



VALVE AND FLOW CONTROL SPECIALISTS
SERVICE AND RELIABILITY

ORBIE PRESS SEAL BALL VALVE

When every drop counts you need an Orbie Press seal Ball Valve.

Orbie Valve are suitable for the Petro-Chemical industry, LPG gas storage, natural gas, compressor systems and refineries. Applications in flowlines, meter isolation, block and bypass, ESD, hot oil or heat transfer systems and hydrogen services.

Standard Size range

2" (50nb) to 20" (500nb)

Pressure Classes

ANSI 150 ANSI 300 ANSI 600

HOW DO THEY WORK?

Unlike conventional ¼ turn ball valves where the ball swipes back and forth across the seats the Orbie initially angularly tilts off the seat then rotates to the open position. In closing the operation is in reverse it closes then "press seals" against the seat forming a drip tight seal. Hence there is no seat wear.

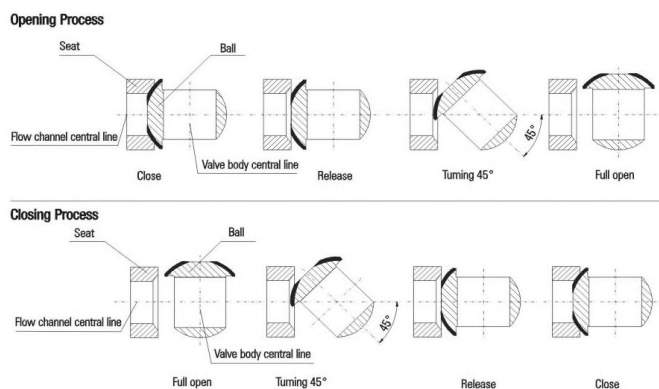
These valves have a linear operation rotating a handwheel or by actuation unlike the ball valves that operate by levers.

Another advantage these valves have over conventional ball valves is that as there is no swiping across seats, the torque requirements are quite flat. There is no huge break or seating torque figures as in traditional ball valves. This makes for very easy manual operation and minimizes actuation costs if elected.

With the Orbie there is only one seat and it seals for flows in both directions without issues of trapped fluid / gas pressures / expansions that can occur in double seated ball valves.

By reducing seat wear compared to traditional slab gates / plugs or ball valves the Orbie minimizes maintenance giving enhanced valve life meaning cost of ownership is reduced.

When it does come to maintenance the top entry design makes it simple to inspect and repair.

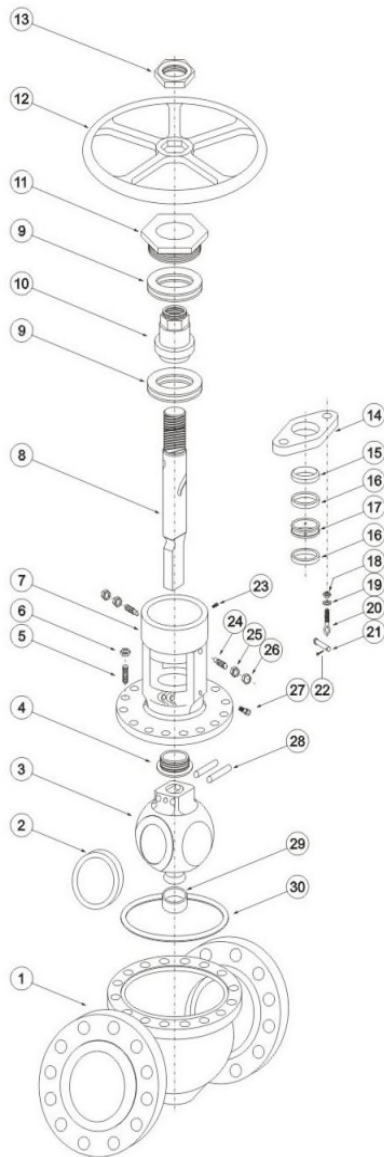


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Standard Design Layout



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



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Part Materials And Main Parameters

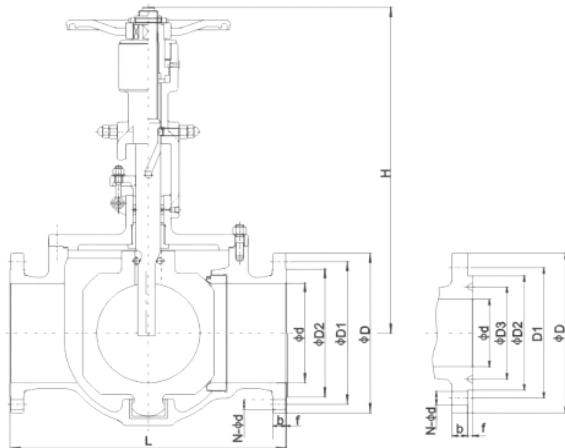
Nominal diameter (in)		NPS 2~20				
Nominal pressure (MPa)		Class150~Class600				
No.	Part name	Materials				
		Carbon steel		Stainless steel		
1	Body	ASTM A216 WCB	ASTM A351 CF8	ASTM A351 CF8M	ASTM A351 CF3	ASTM A351 CF3M
2	Seat	ASTM A105+HF	ASTM A182 304+HF	ASTM A182 316+HF	ASTM A182 304L+HF	ASTM A182 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					

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Standard Dimensions and Pressure classes.
For sizes outside this range consult VCS for production options



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-Φ19	360	28
	3"	80	75	356	359	356	190	152.5	127	-	2	17.5	4-Φ19	490	41
	4"	100	100	406	410	406	230	190.5	157	-	2	22.5	8-Φ19	525	55
	6"	150	150	403	419	457	280	241.5	216	-	2	24	8-Φ22	611	115
	8"	200	201	597	600	597	345	298.5	270	-	2	27	8-Φ22	750	215
	10"	250	252	673	676	673	405	362	324	-	2	29	12-Φ25	826	270
	12"	300	303	762	765	762	485	432	381	-	2	30.5	12-Φ25	920	385
	14"	350	334	826	829	826	535	476	413	-	2	33.5	12-Φ29	990	502
	16"	400	385	902	905	902	595	540	470	-	2	35	16-Φ29	1090	876
	18"	450	436	978	981	978	635	578	533	-	2	38.5	16-Φ32	1200	980
20"	500	487	1054	1060	1054	700	635	584	-	2	41.5	20-Φ32	1320	1240	
300	2"	50	50	292	295	292	165	127	92	-	2	21	8-Φ19	360	32
	3"	80	75	356	359	356	210	168.5	127	-	2	27	8-Φ22	490	48
	4"	100	100	406	410	406	255	200	157	-	2	30.5	8-Φ22	525	65
	6"	150	150	403	419	457	320	270	216	-	2	35	12-Φ22	611	130
	8"	200	201	597	600	597	380	330	270	-	2	40	12-Φ25	750	235
	10"	250	252	673	676	673	445	387.5	324	-	2	46.5	16-Φ29	826	305
	12"	300	303	762	765	762	520	451	381	-	2	49.5	16-Φ32	920	410
	14"	350	334	826	829	826	585	514.5	413	-	2	52.5	20-Φ32	990	550
	16"	400	385	902	905	902	650	571.5	470	-	2	56	20-Φ35	1090	925
	18"	450	436	978	981	978	710	628.5	533	-	2	59	24-Φ35	1200	1135
20"	500	487	1054	1060	1054	775	686	584	-	2	62	24-Φ35	1320	1365	
600	2"	50	50	292	295	292	165	127	92	-	7	26	8-Φ19	430	50
	3"	80	75	356	359	356	210	168.5	127	-	7	32	8-Φ22	490	74
	4"	100	100	432	435	432	275	216	157	-	7	38.5	8-Φ25	570	101
	6"	150	150	559	562	559	355	292	216	-	7	48	12-Φ29	645	202
	8"	200	201	660	664	660	420	349	270	-	7	56	12-Φ32	780	364
	10"	250	252	787	791	787	510	432	324	-	7	64	16-Φ35	860	473
	12"	300	303	838	841	838	560	489	381	-	7	67	20-Φ35	985	636
	14"	350	334	889	892	889	605	527	413	-	7	70	20-Φ39	1050	853
	16"	400	385	991	994	991	685	603	470	-	7	77	20-Φ41	1160	1434
	18"	450	436	1092	1095	1092	745	654	533	-	7	83	20-Φ44	1275	1759
20"	500	487	1194	1200	1194	815	724	584	-	7	89	24-Φ44	1410	2116	

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