

SUMMARY

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

STRUCTURAL FEATURES

1、Top Entry Structure

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

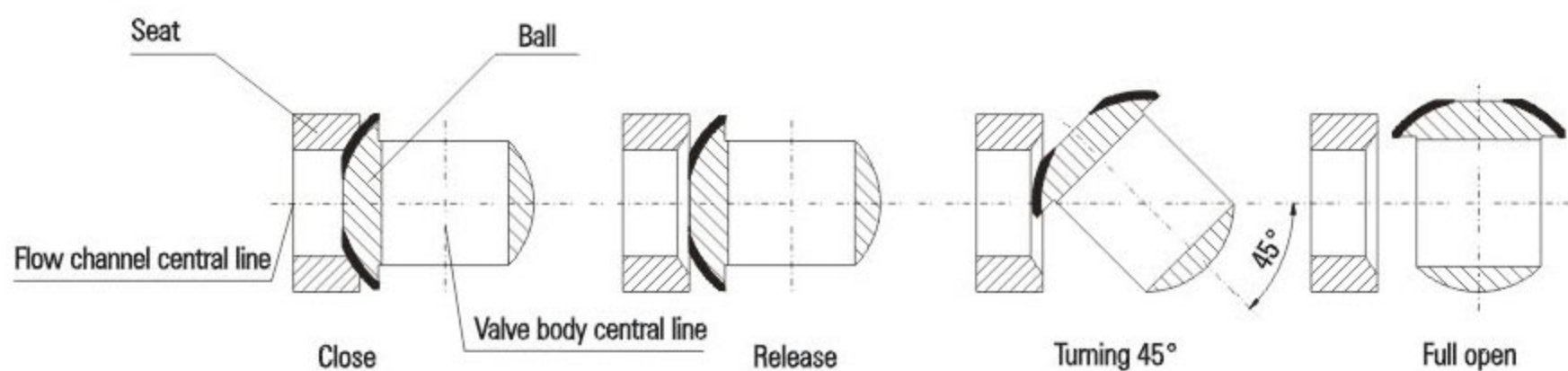
WORK PRINCIPLE

Opening Of Orbit Ball Valve

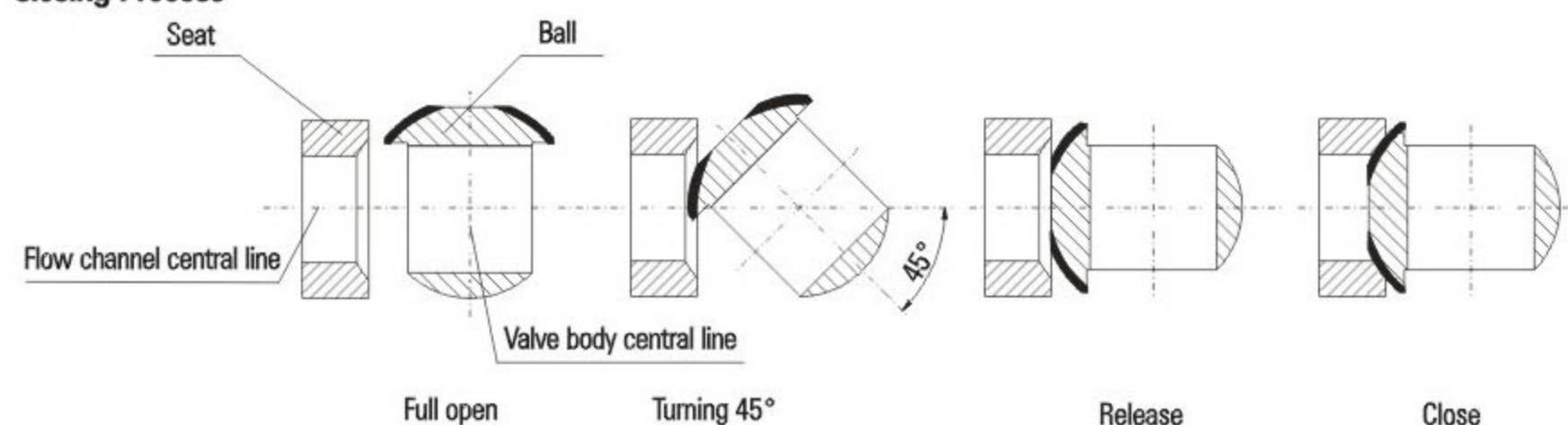
When it is at the closed position, the ball is closely pressed onto the seat under the mechanical pressure of stem. When the handwheel is turned counterclockwise, the stem will move upward, and the angular plane at the bottom of stem will make the ball sealing face leave the seat. The stem will continue rising and interact with the guide pin in the stem spiral groove to make the ball turn 90° without friction until the stem rises to the ultimate position and the ball hole is aligned with the valve channel.

Opening And Closing Schematic Diagram

Opening Process



Closing Process



2、Integral Structure

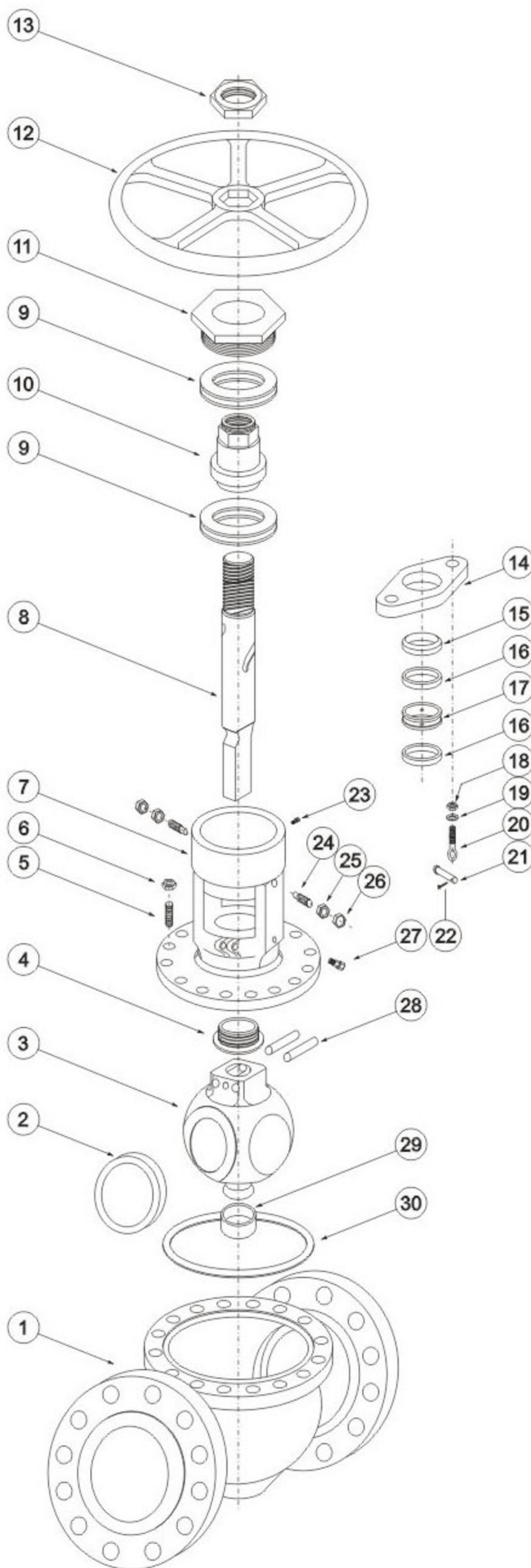
The body adopts the integral structure, so as to ensure that it has enough strength and rigidity under the maximum rated working pressure. The valve trims have been carefully designed and selected to ensure reliability under various service conditions. The sufficient wall thickness and the connection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

3、Lower Torque Operation

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

ORBIT BALL VALVE

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

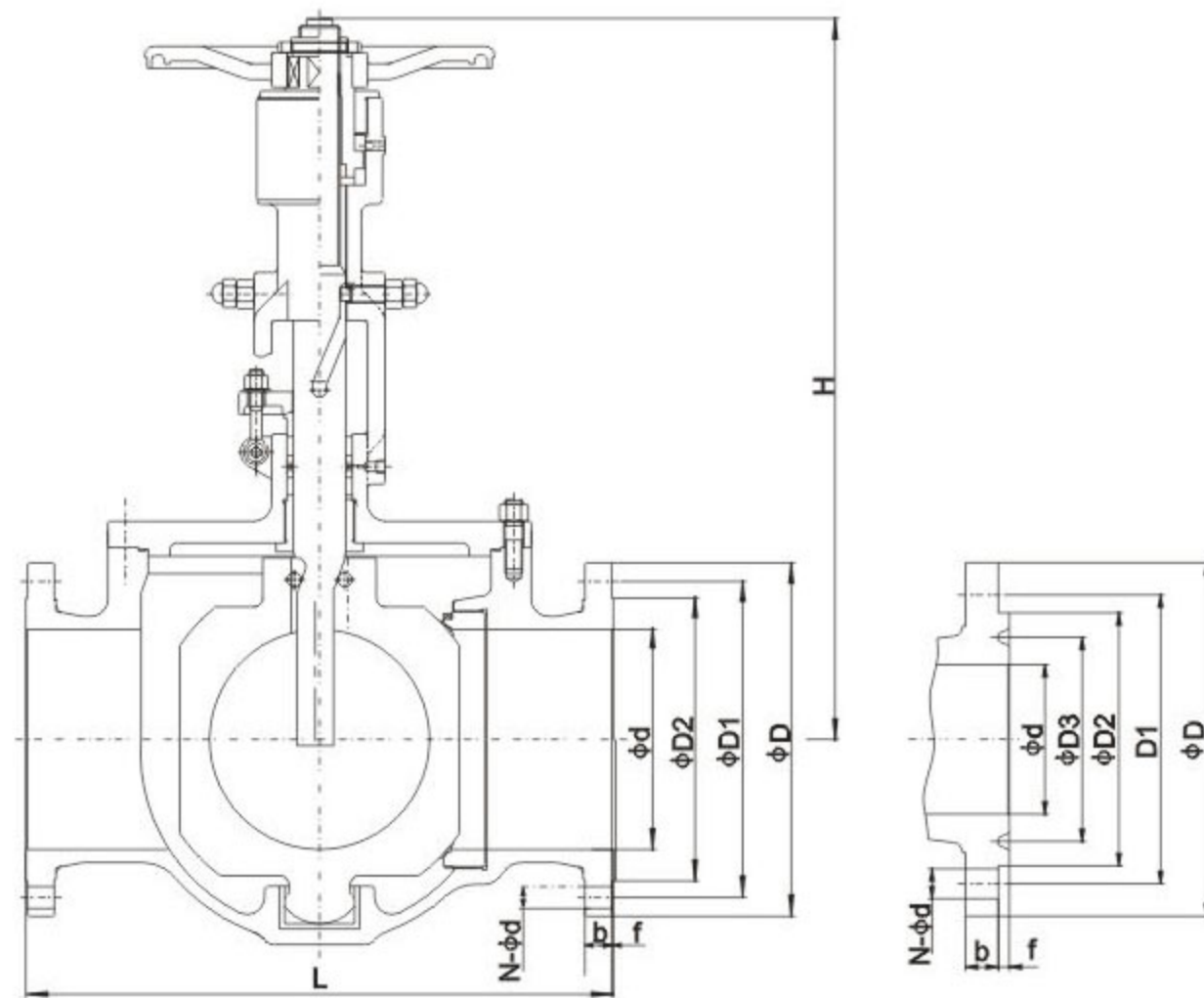


ORBIT BALL VALVE

Part Materials And Main Parameters

Nominal diameter (in)		NPS 2~20				
Nominal pressure (MPa)		Class150~Class600				
No.	Part name	Materials				
		Carbon steel		Stainless steel		
1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
2	Seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
3	Ball	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 316L+HF
4	Upper bearing sleeve	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
5	Stud	A193 B7M	A320 B8	A320 B8M	A320 B8	A320 B8M
6	Hexagon nut	A194 2HM	A194-8	A194 -8M	A194-8	A194-8M
7	Bonnet	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
8	Stem	ASTM A182 F6a	ASTM A182 304	ASTM A182 316	ASTM A182 304L	ASTM A182 316L
9	Rolling bearing	bearing steel	bearing steel	bearing steel	bearing steel	bearing steel
10	Stem nut	A429 D-2	A429 D-2	A429 D-2	A429 D-2	A429 D-2
11	Nut gland	ASTM A105	ASTM A105	ASTM A105	ASTM A105	ASTM A105
12	Handwheel	QT400-17	QT400-17	QT400-17	QT400-17	QT400-17
13	Anchor nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
14	Packing gland	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB
15	Bushing	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
16	Packing	Graphite				
17	Lantern ring	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a	ASTM A182 F6a
18	Hexagon nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
19	Flat washer	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025	ANSI 1025
20	Eye bolt	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
21	Pin	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035	ANSI 1035
22	Forelock	A3	A3	A3	A3	A3
23	Oil bowl	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
24	Holding screw	A193 B7M	A193 B7M	A193 B7M	A193 B7M	A193 B7M
25	Hexagon nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
26	Cap nut	A194 2HM	A194 2HM	A194 2HM	A194 2HM	A194 2HM
27	Sealant Injection valve	Combined parts	Combined parts	Combined parts	Combined parts	Combined parts
28	Rolling pin	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045	ANSI 1045
29	Locating bush	TF-2	TF-2	TF-2	TF-2	TF-2
30	Metal wound gasket	SST+Graphite	SST+Graphite	SST+Graphite	SST+Graphite	SST+Graphite
Applicable service conditions	Applicable media	Water, steam, oil, coal gas, liquefied gas, natural gas	Nitric acid	Acetic acid	Strong Oxidizer	Urea
	Applicable temperature	-29~ + 425℃		≤200℃		
Design and manufacturing		API 6D				
Face-to-face dimensions		ASME B16.10、API 6D				
Type of connection		Flange	ASME B16.5		Butt welding	ASME B16.25
Pressure test		API 598、API 6D				
Transmission mode		Manual, worm and worm gear transmission, pneumatic, electric				

Materials of parts



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

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