	f/f1	Z-Φd	
15	165	13	105	75	55/40	18	2/4	4-14	
20	191	19	125	90	68/51	20		4-18	
25	216	25	135	100	78/58	22		4-18	
32	229	32	150	110	82/66	24		4-23	
40	241	38	165	125	95/76	24	3/4	4-23	
50	292	51	175	135	105/88	26		4-23	
65	330	64	200	160	130/110	28		8-23	
80	356	76	210	170	140/121	30		8-23	
100	406	100	250	200	168/150	32	3/4.5	8-25	
125	508	125	295	240	202/176	36		8-30	
150	495	150	340	280	240/204	38		8-34	
200	597	201	405	345	300/260	44		12-34	
250	673	252	470	400	352/313	48	4/4.5	12-41	
300	762	303	530	460	412/364	54		16-41	
350	826	334	595	525	475/422	60		4/5	16-41
400	902	385	670	585	525/474	66			16-48
500	1054	436	800	705	640/576	70	20-54		
600	1232	487	930	820	750/678	76	5/6	20-58	

Main Connections Dimensions

API Main Connection Dimensions

150LB								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
1/2	108	13	89	60.5	35	—	1.6	4-15
3/4	117	19	98	70	43	—		4-15
1	127	25	108	79.5	51	12		4-15
1-1/4	140	32	117	89	64	13		4-15
1-1/2	165	38	127	98.5	73	15		4-15
2	178	51	152	120.5	92	16		4-19
2-1/2	191	64	178	139.5	105	18		4-19
3	203	76	190	152.5	127	19		4-19
4	229	100	229	190.5	157	24		8-19
5	356	125	254	216	186	24		8-22
6	394	150	279	241.5	216	26		8-22
8	457	201	343	298.5	270	29		8-22
10	533	252	406	362	324	31		12-25
12	610	303	483	432	381	32		12-25
14	686	334	533	476	413	35		12-29
16	762	385	597	540	470	37		16-29
18	864	436	635	578	533	40		16-32
20	914	487	699	635	584	43	20-32	
24	1067	589	813	749.5	692	48	20-35	
28	1245	684	927	863.5	800	72	28-35	
600LB								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
1/2	165	13	95	66.5	35	15	6.4	4-15
3/4	191	19	118	82.5	43	16		4-19
1	216	25	124	89	51	18		4-19
1-1/4	229	32	133	98.5	64	21		4-19
1-1/2	241	38	156	114.5	73	23		4-22
2	292	51	165	127	92	26		8-19
2-1/2	330	64	190	149	105	29		8-22
3	356	76	210	168.5	127	32		8-22
4	432	100	273	216	157	38		8-25
6	559	150	356	292	216	48		12-29
8	660	201	419	349	270	56		12-32
10	787	252	508	432	324	64		16-35
12	838	303	559	489	381	67		20-35
14	889	334	603	527	413	70		20-38
16	991	385	686	603	470	77		20-41
18	1092	436	743	654	533	83		20-45
20	1194	487	813	724	584	89		24-45
24	1397	589	940	838	692	102	24-51	
28	1549	684	1073	965	800	112	28-55	

300LB								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
1/2	140	13	95	66.5	35	15	1.6	4-15
3/4	152	19	117	82.5	43	16		4-19
1	165	25	124	89	51	18		4-19
1-1/4	178	32	133	98.5	64	19		4-19
1-1/2	191	38	156	114.5	73	21		4-22
2	216	51	165	127	92	23		8-19
2-1/2	241	64	190	149	105	26		8-22
3	283	76	210	168.5	127	29		8-22
4	305	100	254	200	157	32		8-22
5	381	125	279	235	186	35		8-22
6	403	150	318	270	216	37		12-22
8	502	201	381	330	270	42		12-25
10	568	252	445	387.5	324	48		16-29
12	648	303	521	451	381	51		16-32
14	762	334	584	514.5	413	54		20-32
16	838	385	648	571.5	470	58		20-35
18	914	436	711	628.5	533	61	24-35	
20	991	487	775	686	584	64	24-35	
24	1143	589	914.5	813	692	70	24-41	
28	1346	684	1035	940	800	86	28-45	
900LB								
NPS	L	DN	D	D1	D2	b	f	Z-Φd
2	368	49	216	165	92	38.5	6.4	8-26
2-1/2	419	62	244	190.5	105	41.5		8-29
3	381	74	241	190.5	127	38.5		8-26
4	457	100	292	235	157	44.5		8-32
6	610	150	381	317.5	216	56		12-32
8	737	201	470	393.7	270	63.5		12-39
10	838	252	545	469.9	324	70		16-39
12	965	303	610	533.4	381	79.5		20-39
14	1029	322	640	558.8	413	86		20-42
16	1130	373	705	615.9	470	89		20-45
18	1219	423	785	685.8	533	102		20-51
20	1321	471	85	749.3	584	108		50-54
24	1549	570	1040	901.7	692	140	20-67	

Main Connections Dimensions

API Series continued

1500Lb								
NPS	L	DN	D	D1	D2	b	f	Z-Φ d
2	368	49	216	165.1	92	38.5	6.4	8-26
2-1/2	419	62	244	190.5	105	41.5		8-29
3	470	74	267	203.2	127	48		8-32
4	546	100	311	241.3	157	54		8-35
6	705	144	394	317.5	216	83		12-39
8	832	192	483	393.7	270	93		12-45
10	991	239	585	482.6	324	108		12-51
12	1130	287	675	571.5	381	124		16-54
14	1257	315	750	635	413	133.5		16-61
16	1384	360	825	704.8	470	146.5		16-67
18	1537	406	915	774.7	533	162		16-74
20	1664	454	985	831.8	584	178		16-80

JB Series continued

10MPa								
NPS	L	DN	D	D1	D2	b	f	Z-Φ d
15	165	13	105	75	55/40	20	2/4	4-14
20	191	19	125	90	68/51	22		4-18
25	216	25	135	100	78/58	24		4-18
32	229	32	150	110	82/66	24		4-23
40	241	38	165	125	95/76	26	3/4	4-23
50	292	51	195	145	112/88	28		4-25
65	330	64	220	170	138/110	32		8-25
80	356	76	230	180	148/121	34		8-25
100	432	100	265	210	172/150	38	3/4.5	8-30
125	508	125	310	250	210/176	42		8-34
150	559	150	350	290	250/204	46		12-34
200	660	201	430	360	312/260	54		12-41
250	787	252	500	430	382/313	60	4/4.5	12-41
300	838	303	585	500	442/364	70		16-48
350	889	334	655	560	498/422	76	4/5	16-54
400	991	385	715	620	558/474	80		16-54

Instructions for maintenance, protection, installation and operation

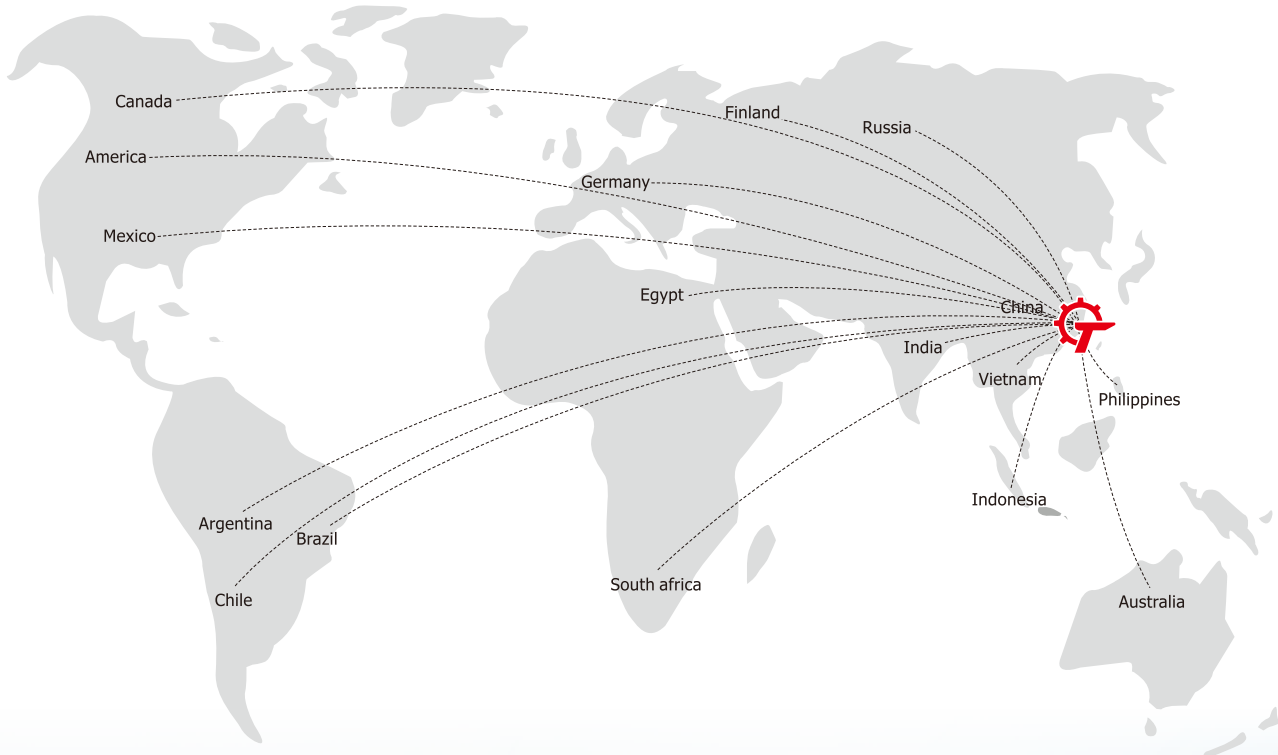
- 1.The valve can be installed at any place where it is convenient to repair, inspect and operate.
- 2.Inspect the identification on the valves before installation.
- 3.Damages and pollution on the valves during the transportation must be removed before installation.
- 4.When the valve is in open position, the position should be the same with the direction on the worm gear.
- 5.The valve must be stocked while the two ends covered; when the valves are piled, they must be placed in dry condition/
- 6.Such valve should be frequently inspected during keeping and operating, looking for faults and eliminate.
- 7.The cavity of the valve should be keep cleaned, and be cleaned when necessary.
- 8.Such valve must be full opening or full closed, with no function as re
- 9.The valve is operated by manual, without other assistant level or power.
- 10.In the process of using, if the cavity has deposition of dirt, or the pressure increases abnormally high at close position, the drain device will conduct the deposition of dirt and the air (liquid) out of the valve.

Faults and elimination methods

Leakage at flange	1. Bolts no tightens 2. Gasket damaged	1. Tighten the bolts 2. Renew or clean
Leakage at Packing staff	1. Packing is loose, or tight on the top and loose at the bottom 2. Damaged packing or insufficient packing	1.Tighten 2.Replaced or increase
Leakage at Closure	1.Closure wears and tears 2.Dirt in the seal surface 3.Two seat loose	1.Replace the seal surface 2.Clean the seal surface 3.Tighten the bolts
Stem Ineffectively works	1.packing gland not installed properly 2. Two seats too tightened	1. Uniform compression 2. Loosen the bolt

Sales network

Actively develops the international market
establishes transnational
sales network



Adhering to the steady, pragmatic and innovative spirit of enterprise,
Under the banner of Quality and with guarantee from credit,
We are setting a model in the industry.
Having the advanced thought and belief,
We are achieving leap frog development, expecting the
brilliant future.

