

# TOP ENTRY BALL VALVE SERIES



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## TOP ENTRY BALL VALVE

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### USAGE

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

### STRUCTURAL FEATURES

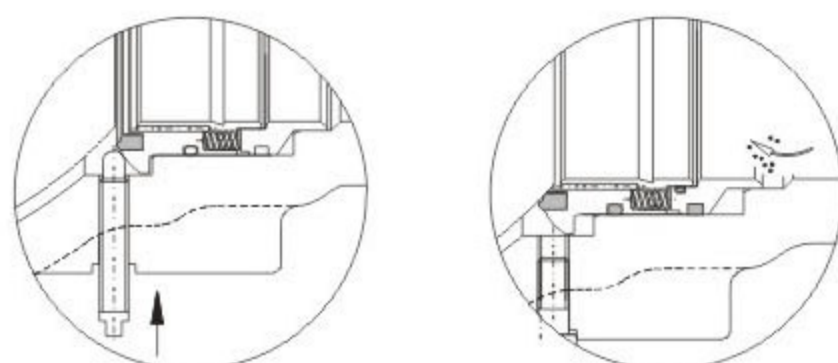
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#### 1、 Integral structure

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

#### 2、 Top Entry Structure

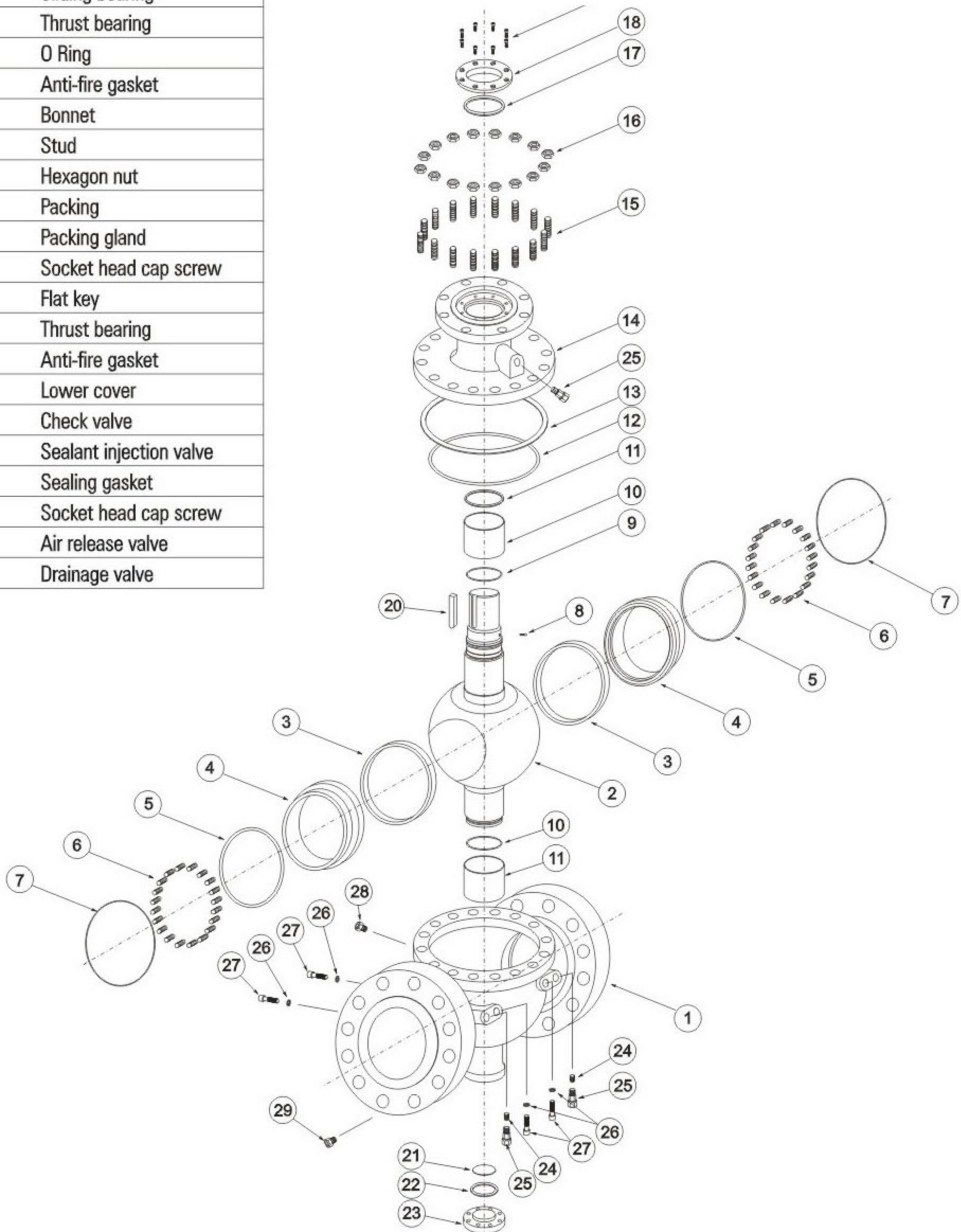
The valve adopts the top entry structure. The most distinctive difference between this kind of valve and others is that the online maintenance function can be realized without the need of removing the valve from the pipeline. The seat adopts the concession type seat structure, and the rear end of the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





# TOP ENTRY BALL VALVE

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





# TOP ENTRY BALL VALVE

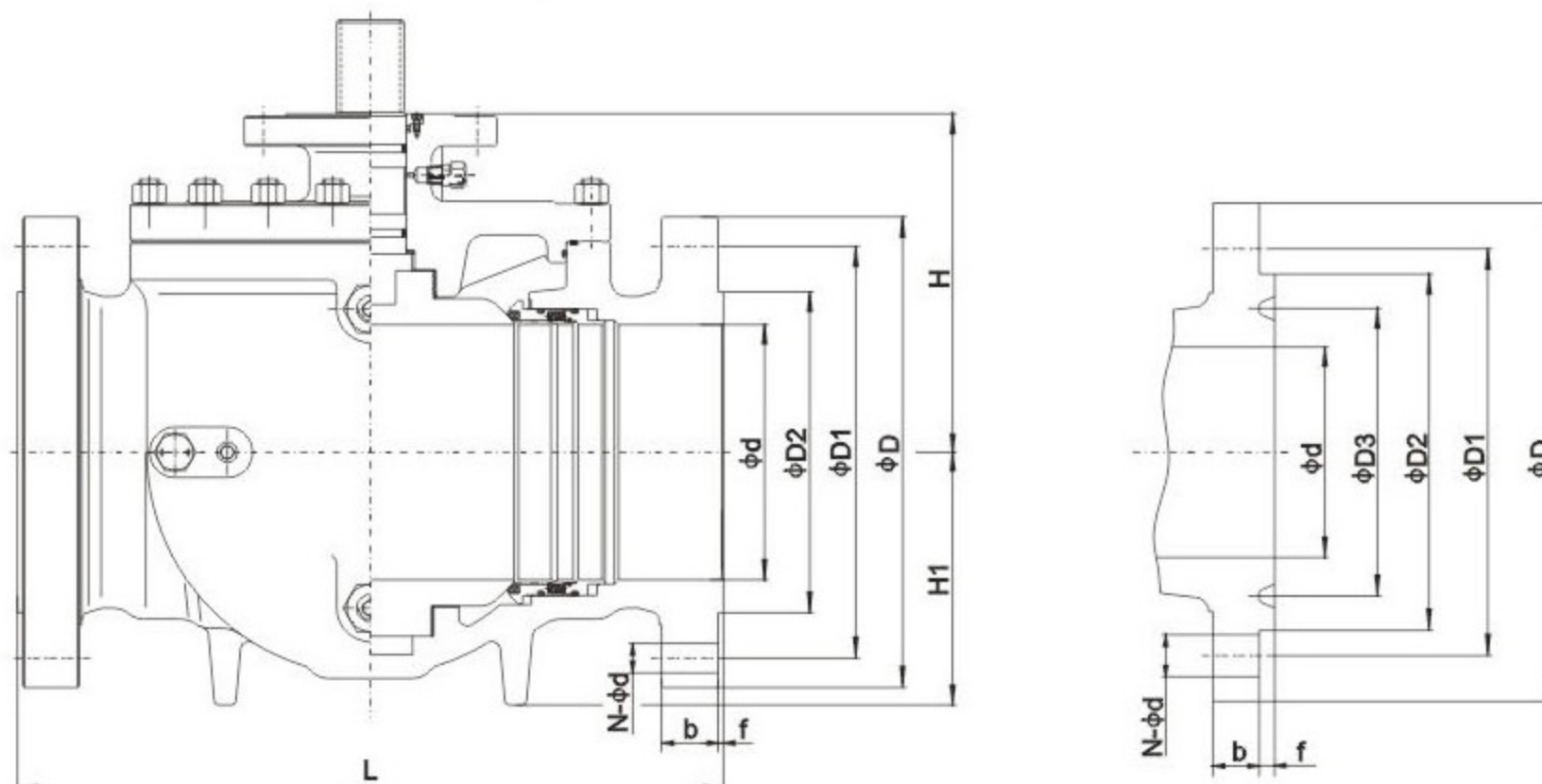
## Part Materials And Main Parameters

Nominal diameter (in)		NPS 2~36				
Nominal pressure (MPa)		Class150~Class900				
No.	Part name	Material				
		Carbon steel		Stainless steel		
1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
2	Ball	ASTM A105 • ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
3	Seat	PTFE/NYOLN/PEEK/PPL				
4	Seat ring	ASTM A105 • ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
5	O Ring	VITON				
6	Spring	17-7PH				
7	Anti-fire packing	Graphite				
8	Anti-static device	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
9	O Ring	VITON				
10	Sliding bearing	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE	Metal+PTFE
11	Thrust bearing	PTFE				
12	O Ring	VITON				
13	Anti-fire gasket	SST+Graphite				
14	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
15	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
16	Hexagon nut	A194 2HM	A194-8	A194 -8M	A194-8	A194-8M
17	Packing	Graphite				
18	Packing gland	ASTM A105 • ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
19	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
20	Flat key	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
21	Thrust bearing	PTFE				
22	Anti-fire gasket	SST+Graphite				
23	Lower cover	ASTM A105 • ENP	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
24	Check valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
25	Sealant injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
26	Sealing gasket	SST+Graphite				
27	Socket head cap screw	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
28	Air release valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
29	Drainage valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
Applicable service conditions	Applicable media	Water, steam, oil, gas liquefied gas, natural gas, etc.	Nitric Acid	Acetic Acid	Strong Oxidizer	Urea
	Applicable temperature	120°C (PTFE) 、 ≤80°C (NYLON) 、 ≤250°C (PEEK) 、 ≤250°C (PPL)				
Design and manufacturing		API 608、API 6D				
Face-to-face dimensions		ASME B16.10、API 6D、JIS B2002				
Type of connection		Flange	ASME B16.5/ASME B16.47	Butt welding	ASME B16.25	
Pressure test		API 598、API 6D				
Transmission mode		Manual、Gear、Pneumatic、Electric				

Materials of parts



# TOP ENTRY BALL VALVE



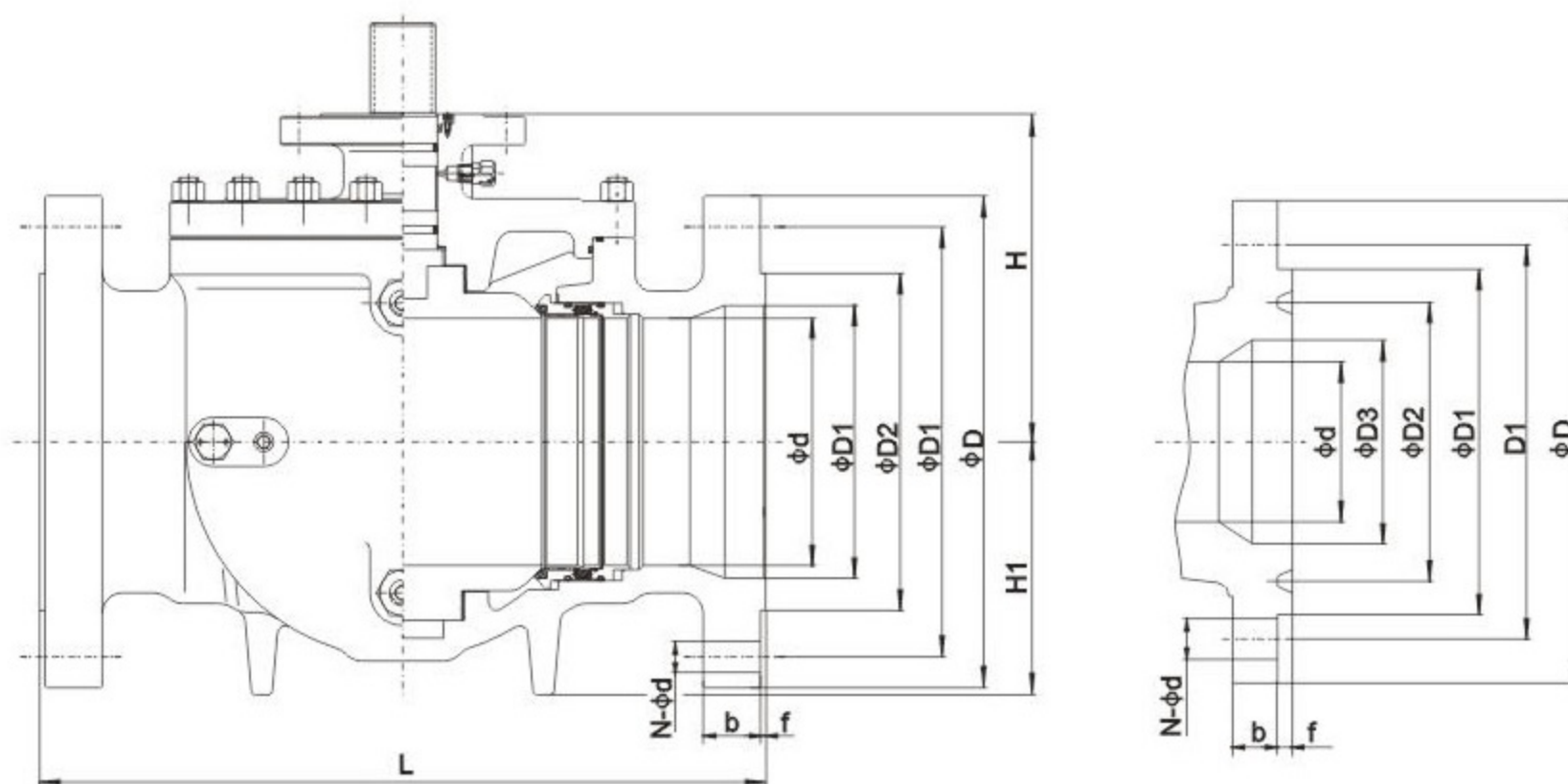
Pressure rating	Nominal Diameter		d	Flanged		Butt welding	Flanged						H	H1	Weight(kg)		
	Class	NPS		DN	L(RF)		L(RTJ)	L(BW)	D	D1	D2	D3				f	b
150		2"	50	50	292	295	292	150	120.5	92	-	2	14.5	4-Φ 19	130	102	△
		3"	80	75	283	298	283	190	152.5	127	-	2	17.5	4-Φ 19	163	150	△
		4"	100	100	432	435	432	230	190.5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

△ Please consult the factory:

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



# TOP ENTRY BALL VALVE



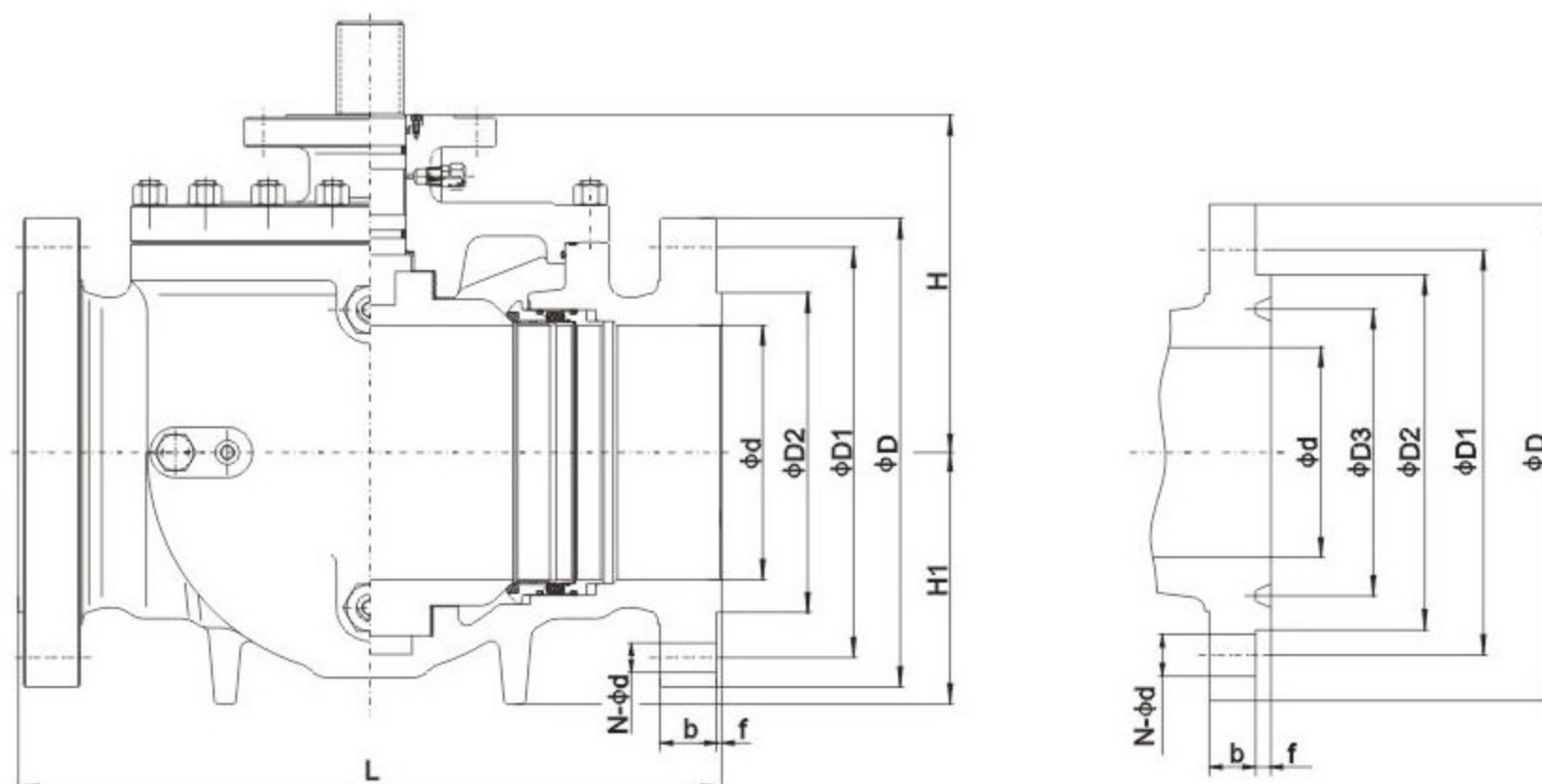
Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Flanged					H	H1	Weight(kg)			
	Class	NPS			DN	L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3				f	b	N-φd
150		3"×2"	80	50	75	283	298	283	190	152.5	127	-	2	17.5	4-φ19	130	102	△
		4"×3"	100	75	100	432	435	432	230	190.5	157	-	2	22.5	8-φ19	163	150	△
		6"×4"	150	100	150	559	562	559	280	241.5	216	-	2	24	8-φ22	177	175	△
		8"×6"	200	150	201	660	664	660	345	298.5	270	-	2	27	8-φ22	240	231	△
		10"×8"	250	201	252	787	791	787	405	362	324	-	2	29	12-φ25	266	256	△
		12"×10"	300	252	303	838	841	838	485	432	381	-	2	30.5	12-φ25	324	303.5	△
		14"×10"	350	252	334	889	892	889	535	476	413	-	2	33.5	12-φ29	324	303.5	△
		14"×12"	350	303	334	889	892	889	535	476	413	-	2	33.5	12-φ29	383	310	△
		16"×12"	400	303	385	991	994	991	595	540	470	-	2	35	16-φ29	383	310	△
		16"×14"	400	334	385	991	994	991	595	540	470	-	2	35	16-φ29	390	300	△
		18"×16"	450	385	436	1092	1095	1092	635	578	533	-	2	38.5	16-φ32	435	340	△
		20"×16"	500	385	487	1194	1200	1194	700	635	584	-	2	41.5	20-φ32	435	340	△
		20"×18"	500	436	487	1194	1200	1194	700	635	584	-	2	41.5	20-φ32	522	410	△
		24"×20"	600	487	589	1397	1407	1397	815	749.5	692	-	2	46.5	20-φ35	565	445	△
	30"×24"	750	589	735	1651	-	1651	984	914.5	857	-	2	75	28-φ35	618	480	△	
	36"×30"	900	735	874	2083	-	2083	1168	1086	1022	-	2	90	32-φ41	770	620	△	
300		3"×2"	80	50	75	283	298	283	210	168.5	127	-	2	27	8-φ22	130	102	△
		4"×3"	100	75	100	432	435	432	255	200	157	-	2	30.5	8-φ22	163	150	△
		6"×4"	150	100	150	559	562	559	320	270	216	-	2	35	12-φ22	177	175	△
		8"×6"	200	150	201	660	664	660	380	330	270	-	2	40	12-φ25	240	231	△
		10"×8"	250	201	252	787	791	787	445	387.5	324	-	2	46.5	16-φ29	266	276	△
		12"×10"	300	252	303	838	841	838	520	451	381	-	2	49.5	16-φ32	324	303.5	△
		14"×10"	350	252	334	889	892	889	585	514.5	413	-	2	52.5	20-φ32	324	303.5	△
		14"×12"	350	303	334	889	892	889	585	514.5	413	-	2	52.5	20-φ32	383	362	△
		16"×12"	400	303	385	991	994	991	650	571.5	470	-	2	56	20-φ35	383	362	△
		16"×14"	400	334	385	991	994	991	650	571.5	470	-	2	56	20-φ35	390	300	△
		18"×16"	450	385	436	1092	1095	1092	710	628.5	533	-	2	59	24-φ35	440	365	△
		20"×16"	500	385	487	1194	1200	1194	775	686	584	-	2	62	24-φ35	440	365	△
		20"×18"	500	436	487	1194	1200	1194	775	686	584	-	2	62	24-φ35	535	420	△
		24"×20"	600	487	589	1397	1407	1397	915	813	692	-	2	68.5	24-φ41	575	450	△
	30"×24"	750	589	735	1651	-	1651	1092	997	857	-	2	92	28-φ48	640	490	△	
	36"×30"	900	735	874	2083	-	2083	1270	1168	1022	-	2	105	32-φ54	808	640	△	

△ Please consult the factory.

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



# TOP ENTRY BALL VALVE



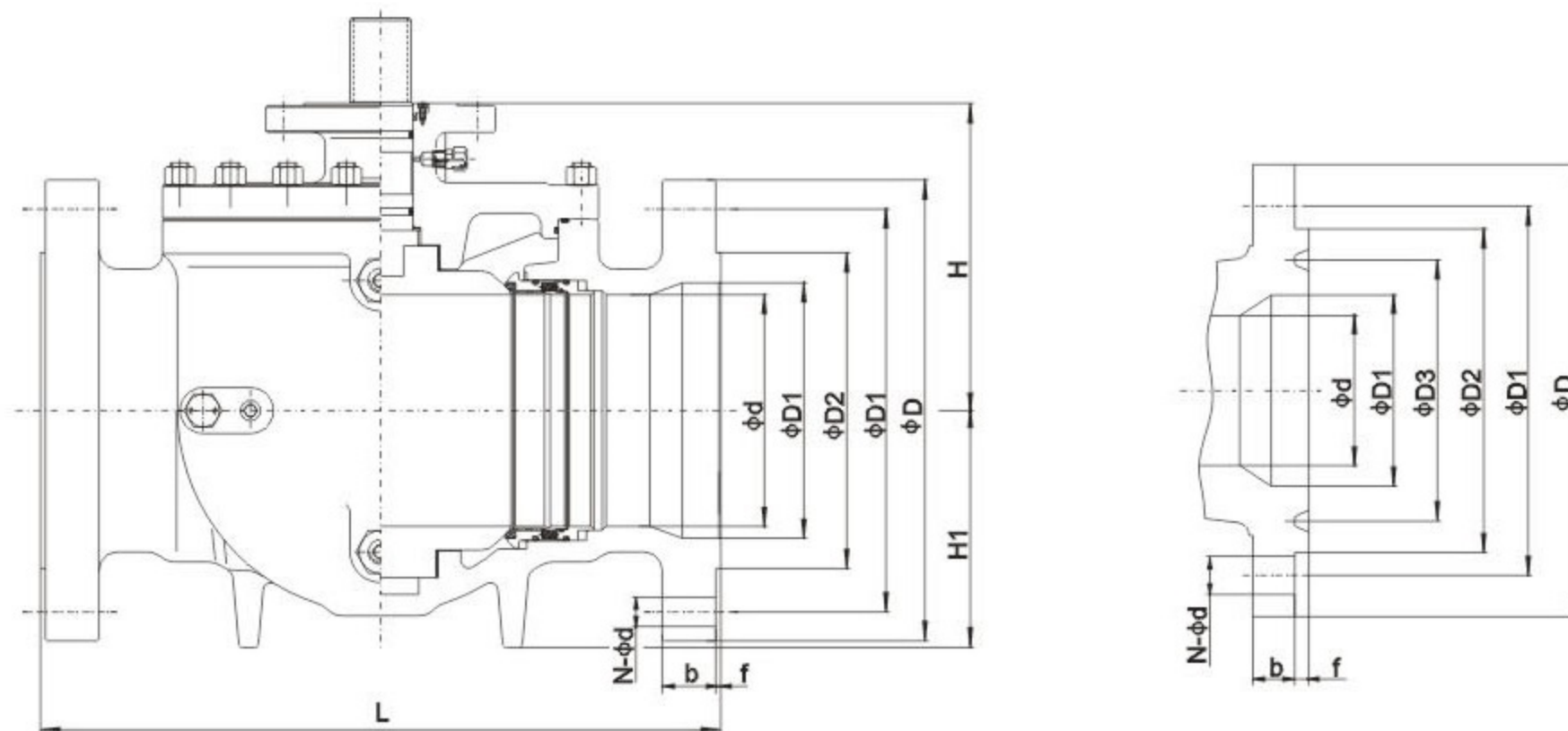
Pressure rating	Nominal Diameter		d	Flanged			Butt welding	Flanged						H	H1	Weight(kg)	
	Class	NPS		DN	L(RF)	L(RTJ)		L(BW)	D	D1	D2	D3	f				b
600		2"	50	50	292	295	292	165	127	92	-	7	26	8-Φ19	142	110	△
		3"	80	75	356	359	356	210	168.5	127	-	7	32	8-Φ22	188	165	△
		4"	100	100	432	435	432	275	216	157	-	7	38.5	8-Φ25	205	193	△
		6"	150	150	559	562	559	355	292	216	-	7	48	12-Φ29	255	242	△
		8"	200	201	660	664	660	420	349	270	-	7	56	12-Φ32	282	268	△
		10"	250	252	787	791	787	510	432	324	-	7	64	16-Φ35	369	339	△
		12"	300	303	838	841	838	560	489	381	-	7	67	20-Φ35	402	300	△
		14"	350	334	889	892	889	605	527	413	-	7	70	20-Φ39	410	320	△
		16"	400	385	991	994	991	685	603	470	-	7	77	20-Φ41	467	360	△
		18"	450	436	1092	1095	1092	745	654	533	-	7	83	20-Φ44	560	430	△
		20"	500	487	1194	1200	1194	815	724	584	-	7	89	24-Φ44	633	490	△
	24"	600	589	1397	1407	1397	940	838	692	-	7	102	24-Φ51	692	536	△	
900		2"	50	50	368	371	368	215	165	124	95.25	7.92	38.5	8-Φ25	160	112	△
		3"	80	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8-Φ25	213	168	△
		4"	100	100	457	460	457	290	235	181	149.23	7.92	45	8-Φ32	232	197.5	△
		6"	150	150	610	613	610	380	317.5	241	211.12	7.92	56	12-Φ32	289	258	△
		8"	200	201	737	740	737	470	393.5	308	269.88	7.92	64	12-Φ39	319	294	△
		10"	250	252	838	841	838	545	470	362	323.85	7.92	70	16-Φ39	407	372	△
		12"	300	303	965	968	965	610	533.5	419	381	7.92	79.5	20-Φ39	443	329	△
		14"	350	322	1029	1038	1029	640	559	467	419.1	11.13	86	20-Φ42	467	345	△
		16"	400	373	1130	1140	1130	705	616	524	469.9	11.13	89	20-Φ45	527	388	△
		18"	450	423	1219	1232	1219	785	686	594	533.4	12.7	102	20-Φ51	632	463	△
		20"	500	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20-Φ54	715	527	△
	24"	600	570	1549	1568	1549	1040	901.5	772	692.15	15.88	140	20-Φ67	782	573	△	

△ Please consult the factory:

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Pressure rating	Nominal Diameter		d	d1	Flanged		Butt welding	Flanged					H	H1	Weight(kg)			
	Class	NPS			DN	L(RF)	L(RTJ)	L(BW)	D	D1	D2	D3				f	b	N-φd
600		3"×2"	80	50	75	356	359	356	210	168.5	127	-	7	32	8-φ22	142	110	△
		4"×3"	100	75	100	432	435	432	275	216	157	-	7	38.5	8-φ25	188	165	△
		6"×4"	150	100	150	559	562	559	355	292	216	-	7	48	12-φ29	205	193	△
		8"×6"	200	150	201	660	664	660	420	349	270	-	7	56	12-φ32	255	242	△
		10"×8"	250	201	252	787	791	787	510	432	324	-	7	64	16-φ35	282	268	△
		12"×10"	300	252	303	838	841	838	560	489	381	-	7	67	20-φ35	369	339	△
		14"×10"	350	252	334	889	892	889	605	527	413	-	7	70	20-φ39	369	339	△
		14"×12"	350	303	334	889	892	889	605	527	413	-	7	70	20-φ39	402	300	△
		16"×12"	400	303	385	991	994	991	685	603	470	-	7	77	20-φ41	402	300	△
		16"×14"	400	334	385	991	994	991	685	603	470	-	7	77	20-φ41	410	320	△
		18"×16"	450	385	436	1092	1095	1092	745	654	533	-	7	83	20-φ44	467	360	△
		20"×16"	500	385	487	1194	1200	1194	815	724	584	-	7	89	24-φ44	467	360	△
		20"×18"	500	436	487	1194	1200	1194	815	724	584	-	7	89	24-φ44	560	430	△
	24"×20"	600	487	589	1397	1407	1397	940	838	692	-	7	102	24-φ51	633	490	△	
900		3"×2"	80	50	75	381	384	381	240	190.5	156	123.83	7.92	38.5	8-φ25	160	112	△
		4"×3"	100	75	100	457	460	457	290	235	181	149.23	7.92	45	8-φ32	213	168	△
		6"×4"	150	100	150	610	613	610	380	317.5	241	211.12	7.92	56	12-φ32	232	197.5	△
		8"×6"	200	150	201	737	740	737	470	393.5	308	269.88	7.92	64	12-φ39	289	258	△
		10"×8"	250	201	252	838	841	838	545	470	362	323.85	7.92	70	16-φ39	319	294	△
		12"×10"	300	252	303	965	968	965	610	533.5	419	381	7.92	79.5	20-φ39	407	372	△
		14"×10"	350	252	322	1029	1038	1029	640	559	467	419.1	11.13	86	20-φ42	407	372	△
		14"×12"	350	303	334	1029	1038	1029	640	559	467	419.1	11.13	86	20-φ42	443	329	△
		16"×12"	400	303	373	1130	1140	1130	705	616	524	469.9	11.13	89	20-φ45	443	329	△
		16"×14"	400	334	385	1130	1140	1130	705	616	524	469.9	11.13	89	20-φ45	467	345	△
		18"×16"	450	373	423	1219	1232	1219	785	686	594	533.4	12.7	102	20-φ51	527	388	△
		20"×16"	500	373	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20-φ54	527	388	△
		20"×18"	500	423	471	1321	1334	1321	855	749.5	648	584.2	12.7	108	20-φ54	632	463	△
	24"×20"	600	471	570	1549	1568	1549	1040	901.5	772	692.2	15.88	140	20-φ67	715	527	△	

△ Please consult the factory:

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