"WE CONTROL THE FLOW"

ELITE®

COMPANY PROFILE

www.elite-valves.com

INDEX

About Us

Elite Flow Control Co., Ltd is a manufacturer of high quality valves based in Oubei Town, Yongjia, Wenzhou city, Zhejiang Province, China.

The manufacturing range includes Ball Valves, Gate Valves, Globe Valves, Check Valves, Plug Valves and Butterfly Valves in Carbon Steel, Stainless Steel, Alloy Steel and Duplex Steel according to the specified / applicable manufacturing standards / grades and can be customized according to the customer’s requirements / specification.

Our engineering department consisting of valve engineers, metallurgist, valve designers and draftsperson are ready to serve our customer`s diverse needs and meets customer`s requirements. Whether the specification are unique, our engineering department bring wealth of experience, knowledge and resources required to solve customer‘s application criteria. Additionally, our engineering department is able to provide design for custom and specialty requirements requested by customers.

Our valves are being used in various industries i.e Oil & Gas, Petrochemical, Power Generation, Water utilities etc.

Elite is dedicated to provide our customers with high quality valves that are designed, manufactured and tested to the exacting standards of various qualifying certification bodies. In addition to these external certification bodies audit, Elite maintain a self-auditing Quality Assurance program which provides us with identifiable goals for continuous quality improvements.

Mission

Elite Flow Control focused to provide the superior quality valves at competitive prices to its customers around the world by utilizing the company's human resources and advanced technology equipment with the strong commitment to R&D , Health, Safety, Environment and company's core values.

Vision

To make our brand "the first choice of the customers".

Core Values

- Quality
- Integrity
- Team Work
- Customer Service
- Continuous R&D

Cast Steel Floating Ball Valves

Elite Offers Following Ball Valves

- BA Series, one piece, side-entry, cast steel
- B Series, two-piece,side-entry, cast steel
- BB Series, two-piece, side-entry, forged steel
- BC Series, three-piece, side-entry, forged steel

Elite floating ball valves function in service ranging from -196°C to 200°C (from -320°F to 392°F), with size which varies from 1/2 inch to 12 inch (15mm~300mm) and pressure range of ASME Class150~Class 2500 (2.0Mpa~25.0Mpa). Our floating ball valves are capable of fulfilling sour service requirements stated in NACE MR0175.

3 PC Floating Ball Valve

Pneumatic Actuated Ball Valve

2PC Forged Steel Design

Cryogenic floating ball valve

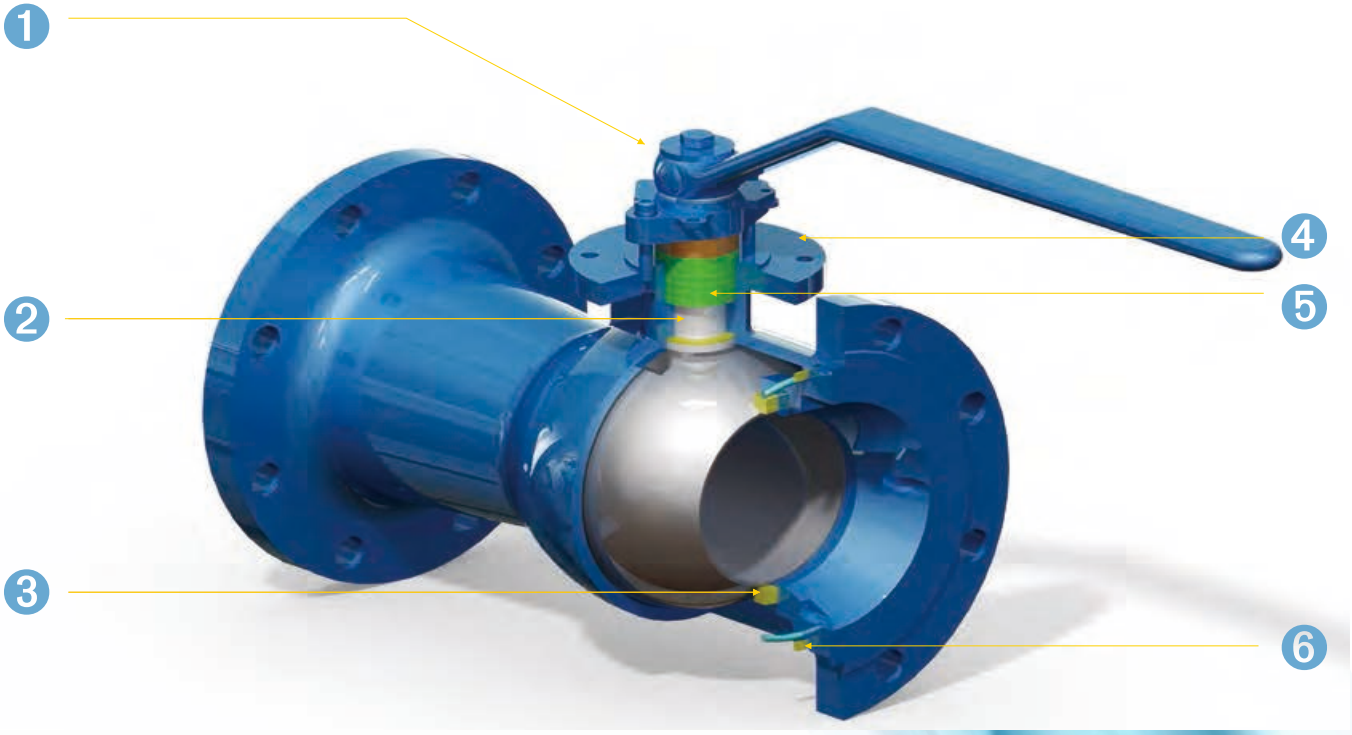
Hastelloy Ball Valve

Pneumatic Actuator Ball valve

1PC Cast Steel Design

2PC Cast Steel Design

Stainless Steel



1. Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
2. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
3. Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.
4. ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
5. Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
6. Emission-free Gasket: Low-emission graphite is employed in gasket to eliminate leakage.

APPLICATIONS

- Refinery
- Chemical
- Petrochemical
- Pharmaceutical
- Paper
- Food and Beverage

Material specifications

Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	Thrust Washer
12	Bolt
13	Auti-Static Device
14	Stop Plate
15	Retainer
16	Washer
17	O-Ring
18	Bolt

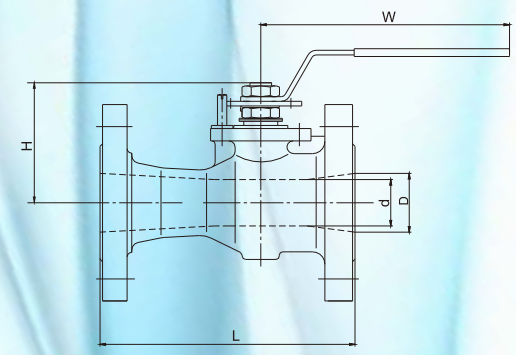
Material Specifications

No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Anti-Static Device	S.S.	S.S.	S.S.	S.S.
14	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
15	Retainer	Carbon Steel	S.S.	Carbon Steel	S.S.
16	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
17	O-Ring	Viton A	Viton A	Viton A	HNBR
18	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.

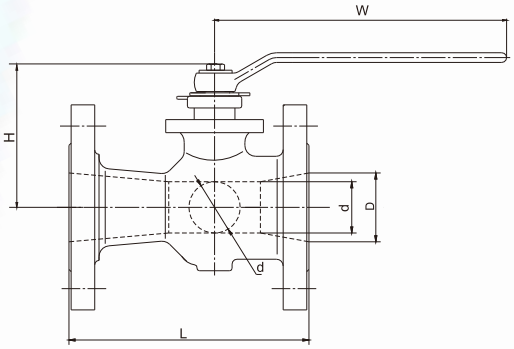
ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.

ELITE®

Reduced Port, Uni-body, Cast Steel, Side Entry Design

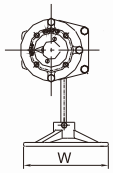


1 / 2 " ~1-1/2 "



2 " ~10 "

Gearbox operated



Class 150 Dimension and Weight

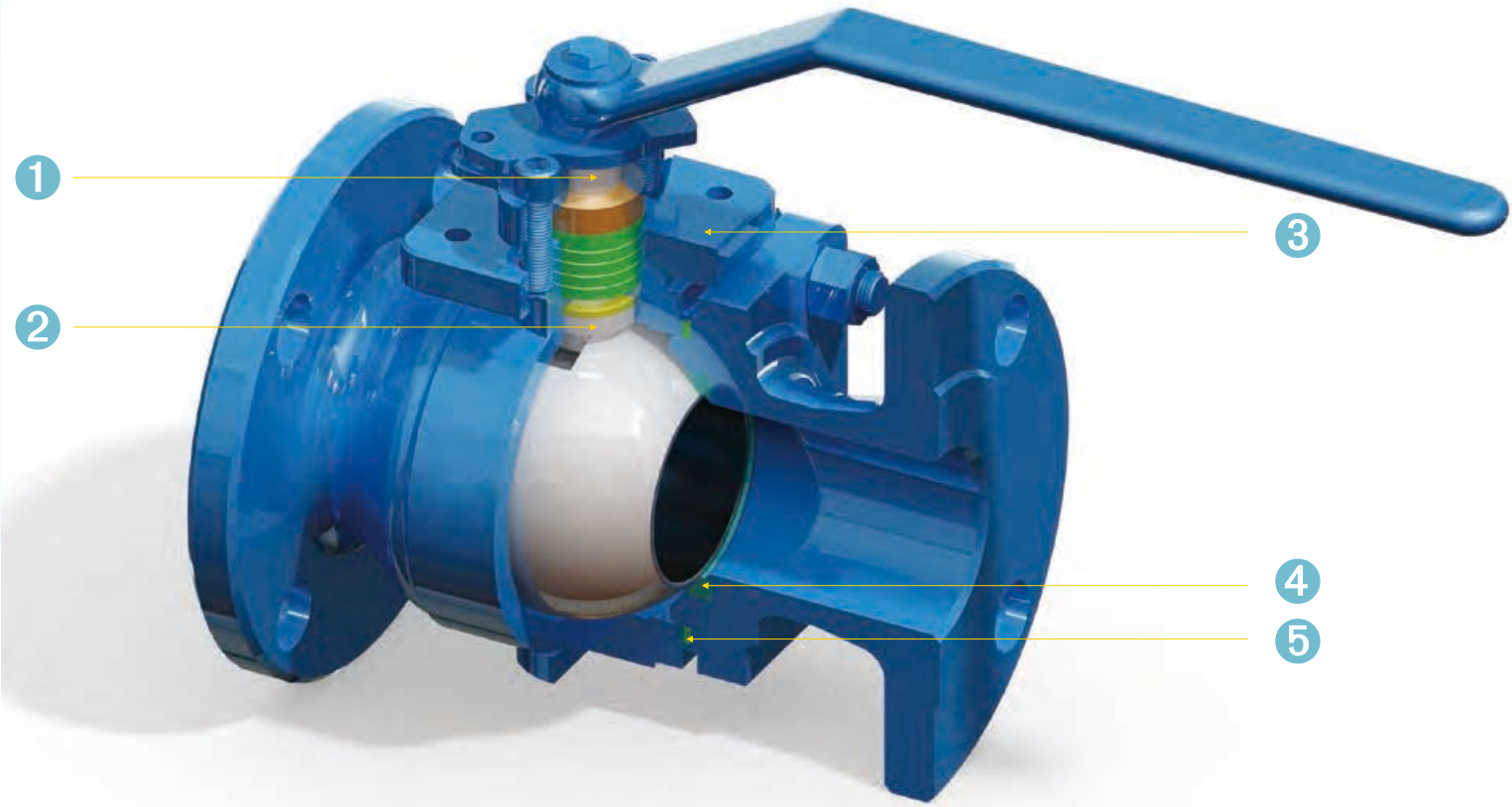
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	10	0.50	13	4.25	108	1.75	44.50	4.72	145	3.3	1.5
3/4*1/2	20*15	0.50	13	0.75	19	4.61	117	2.11	53.50	5.51	165	5.5	2.5
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.42	61.50	5.51	165	6.6	3.0
1-1/2*1	40*25	1.18	30	1.50	38	6.50	165	3.15	80	6.30	215	11.0	5.0
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.17	106	10.43	265	19.2	8.7
2-1/2*2	65*50	2.00	51	2.50	64	7.52	191	4.72	120	10.43	265	27.3	12.4
3*2-1/2	80*65	2.50	64	3.00	76	7.99	203	5.67	144	10.43	285	36.8	16.7
4*3	100*80	3.00	76	4.00	102	9.02	229	6.54	166	11.81	300	53.8	24.4
6*4	150*100	4.50	114	6.00	152	10.51	267	8.39	213	15.75	*300	110.2	50.0
8*6	200*150	6.00	152	8.00	203	11.50	292	20.71	526	11.81	*400	222.7	101.0
10*8	250*200	7.36	187	10.00	254	12.99	330	21.65	550	16	*400	330.7	150.0

Class 300 Dimension and Weight

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	10	0.50	13	5.51	140	1.75	44.50	4.72	145	6.2	2.8
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.11	53.50	5.51	165	7.9	3.6
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.42	61.50	5.51	165	10.6	4.8
1-1/2*1	40*25	1.18	30	1.50	38	7.48	190	3.15	80	6.30	215	21.2	9.6
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.17	106	10.43	265	24.3	11.0
2-1/2*2	65*50	2.00	51	2.50	64	9.49	241	4.72	120	10.43	265	33.3	15.1
3*2-1/2	80*65	2.50	64	3.00	76	11.14	283	5.67	144	10.43	285	49.6	22.5
4*3	100*80	3.00	76	4.00	102	12.01	305	6.54	166	11.81	300	81.6	37.0
6*4	150*100	4.50	114	6.00	152	15.87	403	8.39	213	11.81	*300	159.8	72.5
8*6	200*150	5.67	144	8.00	203	16.50	419	20.71	526	15.75	*400	275.6	125.0
10*8	250*200	7.36	187	10.00	254	17.99	457	21.65	550	15.75	*400	451.9	205.0

*Gearbox operated

Design Features B Series Ball Valve

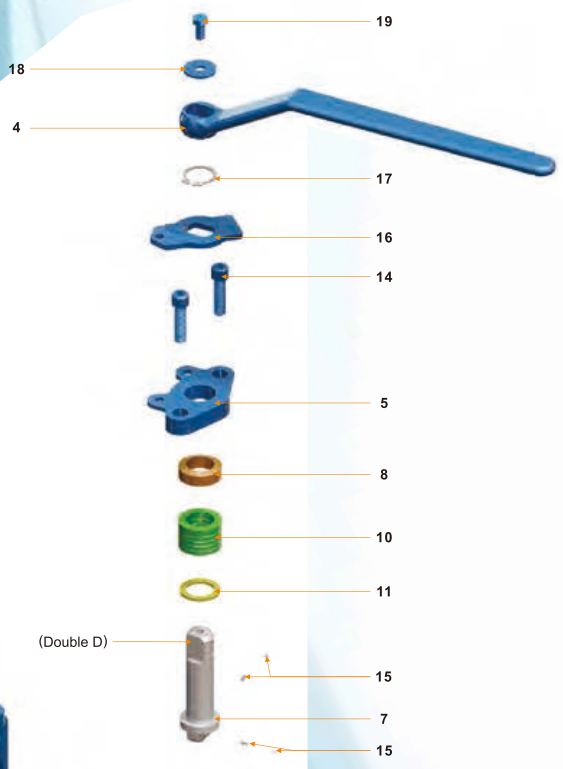


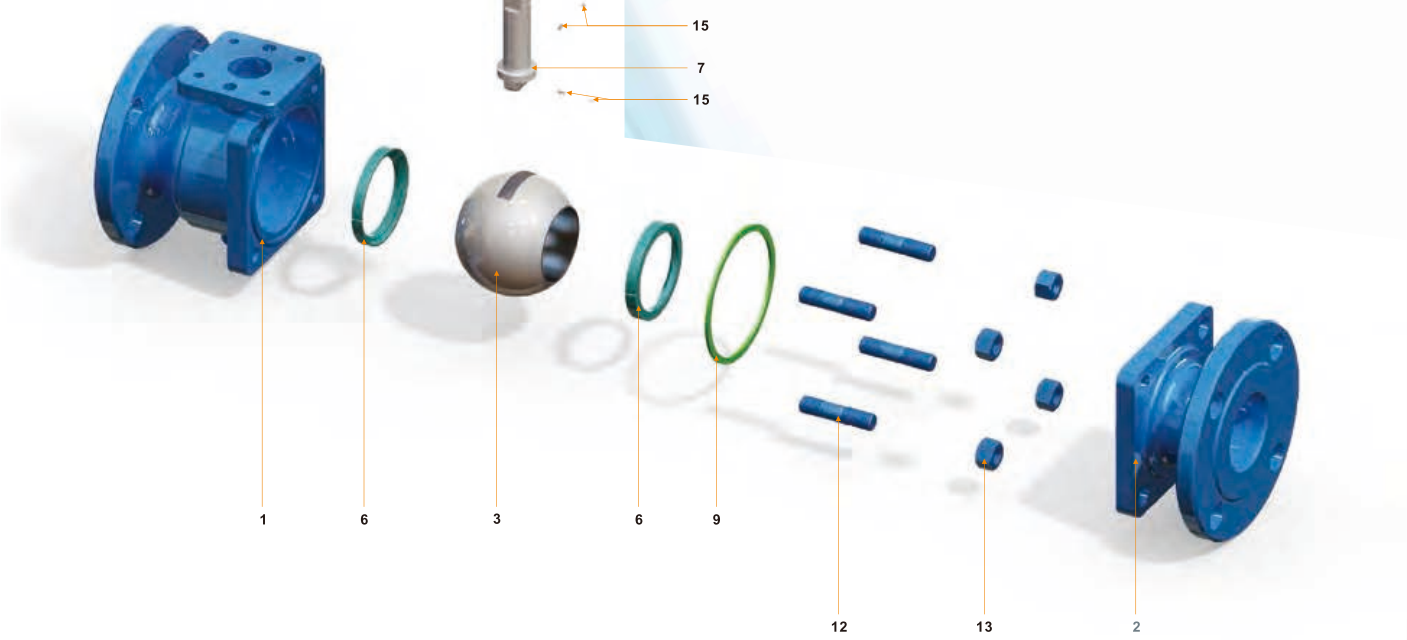
1. Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
2. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
3. ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
4. Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.
5. Emission-free Gasket: Low-emission graphite is employed in gasket to eliminate leakage.

APPLICATIONS

- Refinery
- Petrochemical
- Power
- Chemical
- Pharmaceutical

Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	Thrust Washer
12	Stud
13	Nut
14	Bolt
15	Anti-Static Device
16	Stop Plate
17	Retainer
18	Washer
19	Bolt

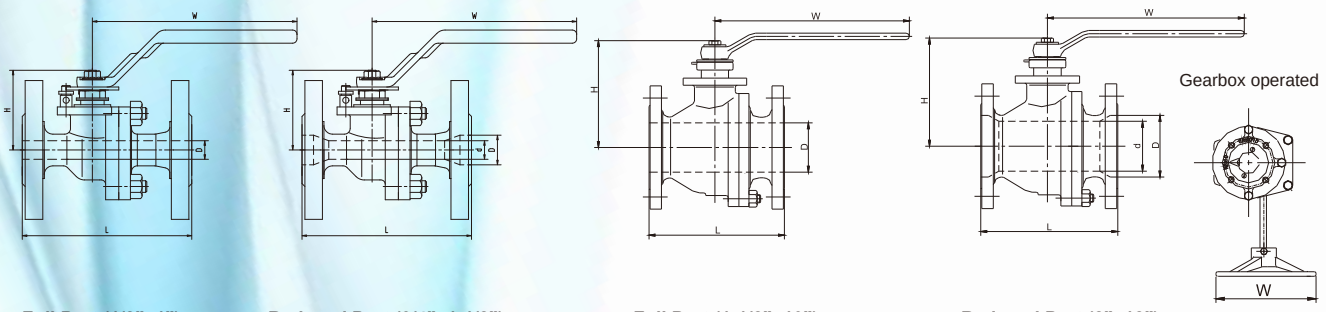




No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
14	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
15	Anti-Static Device	S.S.	S.S.	S.S.	S.S.
16	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
17	Retainer	Carbon Steel	S.S.	Carbon Steel	S.S.
18	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
19	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.

ELITE®

Two-piece, Split Body, Cast Steel, Side Entry Design



Full Port (1/2"~1") | Reduced Port (3/4"~1-1/2") | Full Port (1-1/2"~10") | Reduced Port (2"~12")

Class 150 Dimension and Weight

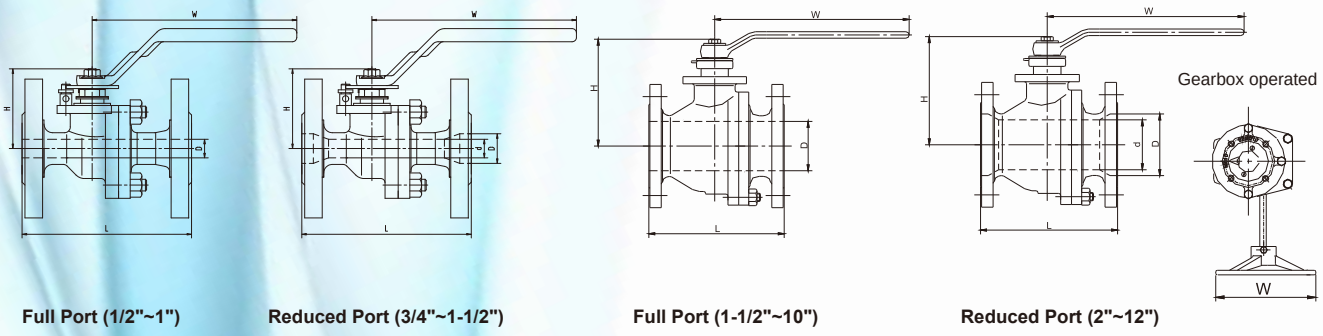
Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.50	13	4.25	108	2.19	55.50	6.50	165	4.0	1.8
3/4	20	0.75	19	4.61	117	2.58	65.50	6.50	165	4.4	2.0
1	25	1.00	25	5.00	127	3.03	77	8.46	215	7.9	3.6
1-1/2	40	1.50	38	6.50	165	4.21	107	10.43	265	15.9	7.2
2	50	2.00	51	7.01	178	4.84	123	10.43	265	24.5	11.1
2-1/2	65	2.50	64	7.48	190	5.91	150	11.22	285	30.9	14.0
3	80	3.00	76	7.99	203	6.69	170	11.81	300	48.5	22.0
4	100	4.00	102	9.02	229	8.11	206	15.75	400	116.8	53.0
6	150	6.00	152	15.51	394	20.91	531	15.75	*400	238.1	108.0
8	200	7.99	203	17.99	457	24.65	626	19.68	*500	429.9	195.0
10	250	10.00	254	20.98	533	26.30	668	19.68	*500	687.8	312.0

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4*1/2	20*15	0.50	13	0.75	19	4.63	118	2.19	55.50	6.50	165	6.6	3.0
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.58	65.50	6.50	165	9.9	4.5
1-1/2*1	40*25	1.00	25	1.50	38	6.50	165	3.03	77	8.46	215	15.4	7.0
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.21	107	10.43	265	19.8	9.0
2-1/2*2	65*50	2.00	51	2.50	64	7.48	190	4.84	123	10.43	265	33.1	15.0
3*2	80*50	2.00	51	3.00	76	7.99	203	4.84	123	11.22	285	35.3	16.0
4*3	100*80	3.00	76	4.00	102	9.02	229	6.69	170	11.81	300	65.0	29.5
6*4	150*100	4.00	102	6.00	152	15.51	394	8.11	206	15.75	400	105.8	48.0
8*6	200*150	6.00	152	8.00	203	17.99	457	20.91	531	15.75	*400	271.2	123.0
10*8	250*200	8.00	203	10.00	254	20.98	533	24.65	626	19.68	*500	480.6	218.0
12*10	300*250	10.00	254	12.00	305	24.02	610	26.30	668	19.68	*500	507.1	230.0

*Gearbox operated

ELITE®

Two-piece, Split Body, Cast Steel, Side Entry Design



Full Port (1/2"~1") | Reduced Port (3/4"~1-1/2") | Full Port (1-1/2"~10") | Reduced Port (2"~12")

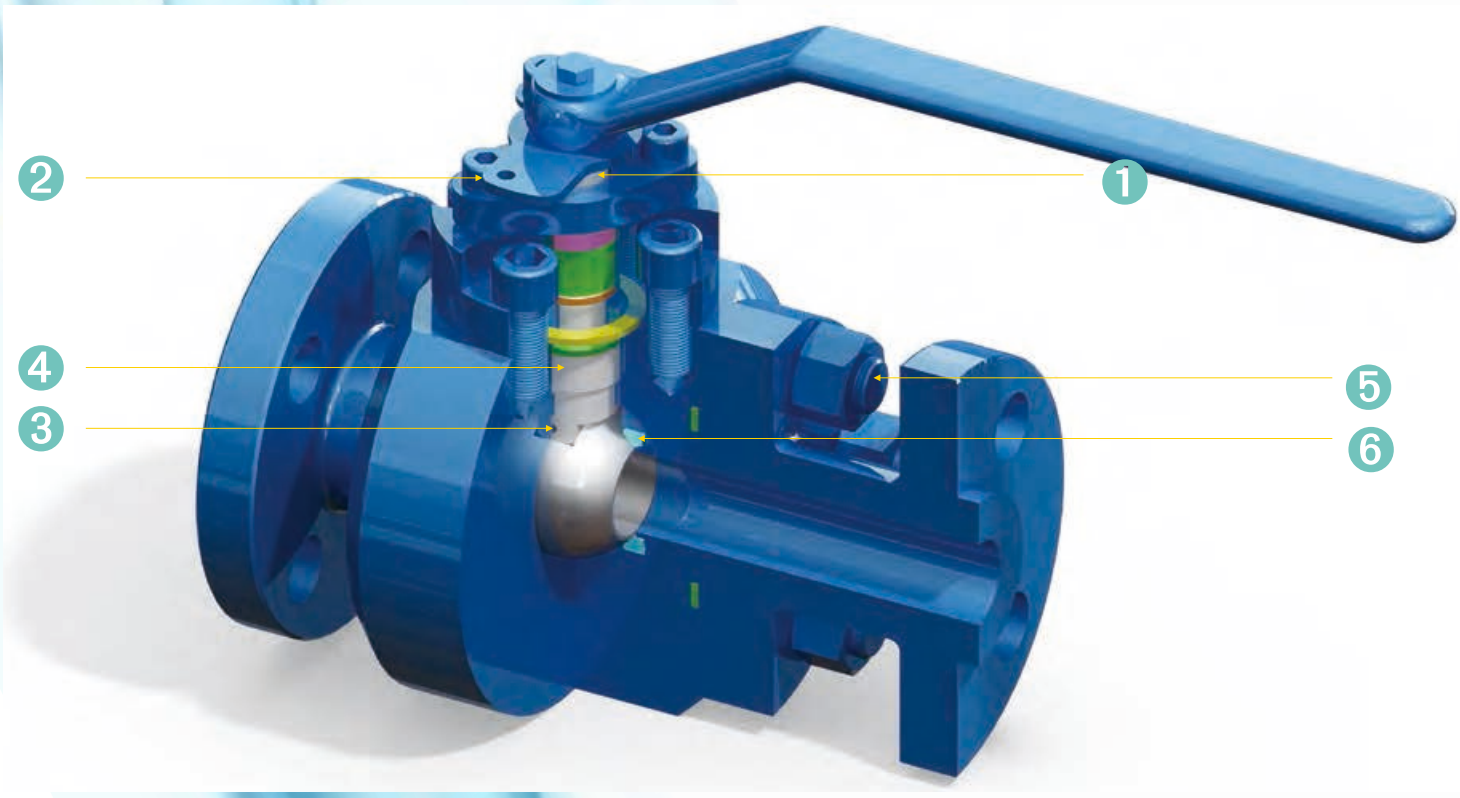
Class 300 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.50	13	5.51	140	2.19	55.50	6.50	165	5.1	2.3
3/4	20	0.75	19	5.98	152	2.58	65.50	6.50	165	7.9	3.6
1	25	1.00	25	6.50	165	3.03	77	8.46	215	11.2	5.1
1-1/2	40	1.50	38	7.48	190	4.21	107	10.43	265	22.0	10.0
2	50	2.00	51	8.50	216	4.84	123	10.43	265	30.9	14.0
2-1/2	65	2.50	64	9.49	241	5.91	150	11.22	285	50.7	23.0
3	80	3.00	76	11.14	283	6.69	170	11.81	300	67.5	30.6
4	100	4.00	102	12.01	305	8.11	206	15.75	400	110.2	50.0
6	150	6.00	152	15.87	403	20.91	531	15.75	*400	255.7	116.0
8	200	8.00	203	19.76	502	27.56	700	23.62	*600	517.0	234.5
10	250	10.00	254	22.36	568	36.30	922	23.62	*600	1086.9	493.0

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.19	55.50	6.50	165	7.7	3.5
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.58	65.50	6.50	165	12.1	5.5
1-1/2*1	40*25	1.00	25	1.50	38	7.48	190	3.03	77	8.46	215	22.0	10.0
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.21	107	10.43	265	24.3	11.0
2-1/2*2	65*50	2.00	51	2.50	64	9.49	241	4.84	123	10.43	265	51.8	23.5
3*2	80*50	2.50	64	3.00	76	11.14	283	4.84	123	10.43	265	66.1	30.0
4*3	100*80	3.00	76	4.00	102	12.01	305	6.69	170	11.81	300	86.0	39.0
6*4	150*100	4.00	102	6.00	152	15.87	403	8.11	206	15.75	400	159.8	72.5
8*6	200*150	6.00	152	8.00	203	19.76	502	20.91	531	15.75	*400	326.3	148.0
10*8	250*200	8.00	203	10.00	254	22.36	568	36.30	700	23.62	*600	705.5	320.0

*Gearbox operated

Material specifications

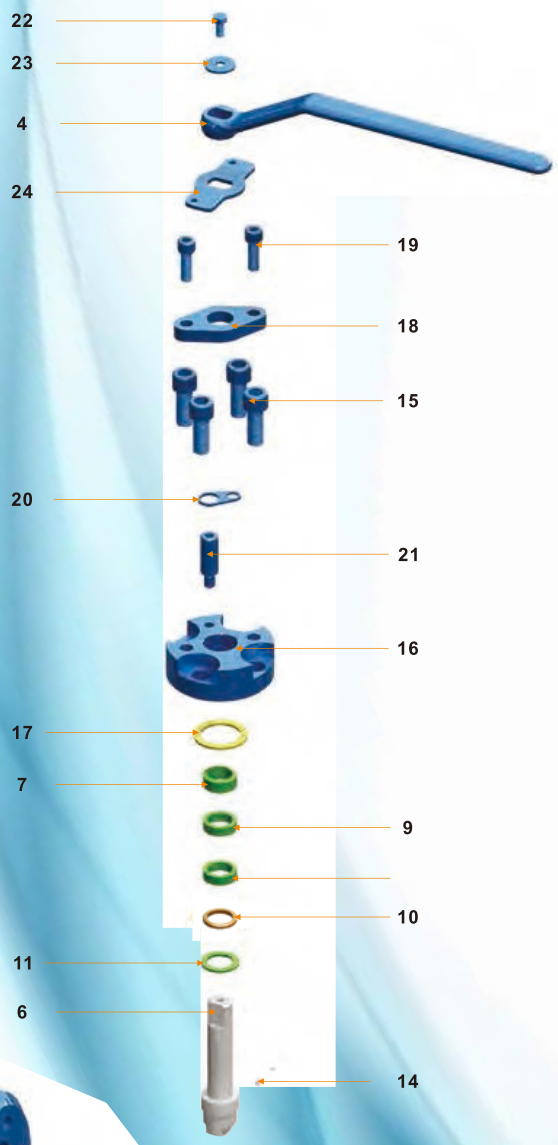


1. Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
2. Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
3. Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
4. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
5. Bolted body-cap configuration: Properly torqued nut is used to maintain seal performance.
6. Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.

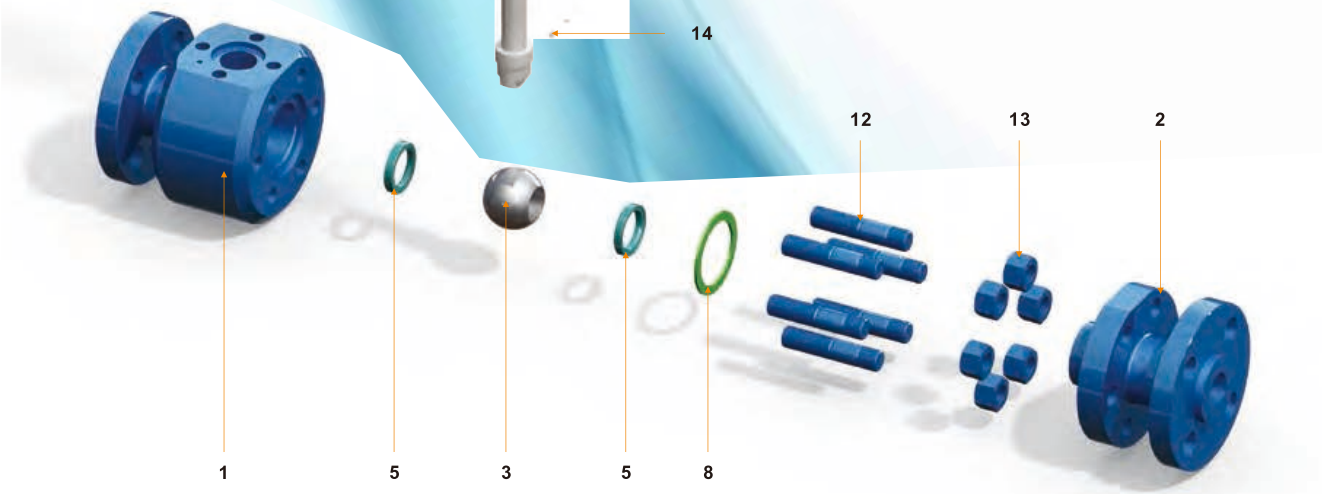
APPLICATIONS

- Refinery
- Petrochemical
- Power
- Chemical
- Pharmaceutical
- Paper

Material Specifications



Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Seat
6	Stem
7	Gland
8	Gasket
9	Packing Set
10	Spacer Ring
11	Thrust Washer
12	Stud
13	Nut
14	Anti Static Device
15	Bolt
16	Cover
17	Gasket
18	Gland Flange
19	Bolt
20	Locking Plate
21	Screw
22	Bolt
23	Washer
24	Stop Plate

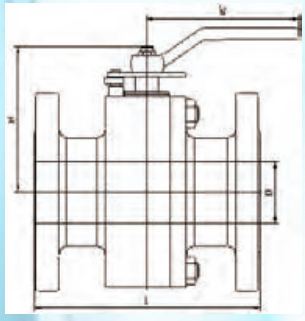


Material specifications

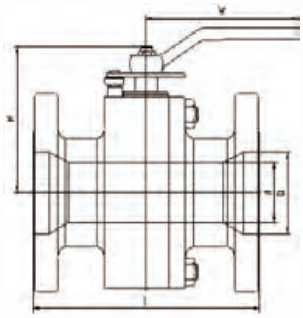
No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
2	Cap	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Seat	PTFE	PTFE	PTFE	PTFE
6	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
7	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
8	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
9	Packing Set	Graphite	Graphite	Graphite	Graphite
10	Spacer Ring	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
14	Anti Static Device	S.S.	S.S.	S.S.	S.S.
15	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.
16	Cover	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
17	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
18	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
19	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
20	Locking Plate	S.S.	S.S.	S.S.	S.S.
21	Screw	S.S.	S.S.	S.S.	S.S.
22	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.
23	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
24	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~1")



Reduced Port (3/4"~1-1/2")

Class 150 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.50	13	4.25	108	2.19	55.50	6.50	165	5.50	2.50
3/4	20	0.75	19	4.61	117	2.58	65.50	6.50	165	7.70	3.50
1	25	1.00	25	5.00	127	3.03	77	8.46	215	11.00	5.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3/4*1/2	20*15	0.50	13	0.75	19	4.61	117	2.19	55.50	6.50	165	6.60	3.00
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.58	65.50	6.50	165	8.80	4.00
1-1/2*1	40*25	1.00	25	1.50	38	6.50	165	3.03	77	8.46	215	15.40	7.00

Class 300 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.50	13	5.51	140	2.19	55.50	6.50	165	6.60	3.00
3/4	20	0.75	19	5.98	152	2.58	65.50	6.50	165	8.80	4.00
1	25	1.00	25	6.50	165	3.03	77	8.46	215	15.40	7.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.19	55.50	6.50	165	8.80	4.00
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.58	65.50	6.50	165	11.00	5.00
1-1/2*1	40*25	1.00	25	1.50	38	7.48	190	3.03	77	8.46	215	19.80	9.00

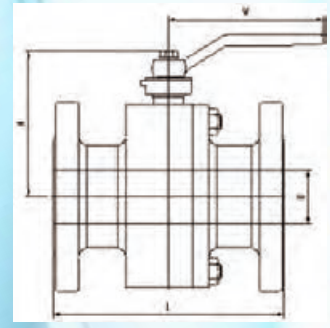
Class 600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3	80	3.00	76	14.02	356	6.30	160	15.75	400	136.70	62.00

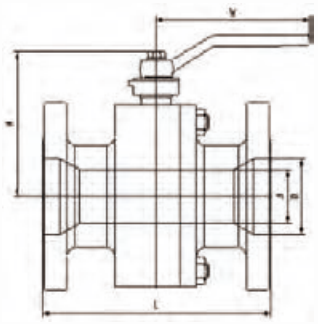
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4*3	100*80	3.00	76	4.00	102	17.01	432	6.30	160	15.75	400	180.80	82.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1-1/2"~3")



Reduced Port (2"~4")

Class 150 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	6.50	165	4.21	107	10.43	265	24.30	11.00
2	50	2.00	51	7.01	178	4.84	123	10.43	265	35.30	16.00
2-1/2	65	2.50	64	7.48	190	5.71	145	11.22	285	57.30	26.00
3	80	3.00	76	7.99	203	6.50	165	11.81	300	70.50	32.00
4	100	4.00	102	9.02	229	7.68	195	15.75	400	116.80	53.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.21	107	10.43	265	29.80	13.50
3*2	80*50	2.00	51	2.50	64	7.99	203	4.84	123	10.43	265	44.10	20.00
4*3	100*80	3.00	76	4.00	102	9.02	229	6.50	165	11.81	300	83.80	38.00
6*4	150*100	4.00	102	6.00	152	15.51	394	7.68	195	15.75	400	158.70	72.00

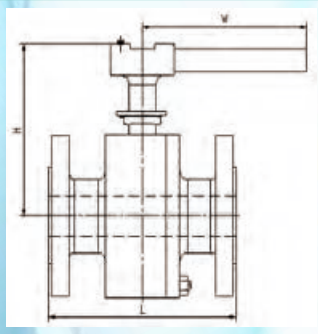
Class 300 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	7.48	190	4.21	107	10.43	265	30.90	14.00
2	50	2.00	51	8.50	216	4.84	123	10.43	265	39.70	18.00
2-1/2	65	2.50	64	9.49	241	5.71	145	11.22	285	63.90	29.00
3	80	3.00	76	11.14	283	6.50	165	11.81	300	88.20	40.00
4	100	4.00	102	12.01	305	7.68	195	15.75	400	163.10	74.00

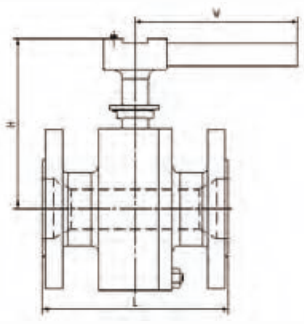
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.21	107	10.43	265	32.00	14.50
3*2	80*50	2.00	51	2.50	64	11.14	283	4.84	123	10.43	265	55.10	25.00
4*3	100*80	3.00	76	4.00	102	12.01	305	6.50	165	11.81	300	110.20	50.00
6*4	150*100	4.00	102	6.00	152	15.87	403	7.68	195	15.75	400	211.60	96.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (3"~4")



Reduced Port (6")

Class 600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4	**100**	4.00	102	17.01	432	11.93	303	39.17	995	297.60	135.00

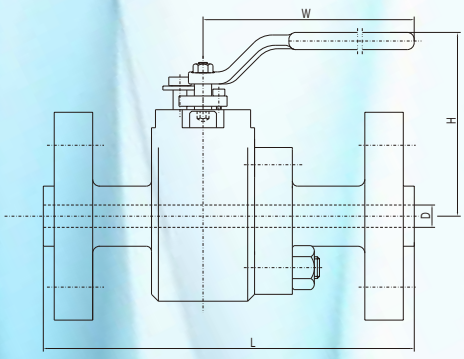
Class 900 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3	**80**	3.00	76	15.00	381	9.80	249	31.50	800	198.40	90.00

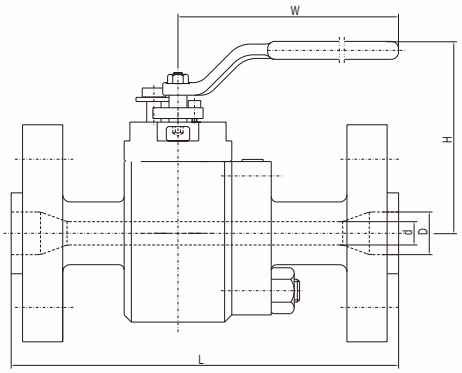
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4*3	**100*80**	3.00	76	4.00	102	18.00	457	9.80	249	31.50	800	249.10	113.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~2")



Rduced Port (1/2"~2")

Class 400/600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	6.50	165	4.59	116.50	5.91	150	7.70	3.50
3/4"	20	0.75	19	7.52	191	5.14	130.50	7.09	180	12.80	5.80
1"	25	1.00	25.4	8.50	216	5.83	148	10.43	265	28.66	13.00
1-1/2"	40	1.50	38	9.49	241	6.32	160.50	11.81	300	50.71	23.00
2"	50	2.00	51	11.50	292	7.56	192	15.75	400	63.90	29.00

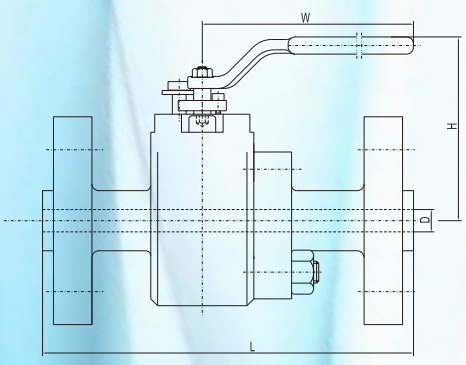
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	6.50	165	4.59	116.50	5.91	150	11.02	5.00
3/4"*1/2	20*15	0.50	12.7	0.75	19	7.52	191	4.59	116.50	5.91	150	17.64	8.00
1*3/4	25*20	0.75	19	1.00	25.4	8.50	216	5.14	130.50	7.09	180	26.46	12.00
1-1/2*1	40*25	1.00	25.4	1.50	38	9.49	241	5.83	148	10.43	265	37.48	17.00
2*1-1/2	50*40	1.50	38	2.00	51	11.50	292	6.32	160.50	11.81	300	59.52	27.00

Class 900 Dimension and Weight

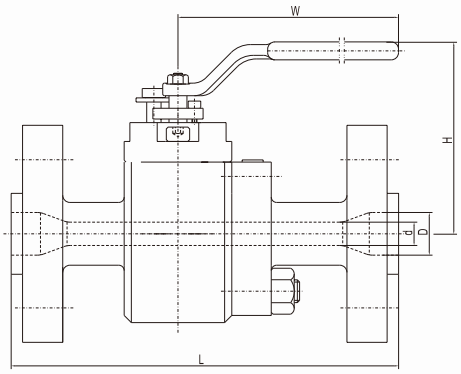
Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	8.50	216	4.59	116.50	5.91	150	22.04	10
3/4"	20	0.75	19	9.02	229	5.35	136	7.09	180	28.66	13
1"	25	1.00	25.4	10.00	254	6.20	157.50	10.43	265	44.09	20
1-1/2"	40	1.50	38	12.01	305	6.99	177.50	11.81	300	90.39	41
2"	50	2.00	51	14.49	368	8.35	212	15.75	400	132.28	60

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~2")



Rduced Port (1/2"~2")

Class 900 Dimension and Weight

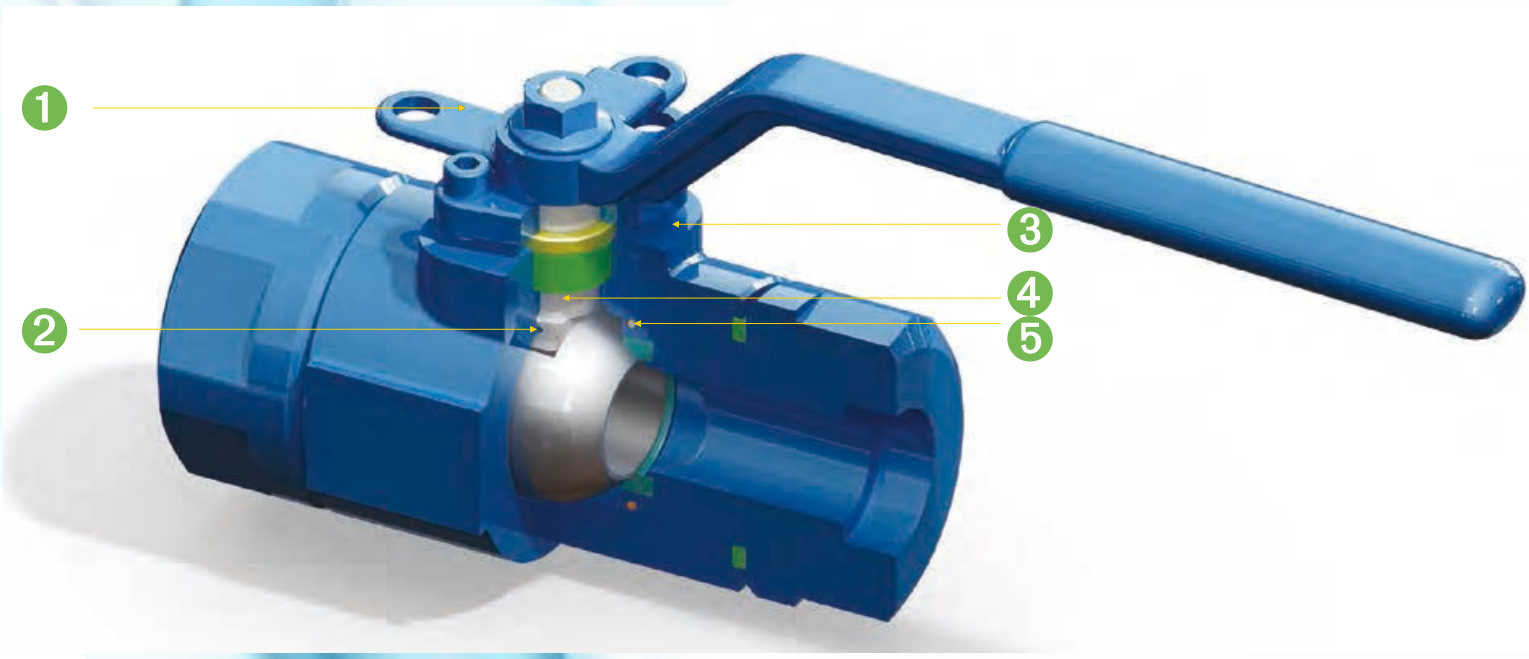
Reduced port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	8.50	216	4.59	116.50	5.91	150	19.84	9
3/4*1/2	20*15	0.50	12.7	0.75	19	9.02	229	4.59	116.50	5.91	150	24.25	11
1*3/4	25*20	0.75	19	1.00	25.4	10.00	254	5.35	136	7.09	180	35.27	16
1-1/2*1	40*25	1.00	25.4	1.50	38	12.01	305	6.20	157.50	10.43	265	55.12	25
2*1-1/2	50*40	1.50	38	2.00	51	14.49	368	6.99	177.50	11.81	300	123.46	56

Class 1500 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	8.50	216	4.59	116.50	5.91	150	22.04	10
3/4"	20	0.75	19	9.02	229	5.35	136	7.09	180	28.66	13
1"	25	1.00	25.4	10.00	254	6.20	157.50	10.43	265	44.09	20
1-1/2"	40	1.50	38	12.01	305	6.99	177.50	11.81	300	90.39	41
2"	50	2.00	51	14.49	368	8.35	212	15.75	400	132.28	60

Reduced port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	8.50	216	4.59	116.50	5.91	150	19.84	9
3/4*1/2	20*15	0.50	12.7	0.75	19	9.02	229	4.59	116.50	5.91	150	24.25	11
1*3/4	25*20	0.75	19	1.00	25.4	10.00	254	5.35	136	7.09	180	35.27	16
1-1/2*1	40*25	1.00	25.4	1.50	38	12.01	305	6.20	157.50	10.43	265	55.12	25
2*1-1/2	50*40	1.50	38	2.00	51	14.49	368	6.99	177.50	11.81	300	123.46	56

Design Features



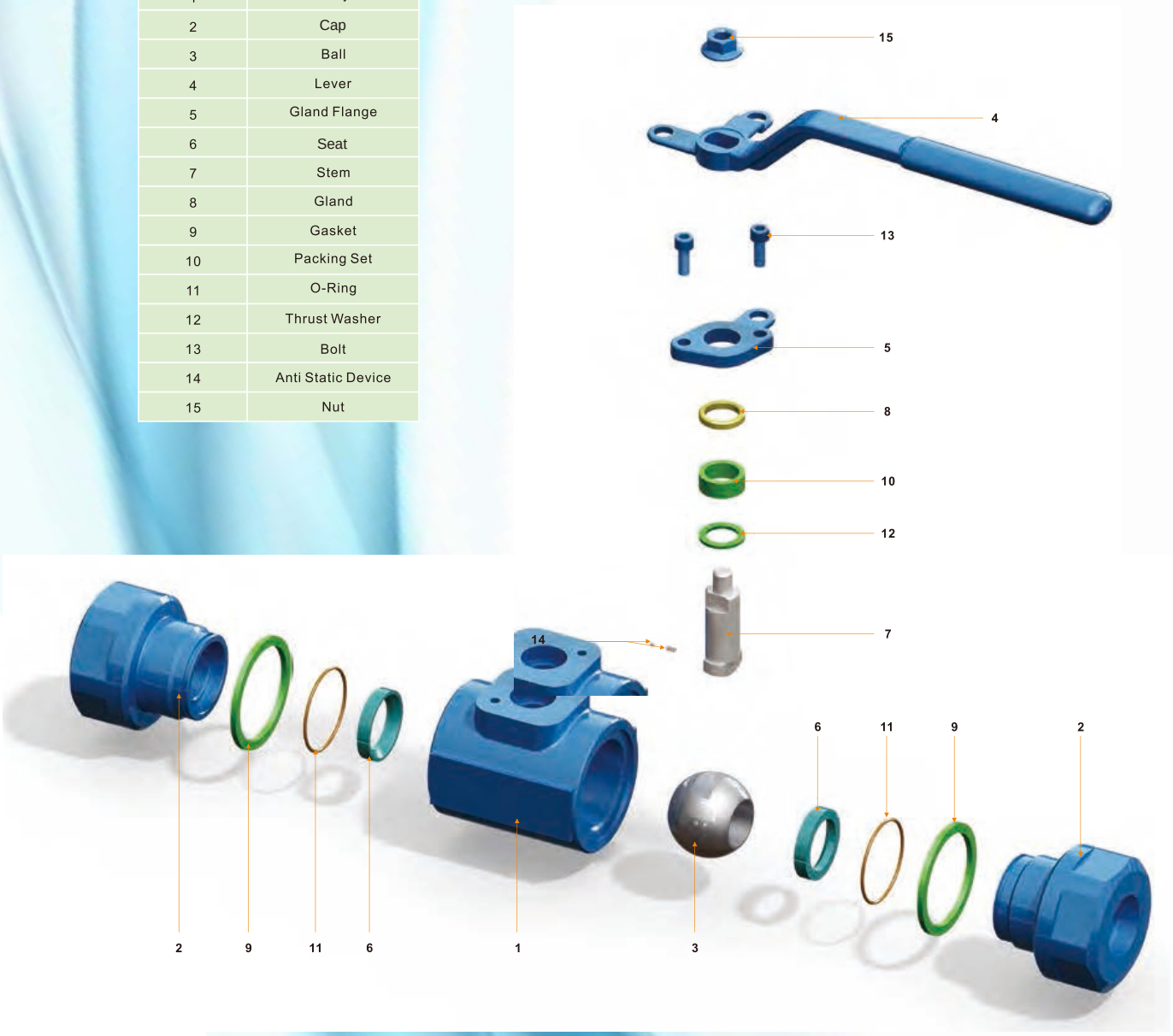
1. Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
2. Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
3. ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
4. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
5. O-ring Seal Design: Protects threads from crevice corrosion.

APPLICATIONS

- Refinery
- Chemical
- Power
- Petrochemical

Material specifications

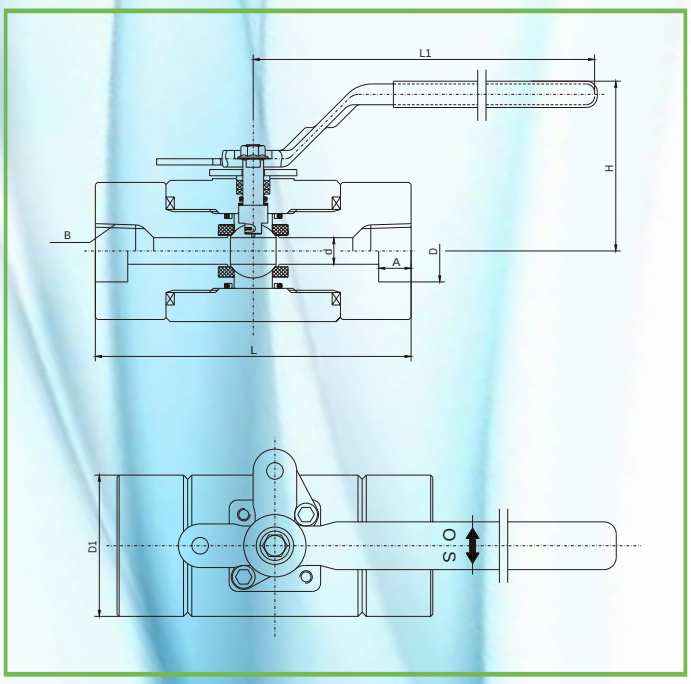
Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	O-Ring
12	Thrust Washer
13	Bolt
14	Anti Static Device
15	Nut



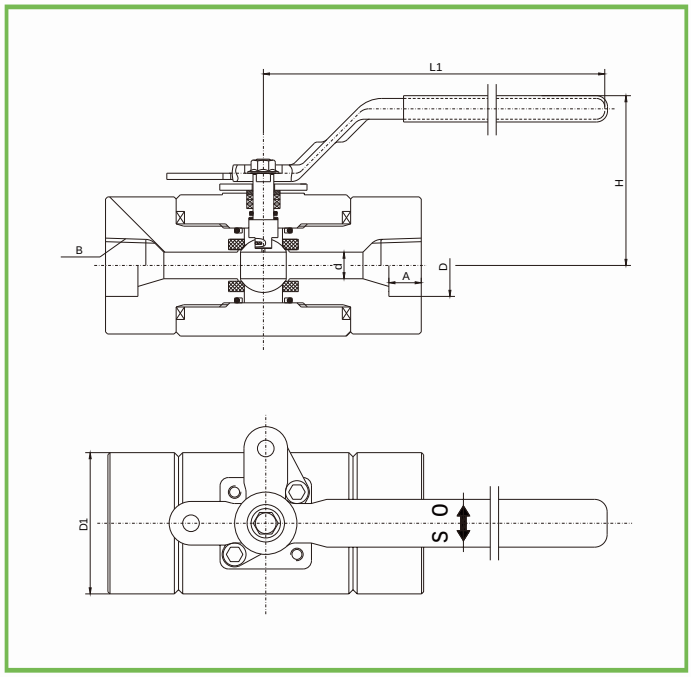
Material Specifications

No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
2	Cap	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	O-Ring	Viton AED	Viton AED	Viton AED	HNBR
12	Thrust Washer	PTFE	PTFE	PTFE	PTFE
13	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
14	Anti Static Device	S.S.	S.S.	S.S.	S.S.
15	Nut	Carbon Steel	S.S.	Carbon Steel	S.S.

Three-piece, Split Body, Forged Steel, Side Entry Design



Full Bore (1/2"~2")



Reduced Bore (1/2"~2")

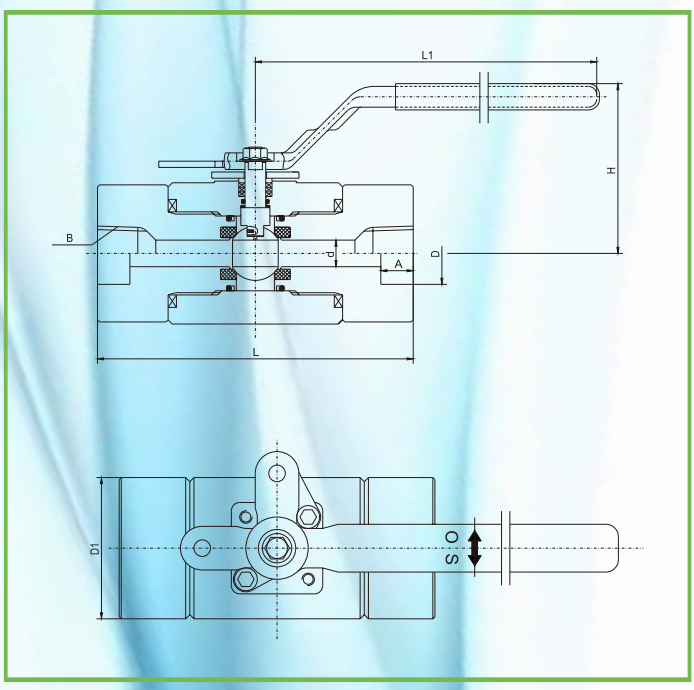
Class 150/300/600/800/900 Dimension and weight

Full Bore																	
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
1/4	8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.56	14.20	1.65	42	1/4-18NPT	3.30	1.50
3/8	10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2	15	0.50	13	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4	20	0.75	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.07	27.20	2.28	58	3/4-14NPT	6.39	2.90
1	25	1.00	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.33	33.90	2.68	68	1-11.5NPT	7.72	3.50
1-1/2	40	1.50	38	5.63	143	5.31	135	11.81	300	0.49	12.50	1.92	48.80	3.66	93	1-1/2-11.5NPT	16.53	7.50
2	50	2.00	51	6.30	160	6.50	165	14.57	370	0.63	16.00	2.41	61.20	4.49	114	2-11.5NPT	28.66	13.00

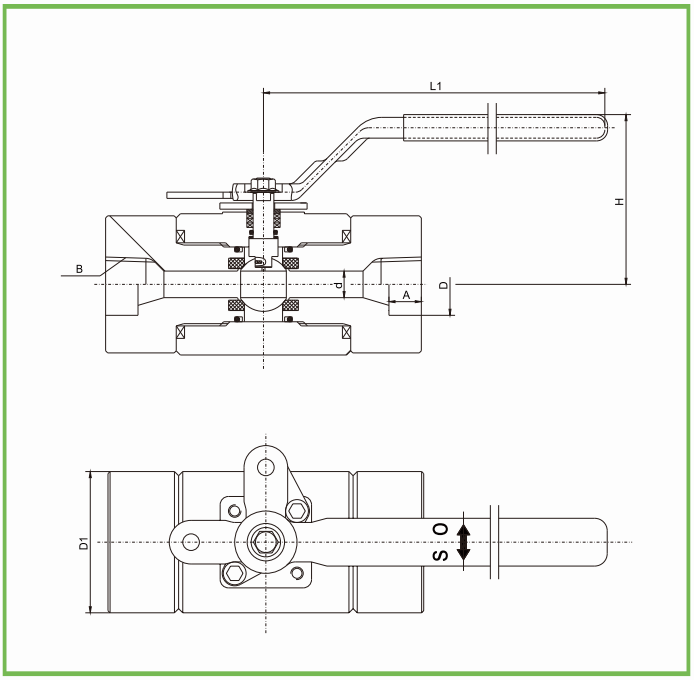
Reduced Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
3/8*1/4	10*8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2*3/8	15*10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4*1/2	20*15	0.51	13	4.09	104	2.44	62	5.91	150	0.49	12.50	1.07	27.20	1.65	42	3/4-14NPT	3.30	1.50
1*3/4	25*20	0.79	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.33	33.90	2.28	58	1-11.5NPT	6.39	2.90
1-1/2*1	40*25	0.98	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.92	48.80	2.68	68	1-1/2-11.5NPT	7.72	3.50
2-*1-1/2	50*40	1.50	38	5.63	143	5.31	135	11.81	300	0.63	16	2.41	61.20	3.66	93	2-11.5NPT	16.53	7.50

ELITE®

Three-piece, Split Body, Forged Steel, Side Entry Design



Full Bore (1/2"~2")



Reduced Bore (1/2"~2")

Class 1500/2500 Dimension and weight

Full Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
1/4	8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.56	14.20	1.65	42	1/4-18NPT	3.30	1.50
3/8	10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2	15	0.50	13	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4	20	0.75	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.07	27.20	2.28	58	3/4-14NPT	6.39	2.90
1	25	1.00	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.33	33.90	2.83	72	1-11.5NPT	11	5
1-1/2	40	1.50	38	5.63	143	5.31	135	11.81	300	0.49	12.50	1.92	48.80	4.13	105	1-1/2-11.5NPT	28.66	13
2	50	2.00	51	6.30	160	6.50	165	14.57	370	0.63	16.00	2.41	61.20	5.28	134	2-11.5NPT	40.09	20

Reduced Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
3/8*1/4	10*8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2*3/8	15*10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4*1/2	20*15	0.51	13	4.09	104	2.44	62	5.91	150	0.49	12.50	1.07	27.20	1.65	42	3/4-14NPT	3.30	1.50
1*3/4	25*20	0.79	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.33	33.90	2.28	58	1-11.5NPT	6.39	2.90
1-1/2*1	40*25	0.98	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.92	48.80	2.83	72	1-1/2-11.5NPT	11	5
2-*1-1/2	50*40	1.50	38	5.63	143	5.31	135	11.81	300	0.63	16	2.41	61.20	4.13	105	2-11.5NPT	28.66	13

Flow Coefficient (Cv value)

Size (inch)	Class 150	Class 300	Class 600	Class 900	Class 1500
1/2	25	25	20	16	16
3/4	56	56	48	34	34
1	95	95	64	55	55
1-1/2	308	308	308	165	165
2	500	430	370	320	320
3	1360	1100	1020	920	
4	2500	2000	1850		
6	5300	5250			
8	10750	10100			
10	17500	16820			
12	26750	25950			

Notes:

1. All the sizes are in full port.
2. Pressure Ratings are according to ASME B16.34.

Method of Calculating Flow

The flow coefficient Cv is the flow rate of water (gallons/minute) through a fully opened valve, with a pressure drop of 1 psi across the valve. Cv is given using the formula.

Liquid Flow:

$QL = Cv\ (P/G)^{1/2}$

QL= Flow rate of liquid (gal. /min.)

P= differential pressure across the valve

G= specific gravity of liquid (for water, G=1)

Gas Flow:

$Qg = 61\ Cv\ (P_2 P/g)^{1/2}$

(For non-critical flow, P/P<1.0)

Qg = Flow rate of gas (CFH at STP)

P_2 = outlet pressure (psia)

g = specific gravity of gas (for air, g=1.0)

Forged Steel Floating Ball Valves

Design and Inspection Standard:

Pressure-Temperature Ratings		ASME B16.34, ASME B16.5 (Class 400), API 602 (Class 800)
Shell Wall Thickness		ASME B16.34
Face-to-face Dimensions	Flange	ASME B16.10
	Socket Weld & NPT	Neway standard
End connection Dimensions	Flange	ASME B16.5
	Butt-Weld	ASME B16.25
	Socket Weld	ASME B16.11
	NPT	ASME B1.20.1
Pressure Test		API 598 or API 6D (Optional)
Fire Safe Test		API 607 or API 6FA (Optional)
Marking		MSP-SP 25
Surface Quality		MSP-SP 55
Sour Service		NACE Std. (MR 0175 or MR 0103)
Low Fugitive Emission		ISO 15848, TA-Luft, SPE 77/312

Product Range:

Product Coding	Class	Size											
		1/4"	3/8"	1/2"	3/4"	1"	1-1/2"	2"	2-1/2"	3"	4"	6"	8"	10"
BA	150			●	●	●	●	●	●	●	●	●	●	●
	300			●	●	●	●	●	●	●	●	●	●	●
B	150			●	●	●	●	●	●	●	●	●	●	●
	300			●	●	●	●	●	●	●	●	●	●	●
BB	150			●	●	●	●	●	●	●	●			
	300			●	●	●	●	●	●	●	●			
	400			●	●	●	●	●						
	600			●	●	●	●	●		●	●			
	900			●	●	●	●	●		●				
	1500			●	●	●	●	●						
BC	150	●	●	●	●	●	●	●						
	300	●	●	●	●	●	●	●						
	600	●	●	●	●	●	●	●						
	800	●	●	●	●	●	●	●						
	900	●	●	●	●	●	●	●						
	1500	●	●	●	●	●	●	●						
	2500	●	●	●	●	●	●	●						

● Design Standard: ASME B16.34, ISO 17292, API 608, API 6D
● Design Standard: ASME B16.34, API 6D
● Design Standard: ASME B16.34, API 608, API 6D

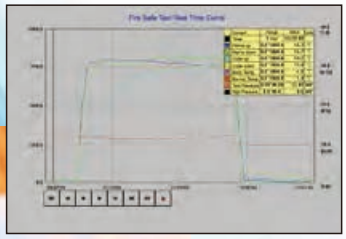
With cutting-edge computer technology utilized, ELITE Technical Center focuses on providing outstanding quality products and developing new lines. There is a highly educated and well-trained engineering team, supported by a comprehensive internal computer network which links the entire operations of design, manufacturing and administration.

ELITE design philosophy is to develop a safe and cost-efficient valve. We introduced the latest Ansys, Fe-safe, CF-design and NX software for all our new product design research which include the advanced finite element analysis, fluid and fatigue analysis to virtually verify the new design prior to production, which has resulted in dramatically shortening development duration and assure a safe and cost-efficient final product.

ELITE technical personnel are always ready to offer on line or on site technical training and suppout for all of its distributors, agents and end users.







Fire safe is ELITE's standard design. All series of Neway floating soft-seated valves has been witnessed and certified by Lloyd's Register. The certifications and test reports are available upon request. Approved by Lloyd's, the computer-controlled facility collects data of fire-safe test, capable of testing and verifying ELITE's all floating ball valves per API6FA and API607.

Material specifications

Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	Thrust Washer
12	Bolt
13	Auti-Static Device
14	Stop Plate
15	Retainer
16	Washer
17	O-Ring
18	Bolt

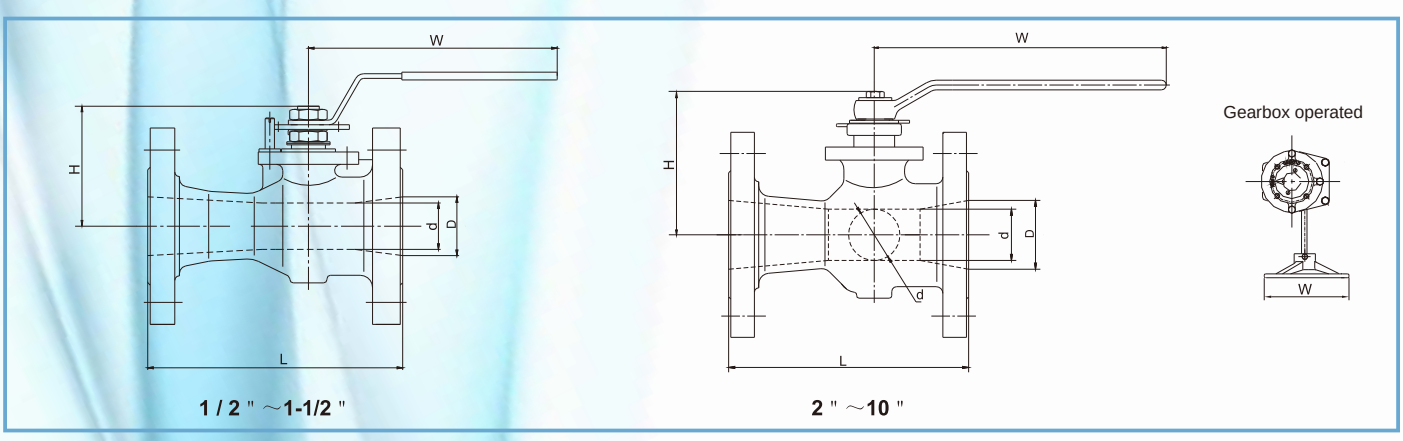
Material Specifications

No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Anti-Static Device	S.S.	S.S.	S.S.	S.S.
14	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
15	Retainer	Carbon Steel	S.S.	Carbon Steel	S.S.
16	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
17	O-Ring	Viton A	Viton A	Viton A	HNBR
18	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.

ISO5211 connection dimension: actuator installation is simplified by using connection dimension recognized in international standards.

ELITE®

Reduced Port, Uni-body, Cast Steel, Side Entry Design



Class 150 Dimension and Weight

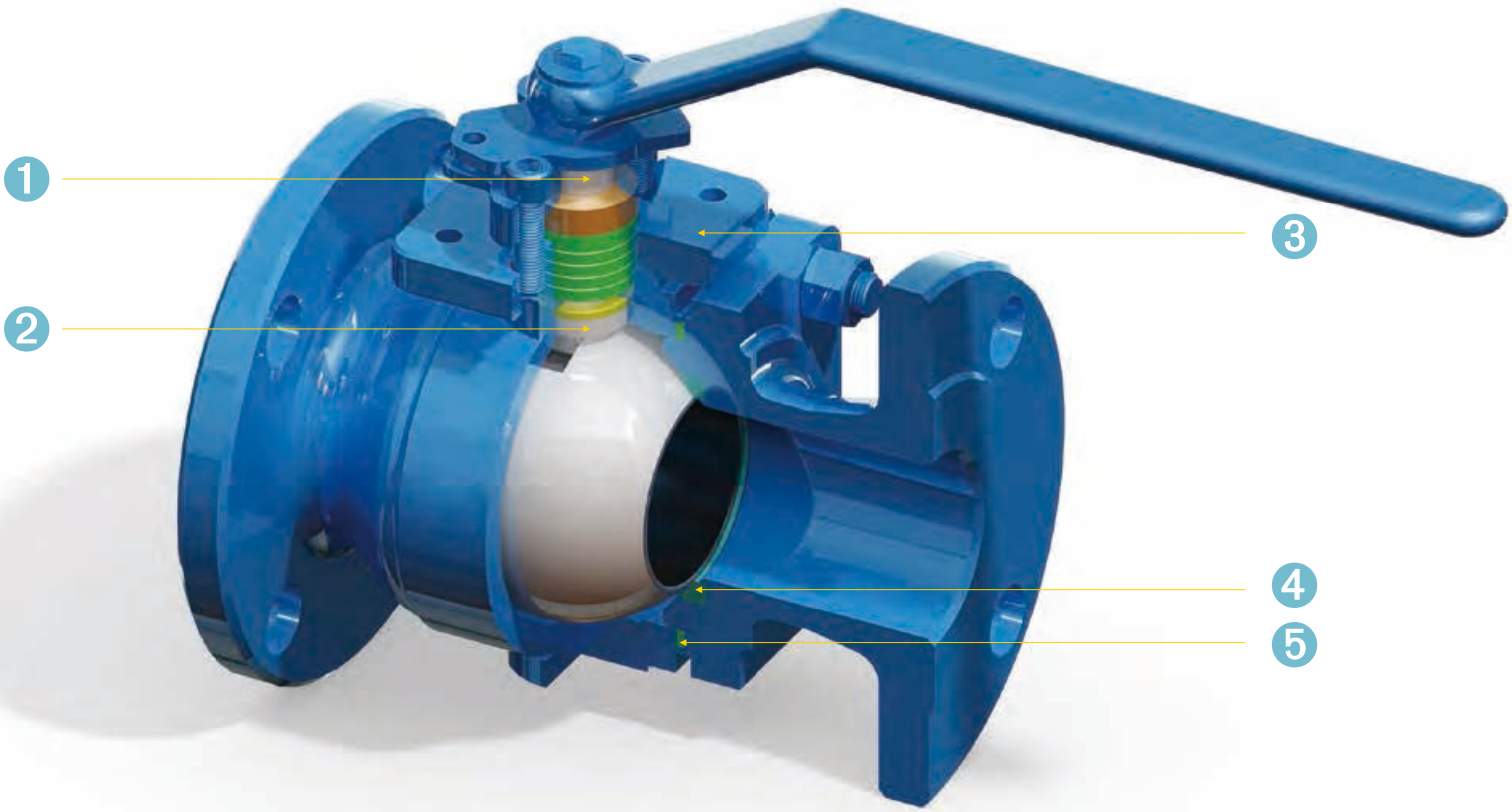
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	10	0.50	13	4.25	108	1.75	44.50	4.72	145	3.3	1.5
3/4*1/2	20*15	0.50	13	0.75	19	4.61	117	2.11	53.50	5.51	165	5.5	2.5
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.42	61.50	5.51	165	6.6	3.0
1-1/2*1	40*25	1.18	30	1.50	38	6.50	165	3.15	80	6.30	215	11.0	5.0
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.17	106	10.43	265	19.2	8.7
2-1/2*2	65*50	2.00	51	2.50	64	7.52	191	4.72	120	10.43	265	27.3	12.4
3*2-1/2	80*65	2.50	64	3.00	76	7.99	203	5.67	144	10.43	285	36.8	16.7
4*3	100*80	3.00	76	4.00	102	9.02	229	6.54	166	11.81	300	53.8	24.4
6*4	150*100	4.50	114	6.00	152	10.51	267	8.39	213	15.75	*300	110.2	50.0
8*6	200*150	6.00	152	8.00	203	11.50	292	20.71	526	11.81	*400	222.7	101.0
10*8	250*200	7.36	187	10.00	254	12.99	330	21.65	550	16	*400	330.7	150.0

Class 300 Dimension and Weight

Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	10	0.50	13	5.51	140	1.75	44.50	4.72	145	6.2	2.8
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.11	53.50	5.51	165	7.9	3.6
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.42	61.50	5.51	165	10.6	4.8
1-1/2*1	40*25	1.18	30	1.50	38	7.48	190	3.15	80	6.30	215	21.2	9.6
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.17	106	10.43	265	24.3	11.0
2-1/2*2	65*50	2.00	51	2.50	64	9.49	241	4.72	120	10.43	265	33.3	15.1
3*2-1/2	80*65	2.50	64	3.00	76	11.14	283	5.67	144	10.43	285	49.6	22.5
4*3	100*80	3.00	76	4.00	102	12.01	305	6.54	166	11.81	300	81.6	37.0
6*4	150*100	4.50	114	6.00	152	15.87	403	8.39	213	11.81	*300	159.8	72.5
8*6	200*150	5.67	144	8.00	203	16.50	419	20.71	526	15.75	*400	275.6	125.0
10*8	250*200	7.36	187	10.00	254	17.99	457	21.65	550	15.75	*400	451.9	205.0

*Gearbox operated

Design Features



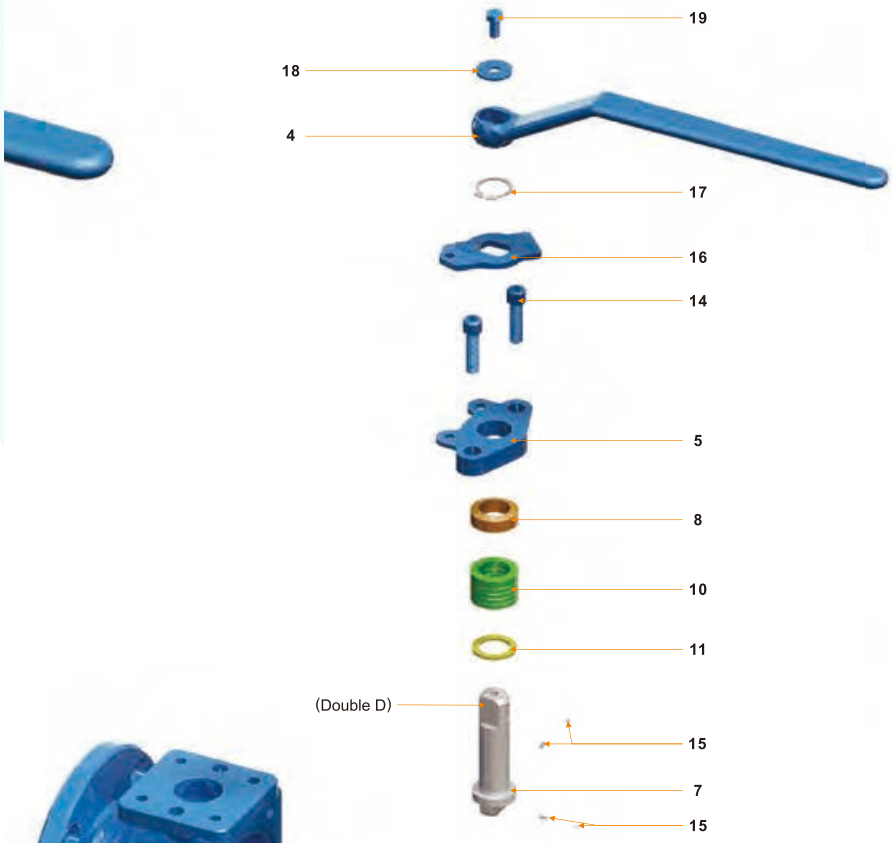
1. Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
2. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
3. ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
4. Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.
5. Emission-free Gasket: Low-emission graphite is employed in gasket to eliminate leakage.

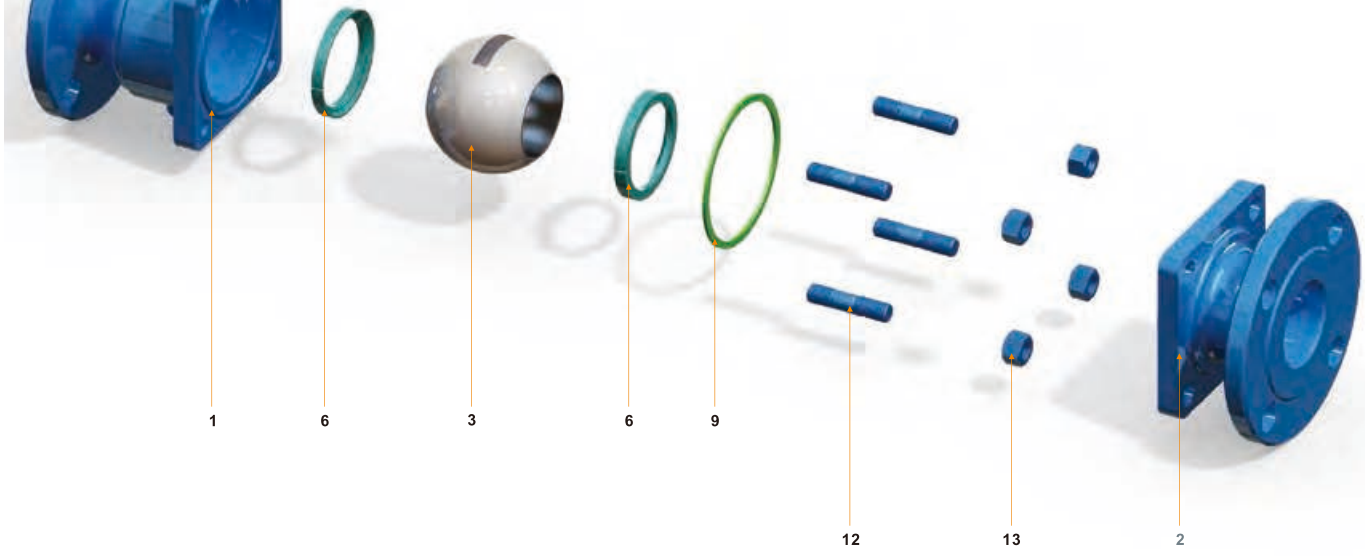
APPLICATIONS

- Refinery
- Petrochemical
- Power
- Chemical
- Pharmaceutical

Material specifications

Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	Thrust Washer
12	Stud
13	Nut
14	Bolt
15	Anti-Static Device
16	Stop Plate
17	Retainer
18	Washer
19	Bolt

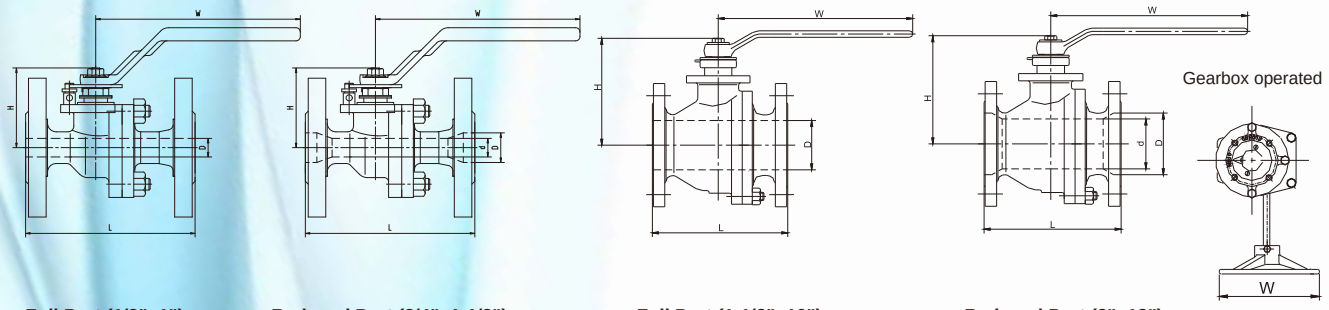




Material specifications

No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
14	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
15	Anti-Static Device	S.S.	S.S.	S.S.	S.S.
16	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
17	Retainer	Carbon Steel	S.S.	Carbon Steel	S.S.
18	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
19	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.

Two-piece, Split Body, Cast Steel, Side Entry Design



Full Port (1/2"~1") | Reduced Port (3/4"~1-1/2") | Full Port (1-1/2"~10") | Reduced Port (2"~12")

Class 150 Dimension and Weight

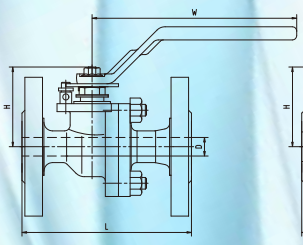
Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.50	13	4.25	108	2.19	55.50	6.50	165	4.0	1.8
3/4	20	0.75	19	4.61	117	2.58	65.50	6.50	165	4.4	2.0
1	25	1.00	25	5.00	127	3.03	77	8.46	215	7.9	3.6
1-1/2	40	1.50	38	6.50	165	4.21	107	10.43	265	15.9	7.2
2	50	2.00	51	7.01	178	4.84	123	10.43	265	24.5	11.1
2-1/2	65	2.50	64	7.48	190	5.91	150	11.22	285	30.9	14.0
3	80	3.00	76	7.99	203	6.69	170	11.81	300	48.5	22.0
4	100	4.00	102	9.02	229	8.11	206	15.75	400	116.8	53.0
6	150	6.00	152	15.51	394	20.91	531	15.75	*400	238.1	108.0
8	200	7.99	203	17.99	457	24.65	626	19.68	*500	429.9	195.0
10	250	10.00	254	20.98	533	26.30	668	19.68	*500	687.8	312.0

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4*1/2	20*15	0.50	13	0.75	19	4.63	118	2.19	55.50	6.50	165	6.6	3.0
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.58	65.50	6.50	165	9.9	4.5
1-1/2*1	40*25	1.00	25	1.50	38	6.50	165	3.03	77	8.46	215	15.4	7.0
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.21	107	10.43	265	19.8	9.0
2-1/2*2	65*50	2.00	51	2.50	64	7.48	190	4.84	123	10.43	265	33.1	15.0
3*2	80*50	2.00	51	3.00	76	7.99	203	4.84	123	11.22	285	35.3	16.0
4*3	100*80	3.00	76	4.00	102	9.02	229	6.69	170	11.81	300	65.0	29.5
6*4	150*100	4.00	102	6.00	152	15.51	394	8.11	206	15.75	400	105.8	48.0
8*6	200*150	6.00	152	8.00	203	17.99	457	20.91	531	15.75	*400	271.2	123.0
10*8	250*200	8.00	203	10.00	254	20.98	533	24.65	626	19.68	*500	480.6	218.0
12*10	300*250	10.00	254	12.00	305	24.02	610	26.30	668	19.68	*500	507.1	230.0

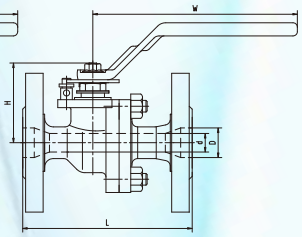
*Gearbox operated

ELITE®

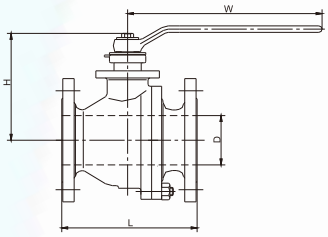
Two-piece, Split Body, Cast Steel, Side Entry Design



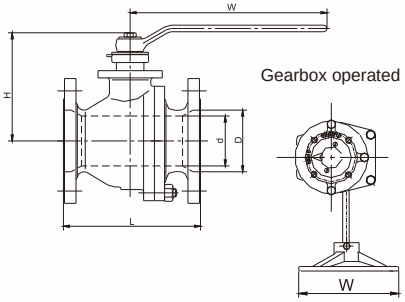
Full Port (1/2"~1")



Reduced Port (3/4"~1-1/2")



Full Port (1-1/2"~10")



Reduced Port (2"~12")

Class 300 Dimension and Weight

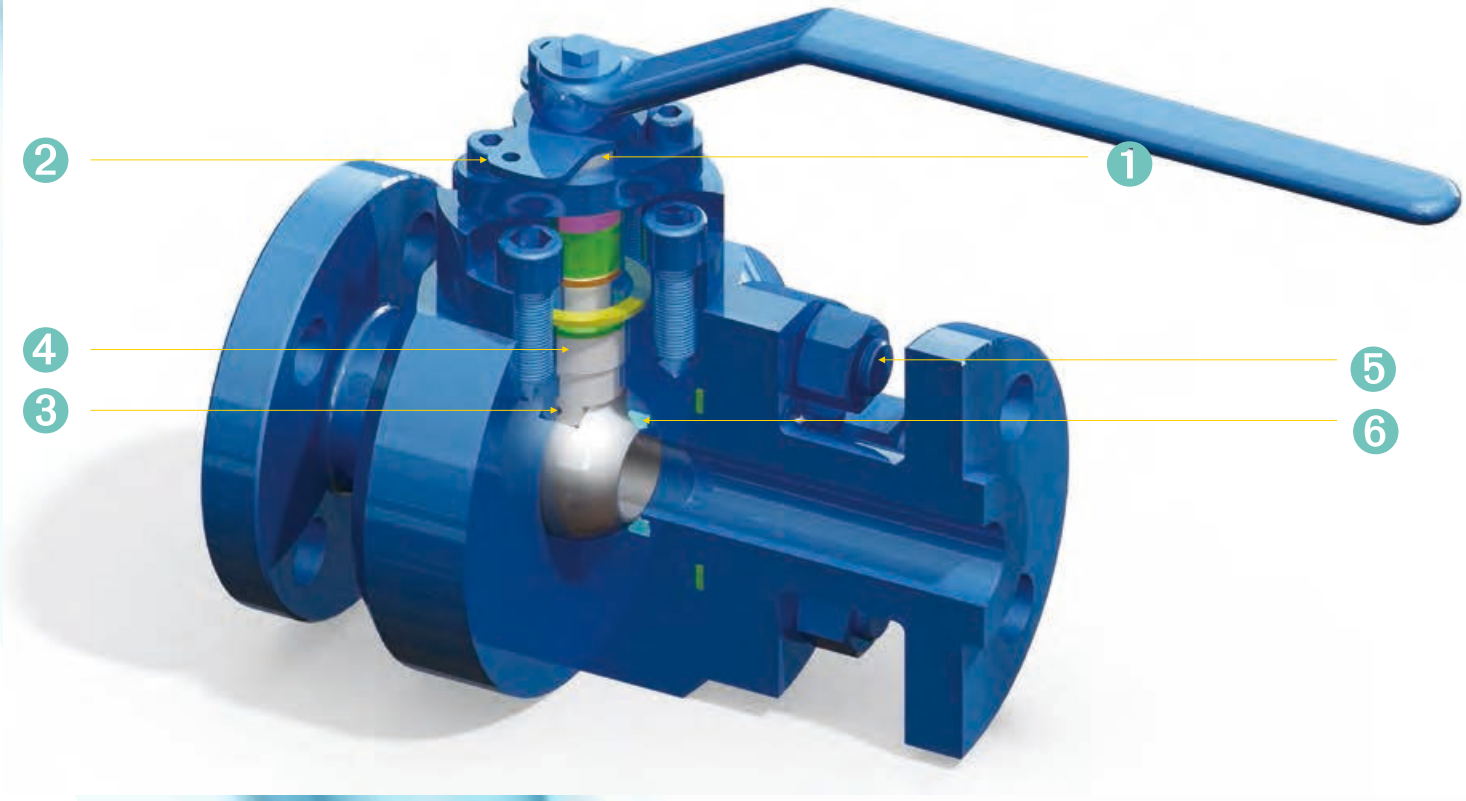
Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
1/2	15	0.50	13	5.51	140	2.19	55.50	6.50	165	5.1	2.3
3/4	20	0.75	19	5.98	152	2.58	65.50	6.50	165	7.9	3.6
1	25	1.00	25	6.50	165	3.03	77	8.46	215	11.2	5.1
1-1/2	40	1.50	38	7.48	190	4.21	107	10.43	265	22.0	10.0
2	50	2.00	51	8.50	216	4.84	123	10.43	265	30.9	14.0
2-1/2	65	2.50	64	9.49	241	5.91	150	11.22	285	50.7	23.0
3	80	3.00	76	11.14	283	6.69	170	11.81	300	67.5	30.6
4	100	4.00	102	12.01	305	8.11	206	15.75	400	110.2	50.0
6	150	6.00	152	15.87	403	20.91	531	15.75	*400	255.7	116.0
8	200	8.00	203	19.76	502	27.56	700	23.62	*600	517.0	234.5
10	250	10.00	254	22.36	568	36.30	922	23.62	*600	1086.9	493.0

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	kg
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.19	55.50	6.50	165	7.7	3.5
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.58	65.50	6.50	165	12.1	5.5
1-1/2*1	40*25	1.00	25	1.50	38	7.48	190	3.03	77	8.46	215	22.0	10.0
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.21	107	10.43	265	24.3	11.0
2-1/2*2	65*50	2.00	51	2.50	64	9.49	241	4.84	123	10.43	265	51.8	23.5
3*2	80*50	2.50	64	3.00	76	11.14	283	4.84	123	10.43	265	66.1	30.0
4*3	100*80	3.00	76	4.00	102	12.01	305	6.69	170	11.81	300	86.0	39.0
6*4	150*100	4.00	102	6.00	152	15.87	403	8.11	206	15.75	400	159.8	72.5
8*6	200*150	6.00	152	8.00	203	19.76	502	20.91	531	15.75	*400	326.3	148.0
10*8	250*200	8.00	203	10.00	254	22.36	568	36.30	700	23.62	*600	705.5	320.0

*Gearbox operated

BB Series Ball Valve

Design Features

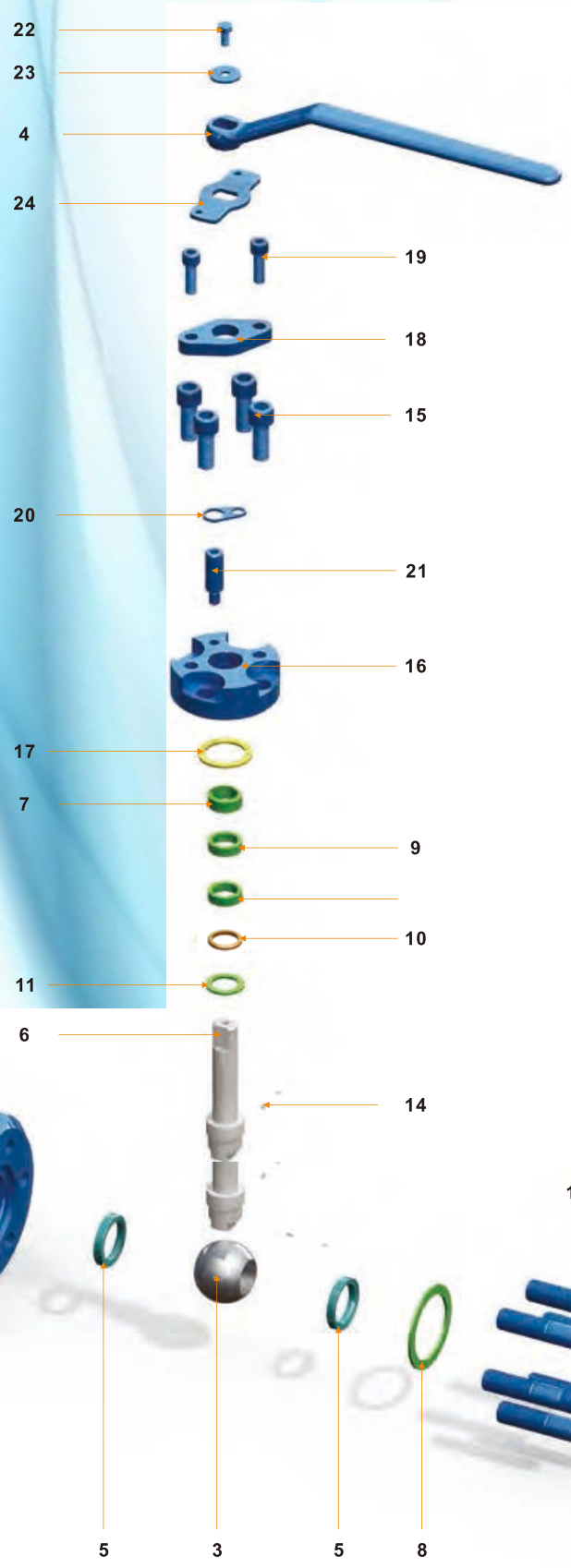


1. Double "D" Stem Head: ensures handle lever will always be mounted correctly, parallel to the media flow, indicating valve open and closed positions.
2. Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
3. Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
4. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
5. Bolted body-cap configuration: Properly torqued nut is used to maintain seal performance.
6. Fire Safe Design: Metal to metal sealing shuts off valve flow when soft sealing materials are destroyed by fire.

APPLICATIONS

- Refinery
- Petrochemical
- Power
- Chemical
- Pharmaceutical
- Paper

Material specifications



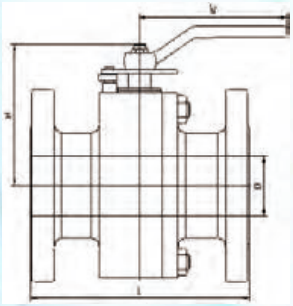
Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Seat
6	Stem
7	Gland
8	Gasket
9	Packing Set
10	Spacer Ring
11	Thrust Washer
12	Stud
13	Nut
14	Anti Static Device
15	Bolt
16	Cover
17	Gasket
18	Gland Flange
19	Bolt
20	Locking Plate
21	Screw
22	Bolt
23	Washer
24	Stop Plate

Material specifications

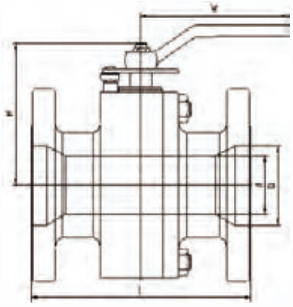
No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
2	Cap	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Seat	PTFE	PTFE	PTFE	PTFE
6	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
7	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
8	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
9	Packing Set	Graphite	Graphite	Graphite	Graphite
10	Spacer Ring	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
11	Thrust Washer	PTFE	PTFE	PTFE	PTFE
12	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
13	Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
14	Anti Static Device	S.S.	S.S.	S.S.	S.S.
15	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.
16	Cover	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
17	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
18	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
19	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
20	Locking Plate	S.S.	S.S.	S.S.	S.S.
21	Screw	S.S.	S.S.	S.S.	S.S.
22	Bolt	Carbon Steel	S.S.	Carbon Steel	S.S.
23	Washer	Carbon Steel	S.S.	Carbon Steel	S.S.
24	Stop Plate	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~1")



Reduced Port (3/4"~1-1/2")

Class 150 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.50	13	4.25	108	2.19	55.50	6.50	165	5.50	2.50
3/4	20	0.75	19	4.61	117	2.58	65.50	6.50	165	7.70	3.50
1	25	1.00	25	5.00	127	3.03	77	8.46	215	11.00	5.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3/4*1/2	20*15	0.50	13	0.75	19	4.61	117	2.19	55.50	6.50	165	6.60	3.00
1*3/4	25*20	0.75	19	1.00	25	5.00	127	2.58	65.50	6.50	165	8.80	4.00
1-1/2*1	40*25	1.00	25	1.50	38	6.50	165	3.03	77	8.46	215	15.40	7.00

Class 300 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.50	13	5.51	140	2.19	55.50	6.50	165	6.60	3.00
3/4	20	0.75	19	5.98	152	2.58	65.50	6.50	165	8.80	4.00
1	25	1.00	25	6.50	165	3.03	77	8.46	215	15.40	7.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3/4*1/2	20*15	0.50	13	0.75	19	5.98	152	2.19	55.50	6.50	165	8.80	4.00
1*3/4	25*20	0.75	19	1.00	25	6.50	165	2.58	65.50	6.50	165	11.00	5.00
1-1/2*1	40*25	1.00	25	1.50	38	7.48	190	3.03	77	8.46	215	19.80	9.00

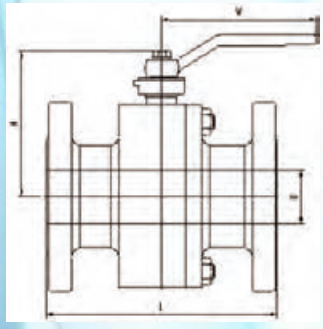
Class 600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3	80	3.00	76	14.02	356	6.30	160	15.75	400	136.70	62.00

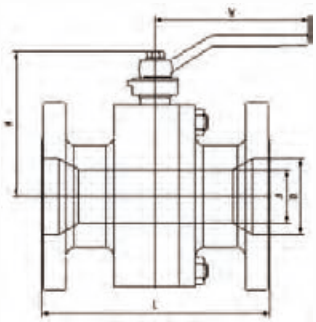
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4*3	100*80	3.00	76	4.00	102	17.01	432	6.30	160	15.75	400	180.80	82.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1-1/2"~3")



Reduced Port (2"~4")

Class 150 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	6.50	165	4.21	107	10.43	265	24.30	11.00
2	50	2.00	51	7.01	178	4.84	123	10.43	265	35.30	16.00
2-1/2	65	2.50	64	7.48	190	5.71	145	11.22	285	57.30	26.00
3	80	3.00	76	7.99	203	6.50	165	11.81	300	70.50	32.00
4	100	4.00	102	9.02	229	7.68	195	15.75	400	116.80	53.00

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.00	51	7.01	178	4.21	107	10.43	265	29.80	13.50
3*2	80*50	2.00	51	2.50	64	7.99	203	4.84	123	10.43	265	44.10	20.00
4*3	100*80	3.00	76	4.00	102	9.02	229	6.50	165	11.81	300	83.80	38.00
6*4	150*100	4.00	102	6.00	152	15.51	394	7.68	195	15.75	400	158.70	72.00

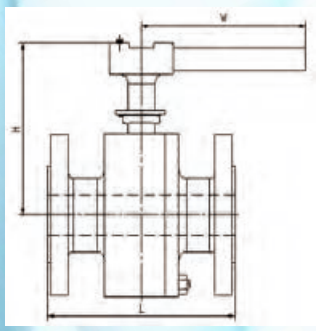
Class 300 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	7.48	190	4.21	107	10.43	265	30.90	14.00
2	50	2.00	51	8.50	216	4.84	123	10.43	265	39.70	18.00
2-1/2	65	2.50	64	9.49	241	5.71	145	11.22	285	63.90	29.00
3	80	3.00	76	11.14	283	6.50	165	11.81	300	88.20	40.00
4	100	4.00	102	12.01	305	7.68	195	15.75	400	163.10	74.00

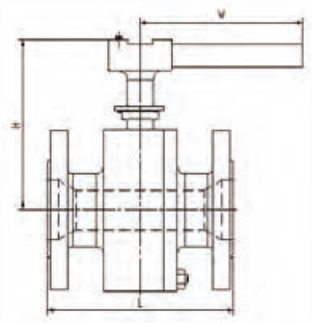
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.00	51	8.50	216	4.21	107	10.43	265	32.00	14.50
3*2	80*50	2.00	51	2.50	64	11.14	283	4.84	123	10.43	265	55.10	25.00
4*3	100*80	3.00	76	4.00	102	12.01	305	6.50	165	11.81	300	110.20	50.00
6*4	150*100	4.00	102	6.00	152	15.87	403	7.68	195	15.75	400	211.60	96.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (3"~4")



Reduced Port (6")

Class 600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4	100	4.00	102	17.01	432	11.93	303	39.17	995	297.60	135.00

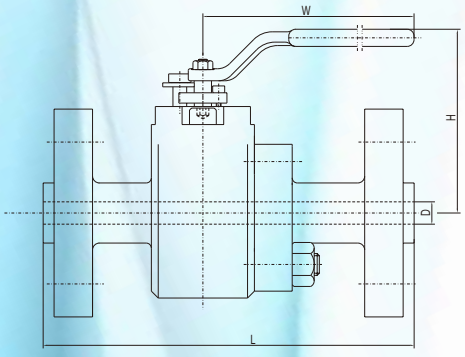
Class 900 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3	80	3.00	76	15.00	381	9.80	249	31.50	800	198.40	90.00

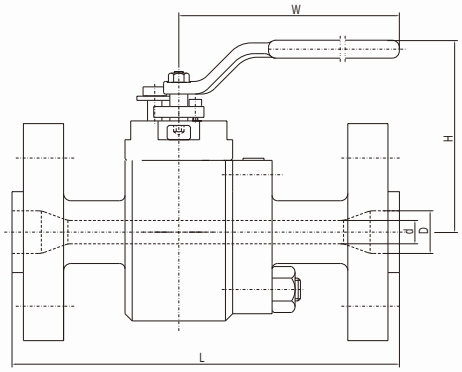
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
4*3	100*80	3.00	76	4.00	102	18.00	457	9.80	249	31.50	800	249.10	113.00

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~2")



Rduced Port (1/2"~2")

Class 400/600 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	6.50	165	4.59	116.50	5.91	150	7.70	3.50
3/4"	20	0.75	19	7.52	191	5.14	130.50	7.09	180	12.80	5.80
1"	25	1.00	25.4	8.50	216	5.83	148	10.43	265	28.66	13.00
1-1/2"	40	1.50	38	9.49	241	6.32	160.50	11.81	300	50.71	23.00
2"	50	2.00	51	11.50	292	7.56	192	15.75	400	63.90	29.00

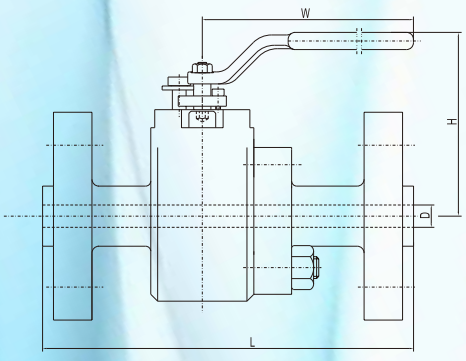
Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	6.50	165	4.59	116.50	5.91	150	11.02	5.00
3/4"*1/2	20*15	0.50	12.7	0.75	19	7.52	191	4.59	116.50	5.91	150	17.64	8.00
1*3/4	25*20	0.75	19	1.00	25.4	8.50	216	5.14	130.50	7.09	180	26.46	12.00
1-1/2*1	40*25	1.00	25.4	1.50	38	9.49	241	5.83	148	10.43	265	37.48	17.00
2*1-1/2	50*40	1.50	38	2.00	51	11.50	292	6.32	160.50	11.81	300	59.52	27.00

Class 900 Dimension and Weight

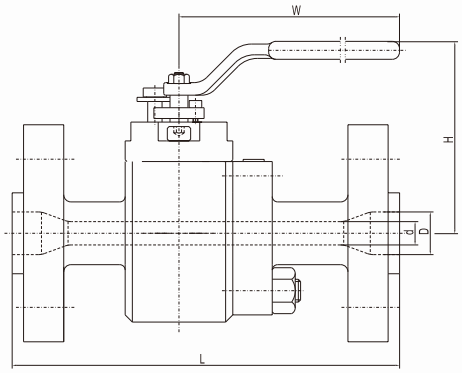
Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	8.50	216	4.59	116.50	5.91	150	22.04	10
3/4"	20	0.75	19	9.02	229	5.35	136	7.09	180	28.66	13
1"	25	1.00	25.4	10.00	254	6.20	157.50	10.43	265	44.09	20
1-1/2"	40	1.50	38	12.01	305	6.99	177.50	11.81	300	90.39	41
2"	50	2.00	51	14.49	368	8.35	212	15.75	400	132.28	60

ELITE®

Two-piece, Split Body, Forged Steel, Side Entry Design



Full Port (1/2"~2")



Rduced Port (1/2"~2")

Class 900 Dimension and Weight

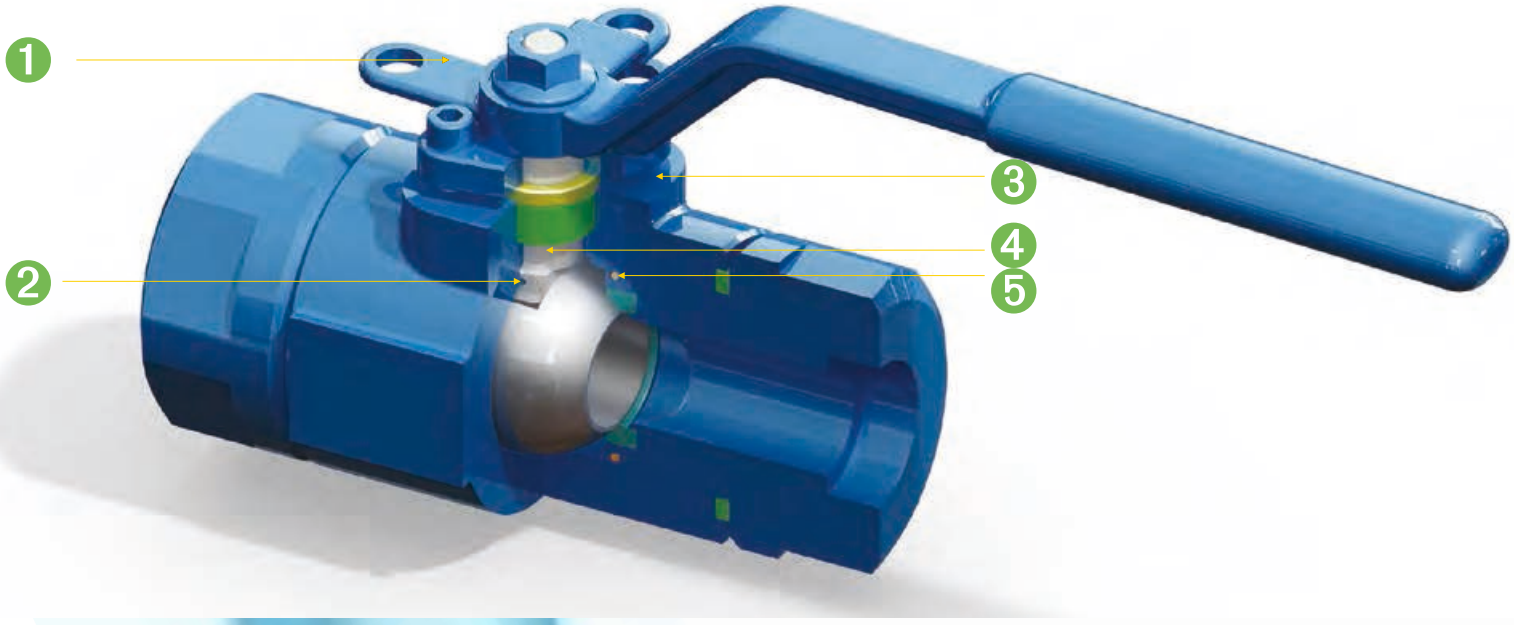
Reduced port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	8.50	216	4.59	116.50	5.91	150	19.84	9
3/4*1/2	20*15	0.50	12.7	0.75	19	9.02	229	4.59	116.50	5.91	150	24.25	11
1*3/4	25*20	0.75	19	1.00	25.4	10.00	254	5.35	136	7.09	180	35.27	16
1-1/2*1	40*25	1.00	25.4	1.50	38	12.01	305	6.20	157.50	10.43	265	55.12	25
2*1-1/2	50*40	1.50	38	2.00	51	14.49	368	6.99	177.50	11.81	300	123.46	56

Class 1500 Dimension and Weight

Full Port											
Size		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2"	15	0.50	12.7	8.50	216	4.59	116.50	5.91	150	22.04	10
3/4"	20	0.75	19	9.02	229	5.35	136	7.09	180	28.66	13
1"	25	1.00	25.4	10.00	254	6.20	157.50	10.43	265	44.09	20
1-1/2"	40	1.50	38	12.01	305	6.99	177.50	11.81	300	90.39	41
2"	50	2.00	51	14.49	368	8.35	212	15.75	400	132.28	60

Reduced port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.37	9.5	0.50	12.7	8.50	216	4.59	116.50	5.91	150	19.84	9
3/4*1/2	20*15	0.50	12.7	0.75	19	9.02	229	4.59	116.50	5.91	150	24.25	11
1*3/4	25*20	0.75	19	1.00	25.4	10.00	254	5.35	136	7.09	180	35.27	16
1-1/2*1	40*25	1.00	25.4	1.50	38	12.01	305	6.20	157.50	10.43	265	55.12	25
2*1-1/2	50*40	1.50	38	2.00	51	14.49	368	6.99	177.50	11.81	300	123.46	56

Design Features



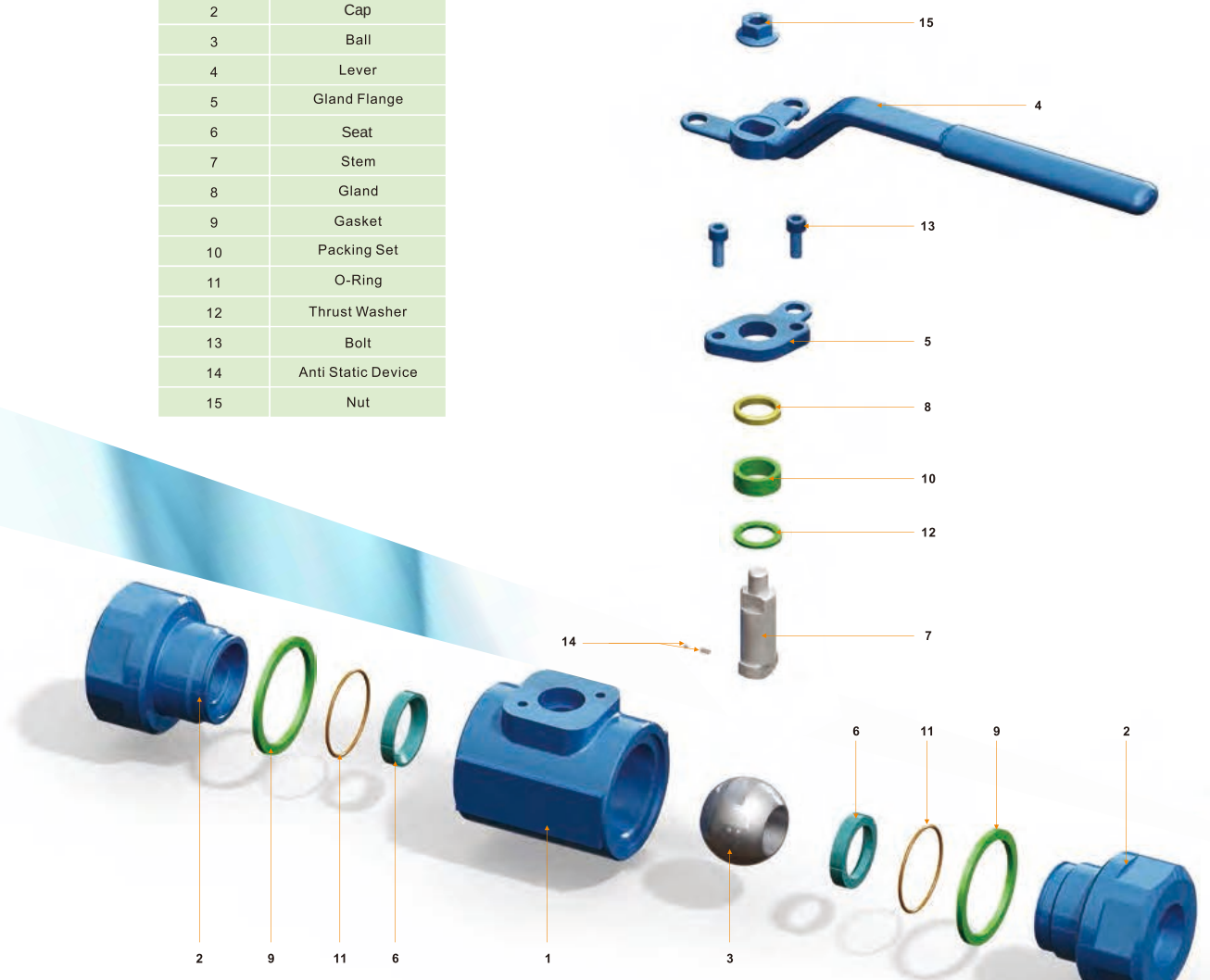
1. Reliable Flow Locking Device: Valve is equipped with an integral locking device to secure flow.
2. Anti-static Device: Spring-loaded plunger assures the electrical continuity between the ball, stem and body, to avoid static buildup.
3. ISO5211 connection dimension: actuator installation is simplified by using connection dimension recog nized in international standards.
4. Blow-out proof stem: The lower end of the stem is T-shaped structured, protected by boss of body, which assures stem retention against any pressure.
5. O-ring Seal Design: Protects threads from crevice corrosion.

APPLICATIONS

- Refinery
- Chemical
- Power
- Petrochemical

Material specifications

Index no	Part
1	Body
2	Cap
3	Ball
4	Lever
5	Gland Flange
6	Seat
7	Stem
8	Gland
9	Gasket
10	Packing Set
11	O-Ring
12	Thrust Washer
13	Bolt
14	Anti Static Device
15	Nut

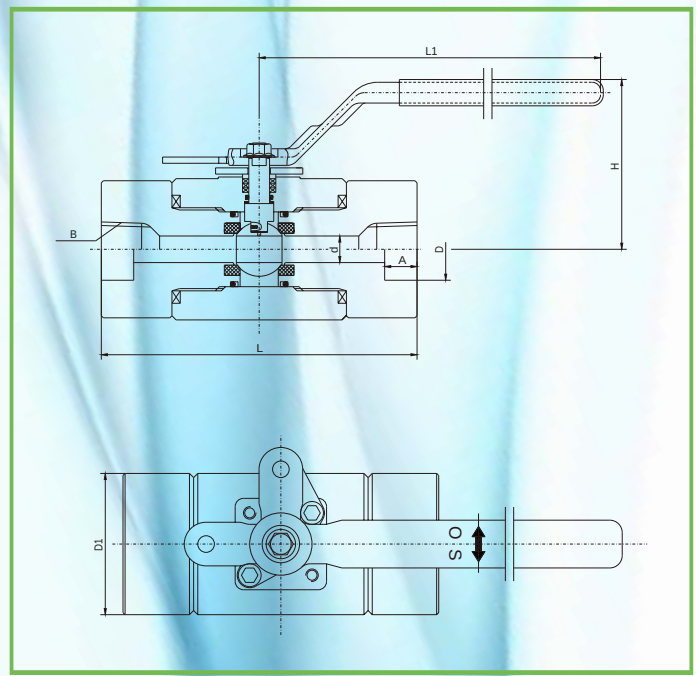


Material Specifications

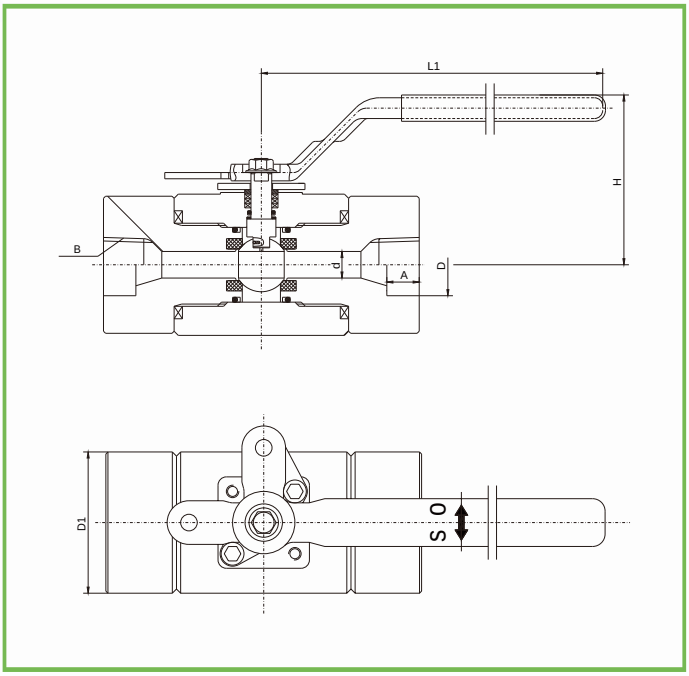
No	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
2	Cap	ASTM A105N	ASTM A182-F316	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A105N/ENP	ASTM A182-F316	ASTM A105N/ENP	ASTM A182-F316
4	Lever	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
5	Gland Flange	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	Seat	PTFE	PTFE	PTFE	PTFE
7	Stem	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F316
8	Gland	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-316
9	Gasket	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite	316 S.S.+Graphite
10	Packing Set	Graphite	Graphite	Graphite	Graphite
11	O-Ring	Viton AED	Viton AED	Viton AED	HNBR
12	Thrust Washer	PTFE	PTFE	PTFE	PTFE
13	Bolt	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
14	Anti Static Device	S.S.	S.S.	S.S.	S.S.
15	Nut	Carbon Steel	S.S.	Carbon Steel	S.S.

ELITE®

Three-piece, Split Body, Forged Steel, Side Entry Design



Full Bore (1/2"~2")



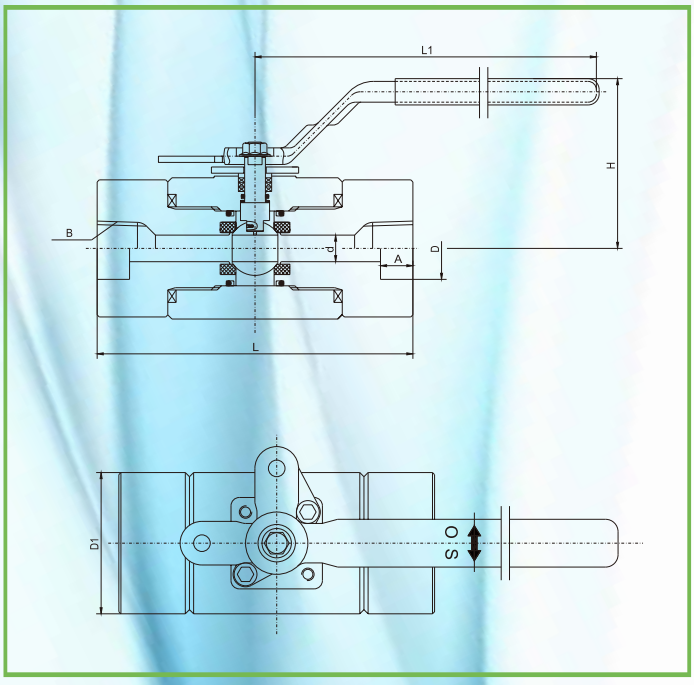
Reduced Bore (1/2"~2")

Class 150/300/600/800/900 Dimension and weight

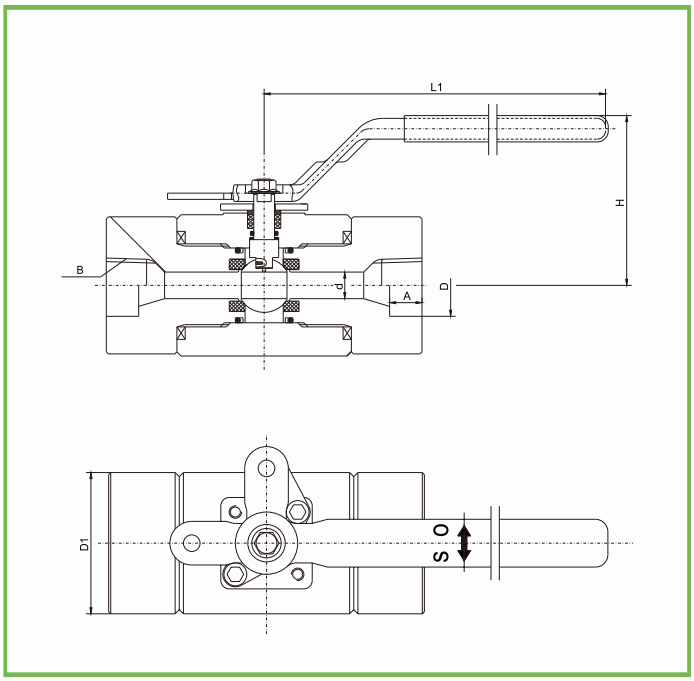
Full Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
1/4	8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.56	14.20	1.65	42	1/4-18NPT	3.30	1.50
3/8	10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2	15	0.50	13	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4	20	0.75	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.07	27.20	2.28	58	3/4-14NPT	6.39	2.90
1	25	1.00	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.33	33.90	2.68	68	1-11.5NPT	7.72	3.50
1-1/2	40	1.50	38	5.63	143	5.31	135	11.81	300	0.49	12.50	1.92	48.80	3.66	93	1-1/2-11.5NPT	16.53	7.50
2	50	2.00	51	6.30	160	6.50	165	14.57	370	0.63	16.00	2.41	61.20	4.49	114	2-11.5NPT	28.66	13.00

Reduced Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
3/8*1/4	10*8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2*3/8	15*10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4*1/2	20*15	0.51	13	4.09	104	2.44	62	5.91	150	0.49	12.50	1.07	27.20	1.65	42	3/4-14NPT	3.30	1.50
1*3/4	25*20	0.79	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.33	33.90	2.28	58	1-11.5NPT	6.39	2.90
1-1/2*1	40*25	0.98	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.92	48.80	2.68	68	1-1/2-11.5NPT	7.72	3.50
2-*1-1/2	50*40	1.50	38	5.63	143	5.31	135	11.81	300	0.63	16	2.41	61.20	3.66	93	2-11.5NPT	16.53	7.50

Three-piece, Split Body, Forged Steel, Side Entry Design



Full Bore (1/2"~2")



Reduced Bore (1/2"~2")

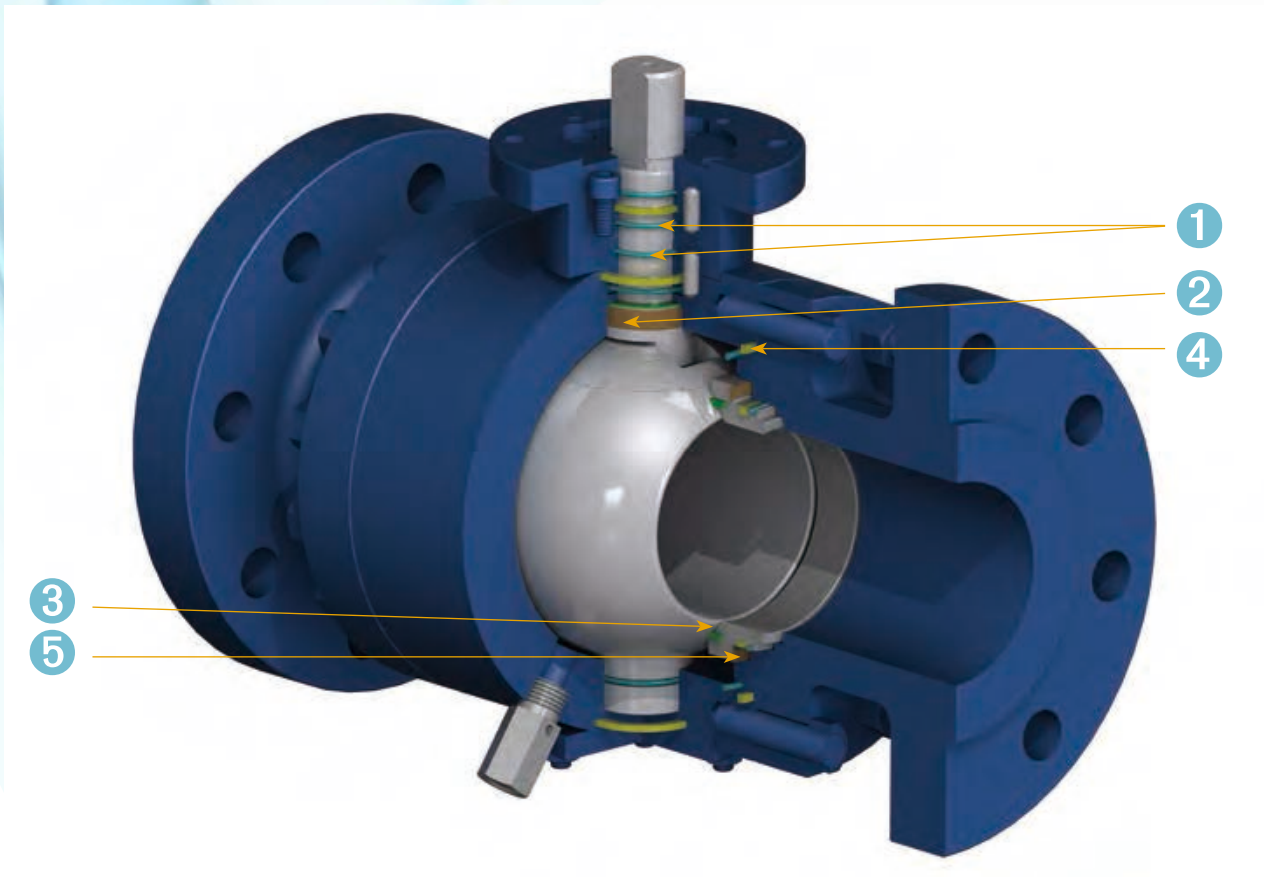
Class 1500/2500 Dimension and weight

Full Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
1/4	8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.56	14.20	1.65	42	1/4-18NPT	3.30	1.50
3/8	10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2	15	0.50	13	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4	20	0.75	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.07	27.20	2.28	58	3/4-14NPT	6.39	2.90
1	25	1.00	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.33	33.90	2.83	72	1-11.5NPT	11	5
1-1/2	40	1.50	38	5.63	143	5.31	135	11.81	300	0.49	12.50	1.92	48.80	4.13	105	1-1/2-11.5NPT	28.66	13
2	50	2.00	51	6.30	160	6.50	165	14.57	370	0.63	16.00	2.41	61.20	5.28	134	2-11.5NPT	40.09	20

Reduced Bore																		
Size		d		L		H		L1		A		D		D1		B	Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm		lb	kg
3/8*1/4	10*8	0.25	6.40	4.09	104	2.44	62	5.91	150	0.37	9.50	0.69	17.60	1.65	42	3/8-18NPT	3.30	1.50
1/2*3/8	15*10	0.37	9.50	4.09	104	2.44	62	5.91	150	0.37	9.50	0.86	21.80	1.65	42	1/2-14NPT	3.30	1.50
3/4*1/2	20*15	0.51	13	4.09	104	2.44	62	5.91	150	0.49	12.50	1.07	27.20	1.65	42	3/4-14NPT	3.30	1.50
1*3/4	25*20	0.79	20	5.00	127	3.23	82	7.09	180	0.49	12.50	1.33	33.90	2.28	58	1-11.5NPT	6.39	2.90
1-1/2*1	40*25	0.98	25	4.53	115	3.94	100	9.06	230	0.49	12.50	1.92	48.80	2.83	72	1-1/2-11.5NPT	11	5
2-*1-1/2	50*40	1.50	38	5.63	143	5.31	135	11.81	300	0.63	16	2.41	61.20	4.13	105	2-11.5NPT	28.66	13

Trunnion Mounted Ball Valves

Design Features

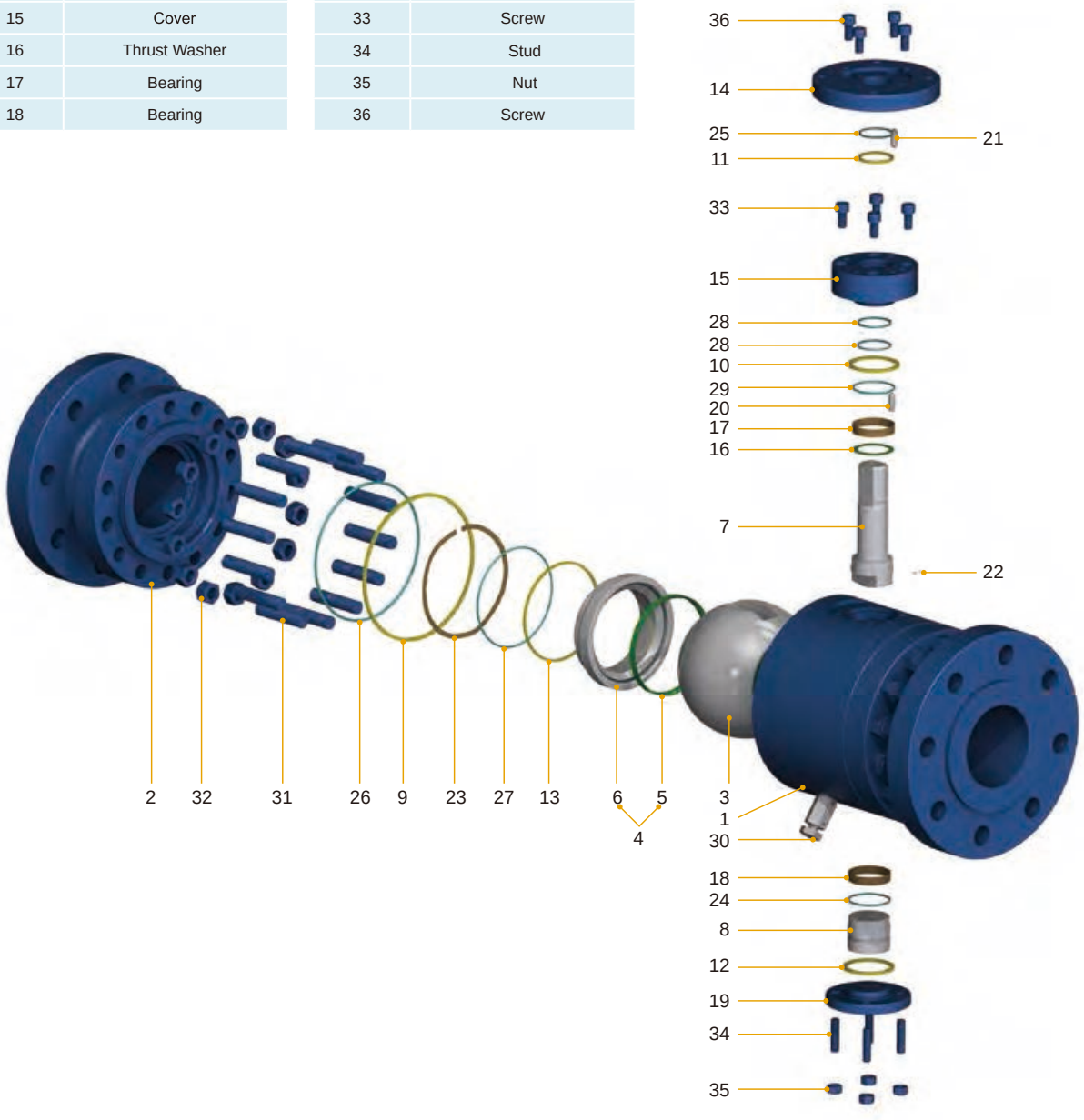


1. Two O-ring Seals: Prevent leakage from stem area.
2. Blow-out Proof Stem : Safety feature that functions to assure stem sealing at all pressures.
3. Back-up Metal to Metal Sealing: When primary soft-seat material is deteriorated by fire, the metal-to-metal provides shutoff.
4. O-ring & Gasket Combination: Prevents leakage from body connection area.
5. Floating Spring-loaded Seats: Assure sealing even at low pressures.

Material Specifications

Item	Part
1	Body
2	Cap
3	Ball
4	Seat Assembly(5+6)
5	Seat Insert
6	Seat Retainer
7	Stem
8	Trunnion
9	Spiral-wound Gaskets
10	Gasket
11	Gasket
12	Gasket
13	Fire Safe Graphite Ring
14	Top Flange
15	Cover
16	Thrust Washer
17	Bearing
18	Bearing

Item	Part
19	Cover
20	Pin
21	Pin
22	Anti-Static Device
23	Spring
24	O-Ring
25	O-Ring
26	O-Ring
27	O-Ring
28	O-Ring
29	O-Ring
30	Vent Valve
31	Body Stud
32	Body Nut
33	Screw
34	Stud
35	Nut
36	Screw

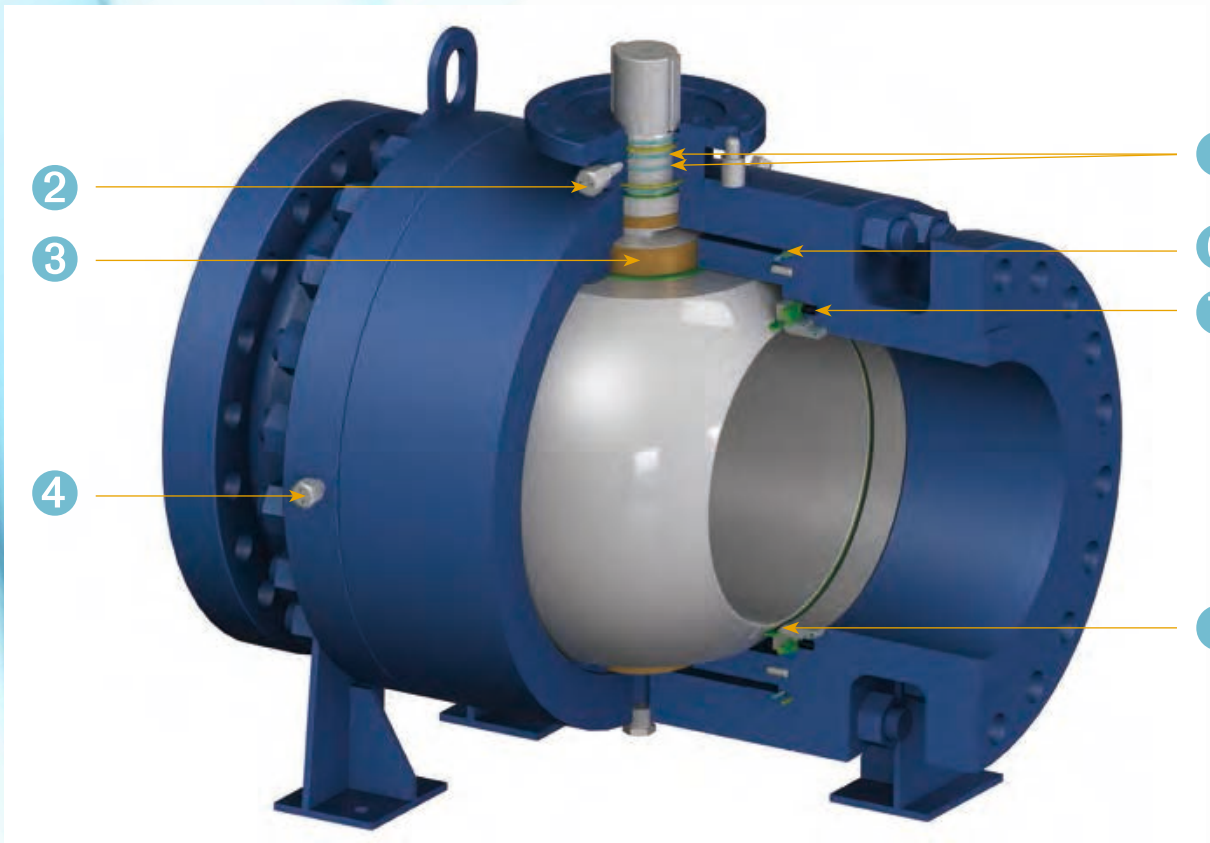


Material Specifications

Item	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
2	Cap	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
3	Ball	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
4	Seat Assembly(5+6)	5&6	5&6	5&6	5&6
5	Seat Insert	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK
6	Seat Retainer	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
7	Stem	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
8	Trunnion	ASTM A182 F6a	ASTM A182 F316L	ASTM A182 F6a	ASTM A182 F6a
9	Spiral-wound Gaskets	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
10	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
11	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
12	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
13	Fire Safe Graphite Ring	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
14	Top Flange	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
15	Cover	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
16	Thrust Washer	PTFE	PTFE	PTFE	PTFE
17	Bearing	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2
18	Bearing	316SS+PTFE	316SS+PTFE	316SS+PTFE	316SS+PTFE
19	Cover	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
20	Pin	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
21	Pin	Carbon Steel	Stainless Steel	Carbon Steel	Carbon Steel
22	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
23	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
24	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
25	O-Ring	NBR	NBR	NBR	NBR
26	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
27	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
28	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
29	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
30	Vent Valve	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
31	Body Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
32	Body Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
33	Screw	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
34	Body Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
35	Body Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
36	Screw	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M

① -Please contact factory for materials supplied

Design Features

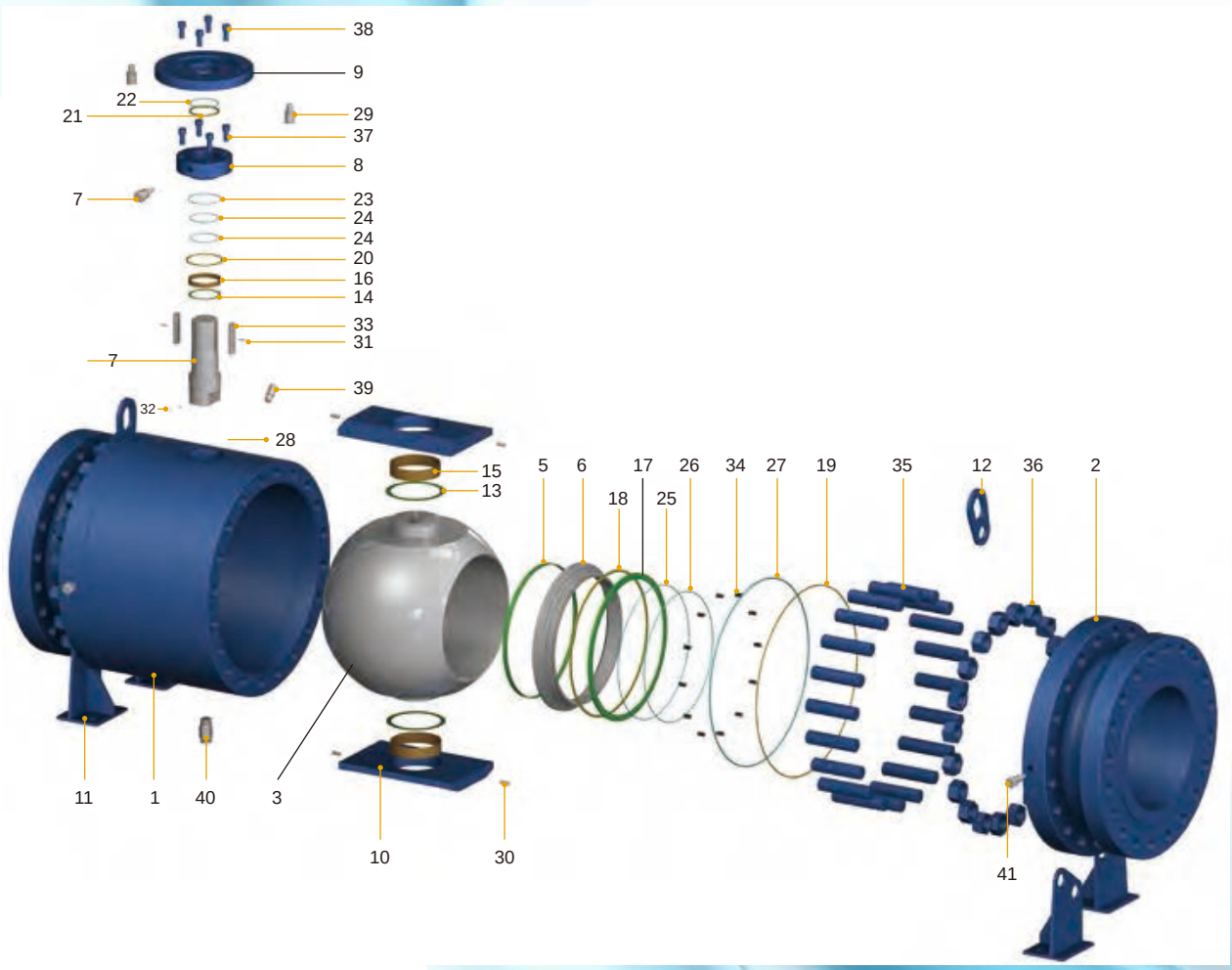


1. Two O-ring Seals: Prevent leakage from stem area.
2. Emergency Sealant Injection Fitting: Allows external interventions to prevent stem leakage.
3. Blow-out Proof Stem : Safety feature that functions to assure stem sealing at all pressures.
4. Emergency Sealant Injection Fitting: Allows external intervention to prevent seat leakage.
5. Back-up Metal to Metal Sealing: When primary soft-seat material is deteriorated by fire, the metal-to-metal provides shutoff.
6. O-ring & Gasket Combination: Prevents leakage from body connection area.
7. Floating Spring-loaded Seats: Assure sealing even at low pressures.

Material Specifications

Item	Part
1	Body
2	Cap
3	Ball
4	Seat Assembly(5+6)
5	Seat Insert
6	Seat Retainer
7	Stem
8	Cover
9	Top Flange
10	Bearing Support
11	Support Legs
12	Lifting Lugs
13	Thrust Washer
14	Thrust Washer
15	Bearing
16	Bearing
17	Seat Follower
18	Gasket
19	Gasket
20	Gasket
21	Fire Safe Graphite Ring

Item	Part
22	O-Ring
23	O-Ring
24	O-Ring
25	O-Ring
26	O-Ring
27	O-Ring
28	Pin
29	Pin
30	Pin
31	Pin
32	Anti-Static Device
33	Key
34	Spring
35	Body Stud
36	Body Nut
37	Screw
38	Screw
39	Vent Valve
40	Plug
41	Injection
42	Injection

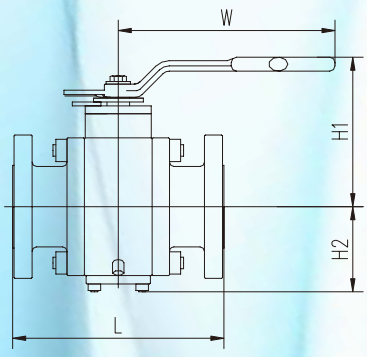


Material Specifications

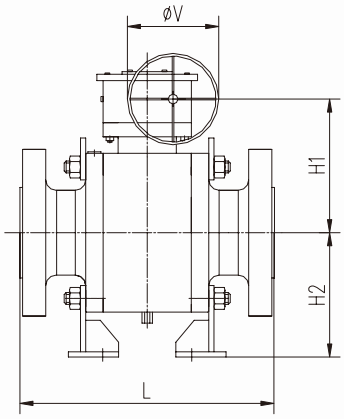
Item	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
2	Cap	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
3	Ball	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
4	Seat Assembly(5+6)	5&6	5&6	5&6	5&6
5	Seat Insert	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK
6	Seat Retainer	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
7	Stem	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
8	Cover	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350 LF2
9	Top Flange	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
10	Bearing Support	ASTM A588B/ENP	ASTM A351-CF3M	ASTM A588B/ENP	ASTM A588B/ENP
11	Support Legs	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
12	Lifting Lugs	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
13	Thrust Washer	PTFE	PTFE	PTFE	PTFE
14	Thrust Washer	PTFE	PTFE	PTFE	PTFE
15	Bearing	316SS+PTFE	316SS+PTFE	316SS+PTFE	316SS+PTFE
16	Bearing	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2
17	Seat Follower	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350 LF2/ENP
18	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
19	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
20	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
21	Fire Safe Graphite Ring	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
22	O-Ring	NBR	NBR	NBR	NBR
23	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
24	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
25	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
26	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
27	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
28	Pin	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel
29	Pin	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
30	Pin	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
31	Pin	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
32	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
33	Key	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
34	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
35	Body Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
36	Body Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
37	Screw	ASTM A193-B7	A2-70	ASTM A193-B7	ASTM A320-L7M
38	Screw	ASTM A193-B7	A2-70	ASTM A193-B7	ASTM A320-L7M
39	Vent Valve	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
40	Plug	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
41	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
42	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel

① -Please contact factory for materials supplied

split body, forged steel, side entry design



(2" ~4")



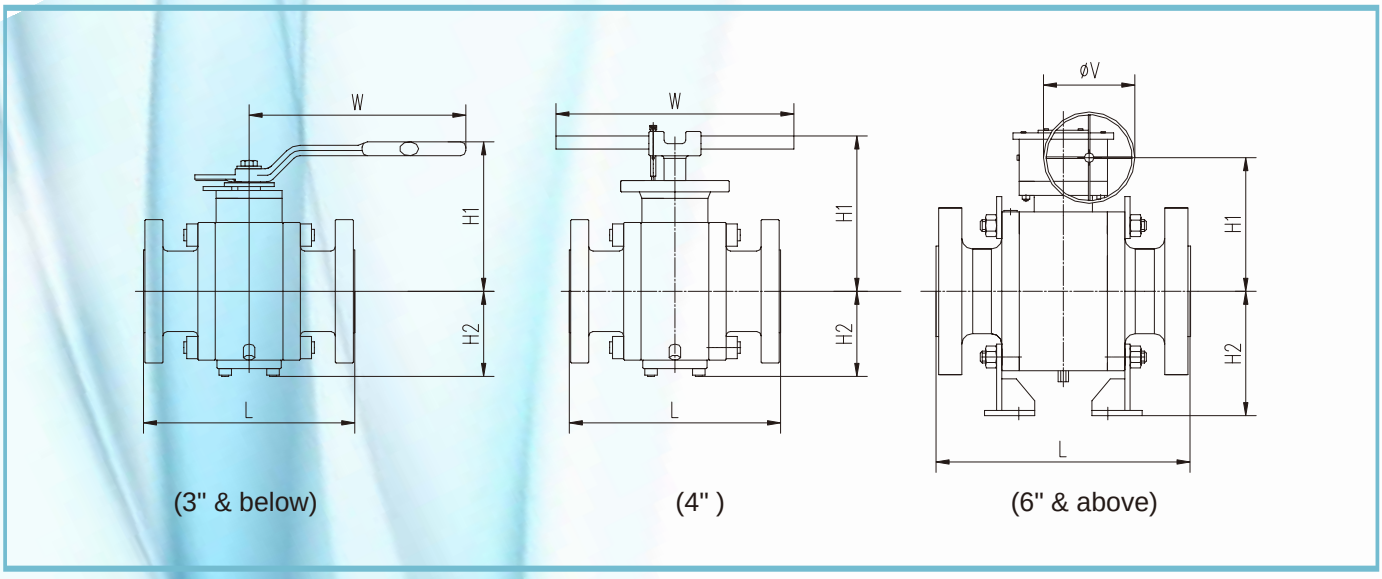
(6" & above)

Class 150 Dimensions and weight

In		D		L				H1		H2		W		V		Weight	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	7.01	178	8.50	216	6.78	172.1	3.52	89.3	12.99	330			41.89	19
3	80	2.91	74	7.99	203	11.14	283	7.91	200.8	4.20	106.8	15.75	400			57.32	26
4	100	3.94	100	9.02	229	12.01	305	8.75	222.3	4.98	126.5	15.75	400			103.62	47
6	150	5.91	150	15.51	394	17.99	457	10.85	275.5	10.04	255.0			15.75	400	352.74	160
8	200	7.91	201	17.99	457	20.51	521	12.32	313.0	11.46	291.0			15.75	400	573.20	260
10	250	9.92	252	20.98	533	22.01	559	14.25	362.0	13.11	333.0			23.62	600	983.26	446
12	300	11.93	303	24.02	610	25.00	635	15.73	399.5	14.57	370.0			23.62	600	1532.21	695
14	350	13.15	334	27.01	686	30.00	762	20.12	511.0	15.53	394.5			23.62	600	1975.34	896
16	400	15.16	385	30.00	762	32.99	838	21.56	547.5	16.93	430.0			23.62	600	2850.57	1293
18	450	17.17	436	34.02	864	35.98	914	23.05	585.5	18.41	467.5			23.62	600	3333.39	1512
20	500	19.17	487	35.98	914	39.02	991	24.57	624.0	19.90	505.5			23.62	600	3935.25	1785
22	550	21.18	538	39.02	991	42.99	1092	27.80	706.0	21.78	553.3			23.62	600	5138.97	2331
24	600	23.19	589	42.01	1067	45.00	1143	29.96	761.0	23.26	590.8			27.56	700	6393.40	2900
26	650	24.92	633	45.00	1143	49.02	1245	31.40	797.5	24.68	626.8			27.56	700	7407.52	3360
28	700	26.93	684	49.02	1245	52.99	1346	28.76	730.5	26.32	668.5			29.92	760	9363.57	4247
30	750	28.94	735	50.98	1295	55.00	1397	30.26	768.5	27.80	706.0			29.92	760	11157.58	5061
32	800	30.67	779	54.02	1372	60.00	1524	31.56	801.5	29.07	738.5			29.92	760	12708.53	5765
34	850	32.68	830	57.99	1473	64.02	1626	33.03	839.0	30.53	775.5			29.92	760	15518.76	7039
36	900	34.41	874	60.00	1524	67.99	1727	35.30	896.5	31.85	809.0			29.92	760	17627.59	7996
40	1000	38.43	976	67.99	1727	70.08	1780	44.98	1142.5	35.57	903.5			29.92	760	25525.86	11578
42	1050	40.16	1020	72.01	1829	72.01	1829	46.30	1176.0	36.85	936.0			29.92	760	28032.85	12716
48	1200	45.91	1166	78.54	1995	78.54	1995	50.57	1284.5	41.24	1047.5			29.92	760	42500.66	19278
54	1350	51.65	1312	—	—	—	—	54.19	1376.5	42.87	1089.0			35.43	900	75464.14	34230
56	1400	53.54	1360	97.99	2489	97.99	2489	57.74	1466.5	44.81	1138.3			39.37	1000	84492.06	38325
60	1500	57.40	1458	—	—	—	—	61.36	1558.5	47.65	1210.3			39.37	1000	90510.67	41055

ELITE®

split body, forged steel, side entry design

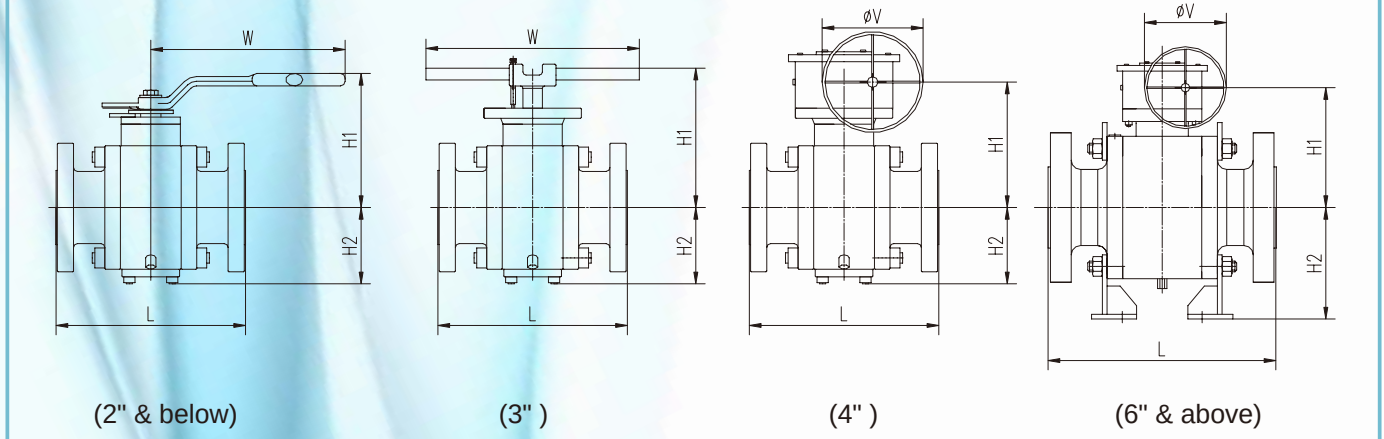


(3" & below) (4") (6" & above)

Class 300 Dimensions and weight

In		D		L				H1		H2		W		V		Weight	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	8.50	216	8.50	216	6.78	172.1	3.59	91.3	12.99	330			66.14	30
3	80	2.91	74	11.14	283	11.14	283	7.91	200.8	3.38	85.8	15.75	400			105.82	48
4	100	3.94	100	12.01	305	12.01	305	11.10	282.0	5.59	142	32.09	815			154.32	70
6	150	5.91	150	15.87	403	17.99	457	10.85	275.5	10.04	255.0			15.75	400	418.88	190
8	200	7.91	201	19.76	502	20.51	521	12.28	312.0	11.61	295.0			19.69	500	694.46	315
10	250	9.92	252	22.36	568	22.01	559	14.29	363.0	13.29	337.5			23.62	600	1172.86	532
12	300	11.93	303	25.51	648	25.00	635	16.08	408.5	14.93	379.3			23.62	600	1814.40	823
14	350	13.15	334	30.00	762	30.00	762	20.12	511.0	15.71	399.0			23.62	600	2204.62	1000
16	400	15.16	385	32.99	838	32.99	838	21.93	557.0	17.29	439.3			23.62	600	3064.42	1390
18	450	17.17	436	35.98	914	35.98	914	24.78	629.5	18.96	481.5			23.62	600	4159.02	1887
20	500	19.17	487	39.02	991	39.02	991	26.99	685.5	20.61	523.5			27.56	700	4583.40	2079
22	550	21.18	538	42.99	1092	42.99	1092	28.84	732.5	22.13	562.0			27.56	700	5703.79	2587
24	600	23.19	589	45.00	1143	45.00	1143	26.02	661.0	23.78	604.0			29.92	760	7008.49	3179
26	650	24.92	633	49.02	1245	49.02	1245	27.72	704.0	25.35	644.0			29.92	760	9052.83	4106
28	700	26.93	684	52.99	1346	52.99	1346	30.45	773.5	27.05	687.0			29.92	760	11094.75	5033
30	750	28.94	735	55.00	1397	55.00	1397	31.95	811.5	28.52	724.5			29.92	760	13556.21	6149
32	800	30.67	779	60.00	1524	60.00	1524	33.31	846.0	29.98	761.5			29.92	760	15132.51	6864
34	850	32.68	830	64.02	1626	64.02	1626	34.78	883.5	31.46	799.0			29.92	760	17872.85	8107
36	900	34.41	874	67.99	1727	67.99	1727	42.81	1087.5	33.37	847.5			29.92	760	20455.57	9279
40	1000	38.43	976	75.98	1930	75.98	1930	45.93	1166.5	36.61	930.0			29.92	760	27160.92	12320
42	1050	40.16	1020	82.01	2083	82.01	2083	49.69	1262.0	37.89	962.5			31.50	800	31647.32	14355
48	1200	45.91	1166	85.43	2170	85.43	2170	55.43	1408.0	39.22	996.3			35.43	900	46076.56	20900
54	1350	51.65	1312	—	—	—	—	56.93	1446.0	42.87	1089.0			35.43307087	900	79057.67	35860
56	1400	53.54	1360	100.12	2543	100.12	2543	57.74	1466.5	44.81	1138.3			39.37007874	1000	88515.49	40150
60	1500	57.40	1458	—	—	—	—	62.54	1588.5	47.65	1210.3				1000	94820.71	43010

split body, forged steel, side entry design



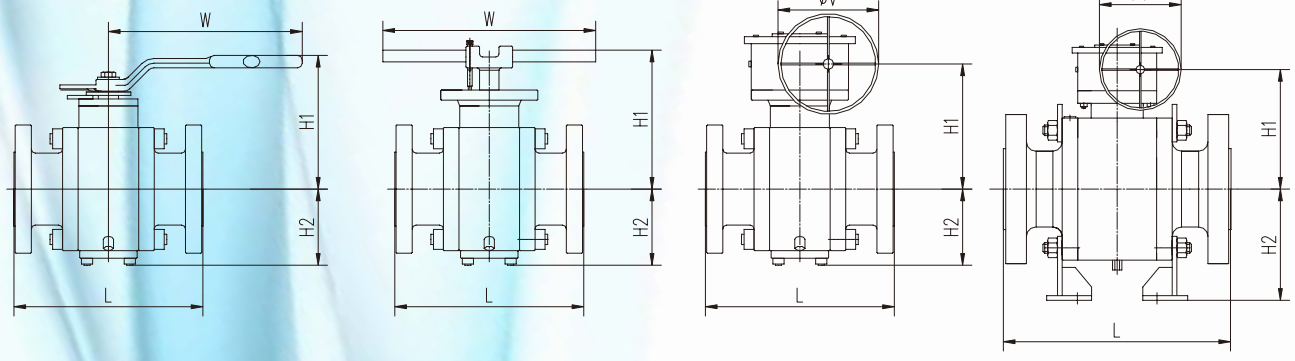
(2" & below) (3") (4") (6" & above)

Class 400 Dimensions and weight

In		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	7.33	186.3	3.59	91.3	15.75	400			72.75	33
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.28	261.0	4.07	103.3	32.09	815			149.91	68
4	100	3.94	100	15.98	406	15.98	406	16.14	410	8.25	209.5	4.93	125.3			11.81	300	257.94	117
6	150	5.91	150	19.49	495	19.49	495	19.61	498	10.85	275.5	10.04	255.0			15.75	400	595.25	270
8	200	7.91	201	23.50	597	23.50	597	23.62	600	12.28	312.0	11.61	295.0			19.69	500	784.84	356
10	250	9.92	252	26.50	673	26.50	673	26.61	676	14.29	363.0	13.29	337.5			23.62	600	1245.61	565
12	300	11.93	303	30.00	762	30.00	762	30.12	765	19.49	495.0	15.12	384.0			23.62	600	2204.62	1000
14	350	13.15	334	32.52	826	32.52	826	32.64	829	20.51	521.0	16.08	408.5			23.62	600	2936.55	1332
16	400	15.16	385	35.51	902	35.51	902	35.63	905	23.27	591.0	17.64	448.0			23.62	600	4100.59	1860
18	450	17.17	436	38.50	978	38.50	978	38.62	981	25.26	641.5	19.29	490.0			23.62	600	4188.78	1900
20	500	19.17	487	41.50	1054	41.50	1054	41.73	1060	27.62	701.5	20.94	532.0			27.56	700	5407.93	2453
22	550	21.18	538	45.00	1143	45.00	1143	45.39	1153	25.10	637.5	22.83	580.0			29.92	760	7129.74	3234
24	600	23.19	589	48.50	1232	48.50	1232	48.86	1241	26.59	675.5	24.19	614.5			29.92	760	9603.32	4356
26	650	24.92	633	51.50	1308	51.50	1308	52.01	1321	29.63	752.5	26.22	666.0			29.92	760	10961.37	4972
28	700	26.93	684	55.00	1397	55.00	1397	55.51	1410	37.20	945.0	27.83	707.0			29.92	760	13216.70	5995
30	750	28.94	735	60.00	1524	60.00	1524	60.51	1537	38.68	982.5	29.31	744.5			29.92	760	15229.51	6908
32	800	30.67	779	65.00	1651	65.00	1651	65.63	1667	40.00	1016.0	30.79	782.0			29.92	760	17824.35	8085
34	850	32.68	830	70.00	1778	70.00	1778	70.63	1794	41.89	1064.0	32.58	827.5			29.92	760	19958.42	9053
36	900	34.41	874	74.02	1880	74.02	1880	74.61	1895	43.21	1097.5	33.90	861.0			29.92	760	24493.33	11110
40	1000	38.43	976	85.00	2159	85.00	2159	—	—	43.43	1103.0	33.73	856.8			35.43	900	32932.61	14938
42	1050	40.16	1020	85.63	2175	85.63	2175	—	—	47.15	1197.5	35.01	889.3			31.50	800	37370.51	16951
48	1200	45.91	1166	95.87	2435	95.87	2435	—	—	52.15	1324.5	39.22	996.3			31.50	800	53109.30	24090
54	1350	51.65	1312	—	—	—	—	—	—	57.22	1453.5	42.89	1089.5			39.37	1000	79057.67	35860
56	1400	53.54	1360	106.69	2710	106.69	2710	—	—	58.52	1486.5	44.81	1138.3			39.37	1000	109435.13	49639
60	1500	57.40	1458	—	—	—	—	—	—	62.54	1588.5	47.65	1210.3			39.37	1000	116403.94	52800

ELITE®

split body, forged steel, side entry design

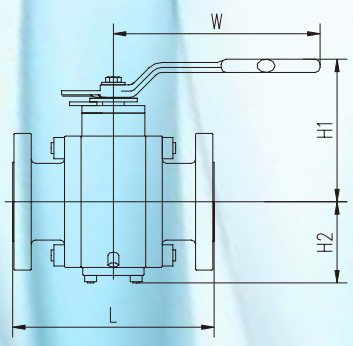


(2" & below) (3") (4") (6" & above)

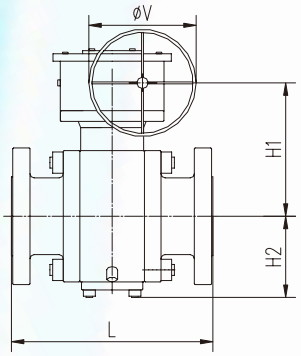
Class 600 Dimensions and weight

In		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	7.33	186.3	3.59	91.3	15.75	400			83.78	38
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.28	261.0	3.38	85.8	32.09	815			171.96	78
4	100	3.94	100	17.01	432	17.01	432	17.13	435	8.56	217.5	4.07	103.3			15.75	400	257.94	117
6	150	5.91	150	22.01	559	22.01	559	22.13	562	11.20	284.5	10.37	263.5			15.75	400	606.27	275
8	200	7.91	201	25.98	660	25.98	660	26.14	664	12.68	322.0	11.98	304.3			19.69	500	965.62	438
10	250	9.92	252	30.98	787	30.98	787	31.14	791	14.96	380.0	13.82	351.0			23.62	600	1631.42	740
12	300	11.93	303	32.99	838	32.99	838	33.11	841	20.00	508.0	15.45	392.5			23.62	600	2270.76	1030
14	350	13.15	334	35.00	889	35.00	889	35.12	892	22.32	567.0	16.57	421.0			23.62	600	2969.62	1347
16	400	15.16	385	39.02	991	39.02	991	39.13	994	24.13	613.0	18.23	463.0			23.62	600	4321.06	1960
18	450	17.17	436	42.99	1092	42.99	1092	43.11	1095	26.56	674.5	19.90	505.5			27.56	700	4817.09	2185
20	500	19.17	487	47.01	1194	47.01	1194	47.24	1200	23.78	604.0	21.59	548.5			29.92	760	7165.02	3250
22	550	21.18	538	50.98	1295	50.98	1295	51.38	1305	26.71	678.5	23.70	602.0			29.92	760	8172.53	3707
24	600	23.19	589	55.00	1397	55.00	1397	55.39	1407	28.25	717.5	25.24	641.0			29.92	760	9810.56	4450
26	650	24.92	633	57.01	1448	57.01	1448	57.52	1461	30.65	778.5	27.26	692.5			29.92	760	13568.11	6154
28	700	26.93	684	60.98	1549	60.98	1549	61.50	1562	38.11	968.0	28.72	729.5			29.92	760	14963.20	6787
30	750	28.94	735	65.00	1651	65.00	1651	65.51	1664	39.86	1012.5	30.53	775.5			29.92	760	16518.78	7493
32	800	30.67	779	70.00	1778	70.00	1778	70.63	1794	41.18	1046.0	31.81	808.0			35.43	900	19321.29	8764
34	850	32.68	830	75.98	1930	75.98	1930	76.61	1946	42.68	1084.0	33.27	845.0			35.43	900	20889.22	9475
36	900	34.41	874	82.01	2083	82.01	2083	82.64	2099	46.44	1179.5	34.94	887.5			31.50	800	26296.71	11928
40	1000	38.43	976	85.00	2159	85.00	2159	—	—	43.52	1105.5	33.83	859.3			35.43	900	36296.86	16464
42	1050	40.16	1020	85.63	2175	85.63	2175	—	—	47.24	1200.0	35.11	891.8			31.50	800	40519.15	18379
48	1200	45.91	1166	95.87	2435	95.87	2435	—	—	57.80	1468.0	39.32	998.8			31.50	800	59754.02	27104
54	1350	51.65	1312	—	—	—	—	—	—	58.78	1493.0	43.23	1098.0			39.37	1000	80495.09	36512
56	1400	53.54	1360	106.69	2710	106.69	2710	—	—	59.80	1519.0	44.91	1140.8			39.37	1000	111423.96	50541
60	1500	57.40	1458	—	—	—	—	—	—	62.64	1591.0	47.75	1212.8			39.37	1000	118520.37	53760

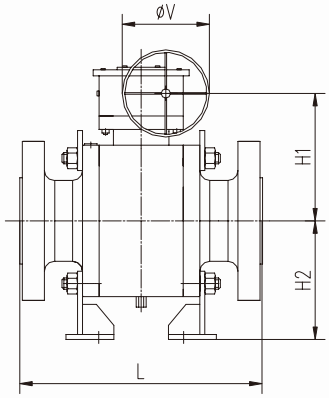
split body, forged steel, side entry design



(2" & below)



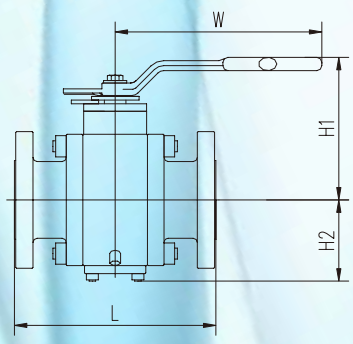
(3"& 4)



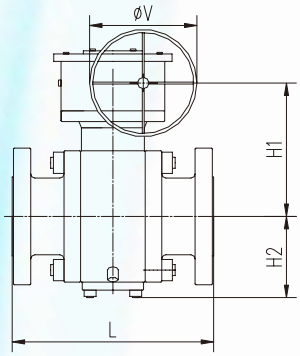
(6" & above)

Class 900 Dimensions and weight

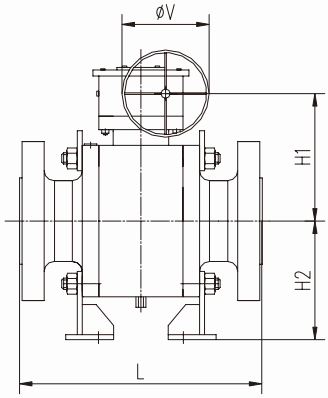
In		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	7.59	192.8	3.70	94.0	15.75	400			125.66	57
3	80	2.91	74	15.00	381	15.00	381	15.12	384	7.66	194.5	4.25	108.0			11.81	300	185.19	84
4	100	3.94	100	17.99	457	17.99	457	18.11	460	8.88	225.5	5.45	138.5			15.75	400	284.40	129
6	150	5.91	150	24.02	610	24.02	610	24.13	613	11.52	292.5	10.75	273.0			19.69	500	1164.04	528
8	200	7.91	201	29.02	737	29.02	737	29.13	740	13.58	345.0	12.50	317.5			23.62	600	1311.75	595
10	250	9.92	252	32.99	838	32.99	838	33.11	841	18.54	471.0	14.21	361.0			23.62	600	2103.21	954
12	300	11.93	303	37.99	965	37.99	965	38.11	968	22.17	563.0	16.26	413.0			23.62	600	3097.49	1405
14	350	12.68	322	40.51	1029	40.51	1029	40.87	1038	23.64	600.5	17.26	438.5			27.56	700	4259.33	1932
16	400	14.69	373	44.49	1130	44.49	1130	44.88	1140	21.28	540.5	19.27	489.5			29.92	760	5317.54	2412
18	450	16.65	423	47.99	1219	47.99	1219	48.50	1232	22.99	584.0	21.18	538.0			29.92	760	7433.98	3372
20	500	18.54	471	52.01	1321	52.01	1321	52.52	1334	26.12	663.5	22.85	580.5			29.92	760	9153.58	4152
22	550	20.55	522	—	—	—	—	—	—	34.00	863.5	24.70	627.5			29.92	760	11666.85	5292
24	600	22.44	570	60.98	1549	60.98	1549	61.73	1568	35.57	903.5	26.57	675.0			29.92	760	14542.56	6596
26	650	24.29	617	65.00	1651	65.00	1651	65.87	1673	37.80	960.0	28.43	722.0			29.92	760	19701.37	8936
28	700	26.18	665	69.02	1753	69.02	1753	69.88	1775	38.35	974.0	30.30	769.5			29.92	760	26989.84	12242
30	750	28.03	712	74.02	1880	74.02	1880	74.88	1902	43.09	1094.5	31.85	809.0			31.50	800	30270.31	13730
32	800	29.92	760	80.00	2032	80.00	2032	80.87	2054	45.16	1147.0	33.56	852.5			35.43	900	32016.37	14522
34	850	31.81	808	85.00	2159	85.00	2159	86.14	2188	41.50	1054.0	29.36	745.8			35.43	900	46196.49	20954
36	900	33.66	855	90.00	2286	90.00	2286	91.14	2315	42.81	1087.5	30.68	779.3			35.43	900	53318.29	24185



(2" & below)



(3"& 4)



(6" & above)

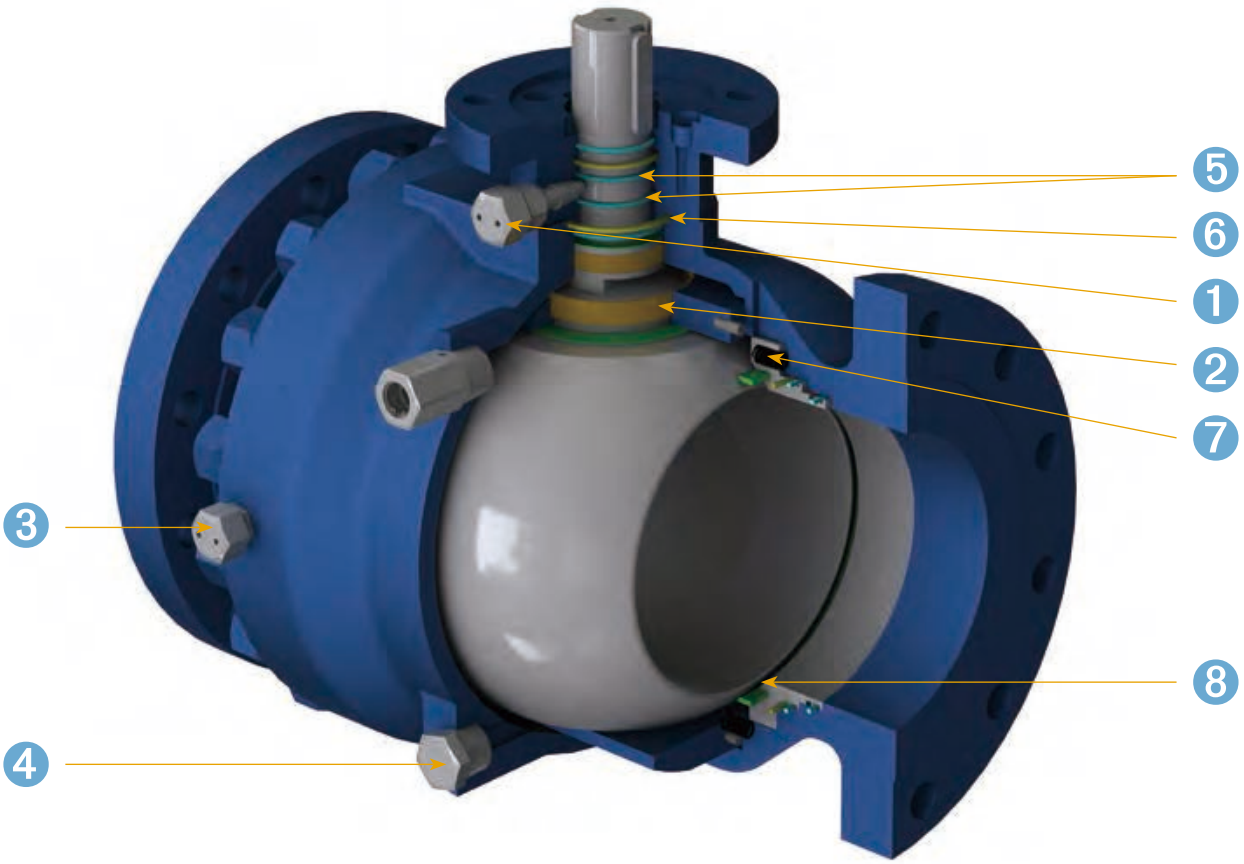
Class 1500 Dimensions and weight

In		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	7.59	192.8	3.94	100.0	15.75	400			138.89	63
3	80	2.91	74	18.50	470	18.50	470	18.62	473	8.35	212.0	4.78	121.3			15.75	400	266.21	121
4	100	3.94	100	21.50	546	21.50	546	21.61	549	9.57	243.0	5.98	152.0			15.75	400	425.49	193
6	150	5.67	144	27.76	705	27.76	705	27.99	711	12.42	315.5	11.54	293.0			23.62	600	1572.78	713
8	200	7.56	192	32.76	832	32.76	832	33.11	841	18.27	464.0	13.64	346.5			23.62	600	2039.19	925
10	250	9.41	239	39.02	991	39.02	991	39.37	1000	21.93	557.0	15.67	398.0			27.56	700	3240.46	1470
12	300	11.30	287	44.49	1130	44.49	1130	45.12	1146	20.08	510.0	17.83	453.0			29.92	760	5884.35	2669
14	350	12.40	315	49.49	1257	49.49	1257	50.24	1276	21.20	538.5	18.90	480.0			29.92	760	6101.29	2768
16	400	14.17	360	54.49	1384	54.49	1384	55.39	1407	23.68	601.5	20.77	527.5			29.92	760	7484.24	3395
18	450	15.98	406	60.51	1537	60.51	1537	61.38	1559	30.69	779.5	23.05	585.5			29.92	760	9886.79	4485
20	500	17.87	454	65.51	1664	65.51	1664	66.38	1686	32.46	824.5	25.04	636.0			29.92	760	12194.44	5531
22	550	19.69	500	—	—	—	—	—	—	35.57	903.5	26.69	678.0			35.43	900	15540.65	7049
24	600	21.50	546	76.50	1943	76.50	1943	77.64	1972	40.37	1025.5	28.64	727.5			31.50	800	19391.24	8796

Class 2500 Dimensions and weight

In		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.65	42	17.76	451	17.76	451	17.87	454	7.24	184	5.26	133.5	15.75	400			238.10	108
3	80	2.44	62	22.76	578	22.76	578	22.99	584	8.64	219.5	6.16	156.5			23.62	600	529.11	240
4	100	3.43	87	26.50	673	26.50	673	26.89	683	10.12	257	7.32	186			23.62	600	1018.53	462
6	150	5.16	131	35.98	914	35.98	914	36.50	927	8.54	217	13.62	346			23.62	600	2058.23	934
8	200	7.05	179	40.24	1022	40.24	1022	40.87	1038	7.72	196	16.18	411			27.56	700	3576.78	1622
10	250	8.78	223	50.00	1270	50.00	1270	50.87	1292	3.35	85	18.43	468			29.92	760	5653.53	2564
12	300	10.43	265	55.98	1422	55.98	1422	56.89	1445	4.29	109	19.92	506			29.92	760	8642.99	3920

Design Features

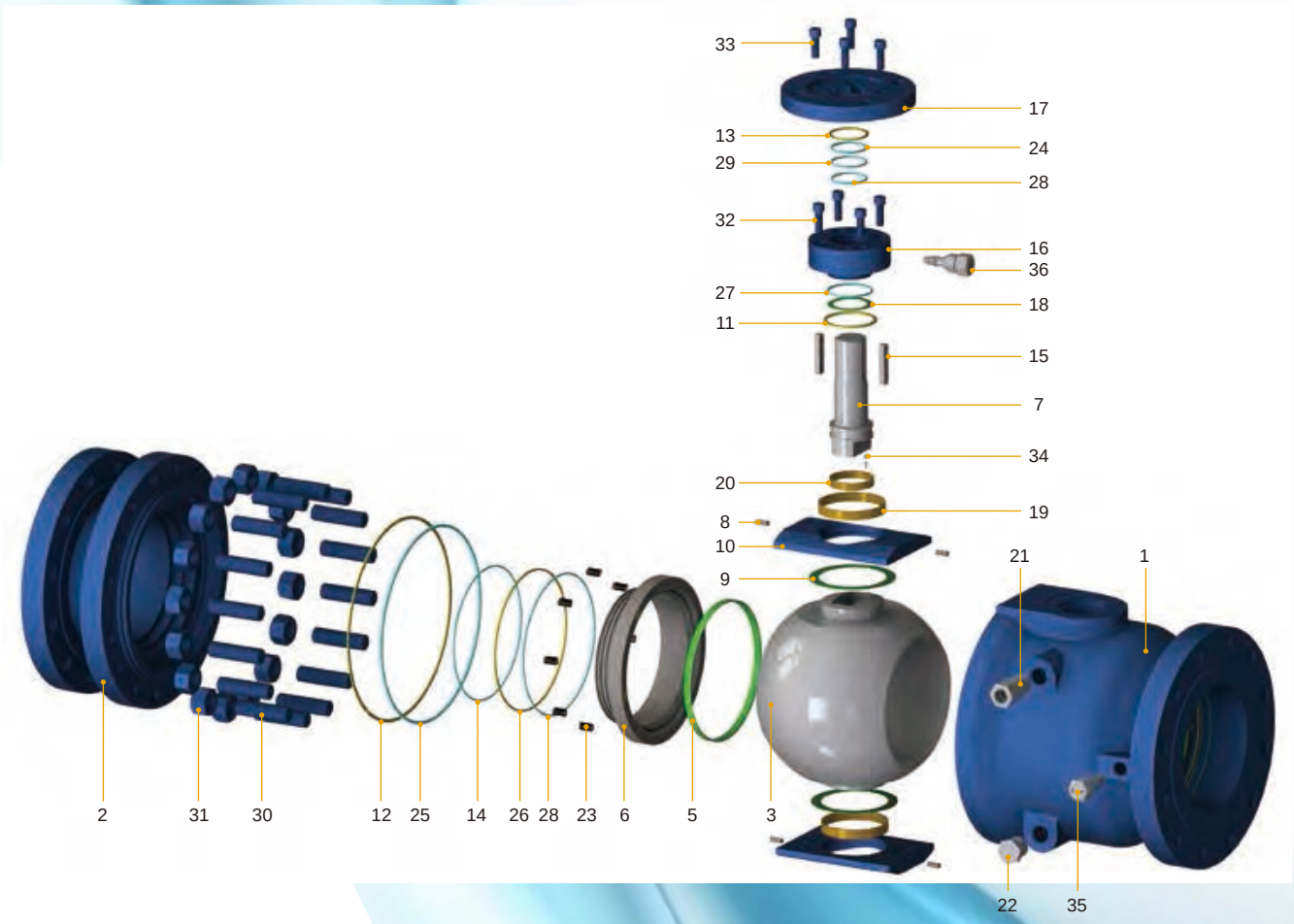


1. Emergency Sealant Injection Fitting: Prevents leakage from the stem.
2. Blow-out Proof Stem: Stem functions as the backseat to assure stem sealing at all pressures.
3. Emergency Sealant Injection Fitting: Prevents leakage from the seat.
4. Drain plug : Relieves the body cavity.
5. Double Sealing O-rings: Prevents leakage from stem area.
6. O-ring & Gasket Combination: Prevents leakage from body connection area.
7. Floating Spring: Loaded seats assure sealing, even at low pressures.
8. Metal-to-Metal Sealing: When soft seals are deteriorated by fire, seat float to shut off the line media.

Material Specifications

Item	Part
1	Body
2	Cap
3	Ball
4	Seat Assembly(5+6)
5	Seat Insert
6	Seat Retainer
7	Stem
8	Pin
9	Thrust Washer
10	Bearing Support
11	Gasket
12	Gasket
13	Fire Safe Graphite Ring
14	Fire Safe Graphite Ring
15	Key
16	Cover
17	Top Flange
18	Thrust Washer

Item	Part
19	Thrust Washer
20	Bearing
21	Vent Valve
22	Plug
23	Spring
24	O-Ring
25	O-Ring
26	O-Ring
27	O-Ring
28	O-Ring
29	O-Ring
30	Body Stud
31	Body Nut
32	Screw
33	Screw
34	Anti-Static Device
35	Injection
36	Injection

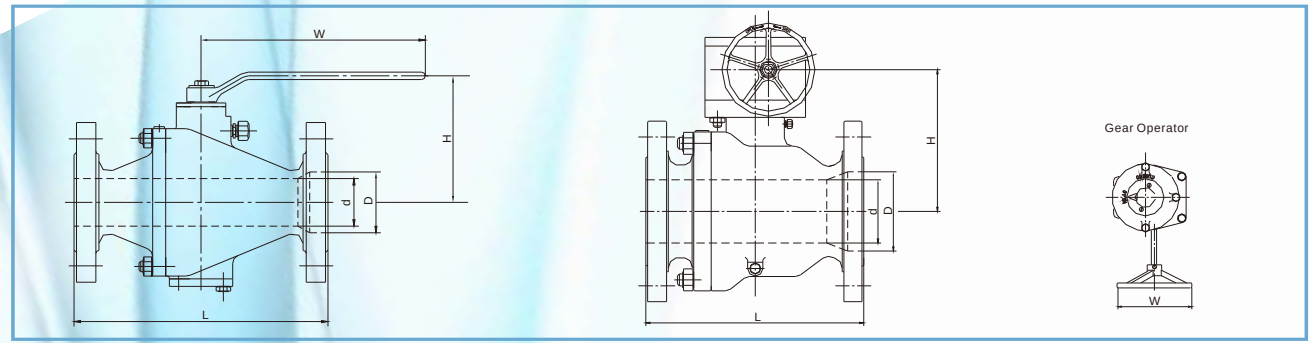


Material Specifications

Item	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
3	Ball	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
4	Seat Assembly(5+6)	5&6	5&6	5&6	5&6
5	Seat Insert	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK
6	Seat Retainer	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
7	Stem	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
8	Pin	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
9	Thrust Washer	PTFE	PTFE	PTFE	PTFE
10	Bearing Support	ASTM A588B/ENP	ASTM A351-CF3M	ASTM A588B/ENP	ASTM A588B/ENP
11	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
12	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
13	Fire Safe Graphite Ring	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
14	Fire Safe Graphite Ring	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
15	Key	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel
16	Cover	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350-LF2
17	Top Flange	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350-LF2
18	Thrust Washer	PTFE	PTFE	PTFE	PTFE
19	Bearing	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2
20	Bearing	316SS+PTFE	316SS+PTFE	316SS+PTFE	316SS+PTFE
21	Vent Valve	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
22	Drain	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
23	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
24	O-Ring	NBR	NBR	NBR	NBR
25	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
26	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
27	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
28	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
29	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
30	Body Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
31	Body Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
32	Screw	ASTM A193-B7	Stainless Steel	ASTM A193-B7M	ASTM A320-L7M
33	Screw	ASTM A193-B7	Stainless Steel	ASTM A193-B7M	ASTM A320-L7M
34	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
35	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
36	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel

①- Please contact factory for materials supplied.

split body, cast steel, side entry design



Class 150 Dimensions and weight

Full Port											
Size		d		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	2.01	51	7.01	178	6.50	165	9.06	230	37.5	17
3	80	2.99	76	7.99	203	7.60	193	15.75	400	72.8	33
4	100	4.02	102	9.02	229	9.09	231	18.11	460	110.2	50
6	150	5.98	152	15.51	394	12.95	329	39.37	1000	205.0	93
8	200	7.99	203	17.99	457	15.47	393	19.69	*500	366.0	166
10	250	10.00	254	20.98	533	15.79	401	19.69	*500	601.9	273
12	300	12.01	305	24.02	610	17.36	441	19.69	*500	1047.2	475
14	350	13.27	337	27.01	686	18.94	481	19.69	*500	1256.6	570
16	400	15.24	387	30.00	762	23.54	598	19.69	*500	1715.2	778
18	450	17.24	438	34.02	864	25.31	643	19.69	*500	2061.3	935
20	500	19.25	489	35.98	914	27.87	708	19.69	*500	2623.5	1190
22	550	21.26	540	40.00	1016	31.42	798	19.69	*500	2967.4	1346
24	600	23.27	591	42.01	1067	33.98	863	19.69	*500	3481.0	1579

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3*2	80*50	2.01	51	2.99	76	7.99	203	6.50	165	9.06	230	66.1	30
4*3	100*80	2.99	76	4.02	102	9.02	229	7.60	193	15.75	400	103.6	47
6*4	150*100	4.02	102	5.98	152	15.51	394	9.09	231	15.75	400	198.4	90
8*6	200*150	5.98	152	7.99	203	17.99	457	12.95	329	18.11	460	354.9	161
10*8	250*200	7.99	203	10.00	254	20.98	533	15.47	393	39.37	1000	590.8	268
12*10	300*250	10.00	254	12.01	305	24.02	610	15.47	393	19.69	*500	1029.5	467
14*12	350*300	12.01	305	13.27	337	27.01	686	17.36	441	19.69	*500	1234.6	560
16*14	400*350	13.27	337	15.24	387	30.00	762	18.94	481	19.69	*500	1688.7	766
18*16	450*400	15.24	387	17.24	438	34.02	864	23.54	598	19.69	*500	1988.5	902
20*18	500*450	17.24	438	19.25	489	35.98	914	25.31	643	19.69	*500	2491.2	1130
22*20	550*500	19.25	489	21.26	540	40.00	1016	25.31	643	19.69	*500	2866.0	1300
24*20	600*500	19.25	489	23.27	591	42.01	1067	27.87	708	19.69	*500	3351.0	1520

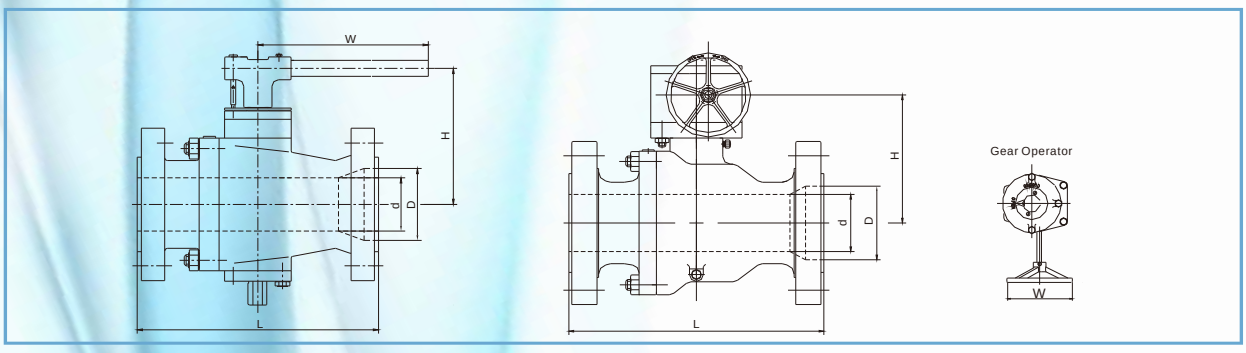
Class 300 Dimensions and weight

Full Port											
Size		d		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	2.01	51	8.50	216	6.50	165	9.06	230	39.7	18
3	80	2.99	76	11.14	283	7.60	193	15.75	400	88.2	40
4	100	4.02	102	12.01	305	9.09	231	2.95	75	138.9	63
6	150	5.98	152	15.87	403	12.95	329	39.37	1000	330.7	150
8	200	7.99	203	19.76	502	15.47	393	59.06	1500	529.1	240
10	250	10.00	254	22.36	568	15.79	401	19.69	*500	672.4	305
12	300	12.01	305	25.51	648	17.36	441	19.69	*500	1117.7	507
14	350	13.27	337	30.00	762	18.94	481	19.69	*500	1327.2	602.
16	400	15.24	387	32.99	838	23.54	598	19.69	*500	2204.6	1000
18	450	17.24	438	35.98	914	25.31	643	19.69	*500	2557.3	1160
20	500	19.25	489	39.02	991	27.87	708	19.69	*500	2910.1	1320
22	550	21.26	540	42.99	1092	31.42	798	19.69	*500	3395.1	1540
24	600	23.27	591	45.00	1143	33.98	863	19.69	*500	4131.4	1874

*Gear Operator

ELITE®

split body, cast steel, side entry design



Class 300 Dimensions and weight

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3*2	80*50	2.01	51	2.99	76	11.14	283	6.50	165	9.06	230	83.8	38
4*3	100*80	2.99	76	4.02	102	12.01	305	7.60	193	15.75	400	132.3	60
6*4	150*100	4.02	102	5.98	152	15.87	403	9.09	231	29.53	750	324.1	147
8*6	200*150	5.98	152	7.99	203	19.76	502	12.95	329	39.37	1000	515.9	234
10*8	250*200	7.99	203	10.00	254	22.36	568	15.47	393	59.06	1500	650.4	295
12*10	300*250	10.00	254	12.01	305	25.51	648	15.47	393	19.69	*500	1075.8	488
14*12	350*300	12.01	305	13.27	337	30.00	762	17.36	441	19.69	*500	1256.6	570
16*14	400*350	13.27	337	15.24	387	32.99	838	18.94	481	19.69	*500	2006.2	910
18*16	450*400	15.24	387	17.24	438	35.98	914	23.54	598	19.69	*500	2248.7	1020
20*18	500*450	17.24	438	19.25	489	39.02	991	25.31	643	19.69	*500	2821.9	1280
22*20	550*500	19.25	489	21.26	540	42.99	1092	25.31	643	19.69	*500	2998.2	1360
24*20	600*500	19.25	489	23.27	591	45.00	1143	27.87	708	19.69	*500	3681.7	1670

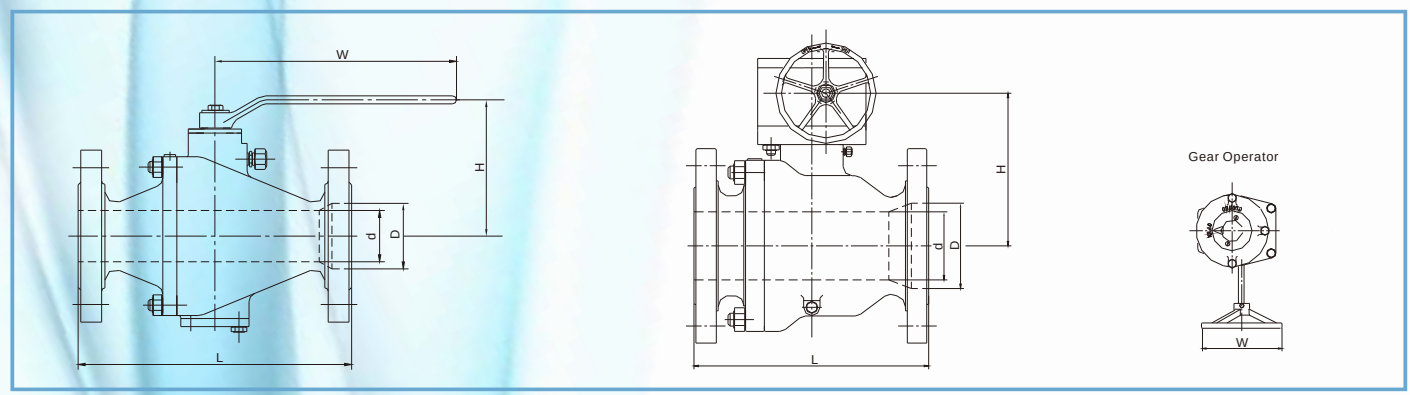
Class 600 Dimensions and weight

Full Port											
Size		d		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	2.01	51	11.50	292	6.93	176	15.75	400	59.5	27
3	80	2.99	76	14.02	356	9.72	247	29.53	750	110.2	50
4	100	4.02	102	17.01	432	10.87	276	39.37	1000	176.4	80
6	150	5.98	152	22.01	559	14.29	363	59.06	1500	775.6	351
8	200	7.99	203	25.98	660	14.29	363	19.69	*500	771.6	350
10	250	10.00	254	30.98	787	16.77	426	19.69	*500	1322.8	600
12	300	12.01	305	32.99	838	21.57	548	19.69	*500	1807.8	820
14	350	13.27	337	35.00	889	23.54	598	19.69	*500	2491.2	1130
16	400	15.24	387	39.02	991	25.51	648	19.69	*500	3417.1	1550
18	450	17.24	438	42.99	1092	29.13	740	19.69	*500	4629.6	2100
20	500	19.25	489	47.01	1194	31.89	810	19.69	*500	6172.8	2800
24	600	23.27	591	55.00	1397	36.22	920	19.69	*500	7993.8	3626

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3*2	80*50	2.01	51	2.99	76	14.02	356	6.93	176	15.75	400	90.4	41
4*3	100*80	2.99	76	4.02	102	17.01	432	9.72	247	29.53	750	154.3	70
6*4	150*100	4.02	102	5.98	152	22.01	559	10.87	276	39.37	1000	269.0	122
8*6	200*150	5.98	152	7.99	203	25.98	660	14.29	363	59.06	1500	562.2	255
10*8	250*200	7.99	203	10.00	254	30.98	787	14.29	363	19.69	*500	970.0	440
12*10	300*250	10.00	254	12.01	305	32.99	838	16.77	426	19.69	*500	1366.8	620
14*12	350*300	12.01	305	13.27	337	35.00	889	21.57	548	19.69	*500	2336.9	1060
16*14	400*350	13.27	337	15.24	387	39.02	991	23.54	598	19.69	*500	3174.6	1440
18*16	450*400	15.24	387	17.24	438	42.99	1092	25.51	648	19.69	*500	4100.5	1860
20*18	500*450	17.24	438	19.25	489	47.01	1194	29.13	740	19.69	*500	5291.0	2400
24*20	600*500	19.25	489	23.27	591	55.00	1397	31.89	810	19.69	*500	7142.9	3240

*Gear Operator

split body, cast steel, side entry design



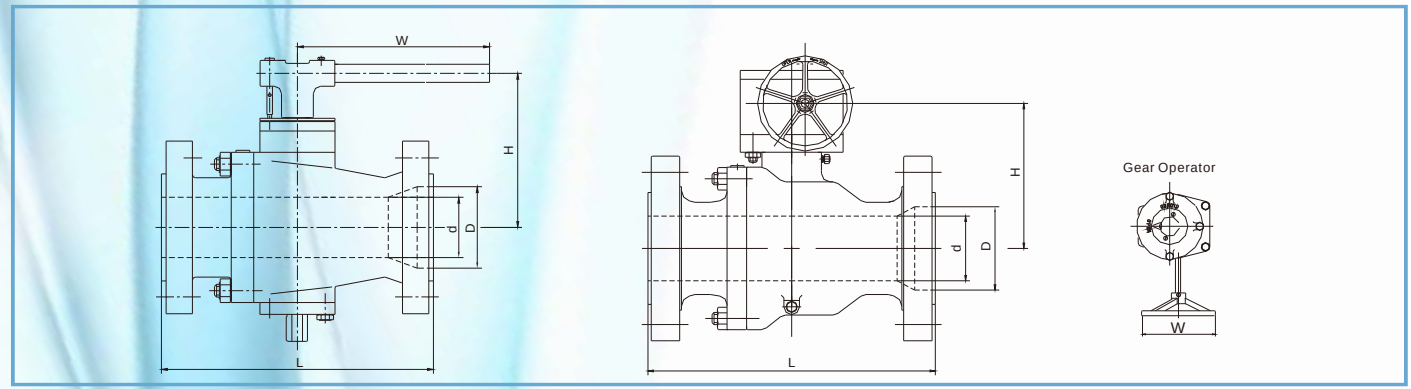
Class 900 Dimensions and weight

Full Port											
Size		d		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	2.01	51	14.49	368	7.56	192	18.11	460	114.6	52
3	80	2.99	76	15.00	381	9.80	249	39.37	1000	213.8	97
4	100	4.02	102	17.99	457	12.40	315	59.06	1500	304.2	138
6	150	5.98	152	24.02	610	12.72	323	19.69	*500	634.9	288
8	200	7.99	203	29.02	737	15.00	381	19.69	*500	987.7	448
10	250	10.00	254	32.99	838	20.39	518	19.69	*500	1649.0	748
12	300	12.01	305	37.99	965	22.36	568	19.69	*500	2244.3	1018
14	350	12.76	324	40.51	1029	26.18	665	19.69	*500	3082.0	1398
16	400	14.76	375	44.49	1130	28.74	730	19.69	*500	4030.0	1828
18	450	16.73	425	47.99	1219	31.30	795	19.69	*500	5132.3	2328
20	500	18.62	473	52.01	1321	32.48	825	24.02	*610	6455.0	2928
24	600	22.52	572	60.98	1549	38.31	973	24.02	*610	9210.8	4178

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3*2	80*50	2.01	51	2.99	76	15.00	381	7.56	192	18.11	460	183.0	83
4*3	100*80	2.99	76	4.02	102	17.99	457	9.80	249	39.37	1000	227.1	103
6*4	150*100	4.02	102	5.98	152	24.02	610	12.40	315	59.06	1500	443.1	201
8*6	200*150	5.98	152	7.99	203	29.02	737	12.72	323	19.69	*500	767.2	348
10*8	250*200	7.99	203	10.00	254	32.99	838	15.00	381	19.69	*500	1318.3	598
12*10	300*250	10.00	254	12.01	305	37.99	965	20.39	518	19.69	*500	1737.2	788
14*12	350*300	12.01	305	12.76	324	40.51	1029	22.36	568	19.69	*500	2425.0	1100
16*14	400*350	12.76	324	14.76	375	44.49	1130	26.18	665	19.69	*500	3130.5	1420
18*16	450*400	14.76	375	16.73	425	47.99	1219	28.74	730	19.69	*500	4250.4	1928
20*18	500*450	16.73	425	18.62	473	52.01	1321	31.30	795	19.69	*500	5352.7	2428
24*20	600*500	18.62	473	22.52	572	60.98	1549	32.48	825	24.02	*610	7888.0	3578

*Gear Operator

split body, cast steel, side entry design



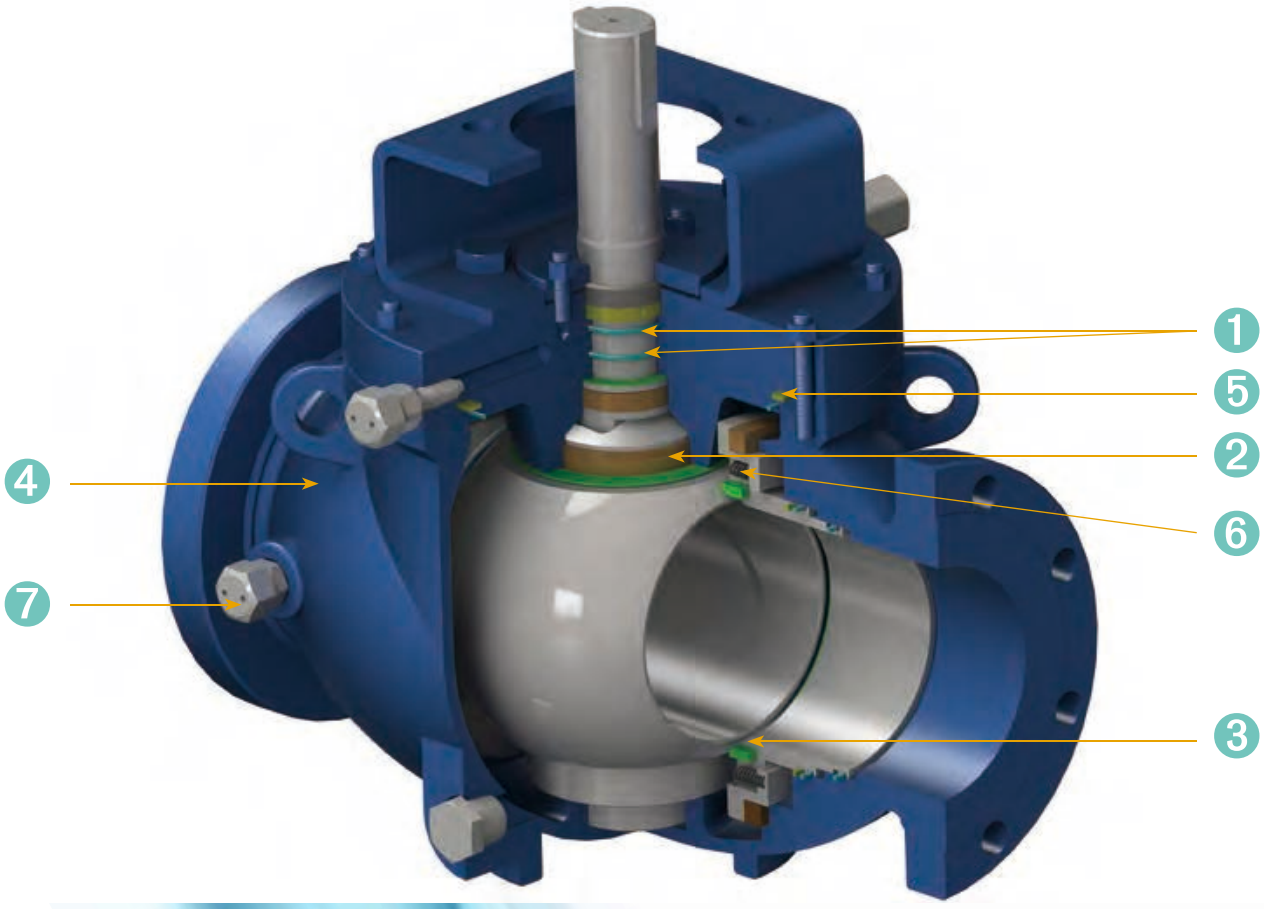
Class 1500 Dimensions and weight

Full Port											
Size		d		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	2.01	51	14.49	368	9.92	252	29.53	750	189.6	86
3	80	2.99	76	18.50	470	11.81	300	59.06	1500	299.8	136
4	100	4.02	102	21.50	546	10.71	272	19.69	*500	487.2	221
6	150	5.75	146	27.76	705	13.43	341	19.69	*500	855.4	388
8	200	7.64	194	32.76	832	19.41	493	19.69	*500	1278.7	580
10	250	9.49	241	39.02	991	22.24	565	19.69	*500	2089.9	948
12	300	11.38	289	44.49	1130	27.56	700	19.69	*500	2949.7	1338
14	350	12.52	318	49.49	1257	29.41	747	19.69	*500	3853.6	1748
16	400	14.25	362	54.49	1384	31.30	795	24.02	*610	4911.8	2228
18	450	16.02	407	60.51	1537	34.53	877	24.02	*610	6283.1	2850
20	500	17.99	457	65.51	1664	38.78	985	24.02	*610	10714.3	4860

Reduced Port													
Size		d		D		L		H		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
3*2	80*50	2.01	51	2.99	76	18.50	470	9.92	252	29.53	750	216.0	98
4*3	100*80	2.99	76	4.02	102	21.50	546	11.81	300	59.06	1500	304.2	138
6*4	150*100	4.02	102	5.75	146	27.76	705	10.71	272	19.69	*500	634.9	288
8*6	200*150	5.75	146	7.64	194	32.76	832	13.43	341	19.69	*500	987.7	448
10*8	250*200	7.64	194	9.49	241	39.02	991	19.41	493	19.69	*500	1649.0	748
12*10	300*250	9.49	241	11.38	289	44.49	1130	22.24	565	19.69	*500	2248.7	1020
14*12	350*300	11.38	289	12.52	318	49.49	1257	27.56	700	19.69	*500	3086.4	1400
16*14	400*350	12.52	318	14.25	362	54.49	1384	29.41	747	19.69	*500	4012.3	1820
18*16	450*400	14.25	362	16.02	407	60.51	1537	31.30	795	24.02	*610	5132.3	2328
20*18	500*450	16.02	407	17.99	457	65.51	1664	34.53	877	24.02	*610	9082.9	4120

*Gear Operator

Design Features

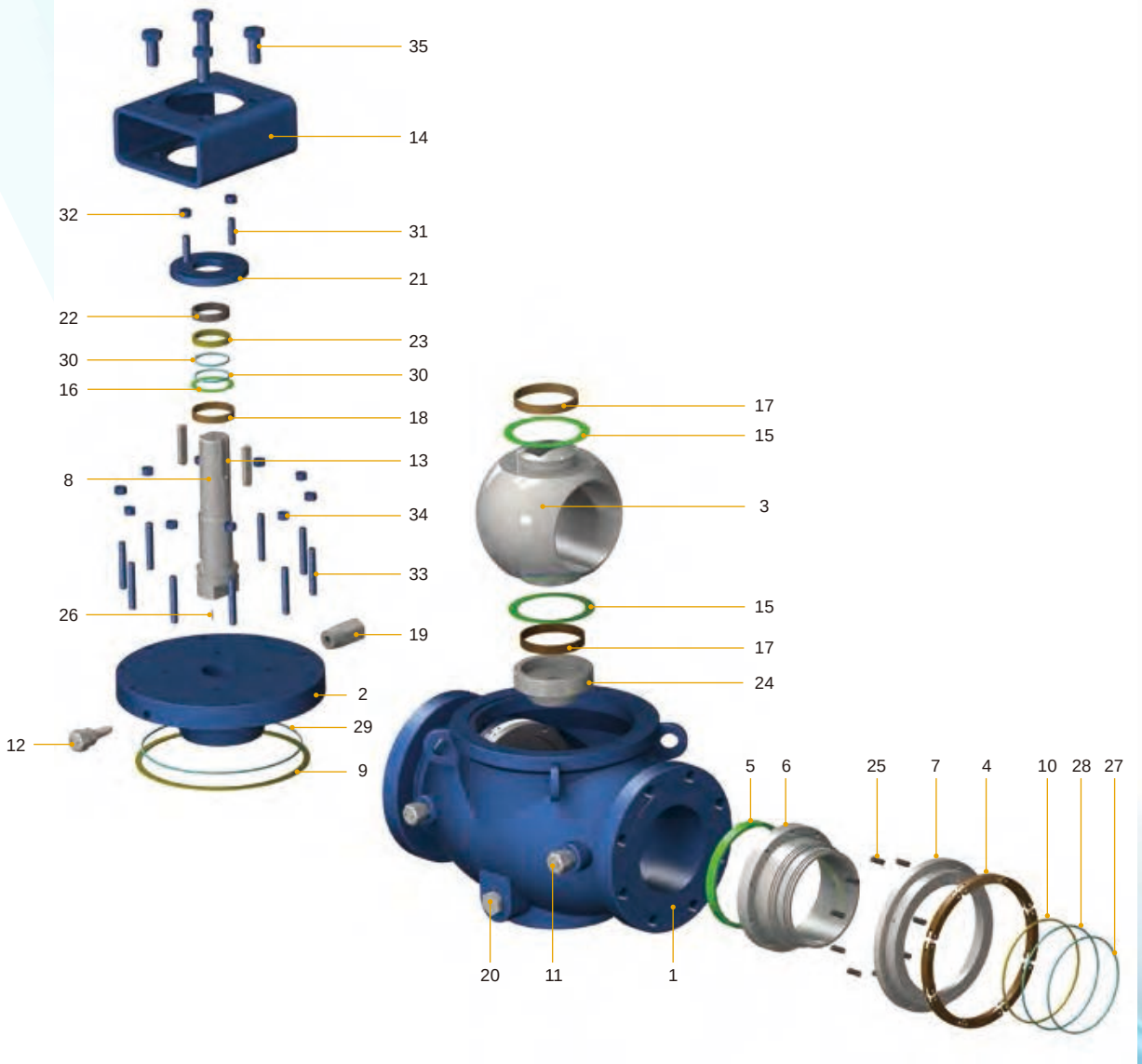


1. Two O-ring Seals: Prevent leakage from stem area.
2. Blow-out Proof Stem : Safety feature that functions to assure stem sealing at all pressures.
3. Back-up Metal to Metal Sealing: If primary soft-seat materials are burned, the metal-to-metal provides shutoff.
4. One-piece Body: Same rigidity as that of pipe.
5. O-ring & Gasket Combination: Prevents leakage from body connection area.
6. Floating Spring-loaded Seats: Assure sealing even at low pressures.
7. Emergency Sealant Injection Fitting: Allows external intervention to prevent seat leakage.

Material specifications

Item	Part
1	Body
2	Cap
3	Ball
4	Supporting Ring
5	Seat Insert
6	Seat Retainer
7	Spring Seat
8	Stem
9	Gasket
10	Fire safe Graphite Ring
11	Injection
12	Injection
13	Key
14	Yoke
15	Thrust Washer
16	Thrust Washer
17	Bearing
18	Bearing

Item	Part
19	Vent Valve
20	Plug
21	Gland Flange
22	Gland
23	Packing
24	Trunnion
25	Seat Spring
26	Anti-Static Device
27	O-Ring
28	O-Ring
29	O-Ring
30	O-Ring
31	Stud
32	Nut
33	Body Stud
34	Body Nut
35	Screw

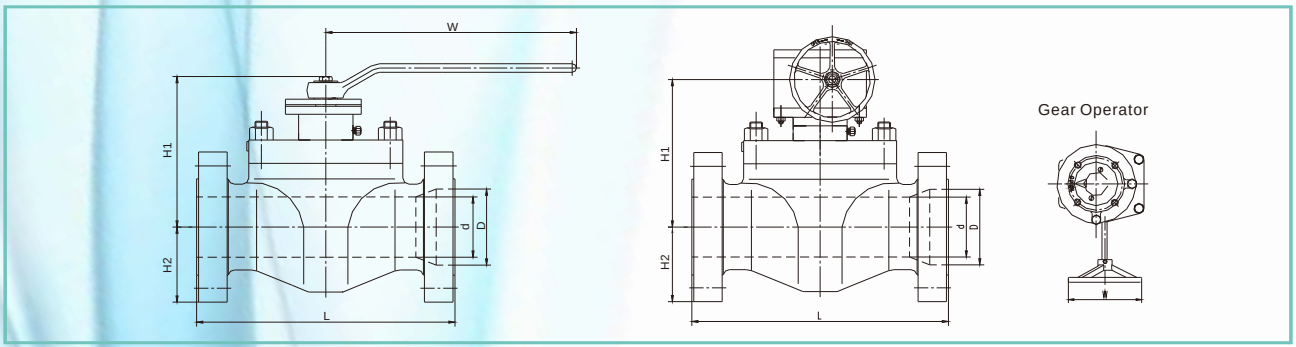


Material specifications

Item	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A351-CF8M	ASTM A216-WCB	ASTM A352-LCB
2	Cap	ASTM A105N	ASTM A182 F316	ASTM A105N	ASTM A350-LF2
3	Ball	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
4	Supporting Ring	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
5	Seat Insert	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK	RPTFE/NYLON/PEEK
6	Seat Retainer	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
7	Spring Support	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
8	Stem	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
9	Gasket	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
10	Fire Safe Graphite Ring	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
11	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
12	Injection	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
13	Key	Carbon Steel	Stainless Steel	Carbon Steel	Stainless Steel
14	Yoke	Carbon Steel	Carbon Steel	Carbon Steel	Carbon Steel
15	Thrust Washer	PTFE	PTFE	PTFE	PTFE
16	Thrust Washer	PTFE	PTFE	PTFE	PTFE
17	Bearing	316SS+PTFE	316SS+PTFE	316SS+PTFE	316SS+PTFE
18	Bearing	316SS+PTFE	316SS+PTFE	316SS+PTFE	316SS+PTFE
19	Vent Valve	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
20	Drain	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
21	Gland Flange	ASTM A105N	Stainless Steel	ASTM A105N	ASTM A350-LF2
22	Gland	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
23	Packing	316SS+Graphite	316SS+Graphite	316SS+Graphite	316SS+Graphite
24	Trunnion	ASTM A105N/ENP	ASTM A182 F316	ASTM A105N/ENP	ASTM A350-LF2/ENP
25	Spring	Inconel X-750	Inconel X-750	Inconel X-750	Inconel X-750
26	Anti-Static Device	Stainless Steel	Stainless Steel	Stainless Steel	Stainless Steel
27	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
28	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
29	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
30	O-Ring	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
31	Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
32	Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
33	Body Stud	ASTM A193-B7	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
34	Body Nut	ASTM A194-2H	ASTM A194-8	ASTM A194-2HM	ASTM A194-7M
35	Screw	Carbon Steel	Stainless Steel	Carbon Steel	ASTM A320-L7M

ELITE®

Cast Steel, top entry design



Class 600 Dimensions and weight

Full Port													
Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	9.49	241	8.23	209	2.76	70	15.75	400	66.1	30
2	50	2.01	51	11.50	292	7.68	195	4.33	110	15.75	400	83.8	38
3	80	2.99	76	14.02	356	9.45	240	4.33	110	29.53	750	176.4	80
4	100	4.02	102	17.01	432	11.02	280	6.89	175	39.37	1000	330.7	150
6	150	5.98	152	22.01	559	12.01	305	7.68	195	11.81	*300	652.6	296
8	200	7.99	203	25.98	660	15.75	400	11.02	280	11.81	*300	965.6	438
10	250	10.00	254	30.98	787	17.13	435	11.22	285	19.69	*500	1325.0	601
12	300	12.01	305	32.99	838	17.32	440	12.60	320	23.62	*600	1377.9	625
14	350	13.27	337	35.00	889	19.88	505	13.39	340	23.62	*600	2711.6	1230
16	400	15.24	387	39.02	991	23.23	590	16.14	410	23.62	*600	3384.0	1535
18	450	17.24	438	42.99	1092	27.56	700	17.52	445	23.62	*600	4706.8	2135
20	500	19.25	489	47.01	1194	30.51	775	20.08	510	23.62	*600	5820.1	2640
24	600	23.27	591	55.00	1397	33.07	840	25.20	640	23.62	*600	8730.2	3960

Reduced Port															
Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.01	51	11.50	292	8.23	209	2.76	70	15.75	400	88.2	40
3*2	80*50	2.01	51	2.99	76	14.02	356	7.68	195	4.33	110	15.75	400	119.0	54
4*3	100*80	2.99	76	4.02	102	17.01	432	9.45	240	4.33	110	29.53	750	218.3	99
6*4	150*100	4.02	102	5.98	152	22.01	559	11.02	280	6.89	175	39.37	1000	467.4	212
8*6	200*150	5.98	152	7.99	203	25.98	660	12.01	305	7.68	195	11.81	*300	670.2	304
10*8	250*200	7.99	203	10.00	254	30.98	787	15.75	400	11.02	280	11.81	*300	1124.3	510
12*10	300*250	10.00	254	12.01	305	32.99	838	17.13	435	11.22	285	19.69	*500	1988.5	902
14*12	350*300	12.01	305	13.27	337	35.00	889	17.32	440	12.60	320	23.62	*600	2403.0	1090
16*14	400*350	13.27	337	15.24	387	39.02	991	19.88	505	13.39	340	23.62	*600	2888.0	1310
18*16	450*400	15.24	387	17.24	438	42.99	1092	23.23	590	16.14	410	23.62	*600	3615.5	1640
20*18	500*450	17.24	438	19.25	489	47.01	1194	27.56	700	17.52	445	23.62	*600	5357.1	2430
24*20	600*500	19.25	489	23.27	591	55.00	1397	30.51	775	20.08	510	23.62	*600	7583.8	3440

* Gear Operator

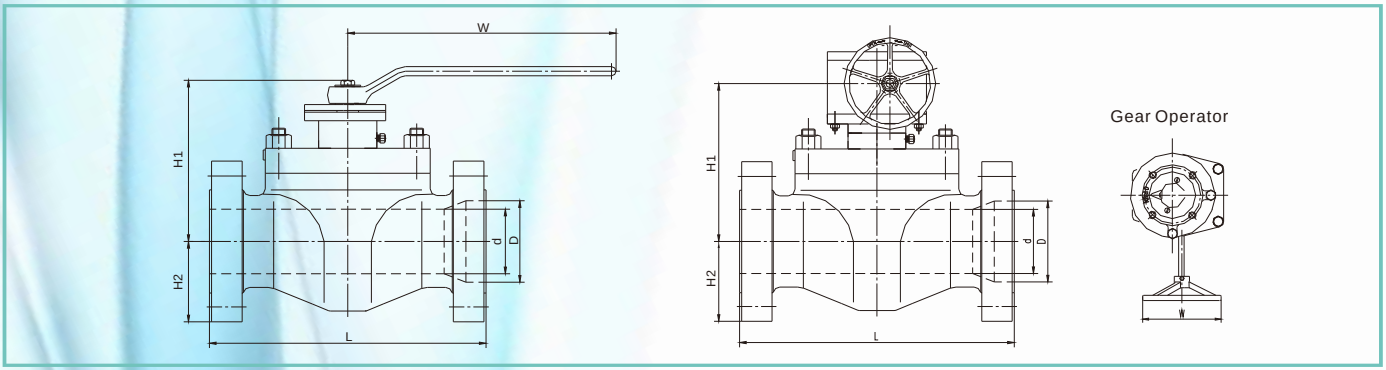
Class 900 Dimensions and weight

Full Port													
Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	12.01	305	8.46	215	3.15	80	15.75	400	88.2	40
2	50	2.01	51	14.49	368	7.87	200	4.72	120	29.53	750	114.6	52
3	80	2.99	76	15.00	381	9.45	240	5.12	130	39.37	1000	191.8	87
4	100	4.02	102	17.99	457	11.02	280	6.89	175	59.06	1500	352.7	160
6	150	5.98	152	24.02	610	13.78	350	8.66	220	11.81	*300	848.8	385
8	200	7.99	203	29.02	737	15.35	390	10.24	260	15.75	*400	1234.6	560
10	250	10.00	254	32.99	838	18.90	480	12.20	310	23.62	*600	1807.8	820
12	300	12.01	305	37.99	965	21.18	538	16.14	410	23.62	*600	2480.2	1125

* Gear Operator

ELITE®

Cast Steel, top entry design



Class 900 Dimensions and weight

Reduced Port															
Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.01	51	14.49	368	8.46	215	3.15	80	15.75	400	97.0	44
3*1-1/2	80*40	2.01	51	2.99	76	15.00	381	7.87	200	4.72	120	29.53	750	123.5	56
4*3	100*80	2.99	76	4.02	102	17.99	457	9.45	240	9.45	240	39.37	1000	207.2	94
6*4	150*100	4.02	102	5.98	152	24.02	610	11.02	280	11.02	280	59.06	1500	498.2	226
8*6	200*150	5.98	152	7.99	203	29.02	737	13.78	350	13.78	350	11.81	*300	1058.2	480
10*8	250*200	7.99	203	10.00	254	32.99	838	15.35	390	15.35	390	15.75	*400	1433.0	650
12*10	300*250	10.00	254	12.01	305	37.99	965	18.90	480	18.90	480	23.62	*600	1913.6	868

* Gear Operator

Class 1500 Dimensions and weight

Full Port													
Size		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1-1/2	40	1.50	38	12.01	305	8.66	220	3.54	90	15.75	400	88.2	40
2	50	2.01	51	14.49	368	8.07	205	4.72	120	29.53	750	132.3	60
3	80	2.99	76	18.50	470	8.27	210	4.92	125	39.37	1000	253.5	115
4	100	4.02	102	21.50	546	9.65	245	6.30	160	11.81	*300	427.7	194
6	150	5.75	146	27.76	705	13.19	335	10.04	255	15.75	*400	1278.7	580
8	200	7.64	194	32.76	832	16.81	427	13.39	340	19.69	*500	1657.8	752
10	250	9.49	241	39.02	991	19.76	502	15.00	381	23.62	*600	2634.5	1195
12	300	11.38	289	44.49	1130	20.98	533	17.24	438	23.62	*600	4784.0	2170

Reduced Port															
Size		d		D		L		H1		H2		W		Weight	
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.50	38	2.01	51	14.49	368	8.66	220	3.54	90	15.75	400	97.0	44
3*1-1/2	80*40	2.01	51	2.99	76	18.50	470	8.07	205	4.72	120	29.53	750	180.8	82
4*3	100*80	2.99	76	4.02	102	21.50	546	8.27	210	4.92	125	39.37	1000	330.7	150
6*4	150*100	4.02	102	5.75	146	27.76	705	9.65	245	6.30	160	11.81	*300	650.4	295
8*6	200*150	5.75	146	7.64	194	32.76	832	13.19	335	10.04	255	15.75	*400	1521.2	690
10*8	250*200	7.64	194	9.49	241	39.02	991	16.81	427	13.39	340	19.69	*500	2050.3	930
12*10	300*250	9.49	241	11.38	289	44.49	1130	19.76	502	15.00	381	23.62	*600	2954.1	1340

* Gear Operator

ELITE®

Soft Seat Material

Seat

Properties		PTFE	NYLON	PEEK	PCTFE	DEVLON V
Temperature Range ℉		-328~428	-58~248	-148~500	-328~302	-148~302
Temperature Range ℃		-100~200	-50~120	-100~260	-200~150	-100~150
Pressure Rating		150~600	150~1500	150~2500	150~600	150~1500
Mechanical Property	Hardness (D)	58	72	88	85	78
	Tensile Strength(MPa)	14~34	55. 2	134	35. 9	79. 9
	Tensile Elongation(Break,%)	350	250	2. 2	150	5. 4
Physical Property	Specific Gravity (g/cm3)	2.17	1.02	1.44	2.12	1.14
	Water Absorption 24hrs(%)	0.00	1	0.06	0.00	0. 1
	Water Absorption saturation	<0.0 1	1. 60	.2	<0.01	3
Service Application		Chemical & low temperature	High Pressure & Hydrocarbon	High pressure & temperature	Cryogenic	High Pressure & Hydrocarbon

Sealing

Type	HNBR	VITON	FFKM
Temperature Range °F	-40~302	-4~392	-4~620
Temperature Range °C	-40~150	-20~200	-20~327
Specific Gravity (g/cm^3)	1.34	1.85	2
Hardness (shore A)	75	75	75

* Other elastomer materials are availale upon request.

Operating Torque

In	Class 150(NYLON)		Class 300(NYLON)		Class 400(NYLON)		Class 600(NYLON)		Class 900(NYLON)		Class 1500(NYLON)		Class 2500(PEEK)	
	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs
1-1/2	40	29.52	50	36.90	58	42.81	80	59.05	130	95.95	240	177.14	290	214.04
2	50	36.90	70	51.66	75	55.35	120	88.57	180	132.85	250	184.52	380	280.46
3	60	44.28	100	73.81	150	110.71	240	177.14	400	295.23	530	391.17	780	575.69
4	100	73.81	210	154.99	330	243.56	500	369.03	670	494.50	900	664.26	1300	959.48
6	420	309.99	600	442.84	650	479.74	900	664.26	1820	1343.27	2040	1505.65	4850	3579.60
8	700	516.64	1100	811.87	1300	959.48	1500	1107.09	2560	1889.44	4790	3535.32	6900	5092.63
10	1100	811.87	1800	1328.51	2000	1476.13	2750	2029.67	4510	3328.66	8230	6074.26	13600	10037.65
12	1600	1180.90	2500	1845.16	3153	2327.11	3600	2657.03	6824	5036.54	10340	7631.57	23100	17049.25
14	1950	1439.22	3200	2361.80	3800	2804.64	4700	3468.89	8250	6089.02	12120	8945.32		
16	2500	1845.16	3500	2583.22	4000	2952.25	5470	4037.20	9940	7336.34	14920	11011.89		
18	3400	2509.41	5510	4066.72	7000	5166.44	9000	6642.56	14630	10797.86	27230	20097.44		
20	4600	3395.09	7500	5535.47	9000	6642.56	11000	8118.69	20000	14761.25	32830	24230.59		
22	5200	3837.93	9000	6642.56	11000	8118.69	14630	10797.86	25400	18746.79	39420	29094.43		
24	6774	4999.64	11150	8229.40	13450	9926.94	17950	13248.22	29900	22068.07	46320	34187.06		
26	8000	5904.50	13360	9860.52	14700	10849.52	21640	15971.67	34950	25795.29	55430	40910.81		
28	8600	6347.34	14200	10480.49	18200	13432.74	24340	17964.44	38780	28622.07	70650	52144.12		
30	9233	6814.53	16660	12296.12	20230	14931.01	32510	23994.41	46610	34401.10	75000	55354.69		
32	11810	8716.52	19500	14392.22	28240	20842.89	37600	27751.15	58230	42977.38				
34	13330	9838.37	21380	15779.78	31140	22983.27	41800	30851.02	63750	47051.49				
36	14214	10490.82	29375	21680.59	35520	26215.98	47570	35109.64	72600	53583.34				

Note:
1. Torque is calculated based on normal temperature.
2. Torque shown in this table is to be used as a guide for actuator selection. A safety factor of 1.3~1.5 is recommended for actuator sizing.
3. Torque may be changed depending on fluids and trim materials.

Flow Coefficient (Cv value) Specification

Size (inch)	Class 150	Class 300	Class 600	Class 900	Class 1500
1/2	25	25	20	16	16
3/4	56	56	48	34	34
1	95	95	64	55	55
1-1/2	308	308	308	165	165
2	500	430	370	320	320
3	1360	1100	1020	920	820
4	2500	2000	1850	1760	1600
6	5300	5250	4400	4300	4150
8	10750	10100	8450	8475	8010
10	17500	16820	14250	14160	13220
12	26750	25950	22550	21200	18800
14	31850	30900	28500	26700	24180
16	44000	42600	38150	36600	33150
18	58000	55870	51150	49000	45703
20	75500	72500	68500	64600	60750
22	91770	86850	80150		
24	113400	109340	98860		

Notes:

1.All sizes belong to full port.
2.Pressure ratings are per API 6D.

Method of Calculating Flow

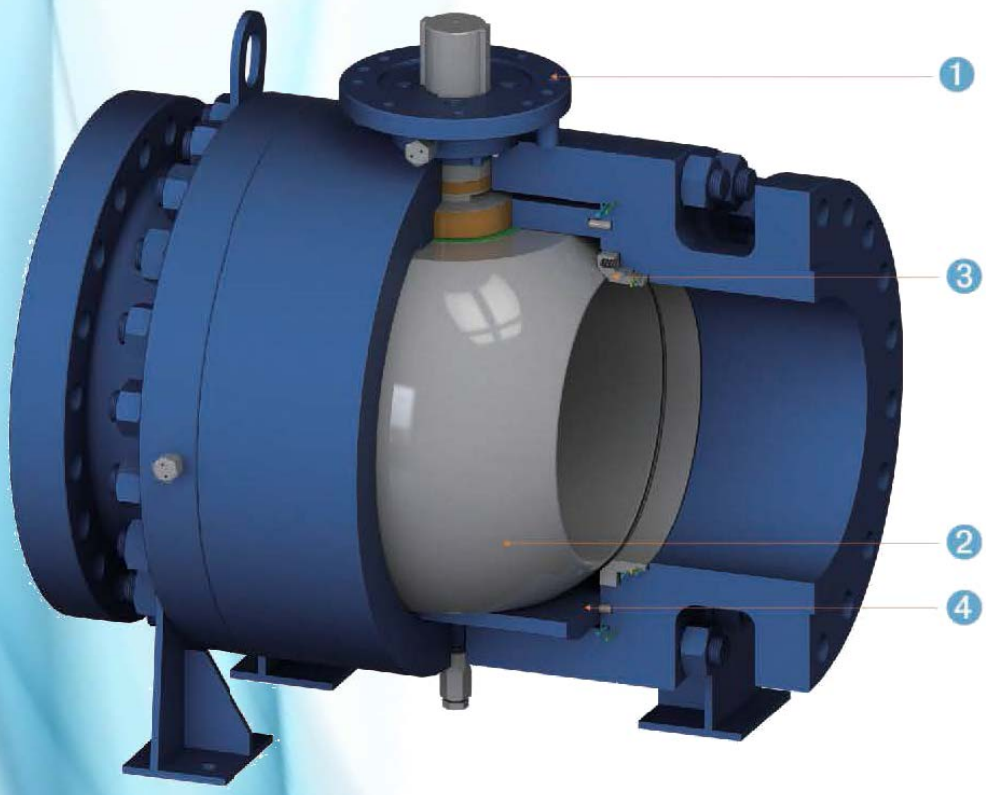
The Flow Coefficient C_v value is the flow rate of water (gallons/minute) through a fully open valve with a pressure drop of 1 psi to find the flow of liquid through the valve with C_v, using the following formulas.

Liquid Flow:
QL = Cv(P/G)1/2
QL = Flow rate of liquid (gal. /min.)
P = differential pressure across the valve
G = specific gravity of liquid (for water, G=1)

Gas Flow:
Qg = 61Cv(P2P/g)1/2
(For non-critical flow, P/P<1.0)
QL = Flow rate of gas (CFH at STP)
P2 = outlet pressure (psia)
g = specific gravity of gas (for air, g=1.0)

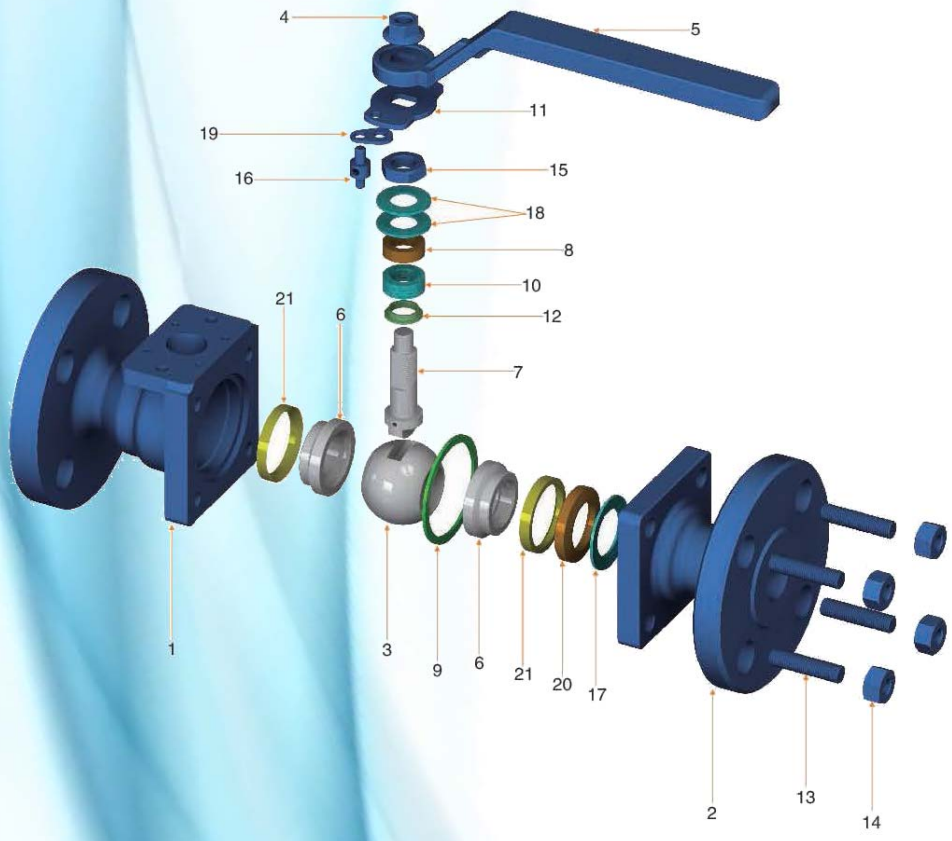
Metal to Metal Ball Valves

Design Feature



1. Top flange design as per ISO 5211, optional actuators of gearbox, electric actuator and pneumatic actuator are available.
2. Hard faced ball and the seat to satisfy the requirement of high hardness, high temperature resistance, wear resistance.
3. With the help of the pre-loaded spring, the seat is able to maintain seal even in low operating pressure.
4. Several designs of the seat to choose from, among which the dust proof seat design is available.

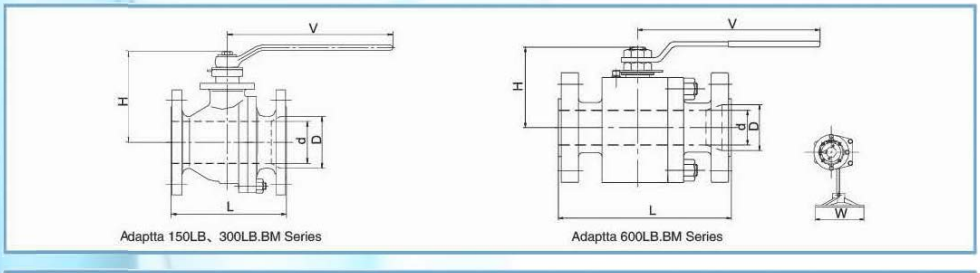
Parts & Material



Parts & Material

序号	英文名称	标准材料	酸性环境	不锈钢	低温环境
1	BODY	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
2	BONNET	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
3	BALL	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC
4	LEVER	AISI 1045	AISI 1045	ASTM A276 304	ASTM A276 304
5	GLAND FLANGE	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
6	SEAT RING	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC
7	SEAT GLAND	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
8	STEM	17-4PH	17-4PH	17-4PH	17-4PH
9	GLAND	ASTM A182 F304L	ASTM A182 F304L	ASTM A182 F304L	ASTM A182 F304L
10	THRUST WASHER	ASTM A182 F316L+N2	ASTM A182 F316L+N2	ASTM A182 F316L+N2	ASTM A182 F316L+N2
11	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
12	PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
13	GASKET	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
14	BOLT	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
15	SPRING	17-7PH	17-7PH	INCONEL X-750	INCONEL X-750
16	STUD	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
17	NUT	ASTM A194 2H	ASTM A194 2HM	ASTM A194 8	ASTM A194 7M
18	COVER FLANGE	ASTM A216 WCB	ASTM A216 WCB	ASTM A182 F316	ASTM A350 LF2
19	PIN	ASTM A276 420	ASTM A276 420	ASTM A276 420	ASTM A276 420
20	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
21	STOP PLATE	AISI 1045	AISI 1045	ASTM A276 420	ASTM A276 420
22	RETAINER	AISI 1066	AISI 1066	ASTM A276 304	ASTM A276 304
23	BOLT	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
24	WASHER	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
25	PIN	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
26	SCREW	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
27	LOCK PLATE	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
28	PIN	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304

Dimension&Weight



150LB Full bore （Floating）

Size		D		L				H		W		V		Weight	
				RF		BW									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	4.25	108	5.49	139.5	2.23	56.6			5.51	140	4.41	2
3/4	20	0.75	19	4.61	117	6.00	152.5	2.32	59			5.51	140	6.61	3
1	25	0.98	25	5.00	127	6.50	165	3.29	83.5			8.46	215	8.82	4
1-1/2	40	1.50	38	6.50	165	7.52	191	4.63	117.5			10.43	265	17.64	8
2	50	2.01	51	7.01	178	8.50	216	5.15	130.8			16.93	430	22.05	10
3	80	2.99	76	7.99	203	11.14	283	6.90	175.3			41.73	1060	35.27	16
4	100	4.02	102	9.02	229	12.01	305	7.65	194.3			41.73	1060	88.18	40

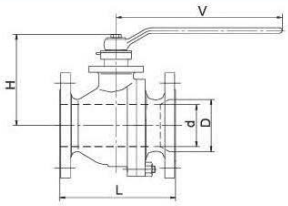
150LB Reduced bore（Floating）

Size		D		d		L				H		W		V		Weight	
						RF		BW									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	4.25	108	5.49	139.5	1.93	49			5.51	140	3.31	1.5
3/4*1/2	20*15	0.75	19	0.51	13	4.61	117	6.00	152.5	2.23	56.6			5.51	140	4.41	2
1*3/4	25*20	0.98	25	0.75	19	5.00	127	6.50	165	2.32	59			5.51	140	6.61	3
1-1/2*1	40*25	1.50	38	0.98	25	6.50	165	7.52	191	3.29	83.5			8.46	215	15.43	7
2*1-1/2	50*40	2.01	51	1.50	38	7.01	178	8.50	216	4.63	117.5			10.43	265	17.64	8
3*2	80*50	2.99	76	2.01	51	7.99	203	11.14	283	5.15	130.8			10.43	265	30.86	14
4*3	100*80	4.02	102	2.99	76	9.02	229	12.01	305	6.90	175.3			16.93	430	79.37	36

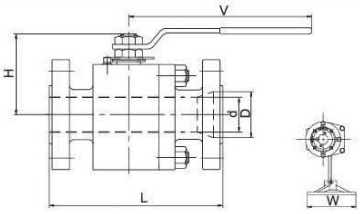
300LB Full bore（Floating）

Size		D		L				H		W		V		Weight	
				RF		BW									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	5.51	140	5.51	140	2.23	56.6			5.51	140	6.61	3
3/4	20	0.75	19	5.98	152	5.98	152	2.32	59			5.51	140	8.82	4
1	25	0.98	25	6.50	165	6.50	165	3.29	83.5			8.46	215	13.23	6
1-1/2	40	1.50	38	7.52	191	7.52	191	4.63	117.5			10.43	265	24.25	11
2	50	2.01	51	8.50	216	8.50	216	5.15	130.8			16.93	430	33.07	15
3	80	2.99	76	11.14	283	11.14	283	6.90	175.3			41.73	1060	103.62	47
4	100	4.02	102	12.01	305	12.01	305	10.04	255	11.81	300			149.91	68

Dimension&Weight



Adaptta 150LB、300LB.BM Series



Adaptta 600LB.BM Series

300LB Reduced bore (Floating)

Size		D		d		L				H		W		V		Weight	
						RF		BW									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	5.51	140	5.51	140	2.14	54.3			5.51	140	4.41	2
3/4*1/2	20*15	0.75	19	0.51	13	5.98	152	5.98	152	2.23	56.6			5.51	140	6.61	3
1*3/4	25*20	0.98	25	0.75	19	6.50	165	6.50	165	2.32	59			5.51	140	8.82	4
1-1/2*1	40*25	1.50	38	0.98	25	7.52	191	7.52	191	3.29	83.5			8.46	215	19.84	9
2*1-1/2	50*40	2.01	51	1.50	38	8.50	216	8.50	216	4.63	117.5			10.43	265	28.66	13
3*2	80*50	2.99	76	2.01	51	11.14	283	11.14	283	5.15	130.8			16.93	430	99.21	45
4*3	100*80	4.02	102	2.99	76	12.01	305	12.01	305	6.90	175.3			41.73	1060	143.30	65

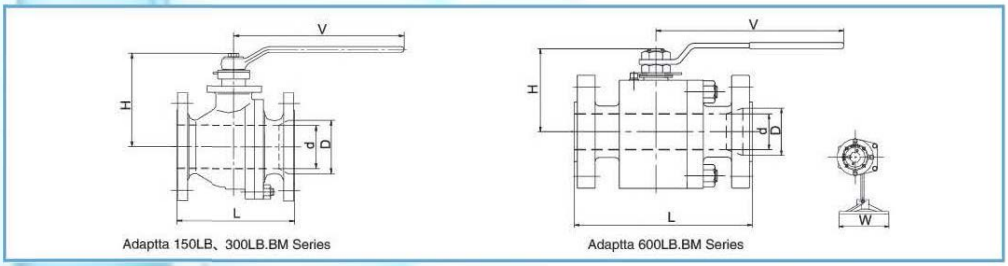
400LB Full bore (Floating)

Size		D		L						H		W		V		Weight	
				RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	6.50	165	6.50	165	6.46	164	3.86	98			5.91	150	8.82	4
3/4	20	0.75	19	7.52	191	7.52	191	7.52	191	4.53	115			7.09	180	13.23	6
1	25	0.98	25	8.50	216	8.50	216	8.50	216	4.74	120.5			10.43	265	24.25	11
1-1/2	40	1.50	38	9.49	241	9.49	241	9.49	241	6.26	159			11.81	300	55.11	25
2	50	2.01	51	11.50	292	11.50	292	11.61	295	11.34	288	11.81	300			110.23	50
3	80	2.99	76	14.02	356	14.02	356	14.13	359	11.89	302	15.75	400			121.25	55
4	100	4.02	102	15.98	406	15.98	406	16.14	410	12.60	320	23.62	600			414.46	188

400LB Reduced bore (Floating)

Size		D		d		L						H		W		V		Weight	
						RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	6.50	165	6.50	165	6.46	164	3.19	81			5.91	150	6.61	3
3/4*1/2	20*15	0.75	19	0.51	13	7.52	191	7.52	191	7.52	191	3.86	98			5.91	150	11.02	5
1*3/4	25*20	0.98	25	0.75	19	8.50	216	8.50	216	8.50	216	4.53	115			7.09	180	19.84	9
1-1/2*1	40*25	1.50	38	0.98	25	9.49	241	9.49	241	9.49	241	4.74	120.5			10.43	265	48.50	22
2*1-1/2	50*40	2.01	51	1.50	38	11.50	292	11.50	292	11.61	295	6.26	159			11.81	300	55.11	25
3*2	80*50	2.99	76	2.01	51	14.02	356	14.02	356	14.13	359	11.34	288	11.81	300			112.43	51
4*3	100*80	4.02	102	2.99	76	15.98	406	15.98	406	16.14	410	11.89	302	15.75	400			399.03	181

Dimension&Weight



Adaptta 150LB、300LB.BM Series

Adaptta 600LB.BM Series

600LB Full bore (Floating)

Size		D		L						H		W		V		Weight	
				RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	6.50	165	6.50	165	6.46	164	3.86	98			5.91	150	8.82	4
3/4	20	0.75	19	7.52	191	7.52	191	7.52	191	4.53	115			7.09	180	13.23	6
1	25	0.98	25	8.50	216	8.50	216	8.50	216	4.74	120.5			10.43	265	24.25	11
1-1/2	40	1.50	38	9.49	241	9.49	241	9.49	241	6.26	159			11.81	300	55.11	25
2	50	2.01	51	11.50	292	11.50	292	11.61	295	11.34	288	11.81	300			110.23	50
3	80	2.99	76	14.02	356	14.02	356	14.13	359	11.89	302	15.75	400			121.25	55
4	100	4.02	102	17.01	432	17.01	432	17.13	435	12.60	320	23.62	600			414.46	188

600LB Reduced bore (Floating)

Size		D		d		L						H		W		V		Weight	
						RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	6.50	165	6.50	165	6.46	164	3.23	82			5.91	150	6.61	3
3/4*1/2	20*15	0.75	19	0.51	13	7.52	191	7.52	191	7.52	191	3.86	98			5.91	150	11.02	5
1*3/4	25*20	0.98	25	0.75	19	8.50	216	8.50	216	8.50	216	4.53	115			7.09	180	19.84	9
1-1/2*1	40*25	1.50	38	0.98	25	9.49	241	5.55	241	9.49	241	4.74	120.5			10.43	265	48.50	22
2*1-1/2	50*40	2.01	51	1.50	38	11.50	292	7.56	292	11.50	292	6.26	159			11.81	300	55.11	25
3*2	80*50	2.99	76	2.01	51	14.02	356	14.02	356	14.13	359	11.34	288	11.81	300			112.43	51
4*3	100*80	4.02	102	2.99	76	17.01	432	17.01	432	17.13	435	11.89	302	15.75	400			399.03	181

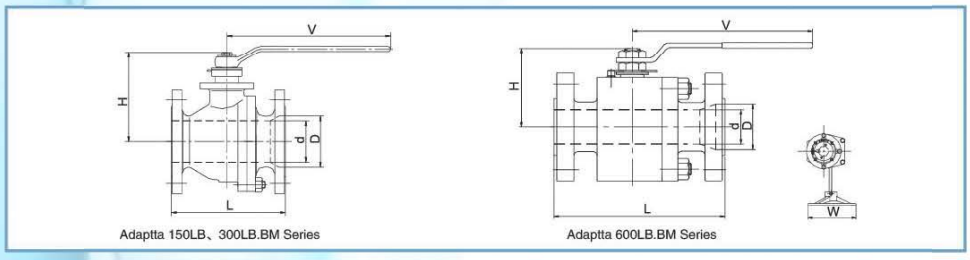
900LB Full bore (Floating)

Size		D		L						H		W		V		Weight	
				RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	8.50	216	8.50	216	8.50	216	4.41	112			7.09	180	22.05	10
3/4	20	0.75	19	9.02	229	9.02	229	9.02	229	4.75	120.5			10.43	265	28.66	13
1	25	0.98	25	10.00	254	10.00	254	10.00	254	6.24	158.5			11.81	300	33.07	15
1-1/2	40	1.50	38	12.01	305	12.01	305	12.01	305	7.48	190			15.75	400	105.82	48
2	50	2.01	51	14.49	368	14.49	368	14.61	371	11.42	290	15.75	400			158.73	72

900LB Reduced bore (Floating)

Size		D		d		L						H		W		V		Weight	
						RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	8.50	216	8.50	216	8.50	216	4.17	106			6.50	165	17.64	8
3/4*1/2	20*15	0.75	19	0.51	13	9.02	229	9.02	229	9.02	229	4.41	112			7.09	180	19.84	9
1*3/4	25*20	0.98	25	0.75	19	10.00	254	10.00	254	10.00	254	4.74	120.5			10.43	265	26.46	12
1-1/2*1	40*25	1.50	38	0.98	25	12.01	305	12.01	305	12.01	305	6.24	158.5			11.81	300	30.86	14
2*1-1/2	50*40	2.01	51	1.50	38	14.49	368	14.49	368	14.61	371	7.49	190			15.75	400	99.21	45

Dimension&Weight



1500LB Full bore（Floating）

Size		D		L						H		W		V		Weight	
				RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	8.50	216	8.50	216	8.50	216	4.41	112			7.09	180	22.05	10
3/4	20	0.75	19	9.02	229	9.02	229	9.02	229	4.25	120.5			10.43	265	28.66	13
1	25	0.98	25	10.00	254	10.00	254	10.00	254	6.24	158.5			11.81	300	33.07	15
1-1/2	40	1.50	38	12.01	305	12.01	305	12.01	305	7.49	190			15.75	400	105.82	48
2	50	2.01	51	14.49	368	14.49	368	14.61	371	11.42	290	15.75	400			158.73	72

1500LB Reduced bore（Floating）

口径		D		d		L						H		W		V		Weight	
						RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	8.50	216	8.50	216	8.50	216	4.17	106			6.50	165	17.64	8
3/4*1/2	20*15	0.75	19	0.51	13	9.02	229	9.02	229	9.02	229	4.41	112			7.09	180	19.84	9
1*3/4	25*20	0.98	25	0.75	19	10.00	254	10.00	254	10.00	254	4.74	120.5			10.43	265	26.46	12
1-1/2*1	40*25	1.50	38	0.98	25	12.01	305	12.01	305	12.01	305	6.24	158.5			11.81	300	30.86	14
2*1-1/2	50*40	2.01	51	1.50	38	14.49	368	14.49	368	14.61	371	7.48	190			15.75	400	99.21	45

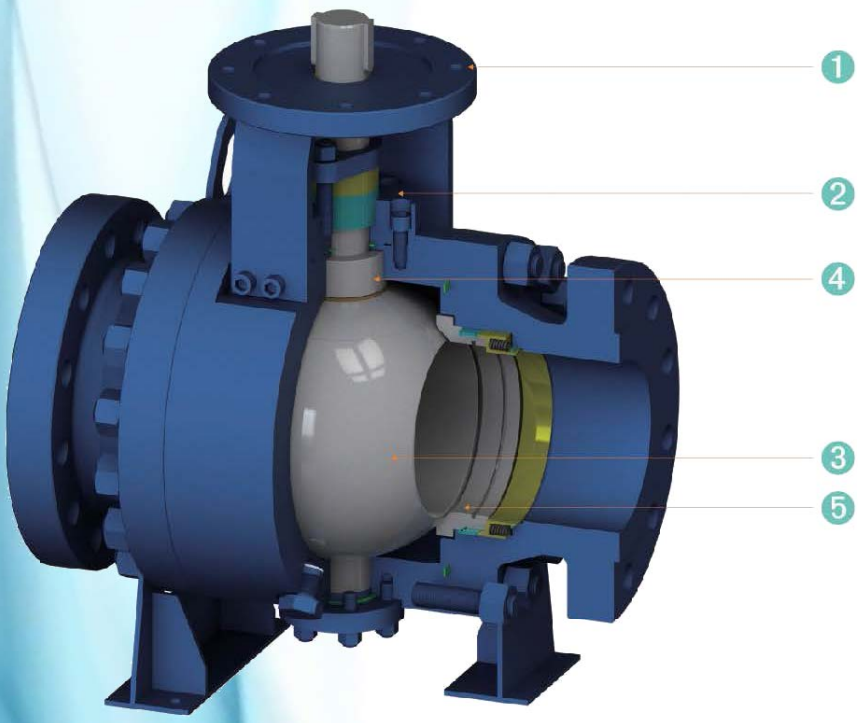
2500LB Full bore（Floating）

口径		D		L						H		W		V		Weight	
				RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2	15	0.51	13	10.39	264	10.39	264	10.39	264	4.53	115			7.09	180	26.46	12
3/4	20	0.75	19	10.75	273	10.75	273	10.75	273	4.65	118			10.43	265	35.27	16
1	25	0.98	25	12.13	308	12.13	308	12.13	308	6.97	177			11.81	300	41.89	19
1-1/2	40	1.50	38	14.49	368	14.49	368	14.49	368	8.03	204			15.75	400	108.02	49
2	50	1.65	42	17.76	451	17.76	451	17.87	454	11.73	298	15.75	400			169.75	77

2500LB Reduced bore（Floating）

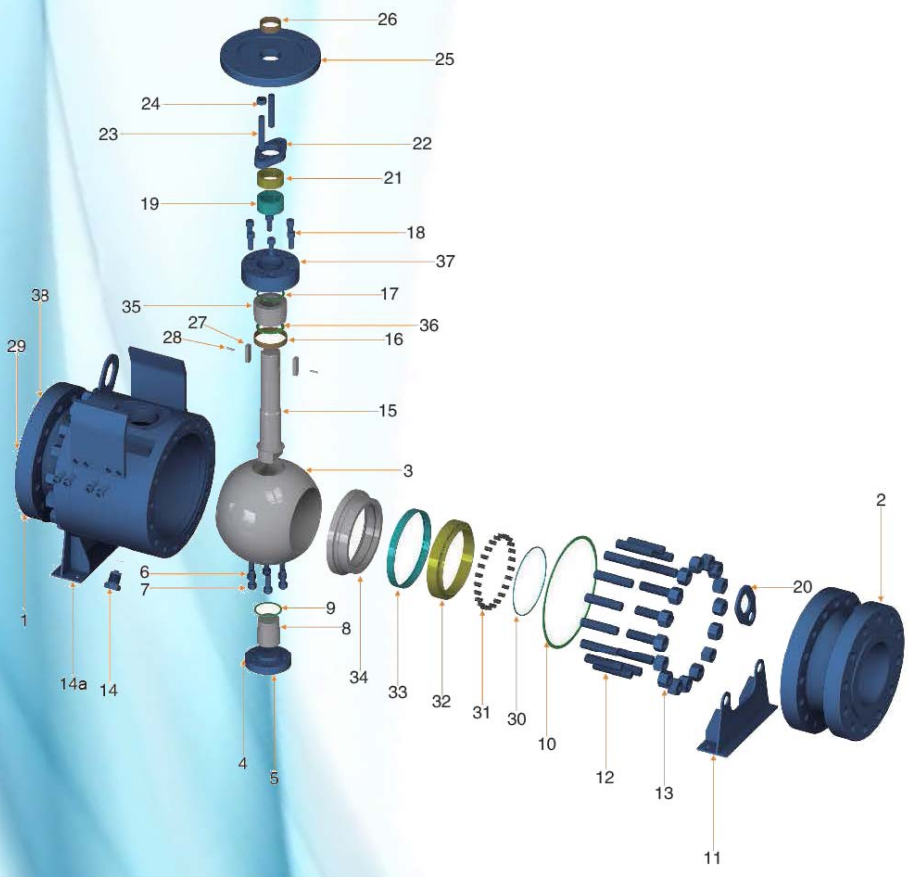
口径		D		d		L						H		W		V		Weight	
						RF		BW		RTJ									
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
1/2*3/8	15*10	0.51	13	0.28	7	10.39	264	10.39	264	10.39	264	3.70	94			6.30	160	19.84	9
3/4*1/2	20*15	0.75	19	0.51	13	10.75	273	10.75	273	10.75	273	4.53	115			7.09	180	26.46	12
1*3/4	25*20	0.98	25	0.75	19	12.13	308	12.13	308	12.13	308	4.65	118			10.43	265	34.17	15.5
1-1/2*1	40*25	1.50	38	0.98	25	14.49	368	14.49	368	14.49	368	6.97	177			11.81	300	92.59	42
2*1-1/2	50*40	1.65	42	1.50	38	17.76	451	17.76	451	17.87	454	8.03	204			15.75	400	152.12	69

Design Feature



1. Top flange design as per ISO 5211, optional actuators of gearbox, electric actuator and pneumatic actuator are available.
2. Low emission graphite packing design.
3. Hard faced ball and the seat to satisfy the requirement of high hardness, high temperature resistance, wear resistance.
4. With the help of the pre-loaded spring, the seat is able to maintain seal even in low operating pressure.
5. Several designs of the seat to choose from, among which the dust proof seat design is available.

Parts & Material

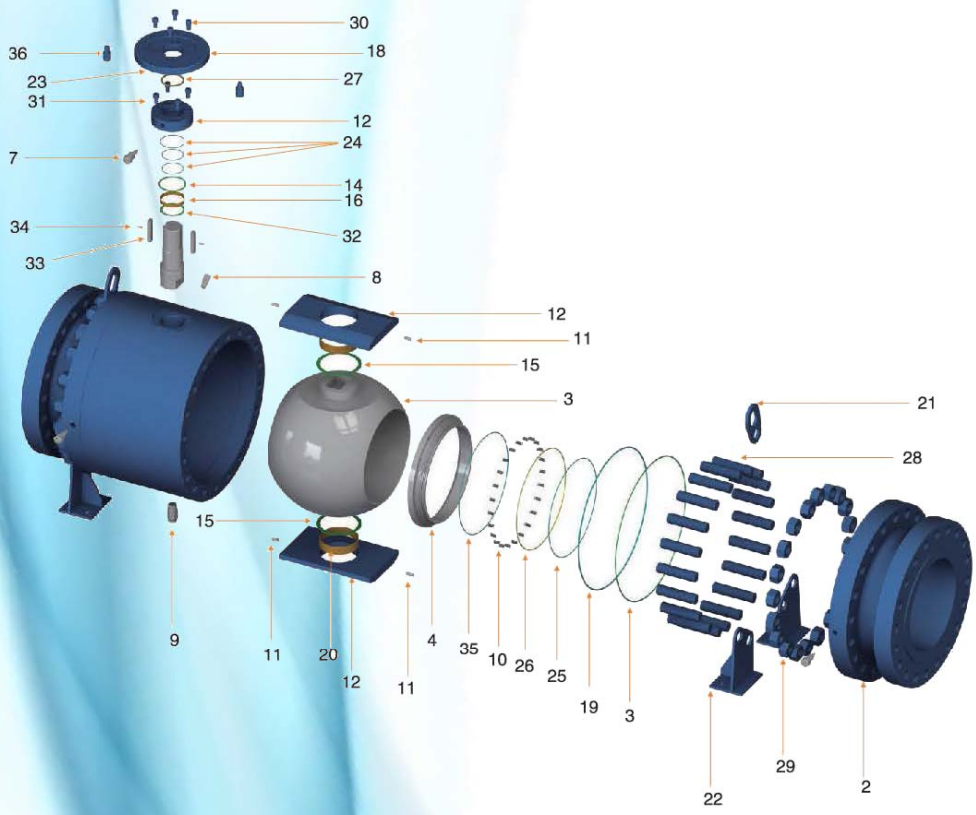


Parts & Material

No.Parts Standard Material Sour Condition Stainless Steel Low Temperature Condition

序号	英文名称	标准材料	酸性环境	不锈钢	低温环境
1	BODY	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
2	BONNET	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
3	BALL	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC
4	TRUNNION	ASTM A105N+CrC	ASTM A105N+CrC	17-4PH+CrC	ASTM A350 LF2+CrC
5	COVER	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
6	STUD	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
7	NUT	ASTM A194 2H	ASTM A194 2HM	ASTM A194 8	ASTM A194 7M
8	BEARING	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2
9	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
10	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
11	SUPPORT LEGS	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD
12	STUD	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
13	NUT	ASTM A194 2H	ASTM A194 2HM	ASTM A194 8	ASTM A194 7M
14	PLUG	ASTM A182 F316L	ASTM A182 F316L	ASTM A182 F316L	ASTM A182 F316L
14a	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
15	STEM	17-4PH	17-4PH	17-4PH	17-4PH
16	BEARING	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2
17	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
18	SCREW	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
19	PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
20	LIFTING LUGS	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD
21	GLAND	ASTM A182 F304L	ASTM A182 F304L	ASTM A182 F304L	ASTM A182 F304L
22	GLAND FLANGE	ASTM A216-WCB	ASTM A216-WCB	ASTM A351-CF8	ASTM A352 LCB
23	STUD	ASTM A193 B7	ASTM A193 B7M	ASTM A193 B8	ASTM A320 L7M
24	NUT	ASTM A194 2H	ASTM A194 2HM	ASTM A194 8	ASTM A194 7M
25	TOP FLANGE	ASTM A105N	ASTM A105N	ASTM A105N	ASTM A350 LF2
26	BEARING	ASTM A240 316+PTFE	ASTM A240 316+PTFE	ASTM A240 316+PTFE	ASTM A240 316+PTFE
27	KEY	AISI 1045	AISI 1045	ASTM A276-420	ASTM A276 420
28	STEM PIN	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
29	SCREW	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
30	GRAPHITE RING	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
31	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750	INCONEL X-750
32	SEAT GLAND	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316	ASTM A182 F316
33	PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
34	SEAT	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC
35	SLEVER	AISI 4140+CrC	AISI 4140+CrC	17-4PH+CrC	AISI 4140+CrC
36	THRUST PLATE	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2	ASTM A182 F316L-N2
37	COVER FLANGE	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
38	ARMOR PLATE	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD

Parts & Material

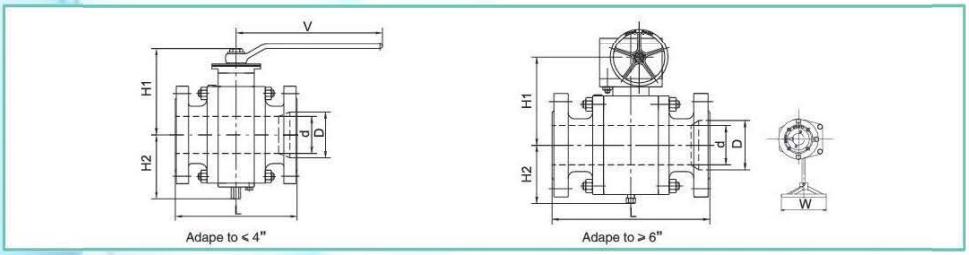


Parts & Material

No.Parts Standard Material Sour Condition Stainless Steel Low Temperature Condition

序号	英文名称	标准材料	酸性环境	不锈钢	低温环境
1	BODY	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
2	BONNET	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
3	BALL	ASTM A105N/ENP	ASTM A105N/ENP	ASTM A182 F316	ASTM A350 LF2/ENP
4	SEAT	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC	ASTM A182 F316+WC
5	STEM	17-4PH	17-4PH	17-4PH	17-4PH
6	TRUNNION ALIGNMENT PIN	ASTM A276 304	ASTM A276 304	ASTM A182 F316L	ASTM A276 304
7	INJECTION	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
8	VENT VALVE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
9	PLUG	ASTM A182 F316L	ASTM A182 F316L	ASTM A182 F316L	ASTM A182 F316L
10	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750	INCONEL X-750
11	PIN	AISI 1035	AISI 1035	ASTM A276 304	AISI 1035
12	TRUNNION SUPPORT	ASTM A588B	ASTM A588B	ASTM A351-CF3	ASTM A351-CF3
13	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
14	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
15	THRUST WASHER	METAL BACKED PTFE	METAL BACKED PTFE	METAL BACKED PTFE	METAL BACKED PTFE
16	BEARING	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2
17	COVER FLANGE	ASTM A105N	ASTM A105N	ASTM A182 F316	ASTM A350 LF2
18	TOP FLANGE	ASTM A105N	ASTM A105N	ASTM A182 F304	ASTM A350 LF2
19	O-RING	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
20	Bearing	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2	316SS+PTFE+MoS2
21	LIFTING LUGS	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD
22	SUPPORT LEGS	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD	ASTM A283 GRD
23	O-RING	NBR	NBR	NBR	NBR
24	O-RING	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
25	O-RING	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
26	O-RING	HNBR/VITON	HNBR/VITON	HNBR/VITON	HNBR/VITON
27	GRAPHITE RING	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
28	Body Stud	ASTM A193-B7	ASTM A193-B7M	ASTM A193-B8	ASTM A320-L7M
29	Body Nut	ASTM A194-2H	ASTM A194-2HM	ASTM A194-8	ASTM A194-7M
30	Screw	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
31	Screw	AISI 1035	AISI 1035	ASTM A276 304	ASTM A276 304
32	THRUST WASHER	METAL BACKED PTFE	METAL BACKED PTFE	METAL BACKED PTFE	METAL BACKED PTFE
33	KEY	AISI 1045	AISI 1045	ASTM A276-420	ASTM A276 420
34	PIN	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
35	GRAPHITE RING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
36	PIN	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304

Dimension&Weight



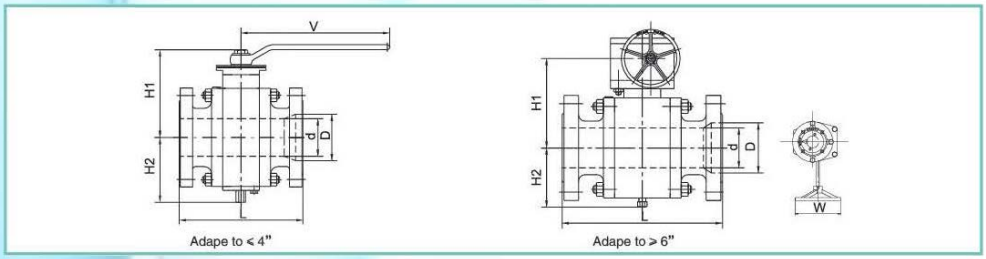
150LB Full bore-TM

Size		D		L				H1		H2		W		V		Weight	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	7.01	178	8.50	216	4.25	108	3.54	90			11.22	285	40	18
3	80	2.91	74	7.99	203	11.14	283	11.02	280	4.33	110	11.81	300			66	30
4	100	3.94	100	9.02	229	12.01	305	11.61	295	5.51	140	11.81	300			229	104
6	150	5.91	150	15.51	394	17.99	457	14.41	366	6.89	175	19.69	500			430	195
8	200	7.91	201	17.99	457	20.51	521	20.16	512	7.48	190	23.62	600			866	393
10	250	9.92	252	20.98	533	22.01	559	23.23	590	9.06	230	23.62	600			1113	505
12	300	11.93	303	24.02	610	25.00	635	26.22	666	11.61	295	27.56	700			1598	725
14	350	13.15	334	27.01	686	30.00	762	29.92	760	14.17	360	27.56	700			1984	900
16	400	15.16	385	30.00	762	32.99	838	32.68	830	16.73	425	29.92	760			2756	1250
18	450	17.17	436	34.02	864	35.98	914	36.22	920	18.50	470	29.92	760			4134	1875
20	500	19.17	487	35.98	914	39.02	991	39.49	1003	20.87	530	29.92	760			5181	2350
22	550	21.18	538	39.02	991	39.02	991	41.65	1058	23.43	595	29.92	760			6834	3100
24	600	23.19	589	42.01	1067	45.00	1143	43.90	1115	25.98	660	29.92	760			8609	3905
28	700	26.93	684	49.02	1245	52.99	1346	46.06	1170	28.54	725	29.92	760			12743	5780
30	750	28.94	735	50.98	1295	55.00	1397	48.23	1225	31.69	805	29.92	760			17163	7785
32	800	30.67	779	54.02	1372	60.00	1524	50.79	1290	34.53	877	31.50	800			20205	9165
34	850	32.68	830	57.99	1473	64.02	1626	53.15	1350	36.46	926	31.50	800			23810	10800
36	900	34.41	874	60.00	1524	67.99	1727	55.12	1400	38.39	975	35.43	900			28704	13020
40	1000	38.43	976	67.99	1727	67.99	1727	67.72	1720	40.16	1020	35.43	900			39793	18050

150LB Reduced bore -TM

Size		D		d		L				H1		H2		W		V		Weight	
						RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	7.01	178	8.50	216	4.13	105	2.95	75			13.78	350	33	15
3*2	80*50	2.91	74	1.93	49	7.99	203	11.14	283	4.25	108	3.54	90			11.22	285	55	25
4*3	100*80	3.94	100	2.91	74	9.02	229	12.01	305	11.02	280	4.33	110	11.81	300			190	86
6*4	150*100	5.91	150	3.94	100	15.51	394	17.99	457	11.61	295	5.51	140	11.81	300			276	125
8*6	200*150	7.91	201	5.91	150	17.99	457	20.51	521	14.41	366	6.89	175	19.69	500			518	235
10*8	250*200	9.92	252	7.91	201	20.98	533	22.01	559	20.16	512	7.48	190	23.62	600			1005	456
12*10	300*250	11.93	303	9.92	252	24.02	610	25.00	635	23.23	590	9.06	230	23.62	600			1323	600
14*12	350*300	13.15	334	11.93	303	27.01	686	30.00	762	26.22	666	11.61	295	27.56	700			1786	810
16*14	400*350	15.16	385	13.15	334	30.00	762	32.99	838	29.92	760	14.17	360	27.56	700			2238	1015
18*16	450*400	17.17	436	15.16	385	34.02	864	35.98	914	32.68	830	16.73	425	29.92	760			2976	1350
20*18	500*450	19.17	487	17.17	436	35.98	914	39.02	991	36.22	920	18.50	470	29.92	760			4378	1986
22*20	550*500	21.18	538	19.17	487	39.02	991	39.02	991	39.49	1003	20.87	530	29.92	760			6173	2800
24*20	600*500	23.19	589	19.17	487	42.01	1067	45.00	1143	41.65	1058	23.43	595	29.92	760			7857	3564
28*24	700*600	26.93	684	23.19	589	49.02	1245	52.99	1346	43.90	1115	25.98	660	29.92	760			9535	4325
30*28	750*700	28.94	735	26.93	684	50.98	1295	55.00	1397	46.06	1170	28.54	725	29.92	760			14237	6458
32*30	800*750	30.67	779	28.94	735	54.02	1372	60.00	1524	48.23	1225	31.69	805	29.92	760			18569	8423
34*32	850*800	32.68	830	30.67	779	57.99	1473	64.02	1626	50.79	1290	34.53	877	31.50	800			21715	9850
36*32	900*800	34.41	874	30.67	779	60.00	1524	67.99	1727	53.15	1350	36.46	926	31.50	800			26786	12150
40*36	1000*900	38.43	976	34.41	874	73.03	1855	82.01	2083	57.48	1460	38.82	986	35.43	900			31415	14250

Dimension&Weight



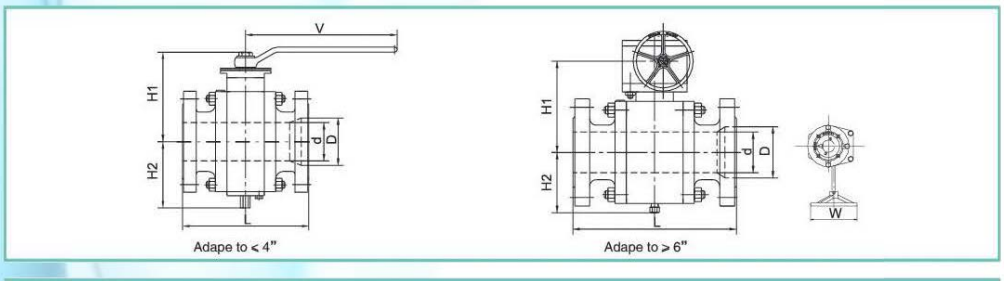
300LB Full bore -TM

Size		D		L				H1		H2		W		V		Weight	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	8.50	216	8.50	216	4.23	107.5	3.54	90			11.22	285	51	23
3	80	2.91	74	11.14	283	11.14	283	11.02	280	4.33	110	11.81	300			77	35
4	100	3.94	100	12.01	305	12.01	305	12.05	306	5.51	140	19.69	500			229	104
6	150	5.91	150	15.87	403	15.87	403	14.41	366	6.89	175	19.69	500			474	215
8	200	7.91	201	19.76	502	20.51	521	21.69	551	7.48	190	27.56	700			853	387
10	250	9.92	252	22.36	568	22.01	559	24.57	624	9.84	250	27.56	700			1411	640
12	300	11.93	303	25.51	648	25.00	635	27.60	701	12.44	316	29.92	760			1900	862
14	350	13.15	334	30.00	762	30.00	762	30.94	786	15.67	398	29.92	760			2976	1350
16	400	15.16	385	32.99	838	32.99	838	33.46	850	19.29	490	29.92	760			3439	1560
18	450	17.17	436	35.98	914	35.98	914	35.83	910	19.69	500	31.50	800			4643	2106
20	500	19.17	487	39.02	991	39.02	991	37.01	940	20.87	530	31.50	800			6173	2800
22	550	21.18	538	42.99	1092	42.99	1092	39.84	1012	23.11	587	31.50	800			7500	3402
24	600	23.19	589	45.00	1143	45.00	1143	42.52	1080	25.00	635	31.50	800			9259	4200
28	700	26.93	684	52.99	1346	52.99	1346	49.21	1250	31.10	790	31.50	800			13889	6300
30	750	28.94	735	55.00	1397	55.00	1397	51.97	1320	33.70	856	35.43	900			18827	8540
32	800	30.67	779	60.00	1524	60.00	1524	55.12	1400	36.22	920	35.43	900			22343	10135
34	850	32.68	830	64.02	1626	64.02	1626	59.69	1516	37.20	945	39.37	1000			24802	11250
36	900	34.41	874	67.99	1727	67.99	1727	64.06	1627	38.78	985	39.37	1000			31305	14200
40	1000	38.43	976	75.98	1930	75.98	1930	67.91	1725	40.47	1028	39.37	1000			42989	19500

300LB Reduced bore-TM

Size		D		d		L				H1		H2		W		V		Weight	
						RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	8.50	216	8.50	216	4.13	105	2.95	75			9.84	250	42	19
3*2	80*50	2.91	74	1.93	49	11.14	283	11.14	283	4.23	107.5	3.54	90			11.22	285	68	31
4*3	100*80	3.94	100	2.91	74	12.01	305	12.01	305	11.02	280	4.33	110	11.81	300			190	86
6*4	150*100	5.91	150	3.94	100	15.87	403	15.87	403	12.05	306	5.51	140	19.69	500			357	162
8*6	200*150	7.91	201	5.91	150	19.76	502	20.51	521	14.41	366	6.89	175	19.69	500			584	265
10*8	250*200	9.92	252	7.91	201	22.36	568	22.01	559	21.69	551	7.48	190	27.56	700			939	426
12*10	300*250	11.93	303	9.92	252	25.51	648	25.00	635	24.57	624	9.84	250	27.56	700			1499	680
14*12	350*300	13.15	334	11.93	303	30.00	762	30.00	762	27.60	701	12.44	316	29.92	760			2017	915
16*14	400*350	15.16	385	13.15	334	32.99	838	32.99	838	30.94	786	15.67	398	29.92	760			3100	1406
18*16	450*400	17.17	436	15.16	385	35.98	914	35.98	914	33.46	850	19.29	490	29.92	760			3642	1652
20*18	500*450	19.17	487	17.17	436	39.02	991	39.02	991	35.83	910	19.69	500	31.50	800			4859	2204
22*20	550*500	21.18	538	19.17	487	42.99	1092	42.99	1092	37.01	940	20.87	530	31.50	800			6504	2950
24*20	600*500	23.19	589	19.17	487	45.00	1143	45.00	1143	39.84	1012	23.11	587	31.50	800			8029	3642
28*24	700*600	26.93	684	23.19	589	52.99	1346	52.99	1346	42.52	1080	25.00	635	31.50	800			9614	4361
30*28	750*700	28.94	735	26.93	684	55.00	1397	55.00	1397	49.21	1250	31.10	790	31.50	800			14356	6512
32*30	800*750	30.67	779	28.94	735	60.00	1524	60.00	1524	51.97	1320	33.70	856	35.43	900			19894	9024
34*32	850*800	32.68	830	30.67	779	64.02	1626	64.02	1626	55.12	1400	36.22	920	35.43	900			24140	10950
36*32	900*800	34.41	874	30.67	779	67.99	1727	67.99	1727	59.69	1516	37.20	945	39.37	1000			26550	12043
40*36	1000*900	38.43	976	34.41	874	75.98	1930	75.98	1930	64.06	1627	38.78	985	39.37	1000			33216	15067

Dimension&Weight



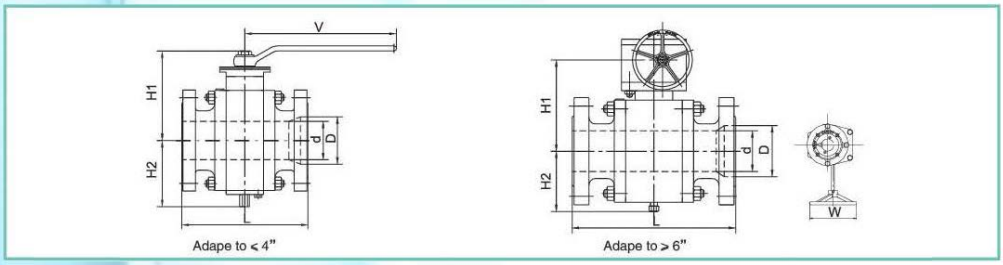
400LB Full bore-TM

Size		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	10.43	265	6.42	163	15.75	400			106	48
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.83	275	7.05	179	15.75	400			198	90
4	100	3.94	100	15.98	406	15.98	406	17.13	435	12.40	315	8.62	219	23.62	600			276	125
6	150	5.91	150	19.49	495	19.49	495	19.61	498	22.05	560	8.19	208	23.62	600			816	370
8	200	7.91	201	23.50	597	23.50	597	23.62	600	27.17	690	9.65	245	23.62	600			1499	680
10	250	9.92	252	26.50	673	26.50	673	26.61	676	24.92	633	12.05	306	23.62	600			2271	1030
12	300	11.93	303	30.00	762	30.00	762	30.12	765	26.18	665	13.74	349	29.92	760			2976	1350
14	350	13.15	334	32.52	826	32.52	826	32.64	829	24.37	619	15.75	400	27.56	700			4078	1850
16	400	15.16	385	35.51	902	35.51	902	35.63	905	29.06	738	17.72	450	29.92	760			4740	2150
18	450	17.17	436	38.50	978	38.50	978	38.62	981	30.83	783	19.76	502	35.43	900			6250	2835
20	500	19.17	487	41.50	1054	41.50	1054	41.73	1060	33.39	848	22.28	566	35.43	900			8025	3640
22	550	21.18	538	45.00	1143	45.00	1143	45.39	1153	37.56	954	23.31	592	39.37	1000			11728	5320
24	600	23.19	589	48.50	1232	48.50	1232	48.86	1241	40.04	1017	25.63	651	39.37	1000			15829	7180
28	700	26.93	684	55.00	1397	55.00	1397	55.51	1410	41.65	1058	27.83	707	39.37	1000			21032	9540
30	750	28.94	735	60.00	1524	60.00	1524	60.51	1537	44.69	1135	29.53	750	39.37	1000			23192	10520
32	800	30.67	779	65.00	1651	65.00	1651	65.63	1667	48.70	1237	30.94	786	43.54	1106			24802	11250
34	850	32.68	830	70.00	1778	70.00	1778	70.63	1794	51.34	1304	32.52	826	43.54	1106			28307	12840
36	900	34.41	874	74.02	1880	74.02	1880	73.82	1875	56.81	1443	35.51	902	43.54	1106			32518	14750
40	1000	38.43	976	85.43	2170	85.43	2170	85.43	2170	60.43	1535	38.86	987	43.54	1106			41226	18700

400LB Reduced bore -TM

Size		D		d		L						H1		H2		W		V		Weight	
						RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	11.50	292	11.50	292	11.61	295	8.11	206	5.71	145	15.75	400			88	40
3*2	80*50	2.91	74	1.93	49	14.02	356	14.02	356	14.13	359	10.43	265	6.42	163	15.75	400			168	76
4*3	100*80	3.94	100	2.91	74	15.98	406	15.98	406	17.13	435	10.83	275	7.05	179	15.75	400			231	105
6*4	150*100	5.91	150	3.94	100	19.49	495	19.49	495	19.61	498	12.40	315	8.62	219	23.62	600			617	280
8*6	200*150	7.91	201	5.91	150	23.50	597	23.50	597	23.62	600	22.05	560	8.19	208	23.62	600			1235	560
10*8	250*200	9.92	252	7.91	201	26.50	673	26.50	673	26.61	676	27.17	690	9.65	245	23.62	600			1653	750
12*10	300*250	11.93	303	9.92	252	30.00	762	30.00	762	30.12	765	24.92	633	12.05	306	23.62	600			2315	1050
14*12	350*300	13.15	334	11.93	303	32.52	826	32.52	826	32.64	829	26.18	665	13.74	349	29.92	760			3483	1580
16*14	400*350	15.16	385	13.15	334	35.51	902	35.51	902	35.63	905	24.37	619	15.75	400	27.56	700			4431	2010
18*16	450*400	17.17	436	15.16	385	38.50	978	38.50	978	38.62	981	29.06	738	17.72	450	29.92	760			5401	2450
20*18	500*450	19.17	487	17.17	436	41.50	1054	41.50	1054	41.73	1060	30.83	783	19.76	502	35.43	900			6702	3040
22*20	550*500	21.18	538	19.17	487	45.00	1143	45.00	1143	45.39	1153	33.39	848	22.28	566	35.43	900			10053	4560
24*20	600*500	23.19	589	19.17	487	48.50	1232	48.50	1232	48.86	1241	37.56	954	23.31	592	39.37	1000			13999	6350
28*24	700*600	26.93	684	23.19	589	55.00	1397	55.00	1397	55.51	1410	40.04	1017	25.63	651	39.37	1000			17670	8015
30*28	750*700	28.94	735	26.93	684	60.00	1524	60.00	1524	60.51	1537	41.65	1058	27.83	707	39.37	1000			22156	10050
32*30	800*750	30.67	779	28.94	735	65.00	1651	65.00	1651	65.63	1667	44.69	1135	29.53	750	39.37	1000			22222	10080
34*32	850*800	32.68	830	30.67	779	70.00	1778	70.00	1778	70.63	1794	48.70	1237	30.94	786	43.54	1106			24295	11020
36*32	900*800	34.41	874	30.67	779	74.02	1880	74.02	1880	73.82	1875	51.34	1304	32.52	826	43.54	1106			27337	12400
40*36	1000*900	38.43	976	34.41	874	85.43	2170	85.43	2170	85.43	2170	56.81	1443	35.51	902	43.54	1106			36486	16550

Dimension&Weight



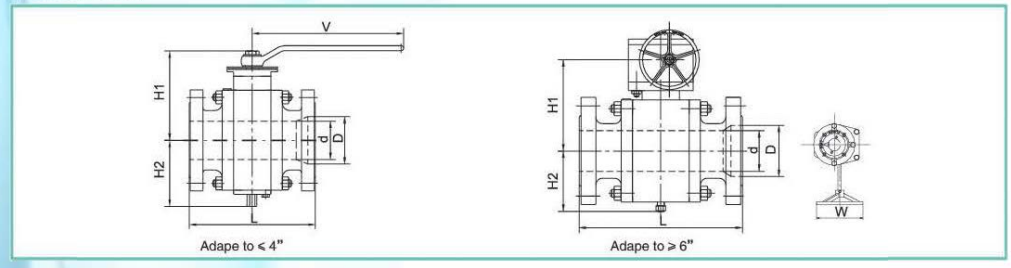
600LB Full bore-TM

Size		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	10.43	265	6.42	163	15.75	400			106	48
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.83	275	7.05	179	15.75	400			198	90
4	100	3.94	100	17.01	432	17.01	432	17.13	435	12.40	315	8.62	219	23.62	600			331	150
6	150	5.91	150	22.01	559	22.01	559	22.13	562	22.05	560	8.19	208	23.62	600			970	440
8	200	7.91	201	25.98	660	25.98	660	26.14	664	27.17	690	9.65	245	23.62	600			1786	810
10	250	9.92	252	30.98	787	30.98	787	31.14	791	24.92	633	12.05	306	23.62	600			2723	1235
12	300	11.93	303	32.99	838	32.99	838	33.11	841	26.18	665	13.74	349	29.92	760			3571	1620
14	350	13.15	334	35.00	889	35.00	889	35.12	892	24.37	619	15.75	400	29.92	760			4486	2035
16	400	15.16	385	39.02	991	39.02	991	39.17	995	29.06	738	17.72	450	29.92	760			5688	2580
18	450	17.17	436	42.99	1092	42.99	1092	43.11	1095	30.83	783	19.76	502	35.43	900			7496	3400
20	500	19.17	487	47.01	1194	47.01	1194	47.24	1200	33.39	848	22.28	566	35.43	900			9612	4360
22	550	21.18	538	50.98	1295	50.98	1295	51.38	1305	37.56	954	23.31	592	39.37	1000			14065	6380
24	600	23.19	589	55.00	1397	55.00	1397	55.39	1407	40.04	1017	25.63	651	39.37	1000			18959	8600
28	700	26.93	684	60.98	1549	60.98	1549	61.50	1562	41.65	1058	27.83	707	39.37	1000			25000	11340
30	750	28.94	735	65.00	1651	65.00	1651	65.51	1664	44.69	1135	29.53	750	39.37	1000			27822	12620
32	800	30.67	779	70.00	1778	70.00	1778	70.63	1794	48.70	1237	30.94	786	43.54	1106			29762	13500
34	850	32.68	830	75.98	1930	75.98	1930	76.61	1946	51.34	1304	32.52	826	43.54	1106			33951	15400
36	900	34.41	874	82.01	2083	82.01	2083	82.56	2097	56.81	1443	35.51	902	43.54	1106			39021	17700
40	1000	38.43	976	85.43	2170	85.43	2170	85.43	2170	60.43	1535	38.86	987	43.54	1106			49363	22400

600LB Reduced bore -TM

Size		D		d		L						H1		H2		W		V		Weight	
						RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	11.50	292	11.50	292	11.61	295	8.11	206	5.71	145	11.81	300			88	40
3*2	80*50	2.91	74	1.93	49	14.02	356	14.02	356	14.13	359	10.43	265	6.42	163	15.75	400			168	76
4*3	100*80	3.94	100	2.91	74	17.01	432	17.01	432	17.13	435	10.83	275	7.05	179	15.75	400			231	105
6*4	150*100	5.91	150	3.94	100	22.01	559	22.01	559	22.13	562	12.40	315	8.62	219	23.62	600			741	336
8*6	200*150	7.91	201	5.91	150	25.98	660	25.98	660	26.14	664	22.05	560	8.19	208	23.62	600			1477	670
10*8	250*200	9.92	252	7.91	201	30.98	787	30.98	787	31.14	791	27.17	690	9.65	245	23.62	600			1984	900
12*10	300*250	11.93	303	9.92	252	32.99	838	32.99	838	33.11	841	24.92	633	12.05	306	23.62	600			2778	1260
14*12	350*300	13.15	334	11.93	303	35.00	889	35.00	889	35.12	892	26.18	665	13.74	349	29.92	760			4167	1890
16*14	400*350	15.16	385	13.15	334	39.02	991	39.02	991	39.17	995	24.37	619	15.75	400	29.92	760			5313	2410
18*16	450*400	17.17	436	15.16	385	42.99	1092	42.99	1092	43.11	1095	29.06	738	17.72	450	29.92	760			6481	2940
20*18	500*450	19.17	487	17.17	436	47.01	1194	47.01	1194	47.24	1200	30.83	783	19.76	502	35.43	900			8025	3640
22*20	550*500	21.18	538	19.17	487	50.98	1295	50.98	1295	51.38	1305	33.39	848	22.28	566	35.43	900			12059	5470
24*20	600*500	23.19	589	19.17	487	55.00	1397	55.00	1397	55.39	1407	37.56	954	23.31	592	39.37	1000			16799	7620
28*24	700*600	26.93	684	23.19	589	60.98	1549	60.98	1549	61.50	1562	40.04	1017	25.63	651	39.37	1000			21164	9600
30*28	750*700	28.94	735	26.93	684	65.00	1651	65.00	1651	65.51	1664	41.65	1058	27.83	707	39.37	1000			26587	12060
32*30	800*750	30.67	779	28.94	735	70.00	1778	70.00	1778	70.63	1794	44.69	1135	29.53	750	39.37	1000			26653	12090
34*32	850*800	32.68	830	30.67	779	75.98	1930	75.98	1930	76.61	1946	48.70	1237	30.94	786	43.54	1106			29145	13220
36*32	900*800	34.41	874	30.67	779	82.01	2083	82.01	2083	82.56	2097	51.34	1304	32.52	826	43.54	1106			32804	14880
40*36	1000*900	38.43	976	34.41	874	85.43	2170	85.43	2170	85.43	2170	56.81	1443	35.51	902	43.54	1106			40873	18540

Dimension&Weight



900LB Full bore-TM

Size		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	12.20	310	4.53	115	19.69	500			220	100
3	80	2.91	74	15.00	381	15.00	381	15.12	384	11.10	282	4.69	119	15.75	400			331	150
4	100	3.94	100	17.99	457	17.99	457	18.11	460	15.75	400	7.87	200	23.62	600			485	220
6	150	5.91	150	24.02	610	24.02	610	24.13	613	18.98	482	8.78	223	29.92	760			1168	530
8	200	7.91	201	29.02	737	29.02	737	29.13	740	19.76	502	12.87	327	29.92	760			1351	613
10	250	9.92	252	32.99	838	32.99	838	33.11	841	20.83	529	14.69	373	31.50	800			2394	1086
12	300	11.93	303	37.99	965	37.99	965	38.11	968	36.81	935	13.15	334	35.43	900			6085	2760
14	350	12.68	322	40.51	1029	40.51	1029	40.87	1038	37.99	965	13.78	350	39.37	1000			6834	3100
16	400	14.69	373	44.49	1130	44.49	1130	44.88	1140	44.09	1120	18.90	480	39.37	1000			11376	5160
18	450	16.65	423	47.99	1219	47.99	1219	48.50	1232	46.54	1182	20.71	526	43.54	1106			16182	7340
20	500	18.54	471	52.01	1321	52.01	1321	52.52	1334	49.45	1256	22.80	579	43.54	1106			19892	9023

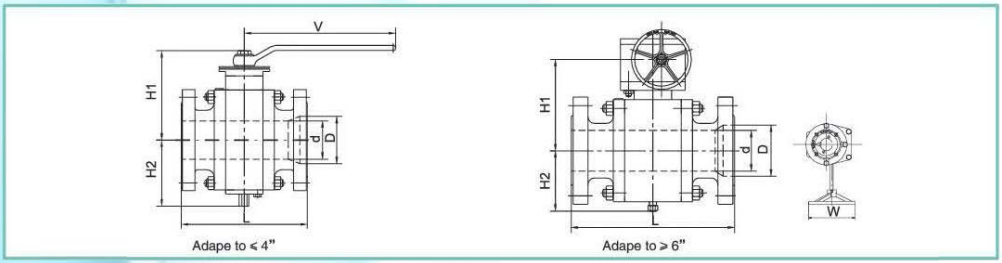
900LB Reduced bore -TM

Size		D		d		L						H1		H2		W		V		Weight	
						RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	14.49	368	14.49	368	14.61	371	8.54	217	4.69	119	15.75	400			157	71
3*2	80*50	2.91	74	1.93	49	15.00	381	15.00	381	15.12	384	12.20	310	4.53	115	19.69	500			220	100
4*3	100*80	3.94	100	2.91	74	17.99	457	17.99	457	18.11	460	11.10	282	4.69	119	15.75	400			331	150
6*4	150*100	5.91	150	3.94	100	24.02	610	24.02	610	24.13	613	15.75	400	7.87	200	23.62	600			485	220
8*6	200*150	7.91	201	5.91	150	29.02	737	29.02	737	29.13	740	18.98	482	8.78	223	29.92	760			1168	530
10*8	250*200	9.92	252	7.91	201	32.99	838	32.99	838	33.11	841	19.76	502	12.87	327	29.92	760			1351	613
12*10	300*250	11.93	303	9.92	252	37.99	965	37.99	965	38.11	968	20.83	529	14.69	373	31.50	800			2394	1086
14*12	350*300	12.68	322	11.93	303	40.51	1029	40.51	1029	40.87	1038	36.81	935	13.15	334	35.43	900			6085	2760
16*14	400*350	14.69	373	12.68	322	44.49	1130	44.49	1130	44.88	1140	37.99	965	13.78	350	39.37	1000			6834	3100
18*16	450*400	16.65	423	14.69	373	47.99	1219	47.99	1219	48.50	1232	44.09	1120	18.90	480	39.37	1000			11376	5160
20*18	500*450	18.54	471	16.65	423	52.01	1321	52.01	1321	52.52	1334	46.54	1182	20.71	526	43.54	1106			16182	7340

1500LB Full bore-TM

Size		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	12.20	310	4.92	125	19.69	500			271	123
3	80	2.91	74	18.50	470	18.50	470	18.62	473	14.17	360	6.69	170	23.62	600			516	234
4	100	3.94	100	21.50	546	21.50	546	21.61	549	16.93	430	7.09	180	23.62	600			902	409
6	150	5.67	144	27.76	705	27.76	705	27.99	711	21.46	545	12.28	312	29.92	760			1984	900
8	200	7.56	192	32.76	832	32.76	832	33.11	841	27.17	690	15.75	400	29.92	760			2873	1303
10	250	9.41	239	39.02	991	39.02	991	39.37	1000	29.13	740	19.13	486	29.92	760			5538	2512
12	300	11.30	287	44.49	1130	44.49	1130	45.12	1146	31.10	790	21.10	536	29.92	760			7275	3300
14	350	12.40	315	49.49	1257	49.49	1257	50.24	1276	33.58	853	23.27	591	35.43	900			8466	3840
16	400	14.17	360	54.49	1384	54.49	1384	55.39	1407	35.91	912	24.41	620	35.43	900			9524	4320
18	450	15.98	406	60.51	1537	60.51	1537	61.38	1559	37.40	950	26.97	685	39.37	1000			10935	4960
20	500	17.87	454	65.51	1664	65.51	1664	66.38	1686	38.58	980	27.56	700	39.37	1000			12125	5500

Dimension&Weight



1500LB Reduced bore -TM

Size		D		d		L						H1		H2		W		V		Weight	
						RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.93	49	1.50	38	14.49	368	14.49	368	14.61	371	12.20	310	4.92	125	19.69	500			245	111
3*2	80*50	2.91	74	1.93	49	18.50	470	18.50	470	18.62	473	14.17	360	6.69	170	23.62	600			485	220
4*3	100*80	3.94	100	2.91	74	21.50	546	21.50	546	21.61	549	16.93	430	7.09	180	23.62	600			714	324
6*4	150*100	5.67	144	3.94	100	27.76	705	27.76	705	27.99	711	21.46	545	12.28	312	29.92	760			1814	823
8*6	200*150	7.56	192	5.67	144	32.76	832	32.76	832	33.11	841	27.17	690	15.75	400	29.92	760			2873	1303
10*8	250*200	9.41	239	7.56	192	39.02	991	39.02	991	39.37	1000	29.13	740	19.13	486	29.92	760			4630	2100
12*10	300*250	11.30	287	9.41	239	44.49	1130	44.49	1130	45.12	1146	31.10	790	21.10	536	29.92	760			6426	2915
14*12	350*300	12.40	315	11.30	287	49.49	1257	49.49	1257	50.24	1276	33.58	853	23.27	591	35.43	900			7551	3425
16*14	400*350	14.17	360	12.40	315	54.49	1384	54.49	1384	55.39	1407	35.91	912	24.41	620	35.43	900			8873	4025
18*16	450*400	15.98	406	14.17	360	60.51	1537	60.51	1537	61.38	1559	37.40	950	26.97	685	39.37	1000			10194	4624
20*18	500*450	17.87	454	15.98	406	65.51	1664	65.51	1664	66.38	1686	38.58	980	27.56	700	39.37	1000			11023	5000

2500LB Full bore-TM

Size		D		L						H1		H2		W		V		Weight	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2	50	1.65	42	17.76	451	17.76	451	17.87	454	13.88	352.5	6.30	160	19.69	500			503	228
3	80	2.44	62	22.76	578	22.76	578	22.99	584	14.65	372	7.09	180	23.62	600			836	379
4	100	3.43	87	26.50	673	26.50	673	26.89	683	19.45	494	8.27	210	23.62	600			1248	566
6	150	5.16	131	35.98	914	35.98	914	36.50	927	26.69	678	14.96	380	29.92	760			2403	1090
8	200	7.05	179	40.24	1022	40.24	1022	40.87	1038	35.04	890	19.29	490	29.92	760			6195	2810
10	250	8.78	223	50.00	1270	50.00	1270	50.87	1292	37.64	956	19.76	502	35.43	900			9524	4320
12	300	10.43	265	55.98	1422	55.98	1422	56.89	1445	40.28	1023	22.05	560	39.37	1000			11486	5210

2500LB Reduced bore -TM

Size		D		d		L						H1		H2		W		V		Weight	
						RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	lb	Kg
2*1-1/2	50*40	1.65	42	1.50	38	17.76	451	17.76	451	17.87	454	13.88	352.5	6.30	160	19.69	500			452	205
3*2	80*50	2.44	62	1.65	42	22.76	578	22.76	578	22.99	584	14.65	372	7.09	180	23.62	600			683	310
4*3	100*80	3.43	87	2.44	62	26.50	673	26.50	673	26.89	683	19.45	494	8.27	210	23.62	600			943	430
6*4	150*100	5.16	131	3.43	87	35.98	914	35.98	914	36.50	927	26.69	678	14.96	380	29.92	760			1918	870
8*6	200*150	7.05	179	5.16	131	40.24	1022	40.24	1022	40.87	1038	35.04	890	19.29	490	29.92	760			5071	2300
10*8	250*200	8.78	223	7.05	179	50.00	1270	50.00	1270	50.87	1292	37.64	956	19.76	502	35.43	900			8025	3640
12*10	300*250	10.43	265	8.78	223	55.98	1422	55.98	1422	56.89	1445	40.28	1023	22.05	560	39.37	1000			9921	4500

·EA(finite element analysis)

Typical application

1. Coal chemical industry: coal-to-liquids, coal-to-methanol, coal gasification.
2. High sour gas field with abrasive solids.
3. Shipbuilding, offshore.
4. Oxygen service.
5. Photovoltaic industry: polysilicon
6. Other working condition in high temperature or with abrasive solids.

Design and production features

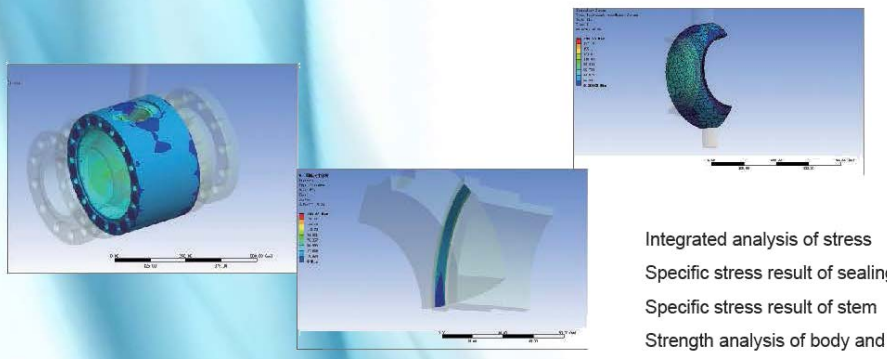
Sealing structure of the seat
Bi-directional sealing of the valve. The seat is able to block the media from both sides of the valve, thus eliminating the limit of installing direction.
Preloading of belleville spring or cylinder spring to ensure sealing in low pressure.
Dust proof structure of the spring.

Live loading packing
The Belleville spring is added on gland flange to minimize need of packing retightening.

Choosing of sealing material
For all the gaskets and packing in relate to the sealing parts, the purity of the graphite is strictly controlled to lower the ignition lost rate and ensure the sealing performance in high temperature.

Design and analysis software

All the designs are verified in accordance with 3D Finite Element Analysis.
Neway has rich application experience in design software such as CAD, Solidworks, NX, Ansys, Fesafe, Cfdesign.



Integrated analysis of stress
Specific stress result of sealing face
Specific stress result of stem
Strength analysis of body and closure

Valve Types		ASME Class			End Connections		Operator	
Symbol	Valve Type	Code	Class(LB)	Pressure	Symbol	End		Lever
BM	2-pcs Casting floating type	1	150	2.0Mpa	R	Raised face flanged end	G	Gear operator
BBM	2-pcs forging floating type	3	300	5.0Mpa	J	RTJ flanged end	M	Electric actuator
BSM	3-pcs forging trunnion mounted type	4	400	6.8Mpa	B	Butt-weld end	P	Pneumatic actuator
		6	600	10.0Mpa	S	Socket weld end	BS	Bare shaft
BSK	2-pcs forging trunnion mounted type(O-ring)	8	800	14.0Mpa	N	Screwed end	H	Hydraulic actuator
		9	900	15.0Mpa	SN	Socket weld/Screwed end	L	Gas over oil actuator
		15	1500	25.0Mpa			C	Gear operator(Operator force≤350N)
		25	2500	42.0Mpa				

Torque Value

Engineering Data

BM/BBM

in	150LB		300LB		600LB		800LB		900LB		1500LB		2500LB	
	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs
1/4	4.5	3	6	4	8.9	7	10.8	8	12	9	17.5	13	35.6	26
1/2	10	7	14	10	26	19	31	23	33	24	48	35	92	68
3/4	16	12	29	21	52	38	80	59	88	65	140	103	295	218
1	31	23	59	44	146	108	190	140	210	155	350	258	718	529
1-1/2	76	56	146	108	296	218	385	284	430	317	550	406		
2	145	107	273	201	550	406	750	553	830	612				
2-1/2	280	206	530	391	950	701								
3	370	273	680	501	1320	973								
4	720	531	1420	1047	3400	2507								

BSM

in	150LB		300LB		600LB		900LB		1500LB		2500LB	
	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs
1-1/2	120	88	200	147	320	236	560	413	1360	1003	2400	1770
2	140	103	265	195	490	361	810	597	1450	1069	2800	2605
2-1/2	205	151	390	288	702	518	1200	885	2100	1549	4300	3171
3	290	214	530	391	980	723	1600	1180	2800	2065	5640	4159
4	450	332	1080	796	2113	1558	3100	2286	5600	4130	10000	7375
5	913	673	1830	1350	3383	2495	5800	4277	9800	7227	18600	13717
6	1450	1069	2950	2176	5510	4063	8700	6416	15800	11652	32000	23599
8	2880	2124	6000	4425	11320	8348	18000	13274	30000	22124	50000	36873
10	4500	3319	9300	6858	19000	14012	31600	23304	42300	31195	57000	42035
12	8400	6195	14600	10767	31700	23378	54200	39971				
14	9300	6858	18300	13496	37000	27286	61100	45059				
16	14000	10324	31000	22861	65000	47936	116000	85546				
18	17800	13127	36000	26549	73500	54204	128000	94395				
20	19550	14417	39000	28761	77000	56785	139500	102876				
22	23560	17375	46200	34071	86200	63569						
24	26250	19358	51704	38130	93400	68879						

BSK

in	150LB		300LB		600LB		900LB		1500LB		2500LB	
	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs	N.m	Ft/Lbs
1-1/2	81	60	134	99	215	159	376	277	912	637	1608	1186
2	94	69	178	131	329	243	543	400	972	717	1876	1383
2-1/2	138	102	262	193	471	347	804	593	1407	1038	2881	2125
3	195	144	356	263	657	485	1072	791	1876	1383	3779	2787
4	302	223	724	534	1416	1044	2077	1532	3752	2767	6700	4941
5	612	451	1227	905	2267	1672	3886	2866	6566	4842	12462	9190
6	972	717	1977	1458	3692	2723	5829	4299	10586	7807	21440	15811
8	1930	1423	4020	2965	7585	5594	12060	8894	20100	14823	33500	24705
10	3015	2223	6231	4595	12730	9388	21172	15614	28340	20900	38190	28164
12	5628	4150	9782	7214	21239	15663	36314	26780				
14	6321	4662	12261	9042	24790	18282	40937	30190				
16	9380	6917	20770	15317	43550	32117	77720	57316				
18	11926	8795	24120	17788	49245	36316	85760	63240				
20	13099	9660	26130	19270	51590	38046	93465	68927				
22	15785	11641	30954	22827	57754	42591						
24	17587	12970	34642	25547	62578	46149						

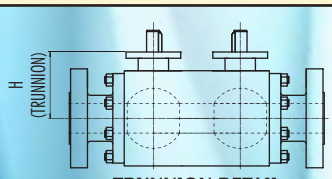
NOTE: 1.Torque is calculated based on 100℃.
2.Torque may be changed according to different fluid and trim material.
3.Torque shown in this table is to be used as a guide for actuator selection . A safety factor of 1.3~1.5 is recommended for actuator sizing.

Double Block And Bleed Ball Valves

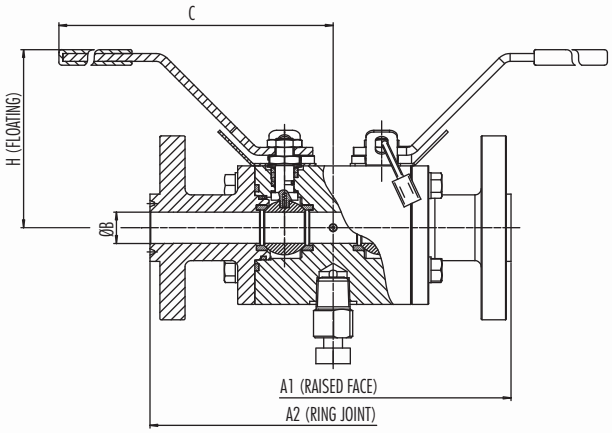
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 150

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	208	–	14	225	110	8,5	1-E333R
3/4"	FLOATING	215	–	20	228	112	9,5	1-E444R
1"	FLOATING	230	240	25,4	233	116	12	1-E555R
1-1/2"	FLOATING	282	292	38	305	135	18	1-E777R
2"	FLOATING	330	340	49	310	145	23	1-E888R
3"	FLOATING	390	400	76	520	190	43	1-EMMMR
4"	FLOATING	440	450	100	535	210	83	1-ENNNR
6"	FLOATING	630	640	150	870	260	149	1-EPPPR
8"	TRUNNION	830	840	202	–	280	440	1-FQQQR

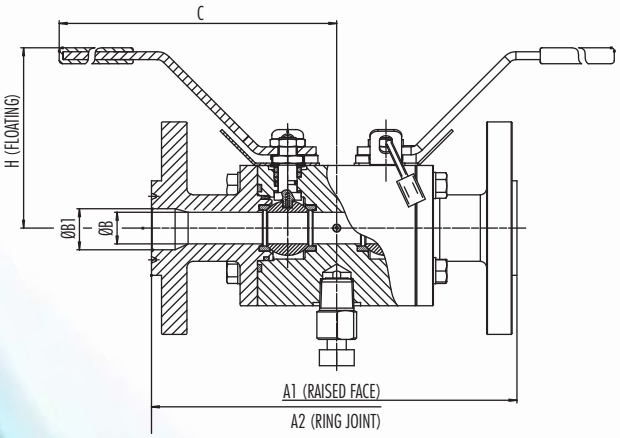


TRUNNION DETAIL



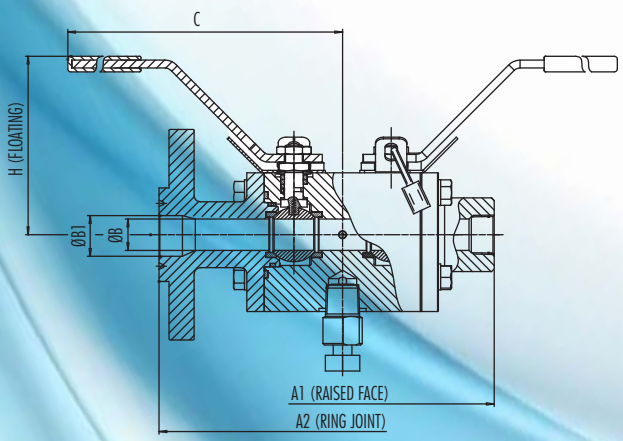
REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	212	–	14	20	225	110	10	1-E434R
1"	FLOATING	219	229	20	25,4	228	112	11,5	1-E545R
1-1/2"	FLOATING	237	247	25,4	38	233	116	16	1-E757R
2"	FLOATING	286	296	38	49	305	135	22	1-E878R
3"	FLOATING	340	350	49	76	310	145	29	1-EM8MR
4"	FLOATING	390	400	76	100	520	190	50	1-ENMNR
6"	FLOATING	444	454	100	150	535	210	98	1-EPNPR
8"	FLOATING	636	646	150	202	870	260	160	1-EQPQR



FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

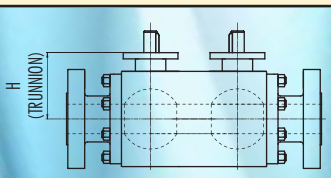
SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	178	–	14	14	225	110	8	1-E333X
3/4"	FLOATING	180	–	14	20	225	110	8,5	1-E433X
1"	FLOATING	182	187	14	25,4	225	110	10	1-E533X
1-1/2"	FLOATING	184	189	14	38	225	110	13	1-E733X
2"	FLOATING	186	191	14	49	225	110	16	1-E833X
3"	FLOATING	191	201	14	76	225	110	21	1-EM33X



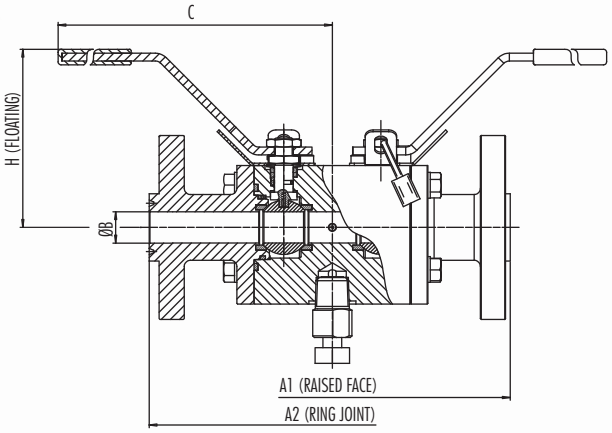
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 300

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	214	224	14	225	110	9,5	3-E333R
3/4"	FLOATING	221	231	20	228	112	10,5	3-E444R
1"	FLOATING	238	248	25,4	233	116	13	3-E555R
1-1/2"	FLOATING	288	298	38	305	135	22	3-E777R
2"	FLOATING	336	348	49	310	145	28	3-E888R
3"	FLOATING	400	412	76	520	190	52	3-EMMMR
4"	FLOATING	465	477	100	535	210	114	3-ENNNR
6"	TRUNNION	720	732	151	–	250	320	3-FPPPR
8"	TRUNNION	880	892	202	–	280	482	3-FQQQR

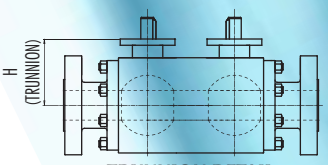


TRUNNION DETAIL

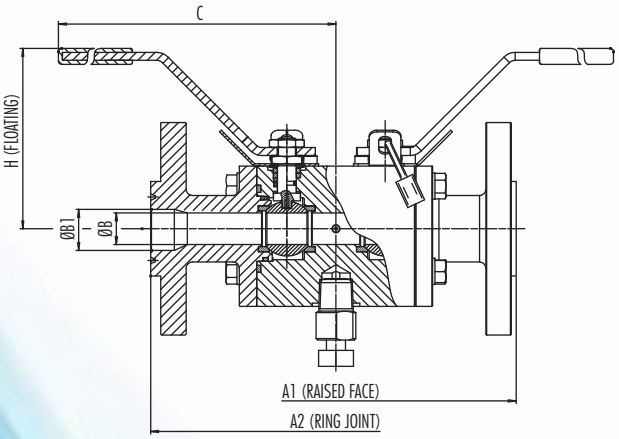


REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	218	228	14	20	225	110	11,5	3-E434R
1"	FLOATING	225	235	20	25,4	228	112	13	3-E545R
1-1/2"	FLOATING	246	256	25,4	38	233	116	18	3-E757R
2"	FLOATING	292	298	38	49	305	135	27	3-E878R
3"	FLOATING	348	360	49	76	310	145	35	3-EM8MR
4"	FLOATING	408	420	76	100	520	190	60	3-ENMNR
6"	FLOATING	475	487	100	150	535	210	130	3-EPNPR
8"	TRUNNION	740	752	151	202	–	250	354	3-FQPQR

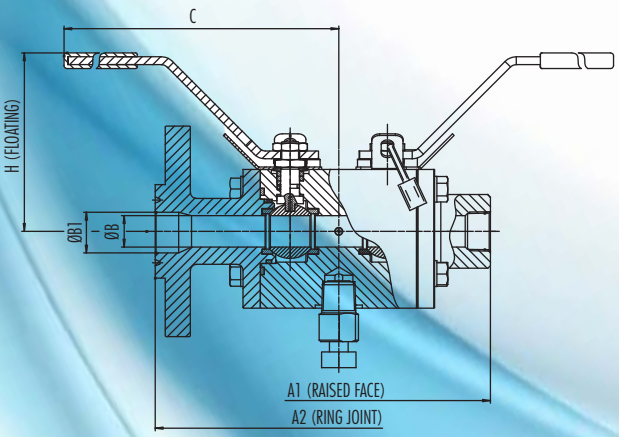


TRUNNION DETAIL



FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

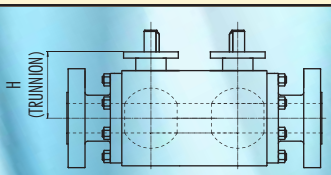
SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	181	185	14	14	225	110	8,5	3-E333X
3/4"	FLOATING	183	188	14	20	225	110	9	3-E433X
1"	FLOATING	185	190	14	25,4	225	110	10,5	3-E533X
1-1/2"	FLOATING	188	193	14	38	225	110	13,5	3-E733X
2"	FLOATING	190	196	14	49	225	110	17	3-E833X
3"	FLOATING	197	203	14	76	225	110	22,5	3-EM33X



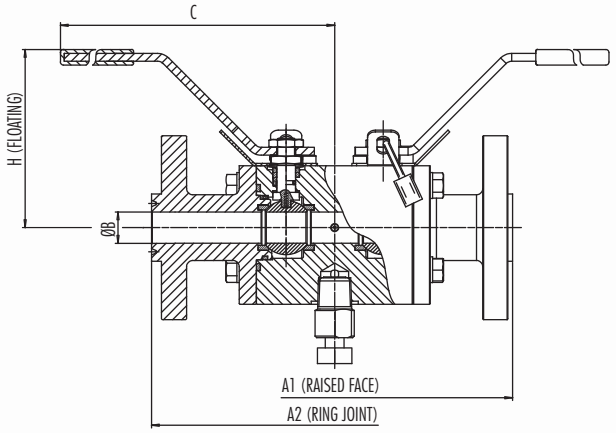
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 600

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	228	226	14	225	110	10	6-E333R
3/4"	FLOATING	234	234	20	228	112	11	6-E444R
1"	FLOATING	252	252	25,4	233	116	14	6-E555R
1-1/2"	FLOATING	325	325	38	305	135	24	6-E777R
2"	FLOATING	353	356	49	310	145	31	6-E888R
3"	FLOATING	462	465	76	520	190	57	6-EMMMR
4"	TRUNNION	697	700	101	–	197	240	6-FNNNR
6"	TRUNNION	877	880	151	–	250	420	6-FPPPR
8"	TRUNNION	1050	1053	202	–	290	670	6-FQQQR

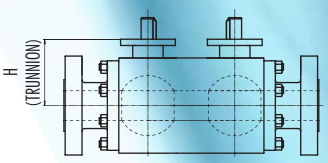


TRUNNION DETAIL

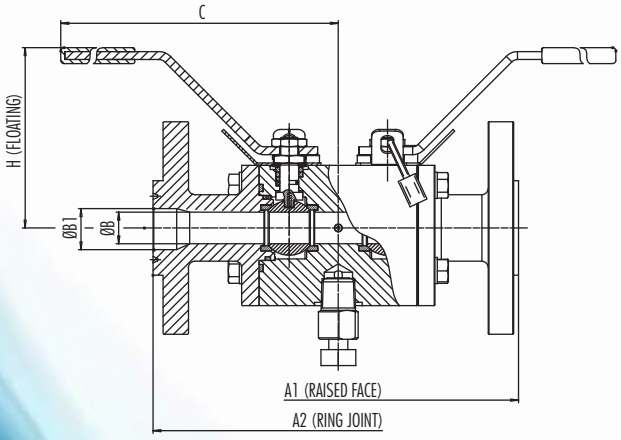


REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	230	230	14	20	225	110	13	6-E434R
1"	FLOATING	238	238	20	25,4	228	112	14,5	6-E545R
1-1/2"	FLOATING	262	262	25,4	38	233	116	20	6-E757R
2"	FLOATING	332	338	38	49	305	135	30	6-E878R
3"	FLOATING	368	371	49	76	310	145	40	6-EM8MR
4"	FLOATING	477	480	76	100	520	190	66	6-ENMNR
6"	TRUNNION	727	730	101	151	–	197	280	6-FPNPR
8"	TRUNNION	907	910	151	202	–	250	470	6-FQPQR

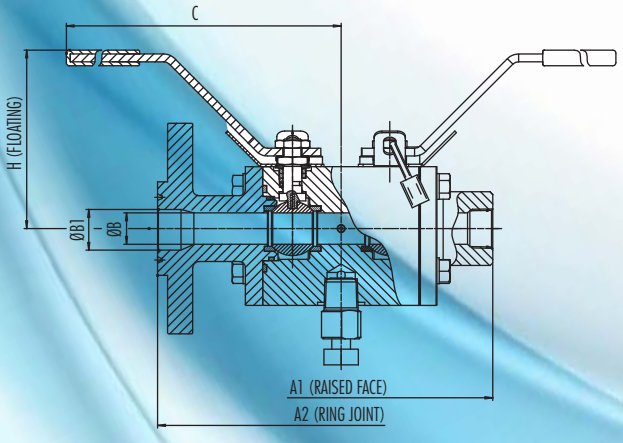


TRUNNION DETAIL



FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

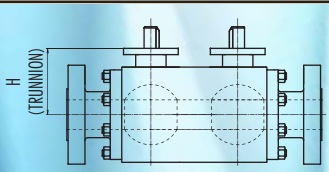
SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	188	187	14	14	225	110	9	6-E333X
3/4"	FLOATING	189	189	14	20	225	110	9,5	6-E433X
1"	FLOATING	191	191	14	25,4	225	110	11	6-E533X
1-1/2"	FLOATING	196	196	14	38	225	110	14	6-E733X
2"	FLOATING	199	200	14	49	225	110	18	6-E833X
3"	FLOATING	206	207	14	76	225	110	24	6-EM33X



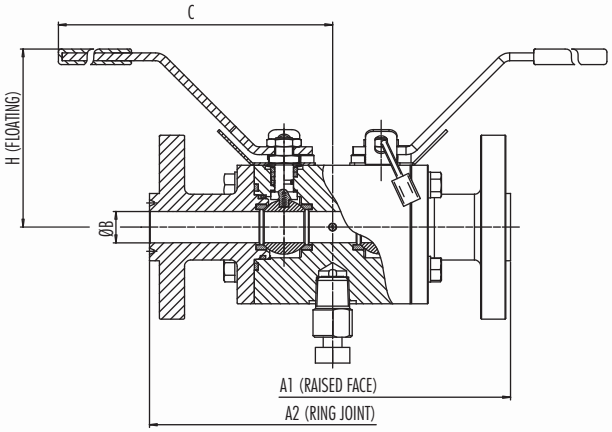
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 900

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	276	276	11,1	225	112	13	90H E333R
3/4"	FLOATING	287	287	15,5	228	114	16	90H E444R
1"	FLOATING	330	330	21	295	122	21	90H E555R
1-1/2"	FLOATING	400	400	34	410	155	46	90H E777R
2"	FLOATING	464	467	43	415	162	63	90H E888R
3"	TRUNNION	647	650	75	–	180	150	90H FMMMR
4"	TRUNNION	747	750	101	–	220	315	90H FNNNR
6"	TRUNNION	977	980	151	–	260	775	90H FPPPR
8"	TRUNNION	1197	1200	202	–	300	1330	90H FQQQR

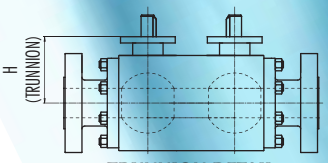


TRUNNION DETAIL

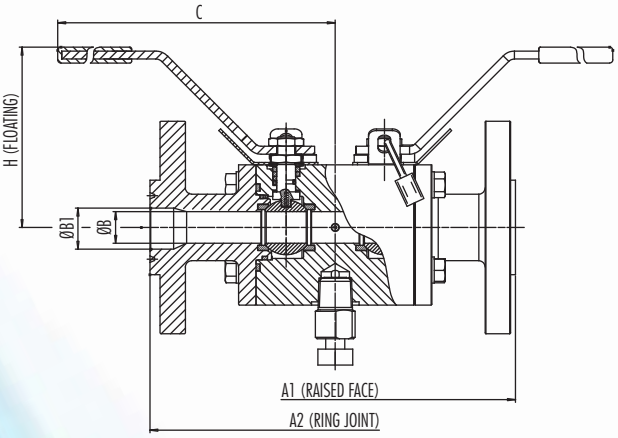


REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	282	282	11,1	15,5	225	112	16	90H E434R
1"	FLOATING	295	295	15,5	21	228	114	19	90H E545R
1-1/2"	FLOATING	340	340	21	34	295	122	28	90H E757R
2"	FLOATING	412	415	34	43	410	155	55	90H E878R
3"	FLOATING	442	445	43	65	415	162	75	90H EM8MR
4"	TRUNNION	662	665	75	101	–	180	180	90H FNMNR
6"	TRUNNION	772	775	101	151	–	220	390	90H FPNPR
8"	TRUNNION	1017	1020	151	202	–	260	870	90H FQPQR

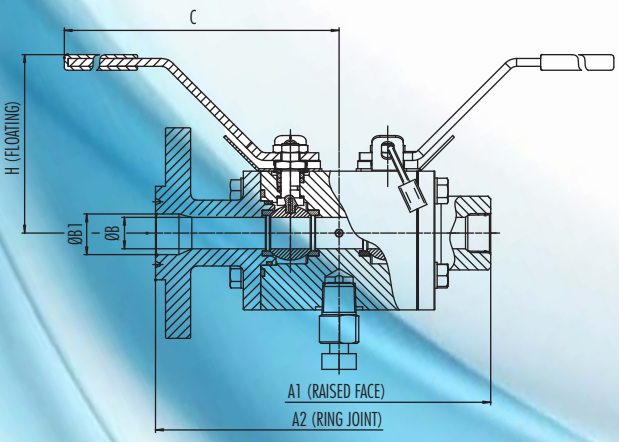


TRUNNION DETAIL



FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

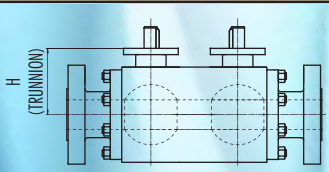
SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	221	221	11,1	11,1	225	112	11	90H E333X
3/4"	FLOATING	224	224	11,1	15,5	225	112	12	90H E433X
1"	FLOATING	231	231	11,1	21	225	112	13	90H E533X
1-1/2"	FLOATING	235	235	11,1	34	225	112	17	90H E733X
2"	FLOATING	239	240	11,1	43	225	112	22	90H E833X
3"	FLOATING	244	245	11,1	65	225	112	30	90H EM33X



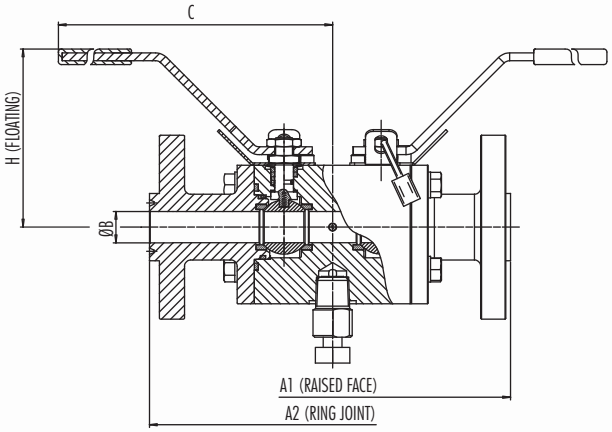
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 1500

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	276	276	11,1	225	112	13	15H E333R
3/4"	FLOATING	287	287	15,5	228	114	16	15H E444R
1"	FLOATING	330	330	21	295	122	21	15H E555R
1-1/2"	FLOATING	400	400	34	410	155	46	15H E777R
2"	FLOATING	464	467	43	415	162	63	15H E888R
3"	TRUNNION	697	700	75	–	180	170	15H FMMMR
4"	TRUNNION	827	830	101	–	220	340	15H FNNNR
6"	TRUNNION	1084	1090	145	–	270	820	15H FPPPR
8"	TRUNNION	1340	1350	193	–	310	1400	15H FQQQR

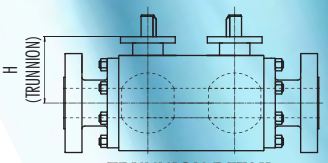


TRUNNION DETAIL

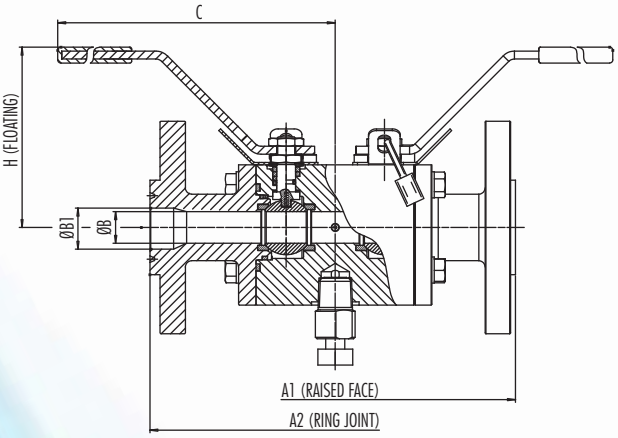


REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	282	282	11,1	15,5	225	112	16	15H E434R
1"	FLOATING	295	295	15,5	21	228	114	19	15H E545R
1-1/2"	FLOATING	340	340	21	34	295	122	28	15H E757R
2"	FLOATING	412	415	34	43	410	155	55	15H E878R
3"	FLOATING	452	455	43	65	415	162	80	15H EM8MR
4"	TRUNNION	737	740	75	101	–	180	210	15H FNMNR
6"	TRUNNION	894	900	101	145	–	220	430	15H FPNPR
8"	TRUNNION	1120	1130	145	193	–	270	940	15H FQPQR

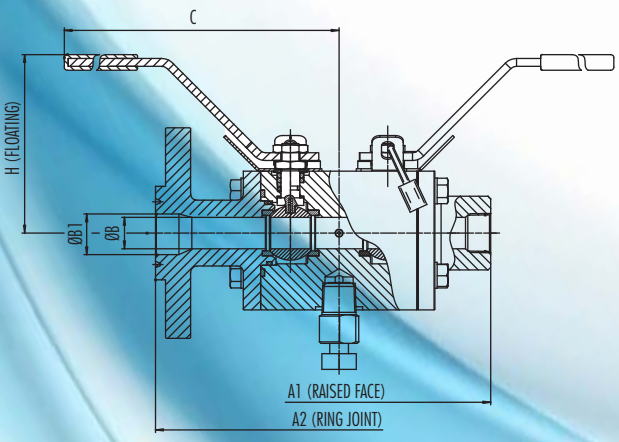


TRUNNION DETAIL



FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

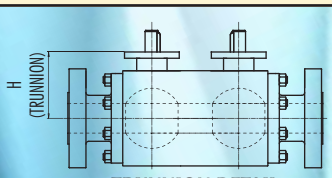
SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	221	221	11,1	11,1	225	112	11	15H E333X
3/4"	FLOATING	224	224	11,1	15,5	225	112	12	15H E433X
1"	FLOATING	231	231	11,1	21	225	112	13	15H E533X
1-1/2"	FLOATING	235	235	11,1	34	225	112	17	15H E733X
2"	FLOATING	239	240	11,1	43	225	112	22	15H E833X
3"	FLOATING	254	255	11,1	65	225	112	33	15H EM33X



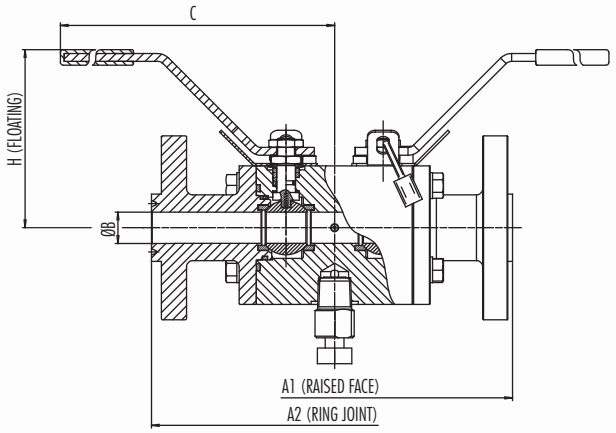
DOUBLE BLOCK AND BLEED VALVE - ASME CLASS 2500

FULL BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	C	H	Weight Kg	Figure N°
1/2"	FLOATING	291	291	11,1	225	112	16	25H E333R
3/4"	FLOATING	300	300	15,5	228	114	19	25H E444R
1"	FLOATING	350	350	21	295	122	35	25H E555R
1-1/2"	TRUNNION	565	565	32	–	100	90	25H F777R
2"	TRUNNION	652	655	43	–	125	150	25H F888R
3"	TRUNNION	864	870	63	–	190	340	25H FMMMR
4"	TRUNNION	990	1000	88	–	240	660	25H FNNNR
6"	TRUNNION	1317	1330	131	–	280	1390	25H FPPPR
8"	TRUNNION	1484	1500	179	–	380	2480	25H FQQQR

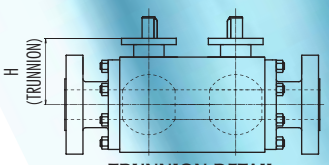


TRUNNION DETAIL

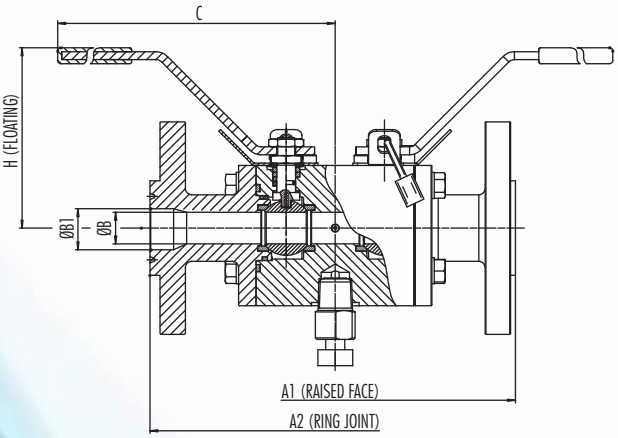


REDUCED BORE DESIGN - FLANGED ENDS

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
3/4"	FLOATING	294	294	11,1	15,5	225	112	19	25H E434R
1"	FLOATING	310	310	15,5	21	228	114	22	25H E545R
1-1/2"	FLOATING	370	373	21	34	295	122	45	25H E757R
2"	TRUNNION	577	580	32	43	–	100	110	25H F878R
3"	TRUNNION	694	700	43	63	–	125	210	25H FM8MR
4"	TRUNNION	890	900	63	88	–	190	440	25H FNMNR
6"	TRUNNION	1067	1080	88	131	–	240	800	25H FPNPR
8"	TRUNNION	1384	1400	131	179	–	280	1750	25H FQPQR

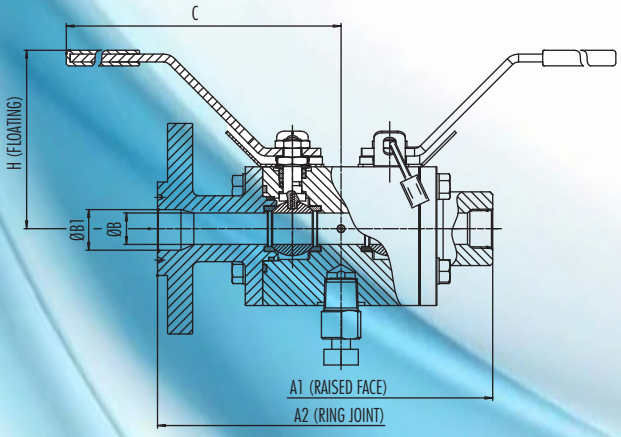


TRUNNION DETAIL



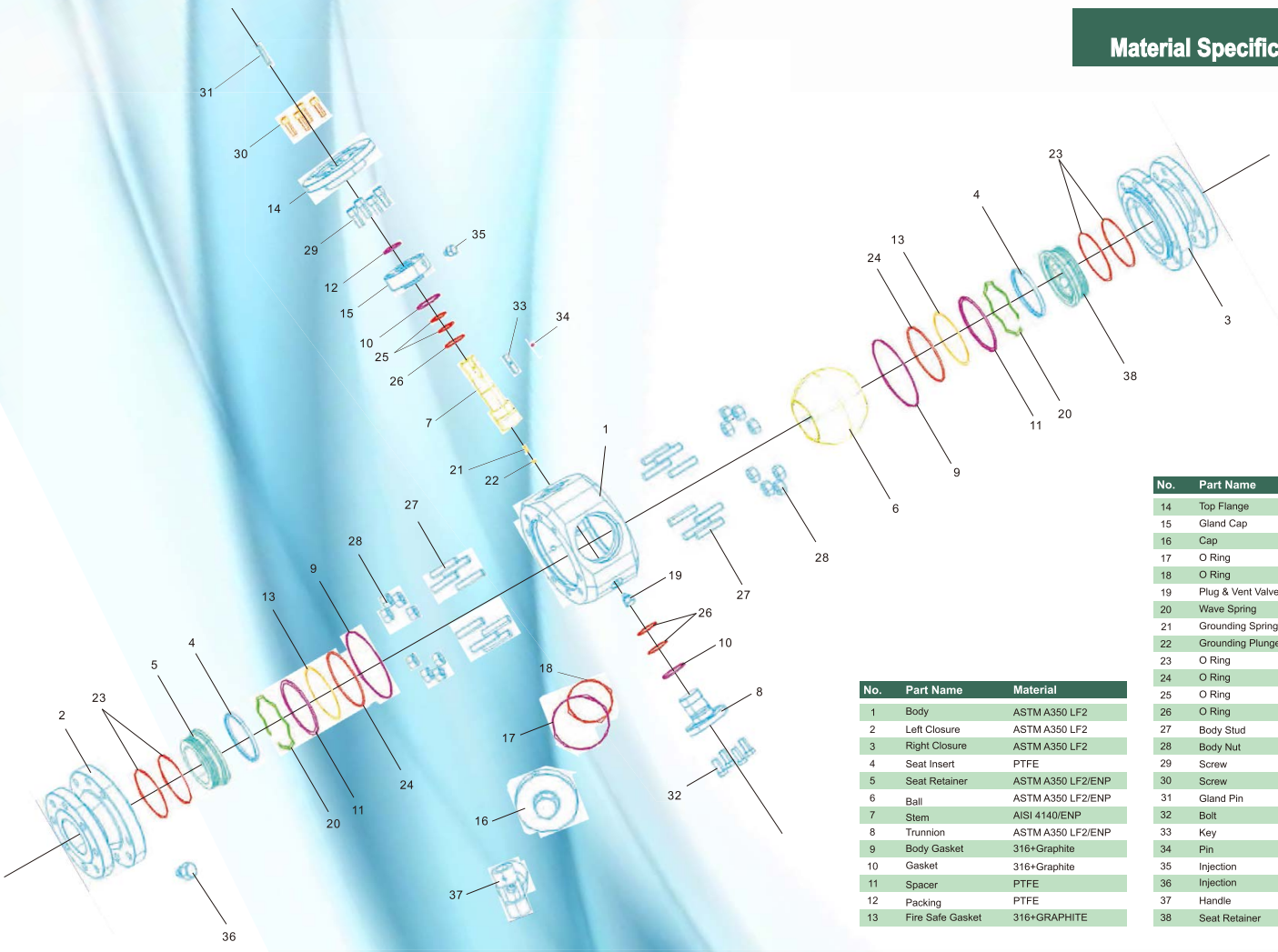
FLANGED INLET - 1/2" FEMALE NPT THREADED OUTLET

SIZE Inch	Valve Type	A1 (RF)	A2 (RJ)	B	B1	C	H	Weight Kg	Figure N°
1/2"	FLOATING	228	228	11,1	11,1	225	112	13	25H E333X
3/4"	FLOATING	230	230	11,1	15,5	225	112	14	25H E433X
1"	FLOATING	234	234	11,1	21	225	112	15	25H E533X
1-1/2"	FLOATING	244	245	11,1	34	225	112	20	25H E733X
2"	FLOATING	252	253	11,1	43	225	112	27	25H E833X
3"	FLOATING	267	270	11,1	65	225	112	41	25H EM33X



Pig Ball Valves

Material Specifications



No.	Part Name	Material
1	Body	ASTM A350 LF2
2	Left Closure	ASTM A350 LF2
3	Right Closure	ASTM A350 LF2
4	Seat Insert	PTFE
5	Seat Retainer	ASTM A350 LF2/ENP
6	Ball	ASTM A350 LF2/ENP
7	Stem	AISI 4140/ENP
8	Trunnion	ASTM A350 LF2/ENP
9	Body Gasket	316+Graphite
10	Gasket	316+Graphite
11	Spacer	PTFE
12	Packing	PTFE
13	Fire Safe Gasket	316+GRAPHITE

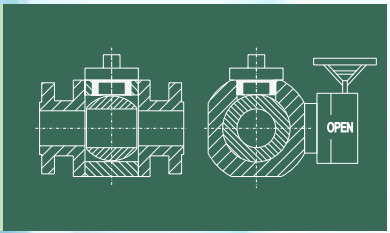
No.	Part Name	Material
14	Top Flange	ASTM A350 LF2
15	Gland Cap	ASTM A350 LF2
16	Cap	ASTM A350 LF2-N2
17	O Ring	HSN
18	O Ring	HSN
19	Plug & Vent Valve	Stainless Steel
20	Wave Spring	Inconel X-750
21	Grounding Spring	Stainless Steel
22	Grounding Plunger	Stainless Steel
23	O Ring	HSN
24	O Ring	HSN
25	O Ring	HSN
26	O Ring	HSN
27	Body Stud	ASTM A320 L7M
28	Body Nut	ASTM A194 7M
29	Screw	ASTM A320 L7M
30	Screw	ASTM A320 L7M
31	Gland Pin	Carbon Steel
32	Bolt	ASTM A320 L7M
33	Key	Carbon Steel
34	Pin	Carbon Steel
35	Injection	Stainless Steel
36	Injection	Stainless Steel
37	Handle	Carbon Steel
38	Seat Retainer	ASTM A350 LF2/ENP

Pig Launching - Clockwise To Close

Step 1

Open position

Through conduit flow no pockets to trap wax or debris.

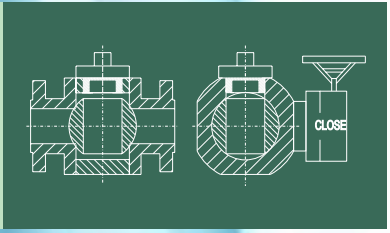


Step 2

Close valve.

Upstream and downstream is sealed off.

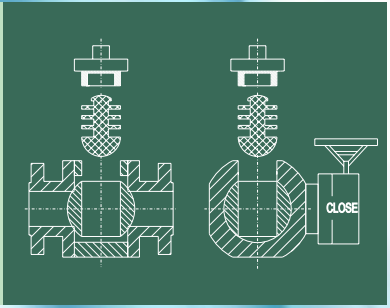
Vent body cavity pressure.



Step 3

Remove entry plug.

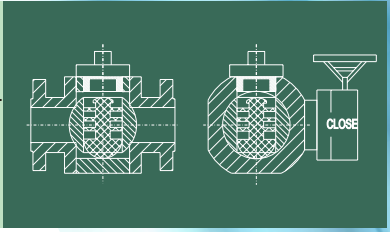
Insert pig into valve ball cavity.



Step 4

Screw entry plug into place.

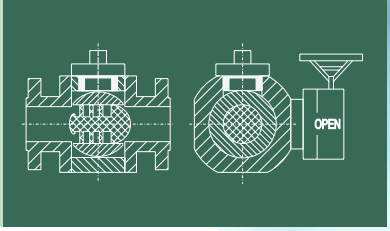
Close vent valve.



Step 5

Open valve.

Flowline pressure moves the pig downstream.

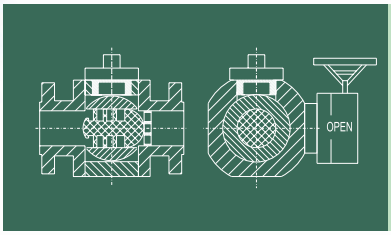


Pig Receiving - Clockwise To Close

Step 1

Open position

Through conduit flow stopper in valve cavity arrests pig.

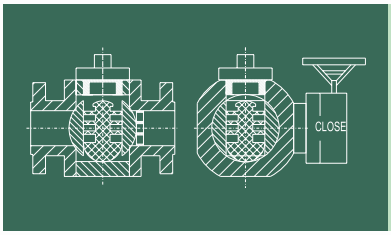


Step 2

Close valve.

Upstream and downstream is sealed off.

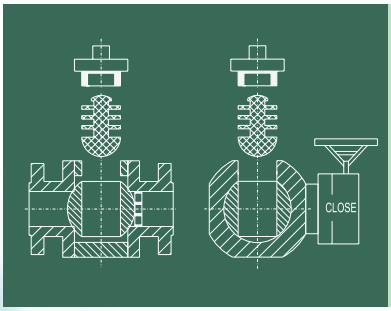
Vent body cavity pressure.



Step 3

Remove entry plug.

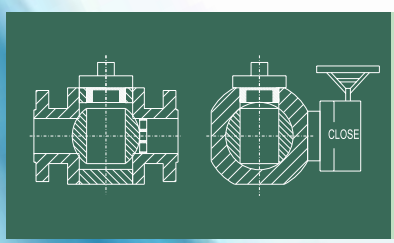
Remove pig from valve ball cavity.



Step 4

Screw entry plug into place.

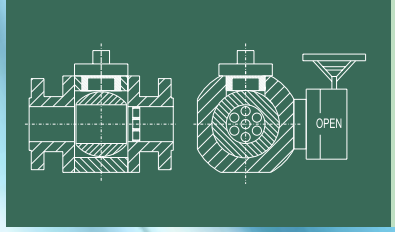
Close vent valve.



Step 5

Open valve.

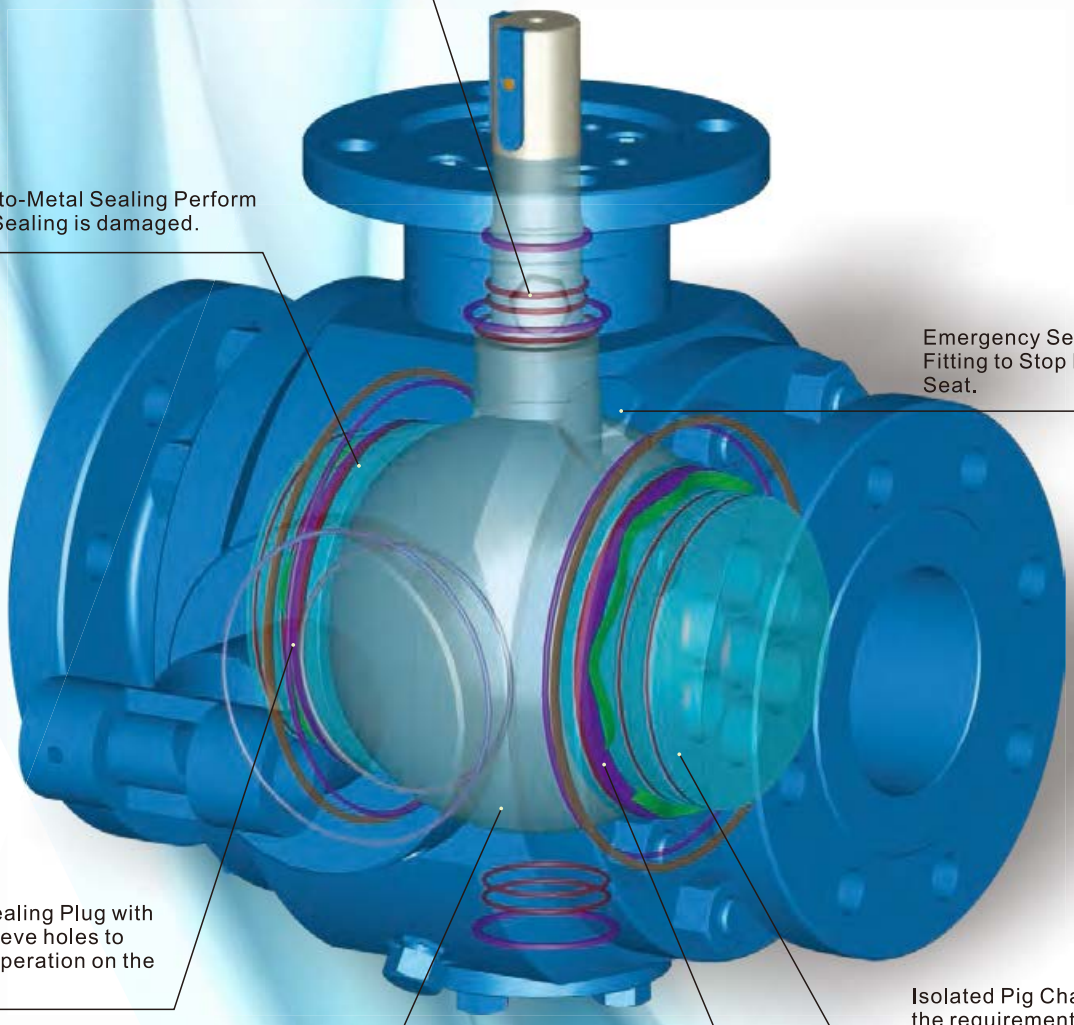
Flow brings the next pig along to be trapped.



Design Features

Double O Ring Sealing to Prevent the Leakage From Stem Area.

Secondary Metal-to-Metal Sealing Perform When non-metal Sealing is damaged.



Emergency Seat sealant Injection Fitting to Stop Leakage From the Seat.

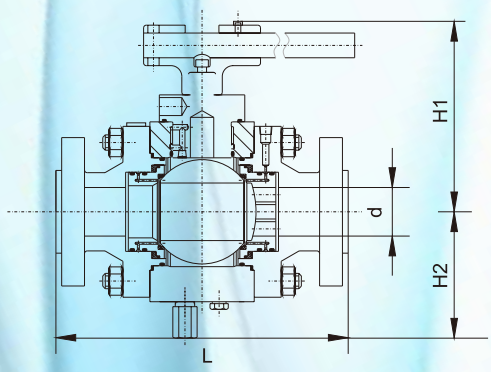
Double O-Ring Sealing Plug with Two Pressure-relieve holes to easy & Safe the Operation on the Field.

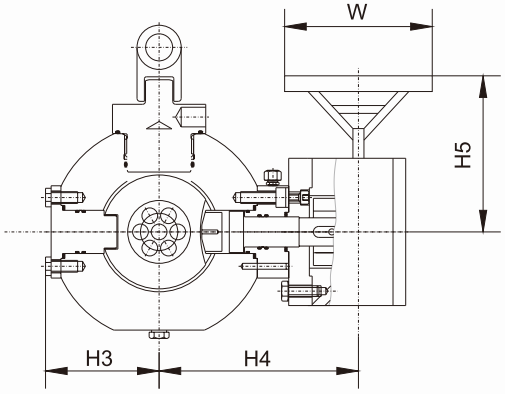
Isolated Pig Chamber to eliminate the requirement for additional shut-off valve.

Trunnion mounted ball design to Extend seat life and reduce the Torque of operation.

Energized Wave Spring Seats to easure the Sealing even at low pressure.

Dimensions





Dimensions

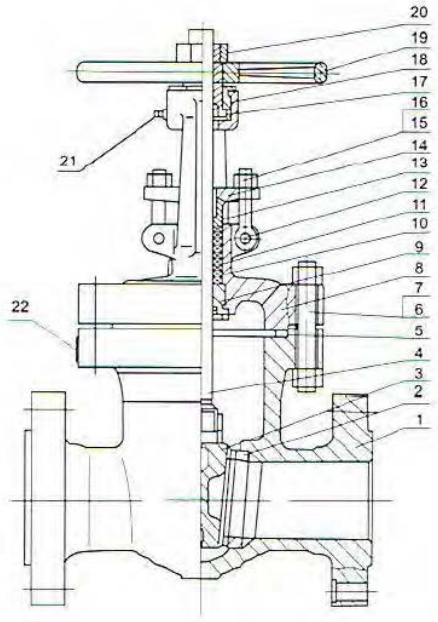
Dia Inch	Press Class	End Type	Face to Face mm	H1 mm	H2 mm	H3 mm	H4 mm	H5 mm	W mm
2	Class 150	RF	292*	260	141	118	258	-----	-----
	Class 150	RTJ	302*	260	141	118	258	-----	-----
	Class 300	RF	362*	260	141	118	258	-----	-----
	Class 300	RTJ	371*	260	141	118	258	-----	-----
	Class 600	RF	362*	260	141	118	258	-----	-----
	Class 600	RTJ	371*	260	141	118	258	-----	-----
3	Class 150	RF	324*	307	158	133	228	218	300
	Class 150	RTJ	333*	307	158	133	228	218	300
	Class 300	RF	356*	307	158	133	228	218	300
	Class 300	RTJ	359*	307	158	133	228	218	300
	Class 600	RF	356*	307	158	133	228	218	300
	Class 600	RTJ	359*	307	158	133	228	218	300
4	Class 150	RF	394*	355	185	171	266	300	400
	Class 150	RTJ	406*	355	185	171	266	300	400
	Class 300	RF	406*	355	185	171	266	300	400
	Class 300	RTJ	422*	355	185	171	266	300	400
	Class 600	RF	432	355	185	171	266	300	400
	Class 600	RTJ	435	355	185	171	266	300	400
6	Class 150	RF	457*	375	232	233	335	450	600
	Class 150	RTJ	467*	375	232	233	335	450	600
	Class 300	RF	480*	375	232	233	335	450	600
	Class 300	RTJ	492*	375	232	233	335	450	600
	Class 600	RF	559	375	232	233	335	450	600
	Class 600	RTJ	562	375	232	233	335	450	600
8	Class 150	RF	597*	445	300	325	405	450	600
	Class 150	RTJ	607*	445	300	325	405	450	600
	Class 300	RF	622*	445	300	325	405	450	600
	Class 300	RTJ	635*	445	300	325	405	450	600
	Class 600	RF	660	445	300	325	405	450	600
	Class 600	RTJ	663	445	300	325	405	450	600

Notes:Face to Face Length meets API Spec.'6D' except for those items marked(*).

Gate Valve

Gate Valve

EFC-GV50C600



Trim Material to API 600

Seating code	Seat Ring Surface Part No.2	Wedge Seat Surface Part No.3	Stem Part No.4	Backseat Bushing PartNo.9
1	F6	F6	F6	F6
2	Stellite	Stellite	F6	F6
3	Stellite	F6	F6	F6
4	F304	F304	F304	F304
5	F316	F316	F316	F316
6	Mone!	Mone!	MoneI	Mone!
7	Alloy 20	Alloy 20	Alloy 20	Alloy 20
8	Hastelloy B	Hastelloy B	Hastelloy B	Hastelloy B
9	Bronze	Bronze	Bronze	Bronze
10	R - PTFE(insert)	CFS	S.S.	S.S.

Trim Material to API 600

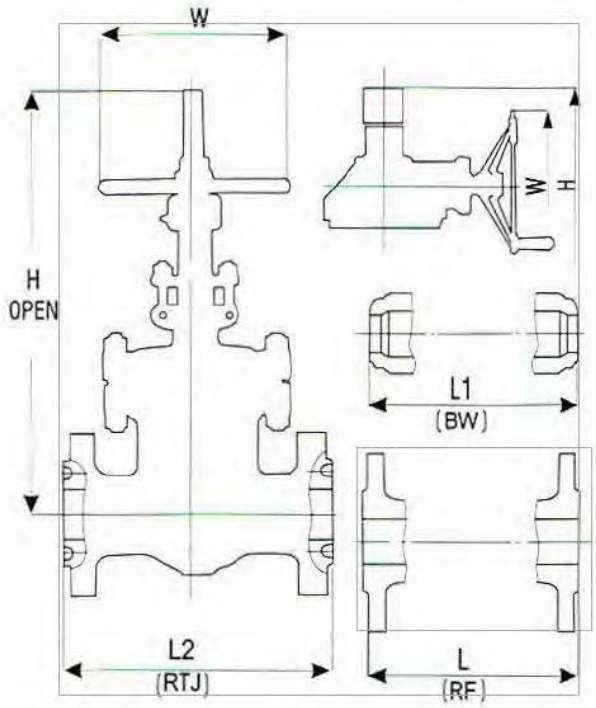
Part Name		Carbon Steel to ASTM		Alloy Steel to ASTM				Stainless Steel to ASTM			
1	Body	A216WCB	A352LCB	A217WC1	A217WC6	A217WC9	A217WC5	A351CF8	A351CF8M	A351CF3	A351CF3
8	Bonnet	A216WCB	A352LCB	A217WC1	A217WC6	A217WC9	A217WC5	A351CF8	A351CF8M	A351CF3	A351CF3
6	Bolts	A193B7	A320L7	A193B7	A193B16	A193B16	A193B16	A193B8	A193B8	A193B8	A193B8
7	Nuts	A1942H	A1944	A1942H	A1944	A1944	A1944	A1948	A1948	A1948	A1948
11	Lantern	410	410	410	410	410	410	304	316	304L	316L
12	Pins	Steel	Steel	Steel	Steel	Steel	Steel	S.S.	S.S.	S.S.	S.S.
13	Gland	A182F6	A182F6	A182F6	A182F6	A182F6	A182F6	304	316	304L	316L
14	Gland Flange	A105	A350LF2	A105	A105	A105	A105	304	316	304L	316L
15	Gland Flange	A193B7	A320L7	A193B7	A193B7	A193B7	A193B7	A193B8	A193B8	A193B8	A193B8
16	Nuts	A1942H	A1944	A1942H	A1942H	A1942H	A1942H	A1948	A1948	A1948	A193B8
5	Gasket	Reinforced Flat Graphite. or SS Spiral Wound W/Graphite or PTFE, or Reinforced PTFE.									
10	Packing	Braided Graphite or Dieformed Graphite Ring or PTFE									
17	Stem Nut	A439 - 02 or A276 – 410									
18	Lock Nut	Steel									
19	Handwheel	Ductile Iron									
20	Hand wheel Nut	Steel									
21	Lubricator	Steel									
22	Nameplate	Stainless Steel or Aluminum									

Other materials (Alloy 20, AISI321 ASI 347. Monel. Hastelloy. etc) on request.
Class 150 gate valve is not provided,with Lartern.
·Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 600

Class 150 Gate Valve

EFC-GV50C150

OS & Y, Rising Stem, Flexible Solid Wedge Bolted Bonnet. Threaded or Welded Seat Ring



STANDARDS COMPLIANCE:

Ba ic Design: API 600
Face to Face Dimension: ANSI B16. 10 End to End Dimension: ANSI B 16. 1O End Flange Dimension:
2"- 24" to ANSI B16.5
26"-36" to MSS SP-44
to API 605 on request
B.W. Ends to ANSI B 16.25 Shell wa l Thickness:
2"- 24" to API 600
26"- 36" to Manufacturer's Sta da d
Manufacturing to NACE MR - 01- 75 on request.

TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	450psig	315psig	80psig
WC6	450psig	319psig	
CF8M	425psig	303psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2½	3	4	5	6	8	10	12	14	16	18	20	24	28	30	32	36
DN	mm	50	60	80	100	125	150	200	250	300	350	400	450	500	600	700	750	800	900
L	in	7	7½	8	9	10	10½	11½	13	14	15	16	17	18	20	24	24	26	28
(RF)	mm	178	190	203	229	254	267	292	330	356	381	406	432	457	508	610	610	660	711
L1	in	8½	9½	11 1/8	12	15	15 7/8	16½	18	19¾	22½	24	26	28	32	36	36	38	40
(BW)	mm	216	241	283	305	381	403	419	457	502	572	610	660	711	813	914	914	965	1016
L2	in	7½	8	8 ½	9 ½	10½	11	12	13½	14½	15½	16½	17½	18½	20½	24½	24½	26½	28½
(RTJ)	mm	191	203	216	241	267	279	305	343	368	394	419	445	470	521	622	622	673	724
H	in	16 1/8	18 9/16	20 15/16	24 1/8	27 15/16	31 4/3	39	46 11/16	55 5/16	63 9/16	71 5/16	78 3/16	87	106¼	119 5/16	130 9/16	137¼	150 9/16
OPEN	mm	409	472	532	612	710	806	806	990	1186	1405	1615	1811	1986	2210	2698	3030	3487	3825
W	in	7 7/8	7 7/8	97/8	9 7/8	11 13/16	11 13/16	13¾	17 11/16	19 1/16	18 1/8	18 1/8	24	24	24	24	24	24	30
	mm	200	200	250	250	300	350	450	500	460*	460*	460*	610*	610*	610*	610*	610*	610*	760*
WT	RF	20	30	36	53	71	85	136	220	323	387	553	660	810	1250	1931	2380	2490	3600
(KG)	BW	17	26	29	46	66	77	116	202	294	350	506	575	720	1130	1765	2028	2280	3080

Manual gear operator is recommended.
Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 150

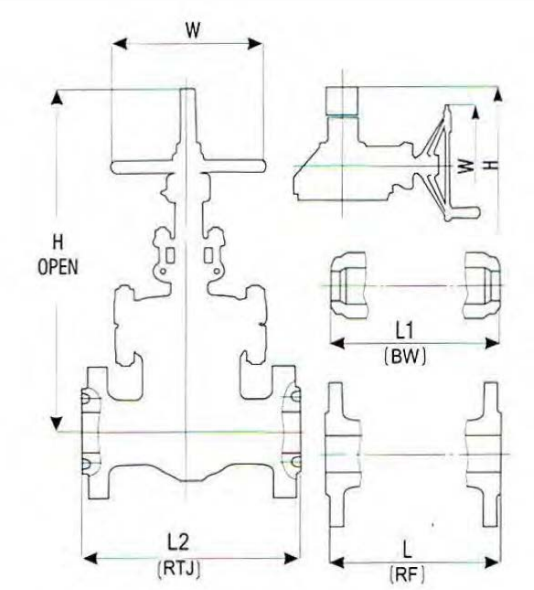
Class 300 Gate Valve

EFC-GV50C300

OS&Y, Rising Stem, Flexible Solid Wedge
Bolted Bonnet, Threaded or Welded Seat Ring

STANDARDS COMPLIANCE:

Basic Design: API 600
Face to Face Dimension: ANSI 616. 10 End to End Dimension: ANSI B 16. 1O End Fla ge Dimension:
2"- 24" to ANSI B16.5
26"-30" to MSS SP-44
to API 605 on request
Ends to ANSI B 16.25 Shell wa l Thickness:
2"- 24" to API 600
26"- 30" to Manufacturer's Standard
Manufacturing to NACE MR - 01 - 75 on



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	1125psig	814psig	80psig
WC6	1125psig	825psig	
CF8M	1100psig	792psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	5	6	8	10	12	14	16	18	20	24	30
DN	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600	750
L-L1	in	8 ½	9 ½	11 1/8	12	15	15 7/8	16 ½	18	19 3/8	30	33	36	39	45	55
(RF-BW)	mm	216	241	283	305	381	403	419	457	502	762	838	914	991	1143	1397
L2	in	9 1/8	10 1/8	11 3/4	12 5/8	15 5/8	16 ½	17 1/8	18 5/8	20 3/8	30 5/8	33 5/8	36 5/8	39 3/4	45 7/8	56
(OPEN)	mm	232	257	298	321	397	419	435	473	518	778	854	930	1010	1165	1422
H	in	15 3/4	18 3/4	21 3/8	25 5/8	30 5/16	34 5/8	40 13/16	50 3/16	56 5/8	65	72 7/16	79 15/16	88 3/16	114 3/16	139 3/8
(OPEN)	mm	400	477	543	650	770	880	1037	1275	1438	1650	1840	2030	2240	2900	3540
W	in	7 7/8	9 7/8	9 7/8	11 13/16	11 13/16	13 3/4	17 11/16	19 11/16	22 1/16	18 1/8	18 1/8	24	24	24	30
	mm	200	250	250	300	300	350	450	500	560	460*	460*	610*	610*	610*	760*
WT	RF	30	39	55	83	92	137	240	333	536	699	1010	1205	1720	2800	3786
(KG)	BW	26	34	47	68	77	118	195	271	432	595	848	1025	1460	2294	3220

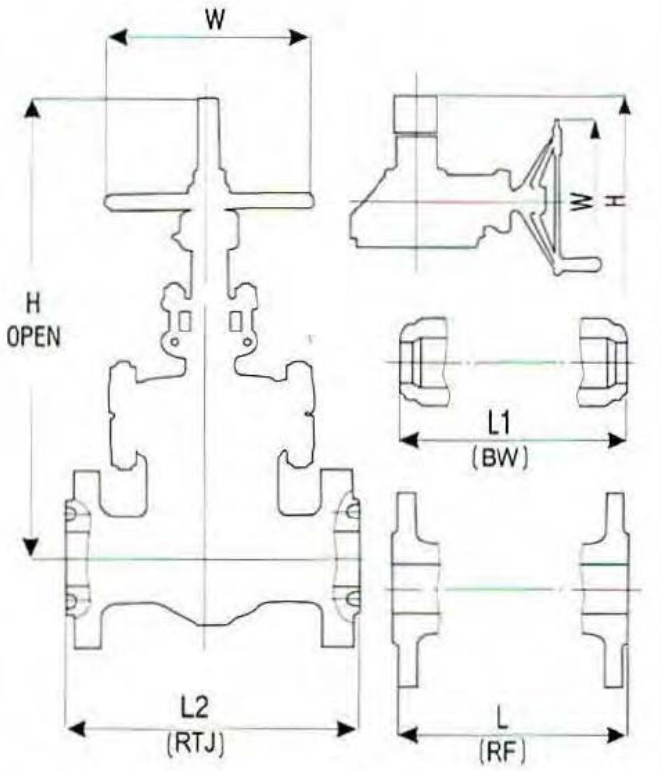
Manual gear operator is recommended.

Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 300

Class 600 Gate Valve

EFC-GV50C600

OS&Y, Rising Stem, Flexible Solid Wedge Bolted Bonnet, Threaded or Welded Seat Ring



STANDARDS COMPLIANCE:

Basic Design: API 600
Face to Face Dimension: ANSI B16.1O End to End Dimension: ANSI B 16.10 End Flange Dimension: 2"- 24 to ANSI 616.5
B.W. Ends to ANSI B 16.25 Shell wall Thickness: 2"- 24" to API 600
Manufacturing to NACE MR - 01 - 75 on request

TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	2225psig	1628psig	80psig
WC6	2250psig	1650psig	
CF8M	2175psig	1548psig	

DIMENSIONS AND WEIGHTS

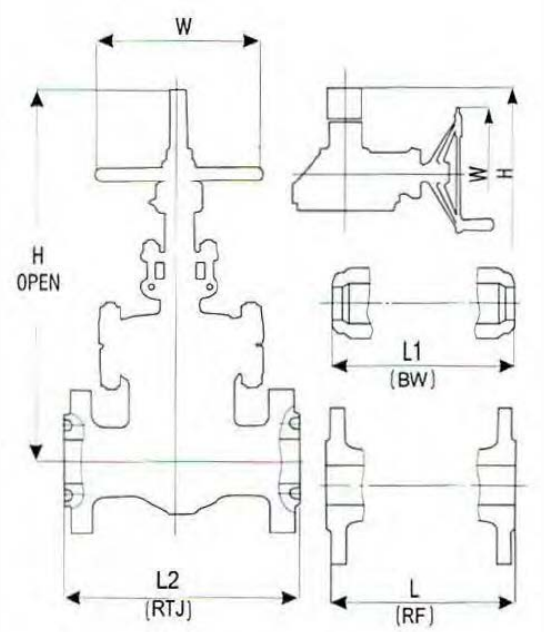
NPS	in	2	2 ½	3	4	6	8	10	12	14	16	18	20	24
DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L-L1	in	11 ½	13	14	17	22	26	31	33	35	39	43	47	55
(RF-BW)	mm	292	330	356	432	559	660	787	838	859	991	1092	1194	1397
L2	In	11 5/8	13 1/8	14 1/8	17 1/8	22 1/8	26 1/8	31 1/8	33 1/8	35 1/8	39 1/8	43 1/8	47 1/4	55 3/8
(OPEN)	mm	295	333	359	435	562	664	791	841	892	994	1095	1200	1407
H	in	18 5/8	21 3/4	23 1/8	28 1/16	38 3/16	44 3/16	52 3/8	59 13/16	68 1/8	72 1/4	90 1/8	98 13/16	119
(OPEN)	mm	474	553	593	713	970	1122	1330	1519	1730	1835	2290	2510	3022
W	in	9 7/8	9 7/8	11 13/16	13 3/4	19 11/16	22 1/16	28 3/8	24	24	24	24	30	30
	mm	250	250	300	350	500	560	720	610*	610*	610*	610*	760*	760*
WT	RF	41	58	88	131	253	413	623	784	1288	1820	2150	2540	4080
(KG)	BW	35	50	68	104	208	328	496	637	1120	1448	1828	2201	3360

Manual gear operator is recommended.
Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 600

Class 900 Gate Valve

EFC-GV50C900

OS&Y, Rising Stem, Flexible Solid Wedge Bolted Bonnet, Threaded or Welded Seat Ring



STANDARDS COMPLIANCE:

Basic Design: API 600

Face to Face Dimension: ANSI B16.1O End to End Dimension: ANSI B 16.10 End Flange Dimension: 2"- 16" to ANSI 816.5

Ends to ANSI B 16.2 Shell wall Thickness: 2" - 16" to API 600

Ma ufa turing to NACE MR- 01 - 75 on request.

TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	3350psig	2442psig	80psig
WC6	3375psig	2475psig	
CF8M	3250psig	2376psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	6	8	10	12	14	16
DN	mm	50	65	80	100	150	200	250	300	350	400
L-L1	in	14 ½	16 ½	15	18	24	29	33	38	40 ½	44 ½
(RF-BW)	mm	371	422	384	460	613	740	841	968	1038	1140
L2	In	14 5/8	16 5/8	15 1/8	18 1/8	24 1/8	29 1/8	33 1/8	38 1/8	40 7/8	44 7/8
(OPEN)	mm	371	422	384	460	613	470	841	968	1038	1140
H	in	21 9/16	27 9/16	25 ½	28 11/16	41	49 5/8	62 5/8	70 11/16	79 ¾	85 7/16
(OPEN)	mm	474	553	593	713	970	1122	1330	1519	1730	1835
W	in	11 13/16	14	15 3/4	17 11/16	22 1/16	18 14/8	24	24	30	30
	mm	300	355	400	450	560	460*	610*	610*	760*	760*
WT	RF	90	110	123	148	420	650	1160	1700	2300	2750
(KG)	BW	82	93	108	122	359	566	980	1450	2000	2390

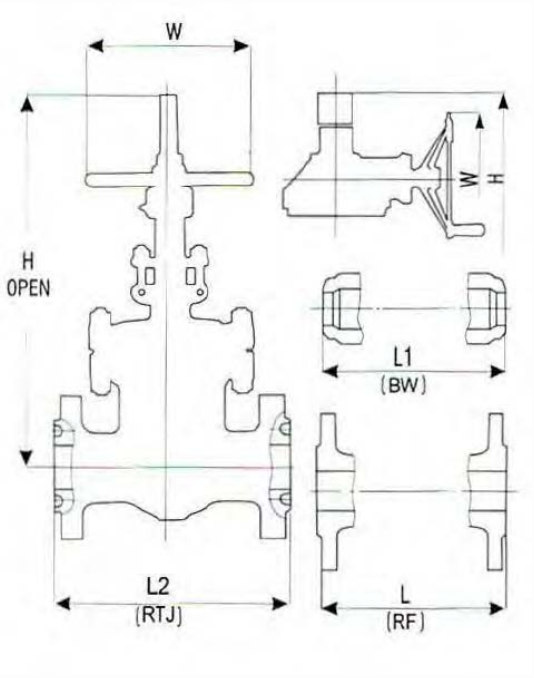
Manual gear operator is recommended.

Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 900

Class 1500 Gate Valve

EFC-GV50C1500

OS&Y, Rising Stem, Flexible Solid Wedge Bolted Bonnet, Threaded or Welded Seat Ring



STANDARDS COMPLIANCE:

Basic Design: API 600
Face to Face Dimension: ANSI B16.1O End to End Dimension: ANSI B 16.10 End Flange Dimension: 2"- 16" to ANSI 816.5
Ends to ANSI B 16.2 Shell wall Thickness: 2" - 16" to API 600
Manufacturing to NACE MR- 01 - 75 on request.

TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	5575psig	4078psig	80psig
WC6	5625psig	4125psig	
CF8M	5400psig	3960psig	

DIMENSIONS AND WEIGHTS

NPS	In	2	2 ½	3	4	6	8	10	12	14	16
DN	mm	50	65	80	100	150	200	250	300	350	400
L-L1	In	14 ½	16 ½	18 ½	21 ½	27 ¾	32 ¾	39	44 ½	49 ½	54 ½
(RF-BW)	mm	368	419	470	546	705	832	991	1130	1257	1384
L2	In	14 5/8	16 5/8	18 5/8	21 5/8	28	33 1/8	39 3/8	45 1/8	50 ¼	55 5/8
(RTJ)	mm	371	422	473	549	711	841	1000	1146	1276	1407
H	In	22 5/8	27 9/16	31 ¾	34 15/16	42 ½	53 15/16	59 13/16	65	76 9/16	88 9/16
(OPEN)	mm	574	700	806	887	1079	1370	1520	1651	1945	2250
W	In	13 ¾	15 ¾	17 ¾	22 1/16	12	24	30	30	30	30
	mm	350	400	450	560	305*	610*	760*	760*	760*	760*
WT	RF	117	175	240	337	680	1228	2278	3260	4100	5960
(KG)	BW	93	144	185	285	584	978	1990	2850	3320	4890

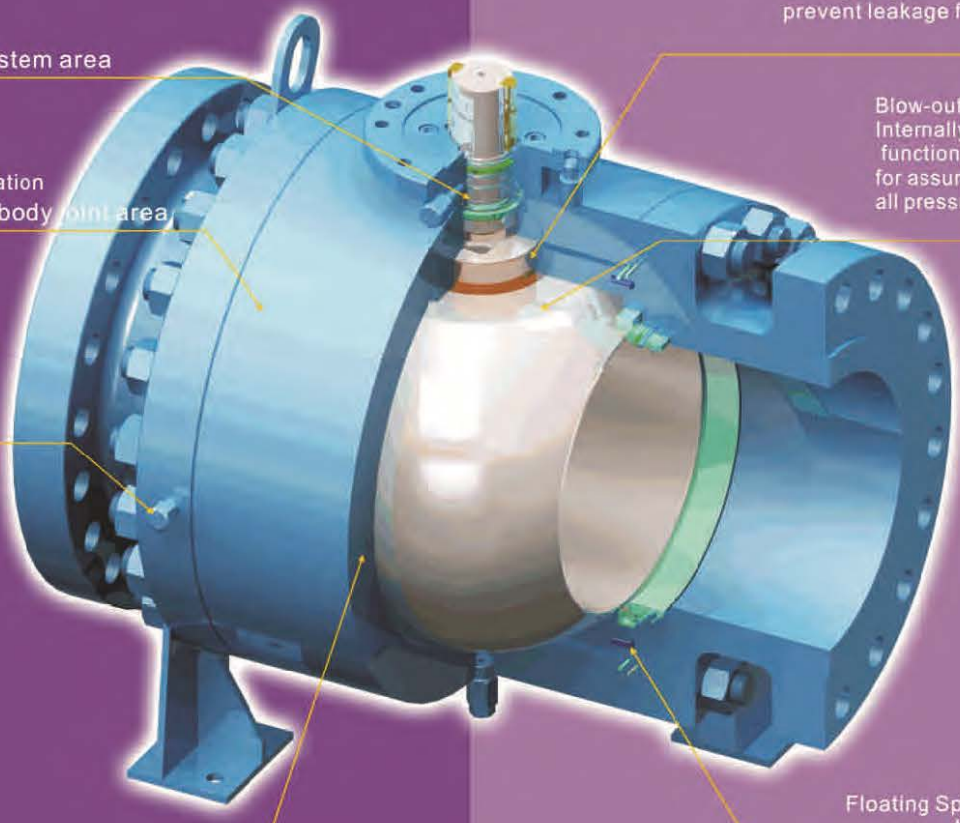
Manual gear operator is recommended.
Model Denote: EFC-GV = Gate Valve | 50 = Size in mm | C = Class 1500

Through Conduit Gate Valves

NEWAY series BS ball valves are trunnion mounted supported and available in size 2 to 48 , ANSI class rating 150 to 1500 and temperature ratings of - 46°C to 200°C . All meets the fire safe requirement of BS 6755 and API 6FA.

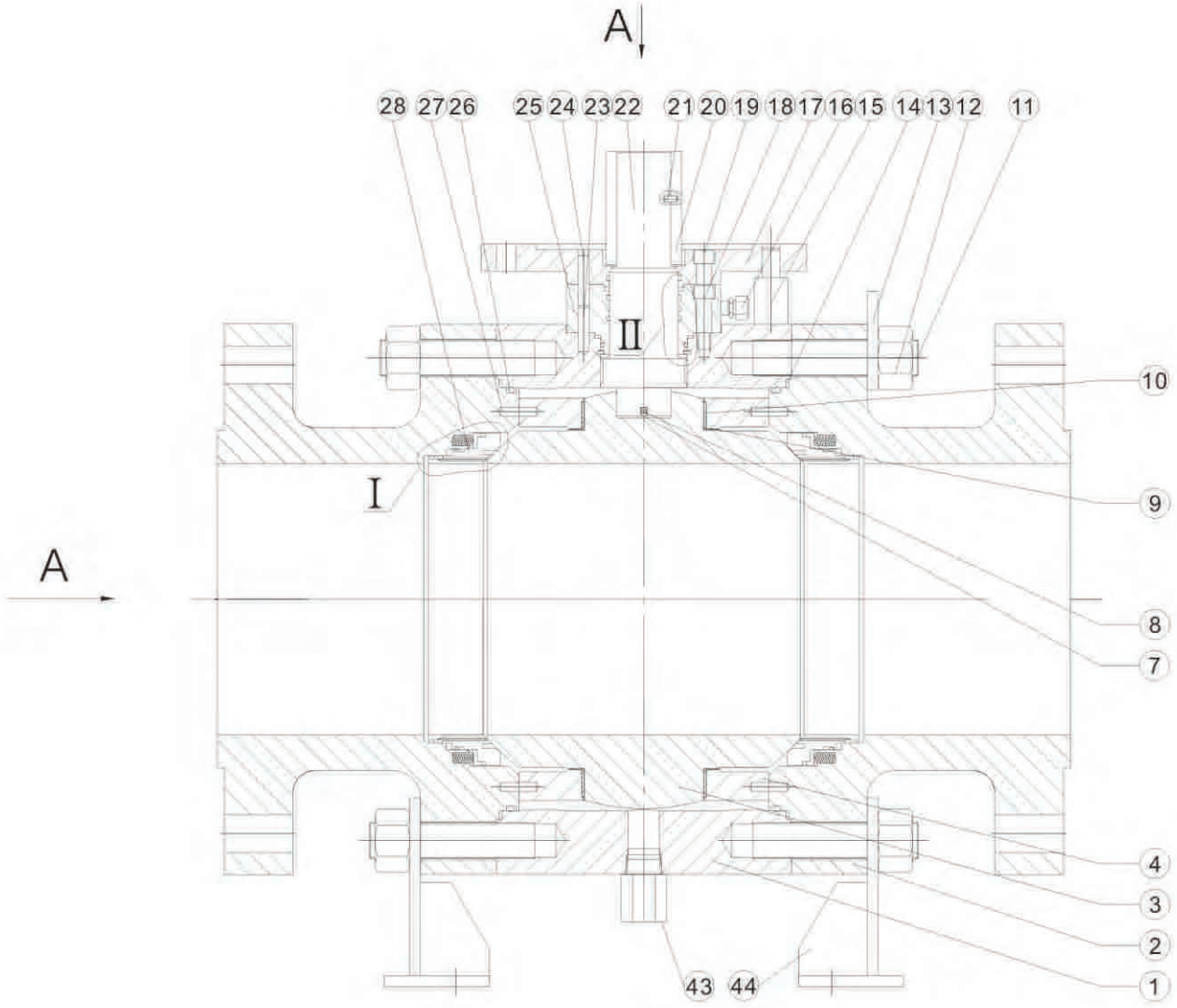
Fully forged steel body and closure eliminates the inevitable defects of casting and assures the tough structure of the valve at full rated working pressure. It also has advantage of quick delivery time, thus more popular in modern oil and gas industry.

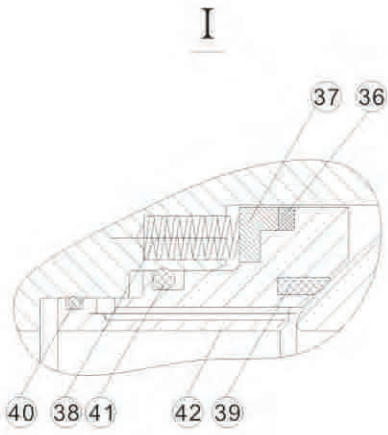
All BS series ball valves are featured with trunnion mounted ball and independent floating spring loaded seats which provides bubble-tight shut off and low operating torques even at low different pressure. Double sealing O-rings or a combination of an O-ring and gasket in stem making this series of ball valve suitable for both above ground or under-ground service.

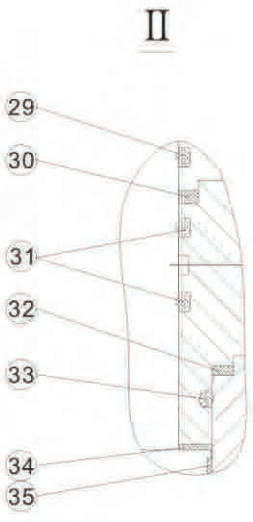


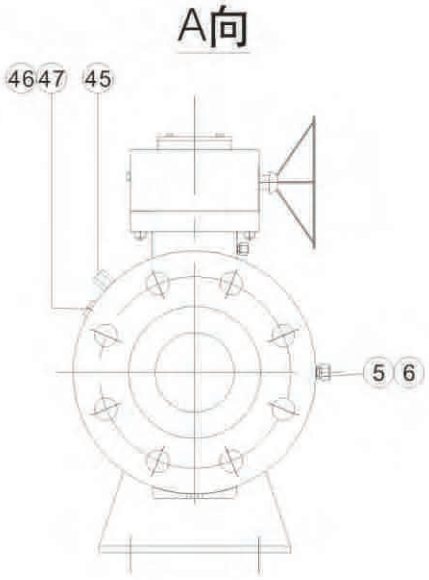
This is a typical ELITE series BS trunnion mounted ball valve illustrated cross-section drawing which is only for demonstrating of basic design features. The actual product design may be slightly different from this sample drawing due to its size and pressure class.

General Assembling Drawing









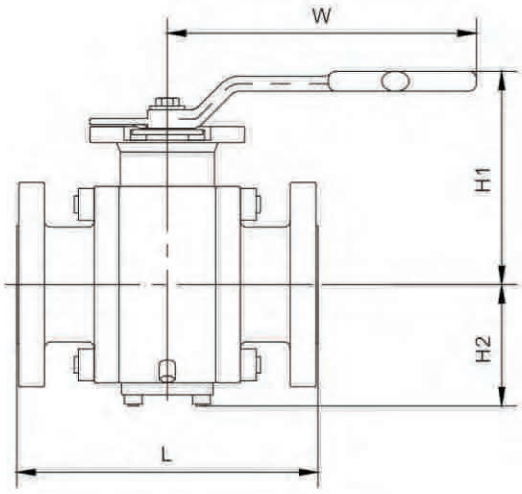
Material Specifications

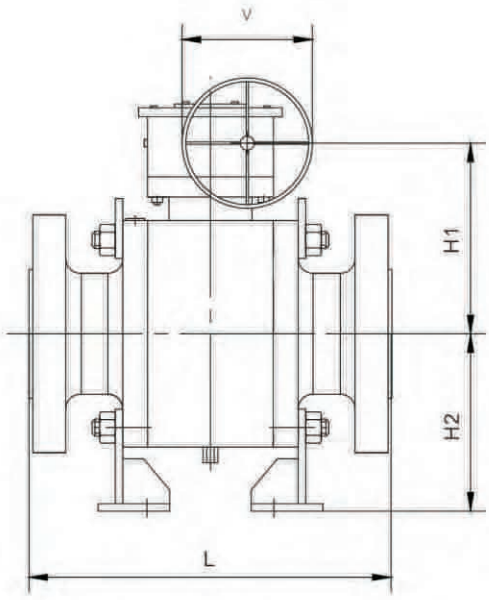
Series BS Trunnion Mounted Ball Valve

No.	Part	Standard	Stainless Steel	Sour Service	Low Temperature Service
1	BODY	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
2	CLOSURE	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
3	BALL	ASTM A105N/ENP	ASTM A182 F304	ASTM A105N/ENP	ASTM A350 LF2/ENP
4	TRUNNION SUPPORT	ASTM A588B/ENP	ASTM A182 CF3	ASTM A588B/ENP	ASTM A352 LCB/ENP
5	INJECTION	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304
6	CHECK VALVE	ASTM A182 F316L	ASTM A182 F316	ASTM A182 F316L	ASTM A182 F316
7	ANTI-STATIC DEVICE	ASTM A276 316	ASTM A276 316	ASTM A276 316	ASTM A276 316
8	SPRING	ASTM A276 316	ASTM A276 316	ASTM A276 316	ASTM A276 316
9	THRUST WASHER	RPTFE	RPTFE	RPTFE	RPTFE
10	BEARING	316+PTFE	316+PTFE	316+PTFE	316+PTFE
11	STUD	ASTM A193 B7	ASTM A193 B8	ASTM A193 B7M	ASTM A320 L7M
12	NUT	ASTM A194 2H	ASTM A194 8	ASTM A194 2HM	ASTM A194 7M
13	LIFTING LUGS	ASTM A283.GRC	ASTM A283.GRC	ASTM A283.GRC	ASTM A283.GRC
14	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
15	PIN	ASTM A350 LF2	ASTM A276 304	ASTM A350 LF2	ASTM A350 LF2
16	INJECTION	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304
17	TOP FLANGE	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
18	SCREW	ASTM A193 B7	ASTM A276 304	ASTM A193 B7	ASTM A320 L7M
19	SCREW	ASTM A193 B7	ASTM A276 304	ASTM A193 B7	ASTM A320 L7M
20	KEY	AISI 1045	ASTM A182 F6a	AISI 1045	ASTM A182 F6a
21	PIN	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
22	STEM	ASTM A105N/ENP	ASTM A182 F304	ASTM A105N/ENP	ASTM A350 LF2/ENP
23	PIN	AISI 1035	ASTM A276 304	AISI 1035	AISI 1035
24	PIN	AISI 1035	ASTM A276 304	AISI 1035	AISI 1035
25	COVER	ASTM A105N	ASTM A182 F304	ASTM A105N	ASTM A350 LF2
26	O RING	HNBR	HNBR	HNBR	HNBR
27	PIN	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
28	SEAT ASSEMBLY	44&52	44&52	44&52	44&52
29	O RING	NBR	NBR	NBR	NBR
30	FIRE SAFE SEAL	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
31	O RING	HNBR	HNBR	HNBR	HNBR
32	GASKET	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
33	O RING	HNBR	HNBR	HNBR	HNBR
34	THRUST WASHER	RPTFE	RPTFE	RPTFE	RPTFE
35	BEARING	316+PTFE	316+PTFE	316+PTFE	316+PTFE
36	FIRE SAFE SEAL	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE	316+GRAPHITE
37	SPACER	ASTM A105N/ENP	ASTM A182 F304	ASTM A105N/ENP	ASTM A350 LF2/ENP
38	SPRING	INCONEL X-750	INCONEL X-750	INCONEL X-750	INCONEL X-750
39	SEAT INSERT	NYLON	NYLON	NYLON	NYLON
40	O RING	HNBR	HNBR	HNBR	HNBR
41	O RING	HNBR	HNBR	HNBR	HNBR
42	SEAT RETAINER	ASTM A105N/ENP	ASTM A182 F304	ASTM A105N/ENP	ASTM A350 LF2/ENP
43	PLUG	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304
44	SUPPORT LEGS	ASTM A283.GRC	ASTM A283.GRC	ASTM A283.GRC	ASTM A283.GRC
45	VENT VALVE	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304	ASTM A182 F304
46	NAME PLATE	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304
47	RIVET	ASTM A276 304	ASTM A276 304	ASTM A276 304	ASTM A276 304

Series BS Trunnion Mounted Ball Valve

Dimensions



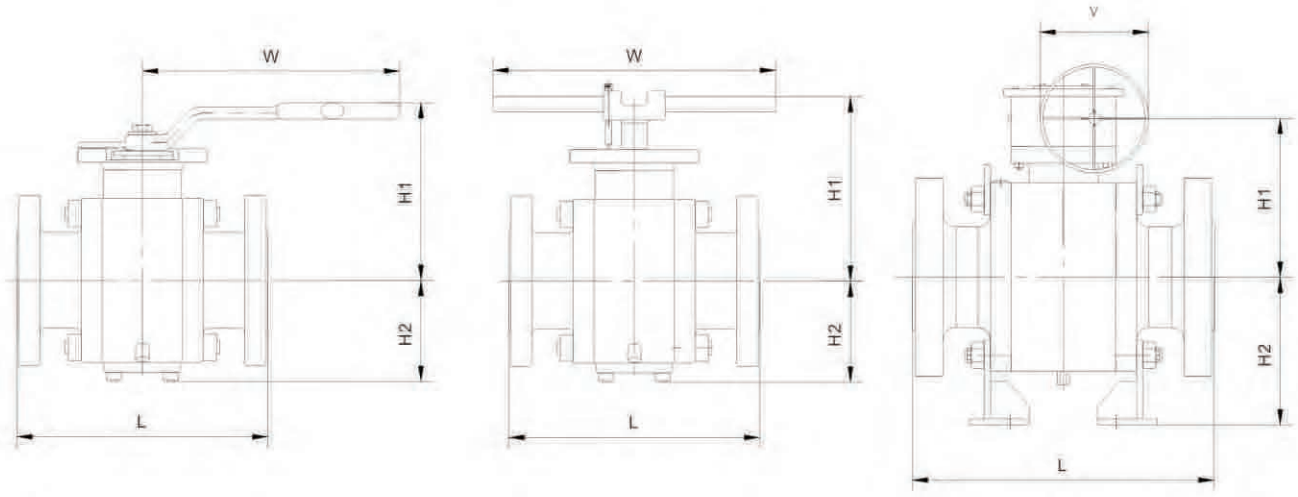


Class 150LB

Size in		D		L				H1		H2		W		V		Weight kg	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	7.01	178	8.50	216	6.78	172.1	3.52	89.3	12.99	330			41.89	19
3	80	2.91	74	7.99	203	11.14	283	7.91	200.8	4.20	106.8	15.75	400			57.32	26
4	100	3.94	100	9.02	229	12.01	305	8.75	222.3	4.98	126.5	15.75	400			103.62	47
6	150	5.91	150	15.51	394	17.99	457	10.85	275.5	10.04	255.0			15.75	400	352.74	160
8	200	7.91	201	17.99	457	20.51	521	12.32	313.0	11.46	291.0			15.75	400	573.20	260
10	250	9.92	252	20.98	533	22.01	559	14.25	362.0	13.11	333.0			23.62	600	983.26	446
12	300	11.93	303	24.02	610	25.00	635	15.73	399.5	14.57	370.0			23.62	600	1532.21	695
14	350	13.15	334	27.01	686	30.00	762	20.12	511.0	15.53	394.5			23.62	600	1975.34	896
16	400	15.16	385	30.00	762	32.99	838	21.56	547.5	16.93	430.0			23.62	600	2850.57	1293
18	450	17.17	436	34.02	864	35.98	914	23.05	585.5	18.41	467.5			23.62	600	3333.39	1512
20	500	19.17	487	35.98	914	39.02	991	24.57	624.0	19.90	505.5			23.62	600	3935.25	1785
22	550	21.18	538	39.02	991	42.99	1092	27.80	706.0	21.78	553.3			23.62	600	5138.97	2331
24	600	23.19	589	42.01	1067	45.00	1143	29.96	761.0	23.26	590.8			27.56	700	6393.40	2900
26	650	24.92	633	45.00	1143	49.02	1245	31.40	797.5	24.68	626.8			27.56	700	7407.52	3360
28	700	26.93	684	49.02	1245	52.99	1346	28.76	730.5	26.32	668.5			29.92	760	9363.57	4247
30	750	28.94	735	50.98	1295	55.00	1397	30.26	768.5	27.80	706.0			29.92	760	11157.58	5061
32	800	30.67	779	54.02	1372	60.00	1524	31.56	801.5	29.07	738.5			29.92	760	12708.53	5765
34	850	32.68	830	57.99	1473	64.02	1626	33.03	839.0	30.53	775.5			29.92	760	15518.76	7039
36	900	34.41	874	60.00	1524	67.99	1727	35.30	896.5	31.85	809.0			29.92	760	17627.59	7996
40	1000	38.43	976	67.99	1727	70.08	1780	44.98	1142.5	35.57	903.5			29.92	760	25525.86	11578
42	1050	40.16	1020	72.01	1829	72.01	1829	46.30	1176.0	36.85	936.0			29.92	760	28032.85	12716
48	1200	45.91	1166	78.54	1995	78.54	1995	50.57	1284.5	41.24	1047.5			29.92	760	42500.66	19278
54	1350	51.65	1312					54.19	1376.5	42.87	1089.0			35.43	900	75464.14	34230
56	1400	53.54	1360	97.99	2489	97.99	2489	57.74	1466.5	44.81	1138.3			39.37	1000	84492.06	38325
60	1500	57.40	1458					61.36	1558.5	47.65	1210.3			39.37	1000	90510.67	41055

Dimensions

Series BS Trunnion Mounted Ball Valve

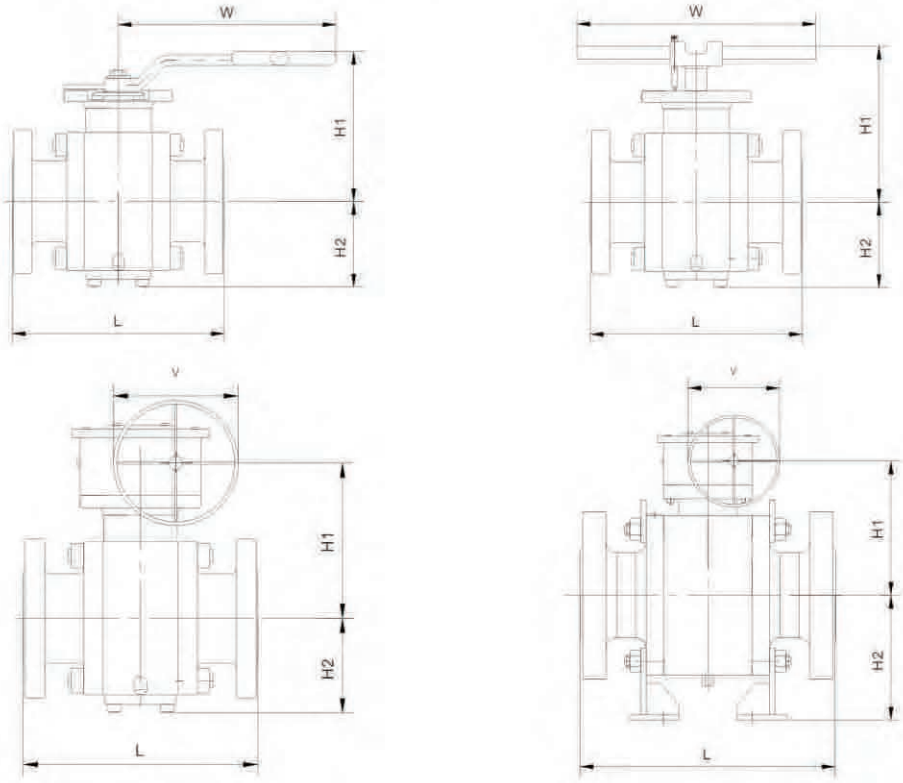


Class 300LB

Size in		D		L				H1		H2		W		V		Weight kg	
				RF		BW											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	8.50	216	8.50	216	6.78	172.1	3.59	91.3	12.99	330			66.14	30
3	80	2.91	74	11.14	283	11.14	283	7.91	200.8	3.38	85.8	15.75	400			105.82	48
4	100	3.94	100	12.01	305	12.01	305	11.10	282.0	5.59	142	32.09	815			154.32	70
6	150	5.91	150	15.87	403	17.99	457	10.85	275.5	10.04	255.0			15.75	400	418.88	190
8	200	7.91	201	19.76	502	20.51	521	12.28	312.0	11.61	295.0			19.69	500	694.46	315
10	250	9.92	252	22.36	568	22.01	559	14.29	363.0	13.29	337.5			23.62	600	1172.86	532
12	300	11.93	303	25.51	648	25.00	635	16.08	408.5	14.93	379.3			23.62	600	1814.40	823
14	350	13.15	334	30.00	762	30.00	762	20.12	511.0	15.71	399.0			23.62	600	2204.62	1000
16	400	15.16	385	32.99	838	32.99	838	21.93	557.0	17.29	439.3			23.62	600	3064.42	1390
18	450	17.17	436	35.98	914	35.98	914	24.78	629.5	18.96	481.5			23.62	600	4159.02	1887
20	500	19.17	487	39.02	991	39.02	991	26.99	685.5	20.61	523.5			27.56	700	4583.40	2079
22	550	21.18	538	42.99	1092	42.99	1092	28.84	732.5	22.13	562.0			27.56	700	5703.79	2587
24	600	23.19	589	45.00	1143	45.00	1143	26.02	661.0	23.78	604.0			29.92	760	7008.49	3179
26	650	24.92	633	49.02	1245	49.02	1245	27.72	704.0	25.35	644.0			29.92	760	9052.83	4106
28	700	26.93	684	52.99	1346	52.99	1346	30.45	773.5	27.05	687.0			29.92	760	11094.75	5033
30	750	28.94	735	55.00	1397	55.00	1397	31.95	811.5	28.52	724.5			29.92	760	13556.21	6149
32	800	30.67	779	60.00	1524	60.00	1524	33.31	846.0	29.98	761.5			29.92	760	15132.51	6864
34	850	32.68	830	64.02	1626	64.02	1626	34.78	883.5	31.46	799.0			29.92	760	17872.85	8107
36	900	34.41	874	67.99	1727	67.99	1727	42.81	1087.5	33.37	847.5			29.92	760	20455.57	9279
40	1000	38.43	976	75.98	1930	75.98	1930	45.93	1166.5	36.61	930.0			29.92	760	27160.92	12320
42	1050	40.16	1020	82.01	2083	82.01	2083	49.69	1262.0	37.89	962.5			31.50	800	31647.32	14355
48	1200	45.91	1166	85.43	2170	85.43	2170	55.43	1408.0	39.22	996.3			35.43	900	46076.56	20900
54	1350	51.65	1312					56.93	1446.0	42.87	1089.0			35.43	900	79057.67	35860
56	1400	53.54	1360	100.12	2543	100.12	2543	57.74	1466.5	44.81	1138.3			39.37	1000	88515.49	40150
60	1500	57.40	1458					62.54	1588.5	47.65	1210.3				1000	94820.71	43010

Series BS Trunnion Mounted Ball Valve

Dimensions

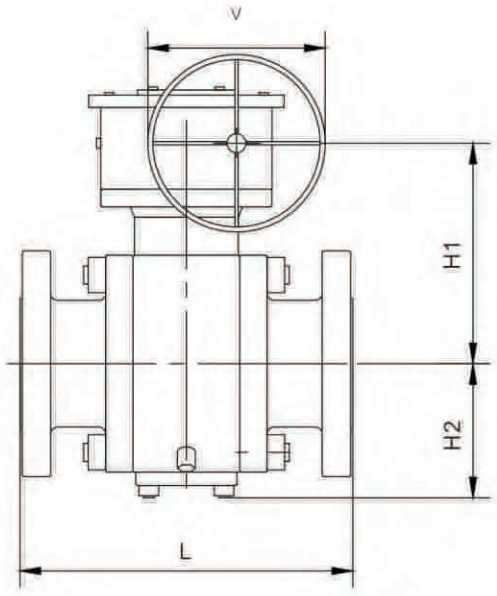


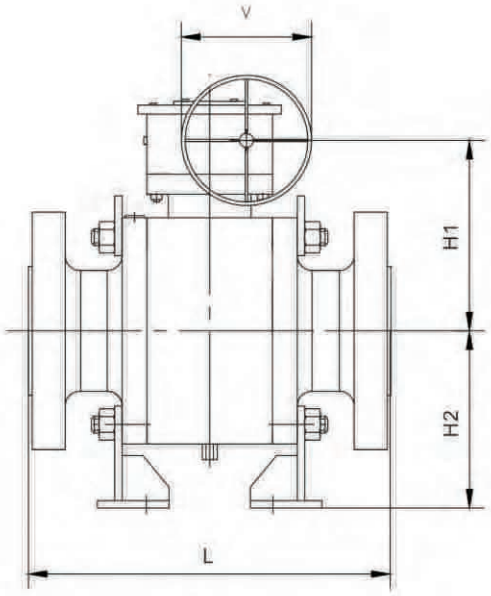
Class 400LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	7.33	186.3	3.59	91.3	15.75	400			72.75	33
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.28	261.0	4.07	103.3	32.09	815			149.91	68
4	100	3.94	100	15.98	406	15.98	406	16.14	410	8.25	209.5	4.93	125.3			11.81	300	257.94	117
6	150	5.91	150	19.49	495	19.49	495	19.61	498	10.85	275.5	10.04	255.0			15.75	400	595.25	270
8	200	7.91	201	23.50	597	23.50	597	23.62	600	12.28	312.0	11.61	295.0			19.69	500	784.84	356
10	250	9.92	252	26.50	673	26.50	673	26.61	676	14.29	363.0	13.29	337.5			23.62	600	1245.61	565
12	300	11.93	303	30.00	762	30.00	762	30.12	765	19.49	495.0	15.12	384.0			23.62	600	2204.62	1000
14	350	13.15	334	32.52	826	32.52	826	32.64	829	20.51	521.0	16.08	408.5			23.62	600	2936.55	1332
16	400	15.16	385	35.51	902	35.51	902	35.63	905	23.27	591.0	17.64	448.0			23.62	600	4100.59	1860
18	450	17.17	436	38.50	978	38.50	978	38.62	981	25.26	641.5	19.29	490.0			23.62	600	4188.78	1900
20	500	19.17	487	41.50	1054	41.50	1054	41.73	1060	27.62	701.5	20.94	532.0			27.56	700	5407.93	2453
22	550	21.18	538	45.00	1143	45.00	1143	45.39	1153	25.10	637.5	22.83	580.0			29.92	760	7129.74	3234
24	600	23.19	589	48.50	1232	48.50	1232	48.86	1241	26.59	675.5	24.19	614.5			29.92	760	9603.32	4356
26	650	24.92	633	51.50	1308	51.50	1308	52.01	1321	29.63	752.5	26.22	666.0			29.92	760	10961.37	4972
28	700	26.93	684	55.00	1397	55.00	1397	55.51	1410	37.20	945.0	27.83	707.0			29.92	760	13216.70	5995
30	750	28.94	735	60.00	1524	60.00	1524	60.51	1537	38.68	982.5	29.31	744.5			29.92	760	15229.51	6908
32	800	30.67	779	65.00	1651	65.00	1651	65.63	1667	40.00	1016.0	30.79	782.0			29.92	760	17824.35	8085
34	850	32.68	830	70.00	1778	70.00	1778	70.63	1794	41.89	1064.0	32.58	827.5			29.92	760	19958.42	9053
36	900	34.41	874	74.02	1880	74.02	1880	74.61	1895	43.21	1097.5	33.90	861.0			29.92	760	24493.33	11110
40	1000	38.43	976	85.00	2159	85.00	2159			43.43	1103.0	33.73	856.8			35.43	900	32932.61	14938
42	1050	40.16	1020	85.63	2175	85.63	2175			47.15	1197.5	35.01	889.3			31.50	800	37370.51	16951
48	1200	45.91	1166	95.87	2435	95.87	2435			52.15	1324.5	39.22	996.3			31.50	800	53109.30	24090
54	1350	51.65	1312							57.22	1453.5	42.89	1089.5			39.37	1000	79057.67	35860
56	1400	53.54	1360	106.69	2710	106.69	2710			58.52	1486.5	44.81	1138.3			39.37	1000	109435.13	49639
60	1500	57.40	1458							62.54	1588.5	47.65	1210.3			39.37	1000	116403.94	52800

Dimensions

Series BS Trunnion Mounted Ball Valve



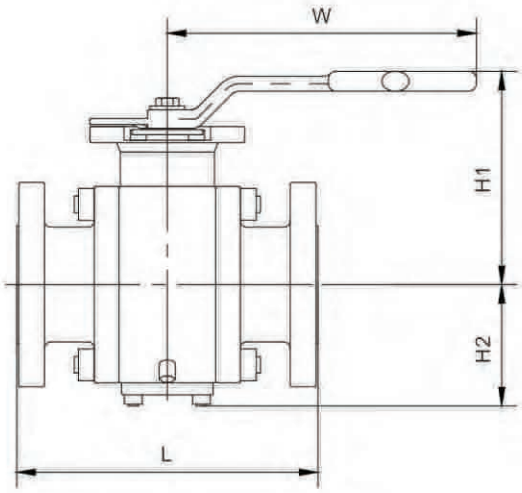


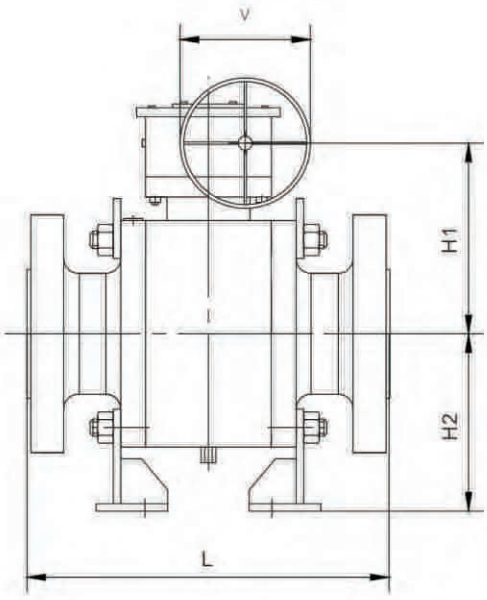
Class 600LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	11.50	292	11.50	292	11.61	295	7.33	186.3	3.59	91.3	15.75	400			83.78	38
3	80	2.91	74	14.02	356	14.02	356	14.13	359	10.28	261.0	3.38	85.8	32.09	815			171.96	78
4	100	3.94	100	15.98	406	15.98	406	17.13	435	8.56	217.5	4.07	103.3			15.75	400	257.94	117
6	150	5.91	150	19.49	495	19.49	495	22.13	562	11.20	284.5	10.37	263.5			15.75	400	606.27	275
8	200	7.91	201	23.50	597	23.50	597	26.14	664	12.68	322.0	11.98	304.3			19.69	500	965.62	438
10	250	9.92	252	26.50	673	26.50	673	31.14	791	14.96	380.0	13.82	351.0			23.62	600	1631.42	740
12	300	11.93	303	30.00	762	30.00	762	33.11	841	20.00	508.0	15.45	392.5			23.62	600	2270.76	1030
14	350	13.15	334	32.52	826	32.52	826	35.12	892	22.32	567.0	16.57	421.0			23.62	600	2969.62	1347
16	400	15.16	385	35.51	902	35.51	902	39.13	994	24.13	613.0	18.23	463.0			23.62	600	4321.06	1960
18	450	17.17	436	38.50	978	38.50	978	43.11	1095	26.56	674.5	19.90	505.5			27.56	700	4817.09	2185
20	500	19.17	487	41.50	1054	41.50	1054	47.24	1200	23.78	604.0	21.59	548.5			29.92	760	7165.02	3250
22	550	21.18	538	45.00	1143	45.00	1143	51.38	1305	26.71	678.5	23.70	602.0			29.92	760	8172.53	3707
24	600	23.19	589	48.50	1232	48.50	1232	55.39	1407	28.25	717.5	25.24	641.0			29.92	760	9810.56	4450
26	650	24.92	633	51.50	1308	51.50	1308	57.52	1461	30.65	778.5	27.26	692.5			29.92	760	13568.11	6154
28	700	26.93	684	55.00	1397	55.00	1397	61.50	1562	38.11	968.0	28.72	729.5			29.92	760	14963.20	6787
30	750	28.94	735	60.00	1524	60.00	1524	65.51	1664	39.86	1012.5	30.53	775.5			29.92	760	16518.78	7493
32	800	30.67	779	65.00	1651	65.00	1651	70.63	1794	41.18	1046.0	31.81	808.0			35.43	900	19321.29	8764
34	850	32.68	830	70.00	1778	70.00	1778	76.61	1946	42.68	1084.0	33.27	845.0			35.43	900	20889.22	9475
36	900	34.41	874	74.02	1880	74.02	1880	82.64	2099	46.44	1179.5	34.94	887.5			31.50	800	26296.71	11928
40	1000	38.43	976	85.00	2159	85.00	2159			43.52	1105.5	33.83	859.3			35.43	900	36296.86	16464
42	1050	40.16	1020	85.63	2175	85.63	2175			47.24	1200.0	35.11	891.8			31.50	800	40519.15	18379
48	1200	45.91	1166	95.87	2435	95.87	2435			57.80	1468.0	39.32	998.8			31.50	800	59754.02	27104
54	1350	51.65	1312							58.78	1493.0	43.23	1098.0			39.37	1000	80495.09	36512
56	1400	53.54	1360	106.69	2710	106.69	2710			59.80	1519.0	44.91	1140.8			39.37	1000	111423.96	50541
60	1500	57.40	1458							62.64	1591.0	47.75	1212.8			39.37	1000	118520.37	53760

Series BS Trunnion Mounted Ball Valve

Dimensions



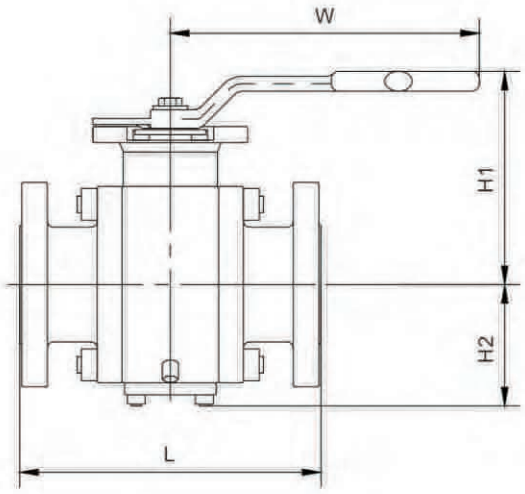


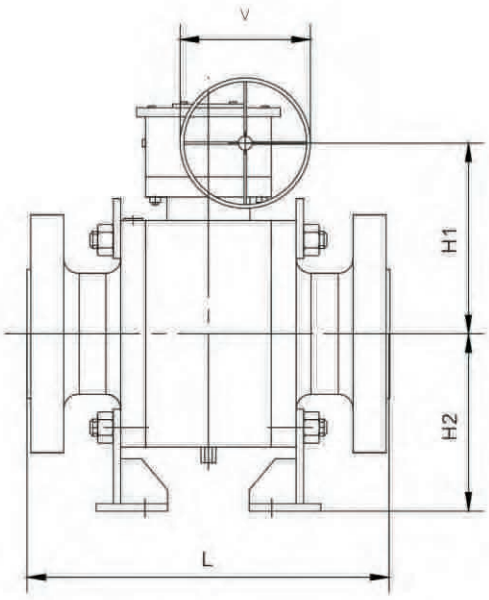
Class 900LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	7.59	192.8	3.70	94.0	15.75	400			125.66	57
3	80	2.91	74	15.00	381	15.00	381	15.12	384	7.66	194.5	4.25	108.0			11.81	300	185.19	84
4	100	3.94	100	17.99	457	17.99	457	18.11	460	8.88	225.5	5.45	138.5			15.75	400	284.40	129
6	150	5.91	150	24.02	610	24.02	610	24.13	613	11.52	292.5	10.75	273.0			19.69	500	1164.04	528
8	200	7.91	201	29.02	737	29.02	737	29.13	740	13.58	345.0	12.50	317.5			23.62	600	1311.75	595
10	250	9.92	252	32.99	838	32.99	838	33.11	841	18.54	471.0	14.21	361.0			23.62	600	2103.21	954
12	300	11.93	303	37.99	965	37.99	965	38.11	968	22.17	563.0	16.26	413.0			23.62	600	3097.49	1405
14	350	12.68	322	40.51	1029	40.51	1029	40.87	1038	23.64	600.5	17.26	438.5			27.56	700	4259.33	1932
16	400	14.69	373	44.49	1130	44.49	1130	44.88	1140	21.28	540.5	19.27	489.5			29.92	760	5317.54	2412
18	450	16.65	423	47.99	1219	47.99	1219	48.50	1232	22.99	584.0	21.18	538.0			29.92	760	7433.98	3372
20	500	18.54	471	52.01	1321	52.01	1321	52.52	1334	26.12	663.5	22.85	580.5			29.92	760	9153.58	4152
22	550	20.55	522							34.00	863.5	24.70	627.5			29.92	760	11666.85	5292
24	600	22.44	570	60.98	1549	60.98	1549	61.73	1568	35.57	903.5	26.57	675.0			29.92	760	14542.56	6596
26	650	24.29	617	65.00	1651	65.00	1651	65.87	1673	37.80	960.0	28.43	722.0			29.92	760	19701.37	8936
28	700	26.18	665	69.02	1753	69.02	1753	69.88	1775	38.35	974.0	30.30	769.5			29.92	760	26989.84	12242
30	750	28.03	712	74.02	1880	74.02	1880	74.88	1902	43.09	1094.5	31.85	809.0			31.50	800	30270.31	13730
32	800	29.92	760	80.00	2032	80.00	2032	80.87	2054	45.16	1147.0	33.56	852.5			35.43	900	32016.37	14522
34	850	31.81	808	85.00	2159	85.00	2159	86.14	2188	41.50	1054.0	29.36	745.8			35.43	900	46196.49	20954
36	900	33.66	855	90.00	2286	90.00	2286	91.14	2315	42.81	1087.5	30.68	779.3			35.43	900	53318.29	24185

Dimensions

Series BS Trunnion Mounted Ball Valve





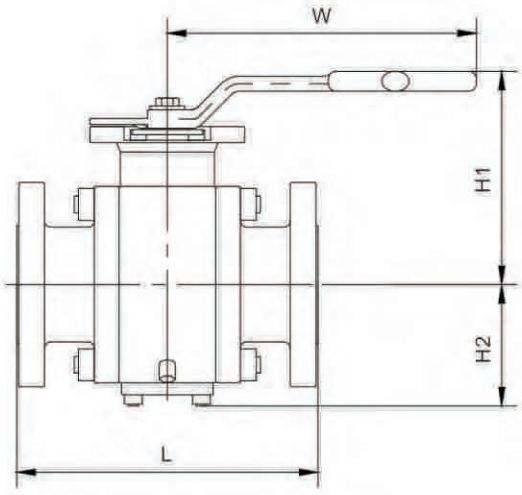
Class 1500LB

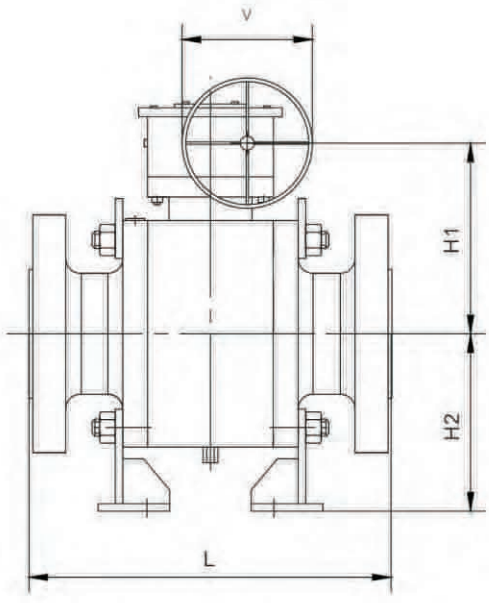
Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.93	49	14.49	368	14.49	368	14.61	371	7.59	192.8	3.94	100.0	15.75	400			138.89	63
3	80	2.91	74	18.50	470	18.50	470	18.62	473	8.35	212.0	4.78	121.3			15.75	400	266.21	121
4	100	3.94	100	21.50	546	21.50	546	21.61	549	9.57	243.0	5.98	152.0			15.75	400	425.49	193
6	150	5.67	144	27.76	705	27.76	705	27.99	711	12.42	315.5	11.54	293.0			23.62	600	1572.78	713
8	200	7.56	192	32.76	832	32.76	832	33.11	841	18.27	464.0	13.64	346.5			23.62	600	2039.19	925
10	250	9.41	239	39.02	991	39.02	991	39.37	1000	21.93	557.0	15.67	398.0			27.56	700	3240.46	1470
12	300	11.30	287	44.49	1130	44.49	1130	45.12	1146	20.08	510.0	17.83	453.0			29.92	760	5884.35	2669
14	350	12.40	315	49.49	1257	49.49	1257	50.24	1276	21.20	538.5	18.90	480.0			29.92	760	6101.29	2768
16	400	14.17	360	54.49	1384	54.49	1384	55.39	1407	23.68	601.5	20.77	527.5			29.92	760	7484.24	3395
18	450	15.98	406	60.51	1537	60.51	1537	61.38	1559	30.69	779.5	23.05	585.5			29.92	760	9886.79	4485
20	500	17.87	454	65.51	1664	65.51	1664	66.38	1686	32.46	824.5	25.04	636.0			29.92	760	12194.44	5531
22	550	19.69	500							35.57	903.5	26.69	678.0			35.43	900	15540.65	7049
24	600	21.50	546	76.50	1943	76.50	1943	77.64	1972	40.37	1025.5	28.64	727.5			31.50	800	19391.24	8796

Class 2500LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.65	42	17.76	451	17.76	451	17.87	454	7.24	184	5.26	133.5	15.75	400			238.10	108
3	80	2.44	62	22.76	578	22.76	578	22.99	584	8.64	219.5	6.16	156.5			23.62	600	529.11	240
4	100	3.43	87	26.50	673	26.50	673	26.89	683	10.12	257	7.32	186			23.62	600	1018.53	462
6	150	5.16	131	35.98	914	35.98	914	36.50	927	8.54	217	13.62	346			23.62	600	2058.23	934
8	200	7.05	179	40.24	1022	40.24	1022	40.87	1038	7.72	196	16.18	411			27.56	700	3576.78	1622
10	250	8.78	223	50.00	1270	50.00	1270	50.87	1292	3.35	85	18.43	468			29.92	760	5653.53	2564
12	300	10.43	265	55.98	1422	55.98	1422	56.89	1445	4.29	109	19.92	506			29.92	760	8642.99	3920

Series BS Trunnion Mounted Ball Valve



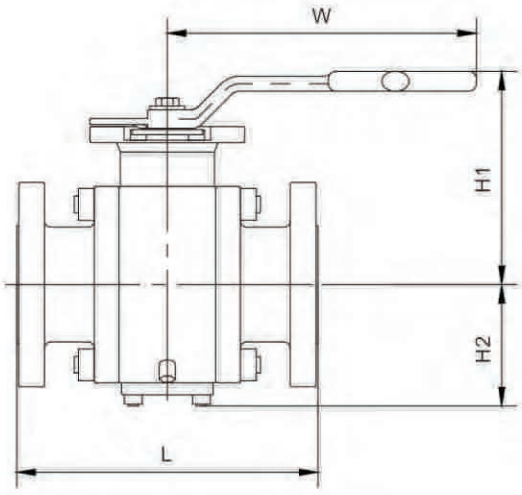


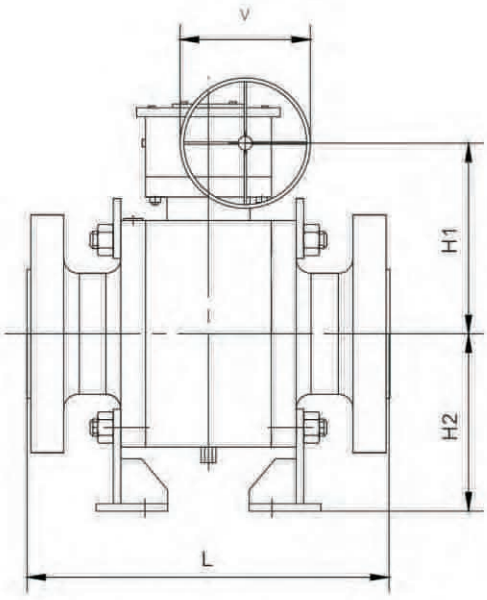
Class 2500LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.65	42	17.76	451	17.76	451	17.87	454	7.24	184	5.26	133.5	15.75	400			238.10	108
3	80	2.44	62	22.76	578	22.76	578	22.99	584	8.64	219.5	6.16	156.5			23.62	600	529.11	240
4	100	3.43	87	26.50	673	26.50	673	26.89	683	10.12	257	7.32	186			23.62	600	1018.53	462
6	150	5.16	131	35.98	914	35.98	914	36.50	927	8.54	217	13.62	346			23.62	600	2058.23	934
8	200	7.05	179	40.24	1022	40.24	1022	40.87	1038	7.72	196	16.18	411			27.56	700	3576.78	1622
10	250	8.78	223	50.00	1270	50.00	1270	50.87	1292	3.35	85	18.43	468			29.92	760	5653.53	2564
12	300	10.43	265	55.98	1422	55.98	1422	56.89	1445	4.29	109	19.92	506			29.92	760	8642.99	3920

Dimensions

Series BS Trunnion Mounted Ball Valve

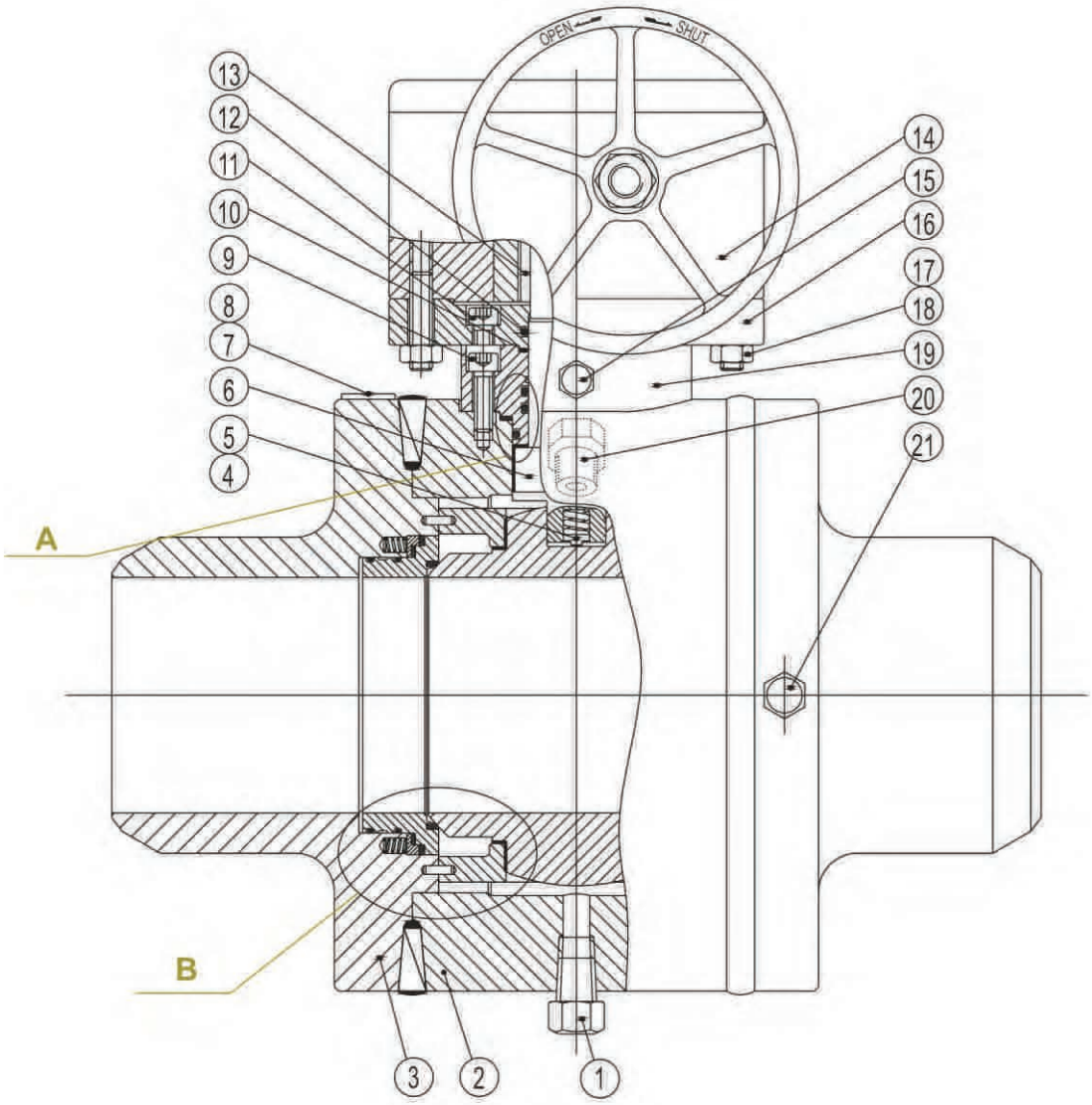




Class 2500LB

Size in		D		L						H1		H2		W		V		Weight kg	
				RF		BW		RTJ											
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.65	42	17.76	451	17.76	451	17.87	454	7.24	184	5.26	133.5	15.75	400			238.10	108
3	80	2.44	62	22.76	578	22.76	578	22.99	584	8.64	219.5	6.16	156.5			23.62	600	529.11	240
4	100	3.43	87	26.50	673	26.50	673	26.89	683	10.12	257	7.32	186			23.62	600	1018.53	462
6	150	5.16	131	35.98	914	35.98	914	36.50	927	8.54	217	13.62	346			23.62	600	2058.23	934
8	200	7.05	179	40.24	1022	40.24	1022	40.87	1038	7.72	196	16.18	411			27.56	700	3576.78	1622
10	250	8.78	223	50.00	1270	50.00	1270	50.87	1292	3.35	85	18.43	468			29.92	760	5653.53	2564
12	300	10.43	265	55.98	1422	55.98	1422	56.89	1445	4.29	109	19.92	506			29.92	760	8642.99	3920

General Assembling Drawing



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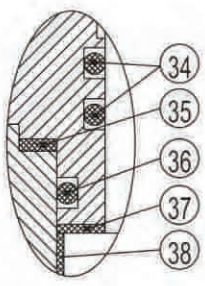

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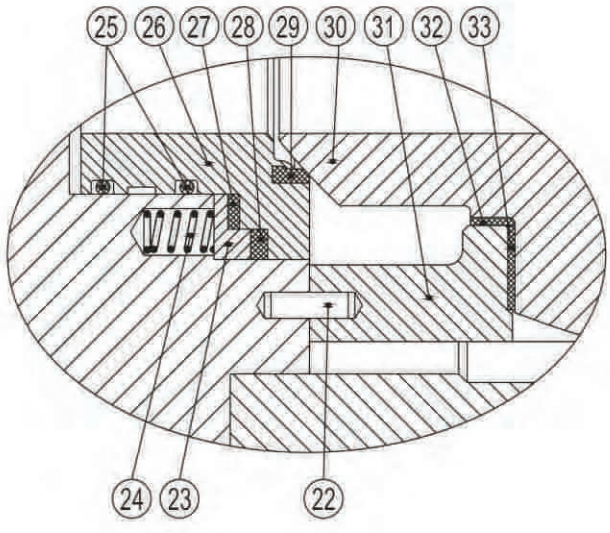


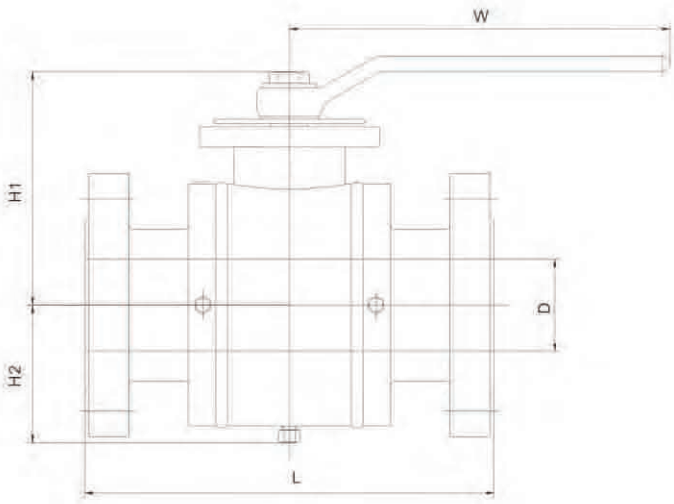
Material Specifications

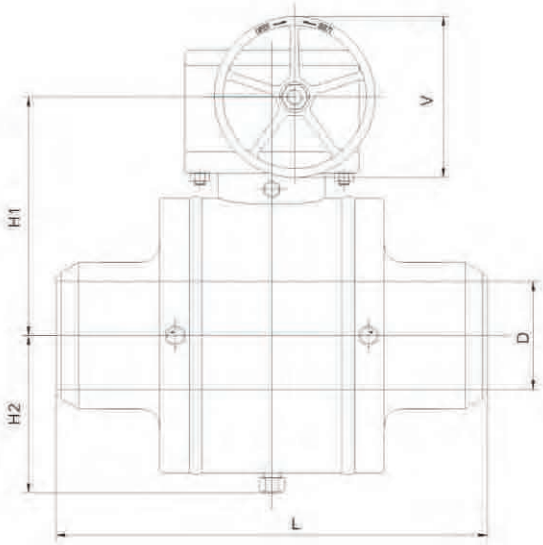
Series BW Fully Welded Ball Valve

NO.	Part Name	Carbon Steel	Stainless Steel	Low Temperature Service
1	Drain	Stainless Steel	Stainless Steel	Stainless Steel
2	Body	ASTM A105	ASTM A182 F316	ASTM A350 LF2
3	Closure	ASTM A105	ASTM A182 F316	ASTM A350 LF2
4	Grounding Plunger	Stainless Steel	Stainless Steel	Stainless Steel
5	Grounding Spring	Stainless Steel	Stainless Steel	Stainless Steel
6	Stem	ASTM A105/ENP	ASTM A182 F316	ASTM A350 LF2/ENP
7	Nameplate	Stainless Steel	Stainless Steel	Stainless Steel
8	Rivet	Stainless Steel	Stainless Steel	Stainless Steel
9	Gland Cap Screw	Carbon Steel	Stainless Steel	ASTM A320 L7M
10	Top Flange Gasket	316Stainless Steel+Graphite	316Stainless Steel+Graphite	316Stainless Steel+Graphite
11	Top Flange Screw	Stainless Steel	Stainless Steel	ASTM A320 L7M
12	Top Flange O-ring	VITON	VITON	HSN
13	Stem Key	Carbon Steel	Stainless Steel	Stainless Steel
14	Gearbox	ASTM A216 WCB	ASTM A216 WCB	ASTM A352 LCB
15	Stem Injection	Stainless Steel	Stainless Steel	Stainless Steel
16	Top Flange	ASTM A105/ENP	ASTM A182 F316	ASTM A350 LF2
17	Actuator Stud	Carbon Steel	Stainless Steel	ASTM A320 L7M
18	Actuator Nut	Carbon Steel	Stainless Steel	ASTM A194 7M
19	Gland Cap	ASTM A105	ASTM A182 F316	ASTM A350 LF2
20	Vent Valve	Stainless Steel	Stainless Steel	Stainless Steel
21	Seat Injection	Stainless Steel	Stainless Steel	Stainless Steel
22	Trunnion Pin	Stainless Steel	Stainless Steel	Stainless Steel
23	Seat Follower	ASTM A105/ENP	ASTM A182 F316	ASTM A350 LF2/ENP
24	Seat Spring	INCONEL X-750	INCONEL X-750	INCONEL X-750
25	Seat O-ring	VITON	VITON	HSN
26	Seat Ring	ASTM A105/ENP	ASTM A182 F316	ASTM A350 LF2/ENP
27	Seat Gasket	PTFE	PTFE	PTFE
28	Firesafe Gasket	316Stainless Steel+Graphite	316Stainless Steel+Graphite	316Stainless Steel+Graphite
29	Seat Insert	NYLON	NYLON	NYLON
30	Ball	ASTM A105/ENP	ASTM A182 F316	ASTM A350 LF2/ENP
31	Trunnion Support	ASTM A216 WCB/ENP	ASTM A351 CF8	ASTM A352 LCB/ENP
32	Ball Thrust Washer	Reinforced PTFE	Reinforced PTFE	Reinforced PTFE
33	Ball Bearing	316+PTFE+MoS2	316+PTFE+MoS2	316+PTFE+MoS2
34	Stem O-ring	VITON	VITON	HSN
35	Gland Cap Gasket	316Stainless Steel+Graphite	316Stainless Steel+Graphite	316Stainless Steel+Graphite
36	Gland Cap O-ring	VITON	VITON	HSN
37	Stem Thrust Washer	Reinforced PTFE	Reinforced PTFE	Reinforced PTFE
38	Stem Bearing	316+PTFE+MoS2	316+PTFE+MoS2	316+PTFE+MoS2

Series BW Fully Welded Ball Valve

Dimensions





Class 150LB

Size in	D mm	L		H1 mm	H2 mm	W mm / V mm	Weight Kg
		RF mm	BW mm				
2	51	178	216	200	110	265	30
3	76	203	283	300	126	285	60
4	102	229	305	315	165	285	92
6	152	394	457	335	165	300	190
8	203	457	521	405	200	300	345
10	254	533	559	427	220	300	495
12	305	610	635	465	262	500	705
14	337	686	762	506	293	600	859
16	387	762	838	622	341	600	1020
18	438	864	914	666	92	600	1440
20	489	914	991	730	435	600	1918
22	540	1067	1143	833	480	600	2352
24	591	1143	1245	895	518	800	2803
26	635	1245	1346	900	535	800	3200
28	686	1295	1397	935	542	800	4045
30	737	1372	1524	1010	605	800	4820
32	781	1473	1626	1060	650	800	5490
34	832	1524	1727	1077	650	800	6704
36	876	1753	1956	1115	700	800	7615
40	978	1855	2083	1400	865	800	110271
42	1022	2134	2134	1598	900	800	12110
48	1168	2489	2489	1722	1042	800	18360
54	1314	2573	2573	1796	1165	800	32600
56	1362			1820	1280	800	36500
60	1461			1865	1496	800	39100

Dimensions

Series BW Fully Welded Ball Valve

Class 300LB

Size in	D mm	L RF mm	L BW mm	H1 mm	H2 mm	W mm / V mm	Weight Kg
2	51	216	216	206	113	265	31
3	76	283	283	315	129	400	69
4	102	305	305	330	169	750	11
6	152	403	403	345	148	300	211
8	203	502	521	415	185	300	376
10	254	568	559	427	226	400	540
12	305	648	635	465	269	500	763
14	337	762	762	519	300	600	900
16	387	838	838	638	350	600	1300
18	438	914	914	683	402	600	1715
20	489	991	991	748	446	600	2090
22	540	1092	1092	854	492	600	2220
24	591	1143	1143	917	531	800	2890
28	686	1346	1346	958	556	800	4575
30	737	1397	1397	1035	620	800	5590
32	781	1524	1524	1087	666	800	6240
34	832	1626	1626	1104	666	800	7370
36	876	1727	1727	1143	718	800	8435
40	978	1956	1956	1435	887	800	11200
42	1022	2083	2083	1638	923	800	13050
48	1168	2170	2170	1765	1068	800	19000
54	1314			1796	1165	800	32600
56	1362	2543	2543	1820	1280	800	36500
60	1461	2627	2627	1865	1496	800	39100

Class 400LB

Size in	D mm	L RF mm	L BW mm	L RTJ mm	H1 mm	H2 mm	W mm / V mm	Weight Kg
2	51	292	292	295	206	113	400	45
3	76	356	356	359	315	129	750	80
4	102	406	406	410	330	169	1000	150
6	152	495	495	498	345	148	300	248
8	203	597	597	600	415	185	300	438
10	254	673	673	676	427	226	500	701
12	305	762	762	765	465	269	600	625
14	337	826	826	829	519	300	600	1230
16	387	902	902	905	638	350	600	1535
18	438	978	978	981	683	402	600	2135
20	489	1054	1054	1060	748	446	600	2640
22	540	1143	1143	1153	854	492	800	3370
24	591	1232	1232	1241	917	531	800	3960
28	686	1397	1397	1410	958	556	800	6060
30	737	1524	1524	1537	1035	620	800	6690
32	781	1651	1651	1667	1087	666	800	7825
34	832	1778	1778	1794	1104	666	800	8460
36	876	1880	1880	1895	1143	718	800	10650
40	978	2170	2170		1435	887	800	14700
42	1022	2175	2175		1638	923	800	16410
48	1168	2435	2435		1765	1068	800	24200
54	1314				1796	1165	800	32600
56	1362	2710	2710		1820	1280	800	36500
60	1461	2794	2794		1865	1496	800	39100

Series BW Fully Welded Ball Valve

Dimensions

Class 600LB

Size in	D mm	L			H1 mm	H2 mm	W mm / V mm	Weight Kg
		RF mm	BW mm	RTJ mm				
2	51	292	292	295	206	113	400	45
3	76	356	356	359	315	129	750	80
4	102	432	432	435	330	169	1000	150
6	152	559	559	562	345	148	300	248
8	203	660	660	664	415	185	300	438
10	254	787	787	791	427	226	500	701
12	305	838	838	841	465	269	600	625
14	337	889	889	892	519	300	600	1230
16	387	991	991	994	638	350	600	1535
18	438	1092	1092	1095	683	402	600	2135
20	489	1194	1194	1200	748	446	600	2640
22	540	1295	1295	1305	854	492	800	3370
24	591	1397	1397	1407	917	531	800	3960
28	686	1549	1549	1562	958	556	800	6060
30	737	1651	1651	1664	1035	620	800	6690
32	781	1778	1778	1794	1087	666	800	7825
34	832	1930	1930	1946	1104	666	800	8460
36	876	2083	2083	2099	1143	718	800	10650
40	978	2170	2170	2170	1435	887	800	14700
42	1022	2175	2175	2175	1638	923	800	16410
48	1168	2435	2435	2435	1765	1068	800	24200
54	1314				1796	1165	800	32600
56	1362	2710	2710	2710	1820	1280	800	36500
60	1461	2794	2794	2794	1865	1496	800	39100

Class 900LB

Size in	D mm	L			H1 mm	H2 mm	W mm / V mm	Weight Kg
		RF mm	BW mm	RTJ mm				
2	51	368	368	371	217	119	460	52
3	76	381	381	384	327	133	1000	87
4	102	457	457	460	343	176	300	160
6	152	610	610	613	358	153	300	385
8	203	737	737	740	431	193	400	560
10	254	838	838	841	443	235	500	820
12	305	965	965	968	484	280	600	1125
14	324	1029	1029	1038	540	312	600	1610
16	375	1130	1130	1140	660	365	600	2010
18	425	1219	1219	1232	700	414	600	2810
20	473	1321	1321	1334	770	459	600	3460
22	524				880	507	800	4410
24	572	1549	1549	1568	945	547	800	5497
28	667				987	573	800	10202
30	714	1880			1066	638	800	11442
32	762	2032			1120	686	800	12102
34	810	2159			1137	688	800	17462
36	857	2286			1177	739	800	20154

Dimensions

Series BW Fully Welded Ball Valve

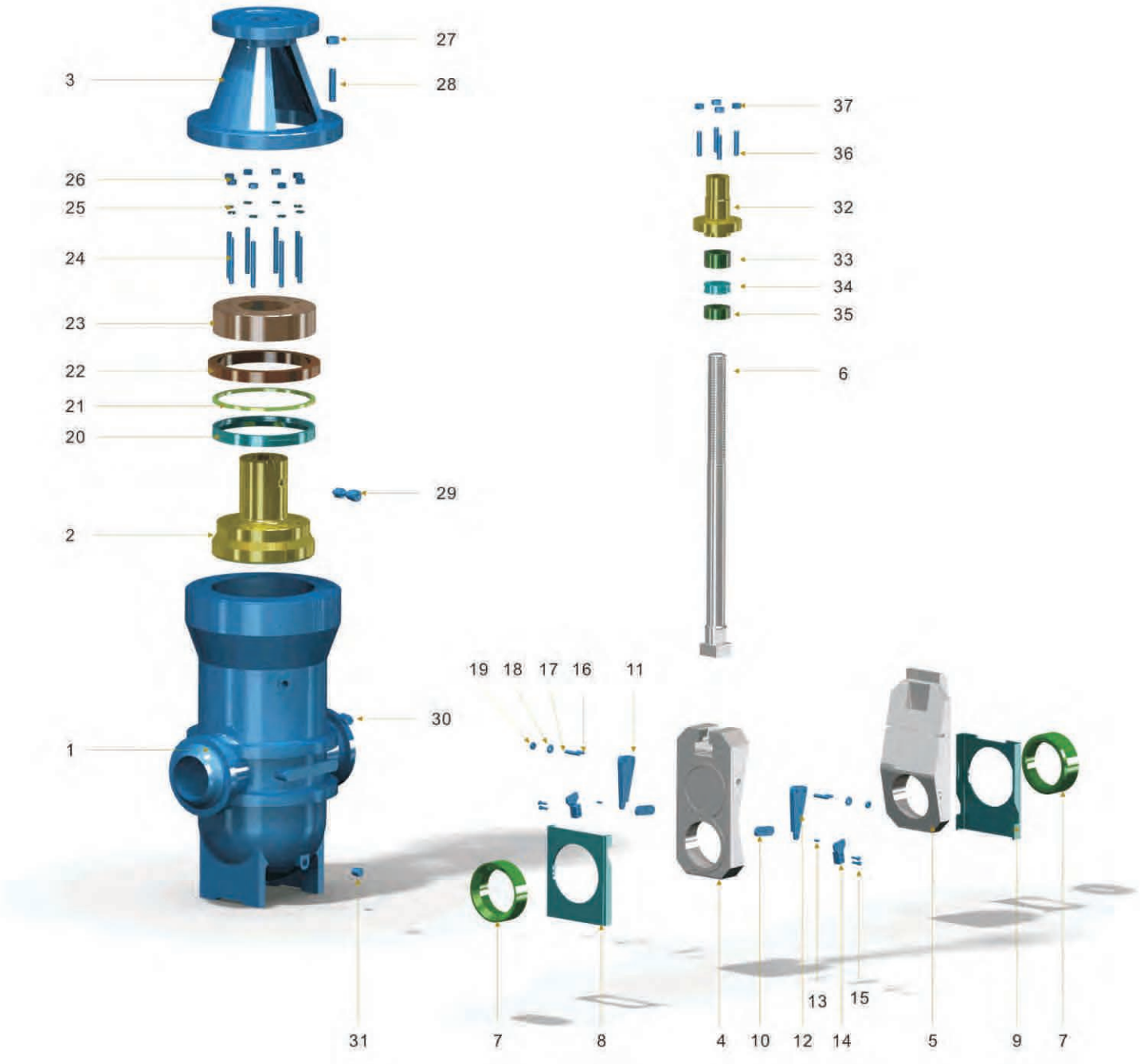
Class 1500LB

Size in	D mm	L			H1 mm	H2 mm	W mm / V mm	Weight Kg
		RF mm	BW mm	RTJ mm				
2	51	368	368	371	221	130	750	60
3	76	470	470	473	297	152	300	115
4	102	546	546	549	345	166	300	194
6	146	705	705	711	365	192	400	580
8	194	832	832	841	423	238	500	752
10	241	991	991	1000	560	274	600	1195
12	289	1130	1130	1146	608	318	600	2170
14	318	1257	1257	1276	662	483	600	2250
16	362	1384	1384	1407	796	534	600	2760
18	407	1537	1537	1559	849	606	600	3646
20	457	1664	1664	1686	964	686	800	4497
22	495	1816	1816		1025	731	800	5731
24	534	2043	2043	2071	1065	775	800	7151

Class 2500LB

Size in	D mm	L			H1 mm	H2 mm	V mm	Weight Kg
		RF mm	BW mm	RTJ mm				
2	44	451	451	454	230	121	300	90
3	64	578	578	584	284	146	400	200
4	89	673	673	683	303	164	400	385
6	133	914	914	927	394	220	600	778
8	181	1022	1022	1038	488	312	600	1352
10	225	1270	1270	1292	600	425	600	2137
12	267	1422	1422	1445	872	629	760	3267

Expanding Gate Valve
General Assembling Drawing



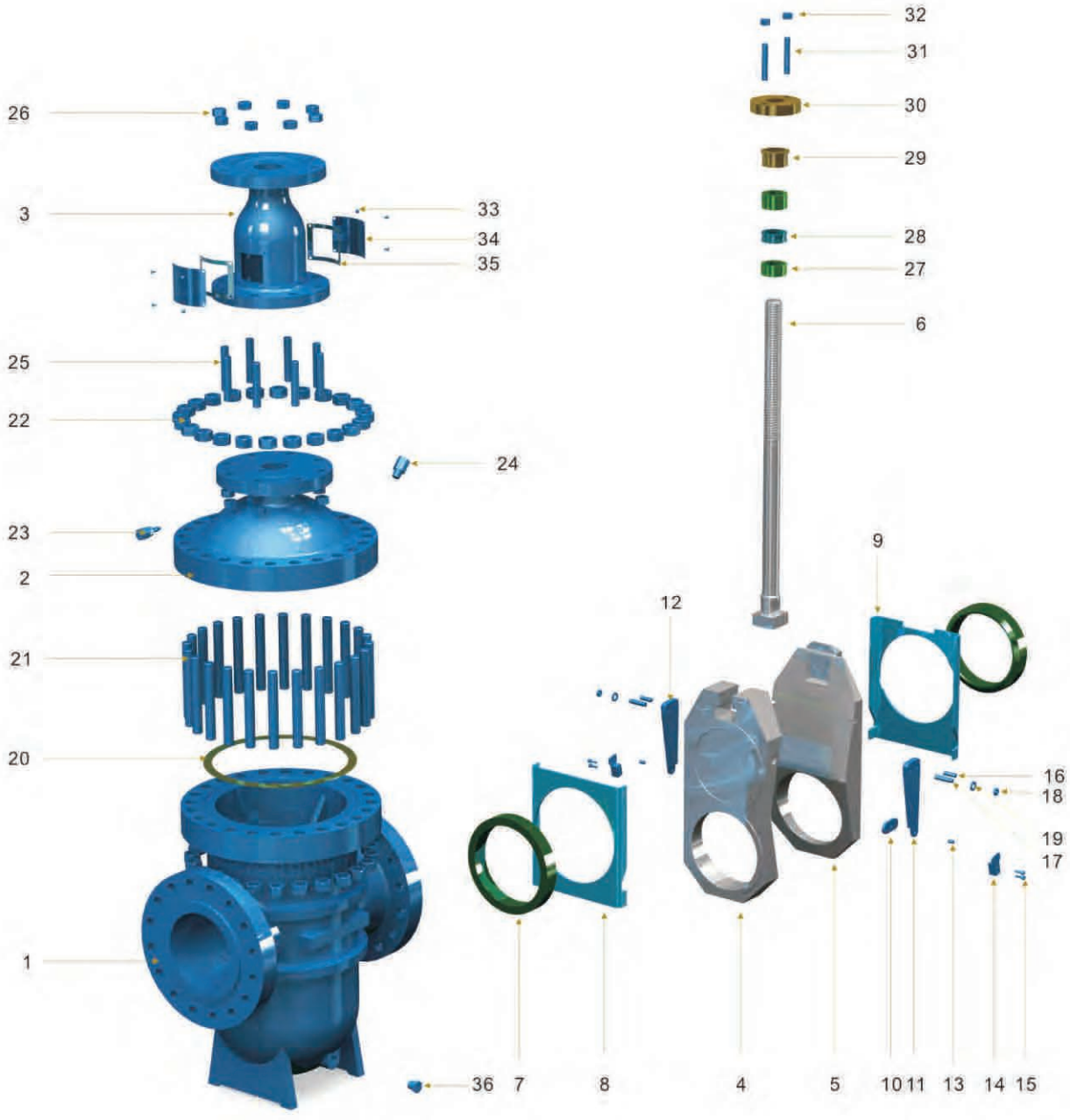
Expanding Gate Valve Material Specifications

Series GT Through Conduit Gate Valve

No	Part	Standard	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
2	Bonnet	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
3	Yoke	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
4	Main Wedge	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
5	Second Wedge	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
6	Stem	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F316
7	Seat Ring	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
8	Body Stud	ASTM A193-B7	ASTM A193-B7M	ASTM A320-L7M
9	Body Nut	ASTM A194-2H	ASTM A194-2HM	ASTM A194-7M

Index No	Part	Index No	Part	Index No	Part
1	Body	15	Screw	29	Stem Injection
2	Bonnet	16	Pin	30	Vent Valve
3	Yoke	17	Pin	31	Plug
4	Main Wedge	18	Washer	32	Gland
5	Second Wedge	19	Nut	33	Packing
6	Stem	20	Gasket	34	Lantern Ring
7	Seat Ring	21	Compression Ring	35	Packing
8	Main Guider Plate	22	Separated Ring	36	Stud
9	Second Guider Plate	23	Supporting Cover	37	Nut
10	Slide Block	24	Stud		
11	Left Roker	25	Washer		
12	Right Roker	26	Nut		
13	Pin	27	Nut		
14	Base Block Rough	28	Stud		

Expanding Gate Valve
General Assembling Drawing



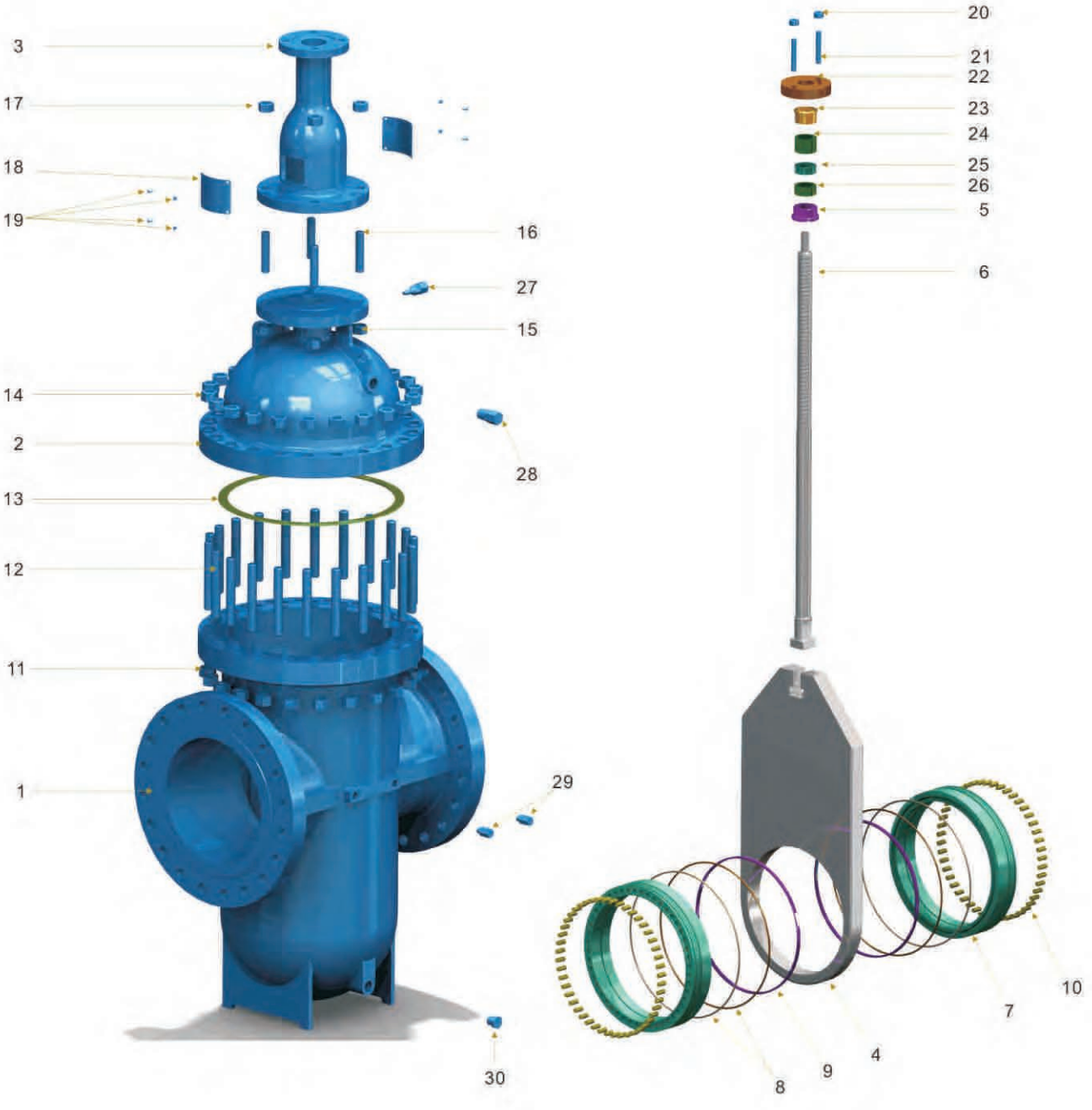
Expanding Gate Valve Material Specifications

Series GT Through Conduit Gate Valve

No	Part	Standard	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
2	Bonnet	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
3	Yoke	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
4	Main Wedge	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
5	Second Wedge	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
6	Stem	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F316
7	Seat Ring	ASTM A105N/HARD FACE	ASTM A105N/HARD FACE	ASTM A350-LF2/HARD FACE
8	Body Stud	ASTM A193-B7	ASTM A193-B7M	ASTM A320-L7M
9	Body Nut	ASTM A194-2H	ASTM A194-2HM	ASTM A194-7M

Index No	Part	Index No	Part	Index No	Part
1	Body	15	Screw	29	Gland
2	Bonnet	16	Pin	30	Gland Flange
3	Yoke	17	Pin	31	Stud
4	Main Wedge	18	Washer	32	Nut
5	Second Wedge	19	Nut	33	Screw
6	Stem	20	Gasket	34	Side Cover Plate
7	Seat Ring	21	Body Stud	36	Gasket
8	Main Guider Plate	22	Body Nut	36	Plug
9	Second Guider Plate	23	Stem Injection		
10	Slide Block	24	Vent Valve		
11	Right Roker	25	Stud		
12	Left Roker	26	Nut		
13	Pin	27	Packing		
14	Base Block Rough	28	Lantern Ring		

Expanding Gate Valve
General Assembling Drawing



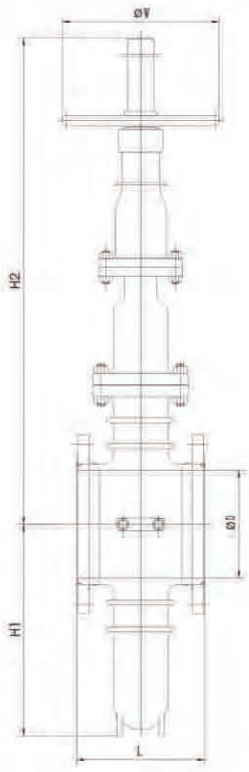
Expanding Gate Valve Material Specifications

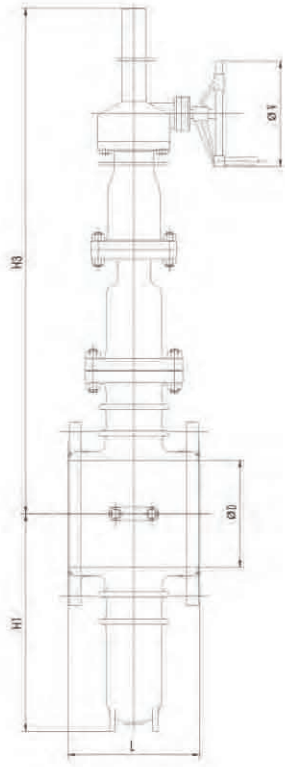
Series GT Through Conduit Gate Valve

No	Part	Standard	Sour Service	Low Temperature Service
1	Body	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
2	Bonnet	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
3	Yoke	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
4	Wedge	ASTM A105N/ENP	ASTM A105N/ENP	ASTM A350-LF2/ENP
5	Stem	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F316
6	Seat Ring	ASTM A105N/ENP	ASTM A105N/ENP	ASTM A350-LF2/ENP
7	Body Stud	ASTM A193-B7	ASTM A193-B7M	ASTM A320-L7M
8	Body Nut	ASTM A194-2H	ASTM A194-2HM	ASTM A194-7M

Index No	Part	Index No	Part	Index No	Part
1	Body	11	Nut	21	Stud
2	Bonnet	12	Stud	22	Gland Flange
3	Yoke	13	Gasket	23	Gland
4	Wedge	14	Nut	24	Packing
5	Back Seat	15	Nut	25	Lantern Ring
6	Stem	16	Stud	26	Packing
7	Retainer	17	Nut	27	Stem Injection
8	O-ring	18	Side Cover	28	Vent Valve
9	Gasket	19	Screw	29	Injection
10	Spring	20	Nut	30	Plug

Dimensions



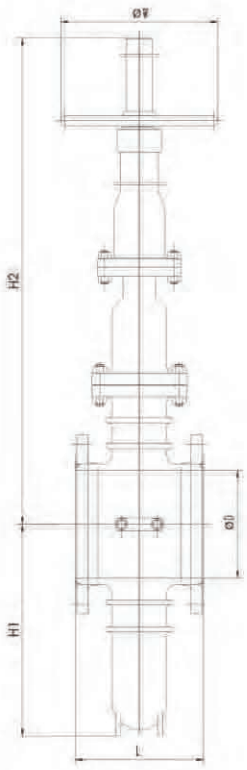


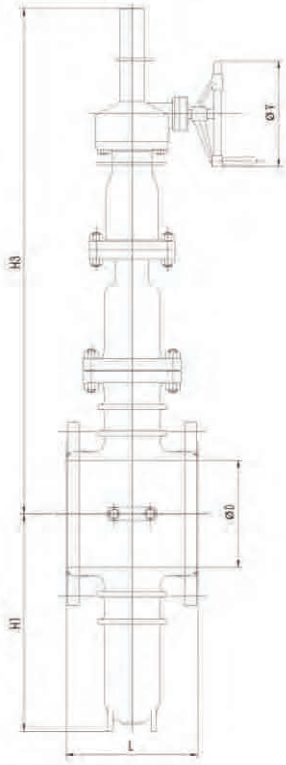
Class 150LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	5.24	2.50	21.54		8.50	7.01	7.52	2.00	7.09		34
2-1/2"	7.09	3.07	23.35		9.49	7.52	8.00	2.50	7.87		48
3"	7.48	3.50	26.57		11.14	8.00	8.50	3.00	9.84		56
4"	9.96	4.76	28.66		12.01	9.02	9.49	4.00	7.87		84
6"	13.78	6.93	41.54	40.63	15.87	10.51	10.98	6.00	9.84	12.01	142
8"	16.54	8.94	49.49	50.35	16.50	11.50	12.01	8.00	11.81	12.01	236
10"	19.69	10.94	57.05	57.72	17.99	12.99	13.50	10.00	13.78	12.01	352
12"	22.83	13.43	65.94	66.14	19.76	14.02	14.49	12.00	15.75	12.01	450
14"	24.80	14.61	73.50	72.64	25.22	15.00	15.51	13.25	17.72	12.01	600
16"	28.66	16.69	80.20	79.76	24.02	15.98	16.50	15.25	19.69	17.72	736
18"	31.69	18.90	87.52	89.09	25.98	17.01	15.72	17.25	21.65	17.72	890
20"	35.04	20.94	24.12	96.50	27.99	17.99	18.50	19.25	23.62	24.02	1120
22"	38.58	22.99		106.50		20.00		21.25		24.02	1700
24"	41.73	24.88		115.16	32.01	20.00	20.51	23.25		24.02	2010
26	45.28	26.89		121.18	34.02	22.01		25.00		24.02	2320
28"	48.43	28.74		126.93	35.98	24.02		27.00		24.02	2650
30"	51.57	31.26		137.95	35.98	25.98		29.00		24.02	2920
32"	54.02	32.80		142.64	37.99	27.99		30.75		24.02	3580
34"	57.80	34.92		149.69	40.00	30.00		32.75		24.02	4280
36"	62.99	36.10		156.18	40.00	32.01		34.50		24.02	5370
40"	65.00	10.87		165.39	35.98	35.98		38.50		24.02	6820
42"	71.54	42.44		184.13	37.99	37.99		40.25		24.02	7460
48"	78.86	48.94		198.11	44.02	44.02		46.00		31.89	10480

Dimensions

Series GT Through Conduit Gate Valve



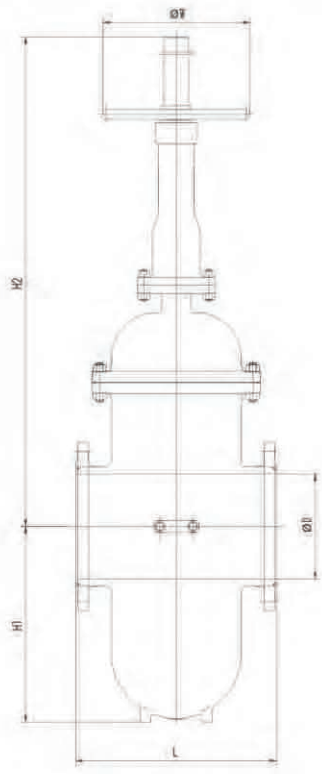


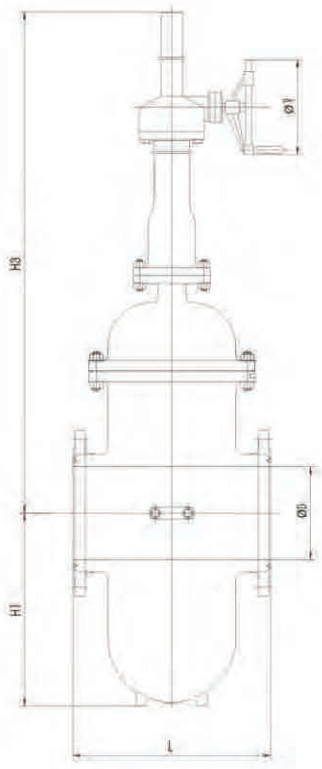
Class 150LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	133	65	547		216	178	191	51	180		34
65	180	78	593		241	191	203	64	200		48
80	190	89	675		283	203	216	76	250		56
100	253	121	728		305	229	241	102	200		84
150	350	176	1055	1032	403	267	279	152	250		142
200	420	227	1257	1279	419	292	305	203	300	305	236
250	500	278	1449	1466	457	330	343	254	350	305	352
300	580	341	1675	1680	502	356	368	305	400	305	450
350	630	371	1867	1845	572	381	394	337	450	305	600
400	728	424	2037	2026	610	406	419	387	500	305	736
450	805	480	2223	2263	660	432	445	438	550	458	890
500	890	532	2412	2451	711	457	470	489	600	458	1120
550	980	584		2705		508		540		610	1700
600	1060	632		2925	813	508	521	591		610	2010
650	1150	683		3078	864	559		635		610	2320
700	1230	730		3224	914	610		686		610	2650
750	1310	794		3504	914	660		737		610	2920
800	1372	833		3623	965	711		781		610	3580
850	1468	887		3802	1016	762		832		610	4280
900	1600	917		3967	1016	813		876		610	5370
1000	1651	1038		4201	914	914		978		610	6820
1050	1817	1078		4677	965	965		1022		610	7460
1200	2003	1243		5032	1118	1118		1168		810	10480

Series GT Through Conduit Gate Valve

Dimensions



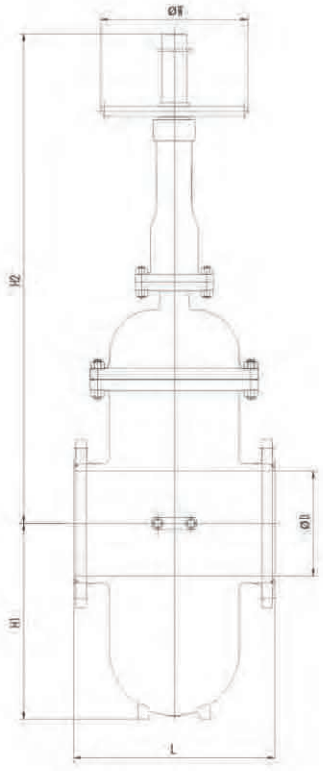


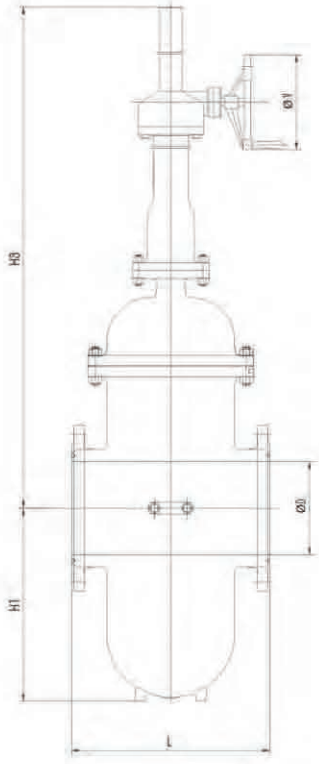
Class 300LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	5.24	2.50	21.54		8.50	8.50	9.13	2.00	7.09		54
2-1/2"	7.68	3.23	23.35		9.49	9.49	10.12	2.50	7.87		72
3"	8.58	3.78	26.38		11.14	11.14	11.73	3.00	9.84		85
4"	9.96	4.76	32.20		12.01	12.01	12.64	4.00	9.84		112
6"	13.98	6.93	42.05	42.87	15.87	15.87	16.50	6.00	11.81	12.01	240
8"	16.73	8.94	49.80	49.49	16.50	16.50	17.13	8.00	13.78	12.01	365
10"	20.08	10.94	58.74	41.61	17.99	17.99	18.62	10.00	15.75	12.01	500
12"	23.23	13.43	69.57	67.24	19.76	19.76	20.39	12.00	17.72	12.01	757
14"	25.75	14.61	75.20	72.32	30.00	30.00	30.63	13.25	19.69	12.01	1050
16"	28.54	16.69	84.84	81.02	32.99	32.99	33.62	15.25	29.92	17.72	1480
18"	31.50	18.58		90.75	35.98	35.98	36.61	17.25		24.02	2040
20"	37.40	20.94		99.92	39.02	39.02	39.76	19.25		24.02	2650
22"	42.83	22.68		106.30	42.99	42.99	43.86	21.25		24.02	3500
24"	42.32	25.08		119.21	45.00	45.00	45.87	23.25		24.02	4260
26	47.24	26.89		121.06	49.02	49.02	50.00	25.00		24.02	4800
28"	49.21	28.74		128.19	52.99	52.99	54.02	27.00		24.02	5510
30"	52.17	31.26		142.05	55.00	55.00	55.98	29.00		24.02	6300
32"	59.06	33.66		154.72	60.00	60.00	61.14	30.75		24.02	7000
34"	58.66	34.92		153.15	64.02	64.02	65.12	32.75		24.02	7900
36"	62.99	36.77		170.28	67.99	67.99	69.13	34.50		31.89	8900
40"	66.10	40.87		169.09		75.98		38.50		31.89	12800
42"	70.79	43.23		181.50		79.02		40.25		31.89	15000
48"	80.31	48.94		201.57		90.00				31.89	22300

Dimensions

Series GT Through Conduit Gate Valve



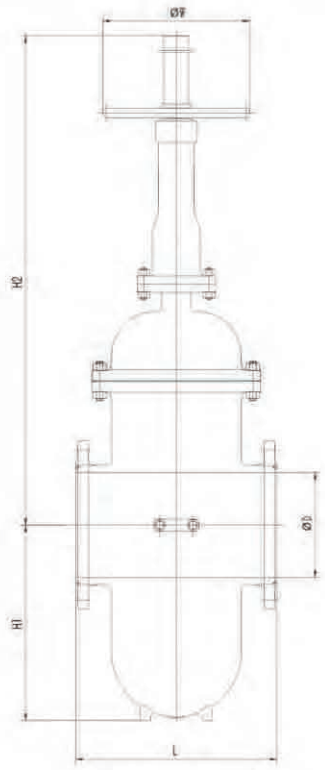


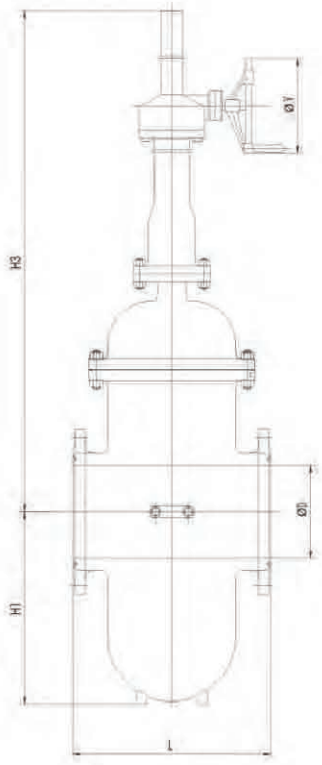
Class 300LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	133	65	481		216	216	232	51	180		54
65	195	82	593		241	241	257	64	200		72
80	218	96	670		283	283	298	76	250		85
100	253	121	818		305	305	321	102	250		112
150	355	176	1068	1089	403	403	419	152	300	305	240
200	425	227	1265	1257	419	419	435	203	350	305	365
250	510	278	1492	1057	457	457	473	254	400	305	500
300	590	341	1767	1708	502	502	518	305	450	305	757
350	654	371	1910	1837	762	762	778	337	500	305	1050
400	725	424	2155	2058	838	838	854	387	760	458	1480
450	800	472		2305	914	914	930	438		610	2040
500	950	532		2538	991	991	1010	489		610	2650
550	1088	576		2700	1092	1092	1114	540		610	3500
600	1075	637		3028	1143	1143	1165	591		610	4260
650	1200	683		3075	1245	1245	1270	635		610	4800
700	1250	730		3256	1346	1346	1372	686		610	5510
750	1325	794		3608	1397	1397	1422	737		610	6300
800	1500	855		3930	1524	1524	1553	781		610	7000
850	1490	887		3890	1626	1626	1654	832		610	7900
900	1600	934		4325	1727	1727	1756	876		810	8900
1000	1679	1038		4295		1930		978		810	12800
1050	1798	1098		4610		2007		1022		810	15000
1200	2040	1243		5120		2286				810	22300

Series GT Through Conduit Gate Valve

Dimensions



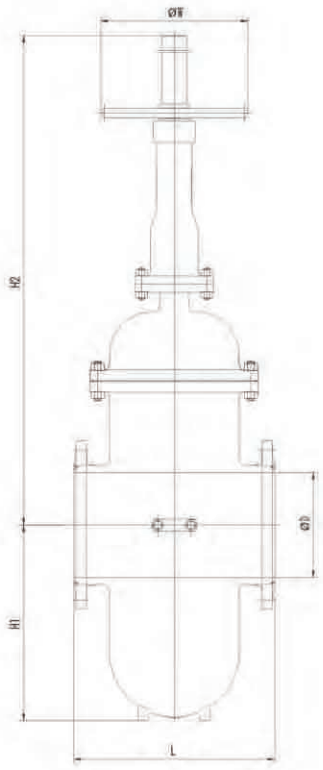


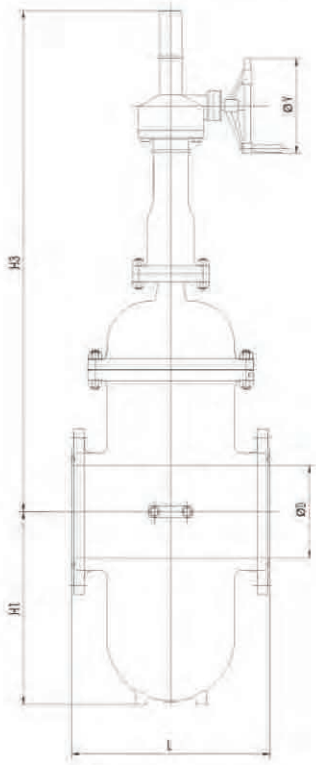
Class 600LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	5.24	2.50	21.54		11.50	11.50	11.61	2.00	7.09		66
2-1/2"	7.48	3.15	25.39		12.99	12.99	13.11	2.50	9.84		90
3"	8.07	3.66	28.82		14.02	14.02	14.13	3.00	9.84		110
4"	10.04	4.76	34.09	35.35	17.01	17.01	17.13	4.00	13.78	12.01	156
6"	14.37	6.93	42.13	44.65	22.01	22.01	22.13	6.00	17.72	12.01	296
8"	16.54	8.94	46.77	52.09	25.98	25.98	26.14	8.00	19.69	12.01	640
10"	20.28	10.94	62.01	62.32	30.98	30.98	31.14	10.00	19.69	12.01	900
12"	24.72	13.43	70.08	71.34	32.99	32.99	33.11	12.00	29.92	17.72	1135
14"	26.54	14.61		73.27	35.00	35.00	35.12	13.25		17.72	1700
16"	30.51	16.69		84.29	39.02	39.02	39.13	15.25		24.02	2350
18"	33.86	18.90		95.51	42.99	42.99	43.11	17.25		24.02	2776
20"	37.40	20.87		116.34	47.01	47.01	47.24	19.25		24.02	4210
22"	43.31	22.87		107.48	50.98	50.98	51.38	21.25		24.02	5530
24"	43.82	25.91		127.28	55.00	55.00	55.39	23.25		24.02	4930
26	88.58	27.28		130.24	57.01	57.01	57.52	25.00		31.89	6010
28"	50.00	28.74		136.81	60.98	60.98	61.50	27.00		31.89	8100
30"	56.46	36.61		145.28	65.00	65.00	65.51	29.00		31.89	7910
32"	56.30	32.80		153.15	70.00	70.00	70.63	30.75		31.89	11500
34"	59.06	34.92		158.66	75.98	75.98	76.61	32.75		31.89	13100
36"	64.65	36.77		172.80	82.01	82.01	82.64	34.50		47.24	15200
40"	67.32	40.87		172.64		94.02		38.50		31.89	18600
42"	79.13	45.47		214.84		95.98		40.25		47.24	20600
48"	80.71	48.94		210.04		110.00				31.89	28500

Dimensions

Series GT Through Conduit Gate Valve



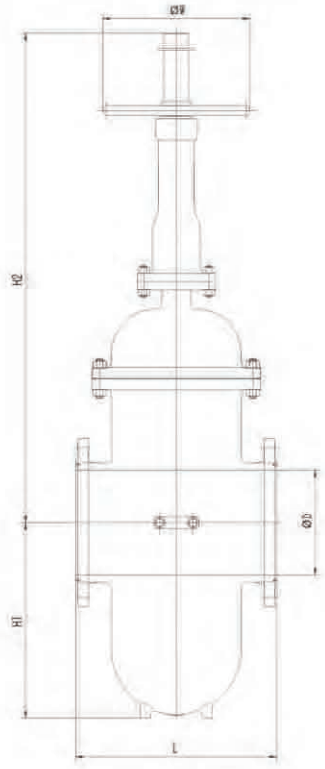


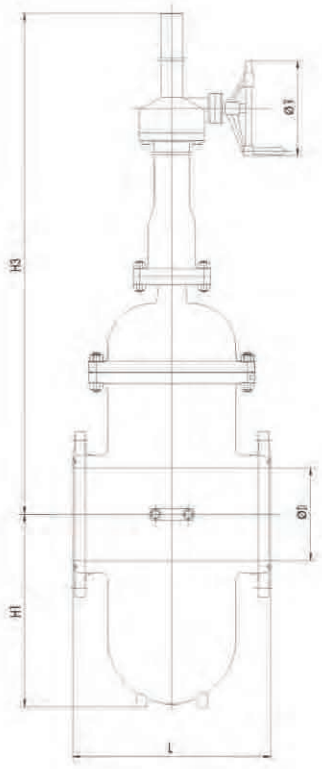
Class 600LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	133	65	547		292	292	295	51	180		66
65	190	80	645		330	330	333	64	250		90
80	205	93	732		356	356	359	76	250		110
100	255	121	866	898	432	432	435	102	350		156
150	365	176	1070	1134	559	559	562	152	450	305	296
200	420	227	1188	1323	660	660	664	203	500	305	640
250	515	278	1575	1583	787	787	791	254	500	305	900
300	628	341	1780	1812	838	838	841	305	760	458	1135
350	674	371		1861	889	889	892	337		458	1700
400	775	424		2141	991	991	994	387		610	2350
450	860	480		2426	1092	1092	1095	438		610	2776
500	950	530		2955	1194	1194	1200	489		610	4210
550	1100	581		2730	1295	1295	1305	540		610	5530
600	1113	658		3233	1397	1397	1407	591		610	4930
650	2250	693		3308	1448	1448	1461	635		810	6010
700	1270	730		3475	1549	1549	1562	686		810	8100
750	1434	803		3690	1651	1651	1664	737		810	7910
800	1430	833		3890	1778	1778	1794	781		810	11500
850	1500	887		4030	1930	1930	1946	832		810	13100
900	1642	934		4389	2083	2083	2099	876		1200	15200
1000	1710	1038		4385		2388		978		810	18600
1050	2010	1155		5457		2438		1022		1200	20600
1200	2050	1243		5335		2794				810	28500

Series GT Through Conduit Gate Valve

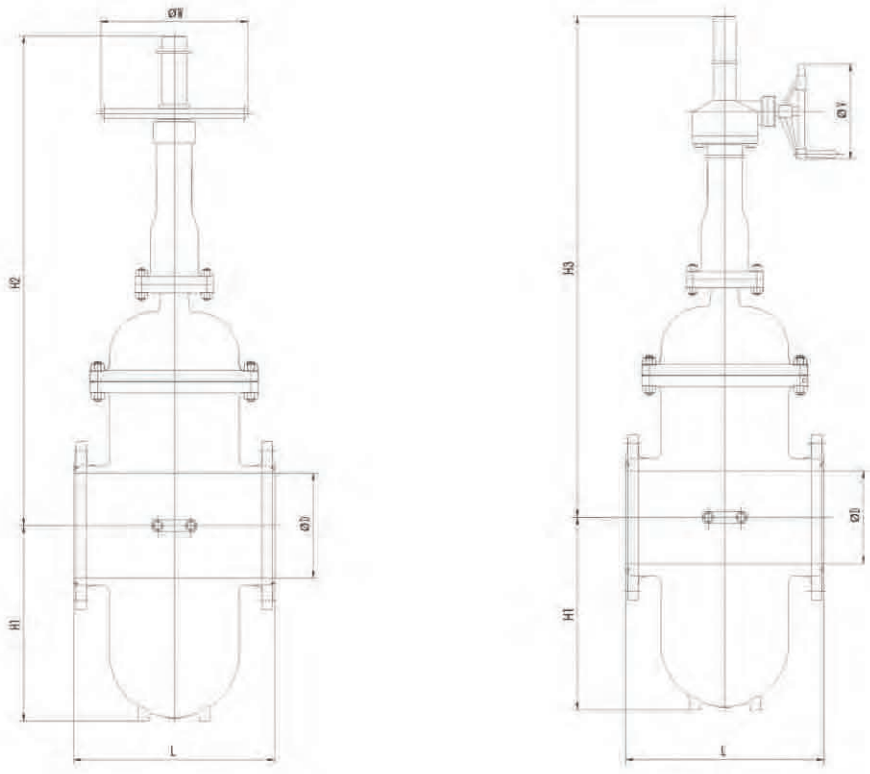
Dimensions





Class 900LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2	6.14	2.76	29.33		14.49	14.49	14.61	2.00	9.84		102
2-1/2	6.77	3.23	32.09		16.50	16.50	16.61	2.50	9.84		115
3	7.48	3.66	34.88		15.00	15.00	15.12	3.00	11.81		162
4	11.26	5.00	31.89		17.99	17.99	18.11	4.00	15.75		286
6	14.57	7.01	41.85	47.68	24.02	24.02	24.13	6.00	19.69	17.72	532
8	16.73	8.94	50.20	54.13	29.02	29.02	29.13	8.00	23.62	12.01	970
10	20.28	10.87		61.02	32.99	32.99	33.11	10.00		17.72	1305
12	25.59	13.43		74.13	37.99	37.99	38.11	12.00		24.02	2000
14	30.12	14.17		82.28	40.51	40.51	40.87	12.76		24.02	2600
16	29.72	16.30		83.35	44.49	44.49	44.88	14.76		24.02	3210
18	37.40	18.50		107.09	47.99	47.99	48.50	16.73		31.89	4000
20	41.73	20.79		122.83	52.01	52.01	52.52	18.62		31.89	5120
24	46.85	24.80		150.79	60.98	60.98	61.73	22.52		31.89	9400
26	50.00	27.24		157.48				24.38		31.89	12200
28	53.15	29.13		164.17				26.25		47.24	14800
30	56.69	31.10		170.67	83.00			28.13		47.24	17600
32	60.24	33.27		178.74				30.00		47.24	20000
34	63.39	35.43		188.98				31.88		47.24	23600
36	66.93	37.09		205.31				33.75		47.24	27500

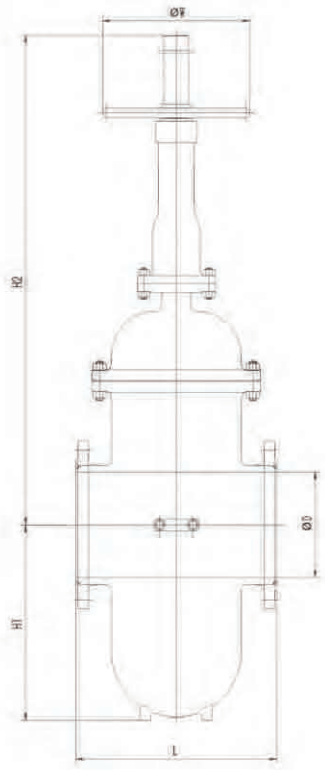


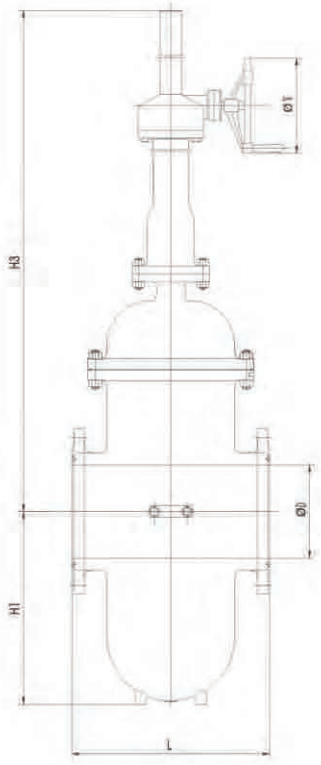
Class 900LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	156	70	745		368	368	371	51	250		102
65	172	82	815		419	419	422	64	250		115
80	190	93	886		381	381	384	76	300		162
100	286	127	810		457	457	460	102	400		286
150	370	178	1063	1211	610	610	613	152	500	458	532
200	425	227	1275	1375	737	737	740	203	600	305	970
250	515	276		1550	838	838	841	254		458	1305
300	650	341		1883	965	965	968	305		610	2000
350	765	360		2090	1029	1029	1038	324		610	2600
400	755	414		2117	1130	1130	1140	375		610	3210
450	950	470		2720	1219	1219	1232	425		810	4000
500	1060	528		3120	1321	1321	1334	473		810	5120
600	1190	630		3830	1549	1549	1568	572		810	9400
650	1270	692		4000				619		810	12200
700	1350	740		4170				667		1200	14800
750	1440	790		4335	2108			714		1200	17600
800	1530	845		4540				762		1200	20000
850	1610	900		4800				810		1200	23600
900	1700	942		5215				857		1200	27500

Series GT Through Conduit Gate Valve

Dimensions



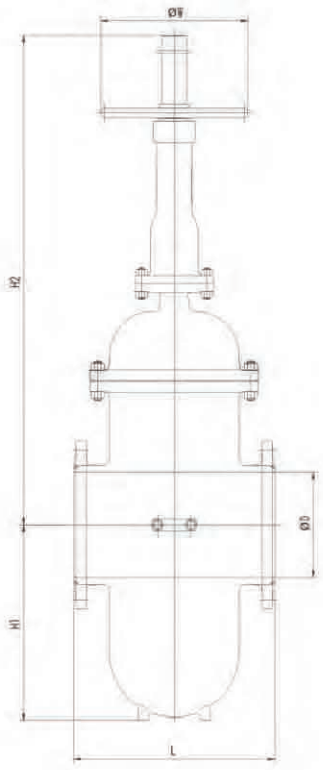


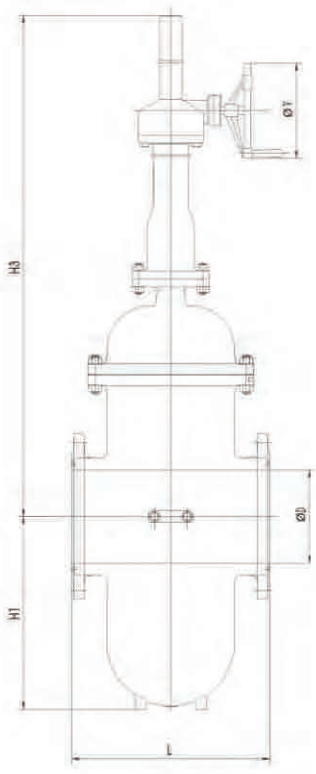
Class 1500LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2	6.30	2.99	26.77		14.49	14.49	14.61	2.00	15.75		120
2-1/2	7.09	3.39	28.82		16.50	16.50	16.61	2.50	15.75		200
3	7.95	3.86	30.91		18.50	18.50	18.62	3.00	19.69		260
4	11.26	5.20	33.07		21.50	21.50	21.61	4.00	23.62		380
6	14.96	6.93	45.67	53.94	27.76	27.76	27.99	5.75	31.50	23.62	910
8	19.09	8.94		59.84	32.76	32.76	33.11	7.64		31.50	1520
10	24.02	11.02		69.49	39.02	39.02	39.37	9.49		31.50	2280
12	27.95	13.58		71.85	44.49	44.49	45.12	11.38		31.50	3300
14	31.10	14.37		84.25	49.49	49.49	50.24	12.52		31.50	4600
16	35.04	16.54		93.70	54.49	54.49	55.39	14.25		31.50	5920
18	38.98	18.50		109.45	60.51	60.51	61.38	15.98		31.50	7500
20	42.91	20.94		132.28	65.51	65.51	66.38	17.87		31.50	10600
22	47.05	22.05		140.94				19.69		31.50	14700
24	50.00	23.62		156.30	76.50	76.50	76.50	21.50		47.24	17200
26	53.74	25.28		167.32						47.24	19800
28	56.89	27.17		180.12						47.24	32200
30	60.24	28.86		191.54						47.24	34800
32	63.98	30.71		203.35						47.24	37400
34	67.13	32.76		213.98						47.24	40000
36	70.28	34.88		224.41							42900

Dimensions

Series GT Through Conduit Gate Valve



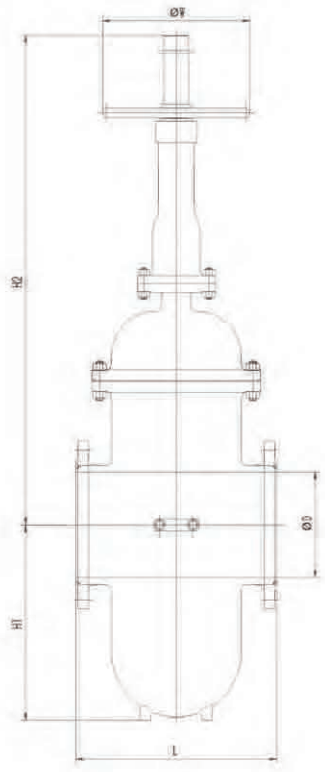


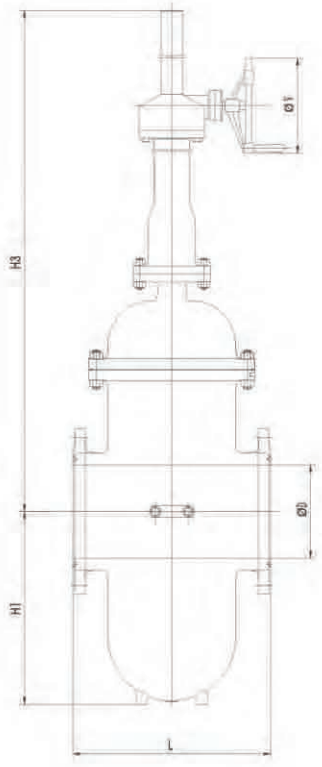
Class 1500LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	160	76	680		368	368	371	51	400		120
65	180	86	732		419	419	422	64	400		200
80	202	98	785		470	470	473	76	500		260
100	286	132	840		546	546	549	102	600		380
150	380	176	1160	1370	705	705	711	146	800	600	910
200	485	227		1520	832	832	841	194		800	1520
250	610	280		1765	991	991	1000	241		800	2280
300	710	345		1825	1130	1130	1146	289		800	3300
350	790	365		2140	1257	1257	1276	318		800	4600
400	890	420		2380	1384	1384	1407	362		800	5920
450	990	470		2780	1537	1537	1559	406		800	7500
500	1090	532		3360	1664	1664	1686	454		800	10600
550	1195	560		3580				500		800	14700
600	1270	600		3970	1943	1943	1972	546		1200	17200
650	1365	642		4250						1200	19800
700	1445	690		4575						1200	32200
750	1530	733		4865						1200	34800
800	1625	780		5165						1200	37400
850	1705	832		5435						1200	40000
900	1785	886		5700							42900

Series GT Through Conduit Gate Valve

Dimensions



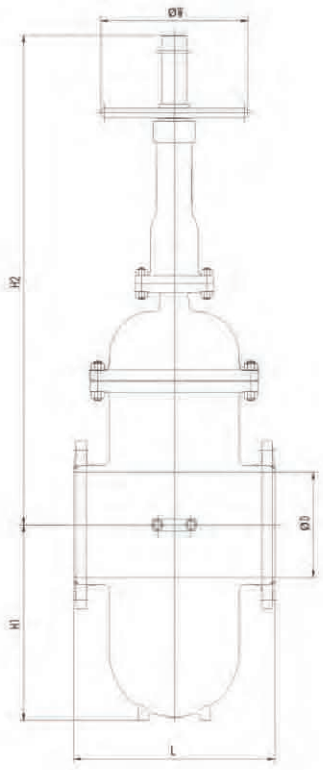


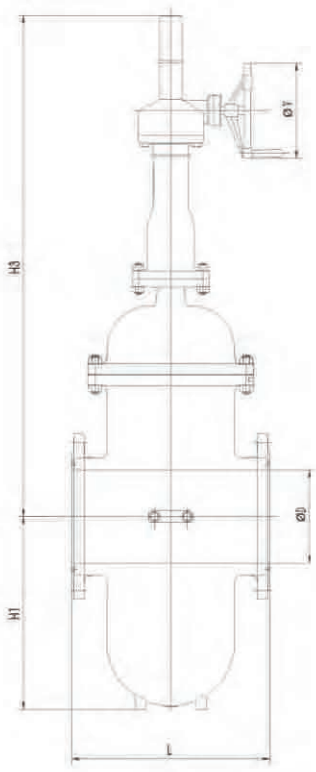
Class 300LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	5.24	2.50	21.54		8.50	8.50	9.13	2.00	7.09		72
2-1/2"	7.09	2.99	23.43		9.49	9.49	10.12	2.50	9.84		90
3"	7.28	3.58		32.60	11.14	11.14	11.73	3.00		9.84	110
4"	10.31	4.92		36.42	12.01	12.01	12.64	4.00		12.01	158
6"	14.37	7.09		40.75	15.87	15.87	16.50	6.00		12.01	302
8"	17.13	9.25		50.59	16.50	16.50	17.13	8.00		12.01	645
10"	20.08	10.87		57.68	17.99	17.99	18.62	10.00		12.01	905
12"	24.61	13.35		66.34	19.76	19.76	20.39	12.00		17.72	1142
14"	25.67	14.53		72.44	30.00	30.00	30.63	13.25		17.72	1720
16"	29.33	16.57		79.92	32.99	32.99	33.62	15.25		24.02	2365
18"	32.87	18.74		89.57	35.98	35.98	36.61	17.25		24.02	2794
20"	36.42	20.87		96.46	39.02	39.02	39.76	19.25		24.02	4235
22"	41.93	23.31		106.89	42.99	42.99	43.86	21.25		24.02	4695
24"	45.28	25.55		116.14	45.00	45.00	45.87	23.25		24.02	4965

Dimensions

Series GT Through Conduit Gate Valve



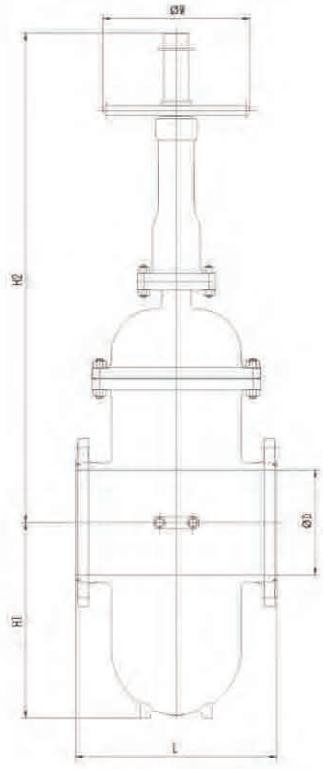


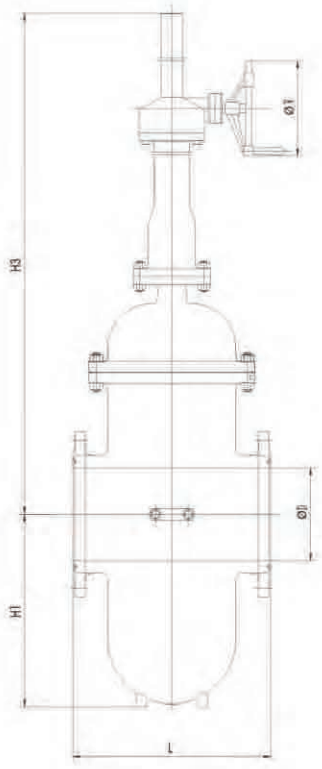
Class 300LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	133	65	547		216	216	232	51	180		72
65	180	76	595		241	241	257	64	250		90
80	185	91		828	283	283	298	76		250	110
100	262	125		925	305	305	321	102		305	158
150	365	180		1035	403	403	419	152		305	302
200	435	235		1285	419	419	435	203		305	645
250	510	276		1465	457	457	473	254		305	905
300	625	339		1685	502	502	518	305		458	1142
350	652	369		1840	762	762	778	337		458	1720
400	745	421		2030	838	838	854	387		610	2365
450	835	476		2275	914	914	930	438		610	2794
500	925	530		2450	991	991	1010	489		610	4235
550	1065	592		2715	1092	1092	1114	540		610	4695
600	1150	649		2950	1143	1143	1165	591		610	4965

Series GT Through Conduit Gate Valve

Dimensions



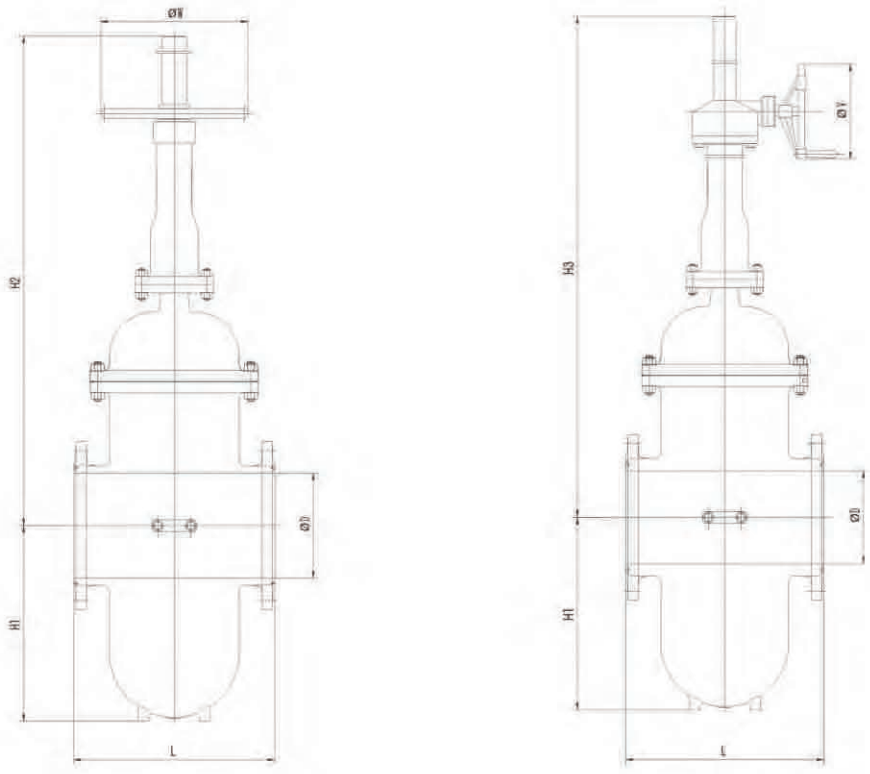


Class 600LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	6.30	2.76	21.54		11.50	11.50	11.61	2.00	9.84		120
2-1/2"	7.28	3.35	25.59		12.99	12.99	13.11	2.50	9.84		175
3"	7.68	3.86			14.02	14.02	14.13	3.00		12.01	225
4"	11.10	4.92			17.01	17.01	17.13	4.00		12.01	346
6"	15.16	7.24			22.01	22.01	22.13	6.00		17.72	592
8"	18.31	9.25			25.98	25.98	26.14	8.00		24.02	1030
10"	22.05	11.30			30.98	30.98	31.14	10.00		27.95	1365
12"	26.61	13.78			32.99	32.99	33.11	12.00		24.02	2060
14"	28.82	15.04			35.00	35.00	35.12	13.25		24.02	2680
16"	32.87	17.01			39.02	39.02	39.13	15.25		31.89	3310
18"	36.42	19.29			42.99	42.99	43.11	17.25		31.89	4215
20"	39.96	21.34			47.01	47.01	47.24	19.25		31.89	5210
22"	45.87	23.31			50.98	50.98	51.38	21.25		31.89	9650
24"	47.05	26.26			55.00	55.00	55.39	23.25		31.89	12650

Dimensions

Series GT Through Conduit Gate Valve

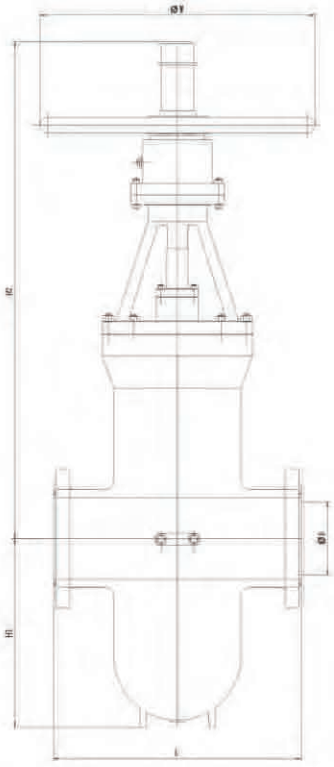


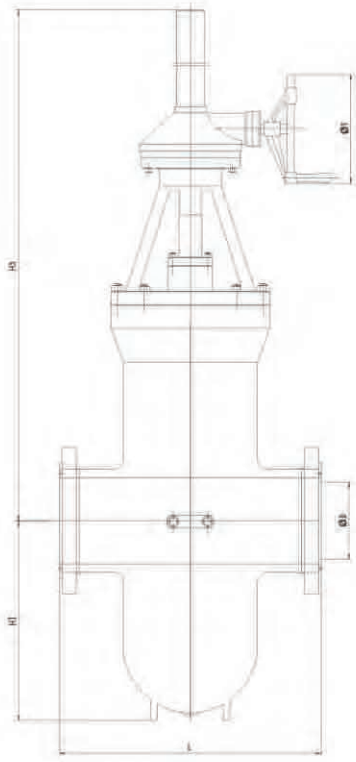
Class 600LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	160	70	547		292	292	295	51	250		120
65	185	85	650		330	330	333	64	250		175
80	195	98		845	356	356	359	76		305	225
100	282	125		1020	432	432	435	102		305	346
150	385	184		1255	559	559	562	152		458	592
200	465	235		1445	660	660	664	203		610	1030
250	560	287		1709	787	787	791	254		710	1365
300	676	350		1935	838	838	841	305		610	2060
350	732	382		1985	889	889	892	337		610	2680
400	835	432		2265	991	991	994	387		810	3310
450	925	490		2545	1092	1092	1095	438		810	4215
500	1015	542		2715	1194	1194	1200	489		810	5210
550	1165	592		2875	1295	1295	1305	540		810	9650
600	1195	667		3325	1397	1397	1407	591		810	12650

Series GT Through Conduit Gate Valve

Dimensions



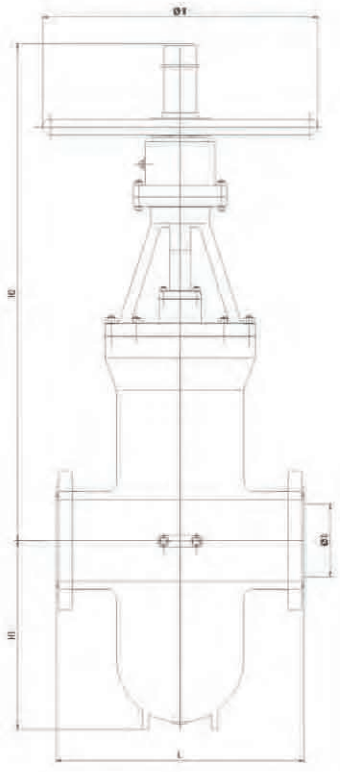


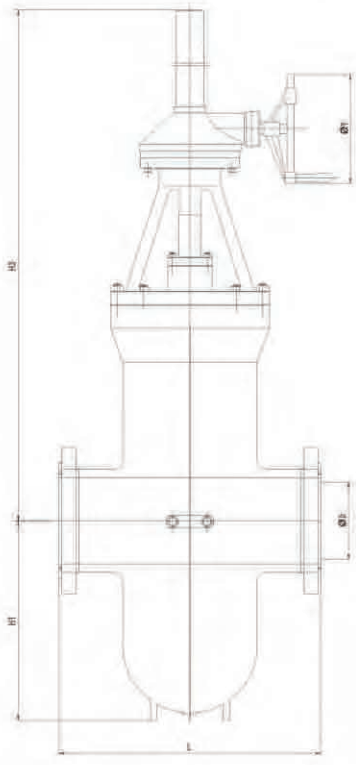
Class 900LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	6.30	2.95	21.54		14.49	14.49	14.61	2.00	12.01		125
2-1/2"	7.17	3.15	26.77		16.50	16.50	16.61	2.50	12.01		185
3"	8.27	3.62		33.27	15.00	15.00	15.12	3.00		17.72	240
4"	11.26	4.72		38.19	17.99	17.99	18.11	4.00		17.72	360
6"	16.34	7.05		52.95	24.02	24.02	24.13	6.00		24.02	860
8"	19.88	8.94		63.19	29.02	29.02	29.13	8.00		31.50	1380
10"	23.23	10.71		75.00	32.99	32.99	33.11	10.00		31.50	1965
12"	27.95	12.60		84.45	37.99	37.99	38.11	12.00		39.37	3060
14"	30.24	14.76		88.39	40.51	40.51	40.87	12.76		39.37	3880
16"	33.27	15.98		96.85	44.49	44.49	44.88	14.76		47.24	4610
18"	37.20	18.31		107.48	47.99	47.99	48.50	16.73		47.24	6615
20"	40.75	20.28		114.17	52.01	52.01	52.52	18.62		47.24	8215

Dimensions

Series GT Through Conduit Gate Valve



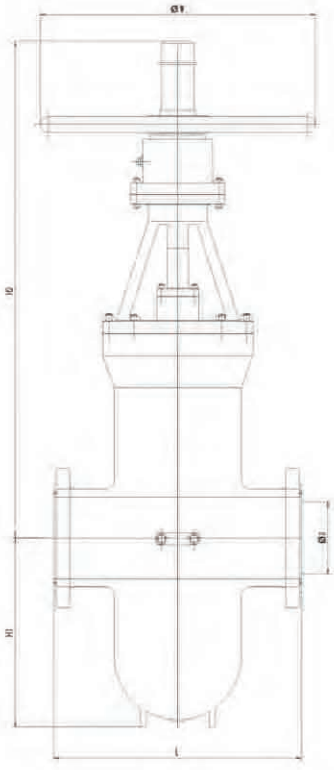


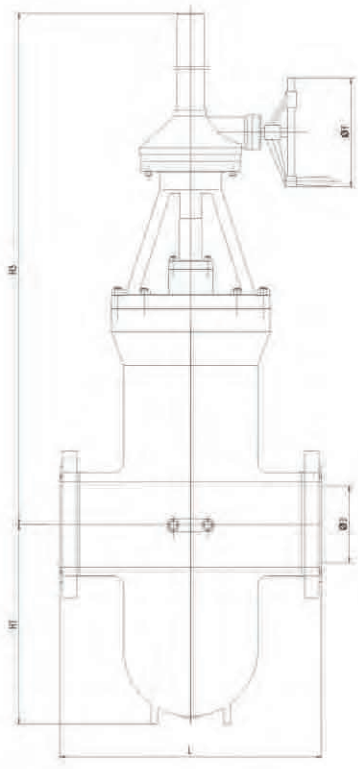
Class 900LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	160	75	481		368	368	371	51	305		125
65	182	80	680		419	419	422	64	305		185
80	210	92		845	381	381	384	76		458	240
100	286	120		970	457	457	460	102		458	360
150	415	179		1345	610	610	613	152		610	860
200	505	227		1605	737	737	740	203		800	1380
250	590	272		1905	838	838	841	254		800	1965
300	710	320		2145	965	965	968	305		1000	3060
350	768	375		2245	1029	1029	1038	324		1000	3880
400	845	406		2460	1130	1130	1140	375		1200	4610
450	945	465		2730	1219	1219	1232	425		1200	6615
500	1035	515		2900	1321	1321	1334	473		1200	8215

Series GT Through Conduit Gate Valve

Dimensions



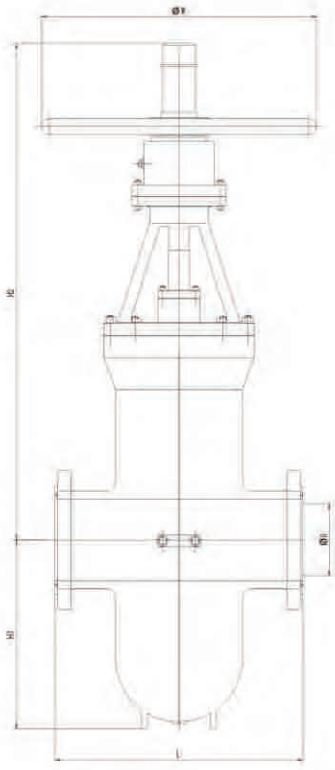


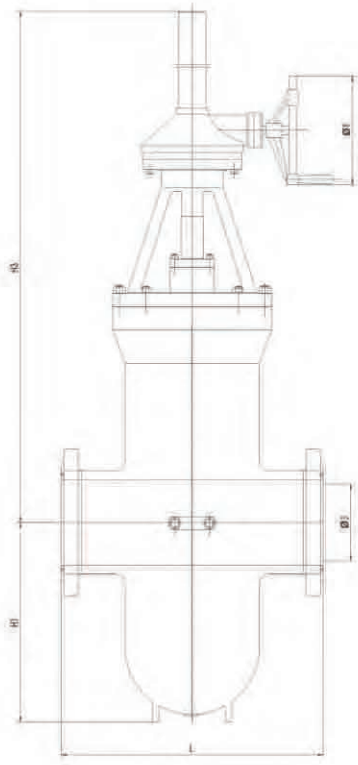
Class 1500LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	6.30	2.95	21.54		14.49	14.49	14.61	2.00	12.01		130
2-1/2"	7.09	3.15	28.74		16.50	16.50	16.61	2.50	12.01		200
3"	9.06	3.62		33.27	18.50	18.50	18.62	3.00		17.72	260
4"	12.20	4.72		38.19	21.50	21.50	21.61	4.00		24.02	370
6"	17.13	7.05		56.89	27.76	27.76	27.99	5.75		27.95	1160
8"	20.87	8.94		71.06	32.76	32.76	33.11	7.64		31.50	1730
10"	24.41	10.71		80.51	39.02	39.02	39.37	9.49		39.37	2575
12"	29.53	12.60		92.32	44.49	44.49	45.12	11.38		47.24	4060
14"	31.42	14.76		100.20	49.49	49.49	50.24	12.52		47.24	5030
16"	33.46	15.98		108.66	54.49	54.49	55.39	14.25		47.24	5990
18"	36.42	18.31		115.35	60.51	60.51	61.38	15.98		47.24	8600
20"	39.37	20.28		120.08	65.51	65.51	66.38	17.87		47.24	11220

Dimensions

Series GT Through Conduit Gate Valve



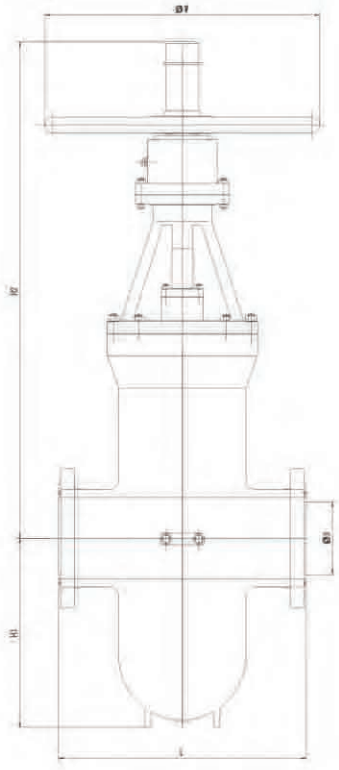


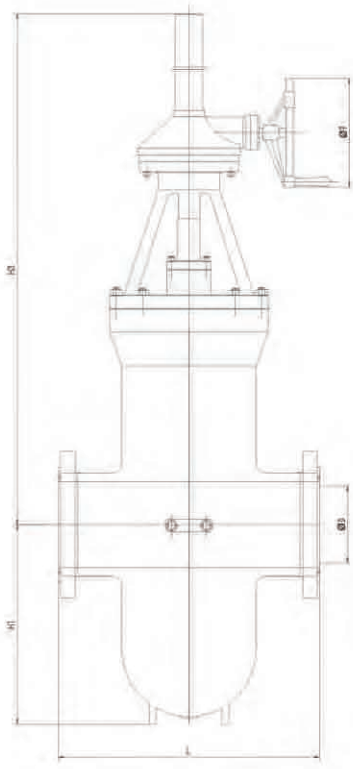
Class 1500LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	160	75	481		368	368	371	51	305		130
65	182	80	680		419	419	422	64	305		200
80	210	92		845	381	381	384	76		458	260
100	286	120		970	457	457	460	102		458	370
150	415	179		1345	610	610	613	152		610	1160
200	505	227		1605	737	737	740	203		800	1730
250	590	272		1905	838	838	841	254		800	2575
300	710	320		2145	965	965	968	305		1000	4060
350	768	375		2245	1029	1029	1038	324		1000	5030
400	845	406		2460	1130	1130	1140	375		1200	5990
450	945	465		2730	1219	1219	1232	425		1200	8600
500	1035	515		2900	1321	1321	1334	473		1200	11220

Series GT Through Conduit Gate Valve

Dimensions



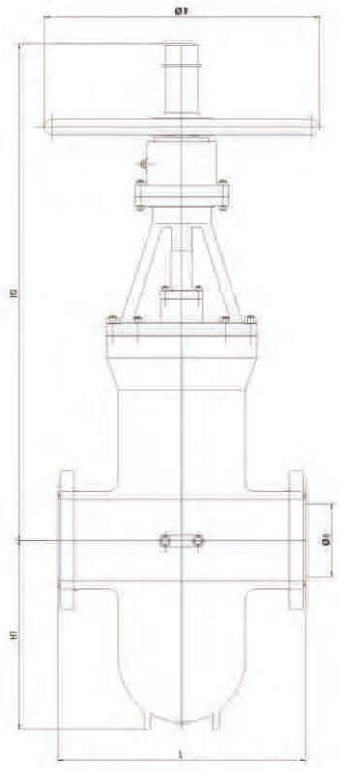


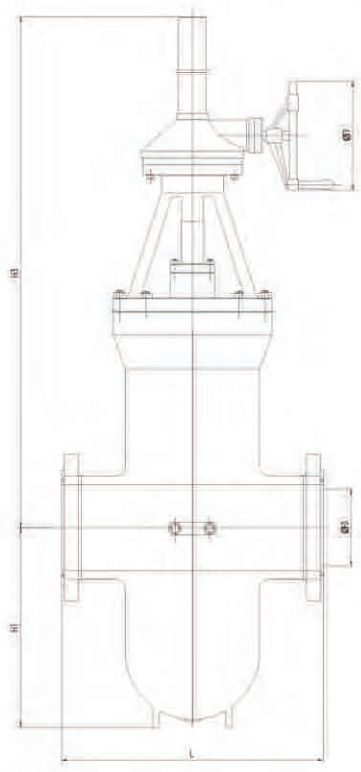
Class 2500LB (in)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
2"	6.69	3.07	21.54		17.76	17.76	17.87	1.73	12.01		150
2-1/2"	7.28	3.23	29.53		20.00	20.00	20.24	2.13	12.01		260
3"	9.25	3.74		33.86	22.76	22.76	22.99	2.52		24.02	365
4"	13.58	4.92		40.16	26.50	26.50	26.89	3.50		31.50	1120
6"	18.90	7.48		62.01	35.98	35.98	36.50	5.24		31.50	1785
8"	21.26	9.65		78.15	40.24	40.24	40.87	7.13		39.37	2615
10"	25.59	11.02		84.45	50.00	50.00	50.87	8.86		47.24	4045
12"	30.91	12.80		96.46	55.98	55.98	56.89	10.51		47.24	5025

Dimensions

Series GT Through Conduit Gate Valve



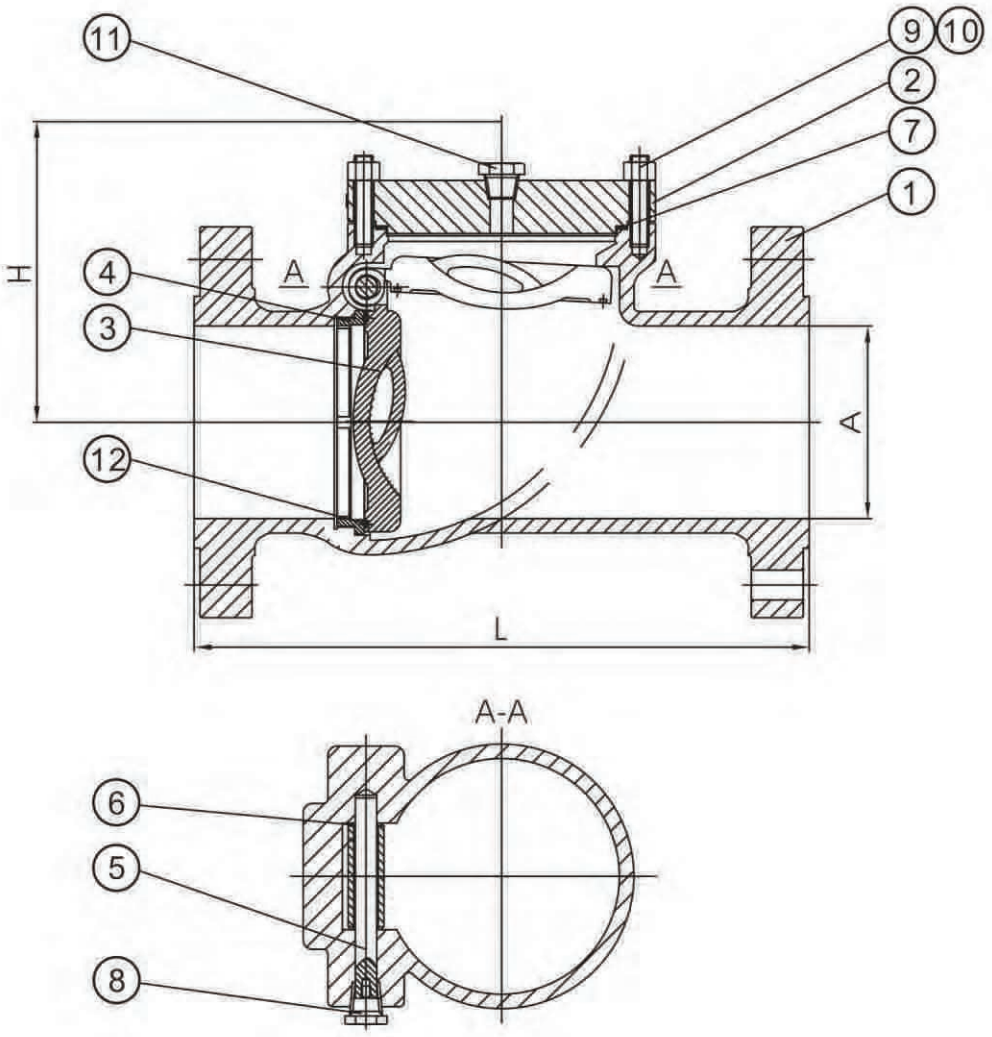


Class 2500LB (mm)

Size	H1	Travel	H2	H3	L			D	ϕW	ϕv	Weight
					BW	RF	RTJ				
50	170	78	481		451	451	454	44	305		150
65	185	82	750		508	508	514	54	305		260
80	235	95		860	578	578	584	64		610	365
100	345	125		1020	673	673	683	89		800	1120
150	480	190		1575	914	914	927	133		800	1785
200	540	245		1985	1022	1022	1038	181		1000	2615
250	650	280		2145	1270	1270	1292	225		1200	4045
300	785	325		2450	1422	1422	1445	267		1200	5025

Series SF Full Opening Check Valve

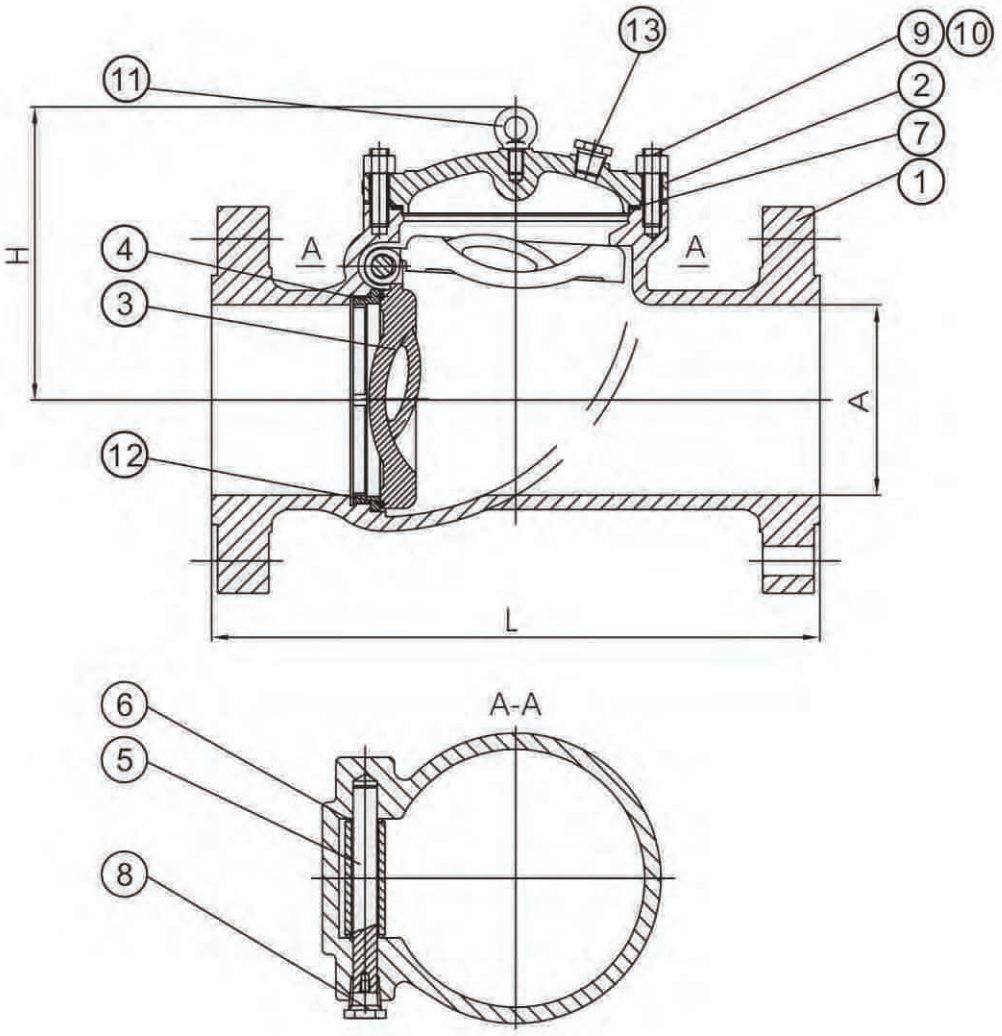
General Assembling Drawing



No.	Part	Standard	Sour Service	Low Temperature Service
1	BODY	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
2	BONNET	ASTM A105	ASTM A105	ASTM A350-LF2
3	DISC	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
4	SEAT RING	ASTM A105N	ASTM A105N	ASTM A350-LF2
5	HINGE PIN	ASTM A276-410	ASTM A276-410	ASTM A182-F316
6	WASHER	ASTM A276-420	ASTM A276-420	ASTM A182-F316
7	GASKET	304SS+GRAPHITE	304SS+GRAPHITE	316SS+GRAPHITE
8	PLUG	AISI 1020	AISI 1020	ASTM A276-316
9	STUD	ASTM A193-B7	ASTM A193-B7M	ASTM A320-L7M
10	NUT	ASTM A194-2H	ASTM A194-2HM	ASTM A194-7M
11	PLUG	AISI 1020	AISI 1020	ASTM A276-316
12	O-RING	NBR	NBR	NBR

Dimensions

Series SF Full Opening Check Valve



No.	Part	Standard	Sour Service	Low Temperature Service
1	BODY	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
2	BONNET	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
3	DISC	ASTM A216-WCB	ASTM A216-WCB	ASTM A352-LCB
4	SEAT RING	ASTM A105N	ASTM A105N	ASTM A350-LF2
5	HINGE PIN	ASTM A276-410	ASTM A276-410	ASTM A182-F316
6	WASHER	ASTM A276-420	ASTM A276-420	ASTM A182-F316
7	GASKET	304SS+GRAPHITE	304SS+GRAPHITE	316SS+GRAPHITE
8	PLUG	AISI 1020	AISI 1020	ASTM A276-316
9	STUD	ASTM A193-B7	ASTM A193-B7M	ASTM A320-L7M
10	NUT	ASTM A194-2H	ASTM A194-2HM	ASTM A194-7M
11	HOOK SCREW	AISI 1025	AISI 1025	AISI 1025
12	O-RING	NBR	NBR	NBR
13	PLUG	AISI 1020	AISI 1020	ASTM A276-316

Series SF Full Opening Check Valve

General Assembling Drawing

Class 150LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	2	51	5.43	138	7.99	203	7.99	203	8.50	216	19	14
2-1/2	65	2.5	64	5.71	145	8.50	216	8.50	216	9.02	229		
3	80	3	76	5.94	151	9.49	241	9.49	241	10.00	254	30	22
4	100	4	102	6.81	173	11.50	292	11.50	292	12.01	305	42	30
6	150	6	152.4	11.42	290	14.02	356	14.02	356	14.49	368	84	72
8	200	8	203	13.07	332	19.49	495	19.49	495	20.00	508	150	138
10	250	10	254	15.98	406	24.49	622	24.49	622	25.00	635	230	186
12	300	12	305	18.11	460	27.52	699	27.52	699	27.99	711	332	262
14	350	13.25	337	19.61	498	30.98	787	30.98	787	31.50	800	368	336
16	400	15.25	387	22.72	577	34.02	864	34.02	864	34.49	876	490	425
18	450	17.25	438	23.03	585	38.50	978	38.50	978	39.02	991	632	542
20	500	19.25	489	25.04	636	38.50	978	38.50	978	39.02	991	846	755
22	550	21.25	540	27.99	711	42.01	1067	42.01	1067	42.52	1080	1370	
24	600	23.25	591	30.04	763	50.98	1295	50.98	1295	51.50	1308	1370	1190
26	650	25.00	635	31.65	804	50.98	1295	50.98	1295	*	*	1450	1350
28	700	27.00	686	38.11	968	57.01	1448	57.01	1448	*	*		
30	750	29.00	737	38.19	970	60.00	1524	60.00	1524	*	*	2120	1830
32	800	30.75	781	40.43	1027	*	*	*	*	*	*		
34	850	32.75	832			*	*	*	*	*	*		
36	900	34.50	876	48.43	1230	77.01	1956	77.01	1956	*	*	2980	2680
38	950	36.50	927			*	*	*	*	*	*		
40	1000	38.50	978			*	*	*	*	*	*	4870	4170
42	1050	40.25	1022	54.29	1379	*	*	*	*	*	*		
44	1100	*	*			*	*	*	*	*	*		
46	1150	*	*			*	*	*	*	*	*		
48	1200	46	1168	62.74	1593.5	*	*	*	*	*	*	7950	6730
50	1250	*	*	64.49	1638	*	*	*	*	*	*		
52	1300	*	*			*	*	*	*	*	*		
54	1350	51.75	1314			*	*	*	*	*	*		

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5;22 in. (550 mm) in accordance with MSS-SP-44; above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Dimensions

Series SF Full Opening Check Valve

Class 300LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	2	51	5.71	145	10.51	267	10.51	267	11.14	283	22	19
2-1/2	65	2.5	64	6.14	156	11.50	292	11.50	292	12.13	308		
3	80	3	76	7.40	188	12.52	318	12.52	318	13.11	333	42	30
4	100	4	102	8.39	213	14.02	356	14.02	356	14.61	371	71	52
6	150	6	152.4	11.10	282	17.52	445	17.52	445	18.11	460	127	102
8	200	8	203	12.32	313	20.98	533	20.98	533	21.61	549	212	187
10	250	10	254	16.14	410	24.49	622	24.49	622	25.12	638	297	258
12	300	12	305	18.86	479	27.99	711	27.99	711	28.62	727	370	320
14	350	13.25	337	22.28	566	32.99	838	32.99	838	33.62	854	490	410
16	400	15.25	387	25.20	640	34.02	864	34.02	864	34.61	879	615	530
18	450	17.25	438	26.50	673	38.50	978	38.50	978	39.13	994	735	682
20	500	19.25	489	28.66	728	40.00	1016	40.00	1016	40.75	1035	980	790
22	550	21.25	540			44.02	1118	44.02	1118	44.88	1140		
24	600	23.25	591	33.70	856	52.99	1346	52.99	1346	53.86	1368	1815	1605
26	650	25.00	635	37.28	947	52.99	1346	52.99	1346	54.02	1372	2115	2005
28	700	27.00	686	41.57	1056	59.02	1499	59.02	1499	60.00	1524		
30	750	29.00	737	44.84	1139	62.76	1594	62.76	1594	63.74	1619	2460	2130
32	800	30.75	781			*	*	*	*	*	*		
34	850	32.75	832			*	*	*	*	*	*		
36	900	34.50	876	51.89	1318	82.01	2083	82.01	2083	*	*	4730	4100
38	950	36.50	927			*	*	*	*	*	*		
40	1000	38.50	978			*	*	*	*	*	*	6780	59302
42	1050	40.25	1022			*	*	*	*	*	*		
44	1100	*	*			*	*	*	*	*	*		
46	1150	*	*			*	*	*	*	*	*		
48	1200	46	1168			*	*	*	*	*	*	13900	12100
50	1250	*	*			*	*	*	*	*	*		
52	1300	*	*			*	*	*	*	*	*		
54	1350	51.75	1314			*	*	*	*	*	*		

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5;22 in. (550 mm) in accordance with MSS-SP-44; above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Series SF Full Opening Check Valve

General Assembling Drawing

Class 600LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	2	51	5.98	152	11.50	292	11.50	292	11.61	295	36	28
2-1/2	65	2.5	64	7.36	187	12.99	330	12.99	330	13.11	333		
3	80	3	76	7.60	193	14.02	356	14.02	356	14.13	359	61	50
4	100	4	102	8.50	216	17.01	432	17.01	432	17.13	435	116	90
6	150	6	152.4	12.83	326	22.01	559	22.01	559	22.13	562	217	182
8	200	8	203	13.58	345	26.00	660.4	26.00	660.4	26.14	664	420	360
10	250	10	254	16.10	409	30.98	787	30.98	787	31.14	791	570	460
12	300	12	305	20.16	512	32.99	838	32.99	838	33.11	841	788	665
14	350	13.25	337	24.92	633	35.00	889	35.00	889	35.12	892	1020	865
16	400	15.25	387	25.00	635	39.00	990.6	39.00	990.6	39.13	994	1440	1200
18	450	17.25	438	27.95	710	42.99	1092	42.99	1092	43.11	1095		1430
20	500	19.25	489	30.00	762	47.01	1194	47.01	1194	47.24	1200	2600	2230
22	550	21.25	540			50.98	1295	50.98	1295	51.38	1305		
24	600	23.25	591	39.74	1009.5	55.00	1397	55.00	1397	55.39	1407	3600	3085
26	650	25.00	635	40.63	1032	57.01	1448	57.01	1448	57.52	1461		4310
28	700	27.00	686	45.83	1164	62.99	1600	62.99	1600	63.50	1613		
30	750	29.00	737	42.87	1089	65.00	1651	65.00	1651	65.51	1664		5420
32	800	30.75	781	46.46	1180	*	*	*	*	*	*		
34	850	32.75	832			*	*	*	*	*	*		
36	900	34.50	876	58.07	1475	82.01	2083	82.01	2083	*	*		9600

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5;22 in. (550 mm) in accordance with MSS-SP-44; above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Dimensions

Series SF Full Opening Check Valve

Class 900LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	2	51			14.49	368	14.49	368	14.61	371		
2-1/2	65	2.5	64	12.68	322	16.50	419	16.50	419	16.61	422		
3	80	3	76	9.76	248	15.00	381	15.00	381	15.12	384	82	68
4	100	4	102	11.65	296	17.99	457	17.99	457	18.11	460	160	135
6	150	6	152.4	14.65	372	24.02	610	24.02	610	24.13	613	272	215
8	200	8	203	19.02	483	29.02	737	29.02	737	29.13	740	548	446
10	250	10	254	22.44	570	32.99	838	32.99	838	33.11	841	944	840
12	300	12	305	24.72	628	37.99	965	37.99	965	38.11	968	1560	1370
14	350	12.75	324	26.73	679	40.51	1029	40.51	1029	40.87	1038	1660	1440
16	400	14.75	375	29.72	755	44.49	1130	44.49	1130	44.88	1140	2060	1780
18	450	16.75	425	32.24	819	47.99	1219	47.99	1219	48.50	1232	3020	2340
20	500	18.625	473	37.83	961	52.01	1321	52.01	1321	52.52	1334	3750	2900
22	550	20.625	524			*	*	*	*	*	*		
24	600	22.50	572	44.61	1133	60.98	1549	60.98	1549	61.73	1568	5400	4210
26	650	24.38	619			*	*	*	*	*	*		
28	700	26.25	667			*	*	*	*	*	*		
30	750	28.13	714			*	*	*	*	*	*		
32	800	30.00	762			*	*	*	*	*	*		
34	850	31.88	810			*	*	*	*	*	*		
36	900	33.75	857			*	*	*	*	*	*		

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5;22 in. (550 mm) in accordance with MSS-SP-44; above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Series SF Full Opening Check Valve

General Assembling Drawing

Class 1500LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	2	51	7.24	184	14.49	368	14.49	368	14.61	371	76	62
2-1/2	65	2.5	64			16.50	419	16.50	419	16.61	422		
3	80	3	76	11.22	285	18.50	470	18.50	470	18.62	473	128	105
4	100	4	102	13.62	346	21.50	546	21.50	546	21.61	549	230	205
6	150	5.75	146	20.08	510	27.76	705	27.76	705	27.99	711	506	456
8	200	7.63	194	23.62	600	32.76	832	32.76	832	33.11	841	942	843
10	250	9.5	241	29.29	744	39.02	991	39.02	991	39.37	1000	1750	1500
12	300	11.38	289	31.22	793	44.49	1130	44.49	1130	45.12	1146	2350	2020
14	350	12.5	318	33.46	850	49.49	1257	49.49	1257	50.24	1276	2950	2400
16	400	14.25	362	37.87	962	54.49	1384	54.49	1384	55.39	1407	3600	3015
18	450	*	*			60.51	1537	60.51	1537	61.38	1559	5500	4680
20	500	*	*			65.51	1664	65.51	1664	66.38	1686	6800	5600
22	550	*	*			*	*	*	*	*	*		
24	600	*	*			76.50	1943	76.50	1943	77.64	1972	10150	8150
26	650	*	*			*	*	*	*	*	*		
28	700	*	*			*	*	*	*	*	*		

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5:22 in. (550 mm) in accordance with MSS-SP-44: above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Dimensions

Series SF Full Opening Check Valve

Class 2500LB

Size		A		H		L						Weight	
						BW		RF		RTJ			
in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	ib	kg
2	50	1.75	44	12.60	320	17.76	451	17.76	451	17.87	454	145	145
2-1/2	65	2.13	54			20.00	508	20.00	508	20.24	514		
3	80	2.5	64	15.63	397	22.76	578	22.76	578	22.99	584	260	260
4	100	3.5	89	17.99	457	26.50	673	26.50	673	26.89	683	480	480
6	150	5.25	133	22.40	569	35.98	914	35.98	914	36.50	927	1020	1020
8	200	7.13	181	23.94	608	40.24	1022	40.24	1022	40.87	1038	1700	1700
10	250	8.88	225	26.81	681	50.00	1270	50.00	1270	50.87	1292	3110	3110
12	300	10.5	267	30.24	768	55.98	1422	55.98	1422	56.89	1445	3700	3700
14	350	*	*			*	*	*	*	*	*		
16	400	*	*			*	*	*	*	*	*		
18	450	*	*			*	*	*	*	*	*		
20	500	*	*			*	*	*	*	*	*		
22	550	*	*			*	*	*	*	*	*		
24	600	*	*			*	*	*	*	*	*		
26	650	*	*			*	*	*	*	*	*		
28	700	*	*			*	*	*	*	*	*		

* Upon Request

"Flanges up to 24 in. (600 mm) (except 22 in. (550 mm)) in accordance with ASME B16.5;22 in. (550 mm) in accordance with MSS-SP-44; above 24 in. (600 mm) in accordance with ASME 16.47 if applicable."

Engineering Data

Soft Seat Material

Seat

Properties		Nylon	Teflon (unfilled)	PEEK	Delrin	Polyphenylene
Temperature Range °F		-30~200	-100~425	-60~500	-50~180	-50~750
Pressure Rating		900~1500	150~600	150~1500	150~1500	150~300
Mechanical Property	Hardness	D75	D58	D85	R-120	D80
	Tensile Strength (psi)	8700 (min)	2100~2400	11000(min)	6600~7500 (min)	2000~2350 (min)
	Elongation (%)	250~290	250	30 (min)	220	275~310
Physical Property	Specific Gravity	1.04	2.2	1.3	1.41	1.9~2.1
	Water Absorption (%)	0.2	<0.01	0.18	0.15	0.1~0.2
	Radiation	$5*10^6$RAD	10^4RAD	10^9RAD	10^7RAD	$9*10^6$RAD
Service Application		High pressure & Low temperature service	Chemical & Cryogenic service	High pressure & temperature service with steam in radiation environment	High pressure & Low temperature service	High temperature & High Corrosion service

Sealing

Type	Viton	EPDM	25% Glass Filled PTFE	NBR	Buna.N
Temperature range °F	-20~400	-60~500	-328~500	-50~300	-30~250
Specific Gravity	1.85	---	2.24	1.2	1.31
Hardness	D75	D90	D65	D50	D90

Gasket

Type	Flexible Graphite	Spiral Wound 316+Graphite	Spiral Wound 316+PTFE
Temperature range °F	-328~500	-328~500	-328~500
Service Application	100% Fire-safe	100% Fire-safe	Cryogenic High Corrosion
Hardness	0~14	0~14	0~14

Knife Gate Valves

Product Range

Neway Knife gate valve :

GK series Soft seal (Bi-directional)

GKM series Metal seal (Uni- directional)

Knife gate valve features short face-to-face dimension, it' s widely used in modern industry, such as mining, power plant, urban sewage treatment, food and beverage, paper mill, pharmaceutical, petroleum and chemical industry etc.

Besides short face to face dimension, Neway knife gate valve also features, stable operation no vibration and noise, easy to maintain. And upon request valve can be offered with manual、pneumatic、electric or hydraulic actuated remote control service.

Product Range

Size:	2" -24" (DN50-DN600)
Pressure Rating :	100PSi-150PSi(PN0.6-PN1.0)
Design :	MSS SP-81, JB/T 8691
Temperature :	soft seal : -29℃-150℃
	Metal seal : -29℃-300℃
Test Standard :	soft seal : API 598, GB/T 13927
	Metal seal : MSS SP-81, GB/T 13927
Body Material :	Stainless Steel, Carbon Steel, Gray Cast Iron
Seat Material :	PTFE, RTFE, Stainless Steel, Co-Cr alloy, Rubber
Operation :	Handwheel, Gear-box, Pneumatic,
	Electric, Hydraulic devices, etc.

Typical application:

- Mining
- Urban Sewage Treatment
- Paper Mill
- Petroleum and Chemical industry etc.
- Shipbuilding Industry
- Food and Beverage

If Soft Seal kinfe valve utilizes RTFE as the seat ring material, bi-directional sealing and zero-leakage can be achieved ; For Metal Seal knife valve, hardened sealing face not only ensures the sealing performance also extend the lifespan of the sealing face.

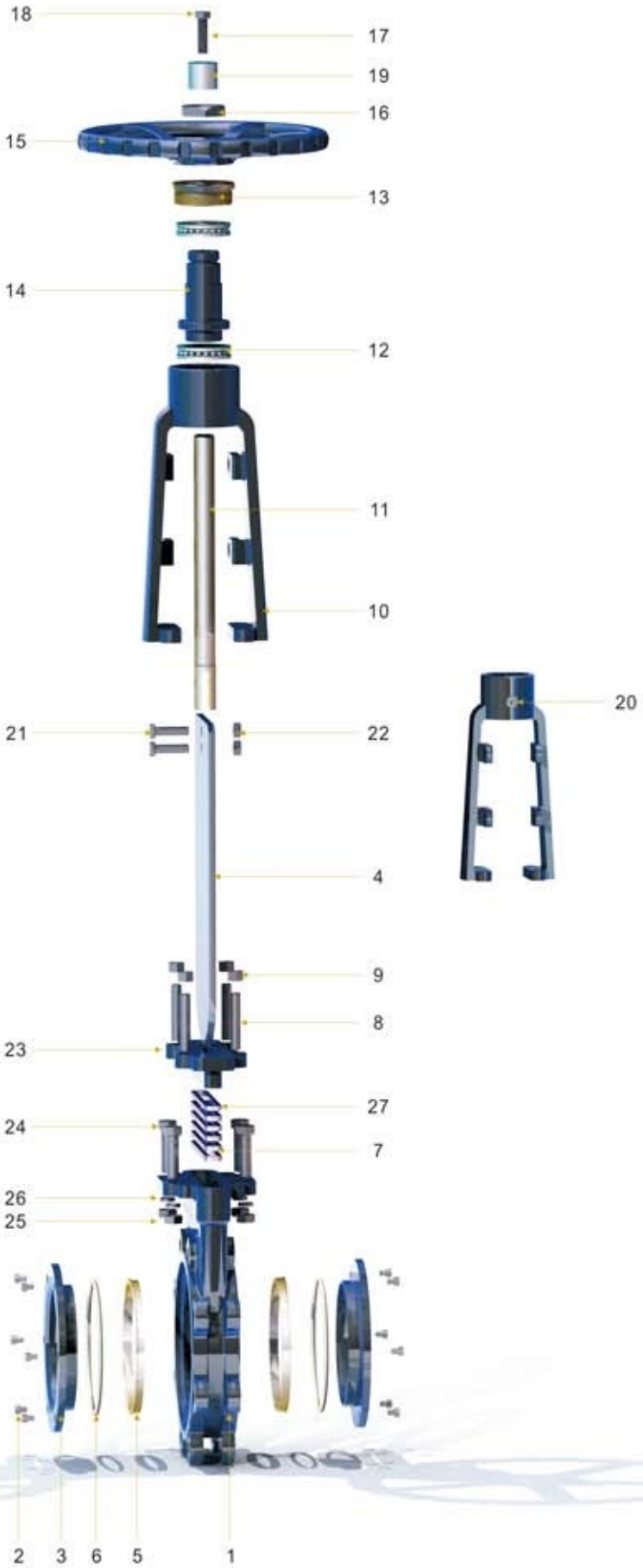
Design Features soft seal

1. Utilizing position limited device to prevent the valve being over opened or closed.
2. Grease deivce is installed for injecting grease to reduce part wear and operation torque.
3. Lugs are designed on yoke for installing pin and lock to prevent unauthorized operation
4. Blade side round– shape configuration greatly reduces packing wear during operation, improve the sealing performance and extend valve service life.

Material Specifications

No.	NAME
1	BODY
2	SCREW
3	RETAINER
4	BLADE
5	SEAL RING
6	O-RING
7	PACKING
8	STUD
9	LOCK NUT
10	YOKE
11	STEM
12	BEARING
13	SLEEVE GLAND
14	STEM NUT
15	HANDWHEEL
16	HANDWHEEL NUT
17	STUD
18	LOCK NUT
19	STOPPER
20	GREASE NIPPLE
21	BOLT
22	LOCK NUT
23	GLAND FLANGE
24	BOLT
25	NUT
26	WASHER
27[a]	ASTEROIDAL PACKING

Note a: only used upon NPS 12"



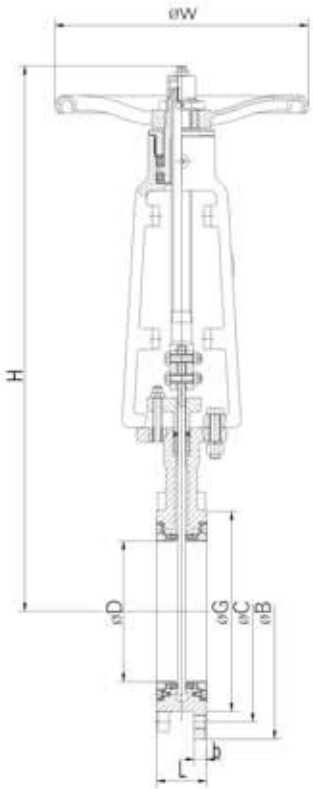
Material Specifications soft seal

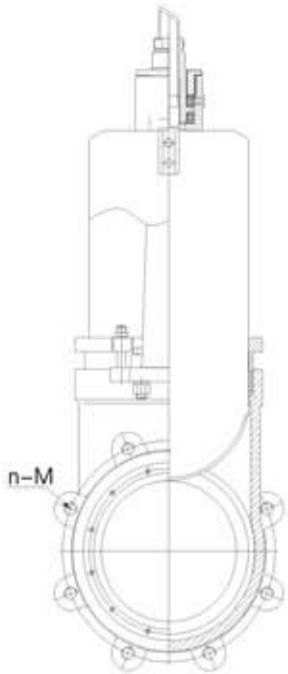
NO.	Part	Stainless Steel	Carbon Steal
1	BODY	ASTM A351-CF8M	ASTM A216- WCB
2	SCREW	ASTM A193-B8	ASTM A193-B7
3	RETAINER	ASTM A182-F316	ASTM A105N+ENP
4	BLADE	ASTM A240-316	ASTM A240-304
5	SEAL RING	RTFE	RTFE
6	O-RING	EPDM	EPDM
7	PACKING	PTFE	PTFE
8	STUD	ASTM A193-B8	ASTM A193-B7
9	LOCK NUT	F304	ASTM A194-2H
10	YOKE	ASTM A351-CF8	ASTM A216-WCB
11	STEM	ASTM A182-F304	ASTM A182-F6a
12	BEARING	ASTM 52100	ASTM 52100
13	SLEEVE GLAND	F304	ASTM A29 1035
14	STEM NUT	ASTM A439 D-2	ASTM A439 D-2
15	HANDWHEEL	ASTM A536 60-40-18	ASTM A536 60-40-18
16	HANDWHEEL NUT	F304	ASTM A29 1025
17	STUD	ASTM A193-B8	ASTM A193-B7
18	LOCK NUT	F304	ASTM A194-2H
19	STOPPER	F304	ASTM A29 1025
20	GREASE NIPPLE	S.S	C.S
21	BOLT	ASTM A193-B8	ASTM A193-B7
22	LOCK NUT	F304	ASTM A194-2H
23	GLAND FLANGE	ASTM A351-CF8	ASTM A216-WCB
24	BOLT	ASTM A193-B8	ASTM A193-B7
25	NUT	ASTM A194-8	ASTM A194-2H
26	WASHER	S.S	C.S
27[a]	ASTEROIDAL PACHING	EPDM	EPDM

Note a:only used upon NPS 12"

soft seal

Size & Weight



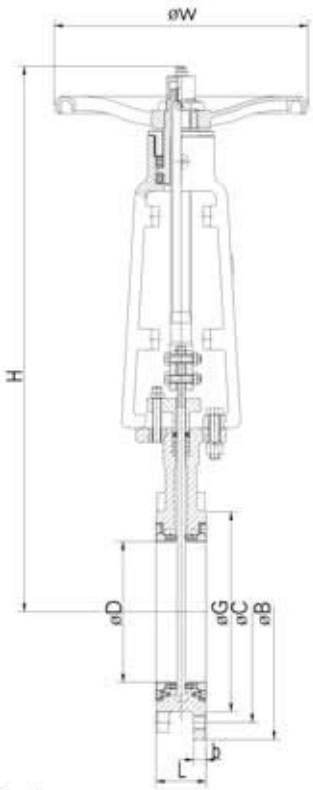


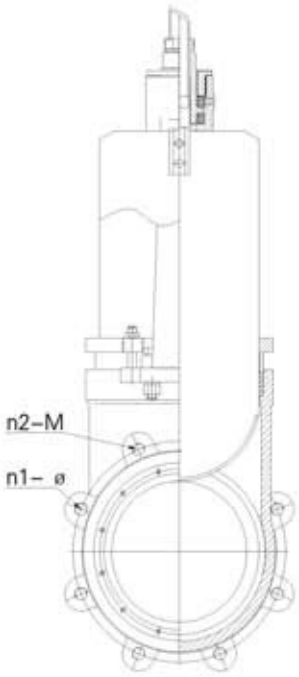
150PSI (Lug)

NPS		in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
ΦD		in	1.87	2.24	2.78	3.7	5.51	7.48	9.37	11.42	12.99	14.57	16.54	18.5	22.4
		mm	47.5	57	70.5	94	140	190	238	290	330	370	420	470	569
ΦB		in	6	7	7.5	9	11	13.5	16	19	21	23.5	25	27.5	32
		mm	150	175	190	230	279.5	344.5	405	485	533	600	635	698.5	813
ΦC		in	4.75	5.5	6	7.5	9.5	11.75	14.25	17	18.75	21.25	22.75	25	29.5
		mm	120.5	139.5	152.5	190.5	241.5	298.5	362	432	476	540	578	635	749.5
ΦG		in	3.62	4.12	5	6.19	8.5	10.62	12.75	15	16.25	18.5	21	23	27.25
		mm	92	105	127	157.5	216	270	324	381	413	470	533.5	584.5	692.5
b		in	0.5	0.5	0.5	0.5	0.69	0.69	0.75	0.75	0.83	0.96	0.96	1.06	1.06
		mm	12.7	12.7	12.7	12.7	17.5	17.5	19	19	21	24.5	24.5	27	27
M		in	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
n			4	4	4	8	8	8	12	12	12	16	16	20	20
L		in	1.88	2	2	2	2.25	2.75	2.75	3	3	3.5	3.5	4.5	4.5
		mm	48	51	51	51	57	70	70	76	76	89	89	114	114
W		in	7.9	7.9	7.9	9.8	11.8	13.8	15.7	17.7	19.7	21.7	21.7	21.7	21.7
		mm	200	200	200	250	300	350	400	450	500	550	550	550	550
H	OPEN	in	16.6	18	19.6	23.3	29.8	37.4	43.8	50.9	55.7	62.6	69.3	76.4	87.9
		mm	421	457	498	593	757	950	1112	1294	1416	1590	1759	1941	2232
	CLOSE	in	14.3	15.3	16.3	19	23.7	29.1	33.5	38.3	41.6	46.6	51.4	56.5	63.8
		mm	363	389	415	483	602	740	850	974	1056	1184	1306	1434	1621
WT		Kg	8.8	10.3	12	17.3	29	50.9	75.8	110	132	186	227	300	388

Size & Weight

Soft Seal

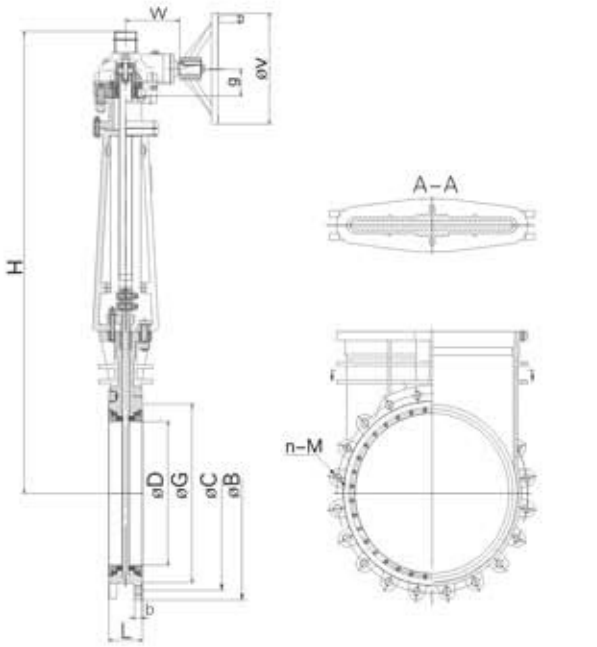


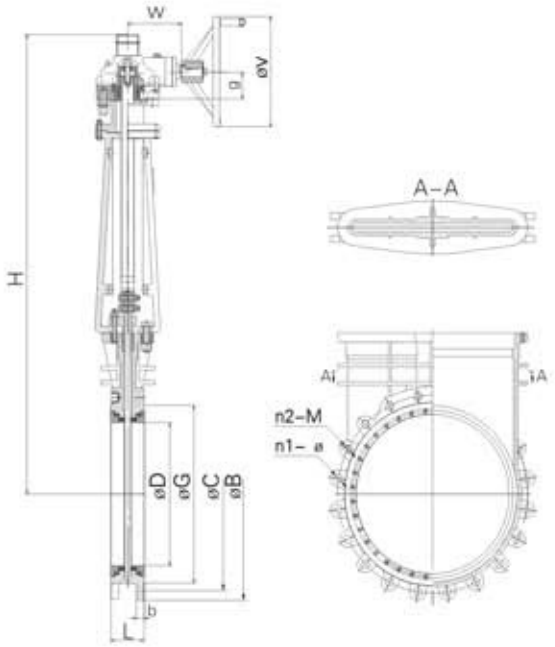


150PSI (Wafer)

NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
ΦD	in	1.87	2.24	2.78	3.7	5.51	7.48	9.37	11.42	12.99	14.57	16.54	18.5	22.4
	mm	47.5	57	70.5	94	140	190	238	290	330	370	420	470	569
ΦB	in	6	7	7.5	9	11	13.5	16	19	21	23.5	25	27.5	32
	mm	150	175	190	230	279.5	344.5	405	485	533	600	635	698.5	813
ΦC	in	4.75	5.5	6	7.5	9.5	11.75	14.25	17	18.75	21.25	22.75	25	29.5
	mm	120.5	139.5	152.5	190.5	241.5	298.5	362	432	476	540	578	635	749.5
ΦG	in	3.62	4.12	5	6.19	8.5	10.62	12.75	15	16.25	18.5	21	23	27.25
	mm	92	105	127	157.5	216	270	324	381	413	470	533.5	584.5	692.5
b	in	0.5	0.5	0.5	0.5	0.69	0.69	0.75	0.75	0.83	0.96	0.96	1.06	1.06
	mm	12.7	12.7	12.7	12.7	17.5	17.5	19	19	21	24.5	24.5	27	27
Φ	mm	19	19	19	19	22	22	25	25	29	29	32	32	35
n1		2	2	2	6	6	6	8	8	8	10	10	12	12
M	in	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
n2		2	2	2	2	2	2	4	4	4	6	6	8	8
L	in	1.88	2	2	2	2.25	2.75	2.75	3	3	3.5	3.5	4.5	4.5
	mm	48	51	51	51	57	70	70	76	76	89	89	114	114
W	in	7.9	7.9	7.9	9.8	11.8	13.8	15.7	17.7	19.7	21.7	21.7	21.7	21.7
	mm	200	200	200	250	300	350	400	450	500	550	550	550	550
H OPEN	in	16.6	18	19.6	23.3	29.8	37.4	43.8	50.9	55.7	62.6	69.3	76.4	87.9
	mm	421	457	498	593	757	950	1112	1294	1416	1590	1759	1941	2232
H CLOSE	in	14.3	15.3	16.3	19	23.7	29.1	33.5	38.3	41.6	46.6	51.4	56.5	63.8
	mm	363	389	415	483	602	740	850	974	1056	1184	1306	1434	1621
WT	Kg	8.8	10.3	12	17.3	29	50.9	75.8	110	132	186	227	300	388

Size & Weight





150PSI (Lug)

NPS	in	12"	14"	16"	18"	20"	24"
DN	mm	300	350	400	450	500	600
ΦD	in	11.42	12.99	14.57	16.54	18.5	22.4
	mm	290	330	370	420	470	569
ΦB	in	19	21	23.5	25	27.5	32
	mm	485	533	600	635	698.5	813
ΦC	in	17	18.75	21.25	22.75	25	29.5
	mm	432	476	540	578	635	749.5
ΦG	in	15	16.25	18.5	21	23	27.25
	mm	381	413	470	533.5	584.5	692.5
b	in	0.75	0.83	0.96	0.96	1.06	1.06
	mm	19	21	24.5	24.5	27	27
M	in	7/8–9	1–8	1–8	1 1/8–7	1 1/8–7	1 1/4–7
n		12	12	16	16	20	20
L	in	3	3	3.5	3.5	4.5	4.5
	mm	76	76	89	89	114	114
v	in	18.1	18.1	18.1	18.1	18.1	18.1
	mm	460	460	460	460	460	460
W	in	6.8	6.8	6.8	6.8	6.8	6.8
	mm	172	172	172	172	172	172
g	in	3.4	3.4	3.4	3.4	3.4	3.4
	mm	87	87	87	87	87	87
H	in	54.6	58.5	64.2	70.7	77.2	88.5
	mm	1388	1485	1630	1796	1960	2248
WT	Kg	160	182	236	277	350	438

150PSI (Wafer)

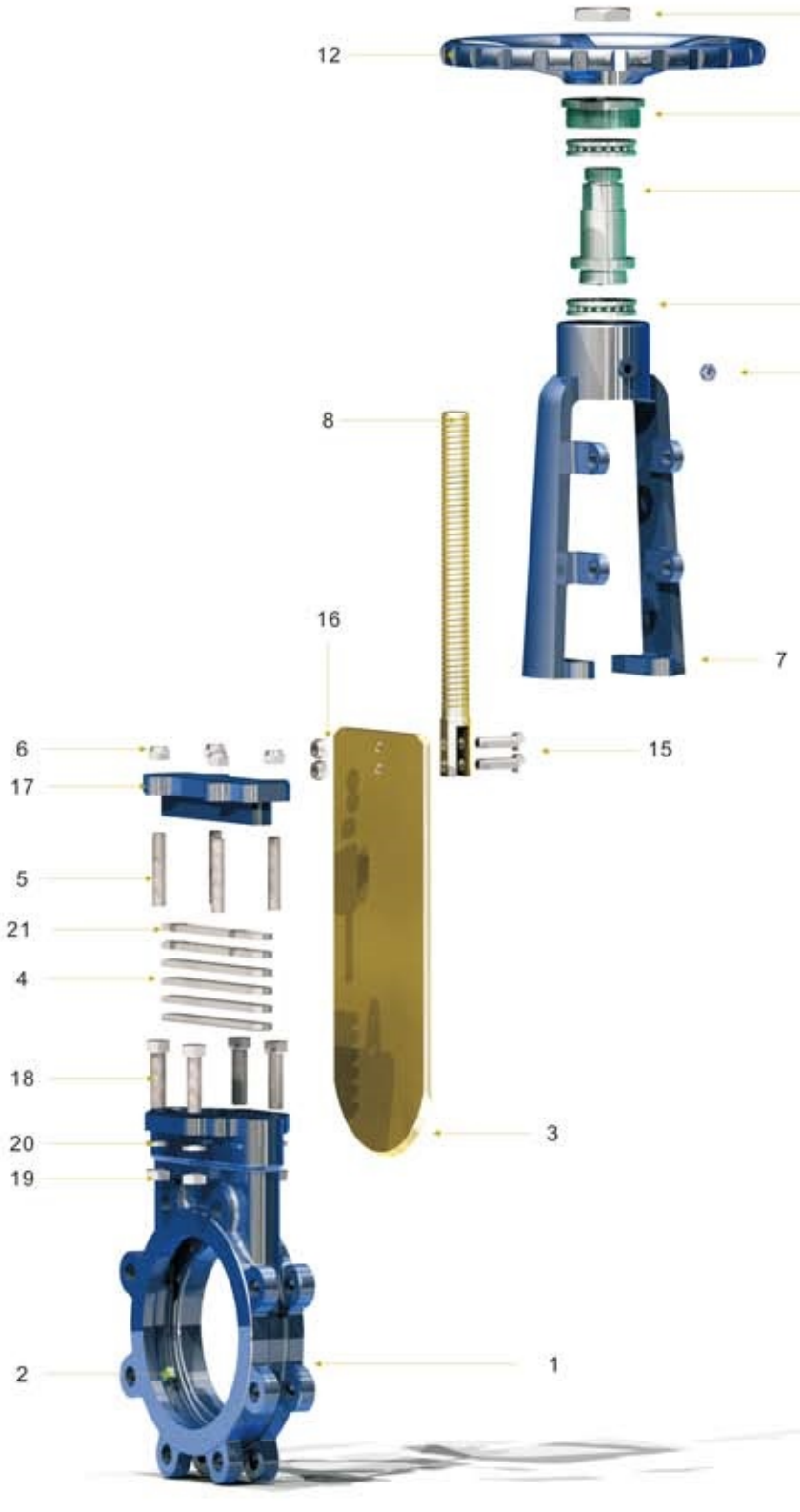
NPS	in	12"	14"	16"	18"	20"	24"
DN	mm	300	350	400	450	500	600
ΦD	in	11.42	12.99	14.57	16.54	18.5	22.4
	mm	290	330	370	420	470	569
ΦB	in	19	21	23.5	25	27.5	32
	mm	485	533	600	635	698.5	813
ΦC	in	17	18.75	21.25	22.75	25	29.5
	mm	432	476	540	578	635	749.5
ΦG	in	15	16.25	18.5	21	23	27.25
	mm	381	413	470	533.5	584.5	692.5
b	in	0.75	0.83	0.96	0.96	1.06	1.06
	mm	19	21	24.5	24.5	27	27
Φ	mm	25	29	29	32	32	35
n1		8	8	10	10	12	12
M	in	7/8–9	1–8	1–8	1 1/8–7	1 1/8–7	1 1/4–7
n2		4	4	6	6	8	8
L	in	3	3	3.5	3.5	4.5	4.5
	mm	76	76	89	89	114	114
v	in	18.1	18.1	18.1	18.1	18.1	18.1
	mm	460	460	460	460	460	460
W	in	6.8	6.8	6.8	6.8	6.8	6.8
	mm	172	172	172	172	172	172
g	in	3.4	3.4	3.4	3.4	3.4	3.4
	mm	87	87	87	87	87	87
H	in	54.6	58.5	64.2	70.7	77.2	88.5
	mm	1388	1485	1630	1796	1960	2248
WT	Kg	160	182	236	277	350	438

Design features

Metal Seal

1. Grease deivce is installed for injecting grease to reduce part wear and operation torque.
2. Lugs are designed on yoke for installing pin and lock to prevent unauthorized operation
3. Blade side round– shape configuration greatly reduces packing wear during operation, improve the sealing performance and extend valve service life.
4. Stoppers are designed to prevent blade being over closed

Material Specifications



NO.	NAME
1	BODY
2	STOPPER
3	BLADE
4	PACKING
5	STUD
6	LOCK NUT
7	YOKE
8	STEM
9	BEARING
10	SLEEVE GLAND
11	STEM NUT
12	HANDWHEEL
13	HANDWHEEL NUT
14	GREASE NIPPLE
15	BOLT
16	LOCK NUT
17	GLAND FLANGE
18	BOLT
19	NUT
20	WASHER
21[a]	ASTEROIDAL PACKING

Note a : Only used upon NPS 12"

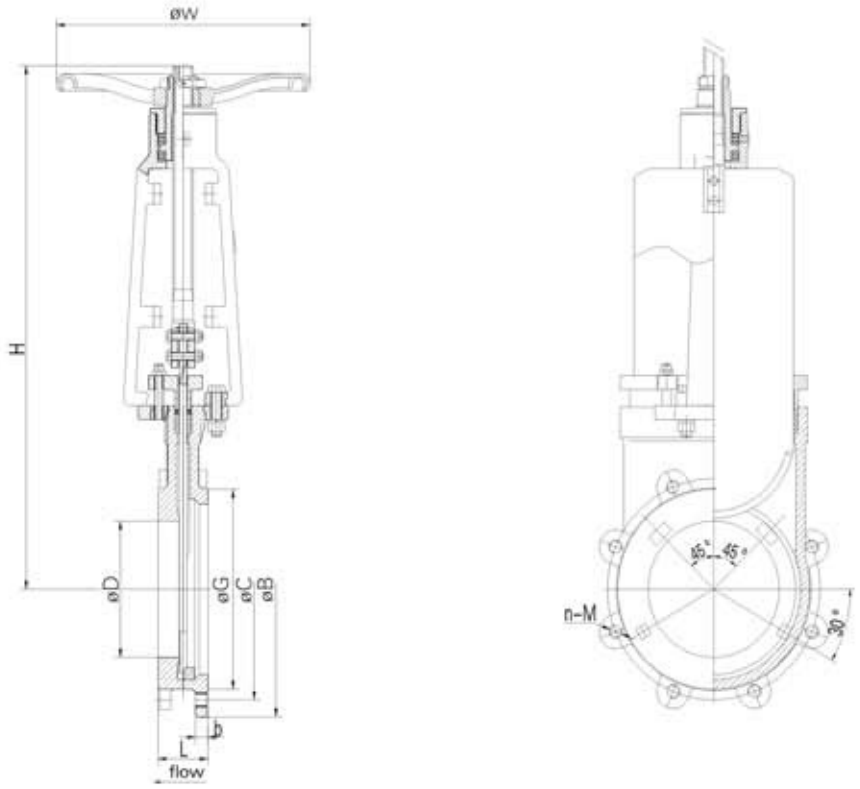
Material Specifications Metal Seal

NO.	Part	Stainless Steel	Carbon Stell
1	BODY	ASTM A351-CF8M	ASTM A216 WCB+304
2	STOPPER	ASTM A276-321	ASTM A276-321
3	BLADE	ASTM A240-316	ASTM A240-304
4	PACKING	PTFE	PTFE
5	STUD	ASTM A193-B8	ASTM A193-B7
6	LOCK NUT	F304	ASTM A194-2H
7	YOKE	ASTM A351-CF8	ASTM A216-WCB
8	STEM	ASTM A182-F304	ASTM A182-F6a
9	BEARING	ASTM 52100	ASTM 52100
10	SLEEVE GLAND	F304	ASTM A29 1035
11	STEM NUT	ASTM A439 D-2	ASTM A439 D-2
12	HANDWHEEL	ASTM A536 60-40-18	ASTM A536 60-40-18
13	HANDWHEEL NUT	F304	ASTM A29 1025
14	GREASE NIPPLE	S.S	C.S
15	BOLT	ASTM A193-B8	ASTM A193-B7
16	LOCK NUT	F304	ASTM A194-2H
17	GLAND FLANGE	ASTM A351-CF8	ASTM A216-WCB
18	BOLT	ASTM A193-B8	ASTM A193-B7
19	NUT	ASTM A194-8	ASTM A194-2H
20	WASHER	S.S	C.S
21[a]	ASTEROIDAL PACKING	EPDM	EPDM

Note a : only used upon NPS 12"

Metal Seal

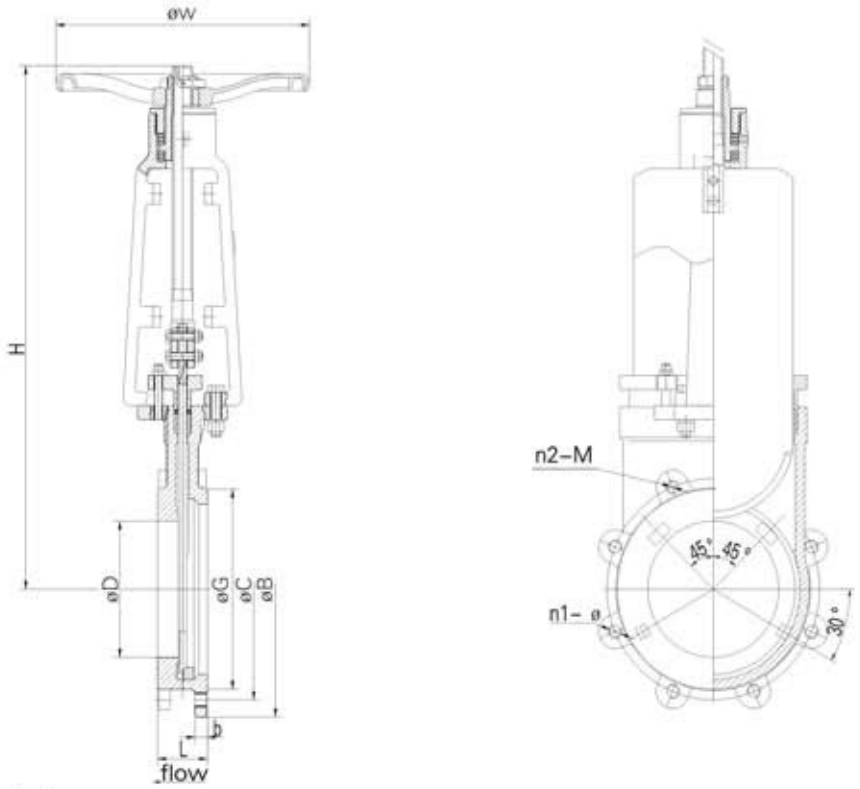
Size & Weight



150PSI (Lug)

NPS		in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
ΦD		in	2	2.5	2.87	3.94	5.75	7.8	9.84	11.81	13.23	14.96	16.93	18.9	22.83
		mm	50.8	63.5	73	100	146	198	250	300	336	380	430	480	580
ΦB		in	6	7	7.5	9	11	13.5	16	19	21	23.5	25	27.5	32
		mm	150	175	190	230	279.5	344.5	405	485	533	600	635	698.5	813
ΦC		in	4.75	5.5	6	7.5	9.5	11.75	14.25	17	18.75	21.25	22.75	25	29.5
		mm	120.5	139.5	152.5	190.5	241.5	298.5	362	432	476	540	578	635	749.5
ΦG		in	3.62	4.12	5	6.19	8.5	10.62	12.75	15	16.25	18.5	21	23	27.25
		mm	92	105	127	157.5	216	270	324	381	413	470	533.5	584.5	692.5
b		in	0.5	0.5	0.5	0.5	0.69	0.69	0.75	0.75	0.83	0.96	0.96	1.06	1.06
		mm	12.7	12.7	12.7	12.7	17.5	17.5	19	19	21	24.5	24.5	27	27
M		in	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
n			4	4	4	8	8	8	12	12	12	16	16	20	20
L		in	1.88	2	2	2	2.25	2.75	2.75	3	3	3.5	3.5	4.5	4.5
		mm	48	51	51	51	57	70	70	76	76	89	89	114	114
W		in	7.9	7.9	7.9	9.8	11.8	13.8	15.7	17.7	19.7	21.7	21.7	21.7	21.7
		mm	200	200	200	250	300	350	400	450	500	550	550	550	550
H	OPEN	in	15.5	16.9	18.5	22.3	28.4	36.1	42.7	49.6	54	60.7	67.4	74.2	85.4
		mm	394	430	471	566	722	917	1084	1260	1373	1543	1712	1885	2170
	CLOSE	in	13.1	14	15.2	17.8	22.2	27.7	32.1	37	39.9	44.8	49.5	54.3	61.4
		mm	333	356	385	452	565	703	815	940	1013	1137	1257	1378	1560
WT		Kg	8.6	10.2	11.7	17.2	27.5	46.8	68.7	103	125	172	207	287	363

Size & Weight Metal Seal

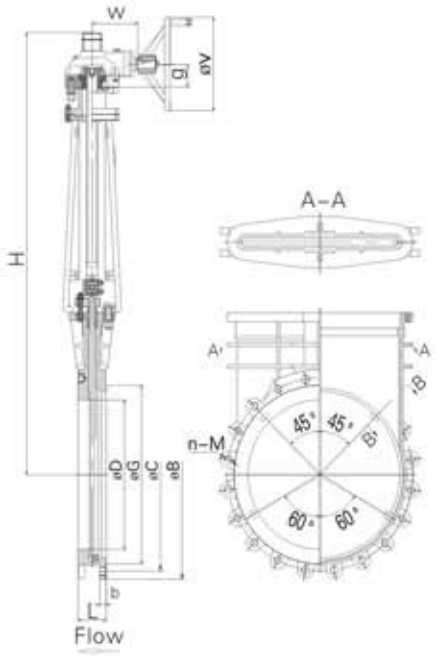


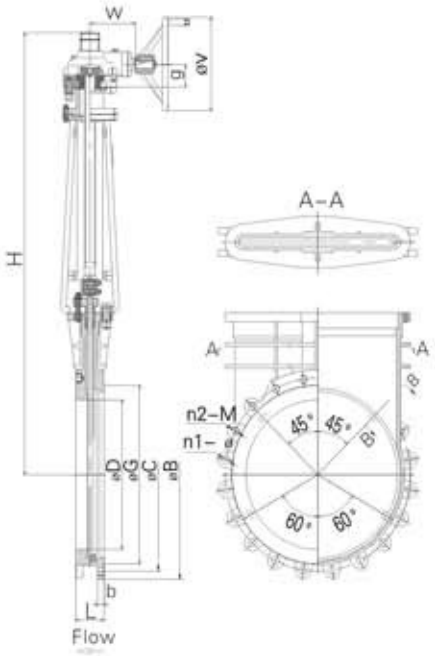
150PSI (Wafer)

NPS		in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN		mm	50	65	80	100	150	200	250	300	350	400	450	500	600
ΦD		in	2	2.5	2.87	3.94	5.75	7.8	9.84	11.81	13.23	14.96	16.93	18.9	22.83
		mm	50.8	63.5	73	100	146	198	250	300	336	380	430	480	580
ΦB		in	6	7	7.5	9	11	13.5	16	19	21	23.5	25	27.5	32
		mm	150	175	190	230	279.5	344.5	405	485	533	600	635	698.5	813
ΦC		in	4.75	5.5	6	7.5	9.5	11.75	14.25	17	18.75	21.25	22.75	25	29.5
		mm	120.5	139.5	152.5	190.5	241.5	298.5	362	432	476	540	578	635	749.5
ΦG		in	3.62	4.12	5	6.19	8.5	10.62	12.75	15	16.25	18.5	21	23	27.25
		mm	92	105	127	157.5	216	270	324	381	413	470	533.5	584.5	692.5
b		in	0.5	0.5	0.5	0.5	0.69	0.69	0.75	0.75	0.83	0.96	0.96	1.06	1.06
		mm	12.7	12.7	12.7	12.7	17.5	17.5	19	19	21	24.5	24.5	27	27
Φ		mm	19	19	19	19	22	22	25	25	29	29	32	32	35
n1			2	2	2	6	6	6	8	8	8	10	10	12	12
M		in	5/8-11	5/8-11	5/8-11	5/8-11	3/4-10	3/4-10	7/8-9	7/8-9	1-8	1-8	1 1/8-7	1 1/8-7	1 1/4-7
n2			2	2	2	2	2	2	4	4	4	6	6	8	8
L		in	1.88	2	2	2	2.25	2.75	2.75	3	3	3.5	3.5	4.5	4.5
		mm	48	51	51	51	57	70	70	76	76	89	89	114	114
W		in	7.9	7.9	7.9	9.8	11.8	13.8	15.7	17.7	19.7	21.7	21.7	21.7	21.7
		mm	200	200	200	250	300	350	400	450	500	550	550	550	550
H	OPEN	in	15.5	16.9	18.5	22.3	28.4	36.1	42.7	49.6	54	60.7	67.4	74.2	85.4
		mm	394	430	471	566	722	917	1084	1260	1373	1543	1712	1885	2170
	CLOSE	in	13.1	14	15.2	17.8	22.2	27.7	32.1	37	39.9	44.8	49.5	54.3	61.4
		mm	333	356	385	452	565	703	815	940	1013	1137	1257	1378	1560
WT		Kg	8.6	10.2	11.7	17.2	27.5	46.8	68.7	103	125	172	207	287	363

Metal Seal

Size & Weight





150PSI (Lug)

NPS	in	12"	14"	16"	18"	20"	24"
DN	mm	300	350	400	450	500	600
ΦD	in	11.81	13.23	14.96	16.93	18.9	22.83
	mm	300	336	380	430	480	580
ΦB	in	19	21	23.5	25	27.5	32
	mm	485	533	600	635	698.5	813
ΦC	in	17	18.75	21.25	22.75	25	29.5
	mm	432	476	540	578	635	749.5
ΦG	in	15	16.25	18.5	21	23	27.25
	mm	381	413	470	533.5	584.5	692.5
b	in	0.75	0.83	0.96	0.96	1.06	1.06
	mm	19	21	24.5	24.5	27	27
M	in	7/8–9	1–8	1–8	1 1/8–7	1 1/8–7	1 1/4–7
n		12	12	16	16	20	20
L	in	3	3	3.5	3.5	4.5	4.5
	mm	76	76	89	89	114	114
v	in	18.1	18.1	18.1	18.1	18.1	18.1
	mm	460	460	460	460	460	460
W	in	6.8	6.8	6.8	6.8	6.8	6.8
	mm	172	172	172	172	172	172
g	in	3.4	3.4	3.4	3.4	3.4	3.4
	mm	87	87	87	87	87	87
H	in	54.6	58.5	64.2	70.7	77.2	88.5
	mm	1388	1485	1630	1796	1960	2248
WT	Kg	158	180	232	272	345	430

150PSI (Wafer)

NPS	in	12"	14"	16"	18"	20"	24"
DN	mm	300	350	400	450	500	600
ΦD	in	11.81	13.23	14.96	16.93	18.9	22.83
	mm	300	336	380	430	480	580
ΦB	in	19	21	23.5	25	27.5	32
	mm	485	533	600	635	698.5	813
ΦC	in	17	18.75	21.25	22.75	25	29.5
	mm	432	476	540	578	635	749.5
ΦG	in	15	16.25	18.5	21	23	27.25
	mm	381	413	470	533.5	584.5	692.5
b	in	0.75	0.83	0.96	0.96	1.06	1.06
	mm	19	21	24.5	24.5	27	27
Φ	mm	25	29	29	32	32	35
n1		8	8	10	10	12	12
M	in	7/8–9	1–8	1–8	1 1/8–7	1 1/8–7	1 1/4–7
n2		4	4	6	6	8	8
L	in	3	3	3.5	3.5	4.5	4.5
	mm	76	76	89	89	114	114
v	in	18.1	18.1	18.1	18.1	18.1	18.1
	mm	460	460	460	460	460	460
W	in	6.8	6.8	6.8	6.8	6.8	6.8
	mm	172	172	172	172	172	172
g	in	3.4	3.4	3.4	3.4	3.4	3.4
	mm	87	87	87	87	87	87
H	in	54.6	58.5	64.2	70.7	77.2	88.5
	mm	1388	1485	1630	1796	1960	2248
WT	Kg	158	180	232	272	345	430

Soft Seal

NPS	2"	2-1/2"	3"	4"	6"	8"	10"
Torque(N.M)[a]	10	12	14	26	17	32	52
Thrust(KN)[a]	1.5	1.8	2.2	3.4	5.6	9.5	14.3

NPS	12"	14"	16"	18"	20"	24"
Torque(N.M)[a]	68	94	125	154	221	288
Thrust(KN)[a]	18.7	22.9	28.7	35.3	44.6	59.2

Notes a: Calculate based on max work pressure 150Psi(1MPa)

Metal Seal

NPS	2"	2-1/2"	3"	4"	6"	8"	10"
Torque(N.M)[a]	14	18	22	39	25	45	75
Thrust(KN)[a]	1.7	2.2	2.6	4.3	7.6	13.5	20.4

NPS	12"	14"	16"	18"	20"	24"
Torque(N.M)[a]	101	141	193	237	340	470
Thrust(KN)[a]	27.7	34.2	44.2	54.4	68.8	94.9

Notes a: Calculate based on max work pressure 150Psi(1MPa)

Notes:

1. Torque is calculated based on normal temperature, and the seat material of soft seal valve is Reinforced Teflon (RTFE).
2. Torque shown in this table is to be used as a guide for actuator selection, A safety factor of 1.3 – 1.5 is recommended for actuator sizing
3. Torque may be changed according to different fluid and trim material.

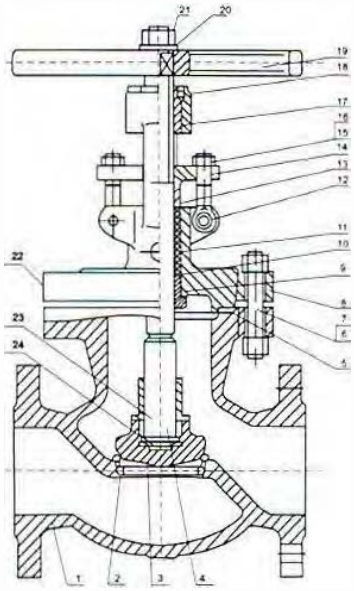
Globe Valves

Globe Valve

EFC-GE50C600

TRIM MATERIAL TO API 600

Seating code	Seat Ring Surface Part No.2	Wedge Seat Surface Part No.3	Stem Part No.4	Backseat Bushing PartNo.9
1	F6	F6	F6	F6
2	Stellite	Stellite	F6	F6
3	Stellite	F6	F6	F6
4	F304	F304	F304	F304
5	F316	F316	F316	F316
6	Monel	MoneI	MoneI	Monei
7	Alloy 20	Alloy 20	Alloy 20	Alloy 20
8	Hastelloy B	Hastelloy B	Hastelloy B	Hastelloy B
9	Bronze	Bronze	Bronze	Bronze



STANDARD MATER IAL SPECIFICATIONS

Part Name		Carbon Steel to ASTM		Alloy Steel to ASTM				Stainless Steel to ASTM			
1	Body	A216WCB	A352LCB	A217WC1	A217WC6	A217WC9	A217WC5	A351CF8	A351CF8M	A351CF3	A351CF3M
8	Bonnet	A216WCB	A352LCB	A217WC1	A217WC6	A217WC9	A217WC5	A351CF8	A351CF8M	A351CF3	A351CF3M
6	Bolts	A193B7	A320L7	A193B7	A193B16	A193B16	A193B16	A193B8	A193B8	A193B8	A193B8
7	Nut	A1942H	A194 4	A194 2H	A194 4	A194 4	A194 4	A194 8	A1948	A1948	A194 8
11	Lantern	410	410	410	410	410	410	304	316	304L	316L
12	Pins	Steel	Steel	Steel	Steel	Steel	Steel	S.S	S.S	S.S	S.S
13	Gland	A182F6	A182F6	A182F6	A182F6	A182F6	A182F6	304	316	304L	316L
14	Gland Flange	A105	A350LF2	A105	A105	A105	A105	304	316	304L	316L
15	Eyebolts	A193B7	A320LF7	A193B7	A193B7	A193B7	A193B7	A193B7	A193B7	A193B7	A193B7
16	Nuts	A1942H	A1944	A1942H	A1942H	A1942H	A1942H	A1948	A1948	A1948	A1948
23	Disc	A182F6	A182F304	A182F6	A182F6	A182F6	A182F6	A182F304	A182F304	A182F304	A182F304
5	Gasket	SS Spiral Wound W/graphite, or SS Spiral Wound W/PTFE, or REINFORCED PTFE									
10	Packing	Braided Graphite or Die-formed graphite ring or PTFE									
16	Lubricator	STEEL									
17	Stem Nut	A439·D276-410									
19	Hand Wheel	Ductile Iron									
20	Hand wheel Washer	STEEL									
21	Hand wheel Nut	STEEL									
22	Nameplate	Stainless Steel or Aluminum									
24	Thrust Washer	A182 F6									

Other materials (Alloy 20, AISI 321. AISI 347. Monel. Hastelloy. etc) on request.

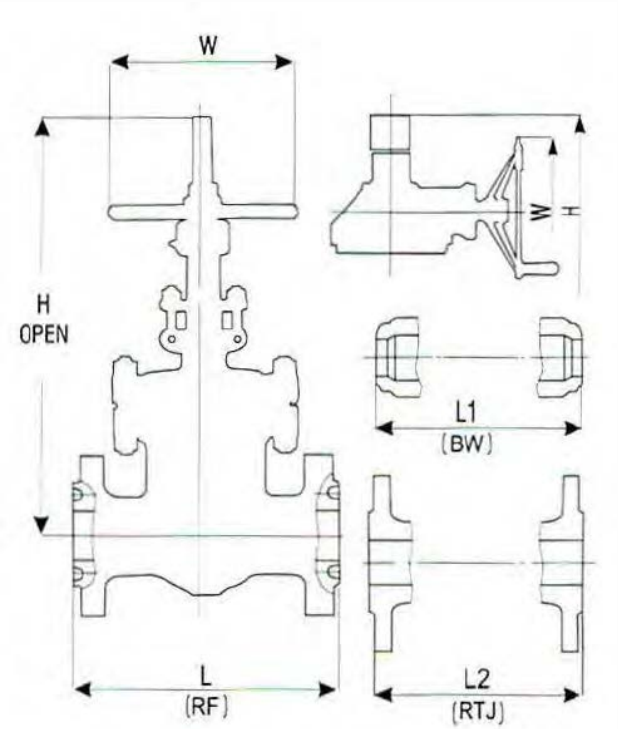
Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 600

Class 150 Globe Valve

EFC-GE50C150

OS&Y, Rising Stem, Plug Type Disc
Bolted Bonnet, Threaded
Seat Ring

STANDARDS COMPLIANCE:
Basic Design: BS 1873
Face to Face Dimension: ANSI B 16. 10
End to End Dimension: ANSI B 16. 10
Flanged Ends to ANSI B 16.5
B.W. Ends to ANSI B 16.25
Shell wall Thickness:
2"- 12" to API 600
Manufacturing to NACE MR - 01 - 75
on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Seat Test (Hydrostatic)	Seat Test (Air)
WCB	450psig	315psig	80psig
WC6	450psig	319psig	
CF8M	425psig	303psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	5	6	8	10	12
DN	mm	50	65	80	100	125	150	200	250	300
L-L1	in	8	8 ½	9 ½	11 ½	14	16	19 ½	24 ½	27 ½
(RF 8W)	mm	203	216	241	292	356	406	495	622	698
L2	in	8 ½	9*	10	12	14 ½	16 ½	20	25	28
(RTJ)	mm	216	229	254	305	368	419	508	635	711
H	in	14-11/16	15 3/8	16- 9/16	20- ¼	21 3/16	22 5/15	24 5/8	28	39
(OPEN)	mm	373	390	421	515	538	567	626	712	990
W	in	7 7/8	9 7/8	9 7/8	11 13/16	11·13/16	13- 3/4	15 ¾	17 ¾	24
	mm	200	250	250	300	300	350	400	450	610
WT	RF	22	29	42	64	77	105	154	288	507
(KG)	BW	19	25	3-1	49	65	82	131	249	430

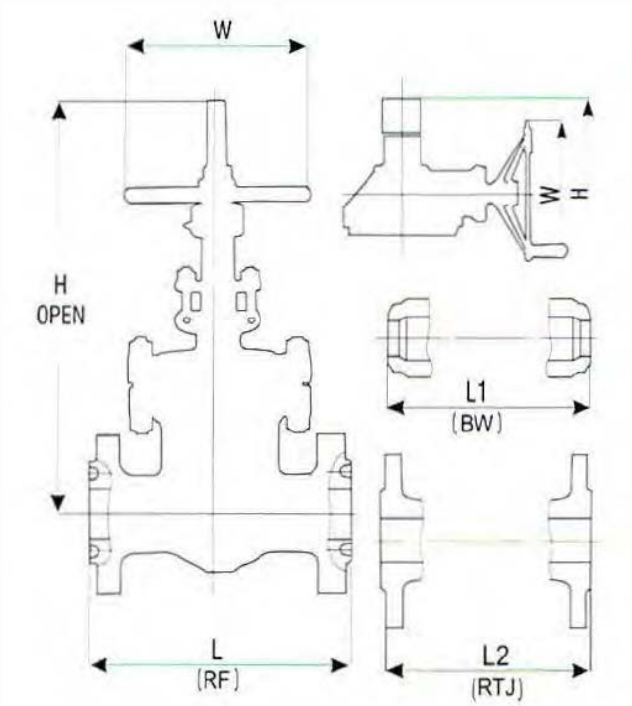
Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 150

Class 300 Globe Valve

EFC-GE50C300

OS&Y, Rising Stem, Plug Type Disc
Bolted Bonnet, Threaded
Seat Ring

STANDARDS COMPLIANCE:
Basic Design: BS 1873
Face to Face Dimension: ANSI B 16. 10
End to End Dimension: ANSI B 16. 10
Flanged Ends to ANSI B 16.5
B.W. Ends to ANSI B 16.25
Shell wall Thickness:
2"- 12" to API 600
Manufacturing to NACE MR - 01 - 75
on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	1125psig	814psig	80psig
WC6	1125psig	825psig	
CF8M	1100psig	792psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	5	6	8	10	12
DN	mm	50	65	80	100	125	150	200	250	300
L-L1	in	10 ½	11 ½	12 ½	14	15 ¾	17 ½	22	24 ½	28
(RF-BW)	mm	267	292	318	356	400	444	559	622	711
L2	in	11 1/8	12 1/8	13 1/8	14 5/8	16 3/8	18 1/8	22 5/8	25 1/8	28 5/8
(RTJ)	mm	283	308	333	371	416	460	575	638	727
H	in	15 11/16	17 1/8	18 3/16	22 1/16	24 3/8	27 5/16	38 5/8	44 ½	41 5/16
(OPEN)	mm	398	435	462	560	620	694	982	1130	1049
W	in	7 7/8	9 7/8	9 7/8	13 ¾	15 ¾	17 ¾	22 1/16	34	18 1/8
	mm	200	250	250	350	400	450	560	864	460*
WT	RF	31	43	57	86	130	168	280	385	724
(KG)	BW	26	28	44	68	110	138	228	329	618

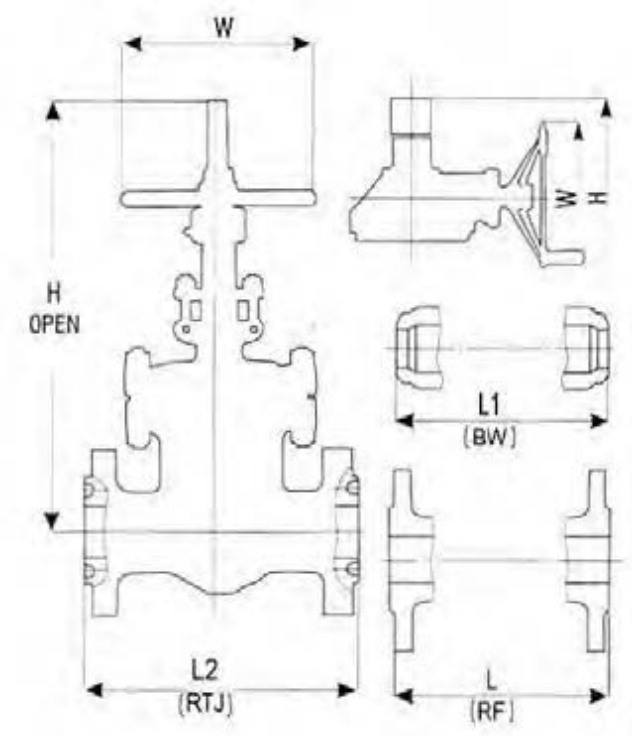
Manual gear operator is recommended
Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 300

Class 600 Globe Valve

EFC-GE50C600

OS&Y, Rising Stem, Plug Type Disc
Bolted Bonnet, Threaded
Seat Ring

STANDARDS COMPLIANCE:
Basic Design: BS 1873
Face to Face Dimension: ANSI B 16. 10
End to End Dimension: ANSI B 16. 10
Flanged Ends to ANSI B 16.5
B.W. Ends to ANSI B 16.25
Shell wall Thickness:
2"- 12" to API 600
Manufacturing to NACE MR - 01 - 75
on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	2225psig	1628psig	80psig
WC6	225psig	1650psig	
CF8M	2175psig	1548psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	6	8	10	12
DN	mm	50	65	80	100	150	200	250	300
L-L1	in	11 ½	13	14	17	22	26	31	33
(RF-BW)	mm	292	330	356	432	559	660	787	838
L2	in	11 1/8	13 1/8	14 1/8	17 1/8	22 1/8	26 1/8	31 1/8	33 1/8
(RTJ)	mm	295	333	359	435	562	664	791	841
H	in	18 5/8	21 ¾	23 3/8	28 1/16	38 3/16	44 3/16	52 3/8	59 13/16
(OPEN)	mm	474	553	593	713	970	1122	1330	1519
W	in	9 7/8	9 7/8	11 13/16	13 ¾	19 11/16	22 1/16	28 3/8	24
	mm	250	250	300	350	500	560	720	610*
WT	RF	39	58	73	120	327	482	700	900
(KG)	BW	33	48	61	95	261	385	588	795

Manual gear operator is recommended

Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 600

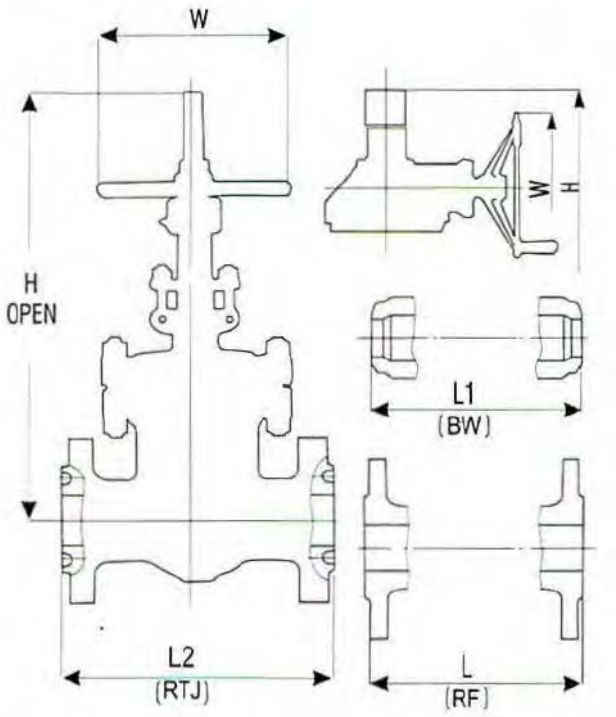
Class 900 Globe Valve

EFC-GE50C900

OS&Y, Rising Stem, Plug Type Disc
Bolted Bonnet, Threaded
Seat Ring

STANDARDS COMPLIANCE:

Basic Design: API 600
Face to Face Dimension: ANSI 816. 10
End to End Dimension: ANSI B 16. 10
Flanged Ends to ANSI B 16.5
B.W. Ends to ANSI B 16.25
Shell wall Thickness:
2"- 8" to API 600
Manufacturing to NACE MR - 01 - 75 on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	3350psig	2442psig	80psig
WC6	3375psig	2475psig	
CF8M	3250psig	2376psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	6	8
DN	mm	50	65	80	100	150	200
L-L1	in	14 ½	16 ½	15	18	24	29
(RF-BW)	mm	368	419	381	457	610	737
L2	in	14 5/8	16 5/8	15 1/8	18 1/8	24 1/8	29 1/8
(RTJ)	mm	371	422	384	460	613	740
H	in	9 7/16	10 ¼	12 5/8	28 11/16	15	25 7/8
(OPEN)	mm	240	280	252	320	382	658
W	in	13 ¾	15 ¾	17 ¾	22 1/16	18 1/8	24
	mm	350	400	450	560	460*	610*
WT	RF	100	118	131	218	452	710
(KG)	BW	75	94	105	185	340	630

Manual gear operator is recommended

Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 900

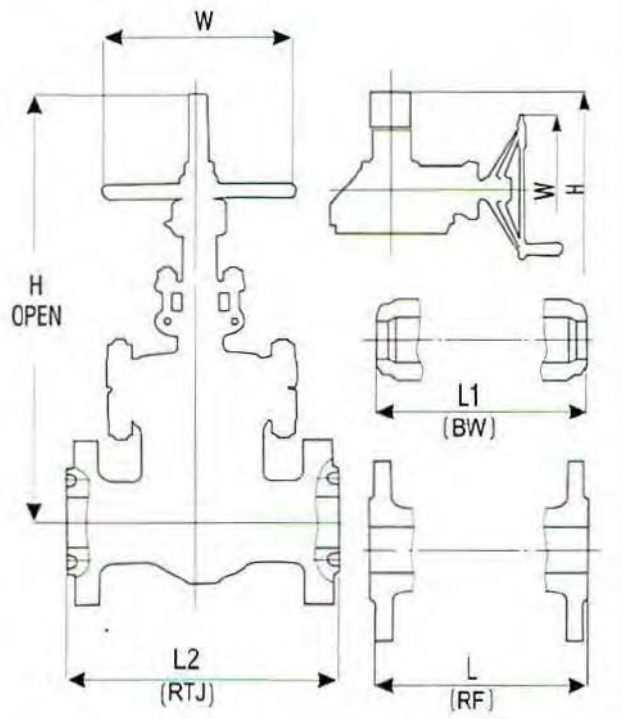
Class 1500 Globe Valve

EFC-GE50C1500

OS&Y, Rising Stem, Plug Type Disc
Bolted Bonnet, Threaded or
Seat Ring

STANDARDS COMPLIANCE:

Basic Design: BS 1873
Face to Face Dimension: ANSI B16. 10
End to End Dimension: ANSI B 16. 10
Flanged End to ANSI B 16.5
B.W. Ends to ANSI B 16.25
Shell wall Thickness:
2"- 8" to API 600
Manufacturing to NACE MR - 01 - 75 on request



TEST PRESSURE TO API 598

Body Material	Shell Test (Hydrostatic)	Shell Test (Hydrostatic)	Shell Test (Air)
WCB	5575psig	4078psig	80psig
WC6	5625psig	4125psig	
CF8M	5400psig	3960psig	

DIMENSIONS AND WEIGHTS

NPS	in	2	2 ½	3	4	6	8
DN	mm	50	65	80	100	150	200
L-L1	in	14 ½	16 ½	18 ½	21 ½	27 ¾	32 ¾
(RF-BW)	mm	368	419	470	546	705	832
L2	in	14 5/8	16 5/8	18 5/8	21 5/8	28	33 1/8
(RTJ)	mm	371	422	473	549	711	841
H	in	23 5/16	26	27 ¼	35 11/16	40	45 1/8
(OPEN)	mm	592	660	692	907	1015	1145
W	in	13 ¾	15 ¾	17 ¾	18 1/8	24	24
	mm	350	400	450	460*	610*	610*
WT	RF	112	141	228	336	622	720
(KG)	BW	84	115	183	227	715	615

Manual gear operator is recommended
Model Denote: EFC-GE = Globe Valve | 50 = Size in mm | C = Class 1500

Swing Check Valves

Metal Seated, Forged and Casted

ELITE®

SWING CHECK VALVES

SERIES 3S ANSI RANGE

Check Valves are self-acting valves used for preventing the reverse of flow in a piping system. Series 3S are Swing Check Valves that operate by means of its articulated disc. They are featured by its rugged and simple design and easy maintenance.

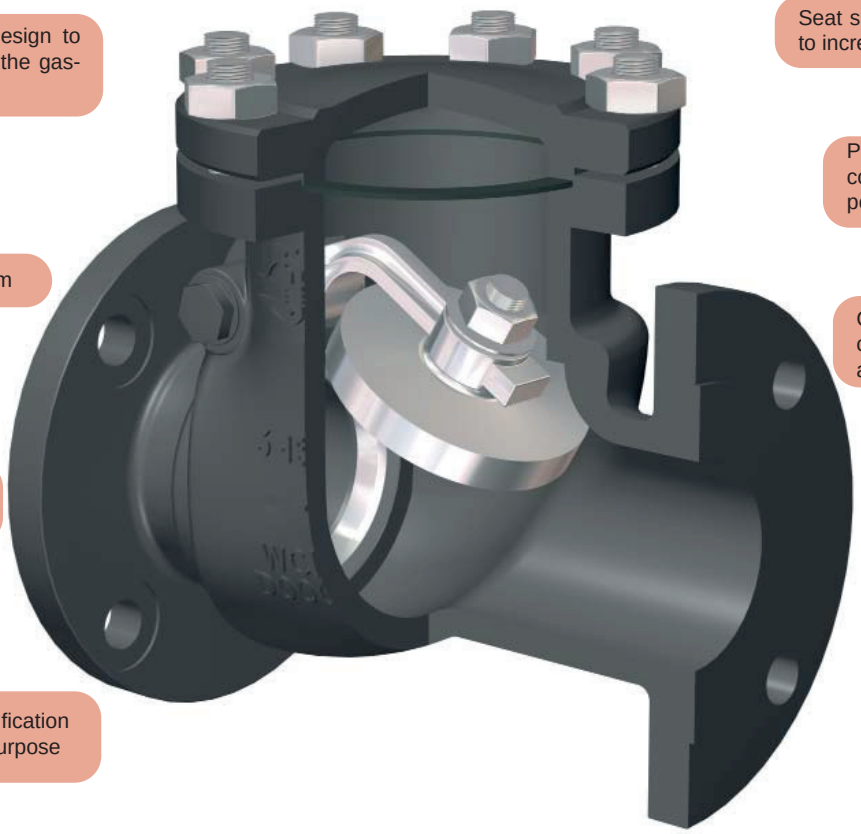
Body to cover joint design to apply uniform load to the gasket

Seat surface can be hardened to increase wear resistance

Precise machining of components for optimal performance

Disc hold by bolted arm

Great versatility in end connections, materials and configurations



Vertical seat, avoids trapping of media particles

Marking for identification and full traceability purpose

Main Features / Reference Standards

Design: API 6D / BS 1868
Pressure Rating: 150/300/600/900/1500/2500#
Face to face length: ASME B16.10
Valve end connections: Flanged RF or RTJ to ASME B16.5
Welded BW to ASME B16.25
Marking: MSS SP-25
Inspections & Tests: API 598
Primer painted for protection during storage and transport (carbon steel body/bonnet)
Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

Main Duties / Limits of use

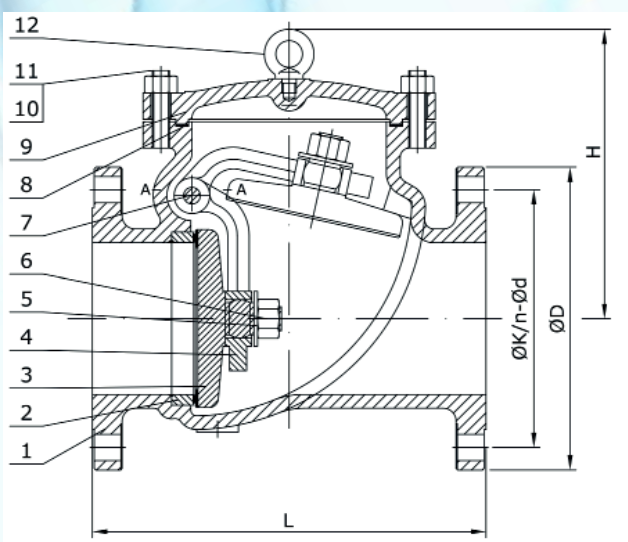
Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us
Pressure / Temperature Rating to ASME B16.34. Temperature range: -29 / 425ºC
For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1*) and tables 7 & 9 (gases & liquids group 2*) up to category III
Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13

Options

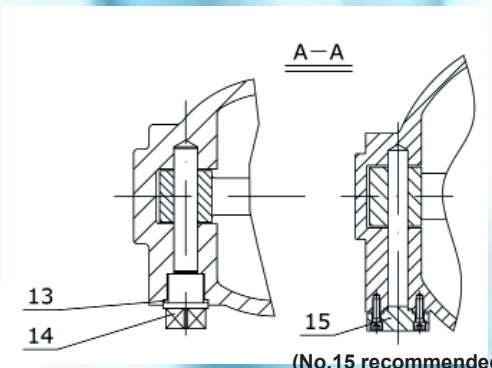
Diverse materials of construction and trim combinations, special designs, execution for aggressive atmosphere, etc. Please consult us

SERIES 3S ANSI RANGE

Main Parts and Materials



Nº	PART	MATERIAL		
		3SA0_	3SI20	3SI00
1	Body	A216 WCB	A351 CF8	A351 CF8M
2	Seat Ring	A105	Integral SS304	Integral+HF
3	Disc	A216 WCB	A351 CF8	A351 CF8M
4	Hinge	ASTM A216 WCB	A351 CF8	A351 CF8M
5	Washer	SS304	SS304	SS316
6	Disc Nut	ASTM A194 2H	A194 8	A194 8M
7	Hinge Pin	ASTM A182 F6a	A182 F304	A182 F316
8	Gasket	SS304+Graphite	SS304+Graphite	SS316+Graphite
9	Cover	ASTM A216 WCB	A351 CF8	A351 CF8M
10	Cover Bolt	ASTM A193 B7	A193 B8	A193 B8M
11	Cover Nut	ASTM A194 2H	A194 8	A194 8M
12	Eye Bolt	Carbon Steel		
13	Gasket	SS304	SS304	SS316
14	Plug	ASTM A105	A182 F304	A182 F316
15	Gland	ASTM A105	A182 F304	A182 F316



(No.15 recommended for size ≥ 16")

Fig. 3SA0_	Seat Surface	Disc Surface
TRIM #1 (3SA01)	A105+13Cr	A216 WCB+13Cr
TRIM #5 (3SA05)	A105+HF	A216 WCB+HF
TRIM #8 (3SA08)	A105+HF	A216 WCB+13Cr

HF = Hard faced

Main Valve Parameters

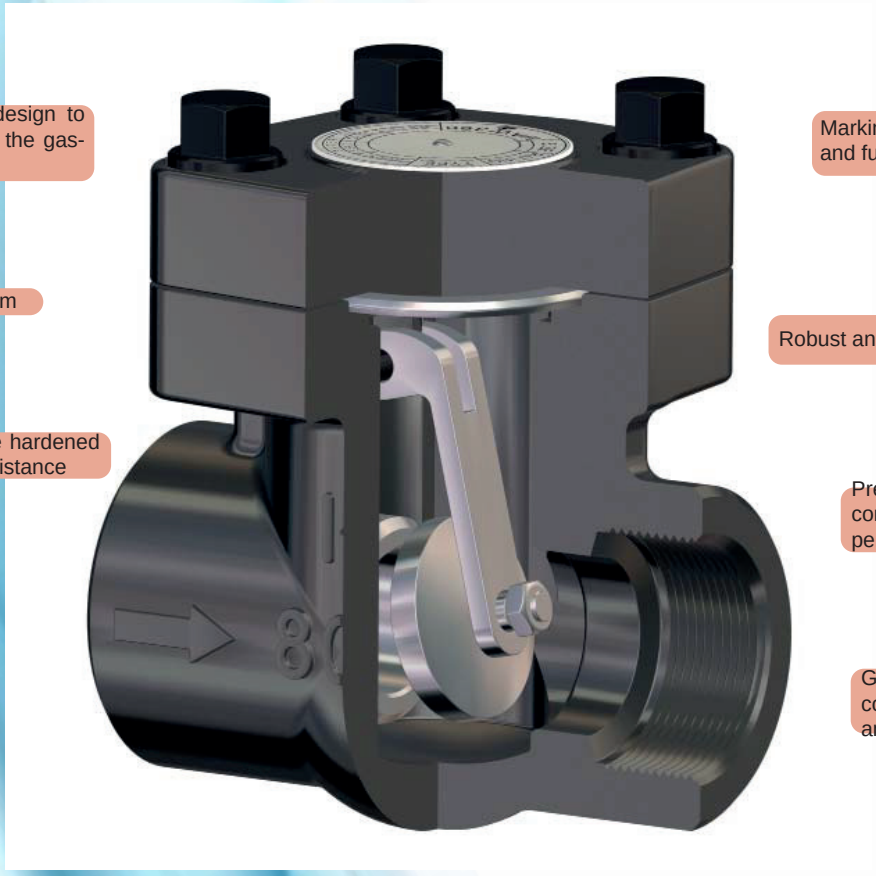
Size		inch	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
		DN	50	80	100	150	200	250	300	350	400	450	500	600
Class 150	RF	L	203	241	292	406	495	622	698	787	914	978	978	1295
		ØD	150	190	230	280	345	405	485	535	595	635	700	815
		ØK	120,7	152,4	190,5	241,3	298,5	362	431,8	476,3	539,8	577,9	635	749,3
		n-Ød	4-Ø19	4-Ø19	8-Ø19	8-Ø22	8-Ø22	12-Ø25	12-Ø25	12-Ø29	16-Ø29	16-Ø32	20-Ø32	20-Ø35
		H	127	156	177	235	340	410	456	475	552	572	660	740
	Approx. Weight		13	23	36	62	115	180	275	351	460	575	740	1350
Class 300	RF	L	267	318	356	444	533	622	711	838	864	978	1016	1346
		ØD	165	210	255	320	380	445	520	585	650	710	775	915
		ØK	127	168,3	200	269,9	330,2	387,4	450,8	514,4	571,5	628,6	685,8	812,8
		n-Ød	8-Ø19	8-Ø22	8-Ø22	12-Ø22	12-Ø25	16-Ø29	16-Ø32	20-Ø32	20-Ø35	24-Ø35	24-Ø35	24-Ø41
		H	137	180	205	315	370	430	465	505	554	620	680	770
	Approx. Weight		17	34	55	104	176	258	420	516	780	1150	1350	2100
Class 600	RF	L	292	356	432	559	660	787	838	889	991	1092	1194	1397
		ØD	165	210	275	355	420	510	560	605	685	745	815	940
		ØK	127	168,3	215,9	292,1	349,2	431,8	489	527	603,2	654	723,9	838,2
		n-Ød	8-Ø19	8-Ø22	8-Ø25	12-Ø29	12-Ø32	16-Ø35	20-Ø35	20-Ø38	20-Ø31	20-Ø44	24-Ø44	24-Ø51
		H	142	223	256	332	409	478	539	609	660	769	890	954
	Approx. Weight		22	43	78	155	285	645	615	920	1250	1800	2350	3300

Dimensions in mm subject to manufacturing tolerance / Weights in kg
Other dimensions on request

FORGED SWING CHECK VALVES

SERIES 39

Check Valves are self-acting valves used for preventing the reverse of fl ow in a piping system. Series 39 are Forged Swing Check Valves that operate by means of its articulated disc. They are featured by its rugged and compact design and easy maintenance.



Main Features / Reference Standards

Design: API 602
Pressure Rating: 800/1500/2500#
Face to face length: Manufacturer standard
Valve end connections: Threaded NPT to ASME B1.20.1 / BSP to ISO 228-1 / BSPT to ISO 7-1
Welded SW to ASME B16.11
Marking: MSS SP-25
Inspections & Tests: API 598
Zinc phosphated surface protection for forged steel valves
Product compliant with Directive 2014/68/EU on Pressure Equipment (PED) and Machinery Directive 2006/42/EC for European Union territory

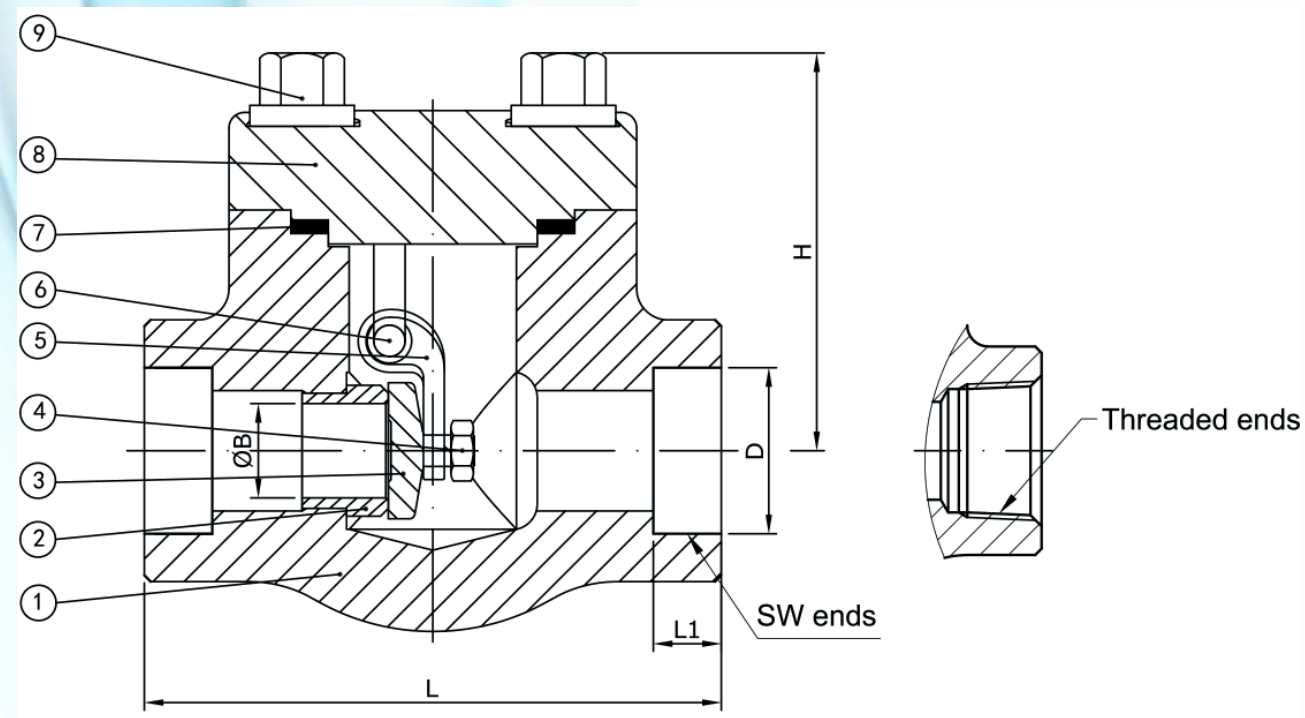
Main Duties / Limits of use

Fluids compatible with materials of construction. Questions referring to chemical resistance, please consult us
Pressure / Temperature Rating to ASME B16.34
For products compliant with Directive 2014/68/EU, observe also limits acc. to Annex II tables 6 & 8 (gases & liquids group 1*) and tables 7 & 9 (gases & liquids group 2*) up to category III
**Classification of fluids (group 1 or 2) acc. to Directive 2014/68/EU, Article 13*

Options

Diverse body materials and trim combinations, different valve connections, pressure seal, welded bonnet... Please consult us

Main Parts and Materials



Nº	PART	MATERIAL								
		A105N			A350 LF2		A182 F11/F22	A182 F304/F304L	A182 F316/F316L	A182 F51/F53
		Trim 1 (39A01)	Trim 5 (39A05)	Trim 8 (39A08)	Trim 2 (39A12)	Trim 10 (39A1D)	Trim 5 (39B75/39B65)	(39I10/39I90)	(39I30/39J10)	(89K30/39K40)
1	Body	ASTM A105N			A350 LF2		A182 F11/F22	A182 F304(L)	A182 F316(L)	A182 F51/F53
2	Seat	A276 410	A276 410+HF	A276 410+HF	A276 304	A276 316	A276 410+HF	A276 304(L)	A276 316(L)	A182 F51/F53
3	Disc	A182 F6a	A182 F6a+HF	A182 F6a	A182 F304	A182 F316	A182 F6a+HF	A182 F304(L)	A182 F316(L)	A182 F51/F53
4	Disc Nut	A194 2H			A194 4		A194 4	A194 8(M)	A194 8M	A194 8M
5	Hinge	SS304			SS304		SS304	SS304	SS316	SS316
6	Hinge Pin	A276 410			A276 304		A276 410	A276 304(L)	A276 316(L)	A182 F51/F53
7	Cover Gasket	SS304+Graphite			SS304+ Graphite	SS316+ Graphite	SS304+ Graphite	SS304+ Graphite	SS316+ Graphite	SS316+ Graphite
8	Cover	ASTM A105N			A350 LF2		A182 F11/F22	A182 F304(L)	A182 F316(L)	A182 F51/F53
9	Cover Bolt	A193 B7			A320 L7		A193 B16	A193 B8(M)	A193 B8M	A193 B8M

HF = Hard faced

ELITE®

FORGED SWING CHECK VALVES

SERIES 39

Main Valve Parameters

Class 800

Nominal Size			inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
			DN	10	15	20	25	32	40	50
End connection	Threaded	NPT/ BSP/BSPT	L	79	79	92	111	120	120	140
			ØB	8	10,5	13,5	18	23	29	36,5
	Socket weld	SW	L	79	79	92	111	120	120	140
			L1	9,6	9,6	12,7	12,7	12,7	12,7	12,7
			ØB	8	10,5	13,5	18	23	29	36,5
			ØD	17,6	21,8	27,1	33,8	42,6	48,7	61,2
H				61	61	61	78	84	84	120
Approx. Weight Threaded/SW				1,4	1,5	1,7	3,3	4,2	4,2	8,5

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m^3/h / Torques in Nm / Weights in kg

Class 1500

Nominal Size			inch	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"
			DN	10	15	20	25	32	40	50
End connection	Threaded	NPT/ BSP/BSPT	L	92	111	111	120	120	140	178
			ØB	8	10,5	13,5	18	23	29	36,5
	Socket weld	SW	L	92	111	111	120	120	140	178
			L1	9,6	9,6	12,7	12,7	12,7	12,7	12,7
			ØB	8	10,5	13,5	18	23	29	36,5
			ØD	17,6	21,8	27,1	33,8	42,6	48,7	61,2
H				61	78	78	84	103	120	133
Approx. Weight Threaded/SW				1,5	3,2	3,3	4,2	5	8,5	10,9

Dimensions in mm subject to manufacturing tolerance / Kvs-values in m^3/h / Torques in Nm / Weights in kg

Wafer Swing Check Valve

Design Attributes

Wafer Swing Check Valves are devices for preventing the reverse of flow in a piping system, by means of its articulated disc. These valves are featured as an extremely light, compact and economic option. With a simple design, they are mainly used in hvac and industrial auxiliary applications, with significant savings in space and investment costs for installation.

Main Features

Valve design: EN 12516
Nominal pressure: PN16
Valve end connections: Wafer, Between flanges EN 1092 PN10/16
Marking: EN 19. *See arrow in label for normal flow direction*
Pressure Tests: EN 12266-1
Seat leakage rate: Rate A (full seat tightness)
Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)

Main Duties / Limits of use

Fresh clean water and neutral liquids of group 2*, acc. to Directive 2014/68/EU, Annex II table 9 up to category I
Table 9: PN16 DN32-600 (Art.4-Parr.3 DN32-DN300)
TS: -10/80ºC (NBR seat); -10/110ºC (EPDM seat); -10/150ºC (VITON seat)
Questions referring to chemical resistance, please consult us
**Classification of fluids (group 2) acc. to Directive 2014/68/EU, Article 13*

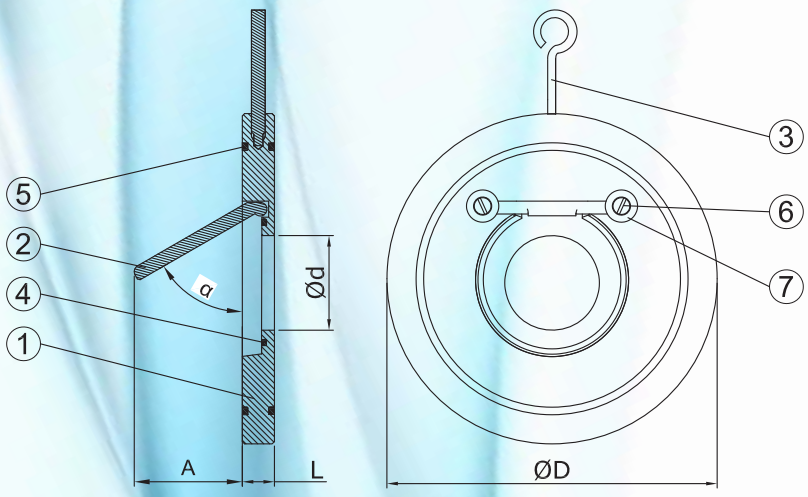
Options

Spring loaded disc, other sealings, higher temperatures, other designs and approvals. Please consult us

ELITE®

Wafer Swing Check Valves

Main Parts and Materials



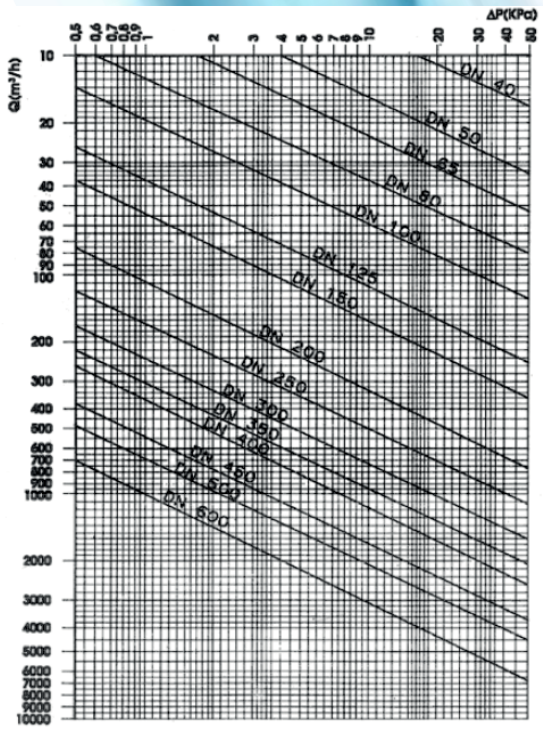
Nº	PARTE		MATERIAL
1	BODY	CVCC	Steel A216 WCB - Cr plated
		CVII	St. steel A351 CF8M
2	DISC	CVCC	Steel A216 WCB - Cr plated
		CVII	St. steel A351 CF8M
3	EYE BOLT	CVCC	Steel - Cr Plated
		CVII	St. steel A351 CF8M
4	SEAT O-RING	NBR (CV_N) / EPDM (CV_E) / VITON (CV_V)	
5	FACE O-RING	NBR (CV_N) / EPDM (CV_E) / VITON (CV_V)	
6	RETAINER SCREW	CVCC	Steel - Cr plated
		CVII	St. steel A351 CF8M
7	DISC BEARING	CVCC	Steel - Cr plated
		CVII	St. steel A351 CF8M

Main Valve Parameters

DN	mm	32	40	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	inch	1-1/4”	1-1/2”	2”	2-1/2”	3”	4”	5”	6”	8”	10”	12”	14”	16”	18”	20”	24”
L		14	14	14	14	14	18	18	20	22	26	32	36	41	50	56	56
A		26,5	31,5	38	51	62,5	77,5	96	118	159	194,5	241	272	326	374,5	417	495,5
α		65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°	65°
ØD		85	94	109	129	144	164	194	220	275	330	380	440	491	541	596	697
Ød		18	22	32	40	54	70	92	112	154	192	227	270	315	359	410	490
Approx. Weight (kg)		0,6	0,7	0,9	1,2	1,5	2,5	3,5	4,7	7,6	13	21	33	19	63	88	130

Dimensions in mm subject to manufacturing tolerance

Pressure Drop Diagram



Opening Pressures

DN	32	40	50	65	80
ΔP_c for horizontal flow	-	0	0	0	0
ΔP_c^{up} for vertical upward flow	-	16	16	15	15

Pressure in mbar

DN	100	125	150	200	250
ΔP_c for horizontal flow	0	0			
ΔP_c^{up} for vertical upward flow	13	12	15	20	20

Pressure in mbar

DN	300	350	400	450	500	600
ΔP_c for horizontal flow	0	0				
ΔP_c^{up} for vertical upward flow	23	25	27	24	35	34

Pressure in mbar

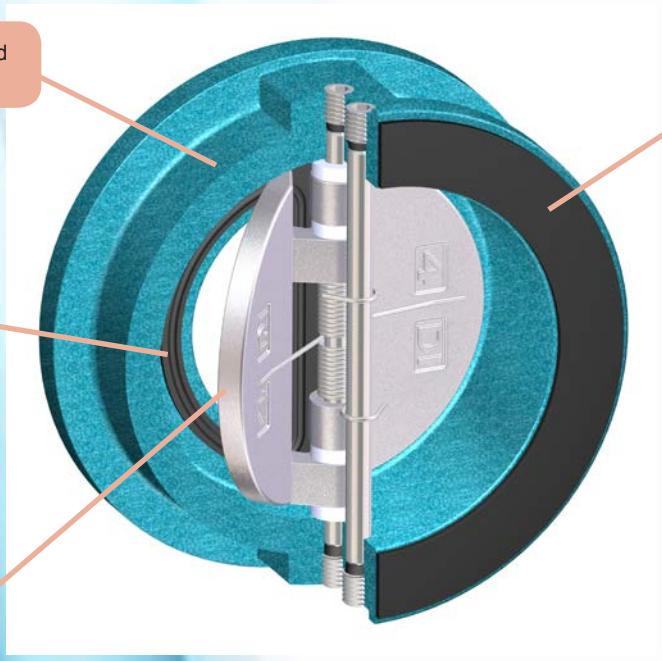
The engineer, designing a system or a plant, is responsable for the selection of the correct valve

ELITE®

Wafer Dual Plate Check Valves

Design Attributes

Wafer Dual Plate Check Valves use two half-sphere discs and a connecting hinge to create a closure element that collapses when positive flow exists, and folds back to a full circular disc when reverse flow exists. Discs are preloaded with springs that favour the closing of the valve when no positive flow. These valves are featured as a light, compact and economic option. The valves are provided with epoxy protection against environmental or media aggression. With a dedicate design and production, they offer a low pressure drop in comparison to other wafer check valves, and full seat tightness, being widely used mainly in clean water and oil systems, with significant savings in space and investment costs for installation.



Main Features

Valve design: EN 12334, EN 12516
Nominal Pressure: PN16 (DN50-300) / PN10 (DN350-600)
Face to face length: EN 558 S16 (DN50-500) / EN 558 S50 (DN600)
Valve end connections: Between flanges EN 1092 PN10/16
Marking: EN 19. See arrow on body for normal flow direction
Pressure Tests: EN 12266-1
Seat leakage rate: Rate A (full seat tightness)
Inside and outside epoxy coating protection metal green color similar to RAL6005. Min. average thickness 60 microns
Product compliant with Directive 2014/68/EU on Pressure Equipment (PED)

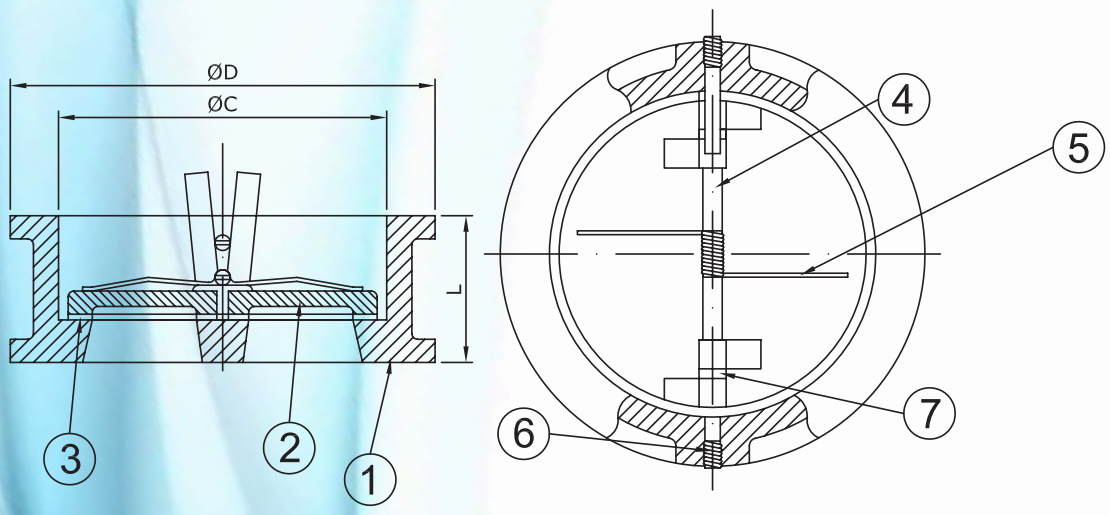
Main Duties / Limits of use

Fresh clean water and neutral liquids of group 2*, acc. to Directive 2014/68/EU, Annex II table 9 up to category I
Table 9: PS 16 bar DN50-300 (Art.4-Parr.3)
PS 10 bar DN350-600 (Art.4-Parr.3)
TS: -10/80ºC (NBR seat) ; -10/110ºC (EPDM seat)
Questions referring to chemical resistance, please consult us
**Classification of fluids (group 2) acc. to Directive 2014/68/EU, Article 13*

Options

Other designs and approvals. Please consult us

Main Parts and Materials



Nº	PART		MATERIAL
1	BODY		Cast iron EN-JL1040 (GG25)
2	DISCS	CH2222	Ductile iron EN-JS1030 (GGG40) Nickel plated
		CH2263	St. steel 316
3	RESILIENT SEAT		NBR (CH2222N/CH2263N) / EPDM (CH2222E/CH2263E) / VITON (CH2222V/CH2263V)

Nº	PART		MATERIAL
4	SHAFT	CH2222	St. steel 420
		CH2263	St. steel 316
5	SPRING	CH2222	St. steel 304
		CH2263	St. steel 316
6	RETAINER SCREW		Galvanized carbon steel
7	DISCS BEARING		PTFE

Main Valve Parameters

DN	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600
	inch	2	2-1/2	3	4	5	6	8	10	12	14	16	18	20	24
	L	43	46	64	64	70	76	89	114	114	127	140	152	152	222
	ØD	109	129	144	165	194	220	275	330	380	440	491	541	596	698
	ØC	70,5	83,5	91,5	115,5	142,5	169,5	220,5	275,5	325,5	356	406	468	515	617
Approx. Weight		2	2	3	4,5	7	11	18	29	33	71	99	118	180	549
Opening Pressure data	ΔP_c for horizontal flow	23	10	19	28	16	8	4	4	3	3	3	3	3	3
	ΔP_c^{up} for vertical upward flow	26	12	23	32	18	9	6	6	6	6	6	6	6	6

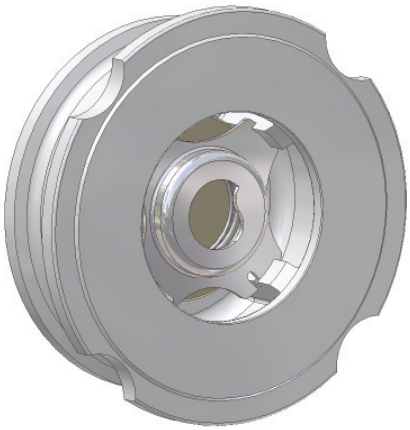
Dimensions in mm subject to manufacturing tolerance / Pressure in mbar / Weights in kg

Disc non return valve Type CSD

::**Data Sheet**::

::Non Return Valve Type CSD:: | ::DN015 - 100:: | ::PN6 - 40:: | ::ANSI150 - 300::

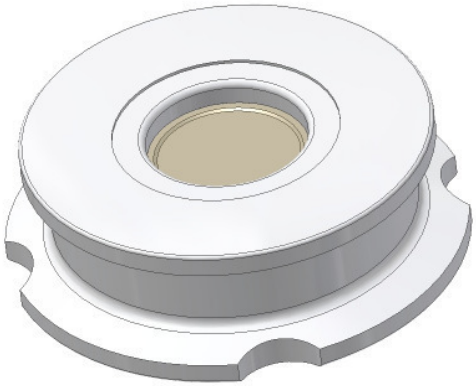
Non Return Valve Type CSD
DN015 - 100



Designation	Material
Body	see table
Valve Plate	1.4404
Spring Cap	1.4401
Spring	1.4401
Soft sealing	see table

Technical Specifications

Classification of these products according to DGRL 97/23/EC, fluid group 1
Installation with sealing between flanges according to
DIN EN 1092-1 Form B1, PN 6-40and ANSI B16.5 Class 150/ 300 RF
Nominal pressure max. PN40
Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
Overall lengths according to DIN EN 558-1, line 49
Identification according to DIN EN 19
Packed in separate card board boxes



Utilisation

For liquids, gases and steams in all process technologies

Constructional features

Centre ring integrated on the body
Guiding of valve plate by body ribs
New planed spring cap for an optimal safety
Serially adequate for PN 6-40 and ANSI Class 150/ 300

Special Types

Hastelloy C4 springs (up to 400°C) and Nimonic (up to 500°C).
Special springs for different opening pressures up to max. 400 mbar

Designation

CSD- 6 4 6 4 - M - 1 0 0

CSD- ❑❑ - ❑❑ - ❑ - ❑❑❑ → **DN015 - 100**

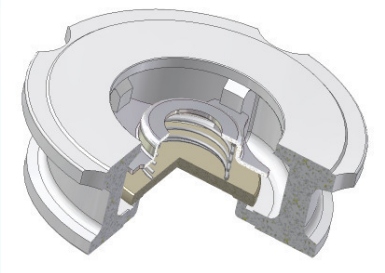
Body			**Valve plate**			**Soft sealing**		
Material	Nr.	Code	Material	Nr.	Code	Material	Temperatur	Code
Steel	1.0619	27	Austenit	1.4404	64	Metal-seated	-200 to 500°C	M
Austenit	1.4408	64				EPDM	-50 to 130°C	E
						NBR	-30 to 120°C	P
						VITON	-20 to 200°C	V
						PTFE	-200 to 200°C	T

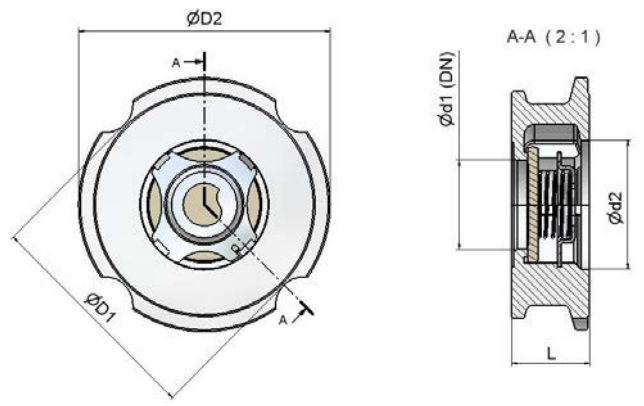
Subject to change without notice

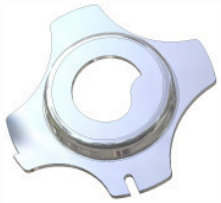
Disc non return valve Type CSD

::**Data Sheet**::

::Non Return Valve Type CSD:: | ::DN015 - 100:: | ::PN6 - 40:: | ::ANSI150 - 300::





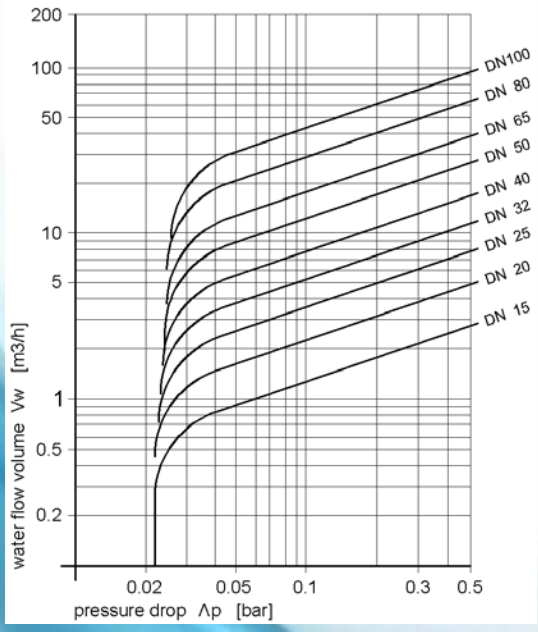


DN (mm)	**015**	**020**	**025**	**032**	**040**	**050**	**065**	**080**	**100**
DN (zoll)	½"	3/4"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	4"
Ø d1	15	20	25	32	39	48	62	72.5	89
Ø d2	26	31	36	44	51.5	62	77.5	92	107
Ø D1	44	54	63.5	73	82.5	96	116	132	152
Ø D2	51	61	71	79.5	92	107	127	142	162/168
L	16	19	22	28	31.5	40	46	50	60
weight	0.1	0.2	0.3	0.5	0.7	1.1	1.6	3.0	3.5
Opening pressures (mbar)									
ΔP ↑	25	25	25	27	28	29	30	31	33
ΔP →	20	20	20	20	20	20	20	20	20
ΔP ↓	15	15	15	13	12	11	10	9	7
Opening pressures without spring (mbar)									
ΔP ↑	5	5	5	7	8	9	10	11	13

If lowest opening pressures are necessary, the valves without spring can be installed in vertical directions with direction of flow from bottom to top.

Pressure drop diagram

Pressure drop diagram for water at 20°C with opened valve and horizontal flow.
For calculating the pressure drop of the medium the equivalent water flow volume has to be calculated.



$$\dot{V}w = \dot{v}\sqrt{\frac{\rho}{1000}}$$

$\dot{V}w$ = Equivalent water flow volume in m3/h
ρ = Density of the medium in kg/m3
$\dot{v}$ = Flow volume of the medium in m3/h (working condition)

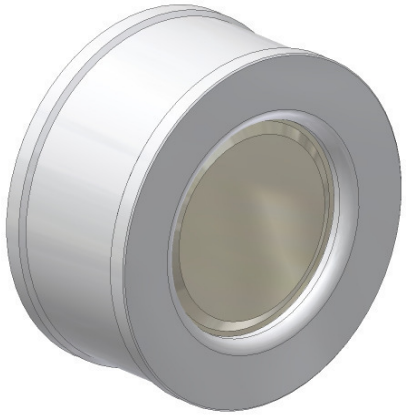
Subject to change without notice

Disc non return valve Type CSD

::**Data Sheet**::

::Non Return Valve Type CSD:: | ::DN125 - 350:: | ::PN10 - 40:: | ::ANSI150 - 300::

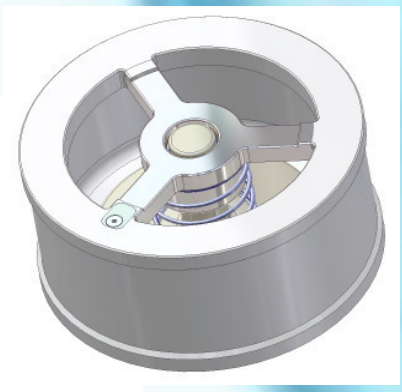
Non Return Valve Type CSD
DN125 - 350



Designation	Material
Body	see table
Flange	see table
Disc	see table
Spring	see pricelist
Soft sealing	see table
Centre ring	see page 2/2

Technical specifications

Placement between flange according to DIN EN 1092-1, PN 10
Nominal pressure max. PN40
Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
Overall lengths according to DIN EN 558-1, Gr. 49, from DN 250 on DIN EN 558-2, Gr. 52
Identification according to DIN EN 19



Utilisation

For liquids, gases and steams in all process technology.

Constructional features

Centering by the outside diameter of the body or centre ring
Guiding of valve plate by body ribs

Special types

Hastelloy C4 springs (up to 400°C) and Nimonic (up to 500°C).
Special springs for different opening pressures
Placement between flange according to DIN 1092-1, PN 16 – 40 and ANSI B 16.5 CL. 150-300 lbs with centre ring according to the following page 2/2

Designation:

CSD- 6 4 6 4 - M - 1 5 0
CSD- ❑❑ - ❑❑ - ❑ - ❑❑❑ → DN125 - 350

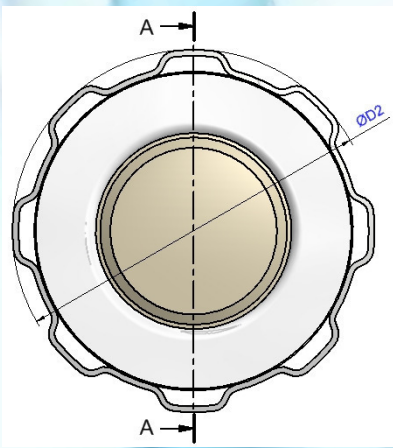
Body			Valve plate			Soft sealing		
Material	Nr.	Code	Material	Nr.	Code	Material	Temperatur	Code
Steel	1.0619	27	Steel	1.0619	27	Metal-seated	-200 bis 500°C	M
Bronce	2.1086	33	Austenit	1.4408	64	EPDM	-50 bis 130°C	E
Austenit	1.4408	64				NBR	-30 bis 120°C	P
						VITON	-20 bis 200°C	V
						PTFE	-200 bis 200°C	T
						Depending on pressure and medium		

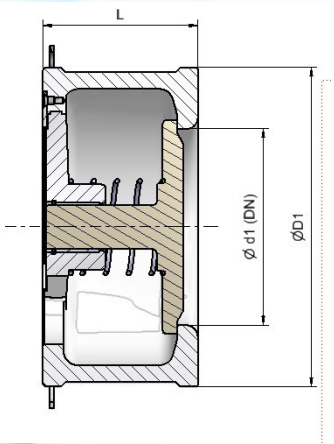
Subject to change without notice

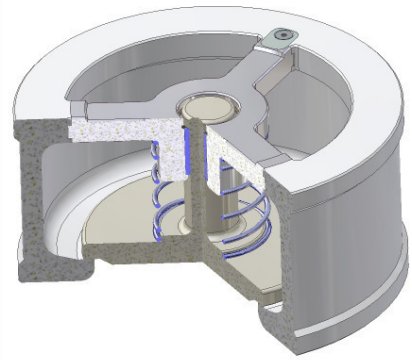
Disc non return valve Type CSD

::**Data Sheet**::

::Non Return Valve Type CSD:: | ::DN125 - 350:: | ::PN10 - 40:: | ::ANSI150 - 300::







DN (mm)	**125**	**150**	**200**	**250**	**300**	**350**
DN (zoll)	5“	6“	8“	10“	12“	14“
Ø D1,PN10	192	218	273	328	378	438
Ø D1,PN16	192	218	273	328	378	444
Ø D1,D2,PN25	192	226	283	338	400	457
Ø D1,D2,PN40	192	226	290	352	417	474
Ø D1,D2,ANSI150	192	218	273	338	400	447
Ø D1,D2,ANSI300	212	247	304	352	417	482
L	90	106	140	200	250	280
Weight (kg)	10	14	24	50	77	108

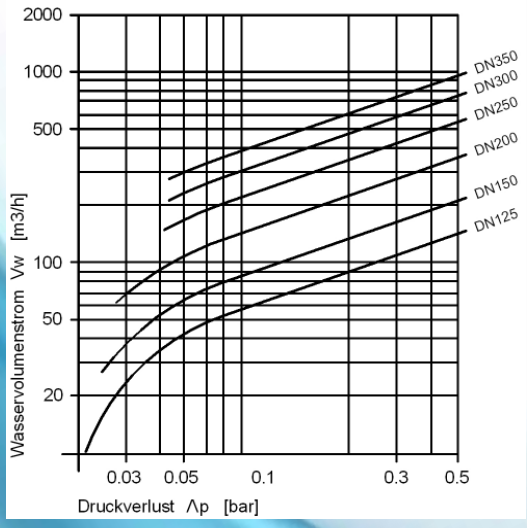
The pressure rates marked in blue are indicating the use of a centre ring. (See extra charges on the price list).
D2 shows the outer diameter of the centre ring.

Opening pressures (mbar)

DN (mm)	125	150	200	250	300	350
DN (zoll)	5“	6“	8“	10“	12“	14“
ΔP ↑	37	40	46	69	73	73
ΔP →	22	25	28	42	44	44
ΔP ↓	7	10	10	15	15	15

Pressure drop diagramm

Pressure drop diagram for water at 20°C with opened valve and horizontal flow.
For calculating the pressure drop of the medium the equivalent water flow volume has to be calculated..



$$\dot{V}w = \dot{v}\sqrt{\frac{\rho}{1000}}$$

$\dot{V}w$	=	Equivalent water flow volume in m3/h
ρ	=	Density of the medium (in use) kg/m3
$\dot{v}$	=	Flow volume of the medium (in use) in m3/h

Subject to change without notice

::**Operating Intruction**
::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Operating instructions and security regulations for putting into operation and maintenance of the non-return valve CSD and CVD.

Please read carefully!

Security note

Only qualified skilled workers are permitted to install the armature. This should be staff that is well acquainted with setting up, fitting, putting into operation, operating and maintain the equipment. The staff must have a qualification at their disposal which corresponds with their function and occupation, such as:

- Instruction and commitment for the observance of all regional and internal regulations and commitments regarding operation.
- Education in accordance with the standards of security engineering, in application and maintenance of adequate equipments of security and labour protection.
- Training in first aid etc.

Proper maintenance

Inset in pipes for prevention of return flow of the media within the permissible limits of pressure and temperature, observing the chemical and corrosive influences on the valve.

The media-resistance of the valve must be tested for operating conditions.

Danger notes

During operation the valve is under pressure!

If flange connections or screw plugs are loosened, hot water, steam, corroding liquids or toxic gases will escape. Serious scalds and burns on the whole body are possible! Serious contaminations are possible!

- Work for assembly or maintenance to be done in pressure less condition only.
- During operation, the valve will be hot or extremely cold.
- Work for assembly or maintenance to be done at room temperature only.
- Sharp-edged interior parts can cause cuts on hands. Wearing gloves for exchanging the valve is necessary!
- Further measurements, materials and fields of application can found in the correspondent Data Sheet.

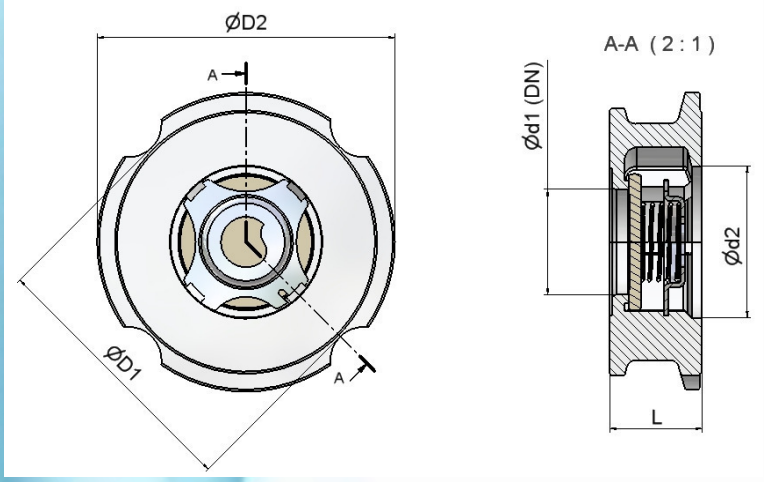
Subject to change without notice

Disc non return valve Type CSD

::**Operating Intruction**::

::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Installation



Non return valve Type CSD and CVD for installation between flanges according to the drawings

- Installation between flanges according to DIN EN 1092-1 Form B1, PN 6/10/16/40 and ASA B16.5 Class 150/300 RF. The centring between the flanges is executed at the body integrated centre ring band by means of the flange connecting screws. The centring ØD1 is for the nominal pressure classification PN6 and ASA Class 150, ØD2 for PN 10-40 and ASA Class 300 interpreted. Installation between flanges of other norms on inquiry. The installation length corresponds to DIN EN 558-1, line 49. For special applications corresponding regulations have to be noted e.g. AD- Merkblätter (working group for pressure devices) or TRD-directives (technical rules for steam boilers).

Preparation for installation

- The assembly must be carried out according to the recognized rules of technology.
- The non-return valve assemble with two seals, a flange pair and at least two screws weld to the piping. Removing the non-return valve and seals and carry out the flange welding. The welding residue must be removed and the weld must be cleaned. The cleaned non-return valve can be reinstalled with the seals.

Note direction of flow (direction of arrow on valve body)!

- The installation position is optional.
- For oscillatory systems (e.g. compressors, diaphragm pumps etc.) please pay attention that the standard execution corresponds with the operation.
- A holding flange is required if the non-return valve shall be bolt between the flange of the outlet side and the piping flanges or if the non-return valve as ventilation, vacuum breaker, suck valve etc. must get connected to the individual flange.
- Non-return valves mustn't be disassembled.
- Using only original spare parts.
- Functional test.

Subject to change without notice

Disc non return valve Type CSD

::**Operating Intruction**:

::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Product classification according to article 9 of pressure devices 97/23/EC (DGRL)

Group 1 (Dangerous fluids)
Appendix II (Diagram 6)

Category with pressure limit PN 40 and ANSI 300 LBS	Exception according to article 3.3	I	II
Nominal DN	15-25	none	32-100
CE-Marking	no		CE 0036
all types except CSD3364	all		all

Category with pressure limit PN 40 and ANSI 150 LBS	Exception according to article 3.3	I	II
Nominal DN	15-25	32-50	65-100
CE-Marking	no	CE 0036	CE 0036
Type CSD3364	all	all	all

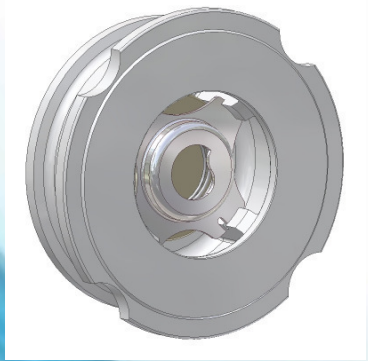
Technical data Non Return Valve Type CSD, DN 15 – 100 (PN40, ANSI 300 LBS)
Application limits according to DIN EN 1092-1 and AD-Merkblätter W10

CSD2764M					
DN015-100 t (°C) Ps (bar)	-10 40	RT 40	150 35.2	250 30.4	400 23.8

CSD6464M							
DN015-100 t (°C) Ps (bar)	-200 40	RT 40	100 37.9	200 31.8	300 27.6	400 25.7	500 24.3

Applications limits for soft sealing

Soft Sealing	Temperature Range	Code
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



For further technical information please consult the corresponding Data Sheet.

Subject to change without notice

::**Operating Intruction**:

::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Technical data Non Return Valve Type CVD, DN015 – 100 (PN40, ANSI 300 LBS)
Application limits according to DIN EN 1092-1 and AD-Merkblätter W10

CVD3364M					
DN015-100					
t (°C)	-60	RT	120	200	250
Ps (bar)	16	16	16	14	13

CVD6565M					
DN015-100					
t (°C)	-200	RT	150	300	500
Ps (bar)	40	40	32.7	25.7	22.8

CVD6868M					
DN015-100					
t (°C)	-60	RT	150	300	400
Ps (bar)	40	40	34.4	27.6	24.3

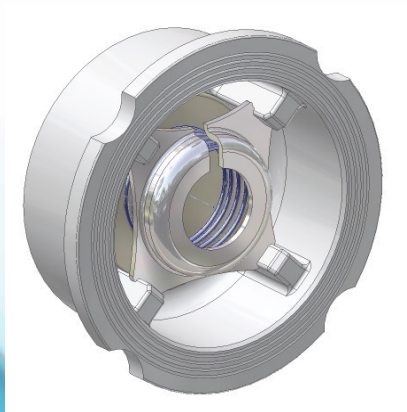
CVD9090M					
DN015-100					
t (°C)	-200	RT	120	200	300
Ps (bar)	40	40	40	23	14

CVD9494M					
DN015-100					
t (°C)	-200	RT	120	250	400
Ps (bar)	40	40	40	34	32

CVD9595M					
DN015-100					
t (°C)	-200	RT	120	250	400
Ps (bar)	40	40	40	34	32

Applications limits for soft sealing

Soft Sealing	**Temperature Range**	**Code**
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



For further technical information please consult the corresponding Data Sheet.

Subject to change without notice

Disc non return valve Type CSD

::**Operating Intruction**::

::Non Return Valve Type CSD/CVD:: | ::DN015 - 350:: | ::PN6 - 40:: | ::ANSI150-300::

Technical data Non Return Valve Type CSD and CVD, DN125 – 350 (PN40, ANSI 300 LBS)
Application limits according to DIN EN 1092-1 and AD-Merkblätter W10

CSD2727M						
DN125-350						
t (°C)	-10	RT	150	200	300	400
Ps (bar)	40	40	35.2	33.3	27.6	23.8

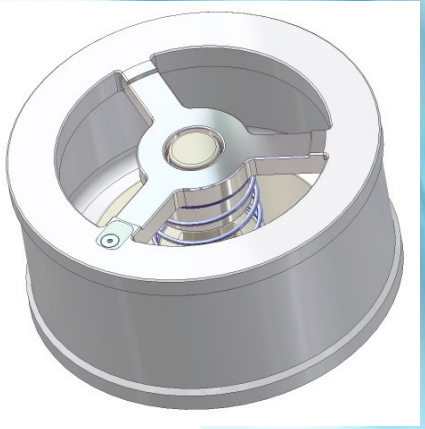
CSD2764M						
DN125-350						
t (°C)	-10	RT	150	200	300	400
Ps (bar)	40	40	35.2	33.3	27.6	23.8

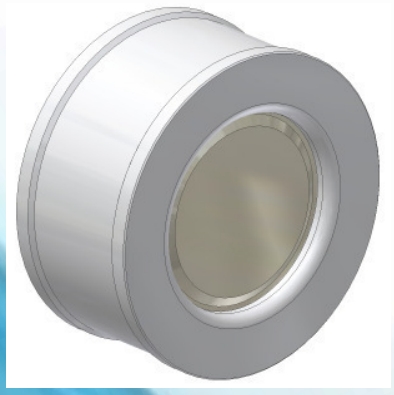
CSD6464M						
DN125-350						
t (°C)	-200	RT	150	300	400	500
Ps (bar)	40	40	36.3	29.7	27.4	26.4

CVD3364M					
DN125-200					
t (°C)	-60	RT	120	200	250
Ps (bar)	16	16	16	14	13

Applications limits for soft sealing

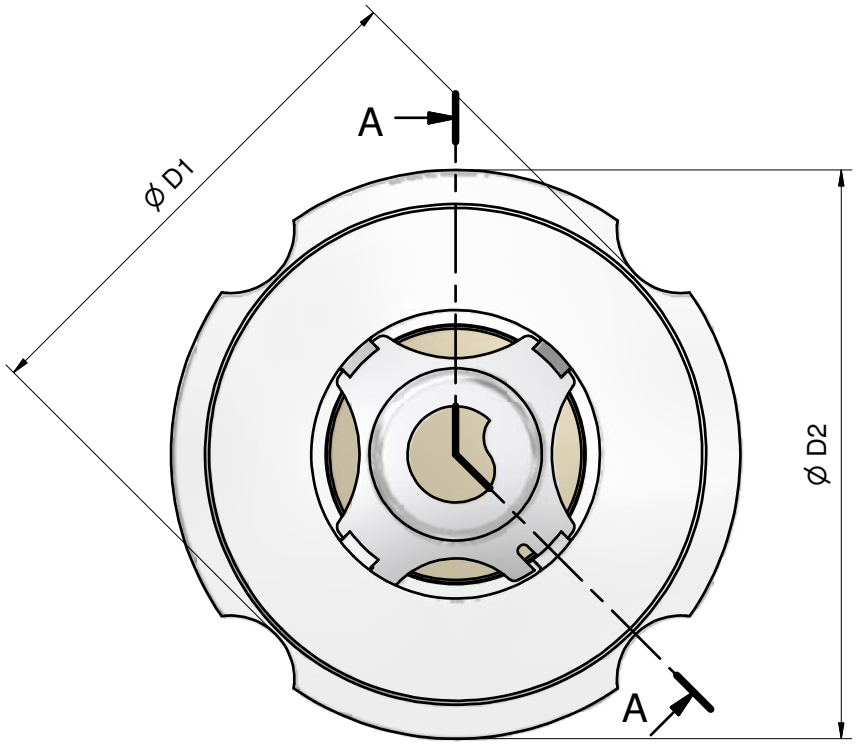
Soft Sealing	**Temperature Range**	**Code**
EPDM	-50 bis 130°C	E
NBR	-30 bis 120°C	P
VITON	-20 bis 200°C	V
PTFE	-200 bis 200°C	T



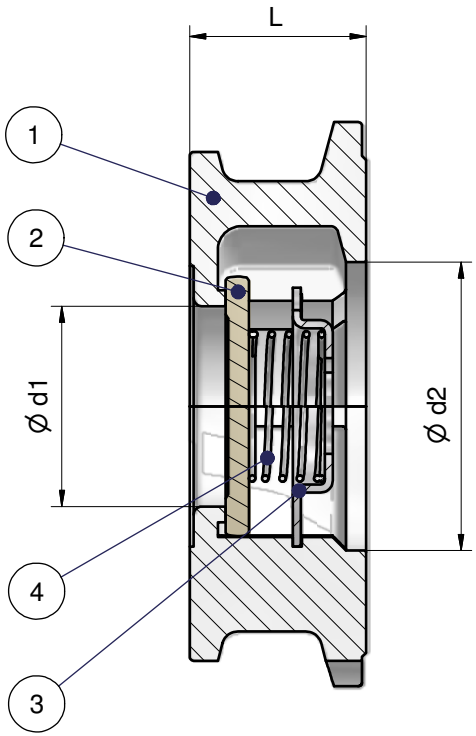


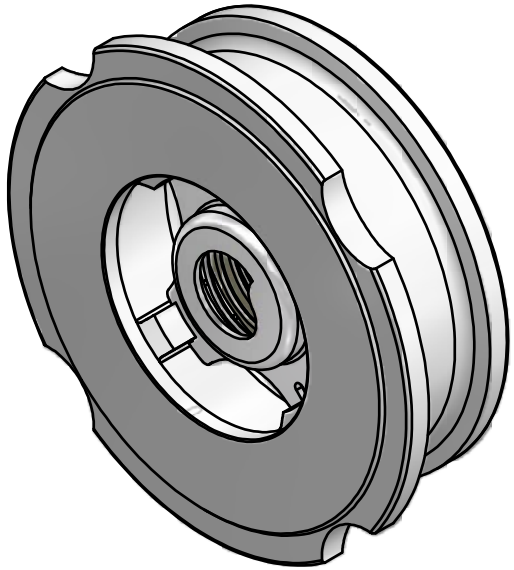
For further technical information please consult the corresponding Data Sheet.

Subject to change without notice



A-A





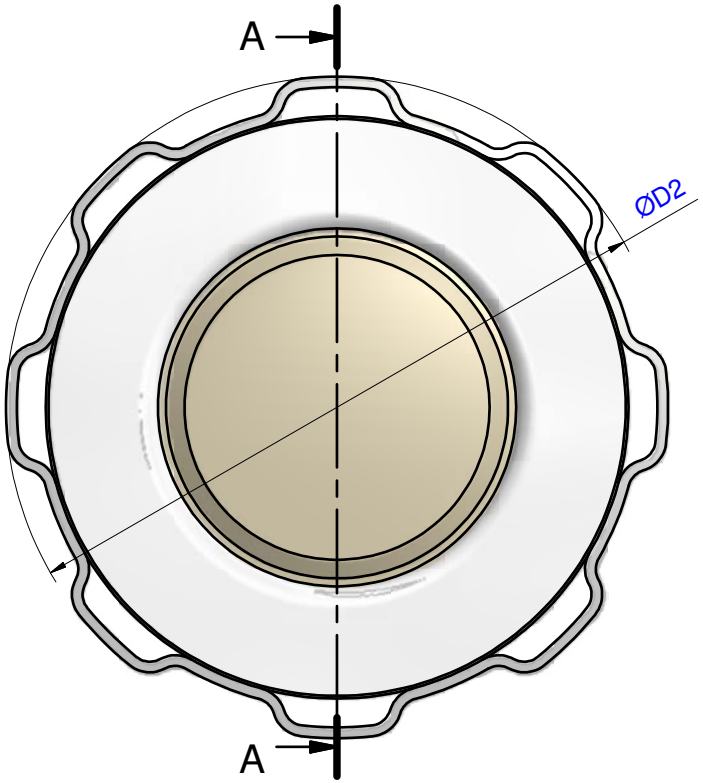
- Product classification according to DGRL 97/23/EC, Fluid Group 1
- Placement between flanges according to DIN EN 1092-1, Form B1, PN 6-40 and ANSI B16.5 Class 150/ 300 RF
- Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
- Tightness according to DIN EN 12266-1
  Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
- Overall length according to DIN EN 558-1, line 49 (K4)
- Identification according to DIN EN 19

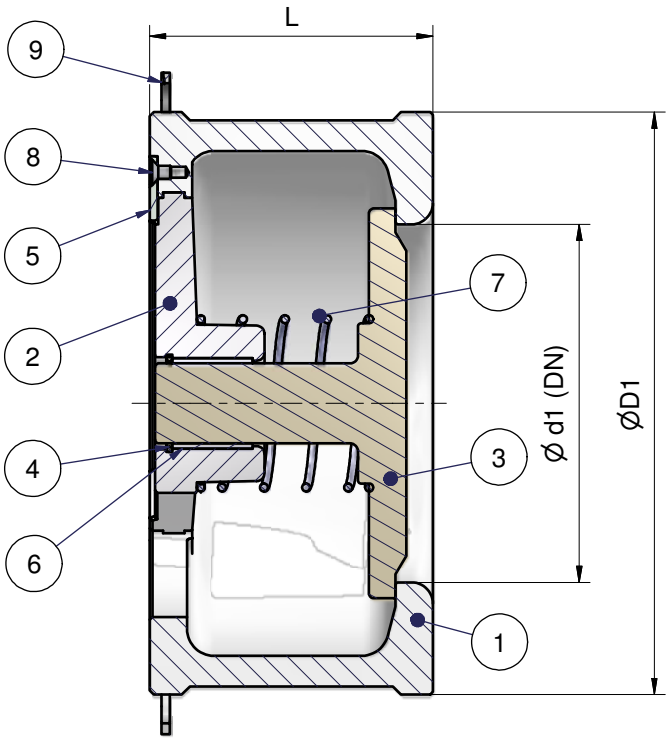
DN (mm)	**15**	**20**	**25**	**32**	**40**	**50**	**65**	**80**	**100**
DN (zoll)	½“	3/4“	1“	1 ¼“	1 ½“	2“	2 ½“	3“	4“
Ø d1	15	20	25	32	39	48	62	72.5	89
Ø d2	26	31	36	44	51.5	62	77.5	92	107
Ø D1	44	54	63.5	73	82.5	96	116	132	152
Ø D2	51	61	71	79.5	92	107	127	142	162/168
L	16	19	22	28	31.5	40	46	50	60
weight	0.1	0.2	0.3	0.5	0.7	1.1	1.6	3	3.5

Stückliste

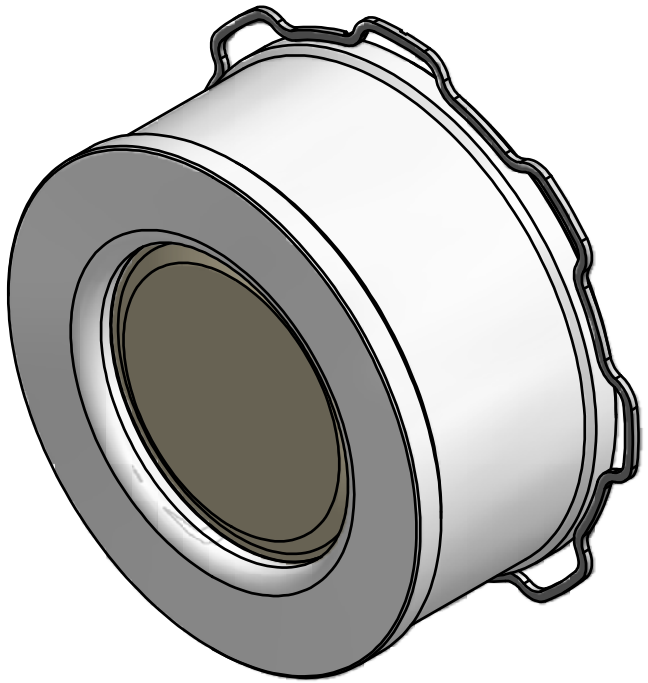
PO	ANZA	BAUTEILNUMMER	BEZEICHNUNG	MAT
4	1	csdfe__-025	CSD-Spring	see data sheet CSD
3	1	csdfk64-025	CSD-Spring Holder	see data sheet CSD
2	1	csdvp__-025	CSD-Valve PlateDN 15-100	see data sheet CSD
1	1	csdge__-025	CSD-Body DN 15-100	see data sheet CSD

Auftrags-Nr.:		last edit	19.11.2008	
FN:N:\3D\CSD\csd025\csd-____m025.iam		Gezeichnet	03.05.2006	Massstab
Änd.	Änd.	Ersteller	B.Schmid	1.5:1
	Benennung: Non Return Valve Type CSD 15-100		Zeichnungs-Nr.: csd-____m025.iam	





A-A



- Product classification according to DGRL 97/23/EC, Fluid Group 1
- Placement between flanges according to DIN EN 1092-1, Form B1, PN 10-40 and ANSI B16.5 Class 150/ 300 RF
- Operational limits according to DIN EN 1092-1 and AD-Merkblätter W10
- Tightness according to DIN EN 12266-1, Leakage Rate D (Sealing M, T) and Leakage Rate A (Sealing E, P, V)
- DN125-200, Overall length according to DIN EN 558-1, line 49
- DN250-350, Overall length according to DIN EN 558-2, line 52
- Identification according to DIN EN 19

- The pressure rates marked in blue are indicating the use of a centre ring. **D2** shows the outer diameter of the centre ring.

DN (mm)	**125**	**150**	**200**	**250**	**300**	**350**
DN (zoll)	5“	6“	8“	10“	12“	14“
Ø D1,PN10	192	218	273	328	378	438
Ø D1,PN16	192	218	273	328	378	444
Ø D1,D2,PN25	192	226	283	338	400	457
Ø D1,D2,PN40	192	226	290	352	417	474
D1,D2,ANSI150	192	218	273	338	400	447
D1,D2,ANSI300	212	247	304	352	417	482
L	90	106	140	200	250	280
Weight (kg)	10	14	24	50	77	108

Stückliste

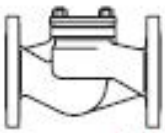
PO	ANZA	BAUTEILNUMM	BEZEICHNUNG	MATERIAL
9	1	zr11-150	Centre Ring DN150	1.4301
8	1	M5 x 8	ISK mit Senkkopf	St. Steel
7	1	csdfe__-150	CSD-Spring DN125-350	1.4401/ Hastelloy
6	1	csddu__-150	CSD-Bearing	PTFE MoS2/St.Steel
5	1	cschp__-125-150	CSD-Anti-Twist Holder 125-150	1.4408/ Hastelloy
4	1	csdsr__-125-150	CSD-Safety Ring DN125-150	see data sheet CSD
3	1	csdvp__-150	CSD-Valve Platte DN125-350	see data sheet CSD
2	1	csdst__-150	CSD-Star DN125-350	see data sheet CSD
1	1	csdge__-150	CSD-Body DN125-350	see data sheet CSD

Auftrags-Nr.:		last edit	19.11.2008	
FN:N:\3D\CSD\csd150\CSD____m150_broschüre.iam		Gezeichnet	03.05.2006	Massstab 1:2
Änd.	Änd.	Ersteller	B.Schmid	
	Benennung: Non Return Valve Type CSD 125-350		Zeichnungs-Nr.: CSD____m150_broschüre.iam	

ARI-Check valve, metallic sealing

ARI-CHECKO®-V -
Straight through with flanges
- TRB 801 Annex II No. 45 (except EN-JL1040)
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Grey cast iron
SG iron
Cast steel
Fig. 003/303
Page 2



ARI-CHECKO®-V -
Straight through with flanges
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Forged steel
Fig. 003
Page 3

ARI-CHECKO®-V -
Straight through with flanges
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

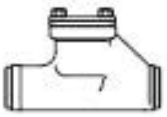
Stainless steel
Fig. 003
Page 4

ARI-CHECKO®-V -
Angle pattern with flanges
- TRB 801 Annex II No. 45 (except EN-JL1040)
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Grey cast iron
SG iron
Cast steel
Fig. 004/304
Page 5

ARI-CHECKO®-V -
Straight through with butt weld ends
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Forged steel
Fig. 030
Page 6



ARI-CHECKO®-V -
Straight through with butt weld ends
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

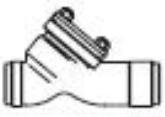
Cast steel
Fig. 030
Page 7

ARI-CHECKO®-V -
Y-pattern with flanges
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Stainless steel
Fig. 039
Page 8

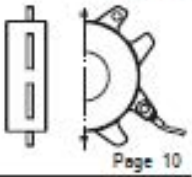
ARI-CHECKO®-V -
Y-pattern with butt weld ends
- TRB 801 Annex II No. 45
- EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Cast steel
Fig. 063
Page 9



ARI-CHECKO®-D -
Disc check valve in clamping version
- TRB 801 Annex II No. 45

Stainless steel
Fig. 001
Page 10



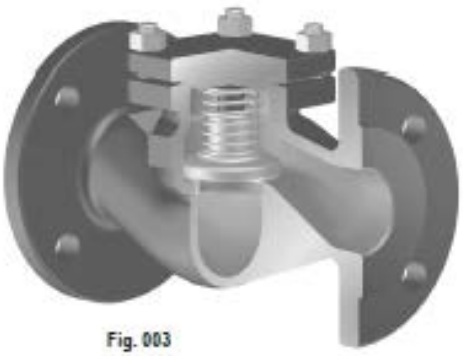


Fig. 003

Fig. 001

Features:
- Solid plug / valve plate made of stainless material
- Solid seat made of stainless material
- Re-setting spring made of stainless steel
- Precise plug / valve plate guidance

Check valve - straight through with flanges (Grey cast iron, SG iron, Cast steel)

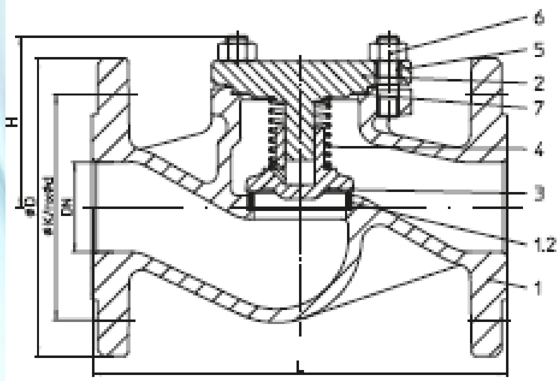


Figure	Nominal pressure	Material	Nominal diameter
10.003	PN6	EN-JL1040	DN15-200
12.003 / 12.303	PN16	EN-JL1040	DN15-300
22.003 / 22.003	PN16	EN-JS1049	DN15-350
23.003 / 23.303	PN25	EN-JS1049	DN15-150
34.003 / 34.303	PN25	1.0619+N	DN15-500
35.003 / 35.303	PN40	1.0619+N	DN15-500

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Fig. 303: Trim made of RG/MS:
CuZn35Ni3Mn2AlPb, CW710R code number 02
CuSn10-Cu, CC480K code number 03
(max. operating temperature: 180°C, code number acc. to DIN 86251)

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Parts								
Pos.	Sp.p.	Description	Fig. 10./12.003	Fig. 10./12.303	Fig. 22./23.003	Fig. 22./23.303	Fig. 34./35.003	Fig. 34./35.303
1		Body	EN-JL1040, EN-GJL-250		EN-JS1049, EN-GJS-400-18U-LT		GP240GH+N, 1.0619+N	
1.2		Seat ring	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03
2		Cover	DN ≤20: EN-JS1049, EN-GJS-400-18U-LT DN >20 EN-JL1040, EN-GJL-250		EN-JS1049, EN-GJS-400-18U-LT		GP240GH+N, 1.0619+N	
3	x	Plug	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuZn35Ni3Mn 2AlPb, CW710R code nr. 02 CuSn10-Cu, CC480K code nr. 03	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuZn35Ni3Mn 2AlPb, CW710R code nr. 02 CuSn10-Cu, CC480K code nr. 03	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuZn35Ni3Mn 2AlPb, CW710R code nr. 02 CuSn10-Cu, CC480K code nr. 03
4		Spring	X10CrNi18-8, 1.4310		X10CrNi18-8, 1.4310			
5		Hexagon bolt	5.6		–			
5		Stud	–		25CrMo4, 1.7218			
6		Hexagon nut	–		C35E, 1.1181			
7	x	Gasket	Pure graphite (CrNi laminated with graphite)					
	└ Spare parts							

DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
Face-to-face dimension FTF series 1 according to DIN EN 558													Standard-flange dimensions refer to page 11					
L	(mm)	130	150	160	180	200	230	290	310	350	400	480	600	730	850	980	1100	1350*
Dimensions																		
H	(mm)	70	70	80	80	85	95	110	130	155	165	215	285	325	365	420	430	530
Kvs-value	(m³/h)	5,7	7,8	11,8	17,9	27,5	48,0	77,6	109	168	251	389	664	1017	1446	2042	2725	4167
Zeta-value	–	2,5	4,2	4,5	5,2	5,4	4,3	4,7	5,5	5,7	6,2	5,3	5,8	6,0	6,2	5,7	5,5	5,7
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173																		
Weights																		
10.003 / 303	(kg)	2,4	2,9	3,5	4,8	6,4	8,2	12,2	18,6	27	42	67	112	–	–	–	–	–
12.003 / 303	(kg)	2,4	3	3,8	5,7	7,4	10,3	15,2	20,4	31	49	69	132	198	278	–	–	–
22.003 / 303	(kg)	3,5	4	5	6	8	11	16	21	31	49	69	132	198	278	383	–	–
23.003 / 303	(kg)	3,5	4	5	6	8	11	16	21	32	51	70	–	–	–	–	–	–
34.003 / 303	(kg)	3,8	4,9	5,9	7,1	10,4	12,3	22,7	28,5	40	64	90	160	222	337	461	709	989
35.003 / 303	(kg)	3,8	4,9	5,9	7,1	10,4	12,3	22,7	28,5	40	64	90	170	240	374	508	786	1044

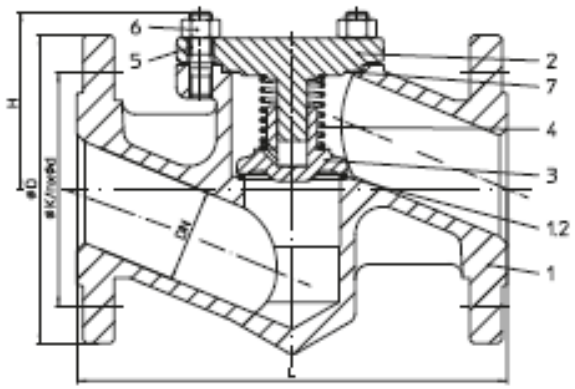
Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.
A production permission acc. to TRB 801 No. 45 is available (acc. to TRB 801 No. 45 EN-JL1040 is not allowed.)
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Check valve - straight through with flanges (Forged steel)

Figure	Nominal pressure	Material	Nominal diameter
45.003	PN40	1.0460	DN15-50

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C



Parts			
Pos.	Sp.p.	Description	Fig. 45.003
1		Body	P250 GH, 1.0460
1.2		Seat ring	G19 9 Nb Si, 1.4551
2		Cover	P250 GH, 1.0460
3	x	Plug	X20Cr13+QT, 1.4021+QT
4		Spring	X10CrNi18-8, 1.4310
5		Stud	25CrMo4, 1.7218
6		Hexagon nut	C35E, 1.1181
7	x	Gasket	Pure graphite (CrNi laminated with graphite)
	└ Spare parts		

DN		15	20	25	32	40	50
Face-to-face dimension FTF series 1 according to DIN EN 558							Standard-flange dimensions refer to page 11
L	(mm)	130	150	160	180	200	230
Dimensions							
H	(mm)	87	89	97	103	95	95
Kvs-value	(m³/h)	3,3	5,5	9,2	15	29,3	36
Zeta-value	--	7,4	8,4	7,4	7,4	4,8	7,7
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173							
Weights							
45.003	(kg)	3,2	4,5	4,6	7,3	9,5	12

Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Check valve - straight through with flanges (Stainless steel)

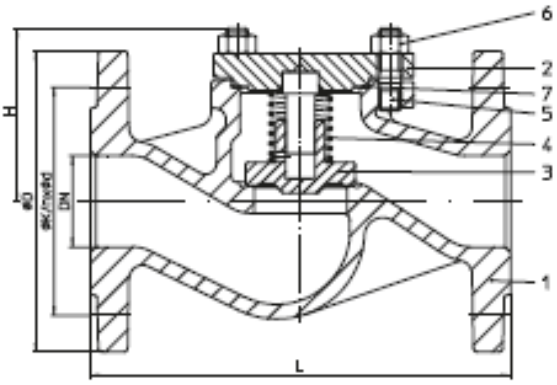


Figure	Nominal pressure	Material	Nominal diameter
52.003	PN16	1.4408	DN65-200
54.003	PN25	1.4408	DN15-200
55.003	PN40	1.4408	DN15-200

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Parts			
Pos.	Sp.p.	Description	Fig. 52./54./55.003
1		Body	GX5CrNiMo19-11-2, 1.4408
2		Cover	X6CrNiMoTi17-12-2, 1.4571
3	x	Plug	X6CrNiMoTi17-12-2, 1.4571
4		Spring	X10CrNi18-8, 1.4310
5		Stud	A4-70
6		Hexagon nut	A4
7	x	Gasket	Pure graphite (CrNi laminated with graphite)
	└ Spare parts		

DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
Face-to-face dimension FTF series 1 according to DIN EN 558														Standard-flange dimensions refer to page 11				
L	(mm)	130	150	160	180	200	230	290	310	350	400	480	600	on request				
Dimensions																		
H	(mm)	70	70	80	80	85	95	110	130	155	165	215	285	on request				
Kvs-value	(m³/h)	5,7	7,8	11,8	17,9	27,5	48,0	77,6	109	168	251	389	664					
Zeta-value	–	2,5	4,2	4,5	5,2	5,4	4,3	4,7	5,5	5,7	6,2	5,3	5,8					
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173																		
Weights																		
52.003	(kg)	–	–	–	–	–	–	22,5	28,5	38	61	87	154	on request				
54.003	(kg)	3,8	4,9	5,9	7,1	10	12	22,5	28,5	40	64	90	160					
55.003	(kg)	3,8	4,9	5,9	7,1	10	12	22,5	28,5	40	64	90	170					

Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Check valve - angle pattern with flanges (Grey cast iron, SG iron, Cast steel)

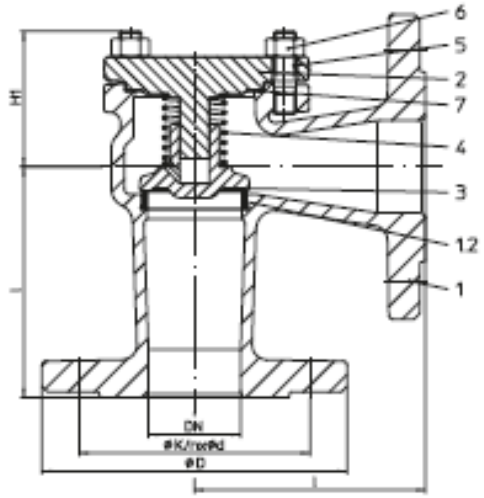


Figure	Nominal pressure	Material	Nominal diameter
12.004 / 12.304	PN16	EN-JL1040	DN15-300
22.004 / 22.304	PN16	EN-JS1049	DN15-350
23.004 / 23.304	PN25	EN-JS1049	DN15-150
34.004 / 34.304	PN25	1.0619+N	DN15-500
35.004 / 35.304	PN40	1.0619+N	DN15-500

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Fig. 304: Trim made of RG/MS:
CuZn35Ni3Mn2AlPb, CW710R code number 02
CuSn10-Cu, CC480K code number 03
(max. operating temperature: 180°C, code number acc. to DIN 86251)

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Parts								
Pos.	Sp.p.	Description	Fig. 12.004	Fig. 12.304	Fig. 22./23.004	Fig. 22./23.304	Fig. 34./35.004	Fig. 34./35.304
1		Body	EN-JL1040, EN-GJL-250		EN-JS1049, EN-GJS-400-18U-LT		GP240GH+N, 1.0619+N	
1.2		Seat ring	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03
2		Cover	DN ≤20: EN-JS1049, EN-GJS-400-18U-LT DN >20 EN-JL1040, EN-GJL-250		EN-JS1049, EN-GJS-400-18U-LT		GP240GH+N, 1.0619+N	
3	x	Plug	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551	CuSn10-Cu, CC480K code number 03
4		Spring	X10CrNi18-8, 1.4310		X10CrNi18-8, 1.4310			
5		Hexagon bolt	5.6		–			
5		Stud	–		25CrMo4, 1.7218			
6		Hexagon nut	–		C35E, 1.1181			
7	x	Gasket	Pure graphite (CrNi laminated with graphite)					
	└ Spare parts							

DN		15	20	25	32	40	50	65	80	100	125	150	200	250	300	350	400	500
Face-to-face dimension CTF series 8 according to DIN EN 558																		Standard-flange dimensions refer to page 11
l	(mm)	90	95	100	105	115	125	145	155	175	200	225	275	325	375	425	475	525 *

* Face-to-face dimension acc. to ARI-works standard

Dimensions																		
H1	(mm)	40	35	45	45	55	60	65	95	105	120	150	195	220	240	300	310	380
Kvs-value	(m³/h)	4,8	8,5	13	22	34	53	88	138	216	331	469	832	1315	1876	2553	3406	5207
Zeta-value	–	3,5	3,5	3,7	3,5	3,5	3,6	3,7	3,4	3,4	3,6	3,7	3,7	3,6	3,7	3,7	3,5	3,7
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173																		

Weights																		
12.004 / 304	(kg)	3	3,5	4	6	8	10	14	19	25	45	70	112	179	248	345	–	–
22.004 / 304	(kg)	3	3,5	4	6	8	10	14	19	25	45	70	112	179	248	345	–	–
23.004 / 304	(kg)	3	3,5	4,1	6	8	10	14	20	29	49	73	on request					
34.004 / 304	(kg)	4,2	4,9	5	7,6	10	12	24,5	28,5	42	55	90	145	170	225	383	623	870
35.004 / 304	(kg)	4,2	4,9	5	7,6	10	12	24,5	28,5	42	55	90	155	188	262	430	700	925

Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
ARI-Valves of EN-JL1040 are not allowed to be operated in systems acc. to TRD 110.
A production permission acc. to TRB 801 No. 45 is available (acc. to TRB 801 No. 45 EN-JL1040 is not allowed.)
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Check valve - straight through with butt weld ends (Forged steel)

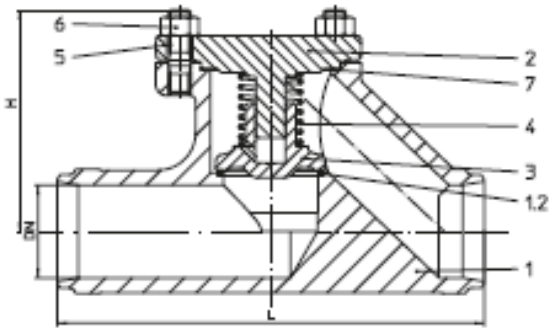


Figure	Nominal pressure	Material	Nominal diameter
45.030	PN40	1.0460	DN15-50

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Butt weld ends according to DIN EN 12627 Fig. 4 (refer to page 12)

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Parts			
Pos.	Sp.p.	Description	Fig. 45.030
1		Body	P250 GH, 1.0460
1.2		Seat ring	G19 9 Nb Si, 1.4551
2		Cover	P250 GH, 1.0460
3	x	Plug	X20Cr13+QT, 1.4021+QT
4		Spring	X10CrNi18-8, 1.4310
5		Stud	25CrMo4, 1.7218
6		Hexagon nut	C35E, 1.1181
7	x	Gasket	Pure grephite (CrNi laminated with graphite)
	└ Spare parts		

DN		15	20	25	32	40	50
Face-to-face dimension ETE series 1 according to DIN EN 12982							
L	(mm)	130	150	160	180	200	230
Dimensions							
H	(mm)	70	70	80	80	85	95
Kvs-value	(m^3/h)	3,3	5,5	9,2	15	29,3	36
Zeta-value	–	7,4	8,4	7,4	7,4	4,8	7,7
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173							
Weights							
45.030	(kg)	3	3,9	4,6	5,3	8,5	9,7

Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.

Check valve - straight through with butt weld ends (Cast steel)

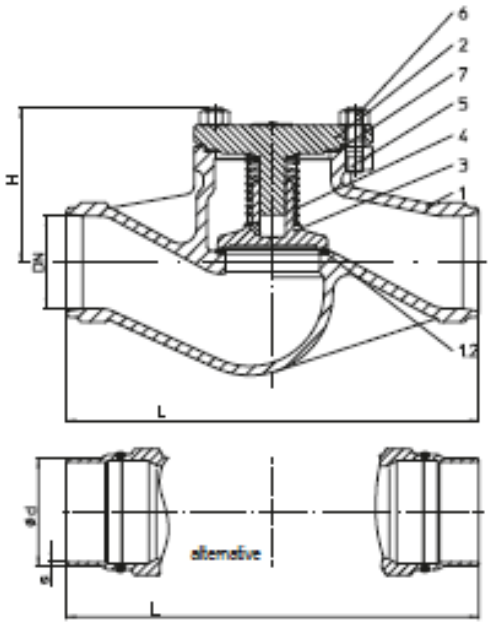


Figure	Nominal pressure	Material	Nominal diameter
35.030	PN40	1.0619+N	DN65-300

Set pressure 0,1 bar
The operating point of the valve cannot be chosen in the unstable region!

Butt weld ends according to DIN EN 12627 Fig. 4 (refer to page 12)
alternative: DN 65-200 with shoed ends of P235GH

Test:	• EN ISO 15848-1 / TA - Luft TÜV-Test-No. 973-10675245-10 C

Parts			
Pos.	Sp.p.	Description	Fig. 35.030
1		Body	GP240GH+N, 1.0619+N
1.2		Seat ring	DN ≤50: X20Cr13+QT, 1.4021+QT DN >50: G19 9 Nb Si, 1.4551
2		Cover	GP240GH+N, 1.0619+N
3	x	Plug	DN ≤200: X20Cr13+QT, 1.4021+QT DN >200: P265 GH, 1.0425 / G19 9 Nb Si, 1.4551
4		Spring	X10CrNi18-8, 1.4310
5		Stud	25CrMo4, 1.7218
6		Hexagon nut	C35E, 1.1181
7	x	Gasket	Pure graphite (CrNi laminated with graphite)
	└ Spare parts		

DN		65	80	100	125	150	200	250	300
Face-to-face dimension ETE series 1 according to DIN EN 12982									
L	(mm)	290	310	350	400	480	600	730	850
Dimensions									
H	(mm)	110	130	155	165	215	285	325	365
Kvs-value	(m³/h)	77,6	109	168	251	389	664	1017	1446
Zeta-value	--	4,7	5,5	5,7	6,2	5,3	5,8	6	6,2
Zeta-value ... range of tolerance for Kvs-values acc. to VDI/VDE 2173									
Weights									
35.030	(kg)	19,2	24	34	56	80	152	222	300

Information / restriction of technical rules need to be observed!
Operating and installation instructions can be downloaded at www.ari-armaturen.com.
A production permission acc. to TRB 801 No. 45 is available.
The engineer, designing a system or a plant, is responsible for the selection of the correct valve.
Resistance and fitness must be verified (contact manufacturer for information, refer to Product overview and Resistance list).

Plug Valves

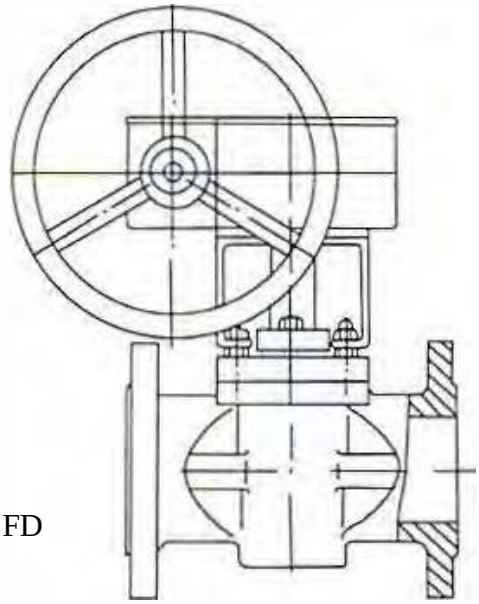
Class 150-600 Plug Valve

EFC-PV50C150

STANDARDS

Design and manufacture: API 6D ANSI B16.34
Face to faced Dimensions: ANSI B16.10
End flange dimensions: ANSI B16.5

Test: API 6D or API 598



Type of connection
R F and RTJ flange ends to ANSI B16.5 standard.
BW flange ends to ANSI B 16.25 standard

Type of operation
Lever
Connection dimensions of worm Gear actuator, Electric actuator,
Pneumatic actuator to ISO 521 1 standard
Anti - static constructions "AS" and Fine- resistant constructions FD

MATERIAL LIST

NO	Part Name	Carbon Steel		Stainless Steel			
		WCB	LCB	CF8	CF8M	CF3	CF3M
1	Body	A216WCB	A352LCB	A351 CF8	A351 CFSM	A351 CF3	A351 CF3M
2	Bonnet	A216WCB	A352LCB	A351 CF8	A351 CFSM	A351 CF3	A351 CF3M
3	Plug	A 105/Ep.Cr	A182F304	A351 CF8	A351 CFSM	A351 CF3	A351 CF3M
4	Stem	A182 F6	A 182 F6	A182F304	A 182 F316	A182F304L	A182F316l
5	Seat Ring	PTFE					
6	Gasket	PTFE or Stainless Steel and Graphite					
7	Stem seat	PTFE	PTFE	PTFE	PTFE	PTFE	PTFE
8	Small spring	17 -17PH (inconel for NACE) Ni- Cr Alloy					
9	Small ball	A182F304 A 182F316					
10	Gland	A182F6	A182F6	A182F304	A182F316	A182F304L	A1S2F316L
11	Gland flange	A216WCB	A352LCB	A351 CFS	A351 CF8M	A351 CF3	A351 CF3M
12	Stem packing	PTFE or Graphite					
13	Bonnet Boll	A193 87 A320L7 A32088 A19388M					
14	Bonnet Nut	A194 2H A1944 A194 8					

The material is according to ASTM standard.
Model Denote: EFC-PV= Plug Valve | 50 = Size in mm | C = Class 150 - 600

.

Class 150-600 Plug Valve

CLASS 150													
DN	mm	15	20	25	40	50	65	80	100	150	200	250	300
NPS	in	1/2	34	1	1	2	21/2	3	4	6	8	10	12
	mm	108	117	127	165	178	191	203	229	394	457	533	610
L(RF)	in	4.25	4.6	5	6.5	7	7.5	8	9	15.5	18	21	24
	mm	140	152	165	190	216	241	283	305	457	521	559	635
L1(BW)	in	5.5	6	6.5	7.48	8.5	9.5	11.13	12	18	20.5	22	25
	mm	119	129.7	139.7	178	191	203	216	241	406	470	546	622
L2(RTJ)	in	4.69	5.11	5.5	6.9	7.5	8	8.5	9.5	16	18.5	21.5	24.5
H	mm	59	63	75	95	153	165	195	213	272	342	495	580
	in	2.3	2.5	2.95	3.74	6.02	6.5	7.68	8.39	10.7	13.5	19.5	22.85
Do(W)	mm	130	130	160	230	400	400	600	850	1100	1500	•350	·350
	in	5.1	5.1	6.3	9	15.74	15.74	23.62	33.46	43.3	59	13.8	13.8
RF(Kg)		2.3	3	4.5	7	15	20	25	40	97	160	240	390
BW(Kg)		2.0	2.5	3.8	5.8	12	17	21	36	92.8	154	227	365

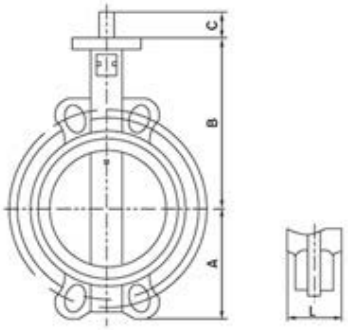
CLASS 300											
DN	mm	15	20	25	40	50	65	80	100	150	200
NPS	in	1/2	34	1	1 1/2	2	21/2	3	4	6	8
L(RF)	mm	140	152	165	190	216	241	283	305	403	502
	in	5.5	5.98	6.5	7.48	8.5	9.5	11.13	12	15.88	19.75
	mm	140	152	165	190	216	241	283	305	457	521
L1(BW)	in	5.5	5.98	6.5	7.48	8.5	9.5	11.13	12	18	20.5
	mm	151	164.7	177.7	202.7	232	257	298	321	419	518
L2(RTJ)	in	5.95	6.48	7	8	9.13	10.13	11.75	12.63	16.5	20.39
H	mm	59	63	75	107	153	165	195	213	272	342
	in	2.3	2.5	2.95	4.2	6.02	6.5	7.68	8.39	10.7	13.5
Do(W)	mm	130	130	160	230	400	400	600	850	1100	1500
	in	5.1	5.1	6.3	9	15.74	15.74	23.62	33.46	43.3	59
RF(Kg)		2.5	3.5	5.5	10.5	20	25	31	52	118	200
BW (KG)		2.1	3	4.8	8.7	17	17	22	28	105	185

CLASS 600								
DN	mm	15	20	25	40	50	65	80
NPS	in	½	34	1	1 ½	2	2 ½	3
L(RF)	mm	165	190	216	241	292	330	356
	in	6.5	7.48	8.5	9.5	11.5	13	14
L1(BW)	mm	165	190	216	241	292	330	356
	in	6.5	7.48	8.5	9.5	11.5	13	14
L2(RTJ)	mm	163.4	190	216	241	295	333	359
	in	6.43	7.48	8.5	9.5	11.63	13.13	14.13
H	mm	59	63	75	107	153	165	195
	in	2.3	2.5	2.95	4.2	6.02	6.5	7.68
Do(W)	mm	130	160	160	230	600	850	1250
	in	5.1	6.3	6.3	9	23.62	33.46	49.25
RF(Kg)		7.5	10.5	14.5	18.5	38	56	66
BW(Kg)		6	8.7	11	14.7	31	49	58

Worm Gear or Electric actuator operated

Wafer Type Butterfly Valves

Wafer type Butterfly valve
CLASS125/150 PN10/16 JIS10K/16K



Valve Standard:
Comply with ISO 5752/BS 5155/
BS EN 593/MSS SP-67/API 609

Pressure Temperature Ratings
Working Pressure: 10 bar/16bar, Class 150
Testing standard: API 598
Working Temperature: -20℃ to 110℃ EPDM Seat
-10℃ to 80℃ NBR seat
Suitable Media: Water, Oil & Gas

Material Specification

Part	Material	ASTM
Body	Cast Iron Ductile Iron	A126 Class B A536 Gr.65-45-12
Disc	Ductile Iron Bronze Stainless Steel 304 Stainless Steel 316	A536 Gr.65-45-12 B148 C95400 A351 CF-8 A351 CF-8M
Shall	Stainless Steel 410 Stainless Steel 431	A276 S 410 00 A276 S 410 00
Seal Ring	EPDM/NBR	
O-Ring	EPDM/NBR	
Bushing	PTFE Bronze	B62 C83600

Dimensions

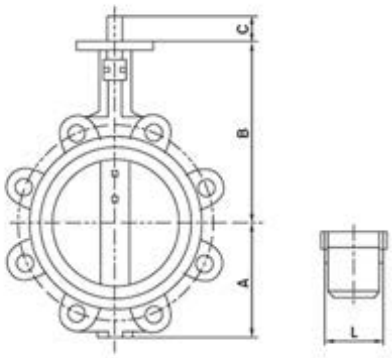
DN	mm	40	50	65	80	100	125	150	200	250	300	350	400
	inch	1½	2	2½	3	4	5	6	8	10	12	14	16
A		68	80	89	95	114	127	139	175	203	242	267	309
B		110	161	175	181	200	213	226	260	292	337	368	400
C		24	30	30	30	30	30	30	34	34	34	40	52
L		33	42	45	45	51	55	55	60	67	76	76	102

DN	mm	450	500	550	600	650	700	750	800	900	1000	1200	-
	inch	18	20	22	24	26	28	30	32	36	40	48	-
A		327	361	412	459	472	527	554	605	668	728	855	-
B		422	490	533	562	540	626	660	66	720	806	938	-
C		52	64	70	70	70	95	95	95	130	130	150	-
L		114	127	151	151	172	165	167	188	203	216	276	-

Lug Type Butterfly Valves

ELITE®

Lug type butterfly valve
CLASS125/150 PN10/16 JIS10K/16K



Valve Standard:

Comply with ISO 5752/BS 5155/
BS EN 593/MSS SP-67/API 609

Pressure Temperature Ratings

Working Pressure: 10 bar/16bar, Class 150

Testing standard: API 598

Working Temperature: -20℃ to 110℃ EPDM Seat
-10℃ to 80℃ NBR seat

Suitable Media: Water, Oil & Gas

Material Specification

Part	Material	ASTM
Body	Cast Iron Ductile Iron	A126 Class B A536 Gr.65-45-12
Disc	Ductile Iron Bronze Stainless Steel 304 Stainless Steel 316	A536 Gr.65-45-12 B148 C95400 A351 CF-8 A351 CF-8M
Shall	Stainless Steel 410 Stainless Steel 431	A276 S 410 00 A276 S 410 00
Seal Ring	EPDM/NBR	
O-Ring	EPDM/NBR	
Bushing	PTFE Bronze	B62 C83600

Dimensions

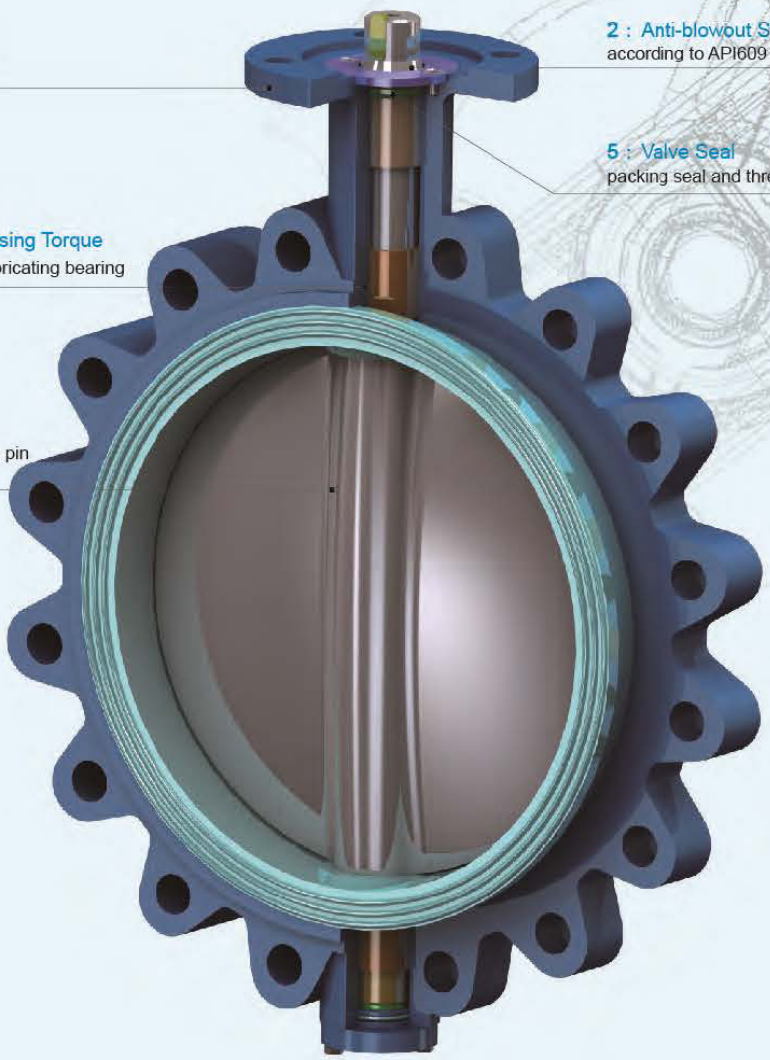
DN	mm	40	50	65	80	100	125	150	200	250
	inch	1½	2	2½	3	4	5	6	8	10
A		68	80	89	95	114	127	139	175	203
B		110	161	175	181	200	213	226	260	292
C		24	30	30	30	30	30	30	34	34
L		33	42	45	45	51	55	55	60	67

DN	mm	300	350	400	450	500	550	600	650	700
	inch	12	14	16	18	20	22	24	26	28
A		242	267	309	327	361	412	459	472	527
B		337	368	400	422	480	533	562	540	626
C		34	40	52	52	64	70	70	70	95
L		76	76	102	114	127	151	151	172	165

Resilient Seated Concentric Butterfly Valves

Concentric Butterfly

Design Feature



1 : top flange
according to ISO5211

2 : Anti-blowout Shaft
according to API609 &ASME B31.3

5 : Valve Seal
packing seal and three stem seals to resist to leak

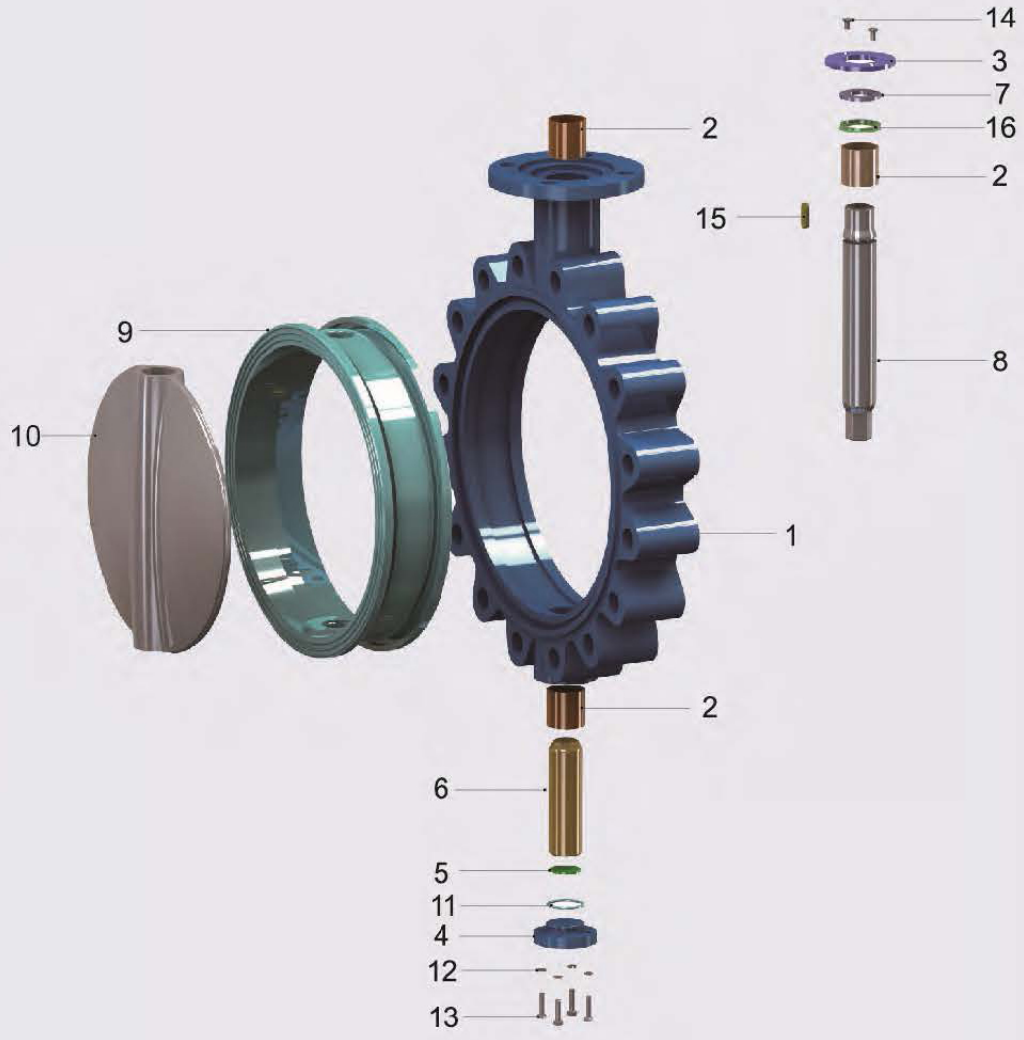
3 : Low Opening&Closing Torque
reduce torque by self-lubricating bearing

4 : No Pin
with double-stem and no pin
to resist to leak

Design Feature

Concentric Butterfly

NO.	Part	Num	NO.	Part	Num
1	Body	1	9	Seat	1
2	Bearing	3	10	Disc	1
3	Blowout Proof Block	1	11	O-rings	1
4	Lower Gland Flange	1	12	Gasket	4
5	Thrust Gasket	1	13	Screw	4
6	Hub Shaft	1	14	Screw	2
7	Retainer Ring	1	15	Key	1
8	Stem	1	16	Seal Ring	1



Concentric Butterfly

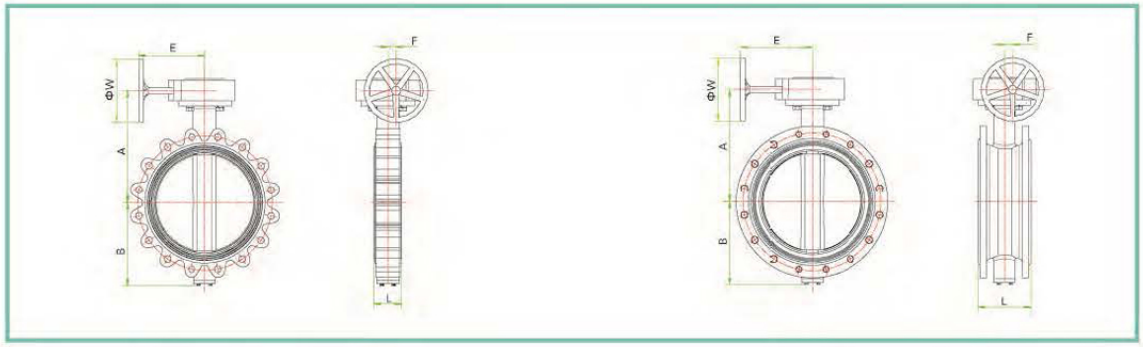
Design Feature

NO	Part	Num	NO	Part	Num
1	Body	1	9	O-rings	1
2	Disc	1	10	Bearing	3
3	Stem	1	11	Retainer Ring	1
4	Hub Shaft	1	12	Blowout Proof Block	1
5	Thrust Gasket	1	13	Key	1
6	Lower Gland Flange	1	14	Screw	2
7	Gasket	4	15	Seal Ring	1
8	Screw	4			

ELITE®

Dimensions & Weights

Enginering Data



lug

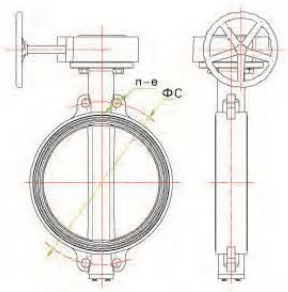
double flange

Out-Dimension and Weight

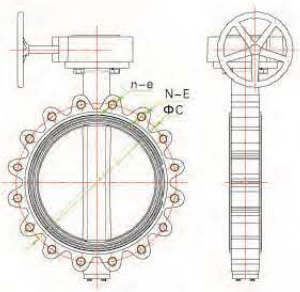
SIZE		L			Height		Lever Length	Gear Dimension			Weight			Lever Type	Gear Type
Valve Size		Wafer	Lug	Double-Flange	A	B	D	E	F	W	Wafer	Lug	Double-Flange		
In	mm	mm		mm	mm	mm	mm	mm	mm	mm	Kg	Kg	Kg		
2	50	43		108	226	93	195	*	*	*	3	4.5	8	FF11	*
2-1/2	65	46		112	240	102	195	*	*	*	4	5	11	FF11	*
3	80	46		114	246	108	195	*	*	*	5	6	14	FF11	*
4	100	52		127	280	127	270	*	*	*	6	9	19	FF14	*
5	125	56		140	293	139	270	*	*	*	8	12	24	FF14	*
6	150	56		140	306	151	270	*	*	*	9	13	26	FF14	*
8	200	60		152	291	195	*	235	63	300	26	31	60	*	SD75
10	250	68		165	336	228	*	235	63	300	35	41	80	*	SD75
12	300	78		178	383	270	*	238	81	300	48	64	102	*	SD120
14	350	78		190	411	285	*	270	80	400	54	80	142	*	SW10
16	400	102		216	450	322	*	270	80	400	120	135	185	*	SW10
18	450	114		222	470	339	*	420	120	500	130	154	223	*	SW20
20	500	127		229	528	380	*	420	120	500	169	214	262	*	SW20
24	600	154		267	613	465	*	460	126	600	264	316	385	*	SW40
28	700	165		292	740	491	*	560	138	600	345	400	530	*	SW70
32	800	190		318	835	588	*	560	138	600	540	630	790	*	SW70
36	900	200		330	900	640	*	560	138	700	630	680	950	*	SW100
40	1000	216		410	940	740	*	560	138	760	850	900	1320	*	SW180
48	1200	276		470	989	810	*	650	171	760	1445	1700	1840	*	SW270
56	1400	279		530	1141	940	*	690	231	760	1970	2320	2660	*	SW300

Enginering Data

End Connection Dimensions



Wafer



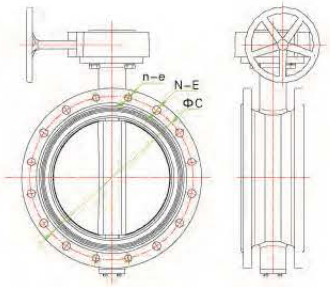
Lug

End Connection Dimensions

SIZE		ΦC				Wafer						
						n-e				N-E		
		PN6	PN10	PN16	150LB	PN6	PN10	PN16	150LB	PN6	PN10	PN16
In	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
2	50	110	125	125	120.7	4-Φ14	4-Φ18	4-Φ18	4-Φ19	4-M12	4-M16	4-M16
2-1/ 2	65	130	145	145	139.7	4-Φ14	4-Φ18	4-Φ18	4-Φ19	4-M12	4-M16	4-M16
3	80	150	160	160	152.5	4-Φ18	4-Φ18	4-Φ18	4-Φ19	4-M16	8-M16	8-M16
4	100	170	180	180	190.5	4-Φ18	4-Φ18	4-Φ18	4-Φ19	4-M16	8-M16	8-M16
5	125	200	210	210	215.9	4-Φ18	4-Φ18	4-Φ18	4-Φ23	8-M16	8-M16	8-M16
6	150	225	240	240	241.5	4-Φ18	4-Φ22	4-Φ22	4-Φ23	8-M16	8-M20	8-M20
8	200	280	295	295	298.5	4-Φ18	4-Φ22	4-Φ22	4-Φ23	8-M16	8-M20	12-M20
10	250	335	350	355	362	4-Φ18	4-Φ22	4-Φ26	4-Φ26	12-M16	12-M20	12-M24
12	300	395	400	410	431.8	4-Φ22	4-Φ22	4-Φ26	4-Φ26	12-M20	12-M20	12-M24
14	350	445	460	470	476.3	4-Φ22	4-Φ22	4-Φ26	4-Φ29	12-M20	16-M20	16-M24
16	400	495	515	525	539.8	4-Φ22	4-Φ26	4-Φ30	4-Φ29	16-M20	16-M24	16-M27
18	450	550	565	585	577.9	4-Φ22	4-Φ26	4-Φ30	4-Φ32	16-M20	20-M24	20-M27
20	500	600	620	650	635	4-Φ22	4-Φ26	4-Φ33	4-Φ32	20-M20	20-M24	20-M30
24	600	705	725	770	749.3	4-Φ26	4-Φ30	4-Φ36	4-Φ34	20-M24	20-M27	20-M33
28	700	810	840	840	863.4	4-M24	4-M27	4-M33	4-1-1/4	20-M24	20-M27	20-M33
32	800	920	950	950	978	4-M27	4-M30	4-M36	4-1-1/2	20-M27	20-M30	20-M36
36	900	1020	1050	1050	1086	4-M27	4-M30	4-M36	4-1-1/2	20-M27	24-M30	24-M36
40	1000	1120	1160	1170	1200	4-M27	4-M33	4-M39	4-1-1/2	24-M27	24-M33	24-M39
48	1200	1340	1380	1390	1422.5	4-M30	4-M36	4-M45	4-1-1/2	28-M30	28-M36	28-M45
56	1400	1560	1590	1590	1651	8-M33	8-M39	8-M45	4-1-3/4	28-M33	28-M39	28-M45

End Connection Dimensions

Enginering Data

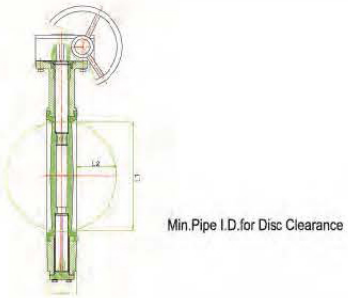


Double-Flange

Lug					Double-Flange							
	n-e				N-E				n-e			
150LB	PN6	PN10	PN16	150LB	PN6	PN10	PN16	150LB	PN6	PN10	PN16	150LB
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
4-5/8	*	*	*	*	4-Φ14	4-Φ18	4-Φ18	4-Φ19	*	*	*	*
4-5/8	*	*	*	*	4-Φ14	4-Φ18	4-Φ18	4-Φ19	*	*	*	*
4-5/8	*	*	*	*	4-Φ18	4-Φ18	4-Φ18	4-Φ19	*	4-M16	4-M16	*
8-5/8	*	*	*	*	4-Φ18	4-Φ18	4-Φ18	8-Φ19	*	4-M16	4-M16	*
8-3/4	*	*	*	*	4-Φ18	4-Φ18	4-Φ18	8-Φ22	4-M16	4-M16	4-M16	*
8-3/4	*	*	*	*	4-Φ18	4-Φ22	4-Φ22	8-Φ22	4-M16	4-M20	4-M20	*
8-3/4	*	*	*	*	4-Φ18	4-Φ22	8-Φ22	8-Φ22	4-M16	4-M20	4-M20	*
12-7/8	*	*	*	*	8-Φ18	8-Φ22	8-Φ26	8-Φ22	4-M16	4-M20	4-M24	*
12-7/8	*	*	*	*	8-Φ22	8-Φ22	8-Φ26	12-Φ26	4-M20	4-M20	4-M24	*
12-1	*	*	*	*	8-Φ22	8-Φ22	12-Φ26	12-Φ29	4-M20	4-M20	4-M24	*
16-1	*	*	*	*	12-Φ22	12-Φ26	12-Φ30	16-Φ29	4-M20	4-M24	4-M27	*
16-1-1/8	*	*	*	*	12-Φ22	16-Φ26	16-Φ30	16-Φ32	4-M20	4-M24	4-M27	*
16-1-1/8	*	*	*	*	16-Φ22	16-Φ26	16-Φ33	16-Φ32	4-M20	4-M24	4-M30	4-1-1/8
20-1-1/4	*	*	*	*	16-Φ26	16-Φ30	16-Φ36	16-Φ35	4-M24	4-M27	4-M33	4-1-1/4
24-1-1/4	4-M24	4-M27	4-M33	4-1-1/4	20-Φ26	20-Φ30	20-Φ36	24-Φ35	4-M24	4-M27	4-M33	4-1-1/4
24-1-1/2	4-M27	4-M30	4-M36	4-1-1/2	20-Φ30	20-Φ33	20-Φ39	24-Φ41	4-M27	4-M30	4-M36	4-1-1/2
28-1-1/2	4-M27	4-M30	4-M36	4-1-1/2	20-Φ30	24-Φ33	24-Φ39	28-Φ41	4-M27	4-M30	4-M36	4-1-1/2
32-1-1/2	4-M27	4-M33	4-M39	4-1-1/2	24-Φ30	24-Φ36	24-Φ42	32-Φ41	4-M27	4-M33	4-M39	4-1-1/2
40-1-1/2	4-M30	4-M36	4-M45	4-1-1/2	28-Φ33	28-Φ39	28-Φ48	40-Φ41	4-M30	4-M36	4-M45	4-1-1/2
44-1-3/4	8-M33	8-M39	8-M45	4-1-3/4	28-Φ36	28-Φ42	28-Φ48	44-Φ48	8-M33	8-M39	8-M45	4-1-3/4

Enginering Data

Min.Pipe I.D.for Disc Clearance



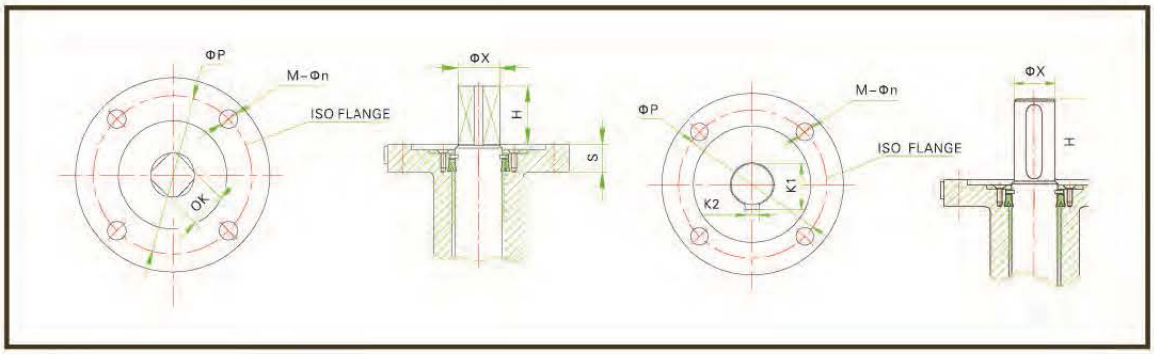
Min.Pipe I.D.for Disc Clearance

SIZE		L1		L2	
		wafer	lug	wafer	lug
In	mm	mm	mm	mm	mm
2	50	30.3		4.8	
2-1/2	65	45.1		9.2	
3	80	64.1		16.5	
4	100	90.1		26.0	
5	125	110.5		34.0	
6	150	145.4		49.9	
8	200	194.2		71.7	
10	250	242.5		92.0	
12	300	292.7		112.5	
14	350	326.0		128.6	
16	400	377.5		144.5	
18	450	425.4		163.2	
20	500	474.9		182.3	
24	600	573.3		219.8	
28	700	646.4		255.3	
32	800	738.3		286.2	
36	900	829.2		326.5	
40	1000	940.5		374.5	
48	1200	1125.7		441.5	
56	1400	1354.6		552.0	

ELITE®

Dimensions Of Top Flange

Enginering Data



Dimensions Of Top Flange

SIZE		H	S	K	K2	K1	ΦX	ISO5211	ΦP	M-Φn
in	mm	mm	mm	mm	mm	mm	mm			
2	50	24	15	11	*	*	14	F05	50	4-Φ6.6
2-1/2	65	24	15	11	*	*	14	F05	50	4-Φ6.6
3	80	24	15	11	*	*	14	F05	50	4-Φ6.6
4	100	24	15	14	*	*	18	F07	70	4-Φ9.5
5	125	24	15	14	*	*	18	F07	70	4-Φ9.5
6	150	24	15	14	*	*	20	F07	70	4-Φ9.5
8	200	24	15	17	*	*	24	F10	102	4-Φ11.5
10	250	26	17	22	*	*	30	F10	102	4-Φ11.5
12	300	29	20	27	*	*	35	F12	125	4-Φ11.5
14	350	52	20	*	10	38	35	F12	125	4-Φ14
16	400	60	20	*	12	43	40	F16	165	4-Φ22
18	450	73	25	*	14	48.5	45	F16	165	4-Φ22
20	500	82	25	*	14	53.5	50	F16	165	4-Φ22
24	600	103	25	*	18	64	60	F16	165	4-Φ22
28	700	110	30	*	20	74.5	70	F25	254	8-Φ18
32	800	120	30	*	22	85	80	F25	254	8-Φ18
36	900	130	30	*	22	85	80	F25	254	8-Φ18
40	1000	145	35	*	28	106	100	F25	254	8-Φ18
48	1200	160	35	*	28	116	110	F30	298	8-Φ22
56	1400	200	40	*	32	137	130	F35	356	8-Φ33

Enginering Data

Valve Operating Torque

Valve Operating Torque

SIZE		PN10		PN16	
in	mm	wet	dry	wet	dry
2	50	9	12	12	16
2-1/2	65	13	18	18	24
3	80	20	27	30	40
4	100	40	50	55	70
5	125	50	65	75	95
6	150	80	104	110	143
8	200	135	185	200	270
10	250	220	300	330	440
12	300	330	430	490	650
14	350	500	680	670	900
16	400	710	950	950	1300
18	450	980	1300	1265	1650
20	500	1230	1640	1825	2410
24	600	1850	2440	2750	3600

note:

1:the data calculate by normal design pressure

2:WET: lubricant liquid medium as water, sea-water, oil and temperature from -4.5℃ to 93℃, internal valve have no sediment and chemical corrosion ,everyday the operation at least keep one time

DRY: all kinds of dry gas

3:choose actuator by 1.2~1.4 times safety factor

4:the torque out of table,contact with manufacturer

5:if condition different from above,referring to correction factor

★ the operation number is less than one time x1.2

★ dry condition(wear-resisting particle,concrete) x1.7

ELITE®

Flow Coeficient (CV value)

Enginering Data

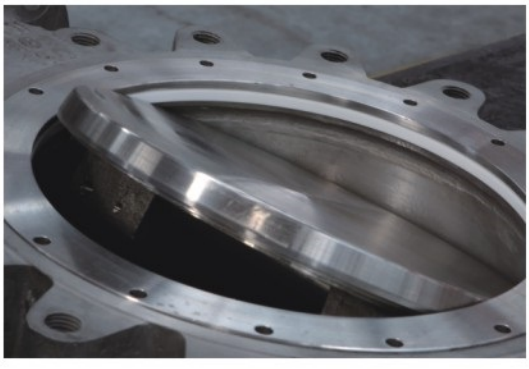
Flow Coeficient (CV value)

SIZE		Opening degree								
In	DN	10°	20°	30°	40°	50°	60°	70°	80°	90°
2"	50	9	22	33	48	70	99	143	198	220
2-1/2"	65	13	32	48	70	102	150	224	288	320
3"	80	20	50	75	110	160	235	350	450	500
4"	100	33	82	123	180	262	385	574	738	820
5"	125	52	130	195	286	416	611	910	1170	1300
6"	150	76	190	285	418	608	893	1330	1710	1900
8"	200	132	330	495	726	1056	1551	2310	2970	3300
10"	250	216	540	810	1188	1728	2538	3780	4860	5400
12"	300	320	800	1200	1760	2560	3760	5600	7200	8000
14"	350	400	1000	1500	2200	3200	4700	7000	9000	10000
16"	400	520	1300	1950	2860	4160	6110	9100	11700	13000
18"	450	720	1800	2700	3960	5760	8460	12600	16200	18000
20"	500	880	2200	3300	4840	7040	10340	15400	19800	22000
24"	600	1200	3000	4500	6600	9600	14100	21000	27000	30000

Double Offset Butterfly Valve

Introduction

Industrial valves normally require wider temperature and pressure ranges, which conventional resilient seated butterfly valve can not comply, this have led to development of high performance butterfly valve. ELITE Double offset series butterfly valve is double off-set design which has an advantage of light weight, compact design, cost effective and low operation torque .



Products Range:

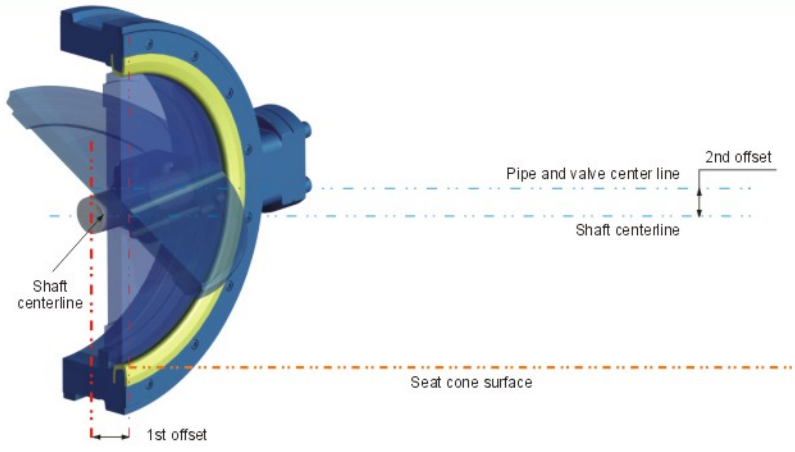
Size:	2" ~ 48"
Rating:	ANSI 150LB ~ 600LB
BodyMaterials:	Carbon steel,Stainless steel, Alloy Steel, Duplex steel
Seat	NBR,EPDM,VITON ,PTFE,RPTFE
End Connection:	Wafer, Lug, Double Flange

Typical Application:

- Petrochemical plant
- Refinery
- Offshore platform
- Power plant
- LNG
- Steel Mills
- Commercial
- Pulp and Paper
- Hydrocarbon Processing
- Industrial

The double offset shaft and disc arrangement provides camming action to the disc which disengages from the seat at minimal rotation. This design minimizes wear points at the top and bottom of the seat typical with conventional butterfly valves.

Design Feature



Double Offset Frictionless Design

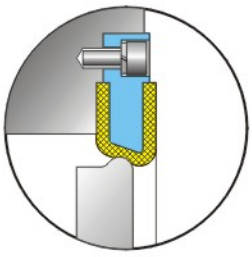
1st offset: Shaft is positioned downstream of the centerline of the seat.

2nd offset: Shaft is off center of the vertical axis of the seat.

Seat Structure

1. Double offset Rubber Seat Butterfly Valve

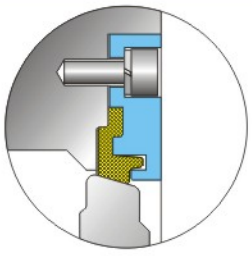
NBR seat are sulfured into the framework increasing the sealing performance. The disc surface is designed into sphere type to reducing contacting area and frictional force which extends the usage life. Valve seat can be replaced or recharge easily.



RUBBER

2. Double Offset PTFE Seat Butterfly Valve

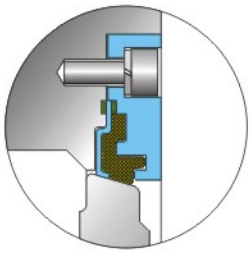
A surplus between PTFE Seat and Disc ensures the seal in low pressure. The force of medium always pushes seat contacting to sealing surface and becomes more reliable in high pressure. The disc surface is a sphere design to reduce frictional force, and the valve seat can be replaced easily.



PTFE/RPTFE

3. Double Offset Fire Safe PTFE Butterfly Valve

Fire Safe valve Seat with dual seal including primary PTFE seat insert and metal seat. In the event that the PTFE insert is destroyed, the secondary metal seat provides effective shut-off. The DOV fire safe certificate approved by Lioyd's Register.

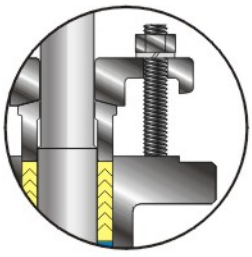


PTFE FIRE

Shaft Retention

Externally retained, double blowout proof stem design as API 609.

External: Shaft is designed with an integral collar and blowout prevented by gland follower.



Externally retained

Zero Leakage

Disc-Seat sealing is achieved by torque force evenly loaded on disc laminated seal edge, which has resilient function to assure Zero Leakage in both hydrostatic or air test per API 598.

Design Feature

Low Emission Shaft Seal

Neway standard emission control is 20 PPM

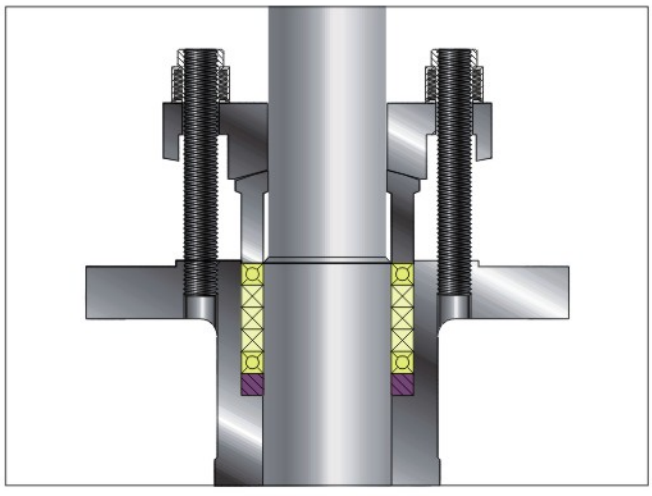
a.) Shaft is fully guided by shaft bearing & gland follower to avoid any side load due to line pressure thrust.

b.) The packing set is pre-compressed and is a combination of braided graphite rings top and bottom with die formed flexible graphite rings between.

c.) Controlled Ra0.4 ~ Ra0.8 finish on the shaft and Ra1.6 on the Stuffing box provides optimum packing and shaft sealing Performance.

d.) Optional Live Loaded gland flange is available to provide constant packing compression to reduce fugitive emission from shaft seal.

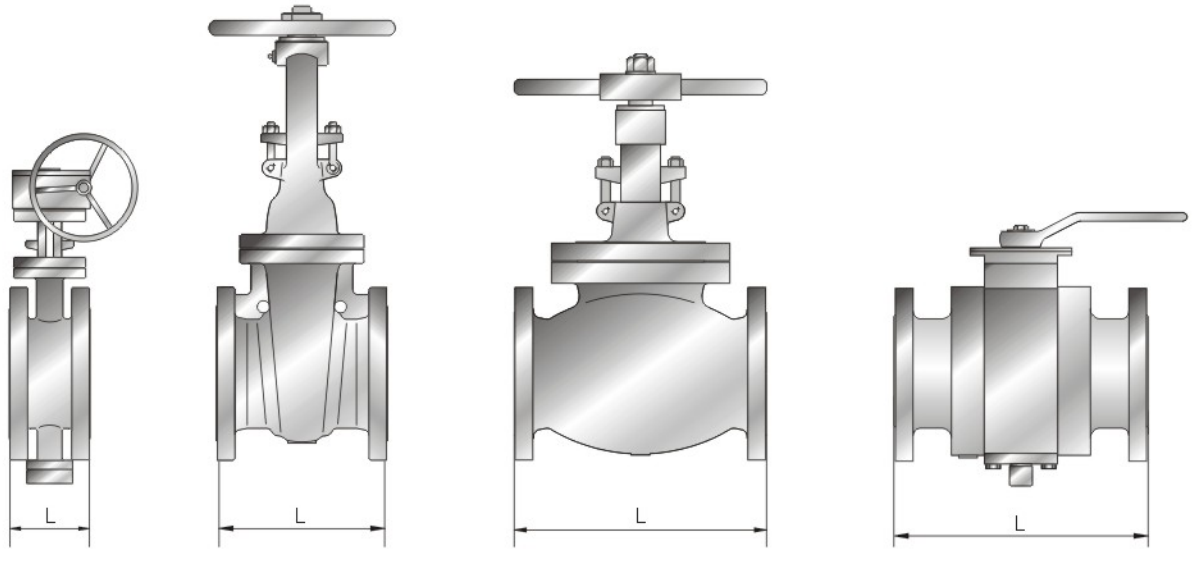
e.) Optional shaft seal design per Shell MESC 77/312 & TA-Luft is also available upon request.



Compact & light Design

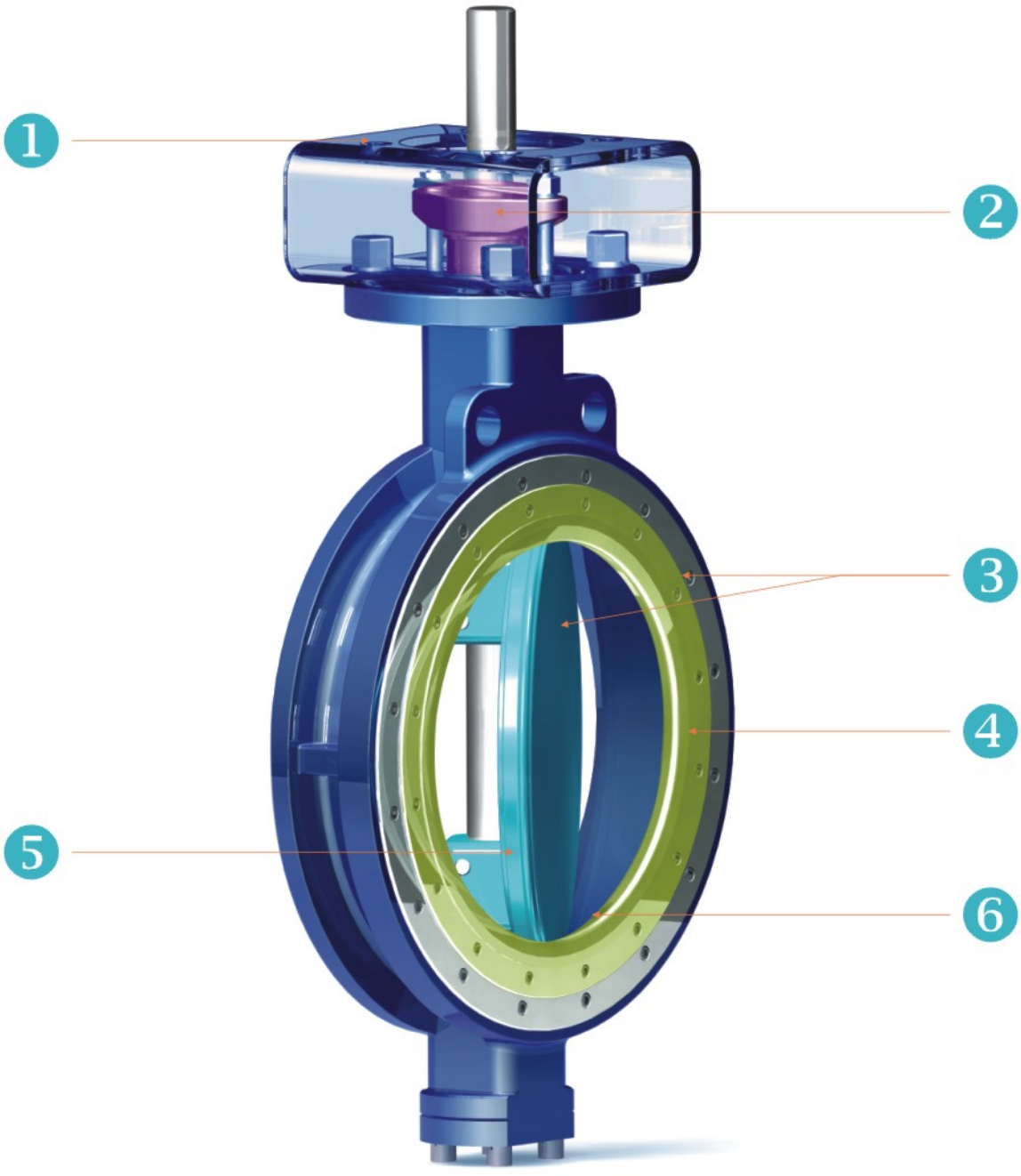
NEWAY Double offset butterfly valve is designed as API 609, due to its compact & light design, it is an economical substitute for gate, globe and ball valves. Below is a comparison table based on a NEWAY 6" valve.

Class	150LB				300LB				600LB			
Valve Type	Butterfly	Gate	Globe	Ball	Butterfly	Gate	Globe	Ball	Butterfly	Gate	Globe	Ball
Face to Face (mm)	140	267	406	394	140	403	445	403	210	559	559	559
Weight (kg)	21	77	100	190	34	144	168	211	87	234	284	248



Butterfly Gate Globe Ball

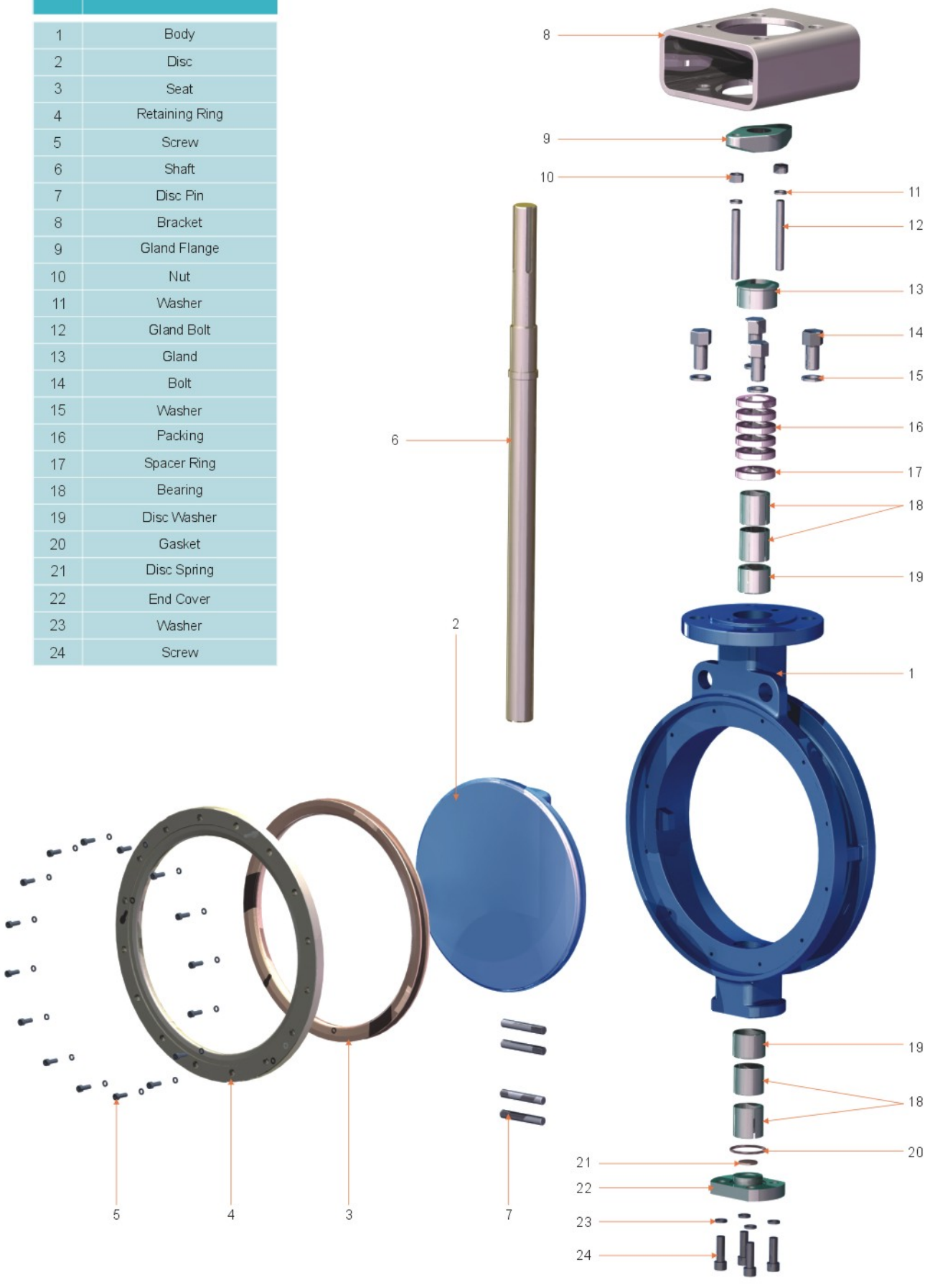
Design Feature



1. ISO 5211 Top Flange.
2. In addition to durable, standard V-ring packing, you can also choose from optional. graphite high-temperature packing or emissions control design.
3. Bi-Directional, Shut off performance.
4. Optional seat: Rubber, PTFE, RPTFE, Fire Safe PTFE.
5. Long life durability of double offset operating principal minimize seat wear & lower operating torques.
6. Positive sealing which is mechanically achieved and does not rely on line pressure assistant.

Material Specifications

No	Part
1	Body
2	Disc
3	Seat
4	Retaining Ring
5	Screw
6	Shaft
7	Disc Pin
8	Bracket
9	Gland Flange
10	Nut
11	Washer
12	Gland Bolt
13	Gland
14	Bolt
15	Washer
16	Packing
17	Spacer Ring
18	Bearing
19	Disc Washer
20	Gasket
21	Disc Spring
22	End Cover
23	Washer
24	Screw

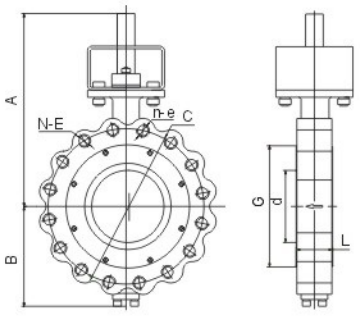


Material Specifications

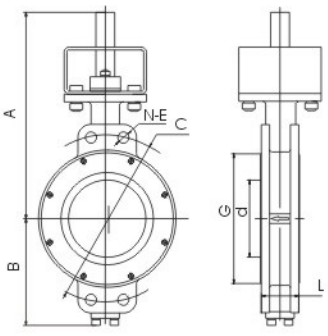
No	Part	Standard	Stainless steel
1	Body	ASTM A216-WCB	ASTM A351-CF8M
2	Disc	ASTM A351-CF8M	ASTM A351-CF8M
3	Seat	NBR/EPDM/PTFE	NBR/EPDM/PTFE
4	Retaining Ring	ASTM A105N	ASTM A182-F316
5	Screw	S.S.	S.S.
6	Shaft	17-4PH	17-4PH
7	Disc Pin	17-4PH	17-4PH
8	Bracket	Carbon Steel	Carbon Steel
9	Gland Flange	ASTM A216-WCB	ASTM A351-CF8
10	Nut	ASTM A194-2H	ASTM A194-8
11	Washer	Carbon Steel	S.S.
12	Gland Bolt	ASTM A193-B7	ASTM A193-B8
13	Gland	ASTM A182-F316	ASTM A182-F316
14	Bolt	ASTM A193-B7	ASTM A193-B8
15	Washer	Carbon Steel	S.S.
16	Packing	NBR / PTFE / Graphite	NBR / PTFE / Graphite
17	Spacer Ring	ASTM A182-F316	ASTM A182-F316
18	Bearing	ASTM A182-F316 with PTFE / Graphite	ASTM A182-F316 with PTFE / Graphite
19	Disc Washer	ASTM A182-F316	ASTM A182-F316
20	Gasket	NBR / PTFE / Graphite	NBR / PTFE / Graphite
21	Disc Spring	PTFE / 316	PTFE / 316
22	End Cover	ASTM A105N.	ASTM A182-F316
23	Washer	Carbon Steel	S.S.
24	Screw	ASTM A193-B7	ASTM A193-B8

Dimensions & Weights

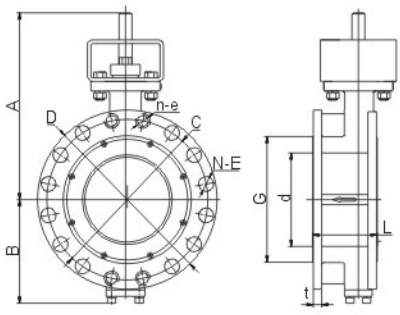
Double offset Butterfly Valve



Lug Type



Wafer Type



Double Flange

150LB LUG TYPE

Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in					mm	in	mm	in	mm	in	Kg	Lbs
2	50	51	2.01	92	3.62	120.7	4.75	4	5/8-11	*	*	43	1.69	194	7.64	80	3.15	6	12.79
3	80	86	3.39	127	5.00	152.5	6.00	4	5/8-11	*	*	48	1.89	214	8.43	80	3.15	9	19.40
4	100	110	4.33	157	6.18	190.5	7.50	8	5/8-11	*	*	54	2.13	233	9.17	100	3.94	12	26.01
5	125	131	5.16	186	7.32	216	8.50	8	3/4-10	*	*	57	2.24	264	10.39	119	4.69	16	34.83
6	150	156	6.14	212	8.35	241.5	9.51	8	3/4-10	*	*	57	2.24	280	11.02	135	5.31	14	30.86
8	200	203	7.99	270	10.63	298.5	11.75	8	3/4-10	*	*	64	2.52	310	12.20	190	7.48	32	69.44
10	250	254	10.00	324	12.76	362	14.25	12	7/8-9	*	*	71	2.80	354	13.94	250	9.84	48	104.72
12	300	305	12.01	381	15.00	432	17.01	12	7/8-9	*	*	81	3.19	450	17.72	290	11.42	70	153.22
14	350	337	13.27	413	16.26	476	18.74	12	1-8	*	*	92	3.62	480	18.90	300	11.81	102	224.87
16	400	387	15.24	470	18.50	539.5	21.24	16	1-8	*	*	102	4.02	505	19.88	340	13.39	144	317.46
18	450	438	17.24	533	20.98	578	22.76	16	1-1/8-8	*	*	114	4.49	600	23.62	380	14.96	188	414.46
20	500	489	19.25	584	22.99	635	25.00	16	1-1/8-8	4	1-1/8-8	127	5.00	740	29.13	390	15.35	244	537.92
24	600	591	23.27	692	27.24	749.5	29.51	16	1-1/4-8	4	1-1/4-8	154	6.06	860	33.86	470	18.50	378	833.33
28	700	692	27.24	762	30.00	795	31.30	36	3/4-10	4	3/4-10	165	6.50	864	34.02	485	19.09	486	1071.43
30	750	743	29.25	813	32.01	846	33.31	37	3/4-10	7	3/4-10	190	7.48	945	37.20	517	20.35	655	1444.00
32	800	781	30.75	864	37.95	900	35.43	41	3/4-10	7	3/4-10	190	7.48	1000	39.37	537	21.14	755	1664.46
36	900	876	34.49	972	38.27	1010	39.76	39	7/8-9	5	7/8-9	203	7.99	1051	41.38	610	24.02	820	1807.76
40	1000	976	38.42	1080	42.52	1120.5	44.11	40	1-8	4	1-8	216	8.50	1220	48.00	684	26.93	1054	2324.07
48	1200	1168	45.98	1289	50.74	1335	52.56	39	1-1/8-8	5	1-1/8-8	254	10.00	1370	54.00	800	31.50	1849	4077.05

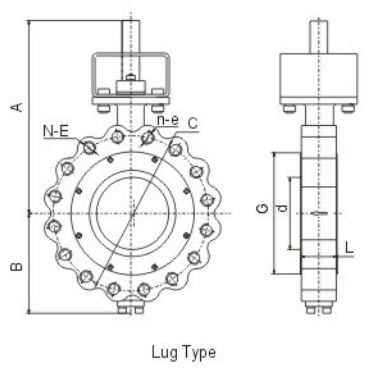
150LB WAFER TYPE

Size		d		G		C		N	E	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in			mm	in	mm	in	mm	in	Kg	Lbs
2	50	51	2.01	92	3.62	120.7	4.75	2	¢19	43	1.69	160	6.30	80	3.15	4	8.38
3	80	86	3.39	127	5.00	152.5	6.00	2	¢19	48	1.89	180	7.09	80	3.15	7	14.99
4	100	110	4.33	157	6.18	190.5	7.50	2	¢19	54	2.13	200	7.87	100	3.94	10	21.60
5	125	131	5.16	186	7.32	216	8.50	2	¢22	57	2.24	235	9.25	119	4.69	14	30.42
6	150	156	6.14	216	8.50	241.5	9.51	2	¢22	57	2.24	252	9.92	135	5.31	11	24.25
8	200	203	7.99	270	10.63	298.5	11.75	2	¢22	64	2.52	293	11.54	190	7.48	25	54.01
10	250	254	10.00	324	12.76	362	14.25	2	¢25	71	2.80	337	13.27	250	9.84	39	84.88
12	300	305	12.01	381	15.00	432	17.01	2	¢25	81	3.19	373	14.69	290	11.42	51	111.33
14	350	337	13.27	413	16.26	476	18.74	2	¢29	92	3.62	521	20.51	300	11.81	80	176.37
16	400	387	15.24	470	18.50	5395	21.24	4	¢29	102	4.02	555	21.85	340	13.39	104	229.28
18	450	438	17.24	533	20.98	578	22.76	4	¢32	114	4.49	620	24.41	380	14.96	153	337.30
20	500	489	19.25	584	22.99	635	25.00	4	1-1/8	127	5.00	673	26.50	390	15.35	192	423.28
24	600	591	23.27	692	27.24	749.5	29.51	4	1-1/4-8	154	6.06	772	30.39	470	18.50	288	634.92
28	700	692	27.24	762	30.00	795	31.30	4	¢22	165	6.50	935	36.81	485	19.09	340	749.56
								4	3/4-10								
30	750	743	29.25	813	32.01	846	33.31	2	¢22	190	7.48	993	39.09	517	20.35	510	1124.34
								6	3/4-10								
32	800	781	30.75	964	37.95	900	35.43	1	¢22	190	7.48	1000	39.37	537	21.14	595	1311.73
								7	3/4-10								
36	900	876	34.49	972	38.27	1010	39.76	8	7/8-9	203	7.99	1113	43.80	610	24.02	680	1499.12
40	1000	976	38.42	1080	42.52	1120.5	44.11	4	¢29	216	8.50	1220	48.03	684	26.93	1054	1973.48
								4	1-8								
48	1200	1168	45.98	1289	50.74	1335	52.56	3	¢32	254	10.00	1370	53.94	800	31.50	1849	3397.91
								5	1-1/8-8								

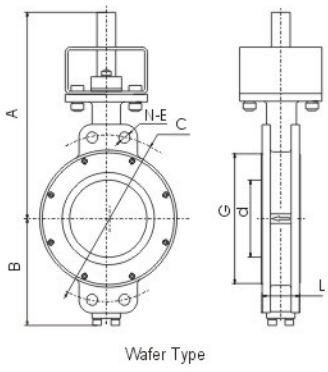
Note: 1. Flange Dimensions of 26" and large size are according to ASME B16.47 B Series.

Double offset Butterfly Valve

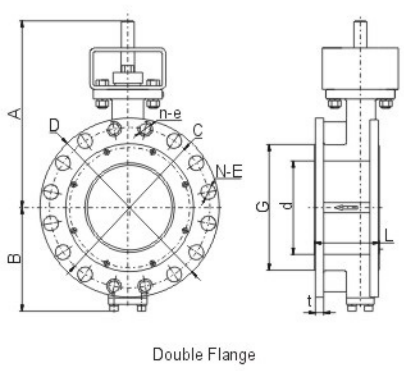
Dimensions & Weights



Lug Type



Wafer Type



Double Flange

150LB DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t		A		B		Weight	
in	mm	mm	in	mm	in	mm	in							mm	in	mm	in	mm	in	mm	in	Kg	Lbs
2	50	51	2.01	150	5.91	92	3.62	120.7	4.75	4	¢19	*	*	108	4.25	19	0.75	160	6.30	80	3.15	8	17.20
3	80	86	3.39	190	7.48	127	5.00	152.5	6.00	4	¢19	*	*	114	4.49	24	0.94	180	7.09	80	3.15	12	26.01
4	100	110	4.33	230	9.06	157	6.18	190.5	7.50	4	¢19	4	5-8/11	127	5.00	24	0.94	200	7.87	105	4.13	16	34.61
5	125	131	5.16	255	10.04	186	7.32	216	8.50	4	¢22	4	3-4/10	140	5.51	24	0.94	235	9.25	119	4.69	21	46.08
6	150	156	6.14	280	11.02	216	8.50	241.5	9.51	4	¢22	4	3-4/10	140	5.51	25.4	1.00	252	9.92	135	5.31	21	46.30
8	200	203	7.99	345	13.58	270	10.63	298.5	11.75	4	¢22	4	3-4/10	152	5.98	28.6	1.13	293	11.54	190	7.48	54	117.95
10	250	254	10.00	405	15.94	324	12.76	362	14.25	8	¢25	4	7/8-9	165	6.50	30	1.18	337	13.27	250	9.84	82	181.00
12	300	305	12.01	485	19.09	381	15.00	432	17.01	8	¢25	4	7/8-9	178	7.01	32	1.26	373	14.69	290	11.42	136	298.94
14	350	337	13.27	535	21.06	413	16.26	476	18.74	8	¢29	4	1-8	190	7.48	35	1.38	521	20.51	300	11.81	151	332.23
16	400	387	15.24	595	23.43	470	18.50	539.5	21.24	12	¢29	4	1-8	216	8.50	36.6	1.44	555	21.85	340	13.39	213	469.80
18	450	438	17.24	635	25.00	533	20.98	578	22.76	12	¢32	4	1-1/8-8	222	8.74	39.7	1.56	620	24.41	380	14.96	313	690.04
20	500	489	19.25	700	27.56	584	22.99	635	25.00	16	¢32	4	1-1/8-8	229	9.02	43	1.69	673	26.50	390	15.35	386	850.97
24	600	591	23.27	815	32.09	692	27.24	749.5	29.51	16	¢35	4	1-1/4-8	267	10.51	47.7	1.88	772	30.39	470	18.50	552	1216.93
28	700	692	27.24	837	32.95	762	30.00	795	31.30	34	¢22	6	1/4	292	11.50	44.5	1.75	935	36.81	485	19.09	578	1274.25
30	750	743	29.25	887	34.92	813	32.01	846	33.31	37	¢22	7	3/4-10	318	12.52	44.5	1.75	993	39.09	517	20.35	798	1759.26
32	800	781	30.75	941	37.05	864	37.95	900	35.43	40	¢22	8	3/4-10	318	12.52	46	1.81	1000	39.37	537	21.14	929	2048.06
36	900	876	34.49	1057	41.61	972	38.27	1010	39.76	39	¢25	5	7/8-9	330	12.99	52	2.05	1113	43.82	610	24.02	1015	2237.65
40	1000	976	38.42	1175	46.25	1080	42.52	1120.5	44.11	37	¢29	7	1-8	410	16.14	55.6	2.19	1220	48.03	684	26.93	1441	3177.41
48	1200	1168	45.98	1392	54.81	1289	50.74	1335	52.56	40	¢32	4	1-1/8-8	470	18.50	65	2.56	1370	53.94	800	31.50	2502	5516.91

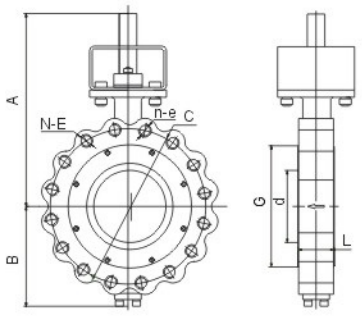
300LB LUG TYPE

Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in					mm	in	mm	in	mm	in	Kg	Lbs
2	50	44	1.73	92	3.62	127	5.00	8	5/8-11	*	*	43	1.69	160	6.30	80	3.15	10	21.60
3	80	86	3.39	127	5.00	168.5	6.63	8	3/4-10	*	*	48	1.89	189	7.44	98	3.86	13	28.22
4	100	110	4.33	157	6.18	200	7.87	8	3/4-10	*	*	54	2.13	208	8.19	110	4.33	16	34.83
5	125	127	5.00	186	7.32	235	9.25	8	3/4-10	*	*	59	2.32	233	9.17	128	5.04	19	40.78
6	150	152	5.98	216	8.50	269.9	10.63	12	3/4-10	*	*	59	2.32	252	9.92	149	5.87	24	51.81
8	200	203	7.99	270	10.63	330	12.99	12	7/8-9	*	*	73	2.87	321	12.64	235	9.25	45	98.10
10	250	254	10.00	324	12.76	387	15.24	12	1-8	4	1-8	83	3.27	393	15.47	290	11.42	49	108.02
12	300	305	12.01	381	15.00	451	17.76	12	1-1/8-8	4	1-1/8-8	92	3.62	455	17.91	305	12.01	74	163.14
14	350	337	13.27	413	16.26	514.5	20.26	16	1-1/8-8	4	1-1/8-8	117	4.61	648	25.51	348	13.70	194	427.69
16	400	388	15.28	470	18.50	571.5	22.50	16	1-1/4-8	4	1-1/4-8	133	5.24	765	30.12	365	14.37	245	540.12
18	450	432	17.01	533	20.98	628.5	24.74	20	1-1/4-8	4	1-1/4-8	149	5.87	735	28.94	415	16.34	393	866.40
20	500	483	19.02	584	22.99	686	27.01	20	1-1/4-8	4	1-1/4-8	159	6.26	844	33.23	430	16.93	490	1080.25
24	600	584	22.99	692	27.24	813	32.01	20	1-1/2-8	4	1-1/2-8	181	7.13	962.5	37.89	501	19.72	834	1838.62

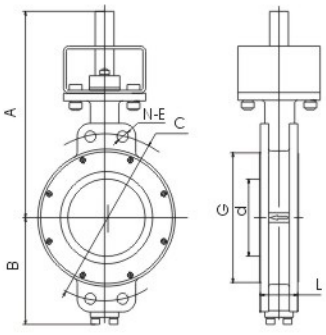
Note: 1. Flange Dimensions of 26" and large size are according to ASME B16.47 B Series.

Dimensions & Weights

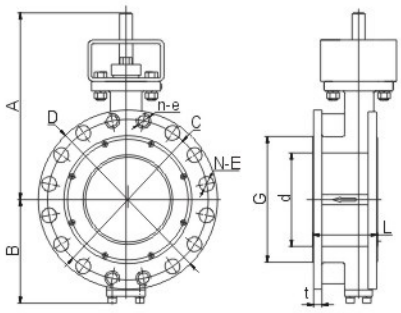
Double offset Butterfly Valve



Lug Type



Wafer Type



Double Flange

300LB WAFER TYPE

Size		d		G		C		N	E	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in			mm	in	mm	in	mm	in	Kg	Lbs
2	50	44	1.73	92	3.62	127	5.00	2	¢19	43	1.69	160	6.30	80	3.15	6	12.79
3	80	86	3.39	127	5.00	168.5	6.63	2	¢22	48	1.89	189	7.44	88	3.46	9	20.17
4	100	110	4.33	157	6.18	200	7.87	2	¢22	54	2.13	208	8.19	105	4.13	11	25.24
5	125	127	5.00	186	7.32	235	9.25	2	¢22	59	2.32	233	9.17	128	5.04	14	29.76
6	150	152	5.98	216	8.50	269.9	9.51	2	¢22	59	2.32	252	9.92	149	5.87	18	38.58
8	200	203	7.99	270	10.63	330	12.99	4	¢25	73	2.87	321	12.64	195	7.68	33	71.65
10	250	254	10.00	324	12.76	387	15.24	4	1-8	83	3.27	393	15.47	290	11.42	26	57.32
12	300	305	12.01	381	15.00	451	17.76	4	1-1/8-8	92	3.62	455	17.91	305	12.01	40	88.18
14	350	337	13.27	413	16.26	514.5	20.26	4	1-1/8-8	117	4.61	648	25.51	348	13.70	125	275.57
16	400	388	15.28	470	18.50	571.5	22.50	4	1-1/4-8	133	5.24	765	30.12	365	14.37	139	306.44
18	450	432	17.01	533	20.98	628.5	24.74	4	1-1/4-8	149	5.87	735	28.94	415	16.34	252	555.56
20	500	483	19.02	584	22.99	686	27.01	4	1-1/4-8	159	6.26	844	33.23	430	16.93	284	626.10
24	600	584	22.99	692	27.24	813	32.01	4	1-1/2-8	181	7.13	962.5	37.89	501	19.72	509	1122.13

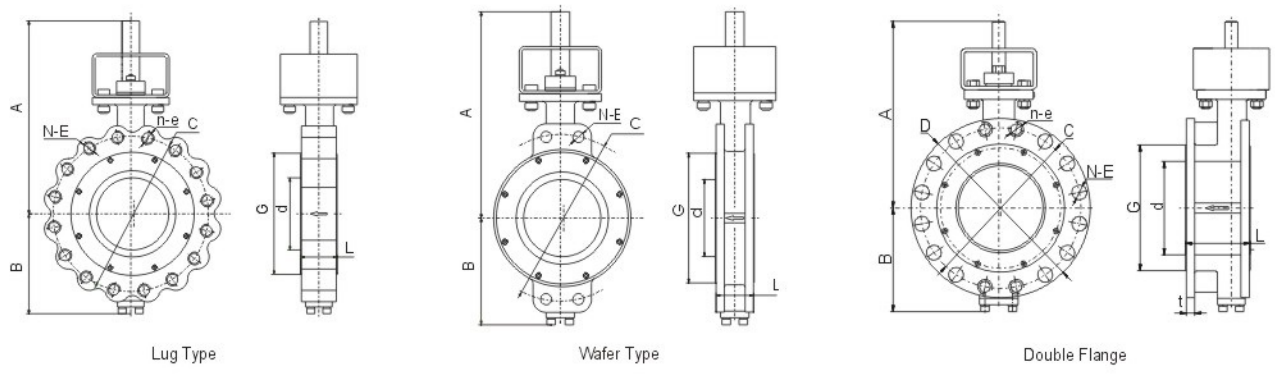
300LB DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t		A		B		Weight	
in	mm	mm	in	mm	in	mm	in	mm	in					mm	in	mm	in	mm	in	mm	in	Kg	Lbs
2	50	44	1.73	165	6.50	92	3.62	127		4	¢19	4	5/8-11	108	4.25	22.3	0.88	160	6.30	80	3.15	13	28.22
3	80	86	3.39	210	8.27	127	5.00	168.5	6.63	4	¢22	4	3/4-10	114	4.49	28.5	1.12	189	7.44	98	3.86	17	37.48
4	100	110	4.33	255	10.04	157	6.18	200	7.87	4	¢22	4	3/4-10	127	5.00	31.8	1.25	231	9.09	110	4.33	21	46.08
5	125	127	5.00	280	11.02	186	7.32	235	9.25	4	¢22	4	3/4-10	140	5.51	35	1.38	259	10.20	128	5.04	28	60.63
6	150	152	5.98	320	12.60	216	8.50	269.9	9.51	8	¢22	4	3/4-10	140	5.51	36.6	1.44	276	10.87	149	5.87	34	74.96
8	200	203	7.99	380	14.96	270	10.63	330	12.99	8	¢25	4	7/8-9	152	5.98	41.2	1.62	340	13.39	235	9.25	63	138.45
10	250	254	10.00	445	17.52	324	12.76	387	15.24	12	¢29	4	1-8	165	6.50	47.8	1.88	412	16.22	290	11.42	73	160.27
12	300	305	12.01	520	20.47	381	15.00	451	17.76	12	¢32	4	1-1/8-8	178	7.01	50.8	2.00	459	18.07	305	12.01	108	237.21
14	350	337	13.27	584	22.99	413	16.26	514.5	20.26	16	¢32	4	1-1/8-8	190	7.48	53.9	2.12	600	23.62	348	13.70	264	581.13
16	400	388	15.28	648	25.51	470	18.50	571.5	22.50	16	¢35	4	1-1/4-8	216	8.50	57.2	2.25	791	31.14	365	14.37	335	739.20
18	450	432	17.01	711	27.99	533	20.98	628.5	24.74	20	¢35	4	1-1/4-8	222	8.74	60.5	2.38	808	31.81	415	16.34	533	1173.94
20	500	483	19.02	775	30.51	584	22.99	686	27.01	20	¢35	4	1-1/4-8	229	9.02	63.5	2.50	789	31.06	430	16.93	674	1485.01
24	600	584	22.99	914	35.98	692	27.24	813	32.01	20	¢41	4	1-1/2-8	267	10.51	69.9	2.75	869	34.21	501	19.72	1121	2471.34

Note: 1. Flange Dimensions of 26" and large size are according to ASME B16.47 B Series.

Double offset Butterfly Valve

Dimensions & Weights



600LB LUG TYPE

Size		d		G		C		N	E	n	e	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in					mm	in	mm	in	mm	in	Kg	Lbs
3	80	88	3.46	127	5.00	168	6.61	8	3/4-10	*	*	54	2.05	303	11.93	102	4.02	14	30.87
4	100	114	4.49	157	6.18	216	8.50	8	7/8-9	*	*	64	2.52	347.5	13.68	124	4.88	35	77.18
6	150	164	6.46	216	8.50	292	11.50	10	1-8	2	1-8	78	3.07	475	18.70	166	6.54	70	154.35
8	200	200	7.87	270	10.63	349	13.74	8	1-1/8-8	4	1-1/8-8	102	4.02	482	18.98	256	10.08	90	198.45
10	250	248	9.76	324	12.76	432	17.01	12	1-1/4-8	4	1-1/4-8	117	4.61	651	25.63	309	12.17	162	357.21
12	300	298.5	11.75	381	15.00	489	19.25	16	1-1/4-8	4	1-1/4-8	140	5.51	666	26.22	348	13.70	218	480.69

600LB WAFER TYPE

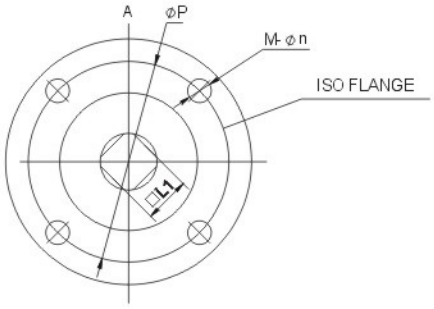
Size		d		G		C		N	E	L		A		B		Weight	
in	mm	mm	in	mm	in	mm	in			mm	in	mm	in	mm	in	Kg	Lbs
3	80	88	3.46	127	5.00	168	6.61	4	3/4-10	54	2.05	303	11.93	102	4.02	11	24.26
4	100	114	4.49	157	6.18	216	8.50	4	7/8-9	64	2.52	347.5	13.68	124	4.88	20	44.10
6	150	164	6.46	216	8.50	292	11.50	4	1-8	78	3.07	475	18.70	166	6.54	50	110.25
8	200	200	7.87	270	10.63	349	13.74	4	1-1/8-8	102	4.02	482	18.98	256	10.08	70	154.35
10	250	248	9.76	324	12.76	432	17.01	4	1-1/4-8	117	4.61	651	25.63	308	12.13	112	246.96
12	300	298.5	11.75	381	15.00	489	19.25	4	1-1/4-8	140	5.51	666	26.22	348	13.70	163	359.42

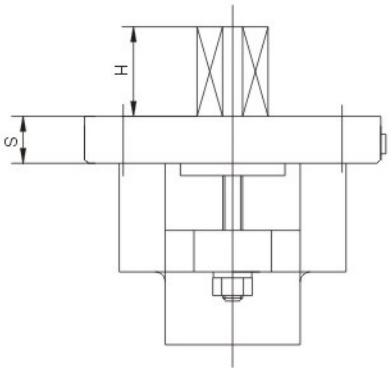
600LB DOUBLE FLANGE

Size		d		D		G		C		N	E	n	e	L		t		A		B		Weight	
in	mm	mm	in	mm	in	mm	in	mm	in					mm	in	mm	in	mm	in	mm	in	Kg	Lbs
3	80	88	3.46	210	8.27	127	5.00	168	6.61	4	¢22	4	3/4-10	180	7.09	38.2	1.50	303	11.93	102	4.02	24	52.92
4	100	114	4.49	273	10.75	157	6.18	216	8.50	8	¢25	*	*	190	7.48	44.5	1.75	348	13.68	124	4.88	49	108.05
6	150	164	6.46	356	14.02	216	8.50	292	11.50	10	¢29	2	1-8	210	8.27	54.1	2.13	475	18.70	166	6.54	100	220.50
8	200	200	7.87	419	16.50	270	10.63	349	13.74	8	¢32	4	1-1/8-8	230	9.06	62	2.44	482	18.98	256	10.08	126	277.83
10	250	248	9.76	508	20.00	324	12.76	432	17.01	12	¢35	4	1-1/4-8	250	9.84	69.9	2.75	651	25.63	309	12.17	220	485.10
12	300	298.5	11.75	559	22.01	381	15.00	489	19.25	16	¢35	4	1-1/4-8	270	10.63	73.1	2.88	666	26.22	348	13.70	305	672.53

Top Flange Datasheet

Engineering Data





150LB

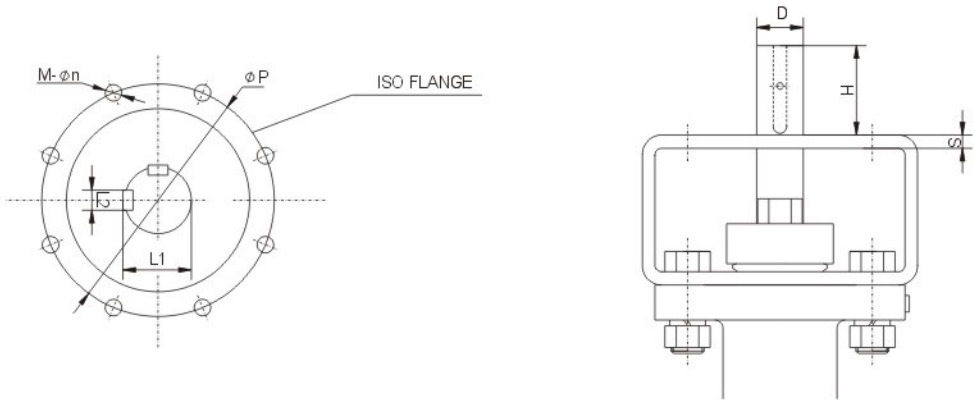
Size		H		S		ISO	L1		P		M-n
in	mm	mm	in	mm	in		mm	in	mm	in	
2	50	16	0.63	11	0.43	F07	11	0.43	70	2.76	4-9.5
3	80	16	0.63	13	0.51	F10	14	0.55	102	4.02	4-11
4	100	19	0.75	13	0.51	F10	17	0.67	102	4.02	4-11
5	125	21	0.83	13	0.51	F10	19	0.75	102	4.02	4-11
6	150	21	0.83	13	0.51	F10	19	0.75	102	4.02	4-11
8	200	24	0.94	15	0.59	F12	22	0.87	125	4.92	4-14
10	250	29	1.14	15	0.59	F12	27	1.06	125	4.92	4-14
12	300	29	1.14	20	0.79	F14	27	1.06	140	5.51	4-18

300LB

Size		H		S		ISO	L1		P		M-n
in	mm	mm	in	mm	in		mm	in	mm	in	
3	80	16	0.63	13	0.51	F10	14	0.55	102	4.02	4-11
4	100	24	0.94	13	0.51	F10	17	0.67	102	4.02	4-11
5	125	26	1.02	13	0.51	F10	19	0.75	102	4.02	4-11
6	150	26	1.02	13	0.51	F10	19	0.75	102	4.02	4-11
8	200	35	1.38	15	0.59	F12	27	1.06	125	4.92	4-14
10	250	35	1.38	25	0.98	F16	32	1.26	165	6.50	4-22
12	300	40	1.57	25	0.98	F16	36	1.42	165	6.50	4-22

Engineering Data

Top Flange Datasheet



150LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	mm	in	mm	in	mm	in	mm	in	mm	in		mm	in	
14	350	35	1.38	95	3.74	10	0.39	38	1.50	10	0.39	F16	165	6.50	4-22
16	400	40	1.57	104	4.09	10	0.39	43	1.69	12	0.47	F16	165	6.50	4-22
18	450	46	1.81	104	4.09	10	0.39	49.5	1.95	14	0.55	F25	254	10.00	8-18
20	500	50	1.97	104	4.09	12	0.47	53.5	2.11	14	0.55	F25	254	10.00	8-18
24	600	60	2.36	105	4.13	12	0.47	64	2.52	18	0.71	F25	254	10.00	8-18
28	700	75	2.95	185	7.28	12	0.47	79.5	3.13	20	0.79	F30	298	11.73	8-22
30	750	80	3.15	185	7.28	12	0.47	85	3.35	22	0.87	F30	298	11.73	8-22
32	800	85	3.35	185	7.28	12	0.47	90	3.54	22	0.87	F30	298	11.73	8-22
36	900	90	3.54	190	7.48	40	1.57	95	3.74	25	0.98	F35	356	14.02	8-33
40	1000	100	3.94	210	8.27	40	1.57	106	4.17	28	1.10	F35	356	14.02	8-33
48	1200	120	4.72	235	9.25	50	1.97	127	5.00	32	1.26	F40	406	15.98	8-39

300LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	mm	in	mm	in	mm	in	mm	in	mm	in		mm	in	
14	350	50	1.97	114	4.49	12	0.47	53.5	2.11	14	0.55	F25	254	10.00	8-18
16	400	55	2.17	125	4.92	12	0.47	59	2.32	16	0.63	F25	254	10.00	8-18
18	450	60	2.36	125	4.92	12	0.47	64	2.52	18	0.71	F25	254	10.00	8-18
20	500	70	2.76	145	5.71	12	0.47	74.5	2.93	20	0.79	F30	298	11.73	8-22
24	600	80	3.15	185	7.28	12	0.47	85	3.35	22	0.87	F30	298	11.73	8-22

600LB

Size		D		H		S		L1		L2		ISO	P		M-n
in	mm	mm	in	mm	in	mm	in	mm	in	mm	in		mm	in	
3	80	25	0.98	50	1.97	8	0.31	28	1.10	8	0.31	F10	102	4.02	4-11
4	100	28	1.10	66	2.60	8	0.31	31	1.22	8	0.31	F12	125	4.92	4-14
6	150	35	1.38	94	3.70	10	0.39	38	1.50	10	0.39	F16	165	6.50	4-22
8	200	40	1.57	103	4.06	10	0.39	43	1.69	12	0.47	F16	165	6.50	4-22
10	250	50	1.97	121	4.76	12	0.47	53.5	2.11	14	0.55	F25	254	10.00	8-18
12	300	60	2.36	121	4.76	12	0.47	64	2.52	18	0.71	F25	254	10.00	8-18

150LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	6	16	24	36	52	76	113	146	162
4	100	15	37	55	80	117	172	256	329	365
6	150	39	98	147	215	313	460	685	880	978
8	200	70	176	264	387	563	827	1232	1584	1760
10	250	131	328	492	722	1050	1542	2296	2952	3280
12	300	196	490	735	1078	1568	2303	3430	4410	4900
14	350	214	536	804	1179	1715	2519	3752	4824	5360
16	400	307	768	1152	1690	2458	3610	5376	6912	7680
18	450	380	950	1425	2090	3040	4465	6650	8550	9500
20	500	537	1342	2013	2952	4294	6307	9394	12078	13420
24	600	752	1880	2820	4136	6016	8836	13160	16920	18800
28	700	1088	2720	4080	5984	8704	12784	19040	24480	27200
30	750	1300	3250	4875	7150	10400	15275	22750	29250	32500
32	800	1673	4182	6273	9200	13382	19655	29274	37638	41820
36	900	2128	5320	7980	11704	17024	25004	37240	47880	53200
40	1000	1098	4802	7889	11182	17699	25588	36358	51450	68600
48	1200	1728	7560	12420	17604	27864	40284	57240	81000	108000

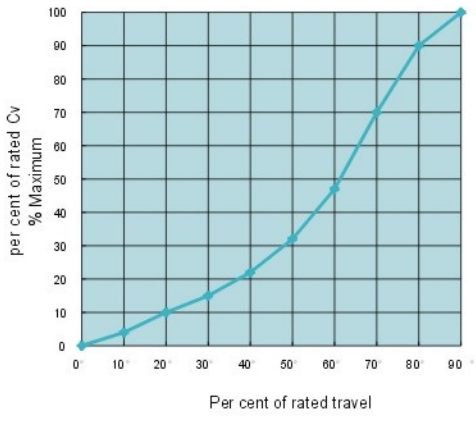
300LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	6	16	24	36	52	76	113	146	162
4	100	15	37	55	80	117	172	256	329	365
6	150	39	98	147	215	313	460	685	880	978
8	200	65	163	245	359	522	766	1141	1467	1630
10	250	124	310	465	682	992	1457	2170	2790	3100
12	300	182	456	684	1003	1459	2143	3192	4104	4560
14	350	205	512	768	1126	1638	2406	3584	4608	5120
16	400	269	672	1008	1478	2150	3158	4704	6048	6720
18	450	352	880	1320	1936	2816	4136	6160	7920	8800
20	500	460	1150	1725	2530	3680	5405	8050	10350	11500
24	600	647	1618	2427	3560	5178	7605	11326	14562	16180

600LB

Valve Size		Disc Opening Angle								
inch	mm	10°	20°	30°	40°	50°	60°	70°	80°	90°
3	80	6	16	23	34	50	73	109	140	156
4	100	10	26	39	57	82	121	180	231	257
6	150	29	72	108	159	231	340	506	651	723
8	200	53	132	199	291	424	622	927	1192	1324
10	250	81	201	302	443	644	946	1409	1812	2013
12	300	112	279	418	614	892	1311	1952	2510	2789
14	350	159	399	598	877	1276	1873	2790	3587	3986
16	400	201	502	753	1105	1607	2361	3516	4521	5023
18	450	225	562	843	1237	1799	2642	3935	5059	5621
20	500	317	793	1190	1745	2538	3727	5551	7137	7930
24	600	461	1152	1728	2534	3686	5414	8064	10368	11520

Cv curve



Notes:

1) Definition:
   Cv: The volume of water in gpm at 15℃ that will pass through a valve with differential pressure of 1 PSI.
   Kv: The volume of water in m³/hr at 15℃ that will pass through a valve with differential pressure of 1 bar.
2) Cv = 1.155 Kv

TB Type Operating Torque

Torque for series TB with NBR seat and shaft up stream at specified pressure.

150LB(Shaft Upstream)

Size		100Psi(0.7MPa)		150psi(1.0MPa)		200psi(1.4MPa)		285psi(1.97MPa)	
		N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-Lbs	N.m	Ft-lbs
2	50	42	31	42	31	43	32	44	33
3	80	51	37	55	41	61	45	68	50
4	100	80	59	89	65	101	74	117	86
5	125	121	89	134	99	151	111	175	129
6	150	175	129	196	144	224	165	263	194
8	200	311	229	351	259	405	298	481	354
10	250	464	342	532	392	622	459	749	552
12	300	681	502	789	582	932	687	1132	835
14	350	978	721	1130	833	1332	982	1615	1191
16	400	1299	958	1508	1112	1787	1318	2178	1606
18	450	1647	1214	1931	1424	2310	1703	2840	2095
20	500	2424	1788	2820	2080	3349	2470	4090	3016
24	600	3716	2741	4377	3228	5258	3878	6491	4787
28	700	5612	4139	6579	4851	7867	5802	9671	7132
30	750	6592	4861	7766	5727	9331	6881	11522	8497
32	800	7520	5546	8881	6549	10695	7887	13235	9761
36	900	9191	6778	10986	8102	13380	9867	16732	12339
40	1000	15155	11200	16653	12307	18650	13782	21640	15992
48	1200	24452	18070	27319	20189	31141	23013	36876	27251

300LB(Shaft Upstream)

Size		220psi(1.5MPa)		290psi(2.0MPa)		435psi(3.0MPa)		580psi(4.0MPa)	
		N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs
3	80	85	63	93	68	107	79	122	90
4	100	104	76	119	88	149	110	179	132
5	125	179	132	203	150	249	184	296	218
6	150	216	159	253	187	328	242	402	297
8	200	558	412	628	463	766	565	905	668
10	250	904	667	1025	756	1266	934	1508	1112
12	300	1364	1006	1570	1158	1982	1462	2395	1766
14	350	1699	1253	1253	1989	2569	1895	3149	2322
16	400	2284	1684	1684	2704	6545	2614	4386	3234
18	450	2196	2151	2151	3483	4617	3405	5752	4242
20	500	5291	3902	3902	6088	7680	5664	9273	6838
24	600	7852	5790	5790	9163	11784	8690	14405	10623

Note: 1.The above datas are calculated in normal temperature,it need a save modulus 1.2~1.5 to select driver.

TBT Type Operating Torque

Engineering Data

Torque for series TBT with PTFE seat and shaft down stream at specified pressure.

150LB(Shaft Downstream)

Size		100psi(0.7MPa)		150psi(1.0MPa)		200psi(1.4MPa)		285psi(1.97MPa)	
		N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs
2	50	18	13	19	14	21	16	23	17
3	80	28	21	31	23	34	25	38	28
4	100	44	33	49	36	56	41	65	48
5	125	67	49	74	55	84	62	97	72
6	150	97	72	109	80	124	92	146	108
8	200	173	127	195	144	225	166	267	197
10	250	258	190	296	218	346	255	416	307
12	300	378	279	438	323	518	382	629	464
14	350	543	401	628	463	740	546	897	662
16	400	722	532	838	618	993	732	1210	892
18	450	915	675	1073	791	1283	946	1578	1164
20	500	1347	993	1567	1156	1861	1372	2272	1676
24	600	2065	1523	2432	1793	2921	2154	3606	2659
28	700	3040	2299	3560	2695	4270	3223	5250	3962
30	750	3570	2701	4210	3182	5060	3823	6260	4721
32	800	4020	3081	4760	3638	5740	4382	7120	5423
36	900	5106	3765	6103	4501	7433	5482	9295	6855
40	1000	7800	5764	9200	6799	11000	8129	13700	10124

300LB(Shaft Downstream)

Size		220psi(1.5MPa)		290psi(2.0MPa)		435psi(3.0MPa)		580psi(4.0MPa)		740psi(5.1MPa)	
		N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs
3	80	47	35	51	38	59	44	68	50	76	56
4	100	58	42	66	49	83	61	99	73	118	87
5	125	100	74	113	83	138	102	164	121	193	142
6	150	120	89	141	104	182	134	224	165	269	198
8	200	310	229	349	257	426	314	503	371	588	433
10	250	502	370	569	420	704	519	838	618	985	727
12	300	758	559	872	643	1101	812	1330	981	1582	1167
14	350	944	696	1105	815	1427	1053	1750	1290	2104	1552
16	400	1269	936	1502	1108	1969	1452	2436	1797	2950	2176
18	450	1620	1195	1935	1427	2565	1892	3195	2356	3888	2868
20	500	2940	2168	3382	2494	4267	3147	5151	3799	6125	4517
24	600	4362	3217	5090	3754	6547	4828	8003	5902	9605	7083

600LB(Shaft Downstream)

Size		580psi(4.0MPa)		725psi(5.0MPa)		870psi(6.0MPa)		1160psi(8.0MPa)		1508psi(10.0MPa)	
		N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs	N.m	Ft-lbs
3	80	119	88	126	93	134	99	150	111	164	121
4	100	183	135	198	146	212	157	242	179	272	201
5	125	294	217	315	233	335	248	375	277	415	307
6	150	365	270	400	296	430	318	500	370	568	420
8	200	685	506	750	554	816	603	945	698	1076	795
10	250	1135	839	1245	920	1355	1001	1570	1160	1790	1323
12	300	2070	1530	2300	1700	2525	1866	2975	2199	3430	2535

Note: 1.The above datas are calculated in normal temperature,it need a save modulus 1.2~1.5 to select driver.

Engineering Data

TBF Type Operating Torque

Torque for series TBF with PTFE fire safe seat and shaft down stream at specified pressure.

150LB(Shaft Downstream)

Size		100psi(0.7MPa)		150psi(1.0MPa)		200psi(1.4MPa)		285psi(1.97MPa)	
		N.m	ft-lbs	N.m	ft-lbs	N.m	ft-lbs	N.m	ft-lbs
2	50	22	16	23	17	25	19	28	20
3	80	42	31	46	34	51	37	57	42
4	100	66	49	74	55	84	62	98	72
5	125	101	74	111	82	126	93	146	107
6	150	145	107	163	120	186	137	219	162
8	200	259	191	293	216	337	249	401	295
10	250	387	285	443	327	519	383	624	460
12	300	568	419	657	485	776	573	944	696
14	350	815	601	941	694	1110	819	1346	992
16	400	1082	798	1257	927	1489	1098	1815	1338
18	450	1372	1012	1609	1187	1925	1419	2367	1746
20	500	2020	1490	2350	1733	2791	2058	3408	2513
24	600	3097	2284	3648	1793	4382	3231	5409	3889
28	700	4677	3449	3655	2960	6556	4835	8059	5943
30	750	5493	4051	5482	4043	7776	5734	9602	7081
32	800	6267	4621	6471	4772	8913	6573	11030	8134
36	900	7659	5648	9155	6752	11150	8223	13943	10283

300LB(Shaft Downstream)

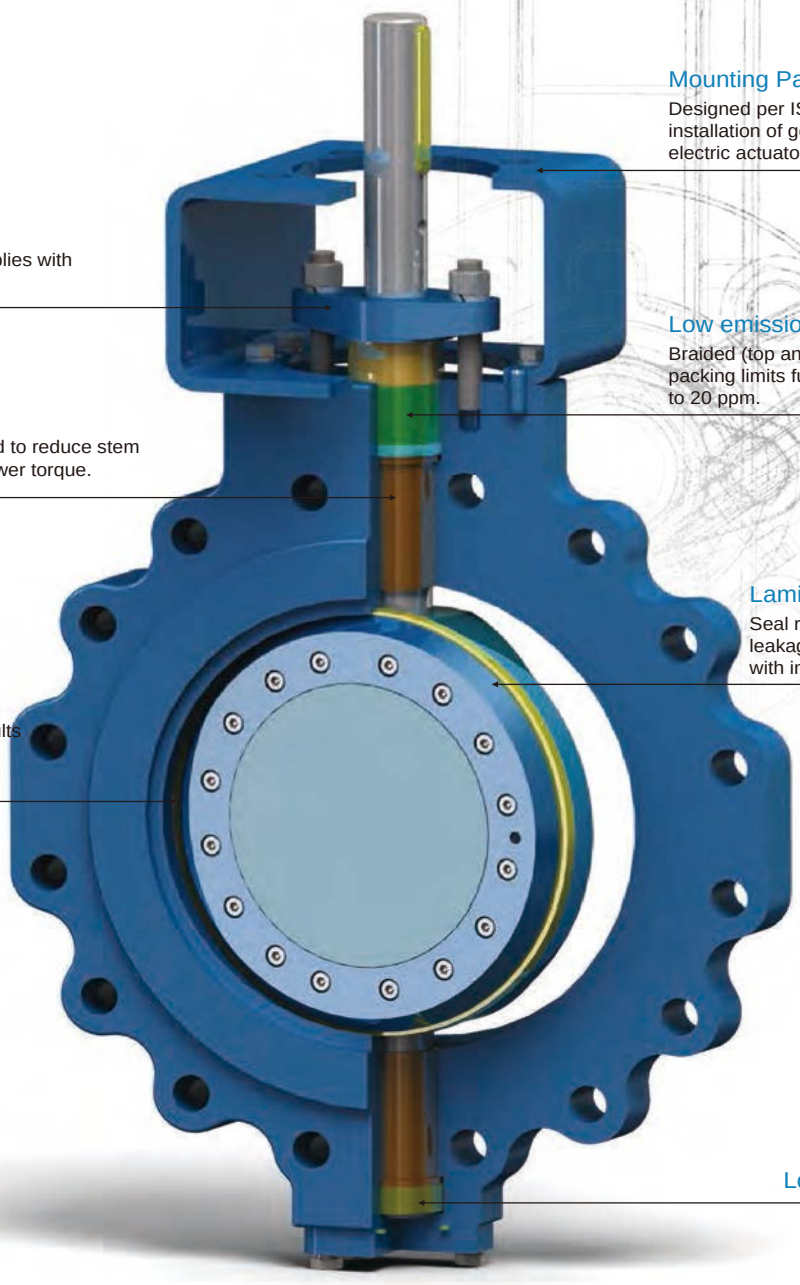
Size		220psi(1.5MPa)		290psi(2.0MPa)		435psi(3.0MPa)		580psi(4.0MPa)		740psi(5.1MPa)	
		N.m	ft-lbs	N.m	ft-lbs	N.m	ft-lbs	N.m	ft-lbs	N.m	ft-lbs
3	80	71	52	77	57	89	66	101	75	115	85
4	100	86	64	99	73	124	91	149	110	176	130
5	125	150	110	169	125	208	153	246	182	289	213
6	150	180	133	211	156	273	201	335	247	404	298
8	200	465	343	523	386	639	471	754	556	882	650
10	250	753	556	854	630	1055	778	1257	927	1478	1090
12	300	1137	838	1309	965	1652	1218	1996	1472	2373	1750
14	350	1416	1044	1657	1222	2141	1579	2624	1935	3156	2328
16	400	1903	1792	2253	1662	2954	2178	3655	2695	4425	3263
18	450	2430	1792	2903	2141	3848	2838	4793	3535	5833	4301
20	500	4409	3252	5073	3741	6400	4720	7727	5698	9187	6775
24	600	6543	4825	7635	5631	9820	7242	12004	8853	14407	10625

Note: 1.The above datas are calculated in normal temperature,it need a save modulus 1.2~1.5 to select driver.

Triple Offset Butterfly Valves

Triple Offset Butterfly Valve

Design Features



Mounting Pad
Designed per ISO 5211 to allow for the easy installation of gear box, pneumatic, or electric actuators

Upper Anti Blowout
Externally retained and complies with API 609 and ASME B31.3

Low emission packing (optional)
Braided (top and bottom) low emission packing limits fugitive emissions down to 20 ppm.

Extended Bearing
Fine-machined and hardened to reduce stem friction in order to achieve lower torque.

Laminated Seal
Seal ring flexes to achieve zero leakage. Parts are easily replaced with interchangeable parts.

Stellited Seat
Hard-faced integral seat results longer valve life and reduces maintenance.

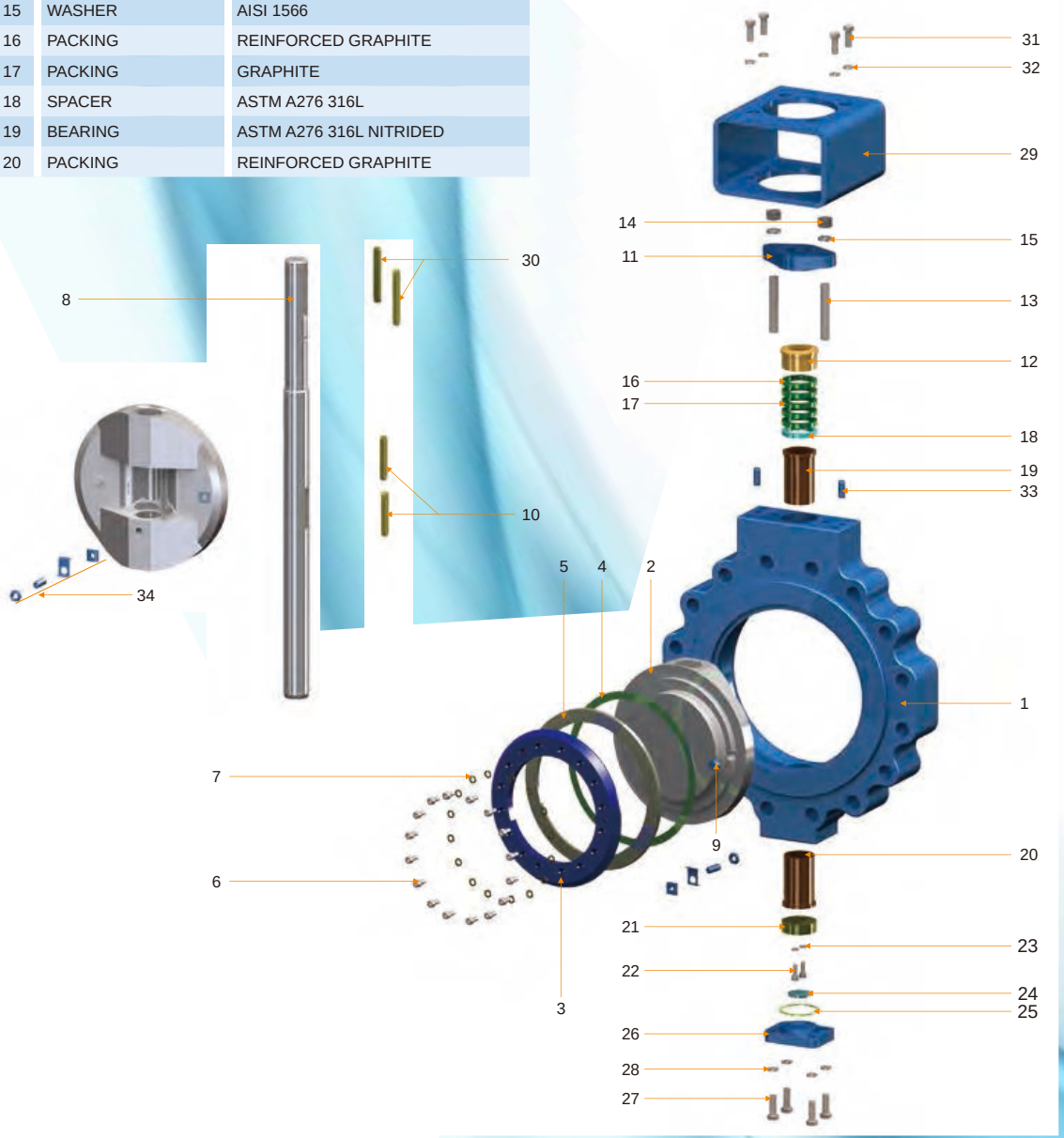
Lower Anti Blowout

Triple Offset Butterfly Valve

Material Specifications

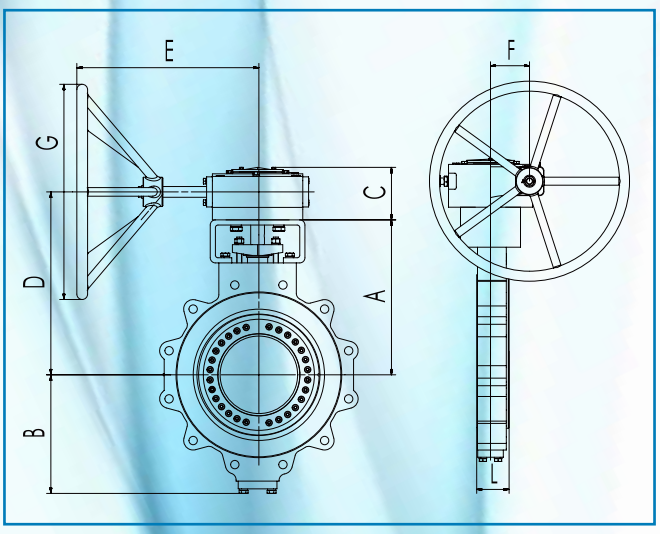
No.	Part	Standard Material
1	BODY	ASTM A216 WCB/STL.21 OVERLAY
2	DISC	ASTM A216 WCB
3	RING RETAINER	ASTM A105N NICKEL PLATED
4	GASKET	SPIRAL WOUND GRAPHITE/SS316L
5	SEAL RING	LAMINATED UNS31803+GRAPHITE
6	SCREW	ASTM A193 B8
7	WASHER	AISI 304
8	STEM	17-4PH
9	PIN	AISI 304
10	KEY	17-4PH
11	GLAND FLANGE	ASTM A216 WCB
12	PACKING FOLLOWER	ASTM A276 420
13	BOLT	ASTM A193 B7
14	NUT	ASTM A194 2H
15	WASHER	AISI 1566
16	PACKING	REINFORCED GRAPHITE
17	PACKING	GRAPHITE
18	SPACER	ASTM A276 316L
19	BEARING	ASTM A276 316L NITRIDED
20	PACKING	REINFORCED GRAPHITE

No.	Part	Standard Material
21	BLOWOUT PROOF BLOCK	ASTM A276 316L NITRIDED
22	BOLT	ASTM A193 B8
23	WASHER	AISI 304
24	THRUST BEARING	ASTM A276 316L NITRIDED
25	GASKET	SPIRAL WOUND GRAPHITE/SS316L
26	BOTTOM FLANGE	ASTM A105N
27	STUD	ASTM A193 B7
28	WASHER	AISI 1566
29	BRACKET	AISI 1020
30	KEY	AISI 1045
31	STUD	ASTM A193 B7
32	WASHER	AISI 1566
33	PIN	AISI 304
34	RETAINER DEVICE	AISI 316

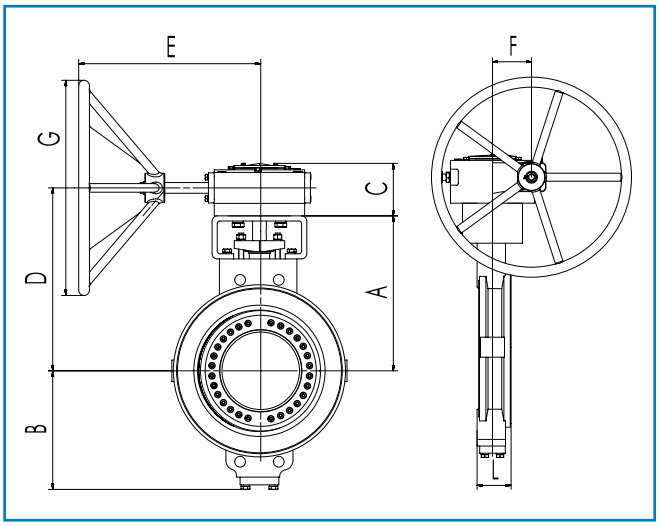


Triple Offset Butterfly Valve

Dimensions & Weights



Lug



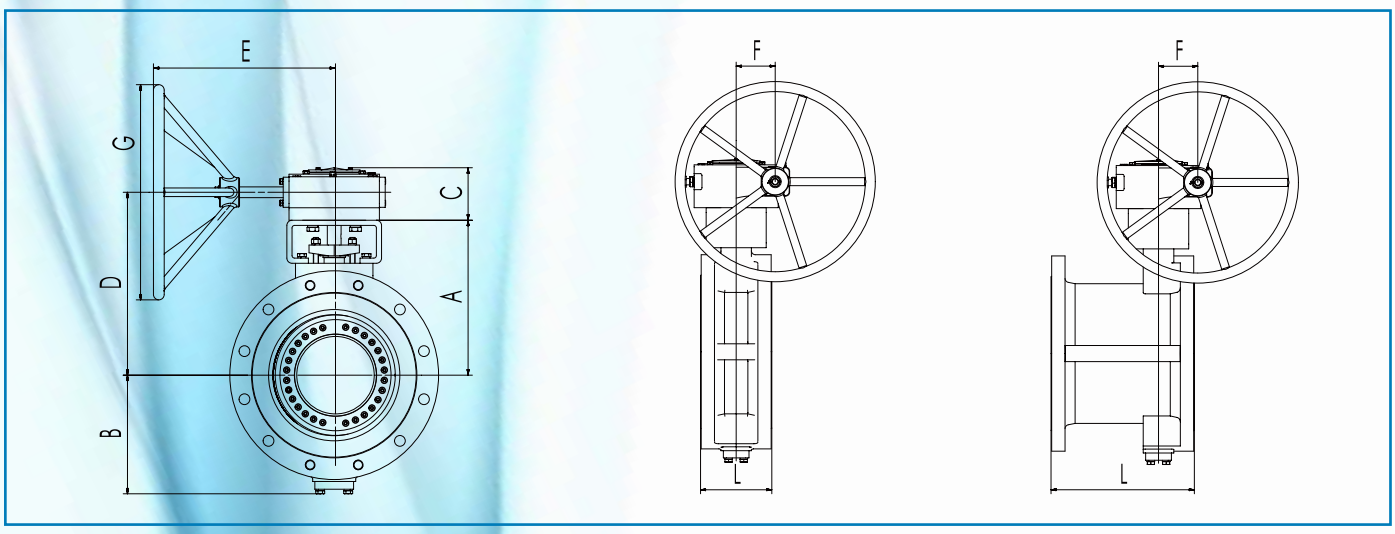
Wafer

Class 150 (inch)

Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (lb)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	MA	
3"	1.89	1.89	4.49	7.99	7.60	5.25	2.64	8.86	6.06	1.97	7.99	30.9	35.3	50.6	55.0	SW2
4"	2.13	2.13	5.00	9.02	8.03	5.75	2.64	9.29	6.06	1.97	7.99	39.6	46.2	74.8	79.2	SW2
6"	2.24	2.24	5.51	10.51	9.49	7.32	3.54	11.26	9.06	2.48	11.81	66.0	77.2	116.8	132.0	SW7
8"	2.52	2.52	5.98	11.50	11.50	8.25	3.54	13.27	9.06	2.48	11.81	105.6	116.8	184.8	204.6	SW7
10"	2.80	2.80	6.50	12.99	13.27	9.67	3.82	15.12	10.63	3.15	15.75	136.4	156.5	242.0	290.4	SW10
12"	3.19	3.19	7.01	14.02	14.17	10.85	5.16	16.3	16.54	4.72	19.69	187.0	220.0	332.2	400.2	SW20
14"	3.62	3.62	7.48	15.00	16.89	11.95	5.16	19.02	16.54	4.72	19.69	275.0	330.0	467.4	518.1	SW20
16"	4.02	4.02	8.50	15.98	18.50	13.21	5.24	20.74	18.11	4.96	23.62	396.0	462.0	572.0	638.0	SW40
18"	4.49	4.49	8.74	17.01	22.56	14.85	5.24	24.8	18.11	4.96	23.62	572.0	607.2	720.9	809.1	SW40
20"	5.00	5.00	9.02	17.99	24.69	16.60	5.63	30.43	22.05	5.43	23.62	682.0	793.7	946.0	1047.2	SW60
24"	6.06	6.06	10.51	20.00	27.36	19.28	5.63	34.41	22.44	5.43	29.92	990.0	1221.0	1419.0	1573.0	SW90
28"	6.50	6.50	11.50		30.91	21.54	8.15	35.20	25.59	8.07	29.92					SW200
30"	7.48	7.48	12.52		30.16	21.81	8.15	34.45	25.59	8.07	29.92					SW200
32"	7.48	7.48	12.52		33.46	22.68	8.15	37.76	25.59	8.07	29.92					SW270
36"	7.99	7.99	12.99		39.76	25.59	9.41	44.41	27.17	9.09	29.92					SW300
40"	8.50	8.50	16.14		40.04	28.11	9.41	44.69	27.17	9.09	29.92					SW300
42"	9.02	9.02	16.14		40.04	29.17	9.41	44.69	24.41	9.09	29.92					SW400
48"	10.00	10.00	18.50		45.00	33.35	10.47	53.58	29.13	10.11	35.43					SW600

Triple Offset Butterfly Valve

Dimensions & Weights



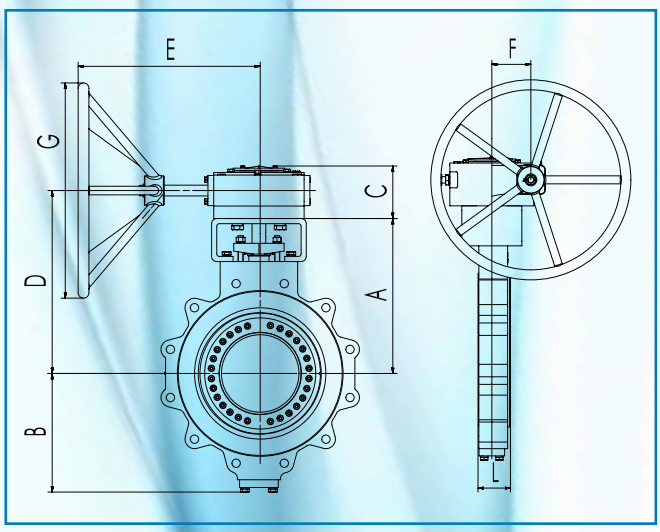
Flange

Class 150 (mm)

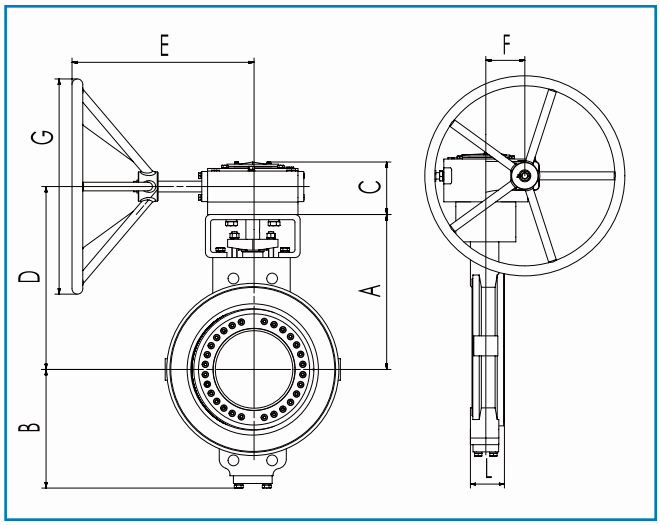
Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (kg)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	RF-L	
DN80	48	48	114	203	193	133.4	67	225	154	50	203	14	16	23	25	SW2
DN100	54	54	127	229	204	146	67	236	154	50	203	18	21	34	36	SW2
DN150	57	57	140	267	241	186	90	286	230	63	300	30	35	53	60	SW7
DN200	64	64	152	292	292	209.6	90	337	230	63	300	48	53	84	93	SW7
DN250	71	71	165	330	337	245.6	97	384	270	80	400	62	71	110	132	SW10
DN300	81	81	178	356	360	275.6	131	414	420	120	500	85	100	151	182	SW20
DN350	92	92	190	381	429	303.6	131	483	420	120	500	125	150	212	235	SW20
DN400	102	102	216	406	470	335.6	133	527	460	126	600	180	210	260	290	SW40
DN450	114	114	222	432	573	377.1	133	630	460	126	600	260	276	327	367	SW40
DN500	127	127	229	457	627	421.6	143	773	560	138	600	310	360	430	475	SW60
DN600	154	154	267	508	695	489.6	143	874	570	138	760	450	555	645	715	SW90
DN700	165	165	292		785	547	207	894	650	205	760					SW200
DN750	190	190	318		766	554	207	875	650	205	760					SW200
DN800	190	190	318		850	576	207	959	650	205	760					SW270
DN900	203	203	330		1010	650	239	1128	690	231	760					SW300
DN950	216	216	410		973	706	239	1091	690	231	760					SW300
DN1050	229	229	410		1017	741	239	1135	620	231	760					SW400
DN1200	254	254	470		1143	847	266	1361	740	256.75	900					SW600

Triple Offset Butterfly Valve

Dimensions & Weights



Lug



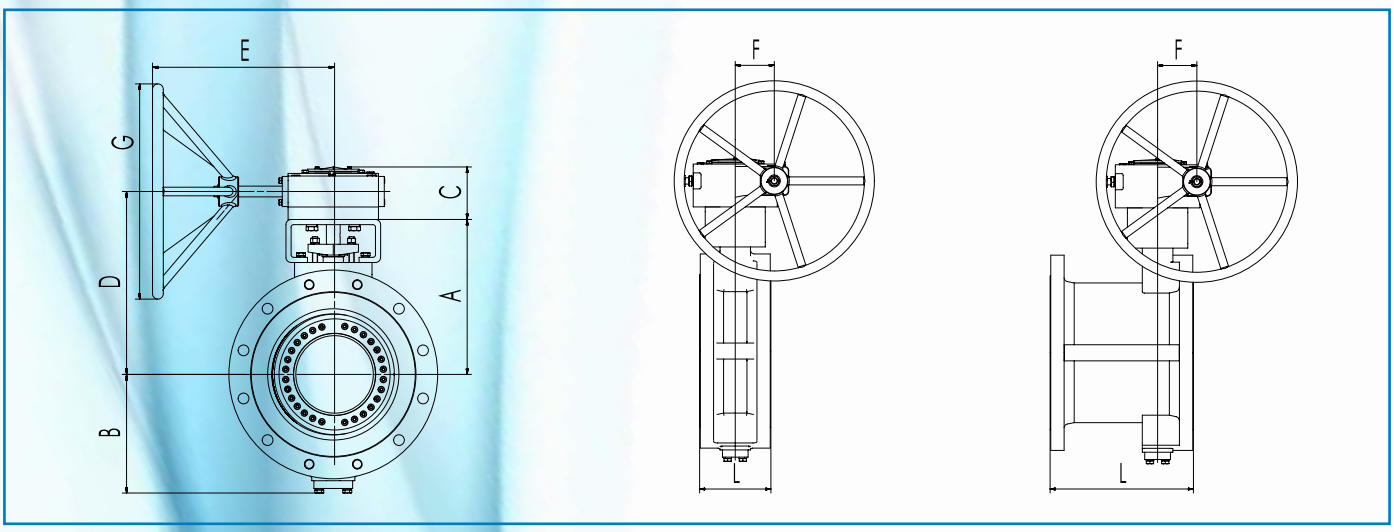
Wafer

Class 300 (inch)

Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (lb)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	RF-L	
3"	1.89	1.89	4.49	11.10	7.68	5.33	2.64	8.94	6.06	1.97	7.99	33.1	37.5	61.7	72.8	SW2
4"	2.13	2.13	5.00	12.01	8.50	6.22	3.54	10.27	9.06	2.48	7.99	41.8	48.4	90.2	107.8	SW4
6"	2.32	2.32	5.51	15.87	12.52	7.70	3.54	14.29	9.06	2.48	11.81	92.4	105.6	165.0	224.4	SW7
8"	2.87	2.87	5.98	16.50	13.98	8.88	3.82	15.83	10.63	3.15	15.75	136.4	158.7	242.0	308.0	SW10
10"	3.27	3.27	6.50	17.99	15.43	10.50	5.24	17.67	18.11	4.96	23.62	211.2	257.4	363.0	473.0	SW40
12"	3.62	3.62	7.01	19.76	17.13	11.85	5.24	19.37	18.11	4.96	23.62	286.0	352.0	488.4	649.0	SW40
14"	4.61	4.61	7.48	30.00	21.73	13.51	5.63	27.48	22.05	5.43	23.62	462.0	627.0	737.0	1001.0	SW60
16"	5.24	5.24	8.50	32.99	23.15	14.89	5.63	30.20	22.05	5.43	23.62	638.0	837.8	959.0	1291.9	SW70
18"	5.87	5.87	8.74	35.98	24.41	16.42	6.61	32.13	22.05	5.43	27.56	781.0	1045.0	1157.4	1631.4	SW100
20"	6.26	6.26	9.02	39.02	25.75	17.48	8.15	30.04	25.59	8.07	29.92	1133.0	1441.0	1617.0	2167.0	SW200
24"	7.13	7.13	10.51	45.00	28.70	20.44	8.15	32.99	25.59	8.07	29.92	1430.0	1995.2	2257.5	3141.6	SW200
30"	9.02	9.02	12.52		35.94	24.67	9.41	44.53	24.41	9.09	29.92					SW400
32"	9.49	9.49	12.52		36.22	24.61	10.47	44.53	29.13	10.11	35.43					SW600
36"	9.49	9.49	12.99		39.57	27.36	10.47	48.15	29.13	10.11	35.43					SW600
40"	11.81	11.81	16.14		40.63	29.72	10.47	49.21	29.13	10.11	35.43					SW600

Triple Offset Butterfly Valve

Dimensions & Weights



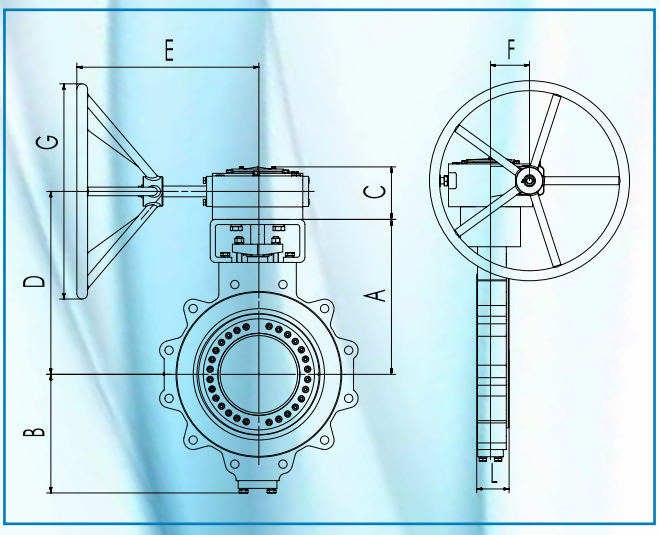
Flange

Class 300 (mm)

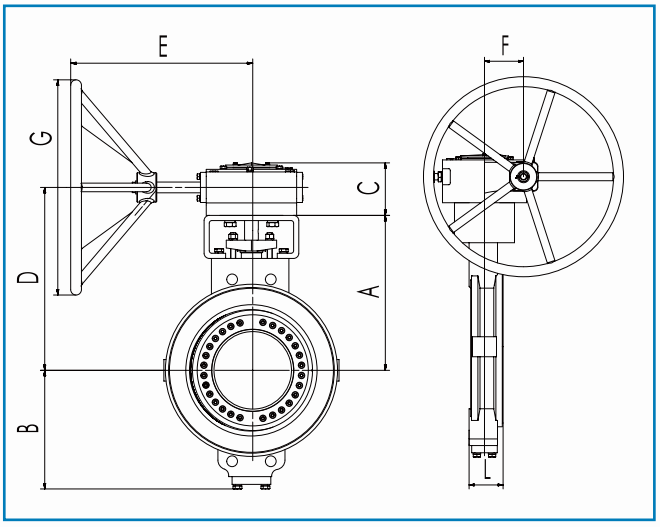
Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (kg)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	RF-L	
DN80	48	48	114	282	195	135.4	67	227	154	50	203	15	17	28	33	SW2
DN100	54	54	127	305	216	158	90	261	230	63	203	19	22	41	49	SW4
DN150	59	59	140	403	318	195.6	90	363	230	63	300	42	48	75	102	SW7
DN200	73	73	152	419	355	225.6	97	402	270	80	400	62	72	110	140	SW10
DN250	83	83	165	457	392	266.6	133	449	460	126	600	96	117	165	215	SW40
DN300	92	92	178	502	435	301.1	133	492	460	126	600	130	160	222	295	SW40
DN350	117	117	190	762	552	343.1	143	698	560	138	600	210	285	335	455	SW60
DN400	133	133	216	838	588	378.1	143	767	560	138	600	290	380	435	586	SW70
DN450	149	149	222	914	620	417.1	168	816	560	138	700	355	475	525	740	SW100
DN500	159	159	229	991	654	444.1	207	763	650	205	760	515	655	735	985	SW200
DN600	181	181	267	1143	729	519.1	207	838	650	205	760	650	905	1024	1425	SW200
DN750	229	229	318		913	626.5	239	1131	620	231	760					SW400
DN800	241	241	318		920	625	266	1131	740	256.75	900					SW600
DN900	241	241	330		1005	695	266	1223	740	256.75	900					SW600
DN1000	300	300	410		1032	755	266	1250	740	256.75	900					SW600

Triple Offset Butterfly Valve

Dimensions & Weights



Lug



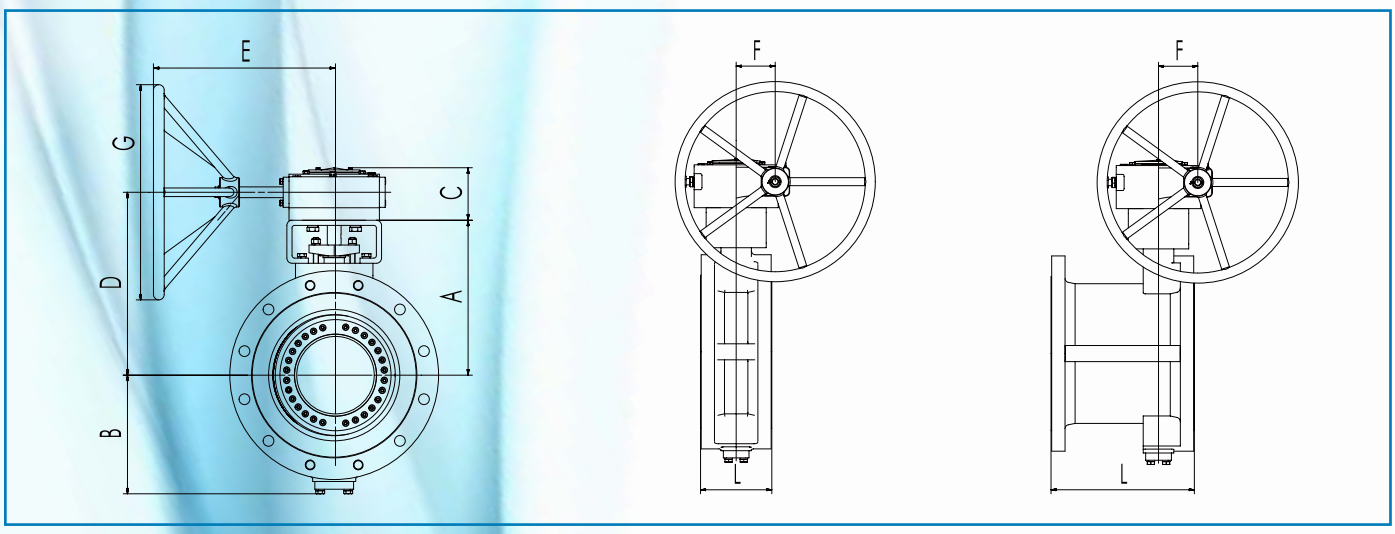
Wafer

Class 600 (inch)

Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (lb)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	RF-L	
4"	2.52	2.52	7.48	17.01	11.54	3.25	3.54	13.31	9.06	2.48	11.81	83.60	105.82	171.96	198.42	SW7
6"	3.07	3.07	8.27	22.01	13.70	9.14	5.16	15.83	16.54	4.72	19.69	171.60	205.03	308.65	374.79	SW20
8"	4.02	4.02	9.06	25.98	15.12	10.24	5.24	17.24	18.11	4.96	23.62	253.00	308.65	453.20	616.00	SW40
10"	4.61	4.61	9.84	30.98	20.24	12.22	5.63	25.98	22.05	5.43	23.62	418.00	529.11	748.00	990.00	SW60
12"	5.51	5.51	10.63	32.99	21.97	14.16	6.61	29.69	22.05	5.43	27.56	616.00	770.00	976.80	1320.00	SW100
14"	6.10	6.10	11.42	35.00	22.56	14.69	6.61	30.28	21.65	5.43	29.92	704.00	1146.40	1263.25	1829.83	SW130
16"	7.01	7.01	12.20	39.02	24.25	16.28	8.15	28.54	25.59	8.07	29.92	943.80	1399.93	1532.21	2204.62	SW200
18"	7.87	7.87	12.99	42.99	28.86	18.27	9.41	33.50	27.17	9.09	29.92	1227.60	1851.90	2336.90	3130.60	SW300
20"	8.50	8.50	13.78	47.01	29.65	19.67	9.41	38.23	24.41	9.09	29.92	1601.60	2400.83	2788.84	3858.09	SW400
24"	9.13	9.13	15.35	55.00	33.66	22.13	9.41	42.24	24.41	9.09	29.92	2189.00	3048.99	3622.19	4916.30	SW400

Triple Offset Butterfly Valve

Dimensions & Weights



Flange

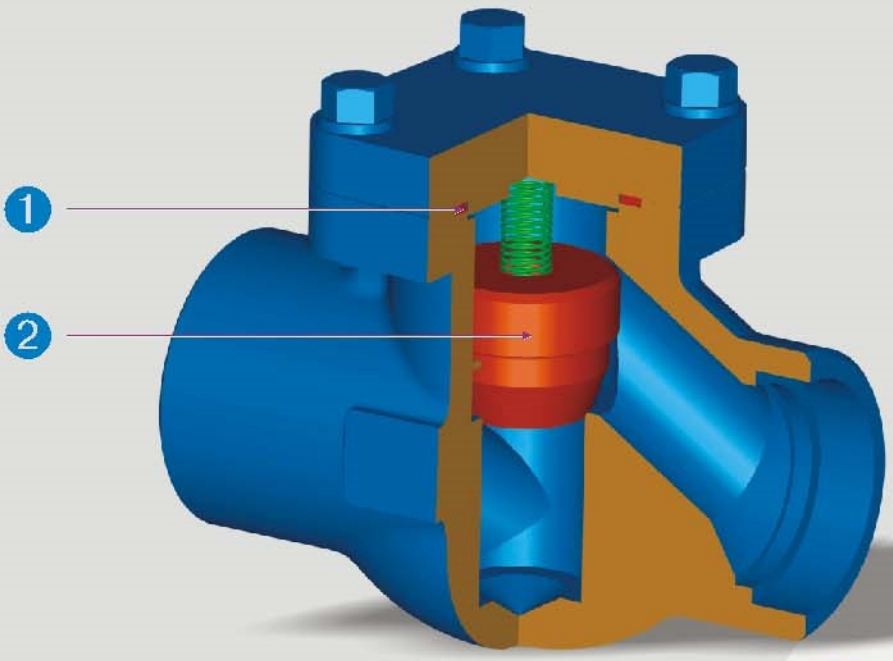
Class 600 (mm)

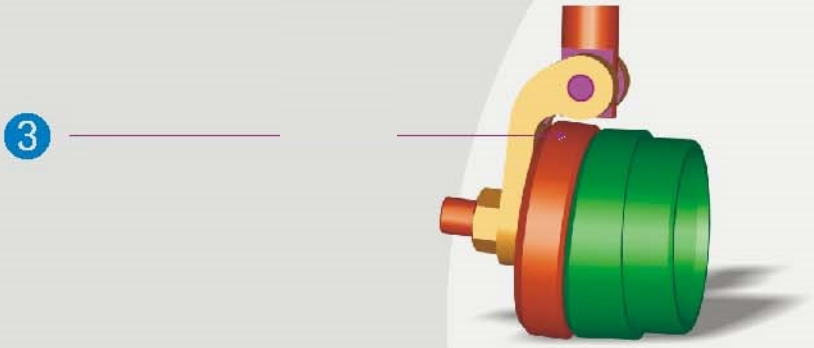
Size	L				Valve Dimensions				Gear Dimensions			Approx. Weight (kg)				Gear Model
	Wafer	Lug	RF-S	RF-L	A	B	C	D	E	F	G	Wafer	Lug	RF-S	RF-L	
DN100	64	64	190	432	293	82.6	90	338	230	63	300	38	48	78	90	SW7
DN150	78	78	210	559	348	232.1	131	402	420	120	500	78	93	140	170	SW20
DN200	102	102	230	660	384	260.1	133	438	460	126	600	115	140	206	280	SW40
DN250	117	117	250	787	514	310.5	143	660	560	138	600	190	240	340	450	SW60
DN300	140	140	270	838	558	359.6	168	754	560	138	700	280	350	444	600	SW100
DN350	155	155	290	889	573	373	168	769	550	138	760	320	520	573	830	SW130
DN400	178	178	310	991	616	413.5	207	725	650	205	760	429	635	695	1000	SW200
DN450	200	200	330	1092	733	464	239	851	690	231	760	558	840	1060	1420	SW300
DN500	216	216	350	1194	753	499.5	239	971	620	231	760	728	1089	1265	1750	SW400
DN600	232	232	390	1397	855	562	239	1073	620	231	760	995	1383	1643	2230	SW400

API 602 Forged Steel Check Valve

Forged Steel Check Valve

Design Features





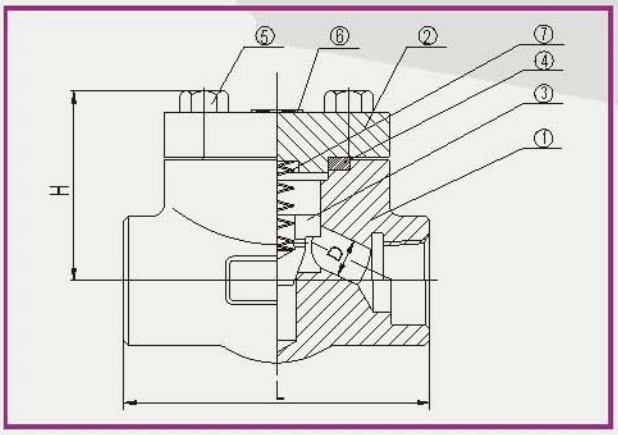
1. Recessed Body-Bonnet Joint design captures the stainless steel spiral wound gasket ensuring body/bonnet sealing integrity.

2. Body guided disc to ensure perfect alignment of disc and seat even under large flow conditions and high velocity.

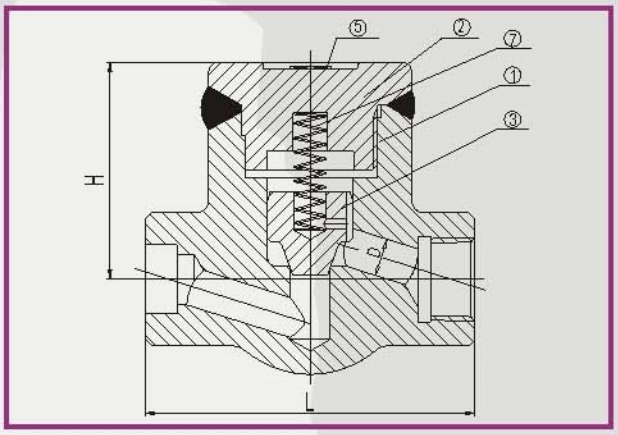
3. Piston type are standard, swing disc style available are available upon request.

Forged Steel Check Valve

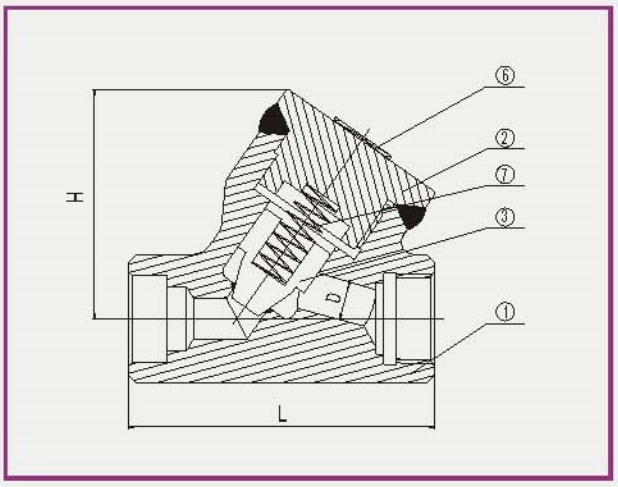
G.A. Drawing of Piston Valve



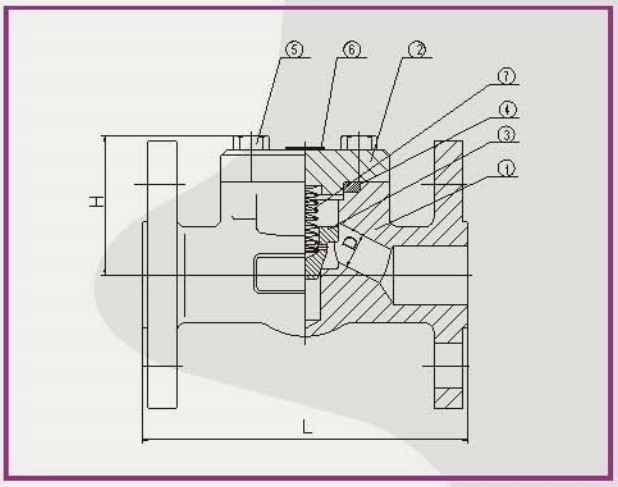
Bolted Cover



Welded Cover



Y Pattern Welded Cover



Integral Flanged Ends

Material List

NO.	Description of Parts	Material				
		Standard	High Temperature	Stainless Steel	Sour Service	Low Temp.
1	BODY	ASTM A105/STL OVERLAY	ASTM A182-F11/F22/ STL OVERLAY	ASTM A182-F304/F316/ STL OVERLAY	ASTM A105/STL OVERLAY	ASTM A350-LF2
2	BONNET	ASTM A105	ASTM A182-F11/F22	ASTM A182-F304/F316	ASTM A105	ASTM A182-F304/F316
3	DISC	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F304/F316	ASTM A182-F6a-NC	ASTM A182-F304/F316
4	GASKET	304SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE
5	STUD	ASTM A193-B7	ASTM A193-B16	ASTM A193-B8	ASTM A193-B7M	ASTM A320-L7M
6	NAME PLATE	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304
7	SPRING	ASTM A276-316	ASTM A276-316	ASTM A276-316	ASTM A276-316	ASTM A276-316

Forged Steel Check Valve

Dimensions of Piston Valve

Class 800 — Piston Type Bolted Cover or Welded Cover

Regular and Full Port - EN ISO 15761. Bolted Cover or Welded Cover - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		-	
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			76	2.99	76	2.99	86	3.39	102	4.02	140	5.51	140	5.51	170	6.69	210	8.26
Bore Diameter	D		6.4	0.25	9.5	0.37	12.7	0.5	17.5	0.69	23.8	0.94	28.6	1.13	36.5	1.44	44.5	1.75
Center to Top (Open)	H	Bolted Bonnet	42	1.65	42	1.65	47	1.85	56	2.2	68	2.68	68	2.68	87	3.43	100	3.94
		Welded Bonnet	-	-	49	1.9	59	2.3	70.5	2.8	96	3.8	96	3.8	125.5	4.9	-	-
Approx. Weight	Kg/Lb		1	2.2	1	2.2	1.5	3.3	2.5	5.5	4	8.8	4	8.8	7.5	16.5	11	24.2

Class 800 — Y Pattern Welded Cover

Full Port - EN ISO 15761. Welded Cover - Threaded and Socket Weld Ends

Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			-	-	80	3.15	80	3.15	90	3.54	110	4.33	125	4.92	155	6.1	180	7.09
Bore Diameter	D		-	-	9.5	0.37	12	0.47	17	0.67	23	0.91	29	1.147	36	1.42	44	1.73
Center to Top (Open)	H		-	-	68.5	2.70	68.5	2.70	78.5	3.09	89.5	3.52	105.5	4.15	123.5	4.86	147.5	5.81
Approx. Weight	Kg/Lb		-	-	1.5	3.3	1.5	3.3	2	4.4	4.5	9.9	5	11	8	17.6	11	24.2

Class 1500 — Piston Type Bolted Cover or Welded Cover

Regular and Full Port - EN ISO 15761. Bolted Cover or Welded Cover - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		2-1/2	
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			90	3.54	90	3.54	104	4.09	120	4.72	150	5.91	150	5.91	180	7.09	210	8.26
Bore Diameter	D		7	0.28	9	0.35	12	0.47	15	0.59	21	0.83	27	1.06	32	1.26	37.5	1.48
Center to Top (Open)	H	Bolted Bonnet	-	-	56	2.2	62	2.4	72	2.8	92.5	3.6	92.5	3.6	111	4.4	-	-
		Welded Bonnet	-	-	61.5	2.4	68.5	2.7	72.5	2.9	83.5	3.3	83.5	3.3	100.5	4	-	-
Approx. Weight	Kg/Lb		1.5	3.3	1.5	3.3	2.5	5.5	4	8.8	6	13.2	9.5	20.9	15	33	14.5	31.9

CLASS 1500 — Piston Type RTJ Cover

Full Port - EN ISO 15761. RTJ Cover - Threaded and Socket Weld Ends

Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			-		-		104	4.09	120	4.72	150	5.91	-		180	7.09	210	8.27
Bore Diameter	D		-		-		12	0.47	15	0.59	21	0.83	-		32	1.26	37.5	1.48
Center to Top (Open)	H		-		-		100	3.93	130	5.11	145	5.7	-		160	6.29	195	7.67
Approx. Weight	Kg/Lb		-		-		4	8.8	7.5	16.5	9	19.8	-		18.5	40.7	30	66

Forged Steel Check Valve

Dimensions of Piston Valve

Class 1500 Y Pattern Welded Cover

Full Port - EN ISO 15761 .Welded Cover - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		80	3.15	80	3.15	90	3.54	110	4.33	125	4.92	155	6.1	180	7.09	200	7.87
Bore Diameter	D	7	0.27	9	0.35	12	0.47	15	0.59	21	0.83	27	1.06	32	1.26	39	1.53
Center to Top (Open)	H	72	2.83	72	2.83	82	3.23	85	3.35	100	3.93	120	4.72	145	5.71	155	6.10
Approx. Weight	Kg/Lb	1.5	3.3	1.5	3.3	1.5	3.3	3.2	7	3.2	7	6	13.2	6.2	13.6	9.5	20.9

Class 2500 Piston Type Welded Cover

Full Port - B16.34 .Welded Cover - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		127	5	155	6.1	170	6.69	-		232	9.13	235	9.25
Bore Diameter	D	-		-		13	0.51	17	0.67	21	0.83	-		27	1.06	35	1.37
Center to Top (Open)	H	-		-		80	3.14	98	3.85	110	4.33	-		140	5.51	170	6.69
Approx. Weight	Kg/Lb	-		-		5	11	8	17.6	10	22	-		21.5	47.3	21.3	46.9

Class 2500 Piston Type RTJ Cover

Full Port - B16.34 .RTJ Cover - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		150	5.9	150	5.9	210	8.26	-		235	9.25	235	9.25
Bore Diameter	D	-		-		13	0.51	17	0.67	21	0.83	-		29.5	1.16	35	1.37
Center to Top (Open)	H	-		-		130	5.11	130	5.11	160	6.29	-		195	7.67	195	7.67
Approx. Weight	Kg/Lb	-		-		7	15.4	7	15.4	17.5	38.5	-		29	63.8	29	63.8

Class 2500 Y PATTERN Welded Cover

Full Port - B16.34 .Welded Cover - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		80	3.15	90	3.54	110	4.33	125	4.92	155	6.1	180	7.09	200	7.87	225	8.86
Bore Diameter	D	7	0.27	9	0.35	11	0.43	15	0.59	19.5	0.76	27.5	1.08	31.5	1.24	39.5	1.55
Center to Top (Open)	H	115	4.52	115	4.52	115	4.52	120	4.72	150	5.9	150	5.9	160	6.3	170	6.69
Approx. Weight	Kg/Lb	3.2	7	3.2	7	3.5	7.7	6.2	13.6	5.6	13.6	5.6	13.6	10.4	22.9	14	30.8

Forged Steel Check Valve

Dimensions of Piston Valve

Class 150-300-600 Bolted cover & Integral Flanged Ends

Regular Port - EN ISO 15761.Bolted Cover - Integral Flanged Ends according to ASME B 16.5

Regular Port		Size	1/2		3/4		1		1-1/2		2	
End to End			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
	Class 150	L	108	4.25	117	4.62	127	5	165	6.5	203	8
	Class 300	L	152	6	178	7	203	8	229	9	267	10.5
	Class 600	L	165	6.5	190	7.5	216	8.5	241	9.5	292	11.5
Bore Diameter		D	9.5	0.37	12.7	0.5	17.5	0.69	28.6	1.13	36.5	1.44
Center to Top (Open)		H	50	1.97	54	2.13	68	2.68	78	3.07	96	3.78
Approx. Weight	Class 150	Kg/Lb	2.5	5.5	3.3	7.3	4.3	9.5	9	19.8	13	28.6
	Class 300	Kg/Lb	3	6.6	3.8	8.4	5.2	11.5	10.5	23.1	15	33
	Class 600	Kg/Lb	3.5	7.7	4.5	9.9	6	13.2	12	26.4	17	37.4

End to End dimensions according to ASME B 16.10

Class 1500 RTJ Cover & Integral Flanged Ends

Full Port - EN ISO 15761.RTJ Cover - Integral Flanged Ends according to ASME B 16.5

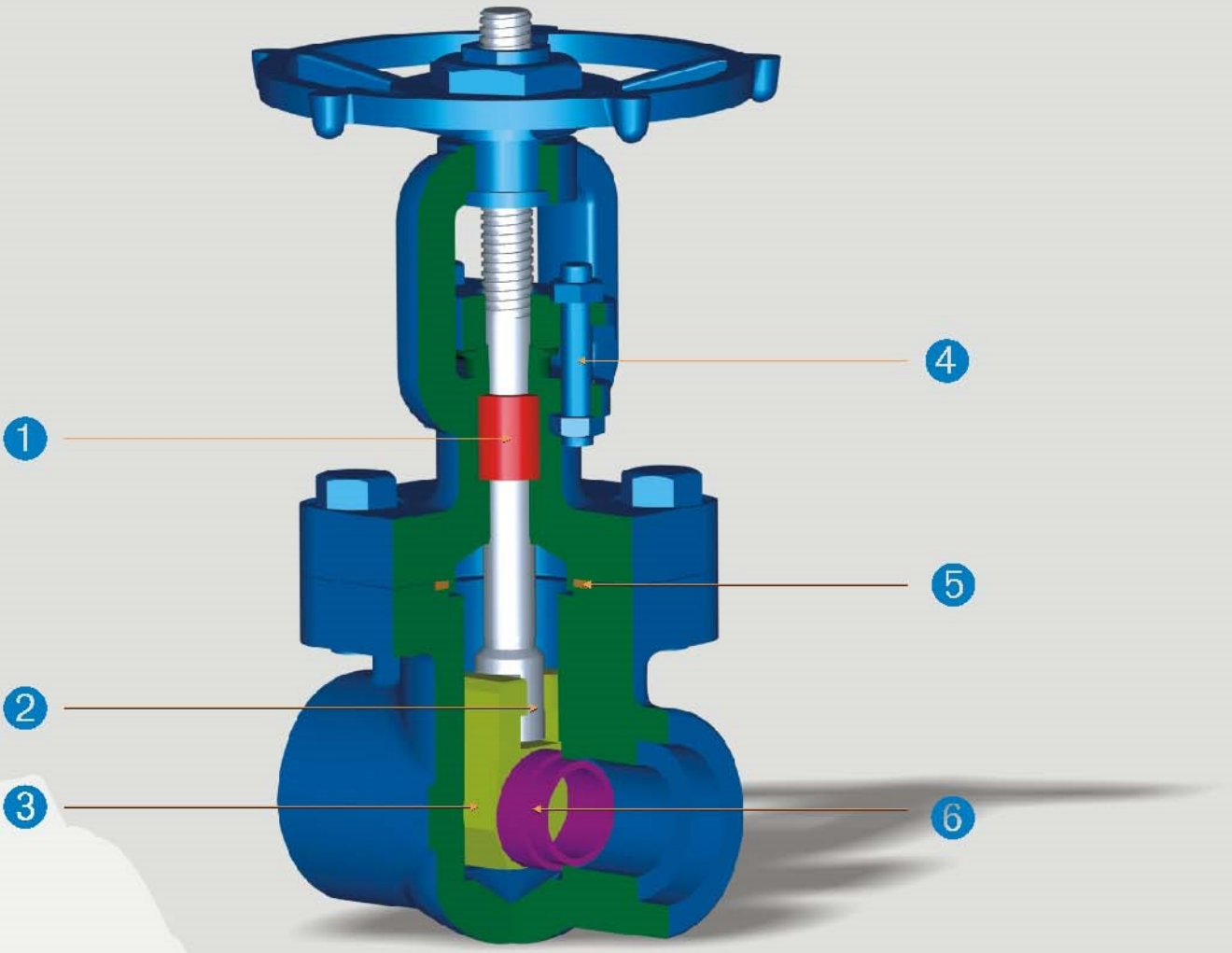
Full Port	Size	1/2		3/4		1		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		216	8.5	229	9	254	10	305	12	368	14.5
Bore Diameter	D	13	0.51	17	0.67	21	0.83	33	1.30	37.5	1.48
Center to Top (Open)	H	100	3.93	130	5.11	145	5.7	160	6.29	195	7.67
Approx. Weight	Kg/Lb	7	15.4	9	19.8	15	33	21	46.2	28	61.6

End to End dimensions according to ASME B 16.10

API 602 Forged Steel Gate Valve

Forged Steel Gate Valve

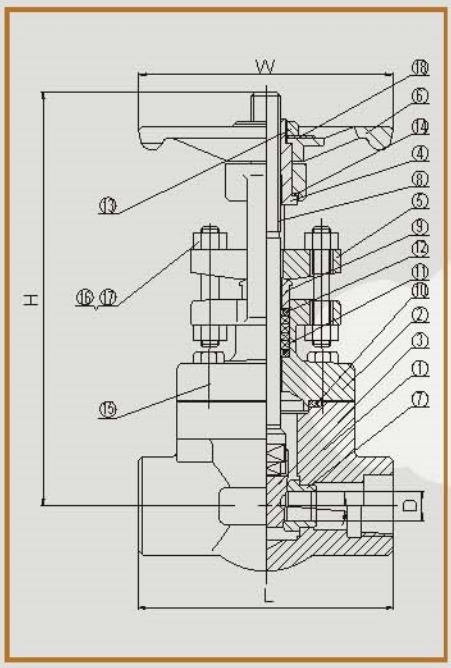
Design Features



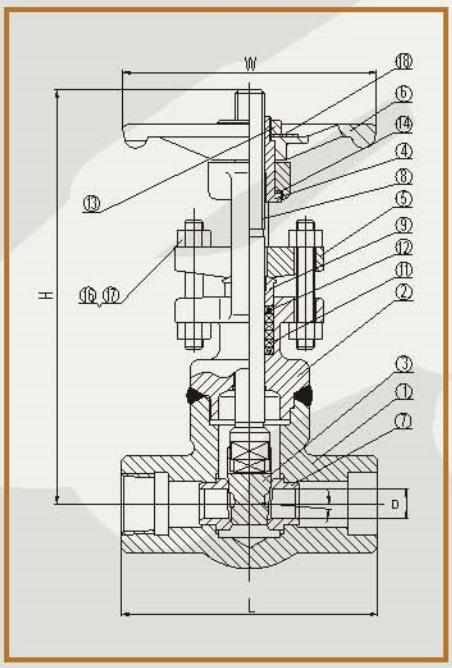
1. A positive backseat, high quality packing material and improved stuffing box design ensure tighter stem seal.
2. The T-head stem design provides positive disc to stem connection and ensures effective seating operation.
3. Fully guided solid wedge reduces wear on seating surfaces.
4. Stud and bolt arrangement facilitates packing maintenance.
5. Recessed Body-Bonnet Joint design captures the stainless steel spiral wound gasket ensuring body/bonnet sealing integrity.
6. Rolled-in seat design ensures tight and effective seat assembly.

Forged Steel Gate Valve

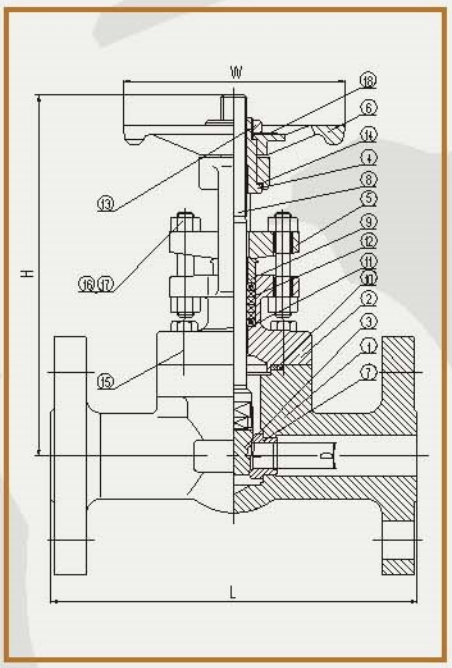
G.A. Drawing



Bolted Bonnet



Welded Bonnet



Integral Flanged Ends

Material List

NO.	Description of Parts	Material				
		Standard	High Temperature	Stainless Steel	Sour Service	Low Temp.
1	BODY	ASTM A105 N	ASTM A182-F11/F22	ASTM A182-F304/F316	ASTM A105	ASTM A350-LF2
2	BONNET	ASTM A105 N	ASTM A182-F11/F22	ASTM A182-F304/F316	ASTM A105	ASTM A350-LF2
3	WEDGE	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F304/F316	ASTM A182-F6a-NC	ASTM A182-F304/F316
4	STEM NUT	ASTM A276-420	ASTM A276-420	ASTM A276-420	ASTM A276-420	ASTM A276-420
5	GLAND FLANGE	ASTM A216 WCB	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352 LCB
6	HANDWHEEL	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON
7	SEAT RING	ASTM A276-410/ STL OVERLAY	ASTM A276-410/ STL. OVERLAY	ASTM A182-F304/F316/ STL.6 OVERLAY	ASTM A276-410/ STL OVERLAY-NC	ASTM A276-410/ ATL OVERLAY
8	STEM	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F304/F316	ASTM A182-F6a-NC	ASTM A182-F304/F316
9	GLAND	ASTM A276-420	ASTM A276-420	ASTM A240-304/316	ASTM A276-420-NC	ASTM A240-304/316
10	GASKET	304SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE
11	PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
12	PACKING	CARBON YARN	CARBON YARN	CARBON YARN	CARBON YARN	CARBON YARN
13	HANDWHEEL NUT	CARBON STEEL	CARBON STEEL	ASTM A276-304	CARBON STEEL	ASTM A276-304
14	WASHER	ASTM A276-304	ASTM A276-304	ASTM A276-304	ASTM A276-304	ASTM A276-304
15	STUD	ASTM A193-B7	ASTM A193-B16	ASTM A193-B8	ASTM A193-B7M	ASTM A320 L7M
16	BOLT	ASTM A193-B8	ASTM A193-B8	ASTM A193-B8	ASTM A193-B8A	ASTM A193-B8
17	NUT	ASTM A194-8	ASTM A194-8	ASTM A194-8	ASTM A194-8A	ASTM A194-8
18	NAME PLATE	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304

Forged Steel Gate Valve

Dimensions

Class 800 Bolted Bonnet or Welded Bonnet

Regular and Full Port - API602 - EN ISO 15761 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		-		
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2		
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
			82	3.23	82	3.23	86	3.39	102	4.02	118	4.65	118	4.65	132	5.2	150	5.91	
Bore Diameter	D		6.4	0.25	9.5	0.37	12.7	0.5	17.5	0.69	23.8	0.94	28.6	1.13	36.5	1.44	44	1.73	
Center to Top (Open)	H	Bolted Bonnet	157	6.18	157	6.18	164	6.46	198	7.80	256	10.08	263	10.35	297	11.69	346	13.62	
		Welded Bonnet	138	5.43	158	6.22	165	6.50	197	7.76	260	10.24	265	10.43	300	11.81	-	-	
Handwheel	W		90	3.54	90	3.54	90	3.54	110	4.33	150	5.91	150	5.91	150	5.91	180	7.09	
Approx. Weight	Kg/Lb		1.5	3.3	1.5	3.3	2	4.5	3	6.5	4	9	5.5	12	7.5	16.5	10.5	23	

Class 1500 Bolted Bonnet or Welded Bonnet

Regular and Full Port - API602 - EN ISO 15761 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		-		
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2		
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
			90	3.54	90	3.54	104	4.1	120	4.72	130	5.12	130	5.12	150	5.91	210	8.27	
Bore Diameter	D		6.4	0.25	9.5	0.37	12.7	0.5	16	0.63	22.5	0.89	27	1.06	35	1.38	38.1	1.5	
Center to Top (Open)	H	Bolted Bonnet	173	6.81	173	6.81	200	7.87	235	9.25	265	10.43	272	10.71	340	13.39	380	14.96	
		Welded Bonnet	177.2	7	177.2	7	205.5	8.1	239.8	9.4	270.8	10.7	275.8	10.9	325.3	12.8	-	-	
Handwheel	W		90	3.54	90	3.54	110	4.33	150	5.91	150	5.91	150	5.91	180	7.08	180	7.09	
Approx. Weight	Kg/Lb		2.5	5.5	2.5	5.5	3.5	7.7	5.5	12.1	8.5	18.7	8.5	18.7	14.5	31.9	20	44	

Class 1500 RTJ Bonnet

Full Port - EN ISO 15761 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
		-		-		110	4.33	150	5.9	150	5.9	-		210	8.26	235	8.26	
Bore Diameter	D	-		-		14	0.55	19	0.75	24	0.94	-		37	1.45	48	1.89	
Center to Top (Open)	H	-		-		227	8.93	300	11.8	307	12	-		400	15.7	448	17.6	
Handwheel	W	-		-		110	4.33	150	5.91	150	5.91	-		180	7.08	180	7.09	
Approx. Weight	Kg/Lb	-		-		5	11	10	22	11.5	25.3	-		22	48.4	37	81.5	

Class 2500 Welded Bonnet

Full Port - B16.34 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	
		-		-		127	5.00	178	7.01	186	7.32	-		232	9.13	235	9.25	
Bore Diameter	D	-		-		14	0.55	19	0.75	24	0.94	-		37	1.45	37	1.45	
Center to Top (Open)	H	-		-		214	8.42	295	11.62	380	14.96	-		440	17.32	430	16.9	
Handwheel	W	-		-		130	5.12	150	5.91	180	7.09	-		250	9.84	250	9.84	
Approx. Weight	Kg/Lb	-		-		6	13.2	7	15.4	10	22	-		26	57.3	26	57.3	

Forged Steel Gate Valve

Dimensions

Class 2500 RTJ Bonnet

Full Port - B16.34. Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		150	5.9	150	5.9	210	8.26	-		235	9.25	235	9.25
Bore Diameter	D	-		-		14	0.55	19	0.75	24	0.94	-		36.5	1.44	36.5	1.44
Center to Top (Open)	H	-		-		293	11.5	300	11.8	390	15.4	-		429	16.89	429	16.89
Handwheel	W	-		-		130	5.12	130	5.12	200	7.87	-		250	9.84	250	9.84
Approx. Weight	Kg/Lb	-		-		10	22	10	22	22	48.4	-		34	74.8	34	74.8

Class 150-300-600 Bolted Bonnet & Integral Flanged Ends

Regular Port - API602 - EN ISO 15761. Outside Screw & Yoke - Integral Flanged Ends according to ASME B 16.5

Regular Port		Size	1/2		3/4		1		1-1/2		2	
			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
End to End	Class 150	L	108	4.25	117	4.62	127	5	165	6.5	178	7
	Class 300	L	140	5.5	152	6	165	6.5	190	7.5	216	8.5
	Class 600	L	165	6.5	190	7.5	216	8.5	241	9.5	292	11.5
Bore Diameter		D	9.5	0.37	12.7	0.5	17.5	0.69	28.6	1.13	36.5	1.44
Center to Top (Open)		H	177	6.97	185	7.28	213	8.39	265	10.43	300	11.81
Handwheel		W	90	3.54	90	3.54	110	4.33	150	5.91	150	5.91
Approx. Weight	Class 150	Kg/Lb	3	6.6	3.8	8.3	4.8	10.6	10	22	15	33
	Class 300	Kg/Lb	3.4	7.5	4.5	9.9	5.7	12.5	11.5	25.3	17	37.4
	Class 600	Kg/Lb	4	8.8	5.2	11.4	6.6	14.5	12.7	28	18	39.6

End to End dimensions according to ASME B 16.10

Class 1500 RTJ Bonnet & Integral Flanged Ends

Full Port - API602 - EN ISO 15761. Outside Screw & Yoke - Integral Flanged Ends according to ASME B 16.5

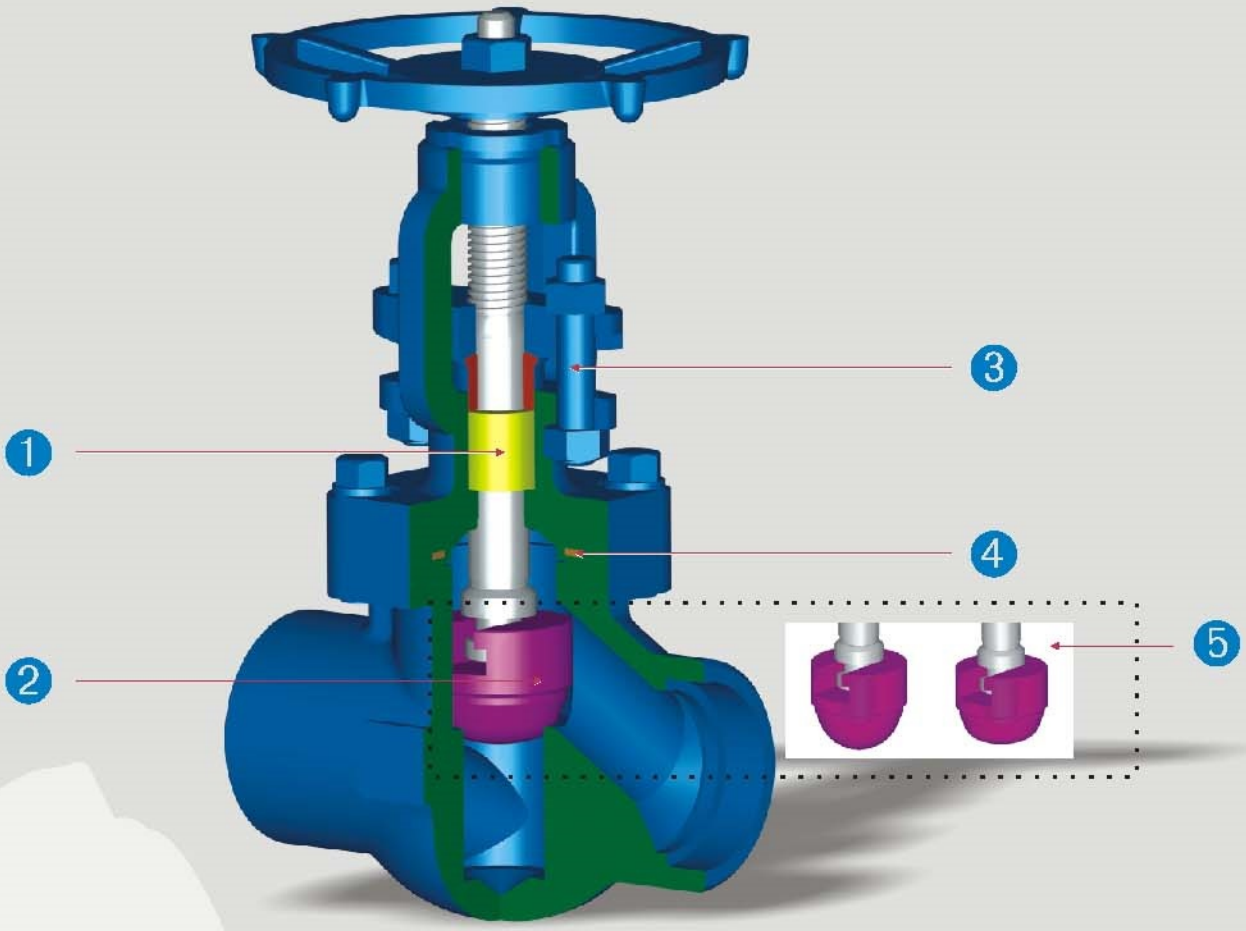
Full Port	Size	1/2		3/4		1		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		254	10	305	12	368	14.5
Bore Diameter	D	-		-		24	0.94	37	1.45	48	1.89
Center to Top (Open)	H	-		-		300	11.8	390	15.3	420	16.5
Handwheel	W	-		-		150	5.91	150	5.91	200	7.87
Approx. Weight	Kg/Lb	-		-		19	41.8	28	61.6	31	68.2

End to End dimensions according to ASME B 16.10

API 602 Forged Steel Globe Valve

Forged Steel Globe Valve

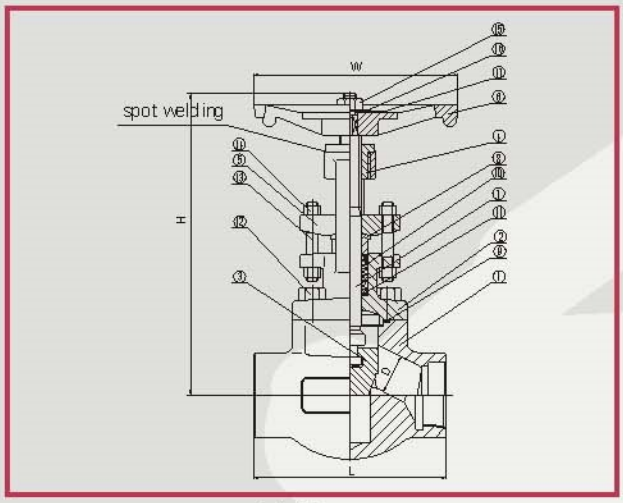
Design Features



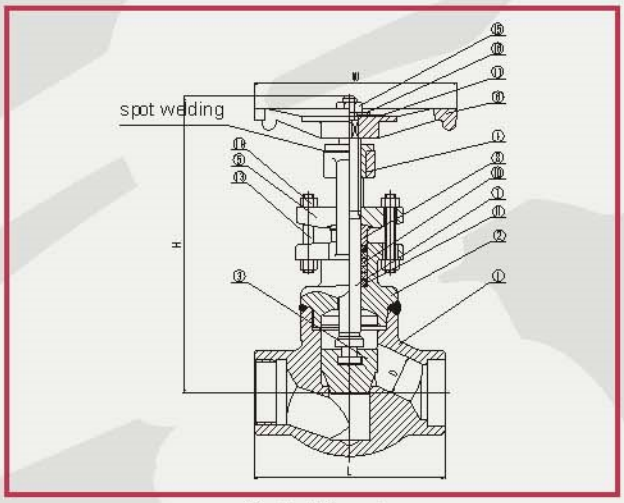
1. A positive backseat, high quality packing material and improved stuffing box design ensure tighter stem seal.
2. Fully guided solid disc ensures perfect alignment of disc and seat and reduces wear on seating surfaces.
3. Stud and bolt arrangement facilitates packing maintenance.
4. Recessed Body-Bonnet Joint design captures the stainless steel spiral wound gasket ensuring body/bonnet sealing integrity.
5. Plug style discs are standard; others are available upon request.

Forged Steel Globe Valve

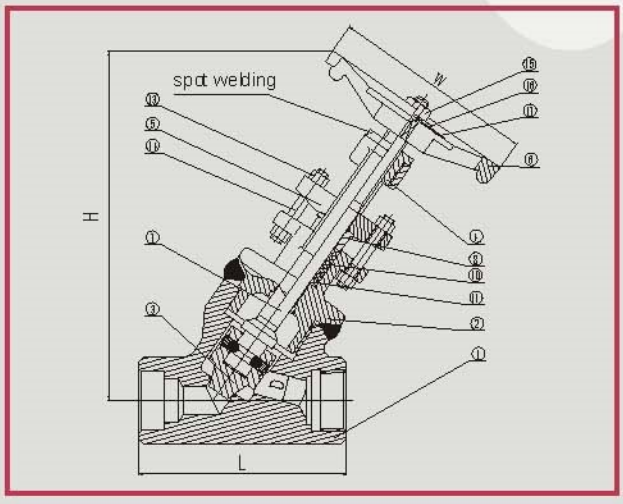
G.A. Drawing



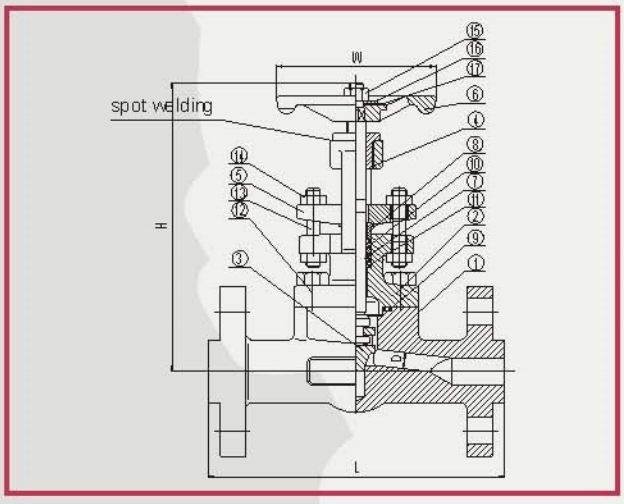
Bolted Bonnet



Welded Bonnet



Y Pattern Welded Bonnet



Integral Flanged Ends

Material List

NO.	Description of Parts	Material				
		Standard	High Temperature	Stainless Steel	Sour Service	Low Temp.
1	BODY	ASTM A105/STL.OVERLAY	ASTM A182-F11/F22/ STL OVERLAY	ASTM A182-F304/F316/ STL OVERLAY	ASTM A105/STL OVERLAY	ASTM A350 LF2/OVERLAY
2	BONNET	ASTM A105	ASTM A182-F11/F22	ASTM A182-F304/F316	ASTM A105	ASTM A350- LF2
3	DISC	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F304/F316	ASTM A182-F6a-NC	ASTM A182-F304/F316
4	STEM NUT	ASTM A276-420	ASTM A276-420	ASTM A276-420	ASTM A276-420	ASTM A276-420
5	GLAND FLANGE	ASTM A216 WCB	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A352-LCB
6	HAND WHEEL	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON
7	STEM	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F304/F316	ASTM A182-F6a-NC	ASTM A182-F304/F316
8	GLAND	ASTM A276-420	ASTM A276-420	ASTM A276-304/316L	ASTM A276-420-NC	ASTM A276-304/316
9	GASKET	304SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE	304SS/SPIRAL WOUND GRAPHITE	304/316SS/SPIRAL WOUND GRAPHITE
10	PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
11	PACKING	CARBON YARN	CARBON YARN	CARBON YARN	CARBON YARN	CARBON YARN
12	STUD	ASTM A193-B7	ASTM A193-B16	ASTM A193-B8	ASTM A193-B7M	ASTM A320 L7M

Material List

NO.	Description of Parts	Material				
		Standard	High Temperature	Stainless Steel	Sour Service	Low Temp.
13	BOLT	ASTM A193-B8	ASTM A193-B8	ASTM A193-B8	ASTM A193-B8A	ASTM A193-B8
14	NUT	ASTM A194-8	ASTM A194-8	ASTM A194-8	ASTM A194-8A	ASTM A194-8
15	HANDWHEEL NUT	CARBON STEEL	CARBON STEEL	ASTM A276-304	CARBON STEEL	ASTM A276-304
16	HANDWHEEL WASHER	CARBON STEEL	CARBON STEEL	ASTM A276-304	CARBON STEEL	ASTM A276-304
17	NAME PLATE	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304	ASTM A240-304

Class 800 Bolted Bonnet or Welded Bonnet

Regular and Full Port - EN ISO 15761 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		-	
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			76	2.99	76	2.99	86	3.39	102	4.02	140	5.51	140	5.51	170	6.7	210	8.26
Bore Diameter	D		6.4	0.25	9.5	0.37	12.7	0.5	17.5	0.69	23.8	0.94	28.6	1.13	36.5	1.44	44.5	1.75
Center to Top (Open)	H	Bolted Bonnet	136.3	5.4	136.3	5.4	141.3	5.6	174.3	6.9	210	8.27	210	8.27	245	9.65	-	-
		Welded Bonnet	151.3	6	151.3	6	166.3	6.5	206.3	8.1	272.3	10.7	281.3	11.1	350.2	13.8	-	-
Handwheel	W		90	3.54	90	3.54	90	3.54	110	4.33	150	5.91	150	5.91	150	5.91	180	7.09
Approx. Weight	Kg/Lb		2	4.4	2	4.4	2.5	5.5	3.5	7.7	7	15.4	7	15.4	10.5	23.1	15	33

Class 800 Y Pattern Welded Bonnet

Full Port - EN ISO 15761.Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		80	3.15	80	3.15	90	3.54	110	4.33	125	4.92	155	6.1	180	7.09
Bore Diameter	D	-		9.5	0.37	12	0.47	17	0.67	23	0.86	29	1.14	36	1.42	44	1.73
Center to Top (Open)	H	-		159	6.26	188	7.40	225	8.86	255	10.04	300	11.81	345	13.58	400	15.75
Handwheel	W	-		90	3.54	90	3.54	110	4.33	150	5.91	150	5.91	150	5.91	180	7.09
Approx. Weight	Kg/Lb	-		2	4.4	2	4.4	3	6.6	4.2	9.24	5.2	11.4	9.5	20.9	11	24.2

Class 1500 Bolted Bonnet or Welded Bonnet

Regular and Full Port - EN ISO 15761 .Outside Screw & Yoke - Threaded and Socket Weld Ends

Regular Port	Size		3/8		1/2		3/4		1		1-1/4		1-1/2		2		2-1/2	
Full Port	Size		1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L		mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
			90	3.54	90	3.54	104	4.09	120	4.72	150	5.91	150	5.91	180	7.09	210	8.62
Bore Diameter	D		6	0.24	9	0.35	12	0.47	15	0.59	21	0.83	27	1.06	32	1.26	37.5	1.48
Center to Top (Open)	H	Bolted Bonnet	166	6.54	166	6.54	192	7.56	227	8.94	280	11.00	280	11.00	312	12.30	316	12.40
		Welded Bonnet	179.7	7.1	179.7	7.1	207.2	8.2	239.7	9.4	281.8	11.1	285.8	11.3	316.3	12.5	-	-
Handwheel	W		90	3.54	90	3.54	110	4.33	150	5.90	150	5.90	180	7.09	180	7.09	180	7.09
Approx. Weight	Kg/Lb		2.5	5.5	2.5	5.5	3	6.6	5.5	12.1	8.5	18.7	8.5	18.7	14.5	31.9	18	39.6

Forged Steel Globe Valve

Dimensions

Class 1500 RTJ Bonnet

Full Port - ENISO15761.Outside Screw &Yoke- Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		110	4.33	150	5.9	150	5.9	-		210	8.26	235	9.25
Bore Diameter	D	-		-		13	0.51	17	0.67	21	0.83	-		33	1.3	37.5	1.48
Center to Top (Open)	H	-		-		235	9.25	265	10.4	310	12.2	-		370	14.5	435	17.1
Handwheel	W	-		-		110	4.33	130	5.11	130	5.11	-		180	7.09	180	7.09
Approx. Weight	Kg/Lb	-		-		5	11	11	24.2	12	26.4	-		22	48.4	37	81.5

Class 1500 Y Pattern Welded Bonnet

Full Port - ENISO15761.Outside Screw &Yoke- Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		80	3.15	80	3.15	90	3.54	110	4.33	125	4.92	155	6.10	180	7.09	200	7.87
Bore Diameter	D	7	0.27	9	0.35	12	0.47	15	0.59	21	0.83	27	1.06	32	1.26	39	1.53
Center to Top (Open)	H	170	6.70	170	6.70	200	7.87	238	9.37	272	10.71	338	13.31	326	12.83	376	14.80
Handwheel	W	90	3.54	90	3.54	110	4.33	150	5.90	150	5.90	180	7.08	180	7.08	200	7.87
Approx. Weight	Kg/Lb	2	4.4	2	4.4	3	6.6	4.2	9.2	5.2	11.4	9.5	20.9	11	24.2	15	33

Class 2500 Welded Bonnet

Full Port - B16.34.Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		120	4.72	140	5.51	186	7.32	-		232	9.13	279	10.98
Bore Diameter	D	-		-		13	0.51	17	0.67	21	0.83	-		29.5	1.16	35	1.37
Center to Top (Open)	H	-		-		205	8.07	260	10.24	302	11.89	-		340	13.39	390	15.35
Handwheel	W	-		-		150	5.91	180	7.09	200	7.87	-		250	9.84	350	13.78
Approx. Weight	Kg/Lb	-		-		7	15.4	9	19.8	12.5	27.5	-		26	57.2	27	59.4

Class 2500 RTJ Bonnet

Full Port - B16.34.Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		-		-		150	5.9	150	5.9	210	8.26	-		235	9.25	235	9.25
Bore Diameter	D	-		-		13	0.51	17	0.67	21	0.83	-		29.5	1.16	35	1.37
Center to Top (Open)	H	-		-		265	10.4	265	10.4	360	14.1	-		430	16.9	435	17.1
Handwheel	W	-		-		130	5.12	130	5.12	250	9.84	-		300	11.8	300	11.8
Approx. Weight	Kg/Lb	-		-		10	22	10	22	20	44	-		34	74.8	34	74.8

Forged Steel Globe Valve

Dimensions

Class 2500 Y Pattern Welded Bonnet

Full Port - B16.34.Outside Screw & Yoke - Threaded and Socket Weld Ends

Full Port	Size	1/4		3/8		1/2		3/4		1		1-1/4		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		110	4.33	110	4.33	110	4.33	125	4.92	180	7.09	180	7.09	200	7.87	230	9.06
Bore Diameter	D	7	0.27	9	0.35	11	0.43	15	0.59	19.5	0.76	27.5	1.08	31.5	1.24	39.5	1.55
Center to Top (Open)	H	240	9.45	240	9.45	240	9.45	275	10.83	325	12.80	370	14.56	375	14.76	450	17.72
Handwheel	W	130	5.11	130	5.11	150	5.91	150	5.91	180	7.08	180	7.08	200	7.87	300	11.81
Approx. Weight	Kg/Lb	4.5	9.9	4.5	9.9	4.5	9.9	7	15.4	7.5	16.5	10	22	14.5	31.9	24	52.8

Class 150-300-600 Bolted Bonnet & Integral Flanged Ends

Regular Port - EN ISO 15761.Outside Screw & Yoke - Integral Flanged Ends according to ASME B16.5

Regular Port		Size	1/2		3/4		1		1-1/2		2	
End to End			mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
	Class 150	L	108	4.25	117	4.62	127	5	165	6.5	203	8
	Class 300	L	152	6	178	7	203	8	229	9	267	10.5
	Class 600	L	165	6.5	190	7.5	216	8.5	241	9.5	292	11.5
Bore Diameter		D	9.5	0.37	12.7	0.5	17.5	0.69	28.6	1.13	36.5	1.44
Center to Top (Open)		H	145	5.71	150	5.91	187.5	7.17	223	8.78	263	10.35
Handwheel		W	90	3.54	90	3.54	110	4.33	150	5.91	150	5.91
Approx. Weight	Class 150	Kg/Lb	3.5	7.7	4.3	9.5	5.3	11.7	12	26.4	16	35.2
	Class 300	Kg/Lb	4	8.8	4.8	10.6	6.2	13.6	13.5	29.7	18	39.6
	Class 600	Kg/Lb	4.5	9.9	5.5	12.1	7	15.4	15	33	20	44

End to End dimensions according to ASMEB 16.10

Class 1500 RTJ Bonnet & Integral Flanged Ends

Full Port - EN ISO 15761.Outside Screw & Yoke - Integral Flanged Ends according to ASMEB 16.5

Full Port	Size	1/2		3/4		1		1-1/2		2	
End to End	L	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.
		216	8.5	229	9	254	10	305	12	368	14.5
Bore Diameter	D	13	0.51	17	0.67	21	0.83	33	1.30	37.5	1.48
Center to Top (Open)	H	260	10.2	300	11.8	300	11.8	390	15.3	420	16.5
Handwheel	W	110	4.33	110	4.33	150	5.90	200	7.87	250	9.84
Approx. Weight	Kg/Lb	9	19.8	10	22	19	41.8	28	61.6	32	70.4

End to End dimensions according to ASMEB 16.10

API 603 Cast Stainless Steel Valve

Product Introduction

DC series valves are thin walled valve designs which take advantage of the non-corrosive nature of the material to reduce wall thickness. These valves are built to meet all ASME B16.34 requirements and reduce excessive bulkiness to the valve, saving weight and material.

Product Introduction

Size Range:	1/2"~24" (15~600 mm)
Wall Thickness:	ASME B16.34
Valve Type:	Gate Valve, Globe Valve, Check Valve
Rating :	CLASS 150~600 (PN20~100)
Body Materials:	Stainless Steel
End Connection:	Flanged; Threaded; Socket Weld
Application:	Petrochemical, Pulp and paper, Chemical; Medicine, Food Industrial etc...

Product Range

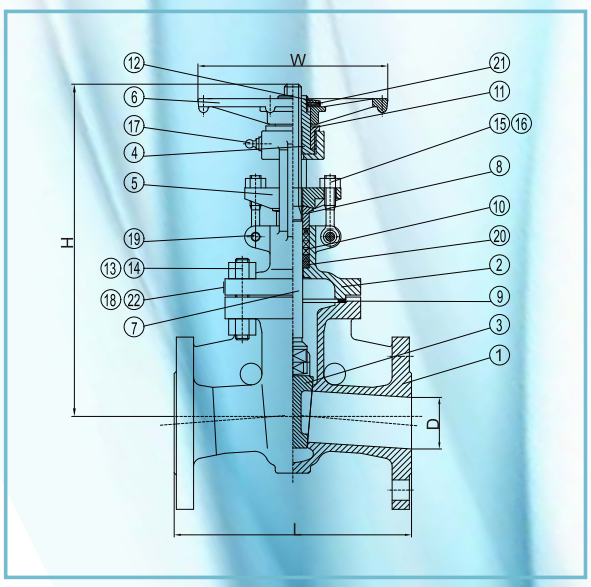
Valve Type & Class		CLASS 150~300 CAST STAINLESS STEEL GATE, GLOBE & CHECK VALVE															FLANGED	
		1/2 15	3/4 20	1 25	1-1/2 40	2 50	2-1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600
Gate	150	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	300	x	x	x	x	x	x	x	x	x	x	x	x	x	x			
Globe	150	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	300	x	x	x	x	x	x	x	x	x	x							
Check	150	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	300	x	x	x	x	x	x	x	x	x	x	x						

Valve Type & Class	CLASS 600 CAST STAINLESS STEEL GATE, GLOBE & CHECK VALVE														THREADED & SOCKET WELD		
	1/2 15	3/4 20	1 25	1-1/2 40													
Gate	x	x	x	x													
Globe	x	x	x	x													
Check	x	x	x	x													

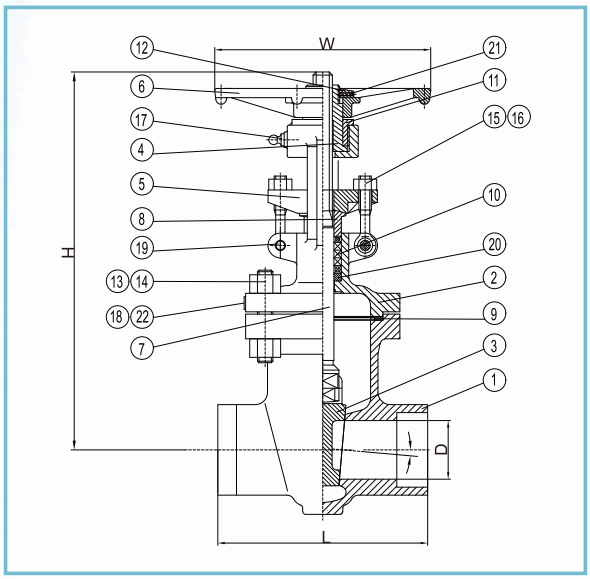
API603 Gate Valve

1/2"~1-1/2" (15-40mm)

Flanged, Threaded or Socket Weld



Flanged,
ASME CLASS 150~300 (PN 20~50)
Integral Seat



Threaded or Socket Weld,
ASME CLASS 600 (PN 100)
Integral Seat

Material List

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	BONNET	ASTM A351 CF8M
3	WEDGE	ASTM A351 CF8M
4	STEM NUT	ASTM A439 D-2C
5	GLAND FLANGE	ASTM A351 CF8
6	HANDWHEEL	ASTM A538 60-40-18
7	STEM	ASTM A182 F316
8	GLAND	ASTM A276 F316L
9	GASKET	316+PTFE OR 316+GRAPHITE
10	PACKING	PTFE OR GRAPHITE
11	RETAINING NUT	ASTM A276 304

No	Part Name	Material
12	HANDWHEEL NUT	ASTM A276 304
13	STUD	ASTM A193-B8
14	NUT	ASTM A194-8
15	EYE BOLT	ASTM A193-B8
16	NUT	ASTM A194-8
17	GREASE FITTING	ASTM A276 304
18	RIVET	ASTM A276 304
19	PIN	ASTM A276 304
20	SPACER RING	ASTM A276 F316L
21	SCREW	ASTM A276 304
22	NAME PLATE	ASTM A240 304

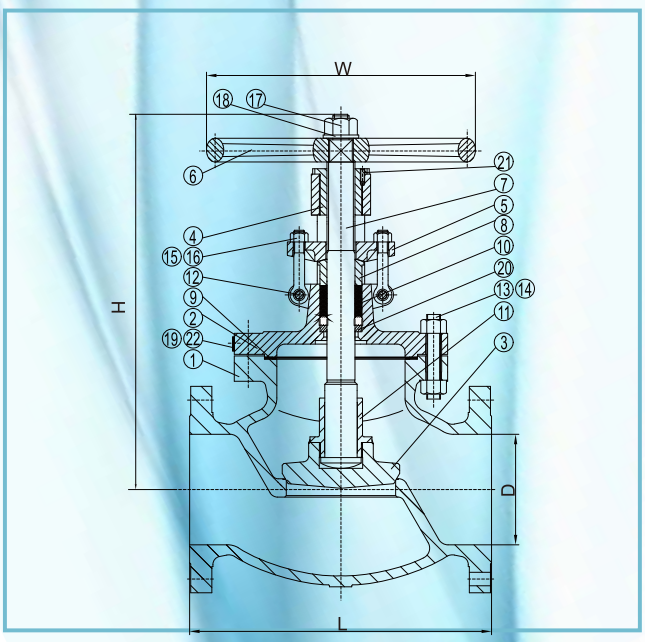
Dimensions And Weights

Size	Flanged, ASME CLASS 150 (PN 20)					Flanged, ASME CLASS 300 (PN 50)					Threaded-Socket Weld, ASME CLASS 600 (PN100)				
in mm	D	L	W	H	Weight lb(kg)	D	L	W	H	Weight lb(kg)	D	L	W	H	Weight lb(kg)
1/2	0.59	4.25	3.94	8.15	7.4	0.59	5.51	3.94	8.15	13.0	0.50	3.43	3.94	8.29	6.8
15	15	108	100	207	3.4	15	140	100	207	5.9	15	87	100	210.5	3.1
3/4	0.75	4.61	3.94	8.15	8.3	0.75	5.98	3.94	8.15	16.0	0.75	3.43	3.94	8.29	7.0
20	19	117	100	207	3.8	19	152	100	207	7.3	19	87	100	210.5	3.2
1	0.98	5.00	4.72	8.66	10.0	0.98	6.50	5.51	9.69	24.0	1.00	4.13	5.51	10.02	10.7
25	25	127	120	220	4.5	25	165	140	246	10.9	25	105	140	254.5	4.9
1-1/2	1.50	6.50	5.51	9.76	18.0	1.50	7.52	7.87	11.69	39.0	1.50	4.92	7.87	12.28	19.5
40	38	165	140	248	8.2	38	191	200	297	17.7	38	125	200	312	8.8

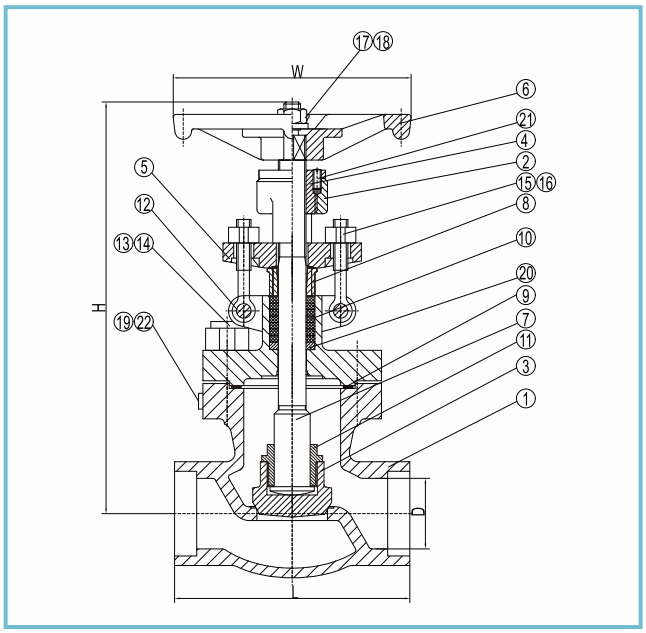
Globe Valve

1/2"~1-1/2" (15-40mm)

Flanged, Threaded or Socket Weld



Flanged,
ASME CLASS 150~300 (PN 20~50)
Integral Seat



Threaded or Socket Weld,
ASME CLASS 600 (PN 100)
Integral Seat

Material List

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	BONNET	ASTM A351 CF8M
3	DISC	ASTM A182 F316
4	STEM NUT	ASTM A439 D-2C
5	GLAND FLANGE	ASTM A351 CF8
6	HANDWHEEL	ASTM A538 60-40-18
7	STEM	ASTM A182 F316
8	GLAND	ASTM A276 F316L
9	GASKET	PTFE OR 316+GRAPHITE
10	PACKING	PTFE OR GRAPHITE
11	DISC NUT	ASTM A276 F316

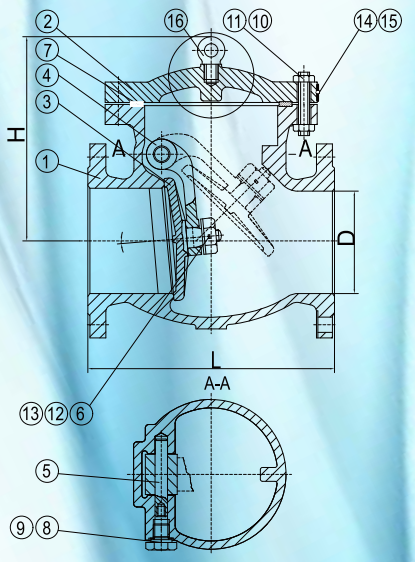
No	Part Name	Material
12	PIN	ASTM A276 304
13	STUD	ASTM A193-B8
14	NUT	ASTM A194-8
15	EYE BOLT	ASTM A193-B8
16	NUT	ASTM A194-8
17	HANDWHEEL NUT	ASTM A276 304
18	WASHER	ASTM A276 304
19	RIVET	ASTM A276 304
20	SPACER RING	ASTM A276 F316L
21	SCREW	ASTM A276 304
22	NAME PLATE	ASTM A240 304

Dimensions And Weights

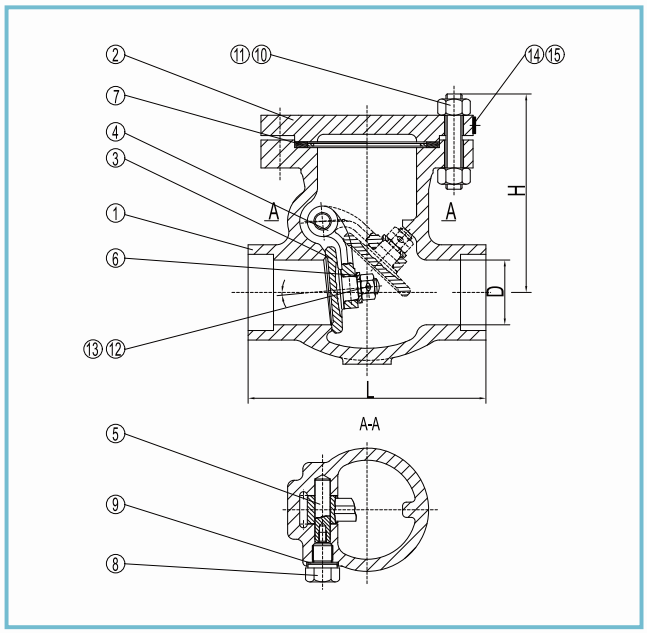
Size in / mm	Flanged, ASME CLASS 150 (PN 20)					Flanged, ASME CLASS 300 (PN 50)					Threaded-Socket Weld, ASME CLASS 600 (PN 100)				
	D	L	W	H	Weight lb(kg)	D	L	W	H	Weight lb(kg)	D	L	W	H	Weight lb (kg)
1/2	0.59	4.25	3.94	8.03	7.6	0.59	5.98	3.94	7.28	13.0	0.50	3.74	3.94	7.82	12.0
15	15	108	100	203.9	3.4	15	152	100	185	5.9	15	95	100	198.7	5.4
3/4	0.75	4.61	3.94	8.22	8.9	0.75	7.01	3.94	7.43	17.0	0.75	4.25	3.94	7.82	12.0
20	19	117	100	208.7	4.0	19	178	100	188.7	7.7	19	108	100	198.7	5.4
1	0.98	5.00	3.94	8.28	11.6	0.98	7.99	5.91	8.64	25.0	1.00	5.00	5.91	9.39	17.0
25	25	127	100	210.4	5.3	25	203	150	219.5	11.3	25	127	150	238.4	7.7
1-1/2	1.50	6.50	7.87	8.83	16.4	1.50	9.02	7.87	10.41	36.0	1.50	5.98	7.87	11.02	32.0
40	38	165	200	224.4	7.4	38	229	200	264.4	16.3	38	152	200	280	14.5

Check Valve
1/2"~1-1/2" (15-40mm)

Flanged, Threaded or Socket Weld



Flanged,
ASME CLASS 150~300 (PN 20~50)
Integral Seat



Threaded or Socket Weld,
ASME CLASS 600 (PN 100)
Integral Seat

Material List

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	COVER	ASTM A351 CF8M
3	DISC	ASTM A182 F316
4	HINGE	ASTM A351 CF8M
5	HINGE PIN	ASTM A276 316
6	WASHER	ASTM A276 316
7	GASKET	PTFE OR 316+GRAPHITE
8	PLUG	ASTM A276 316

No	Part Name	Material
9	WASHER	ASTM A276 316
10	STUD	ASTM A193-B8
11	NUT	ASTM A194-8
12	DISC NUT	ASTM A276 316
13	PIN	ASTM A276 316
14	RIVET	ASTM A276 304
15	NAME PLATE	ASTM A240 304
16	HOOK SCREW	ASTM A276 304

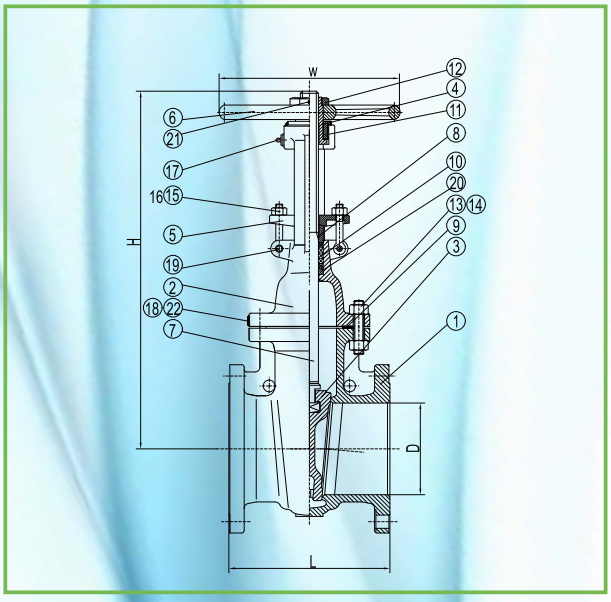
Dimensions And Weights

Size	Flanged, ASME CLASS 150 (PN 20)				Flanged, ASME CLASS 300 (PN 50)				Threaded-Socket Weld, ASME CLASS 600(PN 100)			
in mm	D	L	H	Weight lb(kg)	D	L	H	Weight lb(kg)	D	L	H	Weight lb (kg)
1/2	0.59	4.25	3.54	4.2	0.59	5.98	3.54	16.0	0.50	3.23	3.62	4.2
15	15	108	90	1.9	15	152	90	7.3	15	82	92	1.9
3/4	0.75	4.61	3.54	5.6	0.75	7.01	3.54	18.0	0.75	3.23	3.62	4.2
20	19	117	90	2.5	19	178	90	8.2	19	82	92	1.9
1	0.98	5.00	3.70	8.4	0.98	8.50	3.56	21.0	1.00	4.13	3.78	5.8
25	25	127	94	3.8	25	216	90.5	9.5	25	105	96	2.6
1-1/2	1.50	6.50	4.07	13.5	1.50	9.49	4.51	30.0	1.50	4.92	4.82	10.1
40	38	165	103.5	6.1	38	241	114.5	13.6	38	125	122.5	4.6

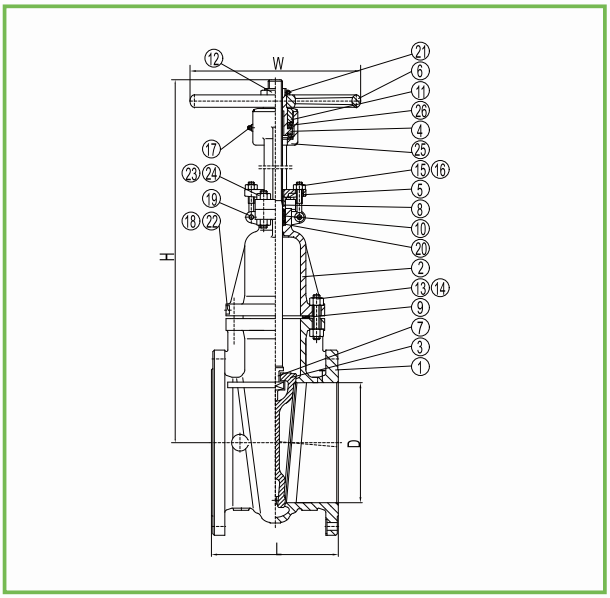
API603 Gate Valve

2"~24" (50-600mm, CLASS 150)

Flanged



Flanged, ASME CLASS 150 (PN 20, DN50~300)
Integral Seat; flexible wedge(solid wedge only for DN50);
Optional Stellited Seat Face



Flanged, ASME CLASS 150 (PN20, DN350~600)
Integral Seat; flexible wedge; Optional Stellited Seat Face

Material List

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	BONNET	ASTM A351 CF8M
3	WEDGE	ASTM A351 CF8M
4	STEM NUT	ASTM A439 D-2C
5	GLAND FLANGE	ASTM A351 CF8
6	HANDWHEEL	ASTM A538 60-40-18
7	STEM	ASTM A182 F316
8	GLAND	ASTM A276 F316L
9	GASKET	316+PTFE OR 316+GRAPHITE
10	PACKING	PTFE OR GRAPHITE
11	RETAINING NUT	ASTM A276 304
12	HANDWHEEL NUT	ASTM A276 304
13	STUD	ASTM A193-B8

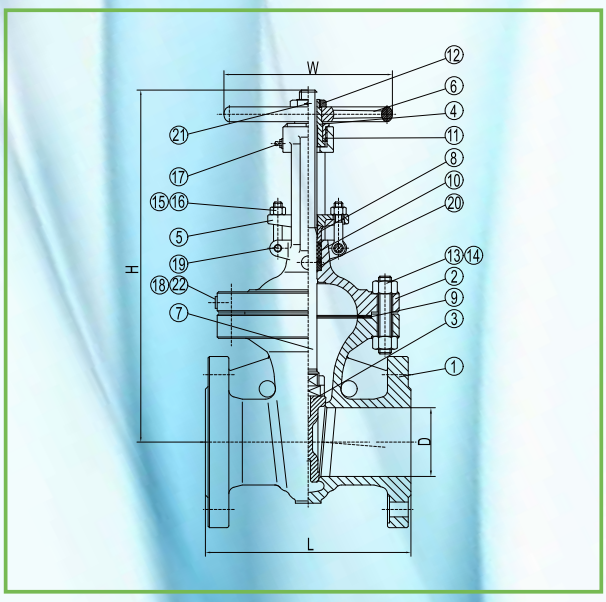
No	Part Name	Material
14	NUT	ASTM A194-8
15	EYE BOLT	ASTM A193-B8
16	NUT	ASTM A194-8
17	GREASE FITTING	ASTM A276 304
18	RIVET	ASTM A276 304
19	PIN	ASTM A276 304
20	SPACER RING	ASTM A276 F316L
21	SCREW	ASTM A276 304
22	NAME PLATE	ASTM A240 304
23	STUD	ASTM A193-B8
24	NUT	ASTM A194-8
25	YOKE	ASTM A351 CF8M
26	THRUST BEARING	STAINLESS STEEL

Dimensions And Weights

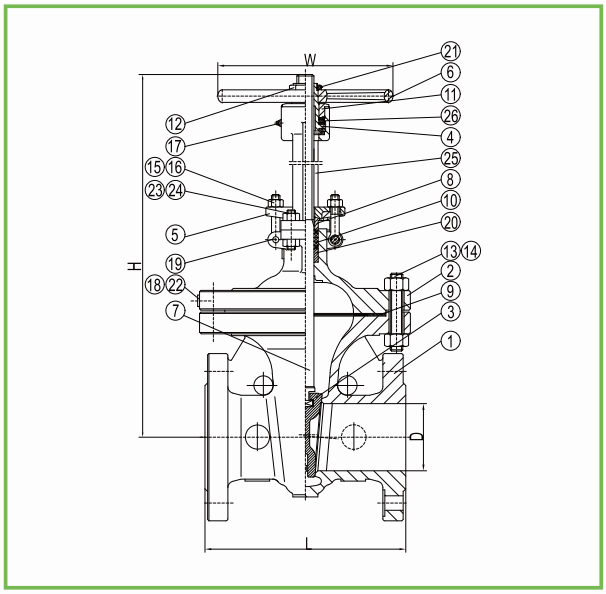
Size	Flanged, ASME CLASS 150 (PN 20)				
in mm	D	L	W	H	Weight lb(kg)
2	2.01	7.01	5.51	11.42	27.0
50	51	178	140	290	12.2
2-1/2	2.52	7.48	5.51	13.19	37.5
65	64	190	140	335	17.0
3	2.99	7.99	7.87	15.20	46.3
80	76	203	200	386	21.0
4	4.02	9.02	9.84	17.52	75.0
100	102	229	250	445	34.0
6	5.98	10.51	11.81	23.27	128.0
150	152	267	300	591	58.1
8	7.99	11.50	13.78	28.74	216.1
200	203	292	350	730	98.0
10	10.00	12.99	15.75	34.76	291.1
250	254	330	400	883	132.0
12	12.01	14.02	17.72	39.96	436.6
300	305	356	450	1015	198.0
14	13.27	15.00	19.69	44.53	703.4
350	337	381	500	1131	319.1
16	15.24	15.98	21.65	50.59	1018.7
400	387	406	550	1285	462.1
18	17.24	17.01	23.62	74.49	1190.7
450	438	432	600	1892	540.1
20	19.25	17.99	26.77	83.23	1631.7
500	489	457	680	2114	740.1
24	23.27	20.00	29.92	98.43	2434.3
600	591	508	760	2500	1104.2

API603 Gate Valve
2"~16" (50-400mm, CLASS 300)

Flanged



Flanged, ASME CLASS 300 (PN50, DN50~200)
Integral Seat; flexible wedge(solid wedge only for DN50);
Optional Stellited Seat Face



Flanged, ASME CLASS 300 (PN50, DN250~400)
Integral Seat; flexible wedge; Optional Stellited Seat Face

Material List

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	BONNET	ASTM A351 CF8M
3	WEDGE	ASTM A351 CF8M
4	STEM NUT	ASTM A439 D-2C
5	GLAND FLANGE	ASTM A351 CF8
6	HANDWHEEL	ASTM A538 60-40-18
7	STEM	ASTM A182 F316
8	GLAND	ASTM A276 F316L
9	GASKET	PTFE OR 316+GRAPHITE
10	PACKING	PTFE OR GRAPHITE
11	RETAINING NUT	ASTM A276 304
12	HANDWHEEL NUT	ASTM A276 304
13	STUD	ASTM A193-B8

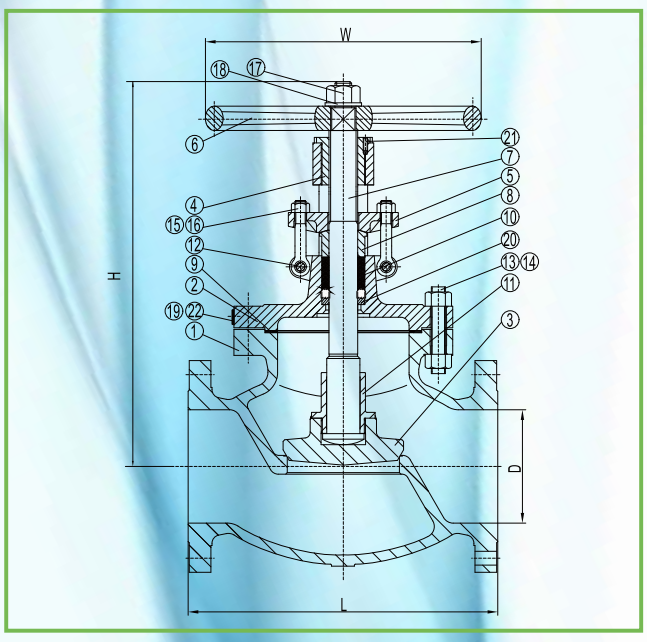
No	Part Name	Material
14	NUT	ASTM A194-8
15	EYE BOLT	ASTM A193-B8
16	NUT	ASTM A194-8
17	GREASE FITTING	ASTM A276 304
18	RIVET	ASTM A276 304
19	PIN	ASTM A276 304
20	SPACER RING	ASTM A276 F316L
21	SCREW	ASTM A276 304
22	NAME PLATE	ASTM A240 304
23	STUD	ASTM A193-B8
24	NUT	ASTM A194-8
25	YOKE	ASTM A351 CF8M
26	THRUST BEARING	STAINLESS STEEL

Dimensions And Weights

Size	Flanged, ASME CLASS 300 (PN 50)				
in mm	D	L	W	H	Weight lb(kg)
2	2.01	8.50	7.87	11.93	53.0
50	51	216	200	303	24.0
2-1/2	2.52	9.49	7.87	14.33	68.4
65	64	241	200	364	31.0
3	2.99	11.14	9.84	15.51	90.4
80	76	283	250	394	41.0
4	4.02	12.01	9.84	17.83	119.1
100	102	305	250	453	54.0
6	5.98	15.87	13.78	24.57	251.4
150	152	403	350	624	114.0
8	7.99	16.50	15.75	30.04	478.5
200	203	419	400	763	217.0
10	10.00	17.99	17.72	36.18	557.9
250	254	457	450	919	253.1
12	12.01	19.76	19.69	42.99	917.3
300	305	502	500	1092	416.1
14	13.27	30.00	21.65	48.19	957.0
350	337	762	550	1224	434.1
16	15.24	32.99	23.62	51.93	1206.1
400	387	838	600	1319	547.1

Globe Valve
2"~12" (50-300mm)

Flanged



Flanged, ASME CLASS 150~300 (PN 20~50)
Integral Seat; Optional Stellited Seat Face

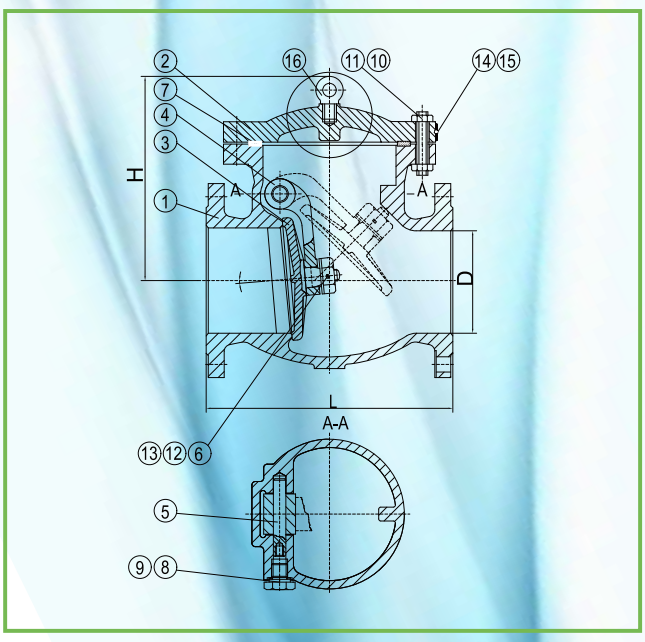
No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	BONNET	ASTM A351 CF8M
3	DISC	ASTM A182 F316
4	STEM NUT	ASTM A439 D-2C
5	GLAND FLANGE	ASTM A351 CF8
6	HANDWHEEL	ASTM A538 60-40-18
7	STEM	ASTM A182 F316
8	GLAND	ASTM A276 F316L
9	GASKET	PTFE OR 316+GRAPHITE
10	PACKING	PTFE OR GRAPHITE
11	DISC NUT	ASTM A276 F316
12	PIN	ASTM A276 304
14	STUD	ASTM A193-B8
15	NUT	ASTM A194-8
16	EYE BOLT	ASTM A193-B8
17	NUT	ASTM A194-8
18	HANDWHEEL NUT	ASTM A276 304
19	WASHER	ASTM A276 304
20	RIVET	ASTM A240 304
21	SPACER RING	ASTM A276 F316L
22	SCREW	ASTM A276 304
23	NAME PLATE	ASTM A276 304

Size	Flanged, ASME CLASS 150 (PN 20)					Flanged, ASME CLASS 300 (PN 50)				
in mm	D	L	W	H	Weight lb(kg)	D	L	W	H	Weight lb(kg)
2	2.01	7.99	7.87	9.64	25.2	2.01	10.51	7.87	11.65	54.0
50	51	203	200	244.8	11.4	51	267	200	296	24.5
2-1/2	2.52	8.50	7.87	10.98	46.3	2.52	11.50	9.84	13.30	83.5
65	64	216	200	279	21.0	64	292	250	337.9	37.9
3	2.99	9.49	9.84	13.66	61.7	2.99	12.52	9.84	14.35	92.0
80	76	241	250	346.9	28.0	76	318	250	364.4	41.7
4	4.02	11.50	11.81	15.74	97.0	4.02	14.02	13.78	16.69	130.1
100	102	292	300	399.9	44.0	102	356	350	423.9	59.0
6	5.98	15.98	13.78	17.71	198.5	5.98	17.48	19.69	23.17	317.5
150	152	406	350	449.9	90.0	152	444	500	588.4	144.0
8	7.99	19.49	15.75	19.92	383.7	7.99	22.01	22.05	27.89	562.3
200	203	495	400	506	174.0	203	559	560	708.5	255.1
10	10.00	24.49	19.69	26.06	546.8					
250	254	622	500	662	248.0					
12	12.01	27.48	22.05	30.39	848.9					
300	305	698	560	772	385.1					

ELITE®

Check Valve
2"~16" (50-400mm)

Flanged



Flanged, ASME CLASS 150~300 (PN20-50)
Integral Seat; Optional Stellited Seat Face

No	Part Name	Material
1	BODY	ASTM A351 CF8M
2	COVER	ASTM A351 CF8M
3	DISC	ASTM A182 F316
4	HINGE	ASTM A351 CF8M
5	HINGE PIN	ASTM A276 316
6	WASHER	ASTM A276 316
7	GASKET	PTFE OR 316+GRAPHITE
8	PLUG	ASTM A276 316
9	WASHER	ASTM A276 316
10	STUD	ASTM A193-B8
11	NUT	ASTM A194-8
12	DISC NUT	ASTM A276 316
13	PIN	ASTM A276 316
14	RIVET	ASTM A240 304
15	NAME PLATE	ASTM A276 304

Size	Flanged, ASME CLASS 150 (PN 20)				Flanged, ASME CLASS 300 (PN 50)			
in mm	D	L	H	Weight lb(kg)	D	L	H	Weight lb(kg)
2	2.01	7.99	4.51	20.4	2.01	10.51	5.02	60.0
50	51	203	114.5	9.3	51	267	127.5	27.2
2-1/2	2.52	8.50	6.00	50.7	2.52	11.50	7.17	81.6
65	64	216	152.5	23.0	64	292	182	37.0
3	2.99	9.49	6.59	57.3	2.99	12.52	7.40	92.6
80	76	241	167.5	26.0	76	318	188	42.0
4	4.02	11.50	7.34	99.2	4.02	14.02	8.62	141.1
100	102	292	186.5	45.0	102	356	219	64.0
6	5.98	14.02	11.42	172	5.98	17.48	12.50	273.4
150	152	356	290	78.0	152	444	317.5	124.0
8	7.99	19.49	14.13	299.9	7.99	20.98	14.35	489.5
200	203	495	359	136.0	203	533	364.5	222.0
10	10.00	24.49	15.35	471.9	10.00	24.49	16.73	643.9
250	254	622	390	214.1	254	622	425	292.1
12	12.01	27.48	16.65	707.8				
300	305	698	423	321.1				
14	13.27	30.98	17.83	904.1				
350	337	787	453	410.1				
16	15.24	34.02	20.35	1133.4				
400	387	864	517	514.1				

Low Fugitive Emission Control

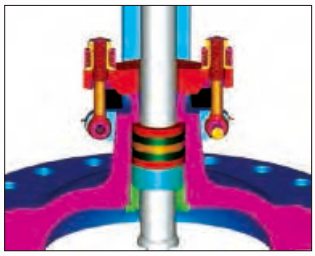
As a corporate effort to be an integral member to protect the environment, Neway stands at the forefront in producing valves which meet the highest fugitive emission requirements.

Neway actively participates and develop standards and products which meet and exceeds requirements. Many valves can be provided in accordance to ISO 15848, API 624, TA-Luft, or other customized solution.

Design Features

Low Emission Packing

Neway actively works with reputable and industry leading sealing solution companies to create low emission solutions that can cover valves from cryogenic to extreme high temperature in variety of endurance range down to 10ppm without usage of bellow seal.



Stuffing box and stem finish

All surface finish for Neway valve's stem and stuffing boxes are tightly controlled to achieve optimized surface finish for the designated sealing solution.

Optional Live-loaded Gland Bolts

Live-loaded gland bolts are optional upon customer request.
The special structure can maintain a permanent packing stress using Belleville spring, and extend the low emission service life. Neway standard Belleville springs are protected by a weatherproof cap to keep them from environmental contamination so as to ensure a longmaintenance free service life

Fugitive Emission Valve Test

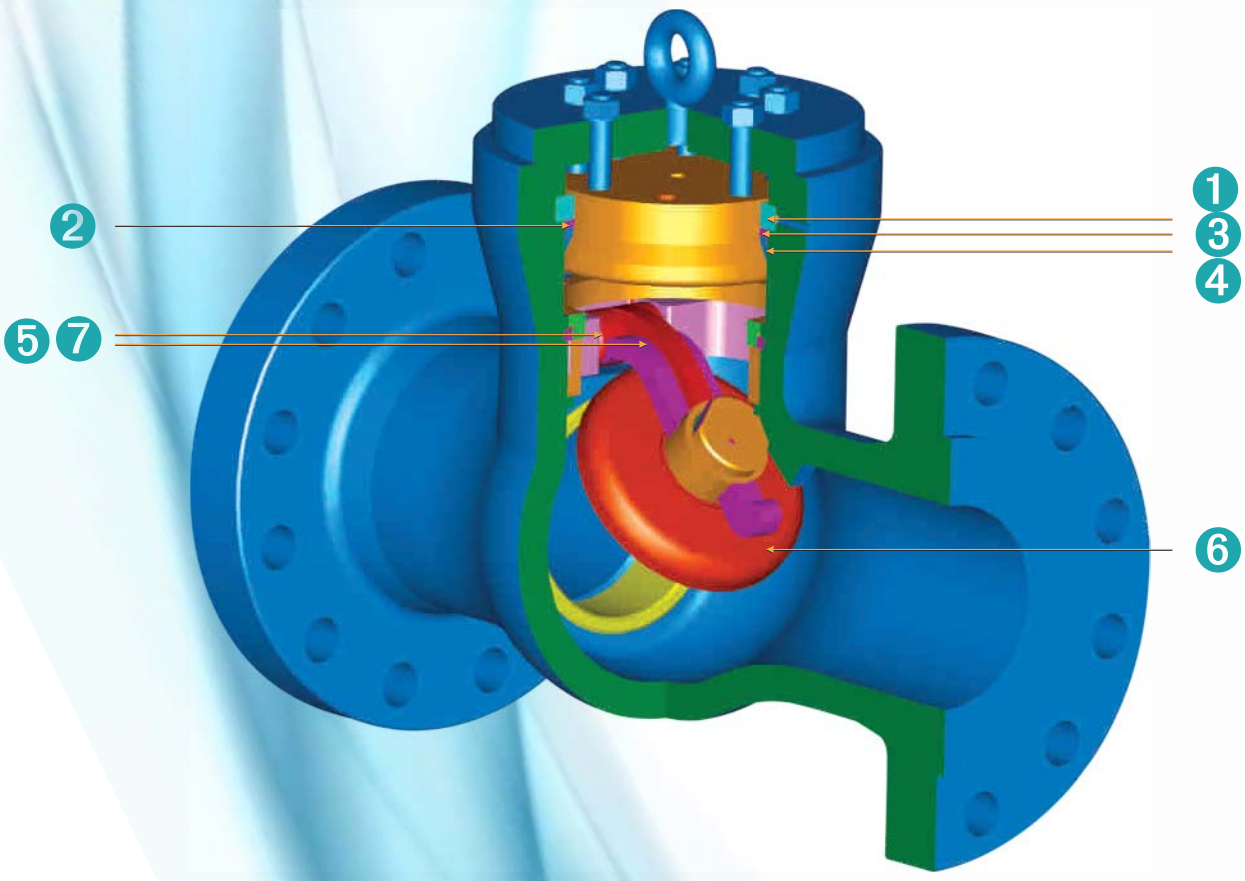
In addition to type testing, Neway offers production testing capabilities to ISO 15848-2, Shell MESC 77/312 or other customized testing standards.

Test STD	Test Method	Test Medium	Mechanical cycles	Acceptance Criteria
ISO 15848-1	Vacuum	Helium	500	10^{-4}mg/s.m
API 624	Sniffing	Methan	310	50ppmv
TA-Luft	Vacuum	Helium	100	10^{-4}mbar.L/s.m

Pressure Seal Valve

Pressure Seal Check Valve

Design Feature



1. Separated rings absorb the thrust along the stem applied by the internal pressure.
2. Sealing rings are used to withstand pressure and prevent deformation of the gaskets.
3. Mild steel gasket seal to provide a large seal contact area for perfect sealing.
4. Stainless steel inlay to ensure soundness and corrosion-resistance in the critical body sealing zone for carbon and alloy steel valves.
5. Hinge pin design ensuring no pressure boundary intrusion.
6. Standard swing disc type to be used in horizontal position for liquid service applications or used in vertical position where liquid flow from botton to top.
7. Hinge and hinge pin design to permit full movement of the disc.

ELITE®

Material List

Pressure Seal Check Valve

Part	Standard	Stainless Steel	High temperature Service		
BODY	ASTM A216-WCB	ASTM A351-CF8M	ASTM A217-WC6	ASTM A217-WC9	ASTM A217-C12A
COVER	ASTM A216-WCB(4"&Smaller ASTM A105)	ASTM A351-CF8M(4"&Smaller ASTM A182-F316)	ASTM A217-WC6(4"&Smaller ASTM A182-F11)	ASTM A217-WC9(4"&Smaller ASTM A182-F22)	ASTM A217-C12A(4"&Smaller ASTM A182-F91)
DISC	ASTM A217-CA15 &ASTM A216-WCB/ER410	ASTM A351-CF8M/STL.OVERLAY	ASTM A217-CA15 &ASTM A217-WC6/ER410	ASTM A217-CA15 &ASTM A217-WC9/ER410	ASTM A217-CA15
HINGE	ASTM A105	ASTM A351-CF8M	ASTM A217-WC6	ASTM A217-WC9	ASTM A217-C12A
HINGE PIN	ASTM A182-F6a	ASTM A276-316	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F6a
DISC NUT	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-420	ASTM A276-420
BONNET SEAL RING	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F316L(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)
HOOK SCREW	CARBON STEEL	STAINLESS STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
COVER STUD	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
COVER NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
SEAT RING	ASTM A105/STL.OVERLAY	ASTM A182-F316/STL.OVERLAY	ASTM A182-F11/STL.OVERLAY	ASTM A182-F22/STL.OVERLAY	ASTM A182-F6a/STL.OVERLAY
SEPARATE RING COVER	CARBON STEEL	ASTM A276-420	AISI 4140	AISI 4140	AISI 4140
THRUST RING COVER	CARBON STEEL	ASTM A276-420	AISI 4140	AISI 4140	AISI 4140
SUPPORTING COVER	ASTM A105	ASTM A276-420	AISI 4140	AISI 4140	AISI 4140
STOP RING	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-420	ASTM A276-420
YOKE	ASTM A216-WCB	ASTM A276-316	ASTM A216-WCB& ASTM A217-WC6	ASTM A216-WCB& ASTM A217-WC6	ASTM A217-C12A
SEPARATE RING FOR STOP RING	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-420	ASTM A276-420
SPLIT PIN	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
STOP RING SCREW	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
RIVET	CARBON STEEL	STAINLESS STEEL	CARBON STEEL	CARBON STEEL	STAINLESS STEEL
NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL

Pressure Seal Check Valve

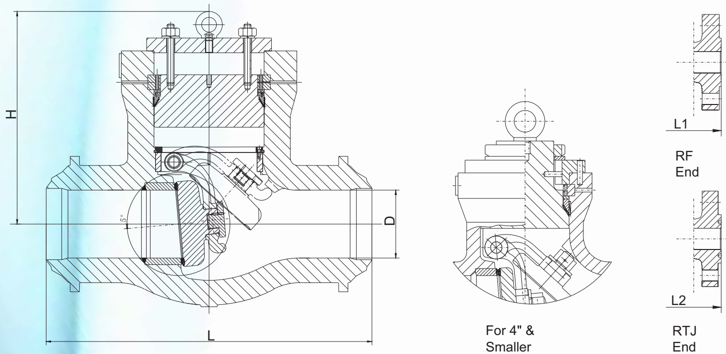
Dimension & Weight

Class 600 — Cast Carbon Steel Check Valve

ASME B16.34,
Pressure Seal Swing Disc Type

Figure NO.:

S6R-PS,WCB/NO.5
S6B-PS,WCB/NO.5
S6J-PS,WCB/NO.5



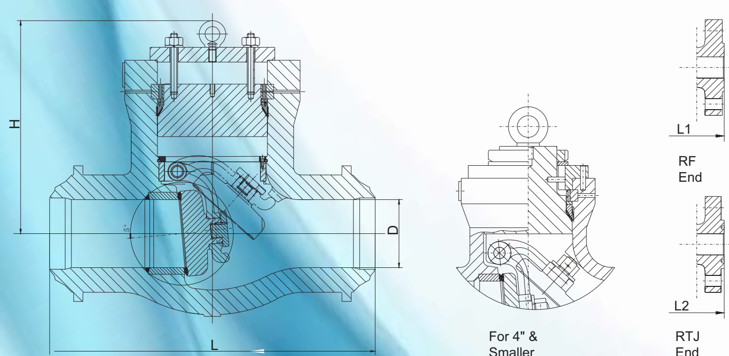
NPS	in	2"	2-1/2	3"	4"	5"	6"	8"	10"	12"	14"		18"		24"		28"	
DN	mm	50	" 65	80	10	12	15	20 16"	25	30	35	40	45 20"	50	60 26"	65	70 30"	75
L (RF-BW)	in	11.	13	14	0 17	5 20	0 22	0 26	0 31	0 33	0 35	0 39	0 43	0 47	0 55	0 57	0 63	0 65
	mm	5 29	33	35	43	50	55	66	78	83	88	99	109	119	139	144	160	165
L2 (RTJ)	in	2 11.6	0 13.1	6 14.1	2 17.1	8 20.1	9 22.1	0 26.1	7 31.1	8 33.1	9 35.1	1 39.1	2 43.1	4 47.2	7 55.3	8 57.	0 63.	1 65.
	mm	2 29	2 33	2 35	2 43	2 51	2 56	2 66	2 79	2 84	2 89	2 99	3 109	5 120	8 140	5 146	5 161	5 166
H	in	5 9.5	3 10.	9 10.	5 12.	1 15.	2 15.	3 23.	0 23.	1 27.	2 29.	4 28.	5 28.7	0 32.2	7 37.3	1 39.3	3 43.2	4 47.2
	mm	24	4 26	6 27	5 31	7 40	7 40	1 58	9 60	4 69	5 74	7 73	5 73	5 81	8 94	8 100	5 109	5 120
WT(RF)	kg	1 27	4 35	0 45	8 85	0 13	0 19	7 35	6 50	5 67	9 88	0 115	0 148	9 188	9 260	0 310	9 350	0 400
WT(BW)	kg	18	25	32	55	5 85	0 13	9 26	0 37	0 49	0 66	0 85	0 110	9 149	9 204	0 250	0 280	0 315
							0	0	0	0	0	0	0	0	0	0	0	0

Class 900 — Cast Carbon Steel Check Valve

ASME B16.34,
Pressure Seal Swing Disc Type

Figure NO.:

S9R-PS,WCB/NO.5
S9B-PS,WCB/NO.5
S9J-PS,WCB/NO.5



NPS	in	2"	2-1/2	3"	4"	6"	8"	10"	12"	14"		18"	20"	24"	26"	28"	
DN	mm	50	" 65	80	10	15	20	25 16"	30	35	40	45 20"	50	60	65	70	75
L (BW)	in	8.5	10	12	0 14	0 20	0 26	0 31	0 36	0 39	0 43	0 48	0 52	0 61	0 63	0 67	0 71
	mm	21	25	30	35	50	66	78	91	99	109	121	132	154	160	170	180
L1 (RF)	in	6 14.	4 16.	5 15	6 18	8 24	0 29	7 33	4 38	1 40.	2 44.	9 48	1 52	9 61	0 65	2 69	3 73
	mm	5 36	5 41	38	45	61	73	83	96	5 102	5 113	121	132	154	165	175	185
L2 (RTJ)	in	8 14.	9 16.	1 15.	7 18.	0 24.	7 29.	8 33.	5 38.	9 40.	0 44.	9 48.	1 52.	9 61.7	1 65.8	3 69.8	4 73.8
	mm	6 37	1 42	1 38	1 46	1 61	1 74	1 84	1 96	9 103	9 114	5 123	5 133	5 156	8 167	8 177	8 187
H	in	1 9.5	2 10.	4 10.	0 12.	3 15.	0 23.	1 23.	8 27.	8 29.	0 28.	2 33.5	3 34	8 37.7	3 39.3	5 45.2	6 55.1
	mm	24	4 26	6 27	5 31	7 40	1 58	9 60	4 69	5 74	7 73	0 85	86	5 95	8 100	5 114	3 140
WT(RF)	kg	1 42	4 55	0 58	8 11	0 24	7 59	6 89	5 136	9 162	0 173	1 230	4 300	9 410	0 460	9 520	0 600
WT(BW)	kg	21	32	34	0 68	2 16	9 46	3 72	5 107	8 128	3 141	0 185	0 240	0 290	0 360	0 400	0 460
						8	2	5	1	1	8	0	0	0	0	0	0

ELITE®

Dimension & Weight

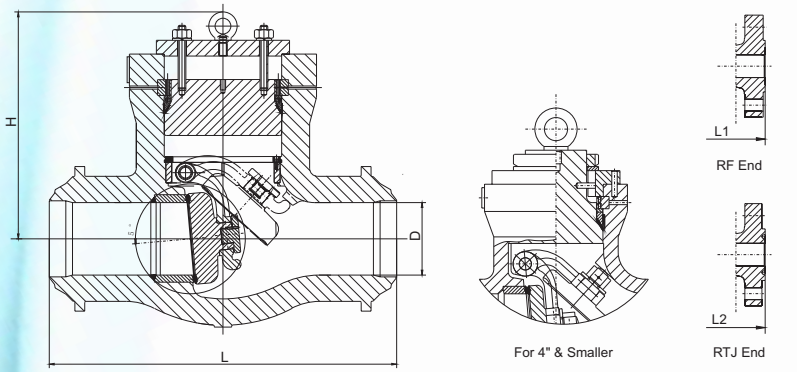
Pressure Seal Check Valve

Class 1500 Cast Carbon Steel Check Valve

ASME B16.34,
Pressure Seal Swing Disc Type

Figure NO.:

S15R-PS,WCB/NO.5
S15B-PS,WCB/NO.5
S15J-PS,WCB/NO.5



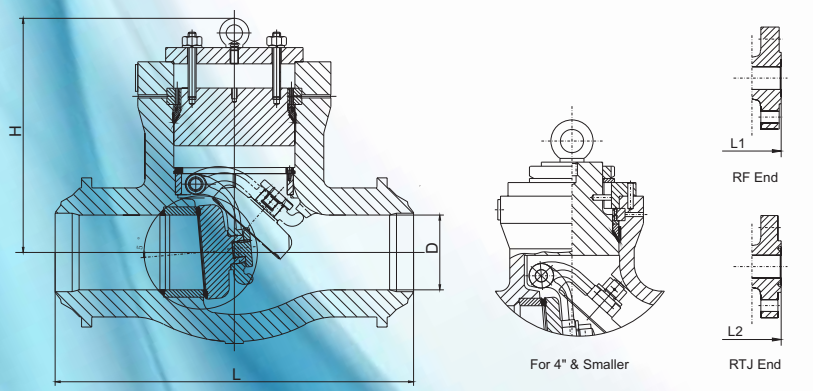
NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L (BW)	in	8.5	10	12	16	22	28	34	39	42	47	60.5	65.5	76.5
	mm	216	254	305	406	559	711	864	991	1067	1194	1537	1664	1943
L1 (RF)	in	14.5	16.5	18.5	21.5	27.8	32.8	39	44.5	49.5	54.4	60.5	65.5	76.5
	mm	368	419	470	546	705	832	991	1130	1257	1384	1537	1664	1943
L2 (RTJ)	in	14.6	16.6	18.6	21.6	28	33.1	39.4	45.1	50.3	55.4	61.38	66.38	77.63
	mm	371	422	473	549	711	842	1000	1146	1276	1407	1559	1686	1972
H	in	9.5	10.4	10.8	12.5	16.6	18.9	23.3	25.4	28	29.5	34.63	37.38	43.25
	mm	241	264	274	318	422	479	591	645	711	749	880	949	1099
WT(RF)	kg	42	58	105	147	360	641	1103	1628	2205	2730	3300	4200	6000
WT(BW)	kg	21	34	42	74	233	504	777	1155	1481	1680	2100	2600	3500

Class 2500 Cast Carbon Steel Check Valve

ASME B16.34,
Pressure Seal Swing Disc Type

Figure NO.:

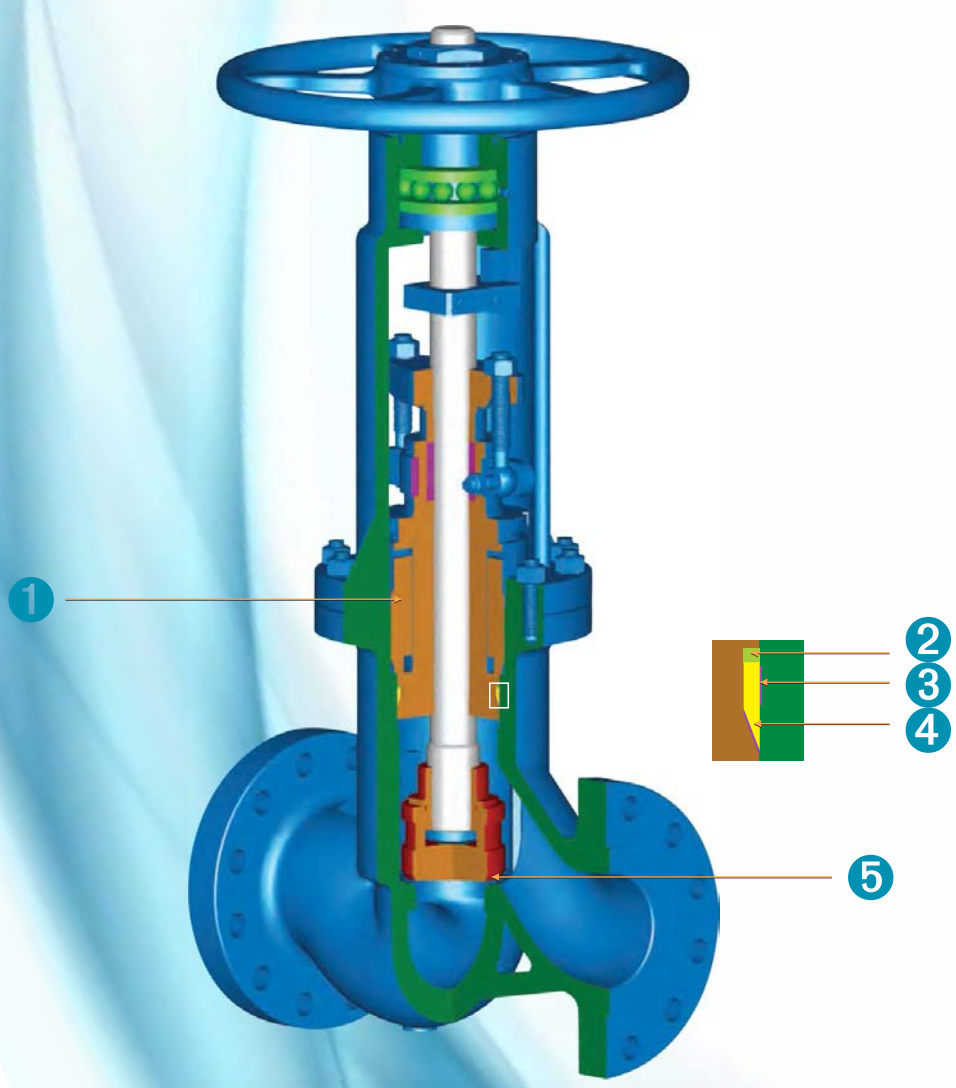
S25R-PS,WCB/NO.5
S25B-PS,WCB/NO.5
S25J-PS,WCB/NO.5



NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
DN	mm	50	65	80	100	150	200	250	300	350	400	450	500	600
L (BW)	in	11	13	14.5	18	24	30	36	41	44	49	55	61	68
	mm	279	330	368	457	610	762	914	1041	1118	1245	1397	1549	1727
L1 (RF)	in	17.8	20	22.8	26.5	36	40.3	50	56	-	-	-	-	-
	mm	451	508	578	673	914	1022	1270	1422	-	-	-	-	-
L2 (RTJ)	in	17.9	20.3	23	26.9	36.5	40.9	50.9	56.9	60.88	-	-	-	-
	mm	454	514	584	683	927	1038	1292	1445	1546	-	-	-	-
H	in	9.6	10.4	10.6	12.5	17.8	22	22.7	25.8	33.88	35.38	39.38	45.25	55.13
	mm	245	264	270	318	451	559	576	656	860	899	1000	1149	1400
WT(RF)	kg	89	124	163	299	588	1071	1676	2772	3350	-	-	-	-
WT(BW)	kg	53	74	89	142	285	598	783	1512	2450	3200	4050	5000	7200

Pressure Seal Globe Valve

Design Feature



1. Separated rings absorb the thrust along the stem applied by the internal pressure.
2. Sealing rings are used to withstand pressure and prevent deformation of the gaskets.
3. Stainless steel inlay to ensure soundness and corrosion-resistance in the critical body sealing zone for carbon and alloy steel valves.
4. Mild steel gasket seal to provide large contact area for perfect sealing.
5. Seat ring with stellite 6 overlay is standard design and installed with seal weld.

ELITE®

Material List

Pressure Seal Globe Valve

Part	Standard	Stainless Steel	High temperature Service		
BODY	ASTM A216-WCB/STL.OVERLAY	ASTM A351-CF8M/STL.OVERLAY	ASTM A217-WC6/STL.OVERLAY	ASTM A217-WC9/STL.OVERLAY	ASTM A217-C12A/STL.OVERLAY
BONNET	ASTM A105	ASTM A182-F316	ASTM A182-F11	ASTM A182-F22	ASTM A217-C12A
DISC	ASTM A182-F6a & ASTM A105/ER410	ASTM A182-F316	ASTM A182-F6a & ASTM A182-F11/ER410	ASTM A182-F6a & ASTM A182-F22/ER410	ASTM A182-F6a
STEM NUT	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2
GLAND FLANGE	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A216-WCB	ASTM A216-WCB
HANDWHEEL	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON
BONNET SEAL RING	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F316L(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)
STEM	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F6a
RETAINING NUT FOR STEM NUT	CARBON STEEL	STAINESS STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
GLAND	ASTM A276-420	ASTM A182-F316	ASTM A276-420	ASTM A276-420	ASTM A276-420
HANDWHEEL NUT	CARBON STEEL	STAINESS STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
DISC NUT	ASTM A276-420	ASTM A182-F316	ASTM A276-420	ASTM A276-420	ASTM A276-420
STEM WASHER	ASTM A276-430	N/A	ASTM A276-430	ASTM A276-430	ASTM A276-430
THRUST RING	CARBON STEEL	AITM A276-420	AISI 4140	AISI 4140	AISI 4140
PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
CLIPPING RING	ASTM A216-WCB	ASTM A351-CF8	ASTM A217-WC6	ASTM A217-WC6	ASTM A276-420
YOKE STUD	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
YOKE NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
GLAND EYE BOLT	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
GLAND NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
BONNET NUT 1	CARBON STEEL	ASTM A276-420	AISI 4140	AISI 4140	AISI 4140
CLIPPING RINGBOLT	CARBON STEEL	STAINESS STEEL	STAINESS STEEL	STAINESS STEEL	STAINESS STEEL
BONNET NUT 2	CARBON STEEL	ASTM A276-420	AISI 4140	AISI 4140	AISI 4140
ORIENTED BLOCK	CARBON STEEL	ASTM A276-420	CARBON STEEL	CARBON STEEL	CARBON STEEL
YOKE	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB& ASTM A217-WC6	ASTM A216-WCB& ASTM A217-WC6	ASTM A217-C12A
RIVET	CARBON STEEL	STAINESS STEEL	CARBON STEEL	CARBON STEEL	STAINESS STEEL
NAME PLATE	STAINESS STEEL	STAINESS STEEL	STAINESS STEEL	STAINESS STEEL	STAINESS STEEL

ELITE®

Pressure Seal Globe Valve

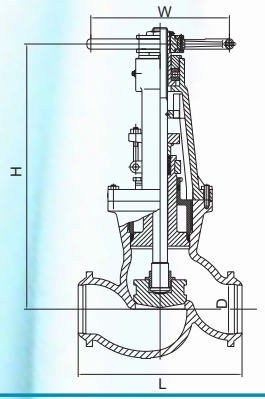
Dimension & Weight

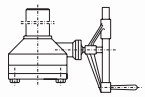
Class 600 Cast Carbon Steel Globe Valve

ASME B16.34,
Pressure Seal, OS&Y,
Rising Stem and Handwheel,
Swivel Disc

Figure NO.:

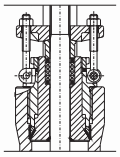
GL6R-PS,WCB/NO.5
GL6B-PS,WCB/NO.5
GL6J-PS,WCB/NO.5



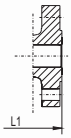


Gear Operator

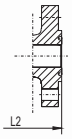
Optional	Standard
8" to 10"	12" & Larger



For 4" & Smaller



RF End



RTJ End

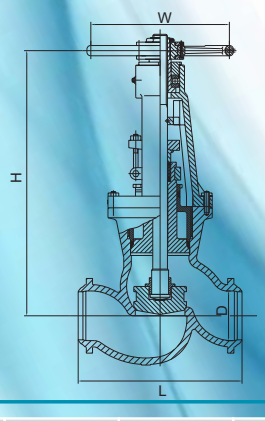
NPS	in	2"	2-1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"
DN	mm	50	65	80	100	125	150	200	250	300	350	400
L-L1 (RF-BW)	in	11.5	13	14	17	20	22	26	31	33	35	39
	mm	292	330	356	432	508	559	660	787	838	889	991
L2 (RTJ)	in	11.62	13.12	14.12	17.12	20.12	22.12	26.12	31.12	33.12	35.12	39.12
	mm	295	333	359	435	511	562	663	790	841	892	994
W	in	9.8	11.8	13.8	17.7	19.7	22	23.6	27.6	24	24	29.9
	mm	250	300	350	450	500	560	600	700	610	610	760
H	in	21.7	24.8	26.8	29.5	39.4	45.3	49.2	55.1	61	70.9	85
	mm	550	630	680	750	1000	1150	1250	1400	1550	1800	2160
WT(RF)	kg	45	55	85	135	190	305	620	1310	1900	2720	3150
WT(BW)	kg	35	45	60	95	150	230	540	1150	1720	2530	2900

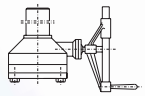
Class 900 Cast Carbon Steel Globe Valve

ASME B16.34,
Pressure Seal, OS&Y,
Rising Stem and Handwheel,
Swivel Disc

Figure NO.:

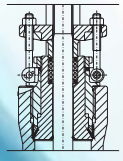
GL9R-PS,WCB/NO.5
GL9B-PS,WCB/NO.5
GL9J-PS,WCB/NO.5





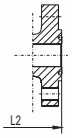
Gear Operator

Optional	Standard
4" to 10"	8" & Larger



For 4" & Smaller

RF End



RTJ End

NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"	16"
DN	mm	50	65	80	100	150	200	250	300	350	400
L-L1 (RF-BW)	in	14.5	16.5	15	18	24	29	33	38	40.50	44.50
	mm	368	419	381	457	610	737	838	965	1029	1130
L2 (RTJ)	in	14.62	16.62	15.12	18.12	24.12	29.12	33.13	38.13	40.88	44.88
	mm	371	422	384	460	613	740	841	968	1038	1140
W	in	14	14	18	20	24	24	24	39.38	39.38	47.25
	mm	350	350	450	500	610	610	610	1000	1000	1200
H	in	24.4	25.2	28.4	33.5	48.2	53.1	61	68.88	78.75	91
	mm	619	641	721	850	1225	1350	1550	1750	2000	2310
WT(RF)	kg	84	110	116	179	441	1050	1720	2300	3350	4000
WT(BW)	kg	58	74	84	137	378	945	1520	2050	3050	3600

ELITE®

Dimension & Weight

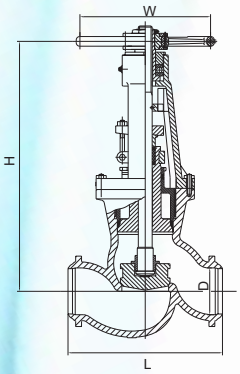
Pressure Seal Globe Valve

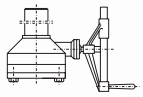
Class 1500 Cast Carbon Steel Globe Valve

ASME B16.34,
Pressure Seal, OS&Y,
Rising Stem and Handwheel,
Swivel Disc

Figure NO.:

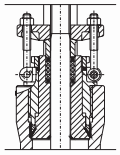
GL15R-PS,WCB/NO.5
GL15B-PS,WCB/NO.5
GL15J-PS,WCB/NO.5



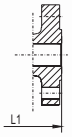


Gear Operator

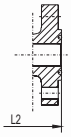
Optional	Standard
2" to 3 "	4" & Larger



For 4" & Smaller



RF End



RTJ End

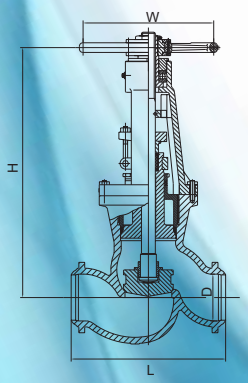
NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"	14"
DN	mm	50	65	80	100	150	200	250	300	350
L-L1 (RF-BW)	in	14.5	16.5	18.5	21.5	27.75	32.75	39	44.5	49.5
	mm	368	419	470	546	705	832	991	1130	1257
L2 (RTJ)	in	14.62	16.62	18.62	21.62	28	33.13	39.38	45.13	50.25
	mm	371	422	473	549	711	842	1000	1146	1276
W	in	14	14	20	22	24	24	39.38	39.38	47.25
	mm	350	350	500	560	610	610	1000	1000	1200
H	in	24.4	25.2	32.9	33.7	48.4	70.9	78.78	91	106
	mm	619	641	835	857	1230	1800	2000	2311	2692
WT(RF)	kg	84	116	143	236	918	1764	2680	3400	4300
WT(BW)	kg	58	62	128	168	781	1502	2280	2830	3600

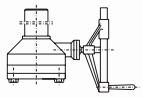
Class 2500 Cast Carbon Steel Globe Valve

ASME B16.34,
Pressure Seal, OS&Y,
Rising Stem and Handwheel,
Swivel Disc

Figure NO.:

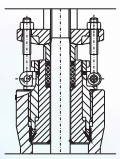
GL25R-PS,WCB/NO.5
GL25B-PS,WCB/NO.5
GL25J-PS,WCB/NO.5



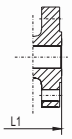


Gear Operator

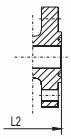
Optional	Standard
2"	3" & Larger



For 4" & Smaller



RF End

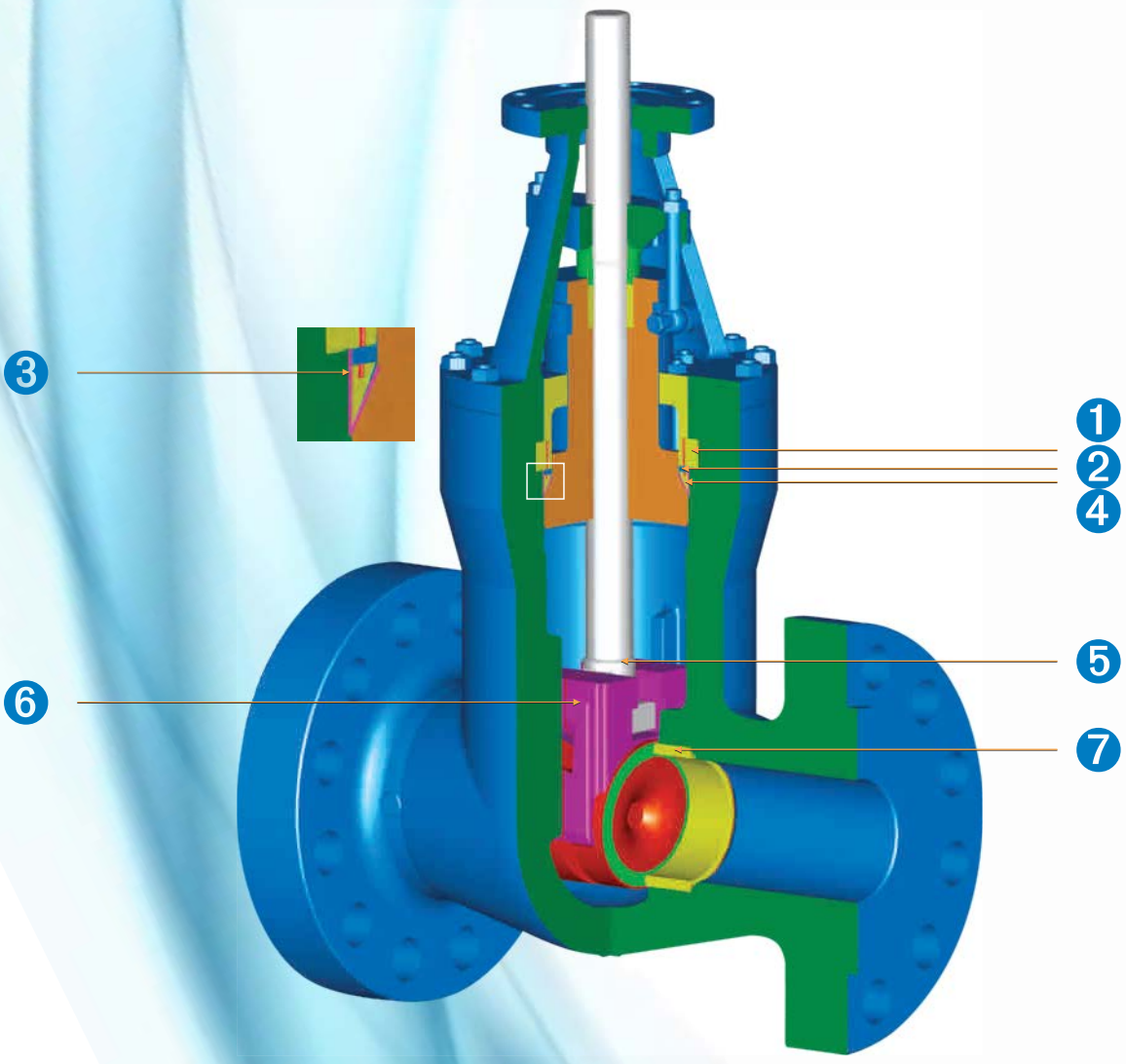


RTJ End

NPS	in	2"	2-1/2"	3"	4"	6"	8"	10"	12"
DN	mm	50	65	80	100	150	200	250	300
L-L1 (RF-BW)	in	17.75	20	22.75	26.5	36	40.25	50	56
	mm	451	508	578	673	914	1022	1270	1422
L2 (RTJ)	in	17.88	20.25	23	26.88	36.5	40.88	50.88	56.88
	mm	454	541	584	683	927	1038	1292	1445
W	in	16	20	22	24	24	24	39.38	39.38
	mm	400	500	560	610	610	610	1000	1000
H	in	24.3	30.7	31.5	51.2	53.9	85	100	106
	mm	616	781	800	1300	1370	2160	2540	2692
WT(RF)	kg	105	163	221	525	1313	2520	3300	4200
WT(BW)	kg	74	116	147	368	973	2100	2500	3300

Pressure Seal Gate Valve

Design Feature



1. Separated rings absorb the thrust along the stem applied by the internal pressure.
2. Sealing rings are used to withstand pressure and prevent deformation of the gaskets.
3. Stainless steel inlay to ensure soundness and corrosion-resistance in the critical body sealing zone for carbon and alloy steel valves.
4. Mild steel gasket seal to provide large contact area for perfect sealing.
5. Blowout proof stem design features tapered sealing surface which contacts against bonnet backseat when the valve is fully open.
6. Flexible wedge can compensate for seat face distortion and body deformation due to pipe stress.
7. Seat ring with stellite 6 overlay is standard design and installed with seal weld.

ELITE®

Material List

Pressure Seal Gate Valve

Part	Standard	Stainless Steel	High temperature Service		
BODY	ASTM A216-WCB	ASTM A351-CF8M	ASTM A217-WC6	ASTM A217-WC9	ASTM A217-C12A
BONNET	ASTM A105	ASTM A182-F316	ASTM A182-F11	ASTM A182-F22	ASTM A217-C12A
WEDGE	ASTM A216-WCB/ER410 & ASTM A217-CA15	ASTM A351-CF8M/STL.OVERLAY	ASTM A217-WC6/ER410 & ASTM A217-CA15	ASTM A217-WC9/ER410 & ASTM A217-CA15	ASTM A217-C12A/ER410
STEM NUT	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2	ASTM A439 D-2
GLAND FLANGE	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB	ASTM A216-WCB	ASTM A216-WCB
HANDWHEEL	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON	DUCTILE IRON
SEAT RING	ASTM A105/STL.OVERLAY	ASTM A182-F316/STL.OVERLAY	ASTM A182-F11/STL.OVERLAY	ASTM A182-F22/STL.OVERLAY	ASTM A182-F6a/STL.OVERLAY
STEM	ASTM A182-F6a	ASTM A182-F316	ASTM A182-F6a	ASTM A182-F6a	ASTM A182-F6a
BONNET SEAL RING	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F316L(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)	ASTM A182-F304(4"&Smaller GRAPHITE)
GLAND	ASTM A276-420	ASTM A276-316	ASTM A276-420	ASTM A276-420	ASTM A276-420
RETAINING NUT FOR STEM NUT	CARBON STEEL	STAINLESS STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
YOKE	ASTM A216-WCB	ASTM A351-CF8	ASTM A216-WCB& ASTM A217-WC6	ASTM A216-WCB& ASTM A217-WC6	ASTM A216-WCB
PACKING	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE	GRAPHITE
BONNET SEPARATE RING	CARBON STEEL	ASTM A276-420	ANSI 4140	ANSI 4140	ANSI 4140
CLIPPING RING	ASTM A216-WCB	ASTM A351-CF8	ASTM A217-WC6	ASTM A217-WC6	ASTM A276-420
HANDWHEEL NUT	CARBON STEEL	STAINLESS STEEL	CARBON STEEL	CARBON STEEL	CARBON STEEL
BONNET STUD	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
BONNET NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
YOKE STUD	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
YOKE NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
GLAND EYE BOLT	ASTM A193-B7	ASTM A193-B8	ASTM A193-B16	ASTM A193-B16	ASTM A193-B16
GLAND NUT	ASTM A194-2H	ASTM A194-8	ASTM A194-4	ASTM A194-4	ASTM A194-4
BONNET THRUST RING	CARBON STEEL	ASTM A276-420	AISI 4140	AISI 4140	ANSI 4140
SUPPORTING COVER	ASTM A105	ASTM A276-420	AISII 4140	AISI 4140	ANSI 4140
CLIPPING RING BOLT	CARBON STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
RIVET	CARBON STEEL	STAINLESS STEEL	CARBON STEEL	CARBON STEEL	STAINLESS STEEL
NAME PLATE	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL

Notes: Above materials are general, when ordered, Please contact ELITE Sales or technical team to confirm the details.

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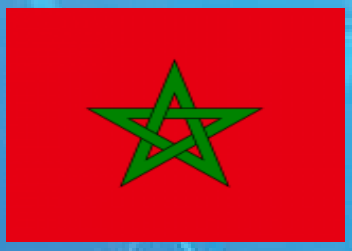

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