

CAST STEEL VALVES

BOLTED BONNET
PRESSURE SEAL BONNET

CAST STEEL VALVES

BOLTED BONNET
PRESSURE SEAL BONNET

Kinka Kikai Co. Ltd

Factory

#153-32, Bonsan-ro, Jinyeong-eup,
Gimhae-city, Gyeongsangnam-do, Korea
TEL : +82 55 346 2731. 2
FAX : +82 55 346 2755
E-mail : INFO@KINKAVALVES.COM



KINKA KIKAI CO LTD.

COMPANY HISTORY

Mar. 2006

Established KINKA SR VALVE LIMITED as a valve manufacturer at jinyoung, Gimhae city

Jul. 2008

Re-approved ISO 9001:2000 by BVQI

Jul. 2011

Re-Qualified ISO 9001:2008 by BVQI

May. 2014

Completed new factory and Move all facilities to Jinyoung- bonsan industrial complex

Jun. 2016

Qualified API 600 by API

Jul. 2016

Qualified API 624 by TÜV NORD



CV FLOW COEFFICIENTS / CAST STEEL VALVES (Class 150 to 2500)

SIZE	GATE BB VALVE						GLOBE BB VALVE					CHECK BC VALVE					
	ASME CLASS																
	150	300	600	900	1500	2500	150	300	600	900	1500	150	300	600	900	1500	2500
2	312	312	312	245	245	101	48	48	48	31	31	124	124	114	108	108	53
2-1/2	507	507	507	329	329	215	68	68	68	-	-	200	200	200	145	145	100
3	714	714	714	486	609	323	87	108	61	71	72	282	282	282	239	268	150
4	1291	1291	1291	728	483	380	170	149	170	90	75	524	524	524	396	293	206
5	2073	2073	2073	-	-	733	293	251	-	-	-	836	836	836	-	-	379
6	3087	3087	3087	2894	1753	1021	422	355	382	194	258	1235	1235	1235	1294	893	539
8	5584	5584	5584	5098	2193	1617	703	703	577	479	435	2213	2213	2213	2260	1319	912
10	9015	9015	8658	5391	4174	2559	1272	936	889	780	841	3574	3574	3432	2822	2301	1444
12	13638	13638	13010	6147	6318	3644	1343	1343	1315	1137	1039	5349	5349	5103	3592	3388	2055
14	16650	16650	15661	8346	7596	-	1549	1773	1522	-	-	6531	6531	6143	4622	4351	-
16	21960	21960	20599	8783	6513	-	2060	2447	2014	-	-	8614	8614	8080	5318	4784	-
18	28103	27358	25742	11049	8935	-	2720	3146	2503	-	-	11473	11169	10509	7053	6549	-
20	35037	34205	31423	17201	15075	-	3888	3452	3079	-	-	14304	13964	12828	9860	9413	-
24	51199	49975	45805	26958	36064	-	5944	5069	4456	-	-	20902	20402	18700	14953	13612	-
26	62292	62292	56360	-	-	-	-	-	-	-	-	25198	25198	19600	-	-	-
28	72711	72711	65063	-	-	-	-	-	-	-	-	29413	29413	26300	-	-	-
30	85271	83935	75044	-	-	-	-	-	-	-	-	34494	34494	30325	-	-	-
32	99958	99958	83935	-	-	-	-	-	-	-	-	39983	39983	-	-	-	-
34	113452	113452	99958	-	-	-	-	-	-	-	-	45381	45381	-	-	-	-
36	125751	125751	112347	-	-	-	-	-	-	-	-	50301	50301	-	-	-	-
38	140835	140835	124878	-	-	-	-	-	-	-	-	56334	-	-	-	-	-
40	156692	156692	138989	-	-	-	-	-	-	-	-	62449	-	-	-	-	-
42	171176	171176	152568	-	-	-	-	-	-	-	-	68470	-	-	-	-	-
48	223493	-	200034	-	-	-	-	-	-	-	-	89397	-	-	-	-	-
50	235910	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
56	304842	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

TABLE OF CONTENTS

FIGURE NUMBER SYSTEM	» 10
VALVE DESIGN FEATURES	» 11
BOLTED BONNET GATE VALVE	» 13
BOLTED BONNET GLOBE VALVE	» 17
BOLTED COVER CHECK VALVE	» 20
PRESSURE SEAL GATE VALVE	» 23
PRESSURE SEAL GLOBE VALVE	» 26
PRESSURE SEAL CHECK VALVE	» 29
CV FLOW COEFFICIENTS	» 31

| KINKA VALVE PRODUCT



PARALLEL SLIDE GATE VALE



PRESSURE SEAL GATE VALVE



PRESSURE SEAL GLOBE VALVE



PARALLEL SLIDE GATE VALE





CRYOGENIC VALVE



EXTENSION STEM TYPE



BELLOWS SEAL GATE VALVE



| KINKA VALVE PRODUCT



AOV TYPE GATE VALVE



BOLTED BONNET VALVES

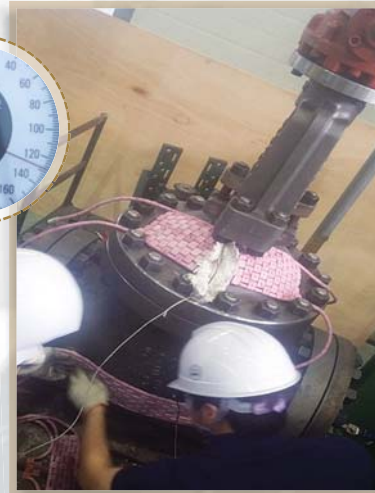


BOLTED BONNET VALVES





CRYOGENIC TEST



API 624 LFE TEST
(A351-CF8, CL600, 12" GATE, RF)



API 598 PRESSURE TEST



API 624 LFE TEST
(A216-WCB, CL1500, 12" GATE, RF)



FACTORY CERTIFICATES / APPROVALS



American Petroleum Institute

Certificate of Authority to use the Official API Monogram
License Number: 600-0257

ORIGINAL

The American Petroleum Institute hereby grants to

SR VALVE LIMITED
#153-32, Bongsan-ro, Jinyeong-eub
Gimhae-si, Gyeongsangnam-do, South Korea

The right to use the Official API Monogram[®] on manufactured products under the conditions in the official publications of the American Petroleum Institute entitled API Spec Q1[®] and **API-600** and in accordance with the provisions of the License Agreement.

To all cases where the Official API Monogram is applied, the API Monogram shall be used in conjunction with this certificate number: **600-0257**

The American Petroleum Institute reserves the right to revoke this authorization to use the Official API Monogram for any reason satisfactory to the Board of Directors of the American Petroleum Institute.

The scope of this license includes the following: Bolted Bonnet Steel Gate Valves

QMS Exclusions: Servicing

Effective Date: **JUNE 16, 2016**
Expiration Date: **JUNE 16, 2019**

To verify the authenticity of this license, go to www.api.org/compofidat.

API 600



BUREAU VERITAS
Certification



UKAS
CERTIFICATION

SR Valve Limited
#153-32, Bongsan-ro, Jinyeong-eub, Gimhae-si, Gyeongsangnam-do, Korea

Bureau Veritas Certification certify that the Management System of the above organization has been audited and found to be in accordance with the requirements of the management system standards detailed below

Standards

ISO 9001:2008 / KS Q ISO 9001:2009

Scope of certification

DESIGN, MANUFACTURE AND SERVICING OF GATE, SWING CHECK, GLOBE, BALL VALVE

Certification cycle start date: **21 July 2014**

Subject to the continued satisfactory operation of the organization's Management System, this certificate expires on: **20 July 2017**

Original certification date: **21 July 2008**

Certificate No. **160908708** Version N, Revision date: 18 July 2014

008

Certification Authority

Certification body address: Boreham House, 100 Borough High Street, London SE1 1UL, United Kingdom
Local office: Rue 1102, Xaeng Tsew, 617-01, Yeosuam-Dong, Gyeongju-do, South Korea

Further clarification regarding the scope of this certificate and the applicability of the management system requirements may be obtained by contacting the organization.
To check this certificate validity please call +44 20 7542 9001

ISO 9001

Inspection Certificate	Certificate	Certificate	Certificate	on Certificate	on Certificate	on Certificate
<p>Certificate No. TWC-0105-0-001-0001</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0001</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0002</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0003</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0004</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0005</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0006</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>

Inspection Certificate	Certificate	Certificate	Certificate	on Certificate	on Certificate	on Certificate
<p>Certificate No. TWC-0105-0-001-0001</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0001</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0002</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>Certificate No. 16-001-0003</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0004</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0005</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>	<p>on Certificate No. 16-001-0006</p> <p>Design Standard: API 600</p> <p>Body / Internal material: A105/A105 WCB</p> <p>Pressure rating: Class 150</p> <p>Packing material: Graphite</p> <p>Ring of Pflor 6027 + 2 Ring of Pflor 6710</p> <p>WCB x 6710 (Steel)</p> <p>LIFE TEST SAMPLE-6</p>

API 624

MANUFACTURING RANGES

MANUFACTURING RANGE	
TYPE	Cast steel Gate, Globe and Check Valves, Bolted bonnet & Pressure seal bonnet.
APPLICABLE SPECIFICATION	ASME / API / BS / ISO / JIS / JPI STD.
CLASS & SIZE RANGES	Class150 to 2500 / Size 2" to 60"
MATERIAL	Carbon steel, Alloy steel, Stainless steel, Duplex steel, Nickel Alloy steel, etc.

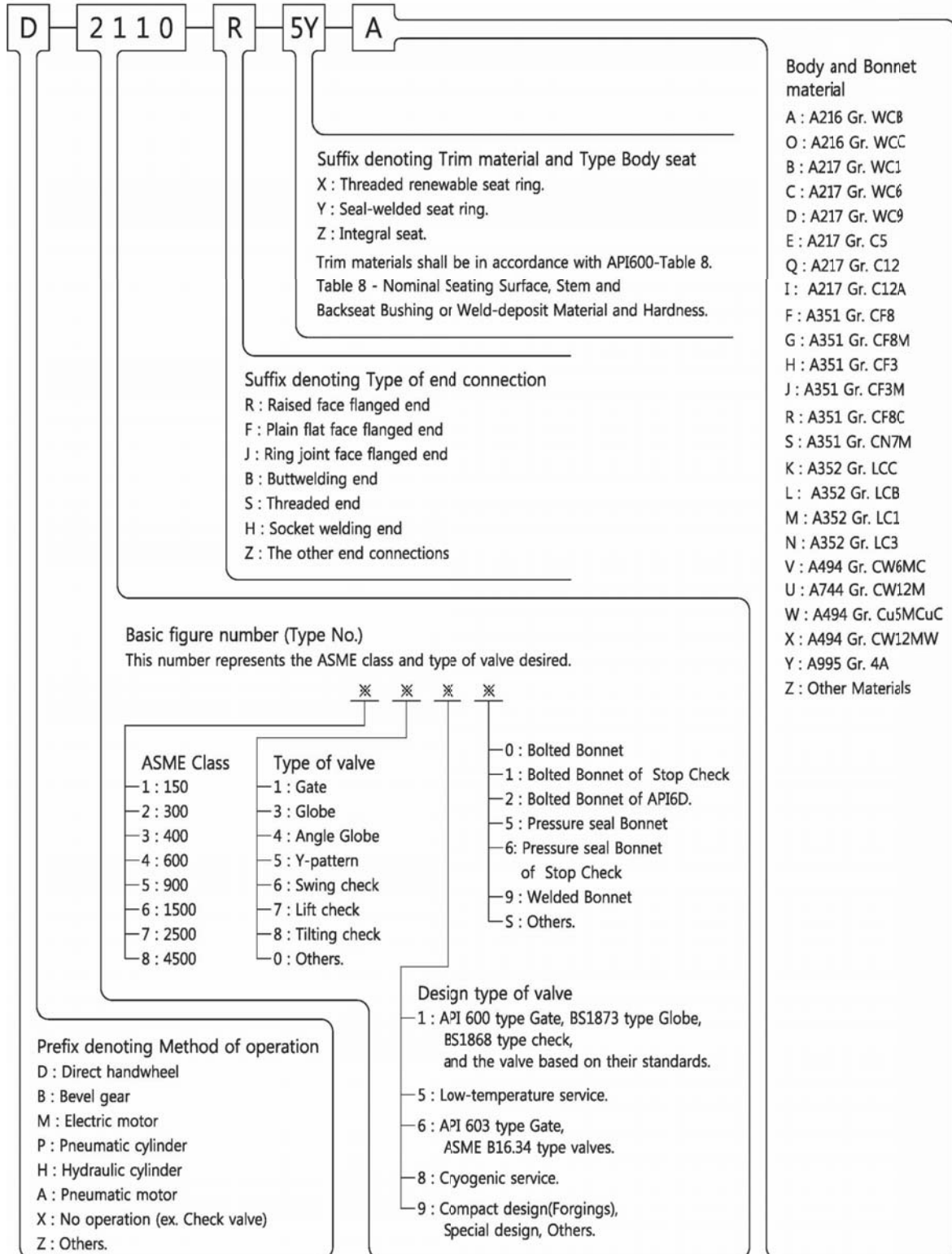
FUGITIVE EMISSION TEST

In a typical petroleum plant, Valve packing is a very extremely important source of Fugitive Emissions. In order to reduce emissions the standards committees have created 4 accepted standards to help greatly reduce fugitive emission levels in valves. Four recognized standards regarding valve fugitive emissions are ISO15848-1, ISO 15848-2, API 622 and API 624.

ISO 15848-1 and ISO 15848-2	API 622 FE test in a test fixture	API 624 FE test in a valve
<p>Developed in 2006.</p> <p>Has many levels of testing and acceptance criteria which makes it difficult for customers to evaluate performance.</p> <p>Uses the "global" test method. ISO 15848-1 test is performed with a standard valve and additional bonnet enclosure.</p>	<p>Developed in 2006.</p> <p>SR valve has qualified API 622 packing suppliers.</p> <p>Uses the local "sniffing/flushing" test method.</p> <p>API 622 test is performed in a test fixture designed to simulate a valve.</p> <p>The test qualified the "packing" only.</p>	<p>Developed in 2011.</p> <p>Intended for fugitive emissions valves.</p> <p>SR valve has tested our standard assembled valve to API 624 and revalidated our FE certification.</p> <p>Uses the "sniffing" test method.</p> <p>Testing is performed using assembled valves.</p>

Requirements	ISO 15848-1	API 622	API 624
Test type	Valve	est fixture	Valve
Method	Global(volumetric)	Local(sniffing/flushing)	Local(sniffing)
Test Medium	Helium or Methane	Methane	Methane
Test pressure	Working pressure @ambient or reduced at hight Temperature (per ASME B16.34)	Between 0 and 600psi	ASME B16.34 pressure rating, ambient and at temperature or 600psi whichever is lower
Thermal cycles	Has several different classes for the acceptance criteria, number of test cycles, and temperatures.	5	3
Mechanical cycles		1510	310
Packing adjustment	1	One time above 500ppmv	Not permitted
Units	mg/sec-m	ppm	ppm
Acceptance Critefia	ISO 15848-1	500ppm	100ppm

KINKA FIGURE NUMBER SYSTEM



VALVE DESIGN FEATURES

■ PRESSURE/TEMPERATURE RATINGS

Pressure/temperature ratings shall be in accordance with ASME B16.34.

■ BODY & BONNET

Gate valve is manufactured by API600 standard.

Body end flanges shall comply with the dimensional requirements of ASME B16.5 for sizes up to and including DN600(NPS24). For sizes over DN600(NPS24), body end flanges shall comply with the dimensional requirements of ASME B16.47 Series A or B as specified by the purchaser.

Butt-welding ends for valve shall conform to the requirements of ASME B16.25.

Face-to-face(End-to-end) dimensions shall be in accordance with ASME B16.10.

The bolted bonnet shall include a stem back seating.

The packing box surface area in contact with the packing material shall have a surface finish, Ra 4.5 μ m or smoother.

■ STEM

The stem thread shall be of ACME thread from as specified in ASME B1.5 or ASME B1.8.

The stem surface area in contact with the packing shall have a surface finish Rmax. 3.2S / 0.8Ra(Mu-m) or smoother.

■ DISC AND BODY SEAT

– Disc type :

- 1) Gate valve : Flexible wedge, Parallel Slide Disc. (Flexible type disc supplied as standard.)
Gate disc fully guided and precisely fitted to ensure sealing performance.
- 2) Globe valve : Plug disc, Parabolic, Needle type, Stop check disc (Plug type disc supplied as standard.)
- 3) Check valve : Swing check disc, Tilting check disc, Lift check (Piston check)

Sealing face shall lapped for smooth finish and superior sealing.

The seat ring as a welded-in type is designed to prevent any turbulence and damage by corrosion. It is forged or rolled into one piece for all dimensions, heat treated to obtain the desired surface hardness, and cleaned thoroughly before assembling.

The globe valve is normally supplied with bottom guide type seat on Class150 12" & larger and Class300~600 10" & larger valves. Class900 & higher is all integral seated.

■ BOLTED BONNET TO BODY JOINT

The bolted bonnet-to-body joint shall be a flange and gasket type.

– Gate valve : Class150 - Plain faced

Class300 and higher class - Male & female or Ring joint.

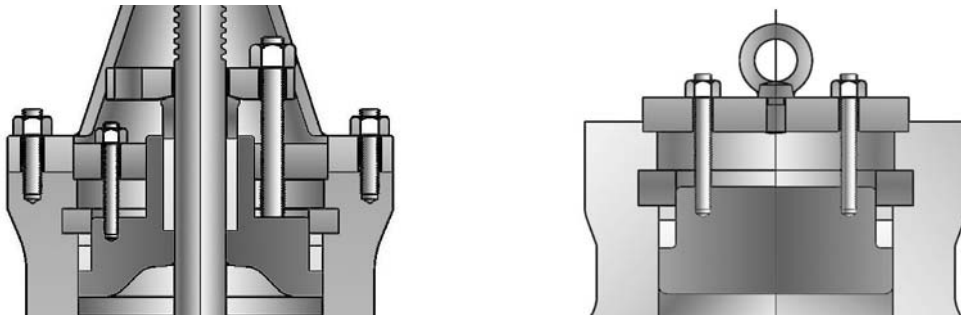
– Globe & check valve : all Male & female or Ring joint. (Bonnet-to-body flanges shall be circular.)

VALVE DESIGN FEATURES

■ PRESSURE SEAL BONNET

The pressure seal valves provide the most efficient use for high pressure and high temperature applications in all types of fluid, and sealing. Uncomplicated design have segment ring and graphite/metal gasket to aid disassembly, and result in significant weight saving and easy and simple installation and maintenance.

A segment ring absorbs all the thrusts applied by internal pressure. A protective ring made by hardened stainless steel prevents the deformation on the top surface of the gasket. The gasket can be removed smoothly without any damage on the sealing surface of body.



PRESSURE SEAL BONNET DESIGN

■ PACKING AND GASKET

We can supply any kinds of packing & gasket as required by customer.

- Packing : Ensures leakage of less than 100ppm as demonstrated through extensive laboratory testing.
- Gasket :

Bolted bonnet : Class150 to 900 - Graphite gasket

Class1500 to 2500 - Ring joint metal gasket

Pressure seal bonnet : Graphite or metal gasket

■ BY-PASS AND OTHER AUXILIARY CONNECTIONS

Auxiliary connections shall be furnished only if specified on the purchase order.

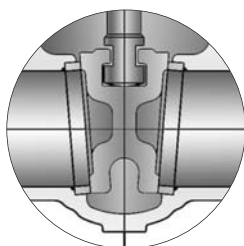
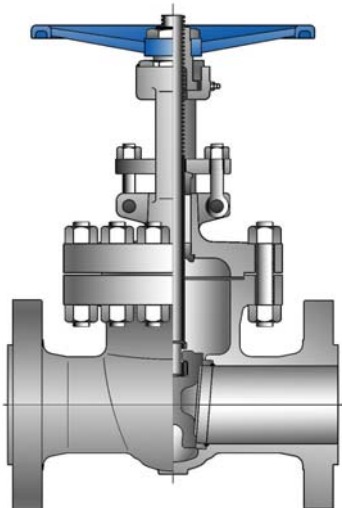
The size and location of auxiliary connections shall be indicated on the purchase order.

We can supply a valve fitted with accessories such as bypasses, drains, lantern ring, locking device, extension stem, etc.

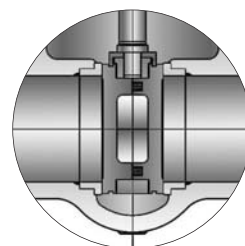
GATE VALVES / BOLTED BONNET (Class 150 to 2500)

■ Valve Design

- Body & Bonnet joint : Class150 - Plain faced
Class300 and higher class - Male & female or Ring joint.
- Non-Rotating rising Stem, Outside screw and Yoke,
- Flexible Wedge disc, Parallel Slide Disc
- Testing : API 598



Flexible wedge

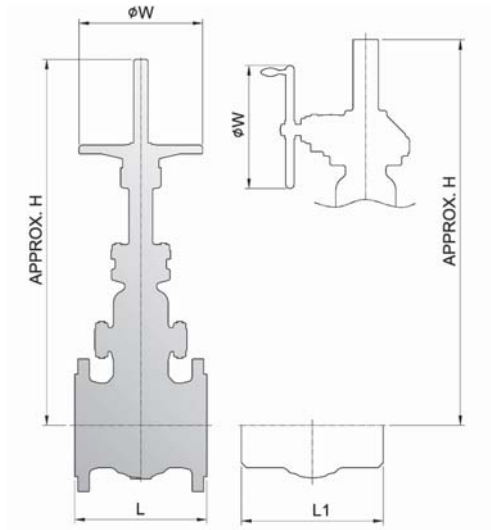


Parallel slide gate

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL
		Mat'l	BODY / BONNET	A216-WCB	A352-LCB	A217-WC6
1	DISC(FACED)	A217-CA15 A216-WCB	A351-CF8	A217-CA15 A217-WC6	A217-CA15 A217-C12	A351-CF8M
2	STEM	A479-410	A479-304	A479-410		A479-316
3	YOKE	A216-WCB				A351-CF8
4	BODY SEATRING	A105	A182-F304	A182-F11	A182-F9	A182-F316
5	BACK SEATRING	A479-410	A479-304	A479-410		A479-316
6	BONNET GASKET	GRAPHITE				
7	GLAND PACKING	GRAPHITE				
8	GLAND FLANGE	CS1020				A240-304
9	GLAND BOLT	A193-B7				A193-B8
10	GLAND BOLT NUT	A194-2H				A194-8
11	HINGE PIN	CS1020				A479-304
12	PACKING GLAND RING	A479-410	A479-304	A479-410		A479-316
13	BONNET BOLT	A193-B7	A320-L7	A193-B16		A193-B8M CL.2
14	BONNET BOLT NUT	A194-2H	A194-4			A194-8M
15	YOKE NUT	CS1020+Zn Plating				A479-304
16	STEM NUT	A439-D2c				
17	HANDLE NUT	CS1020+Zn Plating				
18	YOKE BOLT	A193-B7				A193-B8 CL.2
19	YOKE BOLT NUT	A194-2H				A193-8

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.

GATE VALVES/BOLTED BONNET (Class 150 to 2500)



■ Applicable Specification

- Wall Thickness : API600, BS1414
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

■ APPROX. H : Full open height.

■ Handwheel DIA. øW

- Handle type.
- Gear operator(Our standard) :
Class150 14" & Larger, Class300 12" & Larger,
Class600 8" & Larger, Class900~2500 6" & Larger.

BOLTED BONNET GATE VALVE CLASS 150

SIZE		L (RF)		L1 (BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	178	7.00	216	8.50	407	16.00	200	7.87	16	12
80	3"	203	8.00	282	11.12	454	17.90	250	9.84	30	24
100	4"	229	9.00	305	12.00	546	21.50	315	12.40	44	33
150	6"	267	10.50	403	15.88	738	29.10	315	12.40	71	55
200	8"	292	11.50	419	16.50	958	37.70	355	13.98	114	82
250	10"	330	13.00	457	18.00	1177	46.30	400	15.75	169	135
300	12"	356	14.00	502	19.75	1347	53.00	450	17.72	247	202
350	14"	381	15.00	572	22.50	1630	64.20	400	15.75	410	350
400	16"	406	16.00	610	24.00	1830	72.10	500	19.69	580	504
450	18"	432	17.00	660	26.00	1986	78.20	500	19.69	675	591
500	20"	457	18.00	711	28.00	2235	88.00	630	24.80	842	735
600	24"	508	20.00	813	32.00	2440	96.10	630	24.80	1380	1231
650	26"	559	22.00	864	34.00	2800	110.20	710	27.95	1560	-
700	28"	610	24.00	914	36.00	3000	118.10	900	35.43	1780	-
750	30"	610	24.00	914	36.00	3250	127.90	900	35.43	2200	-
800	32"	660	26.00	965	38.00	3400	133.90	900	35.43	2540	-
850	34"	699	27.52	1016	40.00	3600	141.70	900	35.43	2820	-
900	36"	711	28.00	1016	40.00	3750	147.60	900	35.43	3400	-
950	38"	762	30.00	1067	42.00	3980	156.70	900	35.43	3800	-
1000	40"	762	30.00	1067	42.00	4150	163.40	900	35.43	4500	-
1050	42"	787	31.00	1118	44.00	4300	169.30	900	35.43	4750	-
1200	48"	864	34.00	-	-	4900	192.90	900	35.43	7000	-
1300	52"	914	36.00	-	-	5250	206.70	1000	39.37	7750	-
1400	56"	1041	41.00	-	-	5800	228.40	1000	39.37	8430	-

GATE VALVES / BOLTED BONNET (Class 150 to 2500)

BOLTED BONNET GATE VALVE CLASS 300										BOLTED BONNET GATE VALVE CLASS 600							
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	216	8.50	404	15.90	200	7.87	28	22	292	11.50	404	15.90	200	7.87	36	29
80	3"	282	11.12	475	18.70	250	9.84	50	37	356	14.00	453	17.80	315	12.40	65	51
100	4"	305	12.00	562	22.00	315	12.40	75	56	432	17.00	609	24.00	315	12.40	126	99
150	6"	403	15.88	761	30.00	355	13.98	145	113	559	22.00	805	31.70	450	17.72	242	188
200	8"	419	16.50	972	38.20	400	15.75	240	193	660	26.00	1192	47.00	500	19.69	430	345
250	10"	457	18.00	1185	46.70	450	17.72	323	251	787	31.00	1300	51.20	500	19.69	635	495
300	12"	502	19.75	1500	59.00	400	15.75	420	329	838	33.00	1572	62.00	630	24.80	1055	905
350	14"	762	30.00	1630	64.00	500	19.69	700	579	889	35.00	1675	66.00	710	27.95	1210	1030
400	16"	838	33.00	1840	72.50	500	19.69	890	736	991	39.00	1770	70.00	710	27.95	1513	1263
450	18"	914	36.00	2040	80.30	630	24.80	1212	1018	1092	43.00	2070	81.50	710	27.95	2223	1910
500	20"	991	39.00	2270	89.40	710	27.95	1502	1267	1194	47.00	2254	88.70	900	35.43	2816	2416
600	24"	1143	45.00	2650	104.30	900	35.43	2272	1925	1397	55.00	2675	105.30	900	35.43	3934	3354
650	26"	1245	49.00	2900	114.20	900	35.43	3100	-	1448	57.00	2750	108.20	900	35.43	4450	-
700	28"	1346	53.00	3250	128.00	900	35.43	3500	-	1549	61.00	3000	118.20	900	35.43	6800	-
750	30"	1397	55.00	3400	134.00	900	35.43	4300	-	1651	65.00	3200	126.00	1000	39.37	7000	-
800	32"	1524	60.00	3750	148.00	900	35.43	4650	-	1778	70.00	3400	134.00	1000	39.37	7350	-
850	34"	1626	64.00	3980	157.00	900	35.43	6500	-	1930	76.00	3600	142.00	1000	39.37	8400	-
900	36"	1727	68.00	4140	163.00	900	35.43	7200	-	2083	82.00	4000	157.50	1000	39.37	9500	-
1000	40"	1930	76.00	4400	173.50	1000	39.37	8700	-	2387	94.00	4300	170.00	1000	39.37	9850	-
1050	42"	1981	78.00	4650	183.00	1000	39.37	9200	-	2438	96.00	4500	177.00	1000	39.37	10400	-
1200	48"	2215	87.00	5200	205.00	1000	39.37	11000	-	2540	100.00	5100	200.00	1000	39.37	-	-

BOLTED BONNET GATE VALVE CLASS 900									
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	368	14.50	430	16.90	315	12.40	81	63
80	3"	381	15.00	580	22.80	355	13.98	135	113
100	4"	457	18.00	690	27.20	355	13.98	210	183
150	6"	610	24.00	1060	41.80	500	19.69	326	251
200	8"	737	29.00	1280	50.40	630	24.80	578	448
250	10"	838	33.00	1435	56.50	630	24.80	912	725
300	12"	965	38.00	1674	65.90	710	27.95	1235	1005
350	14"	1029	40.50	1842	72.50	710	27.95	1634	1366
400	16"	1130	44.50	2149	85.00	900	35.43	2268	1939
450	18"	1219	48.00	2230	88.00	1000	39.37	3025	2562
500	20"	1321	52.00	2466	97.00	1000	39.37	3850	3275
600	24"	1549	61.00	2840	112.00	1000	39.37	6518	5418

GATE VALVES / BOLTED BONNET (Class 150 to 2500)

BOLTED BONNET GATE VALVE CLASS 1500									
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	368	14.50	430	16.90	315	12.40	81	63
80	3"	470	18.50	580	22.80	355	13.98	141	107
100	4"	546	21.50	690	27.20	400	15.75	230	178
150	6"	705	27.75	1050	41.50	500	19.69	528	402
200	8"	832	32.75	1238	48.70	630	24.80	998	790
250	10"	991	39.00	1440	57.00	710	27.95	1620	1269
300	12"	1130	44.50	1550	61.00	800	31.50	2672	2194
350	14"	1257	49.50	1830	72.00	900	35.43	4100	3462
400	16"	1384	54.50	2010	79.00	900	35.43	5255	4421
450	18"	1537	60.50	2175	86.00	1000	39.37	6600	5470
500	20"	1664	65.50	2460	97.00	1000	39.37	7800	6385
600	24"	1943	76.50	3021	119.00	1000	39.37	11200	8925

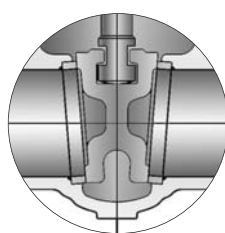
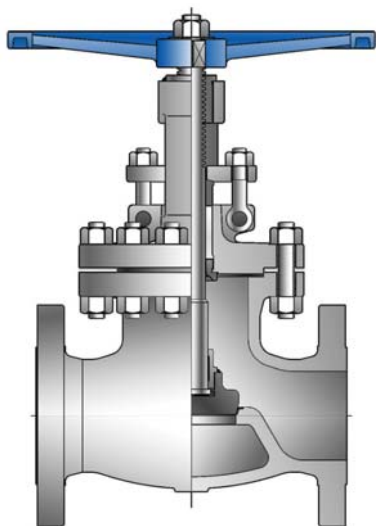
BOLTED BONNET GATE VALVE CLASS 2500									
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	451	17.75	580	22.90	315	12.40	130	100
80	3"	578	22.75	615	24.20	355	13.98	220	155
100	4"	673	26.50	740	29.20	400	15.75	480	380
150	6"	914	36.00	1025	40.50	630	24.80	980	715
200	8"	1022	40.25	1280	50.50	710	27.95	1500	1105
250	10"	1270	50.00	1583	62.50	900	35.43	2500	1730
300	12"	1422	56.00	2273	90.00	900	35.43	3800	2828



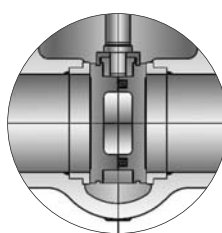
GLOBE VALVES / BOLTED BONNET (Class 150 to 2500)

■ Valve Design

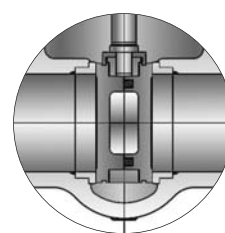
- Body & Bonnet joint : Male & female or Ring joint.
- Outside screw and Yoke, Integral seat
- bottom guide seating type : Class150 12" & larger, Class300, 600 10" & larger (Class900 & higher - Integral seat)
- Plug Disc, Parabolic Disc, Needle, Stop check Disc, etc.
- T-Globe, Y-Globe, Angle Globe, Stop Check, etc.
- Testing : API 598



Plug disc



Parabolic disc

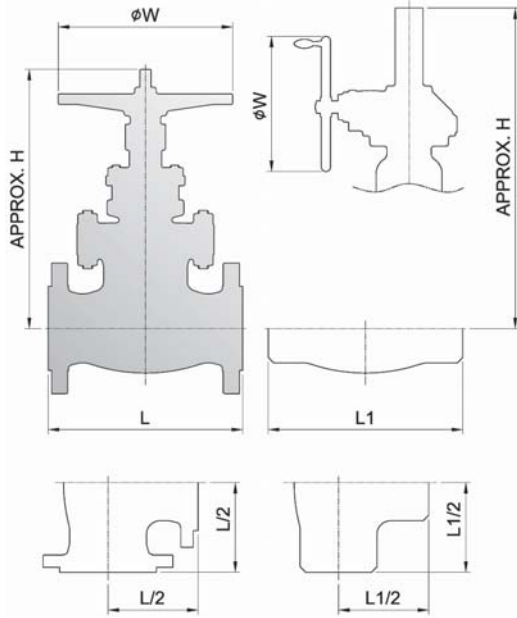


Disc guide type

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL	
		Mat'l	BODY / BONNET	A216-WCB	A352-LCB	A217-WC6	A217-C12
1	DISC(FACED)	A479-410	A479-304	A479-410	A479-410	A479-316	
2	STEM	WCB+13Cr	A351-CF8	A217-WC6	A217-C12	A217-CF8M	
3	BODY SEAT	A479-410	A479-304	A479-410		A479-316	
4	BACK SEATRING	W/Integral A216-WCB	W/Integral A351-CF8	W/Integral A217-WC6	W/Integral A217-C12	W/Integral A351-CF8M	
5	BONNET GASKET	A479-410	A479-304	A479-410		A479-316	
6	GLAND PACKING	GRAPHITE					
7	GLAND FLANGE	CS1020					A240-304
8	GLAND BOLT	A193-B7					A193-B8
9	GLAND BOLT NUT	A194-2H					A194-8
10	HINGE PIN	CS1020					A479-304
11	PACKING GLAND RING	A479-410	A479-304	A479-410		A479-316	
12	BONNET BOLT	A193-B7	A320-L7	A193-B16		A193-B8M CL.2	
13	BONNET BOLT NUT	A194-2H	A194-4			A194-8M	
14	YOKE NUT	CS1020+Zn Plating					A479-304
15	STEM NUT	A439-D2c					
16	HANDLE NUT	CS1020+Zn Plating					
17	DISC NUT	A479-410	A479-304	A479-410		A479-316	

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.

LOBE VALVES/BOLTED BONNET (Class 150 to 2500)



■ Applicable Specification

- Wall Thickness : ASME B16.34, API600/623, BS1873
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

■ APPROX. H : Full open height.

■ Handwheel DIA. øW

- Handle type.
- Gear operator(Our standard) :
Class150 10" & Larger, Class300 8" & Larger,
Class600 6" & Larger, Class900,1500 6" & Larger,
Class2500 4" & Larger.

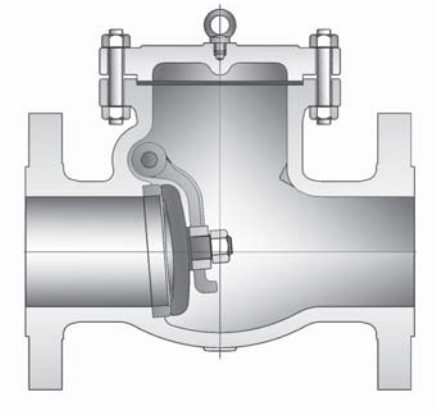
BOLTED BONNET GLOBE VALVE CLASS 150										BOLTED BONNET GLOBE VALVE CLASS 300							
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	203	8.00	320	12.60	200	7.87	20	16	267	10.50	320	12.60	200	7.87	22	16
80	3"	241	9.50	391	15.50	250	9.84	31	25	318	12.50	411	16.20	250	9.84	41	28
100	4"	292	11.50	404	16.00	315	12.40	47	36	356	14.00	444	17.50	315	12.40	62	43
150	6"	406	16.00	501	20.00	355	13.98	95	79	444	17.50	634	25.00	400	15.75	168	136
200	8"	495	19.50	685	27.00	450	17.72	169	137	559	22.00	734	29.00	450	17.72	248	201
250	10"	622	24.50	747	29.50	500	19.69	250	216	622	24.50	998	39.40	500	19.69	550	478
300	12"	698	27.50	974	38.50	630	24.80	440	395	711	28.00	1067	42.00	630	24.80	750	659
350	14"	787	31.00	1042	41.00	630	24.80	640	580	838	33.00	1165	46.00	710	27.95	1020	899
400	16"	914	36.00	1080	42.50	710	27.95	850	774	864	34.00	1324	52.20	800	31.50	1230	1076
450	18"	978	38.50	1314	52.00	800	31.50	982	898	978	38.50	1390	55.00	900	35.43	1600	1406
500	20"	978	38.50	1460	58.00	900	35.43	1480	1373	1016	40.00	1460	58.00	1000	39.37	2000	1765
600	24"	1295	51.00	1580	62.00	1000	39.37	2200	2051	1143	45.00	1870	74.00	1000	39.37	2900	2553

| GLOBE VALVES/BOLTED BONNET (Class 150 to 2500)

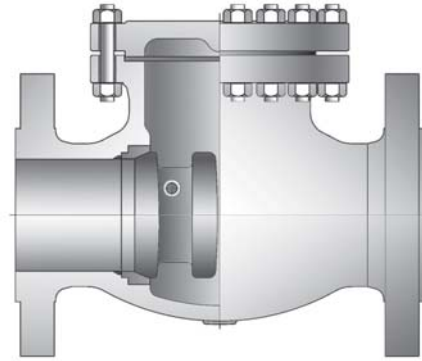
BOLTED BONNET GLOBE VALVE CLASS 600										BOLTED BONNET GLOBE VALVE CLASS 900							
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	292	11.50	346	13.60	224	8.82	37	30	368	14.50	405	16.00	355	13.98	77	59
80	3"	356	14.00	417	16.50	355	13.98	62	48	381	15.00	535	21.00	355	13.98	120	98
100	4"	432	17.00	516	20.50	355	13.98	115	88	457	18.00	623	24.50	400	15.75	192	165
150	6"	559	22.00	850	33.50	630	24.80	335	281	610	24.00	940	37.00	630	24.80	380	305
200	8"	660	26.00	1050	41.40	800	31.50	620	535	737	29.00	1050	41.40	710	27.95	875	745
250	10"	787	31.00	1250	46.40	900	35.43	900	760	838	33.00	1350	53.20	800	31.50	1650	1463
300	12"	838	33.00	1420	49.00	900	35.43	1500	1350	965	38.00	1680	66.20	900	35.43	2050	1820
350	14"	889	35.00	1600	54.40	900	35.43	1870	1690	1029	40.50	1950	77.00	900	35.43	3100	2832
400	16"	991	39.00	1700	66.00	800	31.50	2250	2000	1130	44.50	2400	95.00	900	35.43	3560	3231
450	18"	1092	43.00	1950	77.00	800	31.50	2740	2427								
500	20"	1194	47.00	2147	85.00	800	31.50	3450	3050								
600	24"	1397	55.00	2475	98.00	900	35.43	4230	3650								

BOLTED BONNET GLOBE VALVE CLASS 1500										BOLTED BONNET GATE VALVE CLASS 2500							
SIZE		L(RF)&L1(BW)		H		W		WEIGHT (kg)		L(RF)&L1(BW)		H		W		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	mm	inch	RF	BW	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	368	14.50	405	16.00	355	13.98	77	59	451	17.75	625	24.70	400	15.75	135	105
80	3"	470	18.50	550	22.00	450	17.72	170	136	578	22.75	892	35.20	500	19.69	220	155
100	4"	546	21.50	615	24.20	450	17.72	280	228	673	26.50	1080	42.50	630	24.80	420	320
150	6"	705	27.75	1100	43.40	800	31.50	740	614	914	36.00	1450	57.20	710	27.95	1850	1585
200	8"	832	32.75	1230	48.50	900	35.43	1490	1282	1022	40.25	1710	67.50	900	35.43	2800	2405
250	10"	991	39.00	1500	59.20	900	35.43	2100	1749	1270	50.00	1950	77.00	1000	39.37	3500	2730
300	12"	1130	44.50	1650	65.00	800	31.50	3100	2622	1422	56.00	2230	88.00	900	35.43	5700	4728
350	14"	1257	49.50	2200	87.00	900	35.43	4320	3682								
400	16"	1384	54.50	2600	103.00	900	35.43	5450	4616								

CHECK VALVES/BOLTED COVER (Class 150 to 2500)



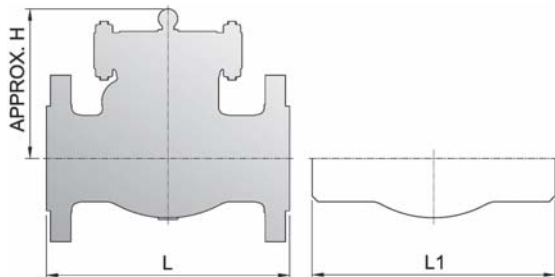
SWING CHECK VALVE



TILTING DISC CHECK VALVE

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL
		A216-WCB	A352-LCB	A217-WC6	A217-C12	A351-CF8M
Mat'l	BODY / BONNET	A216-WCB	A352-LCB	A217-WC6	A217-C12	A351-CF8M
1	DISC(FACED)	A216-WCB	A351-CF8	A217-WC6	A216-C12	A351-CF8M
2	ROD PIN	A479-410	A479-304	A479-410		A479-316
3	BODY SEATRING	A105	A182-F304	A182-F11	A182-F9	A182-F316
4	BONNET GASKET	GRAPHITE				
5	PLUG BOLT	A479-410	A479-304		A479-316	
6	DISC NUT	A194-8				A194-8M
7	EYE BOLT	6" & Larger (A307-B+Zn Plating)				
8	BONNET BOLT	A193-B7	A320-L7	A193-B16		A193-B8M CL.2
9	BONNET BOLT NUT	A194-2H	A194-4		A194-8M	
10	ARM	A216-WCB	A352-LCB	A217-WC6	A216-C12	A351-CF8M

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.



■ Applicable Specification

- Wall Thickness : ASME B16.34, BS1868, API594/600/6D
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

CHECK VALVES/BOLTED COVER (Class 150 to 2500)

BOLTED COVER CHECK VALVE CLASS 150								BOLTED COVER CHECK VALVE CLASS 300							
SIZE		L(RF) & L1(BW)		H		WEIGHT (kg)		SIZE		L(RF) & L1(BW)		H		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	RF	BW	mm	inch	mm	inch	mm	inch	RF	BW
50	2"	203	8.00	153	6.00	17	13	50	2"	267	10.50	165	6.50	25	19
80	3"	241	9.50	175	7.00	31	25	80	3"	318	12.50	186	7.30	58	45
100	4"	292	11.50	202	8.00	50	39	100	4"	356	14.00	219	8.60	73	54
150	6"	356	14.00	291	11.50	92	76	150	6"	444	17.50	262	10.30	136	104
200	8"	495	19.50	327	12.90	136	104	200	8"	533	21.00	334	13.20	184	137
250	10"	622	24.50	390	15.40	195	161	250	10"	622	24.50	398	15.80	298	226
300	12"	698	27.50	417	16.40	285	240	300	12"	711	28.00	475	18.70	416	325
350	14"	787	31.00	478	18.90	421	361	350	14"	838	33.00	540	21.50	683	562
400	16"	864	34.00	516	20.40	500	424	400	16"	864	34.00	605	24.00	749	595
450	18"	978	38.50	554	22.00	641	557	450	18"	978	38.50	650	25.70	962	768
500	20"	978	38.50	620	24.50	782	675	500	20"	1016	40.00	715	28.20	1340	1105
600	24"	1295	51.00	830	32.70	1493	1344	600	24"	1346	53.00	780	30.80	2100	1753
650	26"	1295	51.00	875	34.50	1850	-	650	26"	1346	53.00	850	33.50	2560	-
700	28"	1448	57.00	930	37.00	2050	-	700	28"	1499	59.00	960	37.80	2870	-
750	30"	1524	60.00	980	39.00	2400	-	750	30"	1574	62.75	1080	42.50	3100	-
900	36"	1956	77.00	1080	42.50	4120	-	900	36"	2083	82.00	1350	53.20	4500	-

BOLTED COVER CHECK VALVE CLASS 600							
SIZE		L(RF)&L1(BW)		H		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	RF	BW
50	2"	292	11.50	187	7.40	28	21
80	3"	356	14.00	210	8.40	59	45
100	4"	432	17.00	256	10.20	112	85
150	6"	559	22.00	329	13.00	215	161
200	8"	660	26.00	364	14.50	386	301
250	10"	787	31.00	464	18.50	614	474
300	12"	838	33.00	486	19.20	872	722
350	14"	889	35.00	525	20.80	940	760
400	16"	991	39.00	700	27.80	1340	1090
450	18"	1092	43.00	780	30.70	2023	1710
500	20"	1194	47.00	860	34.00	2395	1995
600	24"	1397	55.00	980	38.70	3740	3160
650	26"	1448	57.00	1045	41.20	4080	-
700	28"	1600	63.00	1100	43.50	4250	-
750	30"	1651	65.00	1180	46.50	4800	-
900	36"	2083	82.00	1270	50.00	5200	-

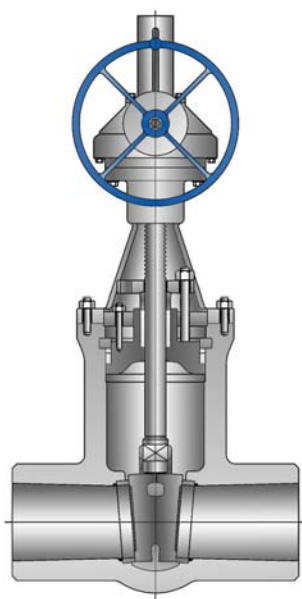
CHECK VALVES / BOLTED COVER (Class 150 to 2500)

BOLTED COVER CHECK VALVE CLASS 900							
SIZE		L(RF)&L1(BW)		H		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	RF	BW
50	2"	368	14.50	250	10.00	42	24
80	3"	381	15.00	295	11.70	71	49
100	4"	457	18.00	310	12.20	124	97
150	6"	610	24.00	400	15.80	255	180
200	8"	737	29.00	465	18.30	412	282
250	10"	838	33.00	565	22.20	800	613
300	12"	965	38.00	580	23.00	940	710
350	14"	1029	40.50	610	24.00	1130	862
400	16"	1130	44.50	750	29.50	1528	1199
450	18"	1219	48.00	832	33.00	2600	2137
500	20"	1321	52.00	960	37.80	3450	2875
600	24"	1549	61.00	1040	41.00	4200	3100

BOLTED COVER CHECK VALVE CLASS 1500							
SIZE		L(RF)&L1(BW)		H		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	RF	BW
50	2"	368	14.50	250	10.00	42	24
80	3"	470	18.50	287	11.30	125	91
100	4"	546	21.50	338	13.40	212	160
150	6"	705	27.75	464	18.30	470	344
200	8"	832	32.75	546	21.50	825	617
250	10"	991	39.00	642	25.40	1700	1349
300	12"	1130	44.50	860	34.00	2460	1982
350	14"	1257	49.50	1015	40.00	2800	2162
400	16"	1384	54.50	1260	50.00	3900	3066

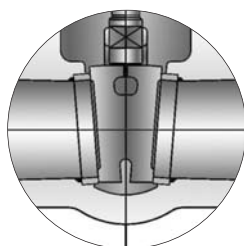
BOLTED BONNET CHECK VALVE CLASS 2500							
SIZE		L(RF)&L1(BW)		H		WEIGHT (kg)	
mm	inch	mm	inch	mm	inch	RF	BW
50	2"	451	17.75	320	12.60	125	95
80	3"	578	22.75	480	18.90	235	170
100	4"	673	26.50	520	20.50	510	410
150	6"	914	36.00	740	29.20	846	581
200	8"	1022	40.25	874	34.50	1500	1105
250	10"	1270	50.00	962	37.90	2600	1830
300	12"	1422	56.00	1045	41.20	3800	2828

GATE VALVES/PRESSURE SEAL BONNET (Class 600 to 2500)

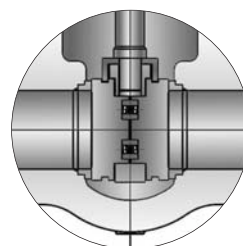


■ Valve Design

- Pressure seal bonnet
- Pressure seal Graphite Gasket or Pressure seal Metal Gasket
- Non-Rotating rising Stem, Outside screw and Yoke
- Flexible Wedge disc, Parallel Slide Disc
- Testing : API 598



Flexible wedge



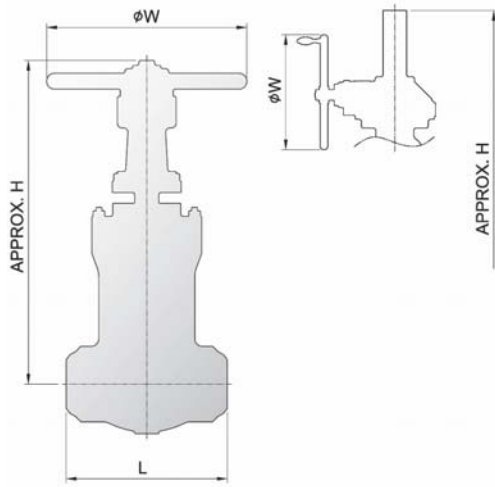
Parallel slide gate

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL
		Mat'l	BODY	A216-WCB	A352-LCB	A217-WC6
1	BONNET	A105 A216-WCB	A182-F304 A351-CF8	A182-F11 A217-WC6	A182-F9 A217-C12	A182-F316 A351-CF8M
2	DISC(FACED)	A217-CA15 A216-WCB	A351-CF8	A217-CA15 A217-WC6	A217-CA15 A217-C12	A351-CF8M
3	STEM	A479-410	A479-304	A479-410		A479-316
4	YOKE	A216-WCB				A351-CF8
5	BODY SEATRING	A105	A182-F304	A182-F11	A182-F9	A182-F316
6	BONNET GASKET	GRAPHITE				
7	GLAND PACKING	GRAPHITE				
8	GLAND FLANGE	CS1020				A240-304
9	GLAND BOLT/NUT	A193-B7/A194-2H				B8 CL.2 / 8
10	PACKING GLAND RING	A479-410	A479-304	A479-410		A479-316
11	RETAINER	CS1045	A479-304	A479-304		A479-316
12	ADAPTER RING	A240-304				
13	BONNET CLAMP	CS1020				A240-304
14	CLAMP BOLT/NUT	A193-B7 or Eq				B8 CL.2 or Eq
15	YOKE BOLT/NUT	A193-B7 / A194-2H	A320-L7 / A194-4	A193-B16 / A194-4		A193-B8M CL.2 / A194-8M
16	YOKE NUT	CS1020+Zn Plating				A479-304
17	STEM NUT	A439-D2c				
18	HANDLE NUT	CS1020+Zn Plating				

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.

※ Backseat W/Integral faced overlay. (Stellite No.6)

GATE VALVES/PRESSURE SEAL BONNET (Class 600 to 2500)



■ Applicable Specification

- Wall Thickness : API600, BS1414
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

■ APPROX. H : Full open height.

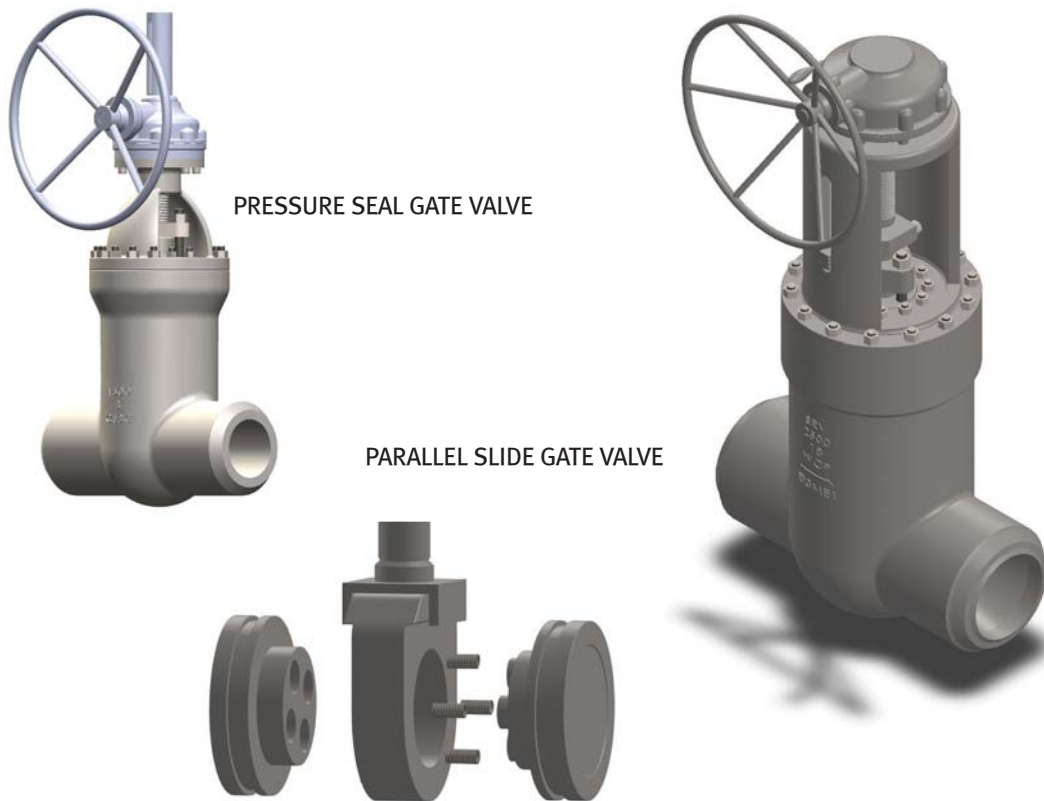
■ Handwheel DIA. øW

- Handle type.
- Gear operator(Our standard) :
All class 4" & Larger.

PRESSURE SEAL GATE VALVE CLASS 600									PRESSURE SEAL GATE VALVE CLASS 900								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	178	7.00	520	20.50	315	12.40	30	50	2"	216	8.50	530	20.90	315	12.40	37
80	3"	254	10.00	580	22.90	315	12.40	55	80	3"	305	12.00	610	24.00	355	13.98	58
100	4"	305	12.00	690	27.20	315	12.40	125	100	4"	356	14.00	728	28.70	355	13.98	110
150	6"	457	18.00	1050	41.50	500	17.72	200	150	6"	508	20.00	1180	46.50	500	19.69	254
200	8"	584	23.00	1200	47.50	500	19.69	355	200	8"	660	26.00	1420	56.00	630	24.80	477
250	10"	711	28.00	1390	55.00	500	19.69	490	250	10"	787	31.00	1700	67.00	710	27.95	826
300	12"	813	32.00	1610	63.40	630	24.80	780	300	12"	914	36.00	1870	73.80	710	27.95	1102
350	14"	889	35.00	1840	72.50	710	27.95	1120	350	14"	991	39.00	2000	78.80	900	35.43	1658
400	16"	991	39.00	1960	77.20	710	27.95	1600	400	16"	1092	43.00	2250	88.70	900	35.43	2258
450	18"	1092	43.00	2200	87.00	710	27.95	2230	450	18"	1219	48.00	2550	100.50	900	35.43	3078
500	20"	1194	47.00	2380	93.70	900	35.43	2840	500	20"	1321	52.00	2740	108.00	900	35.43	3867
600	24"	1397	55.00	2870	113.00	900	35.43	4350	600	24"	1549	61.00	3180	125.20	1000	39.37	5968

PRESSURE SEAL GATE VALVE CLASS 1500									PRESSURE SEAL GATE VALVE CLASS 2500								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	216	8.50	530	20.90	315	12.40	37	50	2"	279	11.00	490	19.40	315	12.40	42
80	3"	305	12.00	610	24.00	355	13.98	71	80	3"	368	14.50	610	24.00	355	13.98	132
100	4"	406	16.00	720	28.50	400	15.75	164	100	4"	457	18.00	710	28.00	450	17.72	185
150	6"	559	22.00	1060	41.80	500	19.69	270	150	6"	610	24.00	1160	45.70	630	24.80	450
200	8"	711	28.00	1270	50.00	630	24.80	510	200	8"	762	30.00	1250	49.20	710	27.95	760
250	10"	864	34.00	1430	56.30	710	27.95	1240	250	10"	914	36.00	1540	60.70	900	35.43	1250
300	12"	991	39.00	1700	67.00	800	31.50	1342	300	12"	1041	41.00	1860	73.20	900	35.43	1900
350	14"	1067	42.00	1950	77.00	900	35.43	1680	350	14"	1118	44.00	2050	81.00	900	35.43	2600
400	16"	1194	47.00	2340	92.20	900	35.43	2880	400	16"	1245	49.00	2380	93.70	900	35.43	3300
450	18"	1346	53.00	2560	100.80	1000	39.37	3400	450	18"	1397	55.00	2650	104.50	800	31.50	5970
500	20"	1473	58.00	2800	110.20	1000	39.37	5350	500	20"	1575	62.00	2850	112.20	900	35.43	6400
600	24"	1727	68.00	3210	126.50	1000	39.37	6400	600	24"	1676	66.00	3300	130.00	900	35.43	7800

| GATE VALVES / PRESSURE SEAL BONNET (Class 600 to 2500)



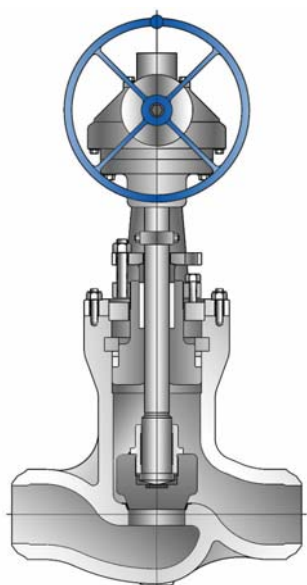
■ PARALLEL SLIDE GATE VALVES

• Features and advantages

- The parallel slide gate valve consists of a spring between two parallel discs, a fully guided disc holder and a fixed plate.
- The spring is fitted between disc to provide initial sealing force, and do not maintain sealing force.
- Parallel slide gate valves require low operative forces.
- Once the disc is in position, it is not necessary any additional torque to achieve positive seal.
- Designed for ease of maintenance : eliminates the need to custom fit the seats to the discs.
- Parallel slide gate valves use line pressure and position to provide positive isolation.
- The parallel slide valve is not subject to thermal binding concerns, resulting in a distinct safety advantage in high temperature service.
- Bypass valves are recommended to equalize pressure across the disc before opening if the valve is exposed to very high differential pressure.

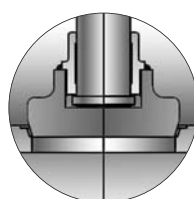
(Size 2"~ 4" : Vent slot at parallel disc is recommended / Size 6" & Larger : Bypass or equalizer is recommended)

GLOBE VALVES / PRESSURE SEAL BONNET (Class 600 to 2500)

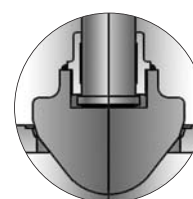


■ Valve Design

- Pressure seal bonnet
- Pressure seal Graphite Gasket or Pressure seal Metal gasket
- Outside screw and Yoke, Integral seat
- Plug Disc, Parabolic Disc, Needle, Stop check Disc, etc.
- T-Globe, Y-Globe, Angle Globe, Stop Check, Lift Check, etc.,
- Testing : API 598



Plug disc



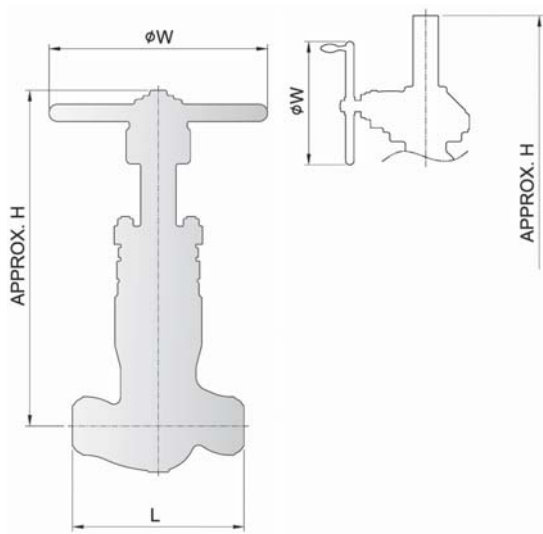
Parabolic disc

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL
		Mat'l	BODY	A216-WCB	A352-LCB	A217-WC6
1	BONNET	A105 A216-WCB	A182-F304 A351-CF8	A182-F11 A217-WC6	A182-F9 A217-C12	A182-F316 A351-CF8M
2	DISC(FACED)	A217-CA15 A216-WCB	A351-CF8	A217-CA15 A217-WC6	A217-CA15 A217-C12	A351-CF8M
3	STEM	A479-410	A479-304	A479-410		A479-316
4	YOKE	A216-WCB				A351-CF8
5	BODY SEATRING	A105	A182-F304	A182-F11	A182-F9	A182-F316
6	BONNET GASKET	GRAPHITE				
7	GLAND PACKING	GRAPHITE				
8	GLAND FLANGE	CS1020				A240-304
9	GLAND BOLT/NUT	A193-B7/A194-2H				B8 CL.2 / 8
10	PACKING GLAND RING	A479-410	A479-304	A479-410		A479-316
11	RETAINER	CS1045	A479-304	A479-304		A479-316
12	ADAPTER RING	A240-304				
13	BONNET CLAMP	CS1020				A240-304
14	CLAMP BOLT/NUT	A193-B7 or Eq				B8 CL.2 or Eq
15	YOKE BOLT/NUT	A193-B7 / A194-2H	A320-L7 / A194-4	A193-B16 / A194-4		A193-B8M CL.2 / A194-8M
16	YOKE NUT	CS1020+Zn Plating				A479-304
17	STEM NUT	A439-D2c				
18	HANDLE NUT	CS1020+Zn Plating				

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.

※ Backseat W/Integral faced overlay. (Stellite No.6)

LOBE VALVES/PRESSURE SEAL BONNET (Class 600 to 2500)



■ Applicable Specification

- Wall Thickness : ASME B16.34, API600, BS1873
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

■ APPROX. H : Full open height.

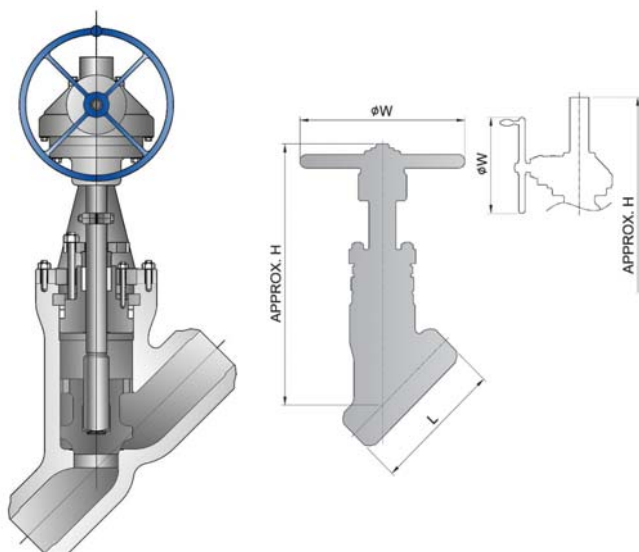
■ Handwheel DIA. ϕW

- Handle type.
- Gear operator(Our standard) :
Class600 to 1500 6" & Larger,
Class2500 4" & Larger.

PRESSURE SEAL GLOBE VALVE CLASS 600									PRESSURE SEAL GLOBE VALVE CLASS 900								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	178	7.00	420	16.60	224	8.82	25	50	2"	216	8.50	428	16.90	315	12.40	63
80	3"	254	10.00	550	21.70	355	13.98	45	80	3"	305	12.00	550	21.70	355	13.98	92
100	4"	305	12.00	680	27.00	355	13.98	86	100	4"	356	14.00	620	24.40	400	15.75	140
150	6"	457	18.00	875	34.50	630	24.80	172	150	6"	508	20.00	890	35.10	630	24.80	425
200	8"	584	23.00	1050	41.40	800	31.50	410	200	8"	660	26.00	1120	44.10	710	27.95	745
250	10"	711	28.00	1290	50.80	900	35.43	576	250	10"	787	31.00	1380	54.40	800	31.50	1500
300	12"	813	32.00	1475	58.20	900	35.43	890	300	12"	914	36.00	1620	63.80	900	35.43	1850
350	14"	889	35.00	1650	65.00	900	35.43	1840	350	14"	991	39.00	1750	68.90	900	35.43	2880
400	16"	991	39.00	1970	77.70	800	31.50	2200	400	16"	1092	43.00	2100	83.00	900	35.43	3300
450	18"	1092	43.00	2100	83.00	800	31.50	3000	450	18"	1219	48.00	2300	90.50	900	35.43	3740
500	20"	1194	47.00	2430	95.80	800	31.50	3575	500	20"	1321	52.00	2500	98.50	1000	39.37	4200
600	24"	1397	55.00	2850	112.20	900	35.43	4300	600	24"	1549	61.00	2700	106.30	1000	39.37	5140

PRESSURE SEAL GLOBE VALVE CLASS 1500									PRESSURE SEAL GLOBE VALVE CLASS 2500								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	216	8.50	428	16.90	315	12.40	63	50	2"	279	11.00	572	22.50	400	15.75	92
80	3"	305	12.00	550	21.70	355	13.98	92	80	3"	368	14.50	625	24.60	450	17.72	145
100	4"	406	16.00	670	26.40	450	17.72	140	100	4"	457	18.00	820	32.40	630	24.80	387
150	6"	559	22.00	940	37.00	710	27.95	420	150	6"	610	24.00	1120	44.10	710	27.95	1390
200	8"	711	28.00	1120	44.10	900	35.43	850	200	8"	762	30.00	1350	53.20	900	35.43	2278
250	10"	864	34.00	1400	55.20	900	35.43	1970	250	10"	914	36.00	1600	63.00	1000	39.37	2650
300	12"	991	39.00	1600	63.00	1000	39.37	2700	300	12"	1041	41.00	1940	76.50	900	35.43	4000
350	14"	1067	42.00	1750	68.90	900	35.43	3200	350	14"	1118	44.00	1975	78.00	1000	39.37	-
400	16"	1194	47.00	2085	82.10	900	35.43	3660	400	16"	1245	49.00	2400	94.50	1000	39.37	-

Y PATTERN GLOBE VALVES/PRESSURE SEAL BONNET (Class 600 to 2500)



■ Applicable Specification

- Wall Thickness : ASME B16.34, BS1873
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

■ APPROX. H : Full open height.

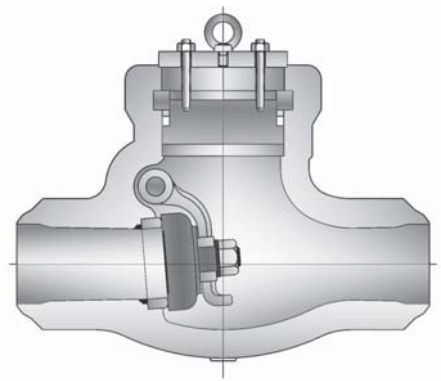
■ Handwheel DIA. øW

- Handle type.
- Gear operator(Our standard) :
Class600 to 1500 6" & Larger,
Class2500 4" & Larger.

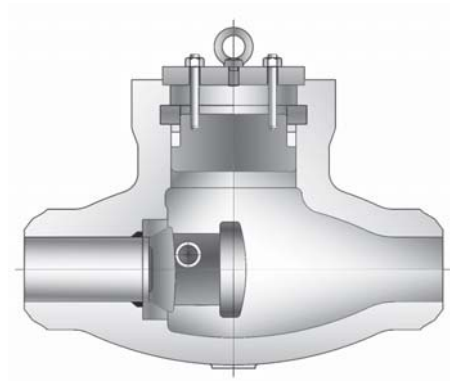
PRESSURE SEAL Y-GLOBE VALVE CLASS 600									PRESSURE SEAL Y-GLOBE VALVE CLASS 900								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	292	11.50	420	16.60	224	8.82		50	2"	216	8.50	428	16.90	315	12.40	
80	3"	356	14.00	550	21.70	355	13.98		80	3"	305	12.00	550	21.70	355	13.98	
100	4"	432	17.00	680	27.00	355	13.98		100	4"	356	14.00	620	24.40	400	15.75	
150	6"	559	22.00	875	34.50	630	24.80		150	6"	508	20.00	890	35.10	630	24.80	
200	8"	660	26.00	1050	41.40	800	31.50		200	8"	660	26.00	1120	44.10	710	27.95	
250	10"	787	31.00	1290	50.80	900	35.43		250	10"	787	31.00	1380	54.40	800	31.50	
300	12"	838	33.00	1475	58.20	900	35.43		300	12"	914	36.00	1620	63.80	900	35.43	
350	14"	889	35.00	1650	65.00	900	35.43		350	14"	991	39.00	1750	68.90	900	35.43	
400	16"	991	39.00	1970	77.70	800	31.50		400	16"	1092	43.00	2100	83.00	900	35.43	
450	18"	1092	43.00	2100	83.00	800	31.50		450	18"	1219	48.00	2300	90.50	900	35.43	
500	20"	1194	47.00	2430	95.80	800	31.50		500	20"	1321	52.00	2500	98.50	1000	39.37	
600	24"	1397	55.00	2850	112.20	900	35.43		600	24"	1549	61.00	2700	106.30	1000	39.37	

PRESSURE SEAL Y-GLOBE VALVE CLASS 1500									PRESSURE SEAL Y-GLOBE VALVE CLASS 2500								
SIZE		L		H		W		WEIGHT	SIZE		L		H		W		WEIGHT
mm	inch	mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	mm	inch	(kg)
50	2"	216	8.50	428	16.90	315	12.40		50	2"	279	11.00	572	22.50	400	15.75	
80	3"	305	12.00	550	21.70	355	13.98		80	3"	368	14.50	625	24.60	450	17.72	
100	4"	406	16.00	670	26.40	450	17.72		100	4"	457	18.00	820	32.40	630	24.80	
150	6"	559	22.00	940	37.00	710	27.95		150	6"	610	24.00	1120	44.10	710	27.95	
200	8"	711	28.00	1120	44.10	900	35.43		200	8"	762	30.00	1350	53.20	900	35.43	
250	10"	864	34.00	1400	55.20	900	35.43		250	10"	914	36.00	1600	63.00	1000	39.37	
300	12"	991	39.00	1600	63.00	1000	39.37		300	12"	1041	41.00	1940	76.50	900	35.43	
350	14"	1067	42.00	1750	68.90	900	35.43		350	14"	1118	44.00	1975	78.00	1000	39.37	
400	16"	1194	47.00	2085	82.10	900	35.43		400	16"	1245	49.00	2400	94.50	1000	39.37	

CHECK VALVES / PRESSURE SEAL COVER (Class 600 to 2500)



SWING CHECK VALVE

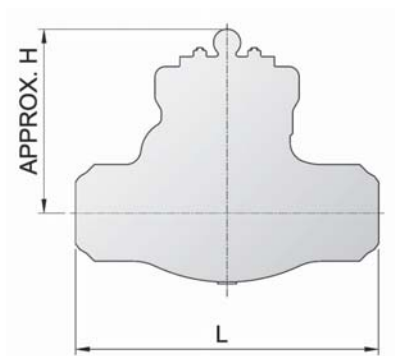


TILTING DISC CHECK VALVE

NO.	PART NAME	CARBON STEEL		ALLOY STEEL		STAINLESS STEEL	
		Mat'l	BODY	A216-WCB	A352-LCB	A217-WC6	A217-C12
1	BONNET	A105 A216-WCB	A182-F304 A351-CF8	A182-F11 A217-WC6	A182-F9 A217-C12	A182-F316 A351-CF8M	
2	DISC(FACED)	A216-WCB	A351-CF8	A217-WC6	A217-C12	A351-CF8M	
3	ROD PIN	A479-410	A479-304	A479-410		A479-316	
4	BODY SEATRING	A105	A182-F304	A182-F11	A182-F9	A182-F316	
5	BONNET GASKET	GRAPHITE					
6	PLUG CAP	CS1020	A479-304	A479-304		A479-316	
7	PLUG CAP GASKET	GRAPHITE / METAL GASKET					
8	DISC NUT	A194-8				A194-8M	
9	RETAINER	CS1045	A479-304	A479-304		A479-316	
10	ADAPTER RING	A240-304					
11	BONNET CLAMP	CS1020				A240-304	
12	CLAMP BOLT/NUT	B7 / 2H	L7 / 4	B16 / 4		B8M CL.2 / 8	
13	ARM	A216-WCB	A352-LCB	A217-WC6	A216-C12	A351-CF8M	

※ API600 Trim# 5 : Disc & Body Seat faced Stellite No.6 Overlay , Trim# 8 : Body Seat faced Stellite No.6 Overlay.

CHECK VALVES/PRESSURE SEAL COVER (Class 600 to 2500)



■ Applicable Specification

- Wall Thickness :
ASME B16.34, BS1868, API594/600/6D
- Design Pressure/Temperature : ASME B16.34
- Face to Face(End to End) Dimension : ASME B16.10
- End Connection : ASME B16.5, ASME B16.25

PRESSURE SEAL CHECK VALVE CLASS 600							PRESSURE SEAL CHECK VALVE CLASS 900						
SIZE		L		H		WEIGHT	SIZE		L		H		WEIGHT
mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	(kg)
50	2"	178	7.00	195	7.70	38	50	2"	216	8.50	220	8.70	41
80	3"	254	10.00	250	9.90	45	80	3"	305	12.00	235	9.40	48
100	4"	305	12.00	310	12.20	52	100	4"	356	14.00	285	11.20	74
150	6"	457	18.00	370	14.70	110	150	6"	508	20.00	380	15.00	175
200	8"	584	23.00	415	16.40	225	200	8"	660	26.00	440	17.30	280
250	10"	711	28.00	480	18.90	380	250	10"	787	31.00	520	20.50	590
300	12"	813	32.00	520	20.50	520	300	12"	914	36.00	580	22.90	665
350	14"	889	35.00	589	23.20	670	350	14"	991	39.00	700	27.60	855
400	16"	991	39.00	635	25.00	840	400	16"	1092	43.00	780	30.80	1180
450	18"	1092	43.00	687	27.20	1310	450	18"	1219	48.00	840	33.20	2135
500	20"	1194	47.00	750	29.50	1620	500	20"	1321	52.00	905	35.70	2550
600	24"	1397	55.00	810	32.00	2470	600	24"	1549	61.00	980	39.00	3000

PRESSURE SEAL CHECK VALVE CLASS 1500							PRESSURE SEAL CHECK VALVE CLASS 2500						
SIZE		L		H		WEIGHT	SIZE		L		H		WEIGHT
mm	inch	mm	inch	mm	inch	(kg)	mm	inch	mm	inch	mm	inch	(kg)
50	2"	216	8.50	220	8.70	41	50	2"	279	11.00	220	8.70	44
80	3"	305	12.00	235	9.40	52	80	3"	368	14.50	213	8.40	54
100	4"	406	16.00	285	11.20	95	100	4"	457	18.00	275	10.80	104
150	6"	559	22.00	380	15.00	185	150	6"	610	24.00	360	14.20	240
200	8"	711	28.00	455	17.90	360	200	8"	762	30.00	470	18.50	480
250	10"	864	34.00	520	20.50	620	250	10"	914	36.00	550	21.70	775
300	12"	991	39.00	615	24.20	920	300	12"	1041	41.00	700	27.60	1300
350	14"	1067	42.00	680	27.00	1340	350	14"	1118	44.00	760	30.00	1780
400	16"	1194	47.00	760	30.00	2030	400	16"	1245	49.00	780	31.00	2467
450	18"	1346	53.00	840	33.00	2580	450	18"	1397	55.00	850	33.50	3200
500	20"	1473	58.00	900	35.50	3100	500	20"	1575	62.00	970	38.20	4250
600	24"	1727	68.00	1000	39.50	3600	600	24"	1676	66.00	1050	41.50	4980