Cast Steel Valves-Gate valve, Globe valve, Check valve

General Design Specifications

Item	American Std.	British Std.
Shell Wall Thickness General design Std.	API600	BS 1414 (Gate valve) BS 1873 (Globe valve) BS 1868 (Check valve)
Pressure temperature rating	ASME B 16.34	BS 1560
Face-to-Face dimension	ASME B 16.10	BS 2080
End Flange dimension Gasket contacting face	ASME B 16.5*	BS1560
Welding End dimension	ASME B 16.25	BS 1414 (Gate valve) BS 1873 (Globe valve) BS 1868 (Check valve)

*Flange dimension: MSS SP-44 For 22 " , and ASME B16.47 series A or B for 26 " and larger.

Optional Shell Materials

Cast steel valves are optionally available with the following materials

ASTM Spec.code	Nominal Designation	Min.Temp.		Max.Temp	
		℉	℃	℉	℃
A216 WCB	C-Si	-20	-29	800	425
A217 WC1	C-1/2Mo	-20	-29	800	425
A217 WC6	1 1/4Cr-1/2Mo	-20	-29	1100	593
A217 WC9	21/4Cr-1Mo	-20	-29	1100	593
A217 C5	5Cr-1/2Mo	-20	-29	1200	650
A217 C12	9Cr-1Mo	-20	-29	1200	650
A352 LCB	C-Si	-50	-46	650	345
A352 LC1	C-1/2Mo	-75	-59	650	345
A352 LC2	2-1/2Ni	-100	-73	650	345
A352 LC3	3-1/2Ni	-150	-101	650	345
A351 CF8	18Cr-8Ni	-320	-196	1500	538
A351 CF8M	18Cr-9Ni-2Mo	-320	-196	1500	538
A351 CF3	18Cr-8Ni	-320	-196	800	425
A351 CF3M	16Cr-12Ni-2Mo	-320	-196	1000	455

Bonnet Gasket Materials

Depending on class ratings and service conditions, the following gasket materials can be chosen.

Gasket Materials	Normal Pressure Rating					
	Class 150	Class 300	Class 600	Class 900	Class 1500	Class 2500
Jacketed graphite with stainless steel	○□△	○□△	○□△			
Spiral wound with flexible graphite filler	○□	○□△	○□△			
Spiral wound with PTFE filler	☆	☆				
Ring joint metal			☆	○□△	○□△	○□△
Virgin PTFE	☆	☆				
Glass filled PTFE	☆	☆				

○: Gate valve
□: Globe valve
△: Check valve
☆: Option

Cast Steel Valves-Gate valve, Globe valve, Check valve

Gland Packing Materials

Packing Materials		Service conditions
Flexible Graphite	Die-formed Rings	600℃ (1110°F) Corrosion resistant
	Braided Graphite Yarn	
PTFE cup & cone/PTFE V-ring		150 ℃ (300°F) Corrosion resistant
Carbon fiber		500 ℃ (930°F) High pressure
Inconel wired flexible graphite		600 ℃ (1110°F) Corrosion resistant
Braided PTFE fiber		260 ℃ (500 °F) Corrosion resistant

Inspection and Test

valves are 100% hydraulic test in accordance to API 598 or EN-12266-1 part 1 requirements.
Material Test Reports and Inspection Certificates are provided upon delivery.
capable to perform the following test and inspection according to the requirement of order.

Test / Inspection Item	Method	Evaluation
Chemical properties analysis		Relevant ASTM Stds.
Mechanical performance test	ASTM A370	Relevant ASTM Stds.
Pressure test	API 598 or BS EN12266	API 598
Radiographic inspection	ASTM E142/E49	ASME B16.34
Wet magnetic particle inspection	ASTM E138	
Liquid penetration inspection	ASTM E165	
Low temperature impact test	ASTM E23	ASTM A352
Dimensional inspection		Relevant valve Stds.
Visual inspection		MSS SP-55
Emission test	EPA Method 21 and Sheel specification	Shell specification

Fugitive Emission Service Valves

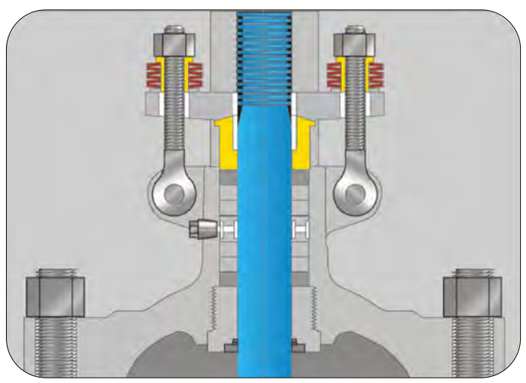
offers fugitive emission service valves. The valves comply with environmental protection requirements.
self developed fugitive emission valves are designed, manufactured and tested to meet less than 100ppm.

Live-loading. Two sets of plate springs maintain a permanent packing stress of 3500-4000psi. Live-loading extends low emission service life especially in service with high pressure/temperature transients

Leak-off. For critical service a lantern ring and double packing can be provided with a leak-off connection. The leak-off is provided to allow collection of leakage from the lower packing set.

Stem 16-32 RMS surface finish, straightness and roundness are precisely controlled.

Stuffing box-Maximum 32 RMS surface finish. Cylindricity and verticality are precisely controlled.



Cast Steel Valves

NACE Valves

For service in petroleum or sour gases that contains H_2S. offers NACE valves with component materials specially heat treated hardness-controlled to meet NACE MR 0175 Standard.

Valve Part	ASTM Specification	NACE Hardness	API 600 Hardness
Body/bonnet	A216 WCB	≤HRC 22 (237 HB)	
Disc	A216 WCB or A276 410		
Seat	***13Cr deposit or A276 410 STL alloy		≥250 HB*
Gland	***A276 410		- -
Stem			275HB≥ ≥200 HB
Lantern ring			- -
Bonnet bush			≥250 HB
Body seat ring			≥250 HB*
Bonnet bolt	A193 B7	- -	- -
	A193 B7M**	≤HRC 22	
Bonnet nut	A194 2H	- -	
	A194 2HM**	≤HRC 22	

* Hardness differential of 50 HB is required between the seats.
** Only when specified.
*** Double tempered. (three step process)

Cryogenic Valves

- Cryogenic valves are designed to comply with API 600, BS 1873, BS 1868 and BS 6364 standards.
- All valves except for check valve are supplied with extended bonnet structure of a sufficient gas volumn length, to keep the stem seal packing exposed only to vapor and not the cold liquid to ensure functional integrity.
- Cryogenic valve components are assured to be not breakable or easily damaged
- Structure of cryogenic valve parts material should remain stable in order to prevent materials from changes in the volume, so for cryogenic valve served -100 ℃below , its valve body, bonnet, wedge/disc, seats, stem should be cryogenic treated before finishing.
- Cryogenic Valves test standards: API 598, ISO 5208, BS 6755.
- Cryogenic Valves test standard: conducted as per BS 6364, by immersing the valve in liquid Nitrogen to cool off to the desired temperature which is monitored at a number of positions on the valve, both internally and externally. Cooling medium can be mixture of alcohol with liquid nitrogen, or liquid nitrogen.

Cast Steel Bolted Bonnet Gate Valves

Gate valves

Design Features

- Cast steel gate valve design complies with the API 600, ISO 10434, BS 1414 and the ASME B16.34 standards.
- Face to Face dimension: ASME B16.10, BS 2080 and ISO 5752.
- Flanged End: ASME B16.5, 26 "and larger sizes according to ASME B16.47 Series A or Series B.
- Butt-weld End: ASME B16.25.
- Shell Wall Thickness: API 600.
- Inspection and Test: API 598, BS EN 12266, ISO 5208

Casting Steel Material

- Visual check for cast steel material includes: surface quality, dimension, chemical properties, mechanical performance, non-destructive testing to ensure that the comprehensive performance of raw materials comply with the relevant ASTM, BS, EN, JIS standards.

Body

- The designe provides the whole structure of low flow resistance channel structure, enables the body stiffness and strength to bear the nominal piping pressure and stress loading, the valve body wall thickness design complies with the API 600 with sufficient margin corrosion resistance for the medium.

Bonnet

- Bonnet can be designed with a variety of seal structure of body connection to meet the needs of different operating conditions, the structure can be equipped to connect with jacketed, flat, spiral or metal ring gasket, and self pressure-seal valve bonnet for class 900/ 1500 / 2500.

Seat

- Seat structure can be designed as per user requirements as a whole alloy steel materials pressed-in sealing structure, welding sealing , or screw connection in assembly. The austenitic stainless steel body material can be provided with integral seat.

Wedge

- The wedge structure design can be solid, flexible, or parallel dual plates, and has enough strength and stiffness to ensure the valve sealing performance.

Seat and other seal material

- The choice of materials for the seat and other seal material can be as per API 600 standard, or users design and manufacturing requirements.

Stem

- The stem is thoroughly forged, its T-shape connecting end is of good stiffness and strength to ensure its safe use and reliability. The stem transmission bearing structure applies sophisticated CCME trapezoidal thread to enable its up and down travel.

Backseat

- All backseats are used on the valve seat seal design, they are replacable, and for austenitic stainless steel material it can be integral backseat design.

Bonnet and Body seal structure

- Class 150: jacketed flexible graphite and stainless steel gasket
- Class300, 600: spiral stainless steel and flexible graphite wound gasket
- Class 900 and above: metal ring gasket
- Choice for bonnet and body seal can be based on the use of specific operating conditions (medium, medium temperature and pressure).

Stuffing box

- Stuffing box is designed in accordance with API 600 standards with precise control of surface finish in 32RMS below and its inner verticality.

Packing gland / bushing

- Packing gland / bushing are separate structure to ensure packing seal performance.

Stem Nut

- Stem drive nut bearing structure is provided with sophisticated ACME trapezoidal thread, top entry connection design to the yoke, so even the valves are taken off the handwheel at service, the locking deice can be ensured to be at original position and working.

Operator

- The valve operators are normally handwheel, gearbox, with clear open the and close marking.
- Electric, or other operation device can be supplied according to customers requirements.

Class 150

Cast Steel Bolted Bonnet Gate Valves

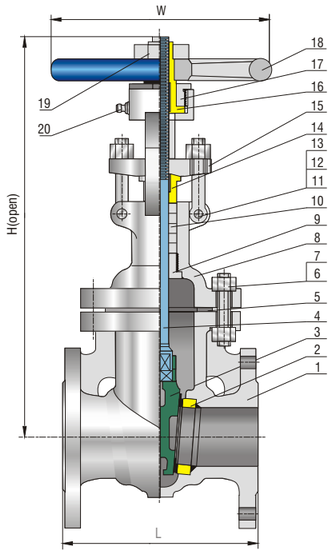
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Non-rising Handwheel, Flexible Wedge.

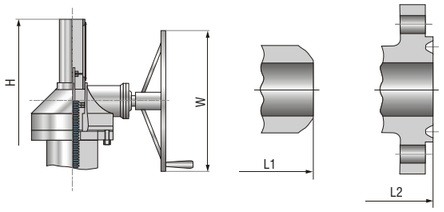
Features

- Design and manufacture: API 600
- Face-to-Face dimension: 36"and smaller to ASME B16.10, 40"and larger to manufacturer's standard
- Flanged End: 24"and smaller to ASME B16.5 26"and larger to ASME B16.47 series A
- B.W. End: ASME B16.25
- Shell Wall Thickness: 24"and smaller to API 600 26"and larger to manufacturer's standard
- 8"and smaller valves have a one-piece bonnet and yoke design 10"and larger valves have a split bonnet and yoke design.

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Wedge	ASTM A216 Gr.WCB+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Jacketed Graphite
6	Stud	ASTM A193 Gr.B7
7	Nut	ASTM A194 Gr.2H
8	Bonnet	ASTM A216 Gr.WCB
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Pin	C.S.
12	Gland bolt	ASTM A193 Gr.B7
13	Gland nut	ASTM A194 Gr.2H
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Retaining nut	C.S.
18	Handwheel	Malleable Iron
19	H.W. lock nut	C.S.
20	Lubricator	Assem.





●Gear operation for 14" and larger BW End RTJ End

Dimensions & Weights

Valve Size	in. mm	1-1/2 40	2 50	2-1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	28 700	30 750	32 800	36 900	40 1000	42 1050	48 1200
L (RF)	in.	6.5	7	7.5	8	9	10	10.5	11.5	13	14	15	16	17	18	20	24	24	26	28	30	31	34
	mm	165	178	190	203	229	254	267	292	330	356	381	406	432	457	508	610	610	660	711	762	787	864
L1 (BW)	in.	6.5	8.5	9.5	11.13	12	15	15.88	16.5	18	19.75	22.5	24	26	28	32	36	36	38	40	42	43	46
	mm	165	216	241	283	305	381	403	419	457	502	572	610	660	711	813	914	914	965	1016	1067	1092	1168
L2 (RTJ)	in.	7.0	7.5	8	8.5	9.5	10.5	11	12	13.5	14.5	15.5	16.5	17.5	18.5	20.5	24.5	24.5	26.5	28.5	-	-	
	mm	178	191	203	216	242	267	279	305	343	368	394	419	445	470	521	622	622	673	724	-	-	
H (open)	in.	15.7	16.13	18.56	20.94	24.13	27.94	31.75	39	46.69	55.31	63.56	71.31	78.19	87	106.25	119.31	130.56	13725	150.56	183.86	193.75	217.5
	mm	392	409	472	532	612	710	806	990	1186	1405	1615	1811	1986	2210	2698	3030	3317	3487	3825	4670	4920	5525
W	in.	7.86	7.86	7.86	9.86	9.86	11.81	11.81	13.75	17.69	19.69	18.13	18.13	18.13	24	24	24	24	24	30	30	30	30
	mm	200	200	200	250	250	300	300	350	450	500	460	460	460	610	610	610	610	610	760	760	760	760
WT (kg)	RF	18.5	20	30	36	53	71	85	136	220	323	387	553	660	810	1250	1931	2380	2490	3600	4815	5300	7110
	BW	15.5	17	26	29	46	66	77	116	202	294	350	506	575	720	1130	1765	2028	2280	3080	4840	5275	7050

Class 300

Cast Steel Bolted Bonnet Gate Valves

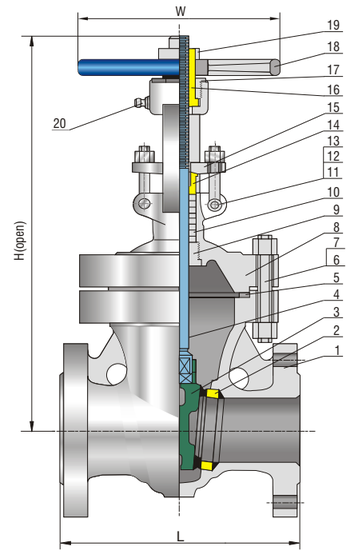
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Non-rising Handwheel, Flexible Wedge.

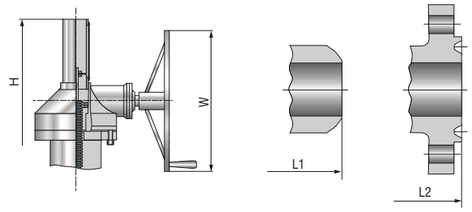
Features

- Design and manufacture: API 600
- Face-to-Face dimension: 36"and smaller to ASME B16.10, 40"and larger to manufacturer's standard
- Flanged End: 24"and smaller to ASME B16.5 26"and larger to ASME B16.47 series A
- B.W. End: ASME B16.25
- Shell Wall Thickness: 24"and smaller to API 600 26"and larger to manufacturer's standard
- 8"and smaller valves have a one-piece bonnet and yoke design 10"and larger valves have a split bonnet and yoke design.

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Wedge	ASTM A216 Gr.WCB+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Spiral wound W/Graphite
6	Stud	ASTM A193 Gr.B7
7	Nut	ASTM A194 Gr.2H
8	Bonnet	ASTM A216 Gr.WCB
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Pin	C.S.
12	Gland bolt	ASTM A193 Gr.B7
13	Gland nut	ASTM A194 Gr.2H
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Retaining nut	C.S.
18	Handwheel	Malleable Iron
19	H.W. lock nut	C.S.
20	Lubricator	Assem.





●Gear operation for 12"and larger BW End RTJ End

Dimensions & Weights

Valve Size	in. mm	1-1/2 40	2 50	2-1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	28 700	30 750	32 800	36 900	40 1000	42 1050	48 1200
L-L1	in.	7.5	8.5	9.5	11.12	12	15	15.88	16.5	18	19.75	30	33	36	39	45	54	55	61.12	68	76	78	88
	mm	190	216	241	283	305	381	403	419	457	502	762	838	914	991	1143	1372	1397	1553	1727	1930	1981	2235
L2 (RTJ)	in.	8.0	9.12	10.12	11.74	12.62	15.62	16.5	17.12	18.62	20.37	30.62	33.62	36.62	39.75	45.88	54	56	61.12	69.12	-	-	-
	mm	203	232	257	298	321	397	419	435	473	518	778	854	930	1010	1165	1372	1422	1553	1756	-	-	-
H (open)	in.	14.7	15.75	18.75	21.38	25.63	30.31	34.63	40.81	50.19	56.63	65	72.44	79.94	88.19	114.19	122	139.38	152	169.75	188.63	198.13	217.38
	mm	374	400	477	543	650	770	880	1037	1275	1438	1650	1840	2030	2240	2900	3100	3540	3860	4312	4791	5032	5522
W	in.	7.88	7.88	9.88	9.88	11.81	11.81	13.75	17.69	19.69	22.06	18.13	18.13	24	24	24	24	30	30	30	24	24	24
	mm	200	200	250	250	300	300	350	450	500	560	460	460	610	610	610	610	760	760	760	610	610	610
WT (kg)	RF	26	30	39	55	83	92	137	240	333	536	699	1010	1205	1720	2800	3150	3786	4210	6850	8460	9500	12400
	BW	22	26	34	47	68	77	118	195	271	432	595	848	1025	1460	2294	2870	3220	3675	4990	6160	6800	9000

GATE VALVE

Class 600

Cast Steel Bolted Bonnet Gate Valves

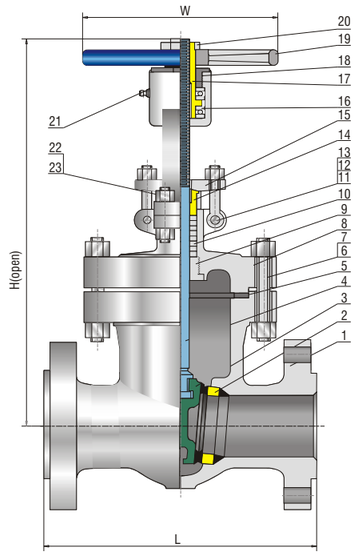
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Non-rising Handwheel, Flexible Wedge.

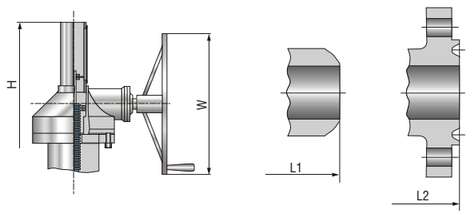
Features

- Design and manufacture: API 600
- Face-to-Face dimension: 36"and smaller to ASME B16.10
  40"and larger to manufacturer's standard
- Flanged End: 24"and smaller to ASME B16.5
  26"and larger to ASME B16.47 series A
- B.W. End: ASME B16.25
- Shell Wall Thickness: 24"and smaller to API 600
  26"and larger to manufacturer's standard
- 6"and smaller valves have a one-piece bonnet and yoke design
  8"and larger valves have a split bonnet and yoke design.

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Wedge	ASTM A216 Gr.WCB+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Spiral wound W/Graphite
6	Stud	ASTM A193 Gr.B7
7	Nut	ASTM A194 Gr.2H
8	Bonnet	ASTM A216 Gr.WCB
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Pin	C.S.
12	Gland bolt	ASTM A193 Gr.B7
13	Gland nut	ASTM A194 Gr.2H
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Bearing	Assem.
17	Stem nut	Aluminum Bronze
18	Retaining nut	C.S.
19	Handwheel	Malleable Iron
20	H.W. lock nut	C.S.
21	Lubricator	Assem.
22	Yoke bolt	ASTM A193 Gr.B7
23	Yoke nut	ASTM A194 Gr.2H





●Gear operation for 10″ and larger

BW End

RTJ End

Dimensions & Weights

Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	5 / 125	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400	18 / 450	20 / 500	24 / 600	26 / 650	28 / 700	30 / 750	32 / 800	36 / 900
L-L1 (RF-BW)	in.	11.5	13	14	17	20	22	26	31	33	35	39	43	47	55	57	61	65	70	82
	mm	292	330	356	432	508	559	660	787	838	889	991	1092	1194	1397	1448	1549	1651	1778	2083
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	43.12	47.25	55.38	-	-	-	-	-
	mm	295	333	359	435	511	562	663	790	841	892	994	1095	1200	1407					
H (open)	in.	18.63	21.75	23.38	28.06	30.3	38.19	44.19	52.38	59.81	68.13	72.75	90.13	98.81	119	127.25	140.25	152.75	163	179.5
	mm	474	553	593	713	770	970	1122	1330	1519	1730	1835	2290	2510	3022	3232	3562	3880	4140	4560
W	in.	9.88	9.88	11.81	13.75	15.7	19.69	22.06	28.38	24	24	24	24	30	30	30	30	24	24	24
	mm	250	250	300	350	400	500	560	720	610	610	610	610	760	760	760	760	610	610	610
WT (kg)	RF	41	58	88	131	205	253	413	623	784	1288	1820	2150	2540	4080	5220	6050	6945	7965	10000
	BW	35	50	68	104	192	208	328	496	637	1120	1448	1828	2201	3360	4295	4980	5710	5223	8220

Class 900/1500/2500

Cast Steel Bolted Bonnet Gate Valves

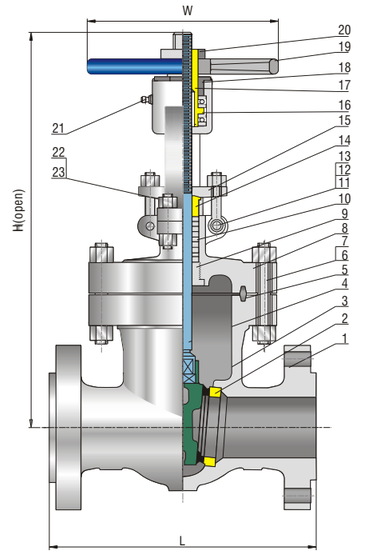
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Non-rising Handwheel, Flexible Wedge.

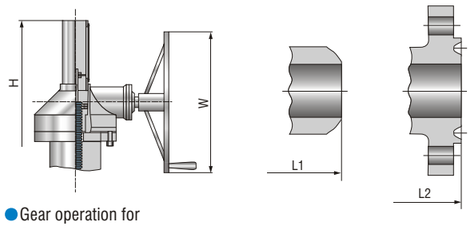
Features

- Design and manufacture: API 600
- Face-to-Face dimension: 36"and smaller to ASME B16.10
  40"and larger to manufacturer's standard
- Flanged End: 24"and smaller to ASME B16.5; 26"and larger to ASME B16.47 series A
- B.W. End: ASME B16.25
- Shell Wall Thickness: 24"and smaller to API 600; 26"and larger to manufacturer's standard
- 6"and smaller valves have a one-piece bonnet and yoke design
  8"and larger valves have a split bonnet and yoke design.

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Wedge	ASTM A216 Gr.WCB+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	Soft Iron
6	Stud	ASTM A193 Gr.B7
7	Nut	ASTM A194 Gr.2H
8	Bonnet	ASTM A216 Gr.WCB
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Pin	C.S.
12	Gland bolt	ASTM A193 Gr.B7
13	Gland nut	ASTM A194 Gr.2H
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Bearing	Assem.
17	Stem nut	Aluminum Bronze
18	Retaining nut	C.S.
19	Handwheel	Malleable Iron
20	H.W. lock nut	C.S.
21	Lubricator	Assem.
22	Yoke bolt	ASTM A193 Gr.B7
23	Yoke nut	ASTM A194 Gr.2H





●Gear operation for
Class 900 6 " and larger
Class 1500 4 " and larger
Class 2500 3 " and larger

BW End

RTJ End

Dimensions & Weights

	Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300
Class 900	L-L1 (RF-BW)	in.	14.5	16.5	15	18	24	29	33	38
		mm	368	419	381	457	610	737	838	965
	L2 (RTJ)	in.	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
		mm	371	422	384	460	613	740	841	968
	H (open)	in.	21.56	27.56	28.15	28.69	41	49.63	62.63	70.69
		mm	547	700	715	729	1041	1260	1590	1795
	W	in.	11.81	14	15.75	17.69	22.06	24	24	24
		mm	300	355	400	450	560	610	610	610
	WT (kg)	RF	90	110	123	148	420	650	1160	1700
		BW	82	93	108	122	359	566	980	1450
Class 1500	L-L1 (RF-BW)	in.	14.5	16.5	18.5	21.5	27.75	32.75	39	44.5
		mm	368	419	470	546	705	832	991	1130
	L2 (RTJ)	in.	14.62	16.62	18.62	21.62	28	33.13	39.38	45.12
		mm	371	422	473	549	711	841	1000	1146
	H (open)	in.	22.63	27.56	31.75	34.94	42.5	53.94	59.81	65
		mm	574	700	806	887	1079	1370	1520	1651
	W	in.	13.75	15.75	17.75	22.06	24	24	30	30
		mm	350	400	450	560	610	610	760	760
	WT (kg)	RF	117	175	240	337	680	1228	2278	3260
		BW	93	144	185	285	584	978	1990	2850
Class 2500	L-L1 (RF-BW)	in.	17.75	20	22.75	26.5	36	40.25	50	-
		mm	451	508	578	673	914	1022	1270	
	L2 (RTJ)	in.	17.87	20.25	23	26.88	36.5	40.87	50.88	-
		mm	454	514	584	683	927	1038	1292	
	H (open)	in.	27.56	29.5	34.63	42.5	53.94	60.25	80.5	-
		mm	700	750	887	1079	1370	1530	2045	
	W	in.	13.75	17.75	22.06	28.38	18.13	24	30	-
		mm	350	450	560	720	460	610	760	
	WT (kg)	RF	132	206	256	498	1550	2395	4460	-
		BW	99	155	192	390	1230	1980	3700	

Cast Steel Bolted Bonnet Globe Valves

Globe valves

Design Feature

- Cast steel globe valve design is as per the API 600, BS 1873 and the ASME B16.34 standards.
- Face-to-Face dimension: ASME B16.10, BS 2080 and ISO 5752.
- Flanged End: ASME B16.5.
- Butt-weld End: ASME B16.25.
- Shell Wall Thickness: BS1873.
- Inspection and Test: API 598, BS EN 12266, ISO 5208

Casting Steel Material

- Visual check for cast steel material includes: surface quality, dimension, chemical properties, mechanical performance, non-destructive testing to ensure that the comprehensive performance of raw materials comply with the relevant ASTM, BS, EN, JIS standards.

Body

- The designe provides the whole structure of low flow resistance channel structure, enables the body stiffness and strength to bear the nominal piping pressure and stress loading, the valve body wall thickness design complies with the API 600 with sufficient margin corrosion resistance for the medium.

Bonnet

- Bonnet can be designed with a variety of seal structure of body connection to meet the needs of different operating conditions, the structure can be equipped to connect with jacketed, flat, spiral wound or metal ring gasket, or pressure-seal valve bonnet for Calss900/1500/ 2500.

Seat

- Seat structure can be designed as per user requirements as a whole alloy steel materials pressed-in sealing structure, welding sealing , or screw connection in assembly. The austenitic stainless steel body material can be provided with integral seat.

Plate

- Disc design applies conventional seal structure of rigid cone with plug-oriented, plunger-seal structure, the pressure balance disc, large-sized valves can be provied with dual plates for easy operation.

Seat and other seal material

- The choice of materials for the seat and other seal material can be as per API 600 standard, or users design and manufacturing requirements.

Stem

- The stem is wholly forged, its T-shape connecting end is of good stiffness and strength to ensure its safe use and reliability. The stem transmission bearing structure applies sophisticated CCME trapezoidal thread to enable its up and down travel.

Backseat

- All backseats are used on the valve seat seal design, they are replacable, and for austenitic stainless steel material it can be integral backseat design..

Bonnet and Body seal structure

- Class 150, 300, 600: spiral stainless steel and flexible graphite wound gasket
- Class 600, 900 and above: metal ring gasket
- Choice for bonnet and body seal can be based on the use of specific operating conditions (medium, medium temperature and pressure).

Stuffing box

- Stuffing box is designed in accordance with API 600 standards with precise control of surface finish in 32RMS below and its inner verticality.

Packing gland / bushing

- Packing gland / bushing are separate structure to ensure packing seal performance.

Stem Nut

- Stem drive nut bearing structure is provided with sophisticated ACME trapezoidal thread, top entry connection design to the yoke, so even the valves are taken off the handwheel at service, the locking deice can be ensured to be at original position and working.

Operator

- The valve operators are normally handwheel, gearbox, with clear open the and close marking.
- Electric, or other operation device can be supplied according to customers requirements.

Class 150

Cast Steel Bolted Bonnet Globe Valves

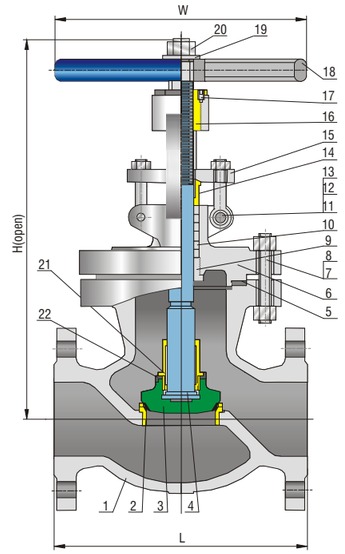
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Plug Type Disc.

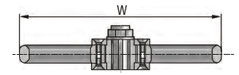
Features

- Design and manufacture: API 600 and BS 1873
- Face-to-Face dimension: ASME B16.10
- Flanged End: ASME B16.5
- B. W. End: ASME B16.25
- Shell Wall Thickness: BS 1873

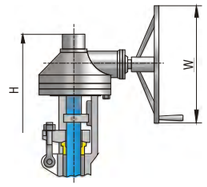
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Jacketed Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Stud	ASTM A193 Gr.B7
8	Nut	ASTM A194 Gr.2H
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.

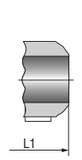




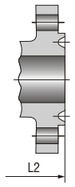
- Impact Type Handwheel for 10″-12″



- Gear operation for 14"and larger



BW End



RTJ End

Dimensions & Weights

Valve Size	in. mm	1-1/2 40	2 50	2-1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400
L-L1 (RF-BW)	in.	6.5	8	8.5	9.5	11.5	14	16	19.5	24.5	27.5	31	36
	mm	165	203	216	241	292	356	406	495	622	698	787	914
L2 (RTJ)	in.	7.0	8.5	9	10	12	14.5	16.5	20	25	28	31.5	36.5
	mm	178	216	229	254	305	368	419	508	635	711	800	927
H (open)	in.	14.25	14.69	15.38	16.56	20.25	21.19	22.31	24.63	28	39	51	63.75
	mm	326	373	390	421	515	538	567	626	712	990	1295	1619
W	in.	7.88	7.88	9.88	9.88	11.81	11.81	13.75	15.75	17.75	20	24	24
	mm	200	200	250	250	300	300	350	400	450	500	610	610
WT (kg)	RF	19	22	29	42	64	77	105	154	288	507	690	950
	BW	16	19	25	34	49	65	82	131	249	430	600	850

Class 300

Cast Steel Bolted Bonnet Globe Valves

Bolted Bonnet, Outside Screw & Yoke, Rising Stem & Handwheel, Plug Type Disc.

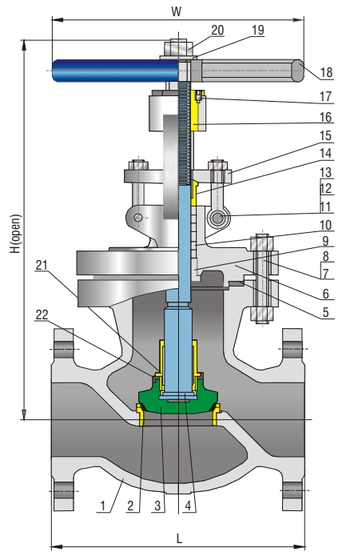
GLOBE VALVE

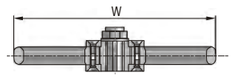
Features

- Design and manufacture: API 600 and BS 1873
- Face-to-Face dimension: ASME B16.10
- Flanged End: ASME B16.5
- B. W. End: ASME B16.25
- Shell Wall Thickness: BS 1873

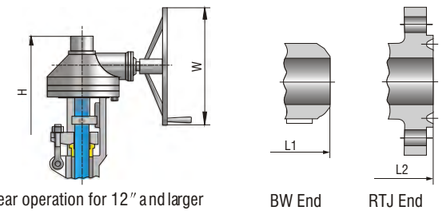
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Spiral wound W/Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Stud	ASTM A193 Gr.B7
8	Nut	ASTM A194 Gr.2H
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.





- Impact Type Handwheel for 6″-10″



- Gear operation for 12″ and larger

BW End

RTJ End

Dimensions & Weights

Valve Size	in. / mm	1-1/2	2	2-1/2	3	4	5	6	8	10	12	14	16
		40	50	65	80	100	125	150	200	250	300	350	400
L-L1 (RF-BW)	in.	9	10.5	11.5	12.5	14	15.75	17.5	22	24.5	28	33	34
	mm	229	267	292	318	356	400	444	559	622	711	838	864
L2 (RTJ)	in.	9.5	11.12	12.12	13.12	14.62	16.37	18.12	22.62	25.12	28.62	33.62	34.62
	mm	241	283	308	333	371	416	460	575	638	727	854	879
H (open)	in.	14.17	15.69	17.13	18.19	22.06	24.38	27.31	38.63	44.5	41.31	61.25	67
	mm	360	398	436	462	560	620	694	982	1130	1049	1556	1700
W	in.	7.88	7.88	9.88	9.88	13.75	15.75	17.75	22.06	34	24	24	24
	mm	200	200	250	250	350	400	450	560	860	610	610	610
WT (kg)	RF	26	31	43	57	86	130	168	280	385	724	1500	2200
	BW	21	26	38	44	68	110	138	228	329	618	1350	2000

Class 600

Cast Steel Bolted Bonnet Globe Valves

Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Plug Type Disc.

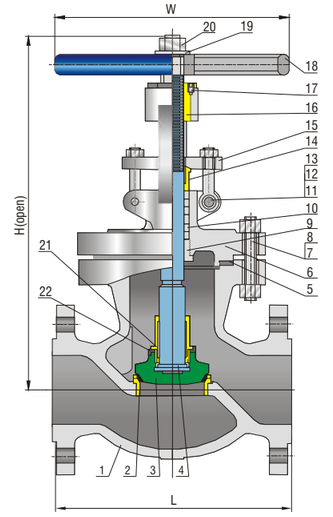
GLOBE VALVE

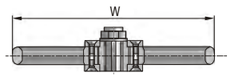
Features

- Design and manufacture: API 600 and BS 1873
- Face-to-Face dimension: ASME B16.10
- Flanged End: ASME B16.5
- B. W. End: ASME B16.25
- Shell Wall Thickness: BS 1873

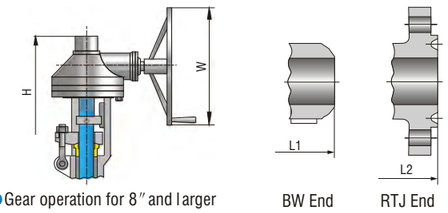
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Gasket	304S.S. Spiral wound W/Graphite
6	Bonnet	ASTM A216 Gr.WCB
7	Stud	ASTM A193 Gr.B7
8	Nut	ASTM A194 Gr.2H
9	Backseat	ASTM A276 410
10	Packing	Graphite
11	Gland bolt	ASTM A193 Gr.B7
12	Gland nut	ASTM A194 Gr.2H
13	Pin	C.S.
14	Bushing	ASTM A276 410
15	Gland	ASTM A216 Gr.WCB
16	Stem nut	Aluminum Bronze
17	Screw	C.S.
18	Handwheel	Malleable Iron
19	Washer	C.S.
20	Nut	C.S.
21	Disc cover	ASTM A276 410
22	Washer	S.S.





- Impact Type Handwheel for 4″-6″



- Gear operation for 8″ and larger

BW End

RTJ End

Dimensions & Weights

Valve Size	in. / mm	2	2-1/2	3	4	6	8	10	12	14	16
		50	65	80	100	150	200	250	300	350	400
L-L1 (RF-BW)	in.	11.5	13	14	17	22	26	31	33	35	39
	mm	292	330	356	432	559	660	787	838	889	991
L2 (RTJ)	in.	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12
	mm	295	333	359	435	562	663	791	841	892	994
H (open)	in.	16.75	19.75	20.5	24.38	34.88	36.69	41	50.38	70.88	76
	mm	425	502	521	620	886	932	1040	1280	1800	1930
W	in.	9.88	11.81	13.75	17.75	28.38	18.13	24	30	30	30
	mm	250	300	350	450	720	460	610	760	760	760
WT (kg)	RF	39	58	73	120	327	482	700	900	2700	3600
	BW	33	48	61	95	261	385	588	795	2510	3350

Class 900/1500/2500

Cast Steel Bolted Bonnet Globe Valves

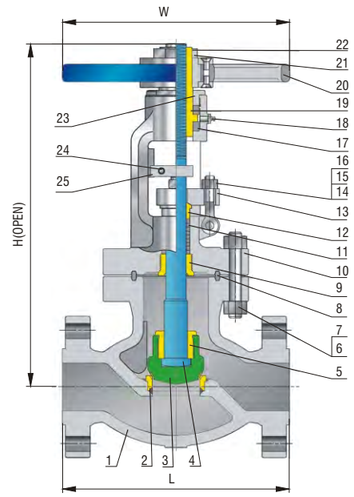
Bolted Bonnet, Outside Screw & Yoke, Rising Stem, Plug Type Disc.

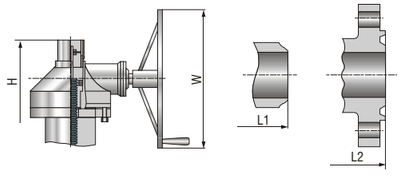
Features

- Design and manufacture: API 600 and BS 1873
- Face-to-Face dimension: ASME B16.10
- Flanged End: ASME B16.5
- B. W. End: ASME B16.25
- Shell Wall Thickness: BS 1873

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A105+13Cr
4	Stem	ASTM A182 F6a
5	Disc cover	ASTM A276 410
6	Stud	ASTM A193 Gr.B7
7	Nut	ASTM A194 Gr.2H
8	Gasket	Soft Iron
9	Backseat	ASTM A276 410
10	Bonnet	ASTM A216 Gr.WCB
11	Packing	Graphite
12	Bushing	ASTM A276 410
13	Gland	ASTM A216 Gr.WCB
14	Gland bolt	ASTM A193 Gr.B7
15	Gland nut	ASTM A194 Gr.2H
16	Pin	C.S.
17	Bearing	Assem.
18	Lubricator	Assem.
19	Stem nut	Aluminum Bronze
20	Handwheel	Malleable Iron
21	H.W. lock nut	C.S.
22	Screw	C.S.
23	Retaining nut	C.S.
24	Bolt	C.S.
25	Guide block	C.S.





- Gear operation for
  Class 900: 6" and larger
  Class 1500: 4" and larger
  Class 2500: 3" and larger

BW End

RTJ End

Dimensions & Weights

	Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250
Class 900	L-L1 (RF-BW)	in.	14.5	16.5	15	18	24	29	33
		mm	368	419	381	457	610	737	838
	L2 (RTJ)	in.	14.62	16.62	15.12	18.12	24.12	29.12	33.12
		mm	371	422	384	460	613	740	841
	H (open)	in.	9.44	10.25	10.25	12.63	15	20.88	27.17
		mm	240	260	260	320	382	530	690
	W	in.	13.75	15.75	17.75	22.06	24	24	24
		mm	350	400	450	560	610	610	610
	WT (kg)	RF	100	118	131	218	452	710	2050
		BW	75	94	105	185	340	630	1870
Class 1500	L-L1 (RF-BW)	in.	14.5	16.5	18.5	21.5	27.75	32.75	-
		mm	368	419	470	546	705	832	
	L2 (RTJ)	in.	14.62	16.62	18.62	21.62	28	33.13	-
		mm	371	422	473	549	711	841	
	H (open)	in.	23.31	26	27.25	35.69	40	45.06	-
		mm	592	660	692	907	1015	1145	
	W	in.	13.75	15.75	17.75	22.06	24	24	-
		mm	350	400	450	560	610	610	
	WT (kg)	RF	112	141	228	336	822	990	-
		BW	84	115	183	277	715	830	
Class 2500	L-L1 (RF-BW)	in.	17.75	20	22.75	26.5	36	-	-
		mm	451	508	578	673	914		
	L2 (RTJ)	in.	17.87	20.25	23	26.88	36.5	-	-
		mm	454	514	584	683	927		
	H (open)	in.	27.25	29.5	31.5	47.25	75	-	-
		mm	692	750	800	1200	1905		
	W	in.	15.75	19.69	24	30	30	-	-
		mm	400	500	610	760	750		
	WT (kg)	RF	182	290	340	820	2300	-	-
		BW	153	230	272	670	2000		

Cast Steel Check Valves

Check Valves

Design Feature:

- Cast steel swing check valve design is in accordance with the API 600, BS 1868 and the ASME B16.34 standards.
- Face-to-Face dimension: ASME B16.10, BS 2080 and ISO 5752.
- Flanged End: ASME B16.5, 26 "and larger sizes according to ASME B16.47 Series A or Series B.
- Butt-weld End: ASME B16.25.
- Shell Wall Thickness: Bs1868.
- Inspection and Test: API 598, BS EN 12266, ISO 5208 Casting Steel Material

Casting Steel Material

Visual check for cast steel material includes: surface quality, dimension, chemical properties, mechanical performance, non-destructive testing to ensure that the comprehensive performance of raw materials comply with the relevant ASTM, BS, EN, JIS standards.

Body

- The design provides the whole structure of low flow resistance channel structure, enables the body stiffness and strength to bear the nominal piping pressure and stress loading, the valve body wall thickness design complies with the API 600 with sufficient margin corrosion resistance for the medium.

Bonnet

- Bonnet can be designed with a variety of seal structure of body connection to meet the needs of different operating conditions, the structure can be equipped to connect with jacketed, flat, spiral wound or metal ring gasket, or pressure-seal valve bonnet for Calss900/1500 / 2500.

Seat

- Seat structure can be designed as per user requirements as a whole alloy steel materials pressed-in sealing structure, welding sealing , or screw connection in assembly. The austenitic stainless steel body material can be provided with integral seat.

Plate components

- Plate components include: plate, hanger, washer, gland or locking nut, locking pin. Swing check valve can be maintained on pipeline directly, and its plate design applies often the conventional rigid parallel seal structure.

Seat and other seal material

- The choice of materials for the Seat and other seal material can be as per API 600 standard, or users design and manufacturing requirements.

Bonnet and body seal structure

- Class 150,300, 600: spiral stainless steel and flexible graphite wound gasket
- Class 900 and above: metal ring gasket

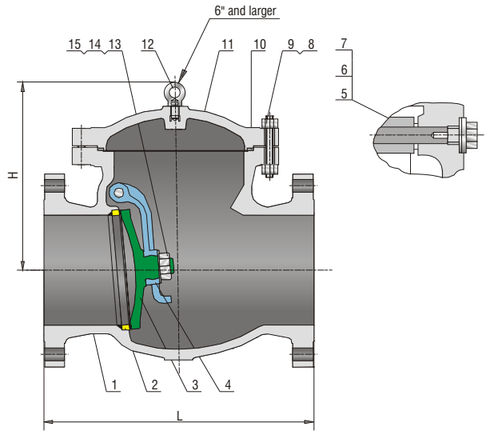
Class 150

Cast Steel Bolted Cover Check Valves

Bolted Cover, Swing Type Disc

Features

- Design and manufacture: API 600 and BS 1868
- Face-to-Face dimension: ASME B16.10
- Flanged dimension: 24″ and smaller valves: ASME B16.5
  26″ and larger valves: ASME B 16.47 series A and B
- B. W. End: ASME B16.25
- Shell Wall Thickness: 24″ and smaller to BS 1868
  26″ and larger to manufacturer s standard



BW End RTJ End

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Spiral wound W/Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410

Dimensions & Weights

Valve Size	in. / mm	1-1/2 40	2 50	2-1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	30 750	36 900
L-L1 (RF-BW)	in.	6.5	8	8.5	9.5	11.5	13	14	19.5	24.5	27.5	31	34	38.5	38.5	51	60	77
	mm	165	203	216	241	292	330	356	495	622	698	787	864	978	978	1295	1524	1956
L2 (RTJ)	in.	7.0	8.5	9	10	12	13.5	14.5	20	25	28	31.5	34.5	39	39	51.5	60.5	77.5
	mm	178	216	229	254	305	343	368	508	635	711	800	877	991	991	1308	1537	1969
H (open)	in.	6.69	6.88	7	7.5	8.63	9.25	12.75	15.13	17.63	21.25	22	24.63	25.63	26.63	34.63	45.25	53.13
	mm	170	175	178	191	219	235	324	384	448	540	559	626	651	676	880	1149	1349
WT (kg)	RF	18	20	24	35	55	84	96	160	245	345	510	660	850	1050	1450	2350	3350
	BW	12	14	17	26	37	52	80	133	213	294	440	568	750	920	1270	2250	3150

CHECK VALVE

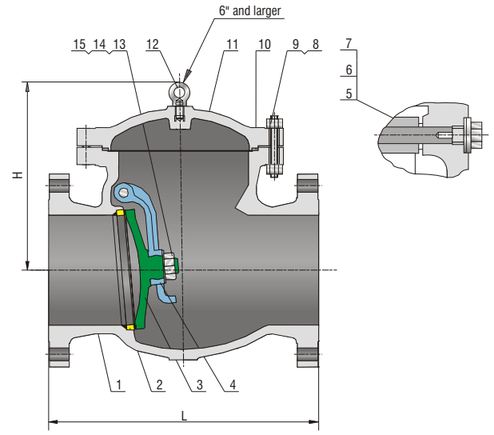
Class 300

Cast Steel Bolted Cover Check Valves

Bolted Cover, Swing Type Disc

Features

- Design and manufacture: API 600 and BS 1868
- Face-to-Face dimension: ASME B16.10
- Flanged dimension: 24″ and smaller valves: ASME B16.5
  26″ and larger valves: ASME B 16.47 series A and B
- B. W. End: ASME B16.25
- Shell Wall Thickness: 24″ and smaller to BS 1868
  26″ and larger to manufacturer s standard



BW End RTJ End

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Spiral wound W/Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410

Dimensions & Weights

Valve Size	in. / mm	1-1/2 40	2 50	2-1/2 65	3 80	4 100	5 125	6 150	8 200	10 250	12 300	14 350	16 400	18 450	20 500	24 600	30 750	36 900
L-L1 (RF-BW)	in.	9.5	10.5	11.5	12.5	14	15.75	17.5	21	24.5	28	33	34	38.5	40	53	62.75	82
	mm	241	267	292	318	356	400	444	533	622	711	838	864	978	1016	1346	1594	2083
L2 (RTJ)	in.	10	11.12	12.12	13.15	14.62	16.37	18.12	21.62	25.12	28.62	33.62	34.62	39.12	40.75	53.88	63.75	83.11
	mm	254	283	308	334	371	416	460	549	638	727	854	879	994	1035	1369	1619	2111
H (open)	in.	7.4	7.75	8	8.75	10.88	11.63	13.25	16.25	18.25	22.13	23.5	25.38	29.88	33.63	37	50	60.63
	mm	188	197	203	222	276	295	337	413	464	562	597	645	759	854	940	1270	1540
WT (kg)	RF	31	35	37	60	82	110	155	268	380	495	710	950	1200	1350	2200	3400	5000
	BW	28	32	35	50	65	70	128	230	270	460	555	800	970	1070	1780	2950	4300

CHECK VALVE

Class 600

Cast Steel Bolted Cover Check Valves

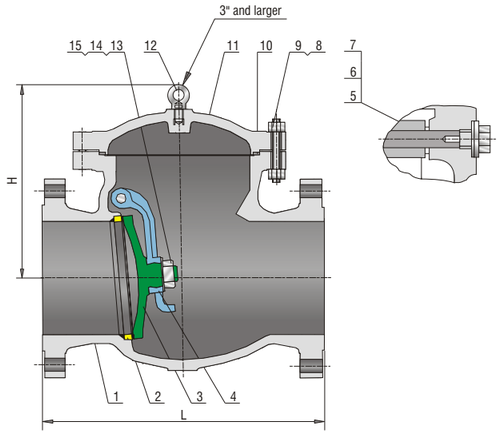
Bolted Cover, Swing Type Disc

Features

- Design and manufacture: API 600 and BS 1868
- Face-to-Face dimension: ASME B16.10
- Flanged dimension: 24″ and smaller valves: ASME B16.5
  26″ and larger valves: ASME B 16.47 series A and B
- B. W. End: ASME B16.25
- Shell Wall Thickness: 24″ and smaller to BS 1868
  26″ and larger to manufacturer s standard

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Hinge pin	ASTM A276 410
6	Washer	ASTM A276 410
7	Plug	ASTM A276 410
8	Cover bolt	ASTM A193 Gr.B7
9	Cover nut	ASTM A194 Gr.2H
10	Gasket	304S.S. Spiral wound W/Graphite
11	Cover	ASTM A216 Gr.WCB
12	Eye bolt	C.S.
13	Pin	ASTM A276 410
14	Nut	304S.S.
15	Washer	ASTM A276 410



Dimensions & Weights

Valve Size	in. / mm	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	26 / 650	28 / 700	30 / 750
L-L1 (RF-BW)	in.	11.5	13	14	17	22	26	31	33	35	39	43	47	55	57	63	65
	mm	292	330	356	432	559	660	787	838	889	991	1092	1194	1397	1448	1600	1651
L2 (RTJ)	in.	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12	43.12	47.25	55.38	57.5	63.5	65.5
	mm	295	333	359	435	562	663	790	841	892	994	1095	1200	1407	1461	1613	1664
H (open)	in.	8.25	8.63	10.5	11.75	15	18.75	21.63	22.63	26.38	30.13	35.25	38.38	43.75	48	53.13	56.25
	mm	210	219	267	299	381	476	549	575	670	765	895	975	1111	1219	1349	1429
WT (kg)	RF	40	55	72	120	270	420	620	810	1100	1450	1800	2100	3000	3500	4100	5000
	BW	31	45	60	85	225	365	500	715	880	1140	1450	1650	2300	3000	3500	4300

Class 900/1500/2500

Cast Steel Bolted Cover Check Valves

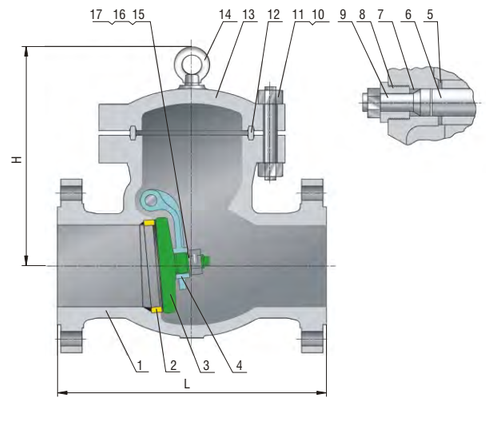
Bolted Cover, Swing Type Disc

Features

- Design and manufacture: API 600 and BS 1868
- Face-to-Face dimension: ASME B16.10
- Flanged dimension: ASME B16.5
- B. W. End: ASME B16.25
- Shell Wall Thickness: BS 1868

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hinge	ASTM A216 Gr.WCB
5	Washer	ASTM A276 410
6	Hanger	ASTM A276 410
7	Gasket ring	ASTM A182 F304
8	Plug	ASTM A276 410
9	Push bolt	ASTM A276 410
10	Cover bolt	ASTM A193 Gr.B7
11	Cover nut	ASTM A194 Gr.2H
12	Gasket	AISI 1008
13	Cover	ASTM A216 Gr.WCB
14	Eye bolt	C.S.
15	Pin	ASTM A276 410
16	Nut	304S.S.
17	Washer	ASTM A276 410



Dimensions & Weights

	Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300
Class 900	L-L1 (RF-BW)	in.	14.5	16.5	15	18	24	29	33	38
		mm	368	419	381	457	610	737	838	965
	L2 (RTJ)	in.	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12
		mm	371	422	384	460	613	740	841	968
	H	in.	12.63	13.75	12.63	16	18.88	22.25	26.13	30.5
		mm	321	349	321	406	479	565	664	775
	WT (kg)	RF	70	160	90	150	305	516	810	1120
		BW	50	71	68	113	230	387	632	901
Class 1500	L-L1 (RF-BW)	in.	14.5	16.5	18.5	21.5	27.75	32.75	39	44.5
		mm	368	419	470	546	705	832	991	1130
	L2 (RTJ)	in.	14.62	16.62	18.62	21.62	28	33.15	39.4	45.12
		mm	371	422	473	549	711	842	1000	1146
	H	in.	12.63	13.75	14.38	16.5	20.13	26.75	29.75	33.75
		mm	321	349	365	419	511	680	756	857
	WT (kg)	RF	70	110	170	300	695	1190	1850	2750
		BW	50	87	135	245	560	965	1480	2180
Class 2500	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.	17.87	20.25	23	26.88	36.5	40.87	50.88	56.88
		mm	454	514	584	683	927	1038	1292	1445
	H	in	16.38	16.5	17.38	18.88	20.13	28	33.5	39.38
		mm	416	419	441	479	511	711	851	1000
	WT (kg)	RF	150	240	350	650	1450	2550	3950	5700
		BW	120	195	280	540	1200	2200	3150	4550

CHECK VALVE

Class 900/1500/2500

Cast Steel Pressure Seal Gate Valves

Pressure Seal Bonnet, Outside Screw & Yoke, Rising Stem, Non-rising Handwheel, Flexible Wedge.

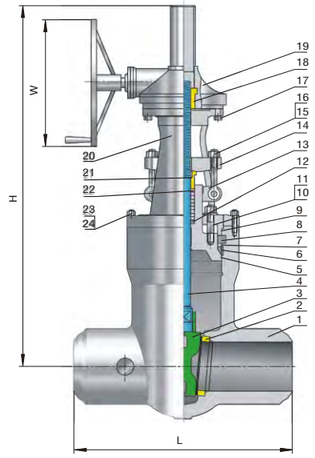
GATE VALVE

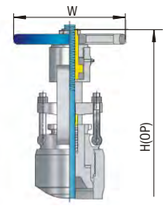
Features

- Design and manufacture: API 600 and ASME B16.34
- Face-to-Face dimension : ASME B16.10
- Flanged dimension : ASME B16.5
- B .W. End: ASME B16.25
- Shell Wall Thickness: API 600

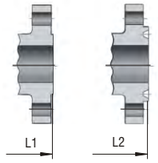
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Wedge	ASTM A216 Gr.WCB+13Cr
4	Stem	ASTM A182 F6a
5	Bonnet	ASTM A216 Gr.WCB
6	Sealing ring	ASTM A182 F304
7	Spacer ring	ASTM A182 F6a
8	Segment ring	ASTM A182 F6a
9	Supporting plate	ASTM A105
10	Stud	ASTM A193 Gr.B7
11	Nut	ASTM A194 Gr.2H
12	Packing plate	ASTM A276 410
13	Split ring	ASTM A216 Gr.WCB
14	Gland flange	ASTM A216 Gr.WCB
15	Gland bolt	ASTM A193 Gr.B7
16	Gland nut	ASTM A194 Gr.2H
17	Bolt	C.S.
18	Stem nut	Aluminum Bronze
19	Gear box	Assem.
20	Yoke	ASTM A216 Gr.WCB
21	Bushing	ASTM A276 410
22	Packing	Graphite
23	Bolt	ASTM A193 Gr.B7
24	Nut	ASTM A194 Gr.2H





● For 4 ″and smaller



RF End RTJ End

Dimensions & Weights

	Valve Size	in. mm	2 50	2-1/2 65	3 80	4 100	6 150	8 200	10 250	12 300	14 350	16 400
Class 900	L (BW)	in. mm	8.5 216	10 254	12 305	13.98 356	20 508	26 660	31 787	36 914	39 991	43 1092
	L1 (RF)	in. mm	14.5 368	16.5 419	15 381	18 457	24 610	29 737	33 838	38 965	40.5 1029	44.5 1130
	L2 (RTJ)	in. mm	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740	33.12 841	38.12 968	40.88 1038	44.88 1140
	H (open)	in. mm	21.81 554	25.08 637	26.77 680	31.34 796	42.68 1084	54.02 1372	58.82 1494	61.02 1550	77.17 1960	87 2210
	W	in. mm	11.81 300	13.78 350	13.78 350	15.75 400	22.05 560	18.11 460	24 610	24 610	24 610	30 760
	WT (kg)	RF BW	48 37	82 62	90 80	152 118	339 264	620 522	948 758	1293 1088	1718 1448	2378 2016
Class 1500	L (BW)	in. mm	8.5 216	10 254	12 305	16 406	22 559	28 711	34 864	39 991	42 1067	47 1194
	L1 (RF)	in. mm	14.5 368	16.5 419	18.5 470	21.5 546	27.75 705	32.75 832	39 991	44.5 1130	49.5 1257	54.5 1384
	L2 (RTJ)	in. mm	14.62 371	16.62 422	18.62 473	21.62 549	28 711	33.13 841	39.38 1000	45.12 1146	50.25 1276	55.38 1407
	H (open)	in. mm	21.81 554	25.08 637	30.2 767	34.45 875	43.07 1094	54 1372	65.16 1655	72.20 1834	84.65 2150	88.98 2260
	W	in. mm	11.81 300	17.72 450	17.72 450	22.05 560	12 305	18.11 460	24 610	24 610	30 760	30 760
	WT (kg)	RF BW	58 44	89 69	126 83	180 128	392 290	793 585	1368 972	2118 1613	2798 2008	3868 2813
Class 2500	L (BW)	in. mm	11 279	13 330	14.5 368	18 457	24 610	30 762	36 914	41 1041	—	—
	L1 (RF)	in. mm	17.75 451	20 508	22.75 578	26.50 673	36 914	40.25 1022	50 1270	56 1422	—	—
	L2 (RTJ)	in. mm	17.87 454	20.25 514	23 584	26.88 683	36.50 927	40.87 1038	50.88 1292	56.88 1445	—	—
	H (open)	in. mm	24 610	25.75 654	29.65 753	33.46 850	49.37 1254	54.09 1374	66.34 1685	74 1873	—	—
	W	in. mm	19.69 500	19.69 500	23.62 600	23.62 600	18.11 460	18.11 460	24 610	24 610	—	—
	WT (kg)	RF BW	119 86	173 133	193 142	227 156	718 498	1293 890	2248 1548	3091 2330	—	—

Class 900/1500/2500

Cast Steel Pressure Seal Globe Valves

Pressure Seal Bonnet, Outside Screw & Yoke, Rising Stem, Plug Type Disc.

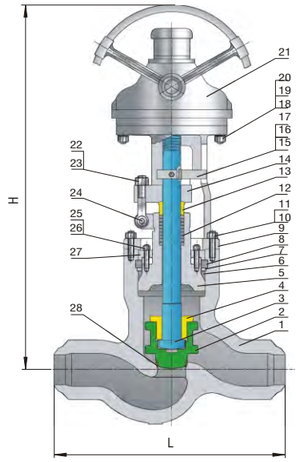
GLOBE VALVE

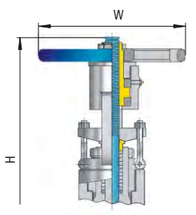
Features

- Design and manufacture: API 600 and ASME B16.34, BS 1873
- Face-to-Face dimension : ASME B16.10
- Flanged dimension : ASME B16.5
- B .W. End: ASME B16.25
- Shell Wall Thickness: BS 1873

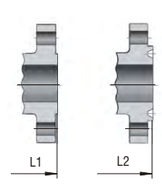
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Disc	ASTM A105+13Cr
3	Stem	ASTM A182 F6a
4	Disc nut	ASTM A276 410
5	Bonnet	ASTM A216 Gr.WCB
6	Sealing ring	ASTM A182 F304
7	Spacer ring	ASTM A182 F6a
8	Segment ring	ASTM A182 F6a
9	Yoke	ASTM A216 Gr.WCB
10	Bolt	ASTM A193 Gr.B7
11	Nut	ASTM A194 Gr.2H
12	Packing	Graphite
13	Bushing	ASTM A276 410
14	Gland	ASTM A216 Gr.WCB
15	Pin	C.S.
16	Bolt	C.S.
17	Stem guide collar	C.S.
18	Bolt	C.S.
19	Nut	C.S.
20	Washer	C.S.
21	Gear box	Assem.
22	Gland bolt	ASTM A193 Gr.B7
23	Gland nut	ASTM A194 Gr.2H
24	Pin	ASTM A276 410
25	Stud	ASTM A193 Gr.B7
26	Nut	ASTM A194 Gr.2H
27	Supporting plate	ASTM A105
28	Seat surface	STL No.6





● For 8 ″and smaller



RF End RTJ End

Dimensions & Weights

	Valve Size	in. mm	2 50	2-1/2 65	3 80	4 100	6 150	8 200
Class 900	L-L1 (BW-RF)	in. mm	14.5 368	16.5 419	15 381	18 457	24 610	29 737
	L2 (RTJ)	in. mm	14.62 371	16.62 422	15.12 384	18.12 460	24.12 613	29.12 740
	H (open)	in. mm	21.65 550	23.82 605	26.70 678	31.42 798	36.61 930	49.61 1260
	W	in. mm	13.78 350	13.78 350	15.75 400	17.72 450	18.03 458	24 610
	WT (kg)	RF BW	76 64	106 89	100 85	140 126	388 353	958 866
Class 1500	L-L1 (BW-RF)	in. mm	14.5 368	16.5 419	18.5 470	21.5 546	27.75 705	32.75 832
	L2 (RTJ)	in. mm	14.62 371	16.62 422	18.62 473	21.62 549	28 711	33.13 842
	H (open)	in. mm	21.65 550	23.82 605	34.10 866	37.64 956	49.61 1260	49.72 1263
	W	in. mm	15.75 400	15.75 400	17.72 450	22.05 560	24 610	24 610
	WT (kg)	RF BW	83 75	108 99	132 120	228 207	658 593	1588 1438
Class 2500	L-L1 (BW-RF)	in. mm	17.75 451	20 508	22.75 578	26.50 673	36 914	40.25 1022
	L2 (RTJ)	in. mm	17.87 454	20.25 514	23 584	26.88 683	36.50 927	40.87 1038
	H (open)	in. mm	22.05 560	28.35 720	29.72 755	48.43 1230	70.51 1791	82.13 2086
	W	in. mm	15.75 400	17.72 450	22.05 560	12.2 310	24 610	30 760
	WT (kg)	RF BW	138 98	166 116	245 178	618 436	1498 1146	3198 2592

Class 900/1500/2500

Cast Steel Pressure Seal Check Valves

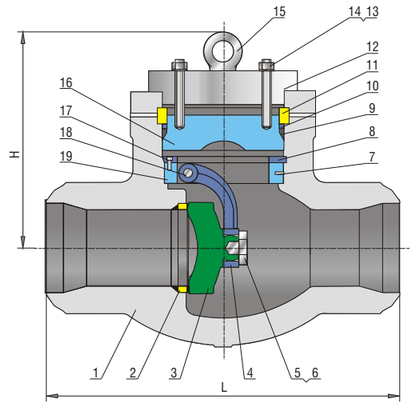
Pressure Seal Cover, Swing Type Disc.

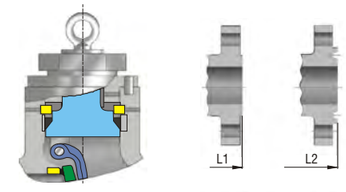
Features

- Design and manufacture: API 600 and ASME B16.34, BS 1868
- Face-to-Face dimension : ASME B16.10
- Flanged dimension : ASME B16.5
- B .W. End: ASME B16.25
- Shell Wall Thickness: BS 1868

Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat ring	ASTM A105+13Cr
3	Disc	ASTM A216 Gr.WCB+13Cr
4	Hanger	ASTM A216 Gr.WCB
5	Disc cover	ASTM A276 410
6	Screw	ASTM A276 410
7	Locking pin	ASTM A276 410
8	Locking ring	ASTM A105
9	Seal ring	ASTM A182 F304
10	Gasket	ASTM A182 F6a
11	Segment ring	ASTM A182 F6a
12	Cover	ASTM A216 Gr.WCB
13	Stud	ASTM A193 Gr.B7
14	Nut	ASTM A194 Gr.2H
15	Eyebolt	C.S.
16	Bonnet	ASTM A216 Gr.WCB
17	Bolt	S.S.
18	Pin	ASTM A276 410
19	Hinge	ASTM A216 Gr.WCB





●For 4″ and smaller RF End RTJ End

Dimensions & Weights

	Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400
Class 900	L (BW)	in.	8.5	10	12	14	20	26	31	36	39	43
		mm	216	254	305	356	508	660	787	914	991	1092
	L1 (RF)	in.	14.5	16.5	15	18	24	29	33	38	40.5	44.5
		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	33.12	38.12	40.88	44.88
		mm	371	422	384	460	613	740	841	968	1038	1140
	H	in.	7.4	8.27	8.27	8.5	14.5	20.12	24.17	27.76	28.98	29.76
		mm	188	210	210	216	368	511	614	705	736	756
	WT (kg)	RF	48	63	60	122	254	511	938	1448	1723	1832
		BW	33	44	42	76	177	383	703	1128	1353	1463
Class 1500	L (BW)	in.	8.5	10	12	16	22	28	34	39	42	47
		mm	216	254	305	406	559	711	864	991	1067	1194
	L1 (RF)	in.	14.5	16.5	18.5	21.5	27.75	32.75	39	44.5	49.5	54.5
		mm	368	419	470	546	705	832	991	1130	1257	1384
	L2 (RTJ)	in.	14.62	16.62	18.62	21.62	28	33.13	39.38	45.12	50.25	55.38
		mm	371	422	473	549	711	841	1000	1146	1276	1407
	H	in.	10.43	10.43	10.63	14.57	18.7	22.44	24.8	30.31	31.3	32.44
		mm	265	265	270	370	475	570	630	770	795	824
	WT (kg)	RF	58	73	71	128	332	588	1023	1528	1852	2058
		BW	40	51	69	84	228	458	713	1148	1388	1542
Class 2500	L (BW)	in.	11	13	14.5	18	24	30	36	41	-	-
		mm	279	330	368	457	610	762	914	1041		
	L1 (RF)	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.	17.87	20.25	23	26.88	36.5	40.87	50.88	56.88	-	-
		mm	454	514	584	683	927	1038	1292	1445		
	H	in.	11.02	12	12.2	14.57	19.1	21.42	27.95	31.5	-	-
		mm	280	305	310	370	485	544	710	800		
	WT (kg)	RF	86	113	133	213	548	988	1598	2298	-	-
		BW	52	88	93	158	383	638	1198	1723		

Class 900/1500/2500

Cast Steel Pressure Seal Y-Pattern Stop Valves

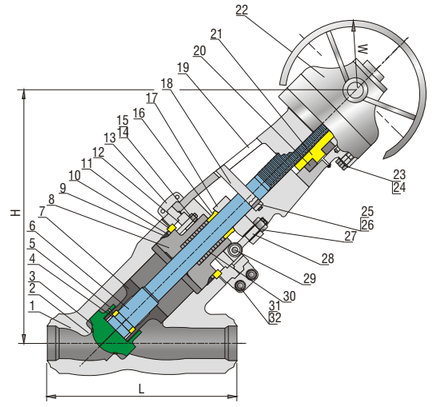
Pressure Seal Bonnet, Piston Type Disc.

Features

- Design and manufacture: BS 1873 and ASME B16.34
- Stem indicator
- Disc
- Integral hard-surfaced seats
- Guide ribs
- Pressure seal gasket
- B.W. End to ASME B16.25
- Low pressure drops

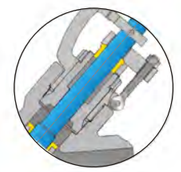
Parts List

No:	Parts	Material
1	Body	ASTM A216 Gr.WCB
2	Seat surface	13Cr
3	Disc	ASTM A105+13Cr
4	Split ring	ASTM A182 F6a
5	Bolt	S.S.
6	Stem	ASTM A182 F6a
7	Disc guide	ASTM A276 410
8	Bonnet	ASTM A216 Gr.WCB
9	Sealing ring	ASTM A182 F304
10	Spacer ring	ASTM A182 F6a
11	Segment ring	ASTM A182 F6a
12	Supporting plate	ASTM A105
13	Yoke lock ring	ASTM A216 Gr.WCB
14	Bolt	ASTM A193 Gr.B7
15	Nut	ASTM A194 Gr.2H
16	Gland	ASTM A276 410
17	Gland flange	ASTM A216 Gr.WCB
18	Stem guide collar	C.S.
19	Yoke	ASTM A216 Gr.WCB
20	Bearing	Assem.
21	Stem nut	Aluminum Bronze
22	Gear box	Assem.
23	Bolt	C.S.
24	Washer	C.S.
25	Pin	C.S.
26	Bolt	C.S.
27	Stud	ASTM A193 Gr.B7
28	Nut	ASTM A194 Gr.2H
29	Pin	C.S.
30	Packing	Graphite
31	Lock ring bolt	ASTM A193 Gr.B7
32	Lock ring nut	ASTM A194 Gr.2H



Y-Pattern Stop Valves

Y-Pattern Stop Valves are available in stop configurations for critical high temperature/high pressure services. Many design features incorporated into stop valves-drop tight shut-off,low pressure drop,piping flexibility-are also included in stop valves.In addition,an Equalizer pipe is provided to help achieve full disk lift as well as reduce wear-producing turbulence.



●8″ and smaller

Dimensions & Weights

	Valve Size	in. / mm	2 / 50	2-1/2 / 65	3 / 80	4 / 100	6 / 150	8 / 200	10 / 250	12 / 300	14 / 350	16 / 400
Class 900	L (BW)	in.	13.3	15.4	17	18.5	20	26	31	38	38	44.5
		mm	338	391	432	470	508	660	787	965	965	1130
	H	in.	15	16.5	18.11	23.23	32.28	41.34	50	58.27	61.02	70.08
		mm	380	420	460	590	820	1050	1270	1480	1550	1780
	W	in.	12.2	12.2	18.11	18.11	18.11	24	24	24	24	24
		mm	310	310	460	460	460	610	610	610	610	610
	WT	kg	78	84	92	131	258	553	992	1603	1825	2579
Class 1500	L (BW)	in.	13.3	15.4	17	18.5	27.75	30	36.25	43	-	-
		mm	338	391	432	470	705	762	921	1092		
	H	in.	15	16.5	15.16	15.16	18.5	26.06	34.76	58.28	-	-
		mm	380	420	385	385	470	662	883	1480		
	W	in.	12.2	12.2	18.11	18.11	18.11	24	24	24	-	-
		mm	310	310	460	460	460	610	610	610		
	WT	kg	83	95	115	148	362	759	1320	2062	-	-
Class 2500	L (BW)	in.	13.3	15.4	17	18.5	27.75	30	36.25	-	-	-
		mm	338	391	432	470	705	762	9921			
	H	in.	15	16.5	15.16	16.54	26.89	28.35	35.12	-	-	-
		mm	380	420	385	420	683	720	892			
	W	in.	12.2	18.11	18.11	18.11	18.11	24	24	-	-	-
		mm	310	460	460	460	460	610	610			
	WT	kg	93	106	122	163	461	790	1330	-	-	-