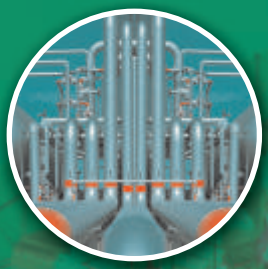
LEADER® LVL®
LEADER VALVES LTD.

Manufacturing Widest Range of Valves & Fittings for All Applications

API6D-0346
API 600-0018

AD 2000-markblatt W.O.

FORGED STEEL



LVL Leading Products 2

LEADER VALVES LTD.

www.leadervalves.com

LEADER® LVL®
LEADER VALVES LTD.

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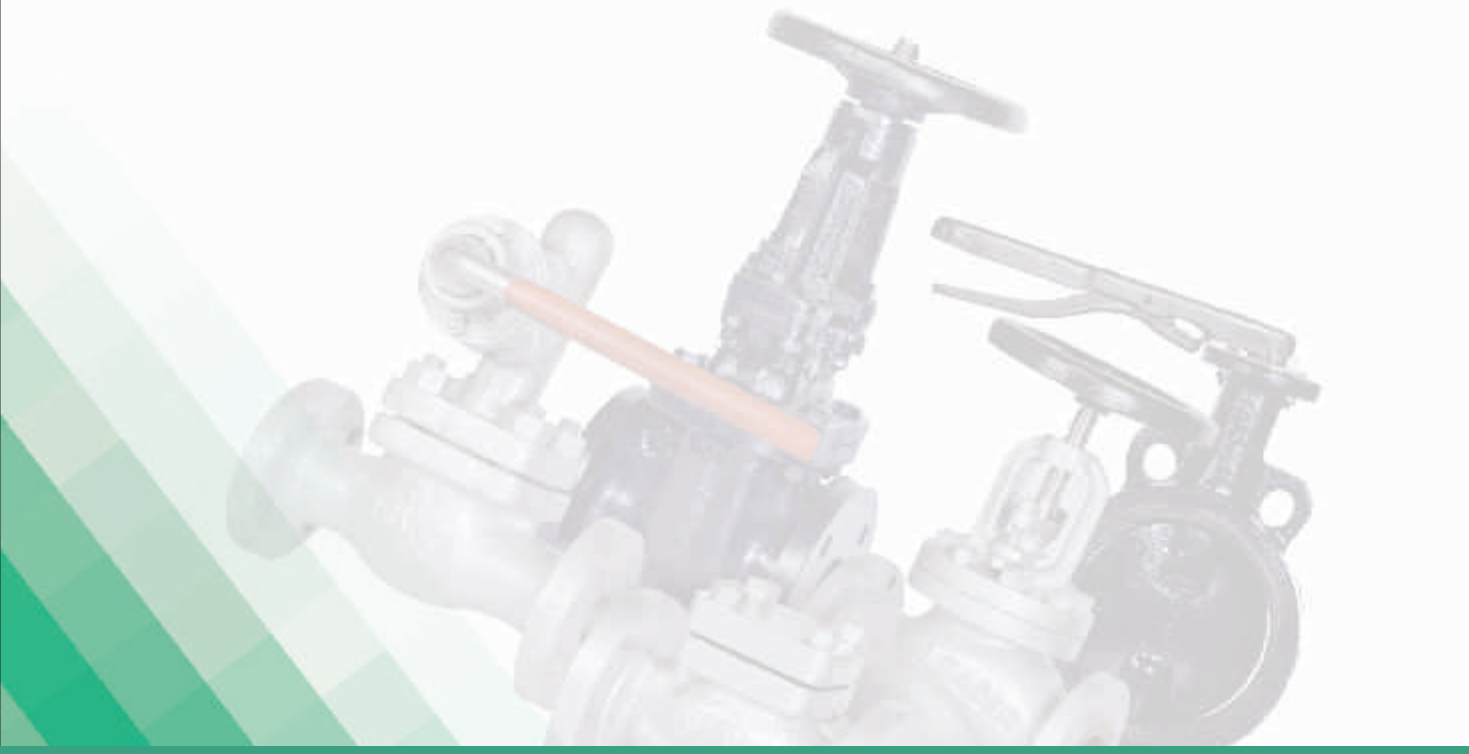


Company Profile

LEADER VALVES LIMITED is a leading, totally integrated valves manufacturing unit with it's own Ferrous & Non Ferrous Foundries and Forging unit in India.

The company was set up more than six decades ago when India was on the threshold of industrial revolution and there were no good valve manufacturers in the country. It has over the years built up an excellent track record by following the policy of customer satisfaction.

We are an ISO-9001:2008 company since Jan. 1996 certified by LRQA, India. The company is licensed to use API Spec 6D (Certificate No. 6D-0346), and API 600 (Certificate No. 600-0018) monograms.

Structural Integrity Division of National Aerospace Laboratory Banglore has tested and certified our valves for "Seismic Qualification" of bi-directional valves.

Leader Ferrous & Non Ferrous foundries are certified as "Well Known FOUNDRY" Under Indian Boiler Regulation 4C (2) of Central Boiler Board, Govt. of India Besides being PED certified by M/s. LRQA & AD 2000-Merkblatt WO certified by TUV.

The company is managed by an Efficient Board of Directors & well qualified professionals.

Leader High Pressure Fittings (I) Ltd. and Leader Exports are other two Associate Units of Leader Valves Ltd. manufacturing high pressure valves and fittings. We are also doing job work for some of the worlds leading valves manufacturing companies.

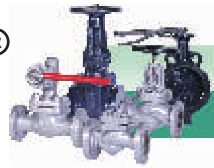
QUALITY POLICY

We at Leader Valves Ltd and leader Export want to achieve Customer Satisfaction.

1) By meeting the customer stated & implied requirements.
2) By meeting the applicable statutory & regulatory requirement.
3) Through Continual Improvement in
a) Quality Management System.
b) Manufacturing Process.
4) By adding new designs & improving existing designs for marketing the products which are Competitive , Safe and Harmless to the environment.

LEADER LVL®

LEADER VALVES LTD.



CERTIFICATION

CERTIFICATE OF APPROVAL

Leader Valves Ltd.
Jalandhar,
INDIA

BS EN ISO 9001:2008

- The design, development and production of ferrous valves maximum size of NPS36 (900mm) nominal size, non-ferrous valves maximum size NPS 24 (600 mm) nominal size, boiler mountings maximum size NPS 12 (300 mm) nominal size and forged fittings maximum size NPS 2 (50 mm) nominal size.
- The manufacture of ferrous castings maximum weight of 2000 Kg and non-ferrous castings maximum weight of 1000 Kg.

CERTIFICATE SCHEDULE

Leader Valves Ltd.
Jalandhar,
INDIA

Head Office:

Activities:

Other Locations:

Certificate of Authority to use the Official API Monogram

LEADER VALVES LTD.

American Petroleum Institute

Certificate of Authority to use the Official API Monogram

LEADER VALVES LTD.

American Petroleum Institute

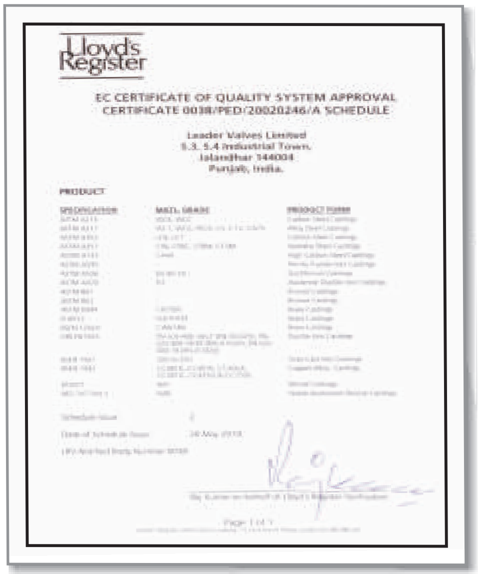
Lloyd's Register

EC CERTIFICATE OF QUALITY SYSTEM APPROVAL

In accordance with the requirements of the Pressure Equipment Directive 97/23/EC and the Pressure Equipment Regulations 1999,UK Statutory Instrument 1999 No. 2001 and 2002 No. 1267

Leader Valves Limited
S.3, S.4 Industrial Town,
Jalandhar 144004
Punjab
India.

The manufacture of ferrous castings upto maximum weight of 2000 Kg and non-ferrous castings upto maximum weight of 1000 Kg.



Lloyd's Register

EC CERTIFICATE OF QUALITY SYSTEM APPROVAL
CERTIFICATE 0038/PED/20020246/A SCHEDULE

Leader Valves Limited
S.3, S.4 Industrial Town,
Jalandhar 144004
Punjab, India.

PRODUCT

TÜV NORD

CERTIFICATE

TÜV CERT-Certification Body for Pressure Equipment
of TÜV NORD Systems GmbH & Co. KG

Leader Valves Limited
Ramnagar, Jalandhar – 144 008,
Punjab, India

AD 2000-Merkblatt W0

Certificate-No.: 07 202 1423 WP 1122 08

FORM XVI-D

[Regulation 4C (2)]

Central Boilers Board

Certificate of Approval for Well Known Foundry

This is to certify that the Inspection and Quality Management System of:

M/s. LEADER VALVES LIMITED,
S-3, S-4, INDUSTRIAL TOWN
JALANDHAR-144004
PUNJAB

has been evaluated by the Central Boilers Board and has been granted recognition under regulation 4C (2) of the Indian Boiler Regulations, 1950, as a WELL KNOWN FOUNDRY. FOR MANUFACTURE OF CASTINGS UPTO A MAXIMUM OF 1500 KGS./PIECE

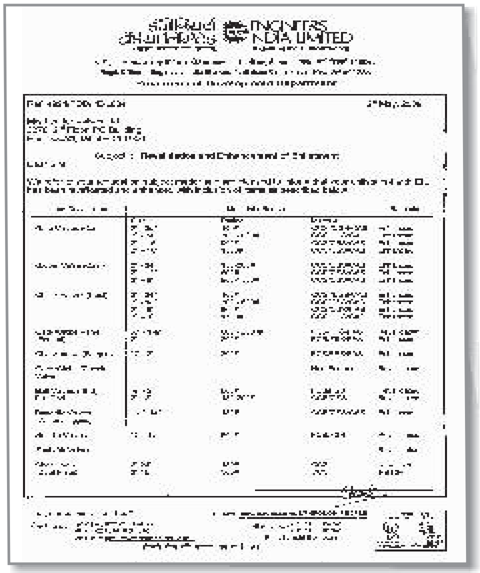
This Certificate is valid for five years, i.e. upto 2ND JUNE, 2015

Validity is subject to the adherence to the quality control prescribed under the provisions of the Indian Boiler Regulations, 1950.

10th AUGUST, 2010
Date of Issue

Approval
Certificate No. 353

Secretary



ENGINEERS INDIA LIMITED

ENGINEERS INDIA LIMITED

Procurement Development Department

(This enlistment is valid for your works located at S-3, S-4 Indl. Town, Jalandhar – 144004).

Please note that this revalidation is subject to satisfactory execution of orders in delivery and quality of above mentioned item when ordered for our various projects.

The validity of this ENLISTMENT is upto 30th November, 2010.

Thanking you,

General Description

FORGED STEEL VALVE

Forged Steel Gate valves have a rising stem and Globe valves have a rising handwheel. The position of the stem or handwheel helps in identifying whether the valve is in Closed or Open position.

Flanged valves are supplied with welded on flanges made of the same material as the body material.

Bolted body-bonnet/cover joint with spirally wound stainless steel gasket for maximum protection against leaks.

Die formed packing rings of flexible graphite with braided end rings to arrest gland leakage.

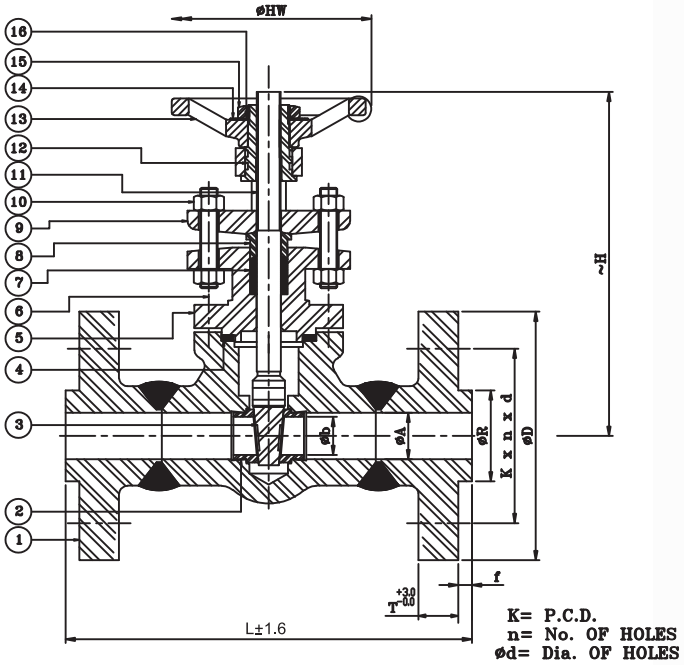
Gate valves have

- "T" head stem connection to ensure disc-seat alignment
- Tapered shoulder on the stem for back seating
- Outside Screw and Yoke (OS & Y) which prevents corrosion of the stem by the line fluid.

Globe & Check Valves have plug type disc enables close flow regulations.

Ball Valves offer full flow with minimum turbulence and can balance or throttle fluids. Ball Valve move from closed to full open in a quarter of a turn of the shaft and are, therefore, referred to as quarter turn ball valve.

FORGED STEEL GATE VALVES
API 602, BSEN ISO 15761, ASME B16.34



STANDARD MATERIAL COMBINATION

S.NO.	PART NAME	Carbon steel to ASTM		Alloy steel to ASTM				Stainless steel to ASTM			
1	BODY	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Spiral wound Stainless steel Graphoil filled									
5	BONNET	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182 F316	A182F316L
6	STUDS	A193B7	A320 L7	A193 B7	A193 B7	A193 B16	A193 B16	A193 B8	A193B8	A193B8	A193B8
7	PACKING	To suit service conditions									
8	GLAND	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	F-304	F-316	F-304L	F-316L
9	GLAND FLANGE	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
10	NUTS	A194 2H	A194 Gr.4	A194 2H	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8
11	STEM	As per Trim Material Combination									
12	YOKE SLEEVE	Al. Bronze BS 1400 AB2C or Ni-resist to A439 D2									
13	HANDWHEEL	DI. A536 80-55-06 OR MI/A338									
14	NAME PLATE	ALUMINIUM / STEEL									
15	HANDWHEEL RETAINING NUT	CARBON STEEL									

Body Material Combination with ASTMA F304H, F316H, F321, F347 also provided.

FORGED STEEL GATE VALVES API 602, BSEN ISO 15761, ASME B16.34

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: Other Trim Combination can provided as Trim Material Combination.

DIMENSIONAL DATA CLASS-150

•All dimensions in mm

MAIN DIMENSIONS						FLANGE DETAILS						
						FLANGE		RAISED FACE		BOLT		HOLES
SIZE	**øA**	**L**	**H**	**øb**	**HW**	**D**	**T**	**R**	**f**	**K**	**n**	**d**
15 mm	12.5	108	128	9.5	83	90	8	34.9	2	60.3	4	15.8
20 mm	19	117	150	12.5	90	100	8.9	42.9	2	69.9	4	15.8
25 mm	22	127	168	18	96	110	9.6	50.8	2	79.4	4	15.8
32 mm	25	140	192	24	108	115	11.2	63.5	2	88.9	4	15.8
40 mm	36	165	222	31	125	125	12.7	73	2	98.4	4	15.8
50 mm	40	178	245	33	125	150	14.3	92.1	2	120.7	4	19.05

DIMENSIONAL DATA CLASS-300

MAIN DIMENSIONS						FLANGE DETAILS						
						FLANGE		RAISED FACE		BOLT		HOLES
SIZE	**øA**	**L**	**H**	**øb**	**HW**	**D**	**T**	**R**	**f**	**K**	**n**	**d**
15mm	15	140	128	9.5	83	95	12.6	34.9	2	66.7	4	15.8
20mm	20	152	150	12.5	90	115	14.2	42.9	2	82.6	4	19.1
25mm	25	165	165	18	96	125	15.9	50.8	2	88.9	4	19.1
32 mm	25	178	192	24	108	135	17.5	63.5	2	98.4	4	19.1
40 mm	36	190	222	31	125	155	19.1	73	2	114.3	4	22.2
50 mm	40	216	145	33	125	165	20.7	92.1	2	127	8	19.1

FORGED STEEL GATE VALVES API 602, BSEN ISO 15761, ASME B16.34

DIMENSIONAL DATA CLASS-600

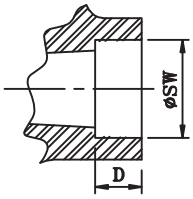
MAIN DIMENSIONS						FLANGE DETAILS						
						FLANGE		RAISED FACE		BOLT		HOLES
SIZE	øA	L	H	øb	HW	D	T	R	f	K	n	d
15mm	12.5	165	145	12.5	90	95	14.3	34.91	7	66.7	4	15.7
20mm	22	190	170	18	95	115	15.9	42.9	7	82.6	4	19.1
25mm	25	216	186	24	114	125	17.5	50.8	7	88.9	4	19.1
32mm	25	229	220	31	125	135	20.7	63.5	7	98.4	4	19.1
40mm	36	241	220	33	125	155	22.3	73	7	114.3	4	22.3
50mm	40	292	252	35	125	165	25.4	92	7	127	8	19.1

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(≙WEIGHT GIVEN IN KGS)**

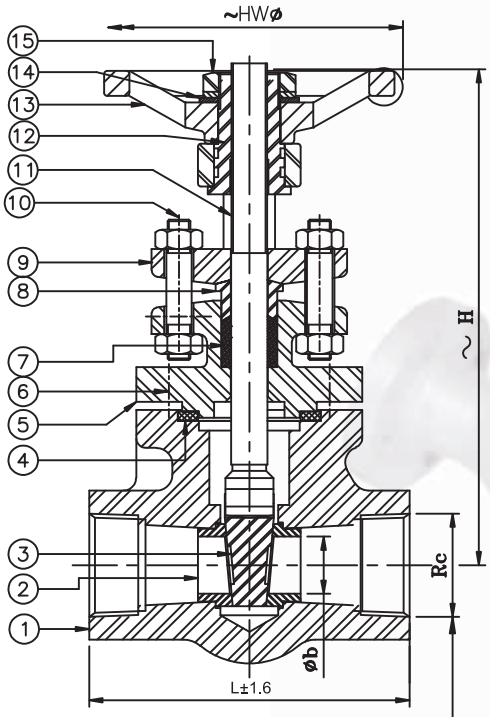
TEST PRESSURES

CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
150	30 Bar	435 Psi g	22 Bar	319 Psig g	6.9 bar	100 Psi g
300	77 Bar	1102 Psi g	57 Bar	780 Psi g	6.9 bar	100 Psi g
600	154 Bar	2175 Psi g	113 Bar	1595 Psi g	6.9 bar	100 Psi g

FORGED STEEL GATE VALVES - API 602, ASME B16.34, BSEN ISO 15761 (Socket Weld End, Screwed & BWE)



SOCKET WELDED ENDS



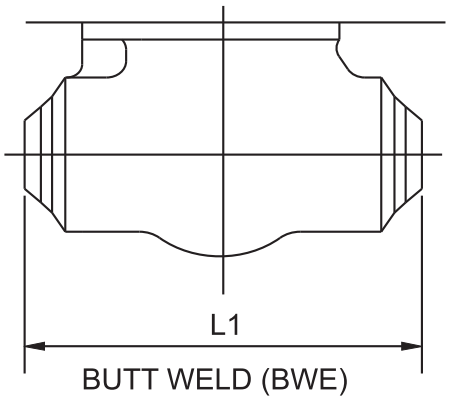
THDS.TO ASME B 1.20:1983

STANDARD MATERIAL COMBINATION

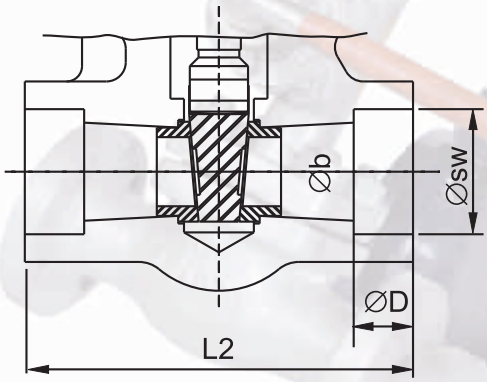
S.NO.	PART NAME	Carbon steel to ASTM		Alloy steel to ASTM				Stainless steel to ASTM			
1	BODY	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Spiral wound Stainless steel Graphoil filled									
5	BONNET	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182 F316	A182F316L
6	STUDS	A193B7	A320 L7	A193 B7	A193 B7	A193 B16	A193 B16	A193 B8	A193B8	A193B8	A193B8
7	PACKING	To suit service conditions									
8	GLAND	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	F-304	F-316	F-304L	F-316L
9	GLAND FLANGE	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
10	NUTS	A194 2H	A194 Gr.4	A194 2H	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8
11	STEM	As per Trim Material Combination									
12	YOKE SLEEVE	Al. Bronze BS 1400 AB2C or Ni-resist to A439 D2									
13	HANDWHEEL	DI. A536 80-55-06 OR MI/A338									
14	NAME PLATE	ALUMINIUM / STEEL									
15	HANDWHEEL RETAINING NUT	CARBON STEEL									

Body Material Combination with Body/Bonnet ASTMA F304H, F316H, F321, F347 also provided.

FORGED STEEL GATE VALVES - API 602, ASME B16.34, BSEN ISO 15761



BUTT WELD (BWE)



SOCKET WELD (SWE)

• All dimensions in mm

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

DIMENSIONAL DATA CLASS - 800 (REDUCED BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt. ⍲
							BS 3799	ASME B16.11		
15	½	9.5	80	80	130	83	21.8 +0.3 -0.0	22.2 21.8	11	1.6
20	3/4	12.5	88	88	150	90	27.4 +0.3 -0.0	27.6 27.2	14	2.1
25	1	18	100	100	168	96	34.1 +0.3 -0.0	34.3 33.9	14	3.15
32	1 1/4	24	114	114	186	114	42.9 +0.3 -0.0	43.1 42.7	14	4.92
40	1 ½	31	104	104	222	125	49 +0.3 -0.0	49.2 48.8	14	5.8
50	2	37	116	116	245	125	61 +0.3 -0.0	61.7 61.2	17	9.450

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⍲ WEIGHT GIVEN IN KGS)**

FORGED STEEL GATE VALVES - API 602, ASME B16.34, BSEN ISO 15761

• All dimensions in mm

DIMENSIONAL DATA CLASS - 800 (FULL BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt. ⅄
							BS 3799	ASME B16.11		
15	½	12.7	88	88	145	90	21.8 +0.3 -0.0	22.2 21.8	14	2.1
20	3/4	18	100	100	170	96	27.4 +0.3 -0.0	27.6 27.2	14	3.15
25	1	24	114	114	192	108	34.1 +0.3 -0.0	34.3 33.9	14	4.92
32	1 1/4	31	104	104	220	125	42.9 +0.3 -0.0	43.1 42.7	14	5.8
40	1 ½	37	116	116	245	125	49 +0.3 -0.0	49.2 48.8	17	9.450

DIMENSIONAL DATA CLASS - 1500

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt. ⅄
							BS 3799	ASME B16.11		
15	½	11.5	100	100	170	95	21.8 +0.3 -0.0	22.2 21.8	11	3.165
20	3/4	15	114	114	192	108	24.8 +0.3 -0.0	27.6 27.2	14	5.055
25	1	19.5	104	104	245	125	34.1 +0.3 -0.0	34.3 33.9	14	6.28
40	1 ½	27	116	116	245	125	49 +0.3 -0.0	49.2 48.8	14	11.78

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⅄ WEIGHT GIVEN IN KGS)**

TEST PRESSURES

CLASS	SHELL TEST		SEAT TEST			
			(HYDROSTATIC)		PNEUMATIC	
800	207 Bar	3003 Psi g	152 Bar	2205 Psi g	6.9 bar	100 Psi g
1500	384 Bar	5568 Psi g	282 Bar	4075 Psi g	6.9 bar	100 Psi g

FORGED STEEL GATE VALVES - ASME B16.34

DIMENSIONAL DATA CLASS - 2500

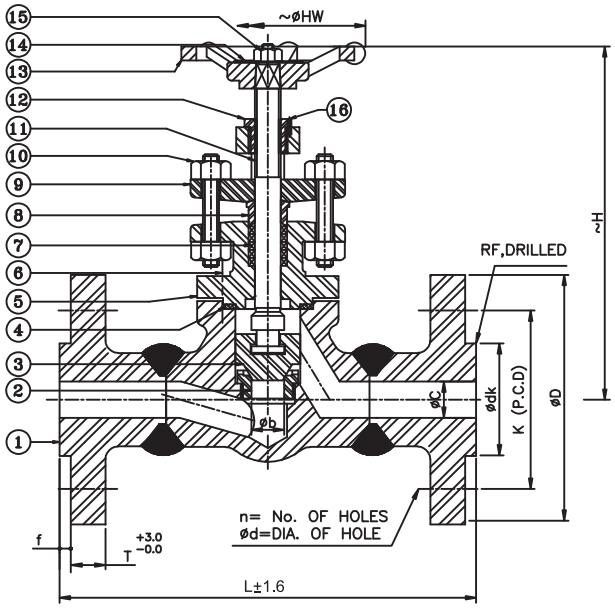
DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt.⍲
							BS 3799	ASME B16.11		
15	½	12	130	130	300	200	21.8 +0.3 -0.0	22.2 21.8	11	8.77
20	3/4	15	130	130	300	200	27.4 +0.3 -0.0	27.6 27.2	14	9.79
25	1	19	130	130	300	200	34.1 +0.3 -0.0	34.3 33.9	14	10.47

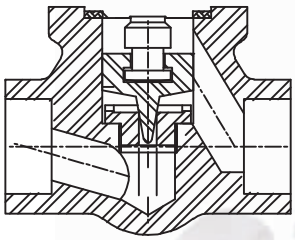
NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⍲WEIGHT GIVEN IN KGS)**

TEST PRESSURES

CLASS	SHELL TEST		SEAT TEST			
			(HYDROSTATIC)		PNEUMATIC	
2500	639 Bar	9372 Psi g	469 Bar	6785 Psi g	6.9 bar	100 Psi g

FORGED STEEL GLOBE VALVES
API 602, BSEN ISO 15761, ASME B 16.34





Needle Valve

STANDARD MATERIAL COMBINATION

S.NO.	PART NAME	Carbon steel to ASTM		Alloy steel to ASTM				Stainless steel to ASTM			
1	BODY	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Spiral wound Stainless steel Graphoil filled									
5	BONNET	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182 F316	A182F316L
6	STUDS	A193B7	A320 L7	A193 B7	A193 B7	A193 B16	A193 B16	A193 B8	A193B8	A193B8	A193B8
7	PACKING	To suit service conditions									
8	GLAND	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	F-304	F-316	F-304L	F-316L
9	GLAND FLANGE	A105	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
10	NUTS	A194 2H	A194 Gr.4	A194 2H	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8
11	STEM	As per Trim Material Combination									
12	YOKE SLEEVE	Al. Bronze BS 1400 AB2C or Ni-resist to A439 D2									
13	HANDWHEEL	DI. A536 80-55-06 OR MI/A338									
14	NAME PLATE	ALUMINUM / STEEL									
15	HANDWHEEL RETAINING NUT	CARBON STEEL									

Body Material Combination with ASTMA F304H, F316H, F321, F347 also provided.

FORGED STEEL GLOBE VALVES - BSEN ISO 15761, ASME B16.34

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: Other Trim Combination can be provided as Trim Material Combination.

• All dimensions in mm

DIMENSIONAL DATA CLASS-150

SIZE	L	ϕb	C	HW	H	D	T	dk	f	K	n	d	Approx.Wt.
15mm	108	9.5	9.5	82	140	90	8	34.9	2	60.3	4	15.8	5.75
20mm	117	12.7	17.5	90	155	100	8.9	42.9	2	69.9	4	15.8	11.4
25mm	127	17.5	23	96	172	110	9.6	50.8	2	79.4	4	15.8	14.64

DIMENSIONAL DATA CLASS-300

SIZE	L	ϕb	C	HW	H	D	T	dk	f	K	n	d	Approx.Wt.
15mm	152	12.7	15	90	155	95	12.6	34.9	2	66.7	4	15.8	6.1
20mm	178	17.5	20	96	172	115	14.2	42.9	2	82.6	4	19.1	12.1
25mm	203	23	23	114	210	125	15.9	50.8	2	88.9	4	19.1	16.8
32mm	216	30	30	155	248	135	17.5	63.5	2	98.5	4	19.1	-
40mm	229	35	35	155	270	155	19.1	73	2	114.3	4	22.2	31
50mm	267	38	47.6	155	332	165	20.7	92.1	2	127	8	19.1	36

DIMENSIONAL DATA CLASS-600

SIZE	L	b	C	HW	H	D	T	dk	f	K	n	d	Approx.Wt.
15mm	165	12.7	13	90	155	95	14.3	34.9	7	66.7	4	15.7	6.8
20mm	190	18	20	96	172	115	15.9	42.9	7	82.6	4	19.1	13.3
25mm	216	23	25	114	210	125	17.5	50.8	7	88.9	4	19.1	18.5
32mm	229	30	32	155	235	135	20.7	63.5	7	98.4	4	19.1	-
40mm	241	35	35	155	235	155	22.3	73	7	114.3	4	22.3	34.1
50mm	292	36	46.5	155	270	165	25.4	92	7	127	8	19.1	39.7

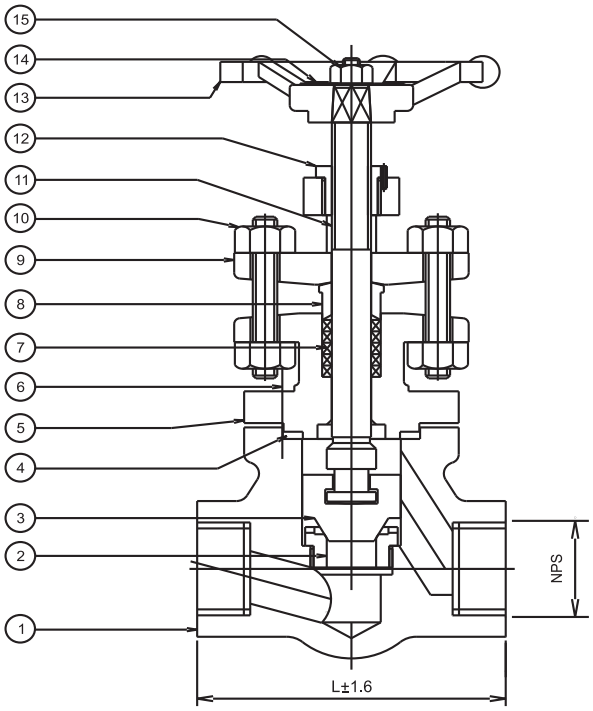
NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(^WEIGHT GIVEN IN KGS)**

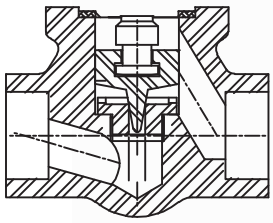
*Needle Type Disc also available.

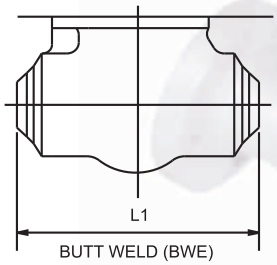
TEST PRESSURES

CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
150	30 Bar	435 Psi g	22 Bar	319 Psig g	6.9 bar	100 Psi g
300	77 Bar	1102 Psi g	57 Bar	780 Psi g	6.9 bar	100 Psi g
600	154 Bar	2175 Psi g	113 Bar	1595 Psi g	6.9 bar	100 Psi g

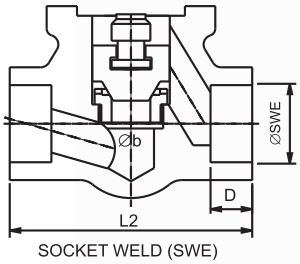
FORGED STEEL GLOBE VALVES - BSEN ISO 15761, ASME B16.34, API 602




Needle Valve



BUTT WELD (BWE)



SOCKET WELD (SWE)

STANDARD MATERIAL COMBINATION

P.NO.	DESCRIPTION	Carbon steel to ASTM			Alloy steel to ASTM			Stainless to ASTM			
1	BODY	A105F	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Stainless steel + Graphoil									
5	BONNET	A105F	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182 F316	A182F316L
6	STUDS	A193B7	A320 L7	A193 B7	A193 B7	A193 B16	A193 B16	A193 B8	A193B8	A193B8	A193B8
7	PACKING	To suit service conditions									
8	GLAND	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	A182 F6a	F-304	F-316	F-304L	F-316L
9	GLAND FLANGE	A105F	A350 LF2	A182 F5	A182 F11	A182 F22	A182 F9	A182 F304	A182 F316	A182F304L	A182F316L
10	NUTS	A194 2H	A194 Gr.4	A194 2H	A194 2H	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8
11	STEM	As per Trim Material Combination									
12	YOKE SLEEVE	Al. Bronze BS 1400 AB2C or Ni-resist to A439 D2									
13	HANDWHEEL	DI. A536 80-55-06 OR MI IS 2108 BM290									
14	WASHER	CARBON STEEL (ANY GRADE)									
15	HANDWHEEL RETAINING NUT	CARBON STEEL									

Body Material Combination with Body/Bonnet ASTMA F304H, F316H, F321, F347 also provided.

FORGED STEEL GLOBE VALVES - BSEN ISO 15761, ASME B16.34, API 602

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: Other Trim Combination can be provided as Trim Material Combination.

• All dimensions in mm

DIMENSIONAL DATA CLASS - 800 (REDUCED BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox. Wt.⍋
							BS 3799	ASME B16.11		
15	½	10	82	82	140	82	21.8 +0.3 -0.0	22.2 21.8	11	1.64
20	3/4	12.7	90	90	155	90	27.4 +0.3 -0.0	27.6 27.2	14	2.050
25	1	18	96	96	175	96	34.1 +0.3 -0.0	34.3 33.9	14	3.2
40	1 ½	30	155	155	240	155	49 +0.3 -0.0	49.2 48.8	14	7.5
50	2	35	170	170	270	155	61 +0.3 -0.0	61.7 61.2	17	11.5

DIMENSIONAL DATA CLASS - 800 (FULL BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox. Wt.⍋
							BS 3799	ASME B16.11		
15	½	12.7	88	88	155	90	21.8 +0.3 -0.0	22.2 21.8	11	2.050
20	3/4	18	100	100	175	96	27.4 +0.3 -0.0	27.6 27.2	14	3.2
25	1	23	124	124	198	114	34.1 +0.3 -0.0	34.3 33.9	14	7.5
40	1 ½	35	170	170	270	155	49 +0.3 -0.0	49.2 48.8	14	11.5

DIMENSIONAL DATA CLASS - 1500

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt.⍋
							BS 3799	ASME B16.11		
15	½	12	100	100	172	96	21.8 +0.3 -0.0	22.2 21.8	11	3.240
20	3/4	16	124	124	210	114	27.4 +0.3 -0.0	27.6 27.2	14	5.190
25	1	19	145	104	235	155	34.1 +0.3 -0.0	34.3 33.9	14	8.1
32	1 1/4	28	170	170	270	155	42.9 +0.3 -0.0	43.1 42.7	14	12.6
40	1 ½	32	170	170	278	155	49 +0.3 -0.0	49.7 48.8	14	12.6

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⍋ WEIGHT GIVEN IN KGS)**

*Needle Type Disc also available.

FORGED STEEL GLOBE VALVES - ASME B 16.34

DIMENSIONAL DATA CLASS - 2500

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕHW	ϕSWE		D	Aprox.Wt.
							BS 3799	ASME B16.11		
15	½	11	130	130	320	175	21.8 +0.3 -0.0	22.2 21.8	11	9.295
20	3/4	14	130	130	320	200	27.4 +0.3 -0.0	27.6 27.2	14	10.61
25	1	19	130	130	320	200	34.1 +0.3 -0.0	34.3 33.9	14	11.395

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⊥WEIGHT GIVEN IN KGS)**

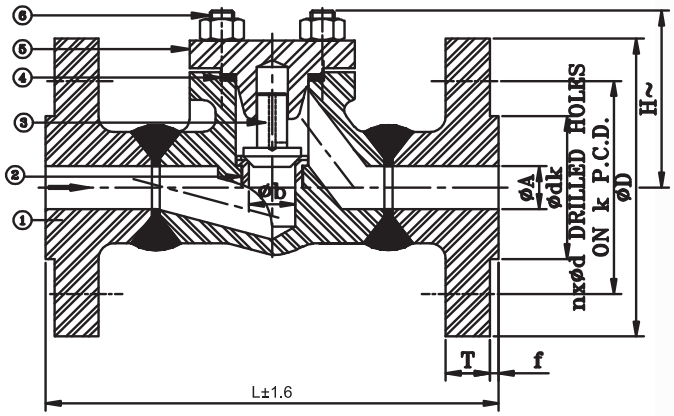
TEST PRESSURES

CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
800	207 Bar	3003 Psi g	152 Bar	2205 Psig g	6.9 bar	100 Psi g
1500	384 Bar	5568 Psi g	282 Bar	4075 Psi g	6.9 bar	100 Psi g
2500	639 Bar	9372 Psi g	469 Bar	6785 Psi g	6.9 bar	100 Psi g

FORGED STEEL CHECK VALVES API 602, BSEN ISO 15761(Bolted/Weld Cover)

SPECIFICATIONS

FULL BORE, WELD ON FLANGES



• All dimensions in mm

STANDARD MATERIAL COMBINATION

P.No.	Description	Carbon Steel to ASTM		Alloy Steel to ASTM				Stainless Steel to ASTM			
1	BODY	A105	A350LF2	A182F5	A182F11	A182F22	A182F9	A182F304	A182F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Stainless steel + Graphoil									
5	COVER	A105	A350 LF2	A182F5	A182F11	A182F22	A182F9	A182F304	A182F316	A182F304L	A182F316L
6	STUDS	A193 B7	A320 L7	A193 B7	A193 B16	A193B16	A193B16	A193 B8	A193 B8	A193 B8	A193 B8

Body Material Combination with ASTMA F304H, F316H, F321, F347 also provided.

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(▲WEIGHT GIVEN IN KGS)**

*Needle Type Disc also provided. *Class 150, Class 300 Check Valve are also provided.

FORGED STEEL CHECK VALVES
API 602, BSEN ISO 15761(Bolted/Welded Cover)

• All dimensions in mm

DIMENSIONAL DATA CLASS-150

SIZE	L	b	C	H	D	T	dk	f	K	n	d	Aprox.Wt.
15mm	108	9.5	9.5	60	90	8	34.9	2	60.3	4	15.8	5.2
20mm	117	12.7	17.5	78	100	8.9	42.9	2	69.9	4	15.8	9.7
25mm	127	17.5	23	90	110	9.6	50.8	2	79.4	4	15.8	11.9

DIMENSIONAL DATA CLASS-300

SIZE	L	b	C	H	D	T	dk	f	K	n	d	Aprox.Wt.
15mm	152	12.7	15	60	95	12.6	34.9	2	66.7	4	15.8	5.8
20mm	178	17.5	20	78	115	14.2	42.9	2	82.6	4	19.1	6.8
25mm	203	23	23	90	125	15.9	50.8	2	88.9	4	19.1	10.7
32mm	216	30	30	97	135	17.5	63.5	2	98.4	4	19.1	14.2
40mm	229	35	35	97	155	19.1	73	2	114.3	4	22.2	26
50mm	267	46	47.6	120	165	20.7	92.1	2	127	8	19.1	29.2

DIMENSIONAL DATA CLASS-600

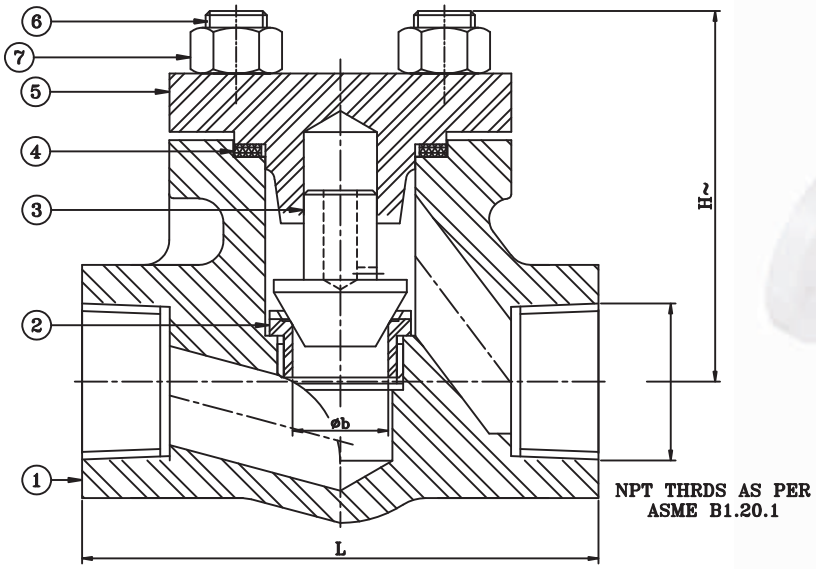
MAIN DIMENSIONS					FLANGE DETAILS							
					FLANGE		RAISED		FACE	BOLT	HOLES	
SIZE	øA	L	H~	øb	øD	T	ødk	f	K	n	ød	Aprox.Wt.
15mm	13	165	60	12.7	95	14.3	34.9	7	66.7	4	15.7	6.4
20mm	20	190	78	18	115	15.9	42.9	7	82.6	4	19.1	11.8
25mm	26	216	90	23	125	17.5	50.8	7	88.9	4	19.1	15.6
32mm	32	229	97	30	135	20.7	63.5	7	98.4	4	19.1	26.6
40mm	32	241	97	30	155	22.5	73.0	7	114.3	4	22.3	
50mm	46.5	292	120	36	165	25.4	92.1	7	127	8	19.1	

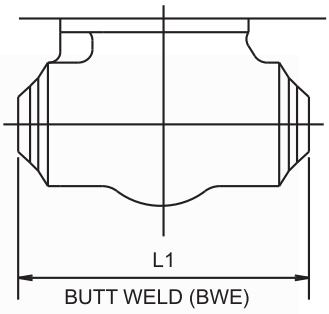
NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(▲WEIGHT GIVEN IN KGS)**

TEST PRESSURES

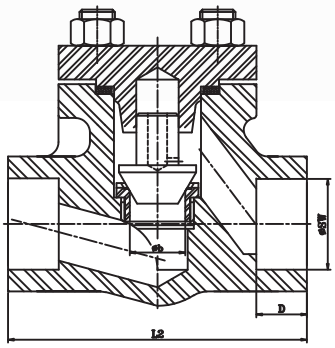
CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
150	30 Bar	435 Psi g	22 Bar	319 Psig g	6.9 bar	100 Psi g
300	77 Bar	1102 Psi g	57 Bar	780 Psi g	6.9 bar	100 Psi g
600	154 Bar	2175 Psi g	113 Bar	1595 Psi g	6.9 bar	100 Psi g

FORGED STEEL CHECK VALVES - BSEN ISO 15761, API 602, ASME B16.34





BUTT WELD (BWE)



SOCKET WELD (SW)

STANDARD MATERIAL COMBINATION											
P.No.	Description	Carbon Steel to ASTM		Alloy Steel to ASTM				Stainless Steel to ASTM			
1	BODY	A105	A350LF2	A182F5	A182F11	A182F22	A182F9	A182F304	A182F316	A182F304L	A182F316L
2	SEAT RING	As per Trim Material Combination									
3	WEDGE	As per Trim Material Combination									
4	GASKET	Stainless steel + Graphoil									
5	COVER	A105	A350 LF2	A182F5	A182F11	A182F22	A182F9	A182F304	A182F316	A182F304L	A182F316L
6	STUDS	A193 B7	A320 L7	A193 B7	A193 B16	A193B16	A193B16	A193 B8	A193 B8	A193 B8	A193 B8
7	NUTS	A194 2H	A194 Gr.4	A194 2H	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8	A194 Gr.8

Body Material Combination with ASTMA F304H, F316H, F321, F347 also provided.

FORGED STEEL CHECK VALVES - BSEN ISO 15761, API 602, ASME B16.34

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: Other Trim Combination can be provided as Trim Material Combination.

• All dimensions in mm

DIMENSIONAL DATA CLASS -800 (REDUCED BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕSWE		D	Aprox. Wt.
						BS 3799	ASME B16.11		
15	½	10	80	80	55	+0.3 21.8 -0.0	22.2 21.8	11	1.15
20	3/4	12.7	88	88	60	+0.3 27.4 -0.0	27.6 27.2	14	1.450
25	1	18	100	100	78	+0.3 34.1 -0.0	34.3 33.9	14	2.2
40	1 ½	30	145	145	97	+0.3 49 -0.0	49.2 48.8	14	5.4
50	2	35	170	170	120	+0.3 61 -0.0	61.7 61.2	17	7

DIMENSIONAL DATA CLASS -800 (FULL BORE)

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕSWE		D	Aprox. Wt.
						BS 3799	ASME B16.11		
15	½	12.7	88	88	60	+0.3 21.8 -0.0	22.2 21.8	14	1.450
20	3/4	18	100	100	78	+0.3 27.4 -0.0	27.6 27.2	14	2.2
25	1	23	124	124	90	+0.3 34.1 -0.0	34.3 33.9	14	5.4
40	1 ½	35	170	170	120	+0.3 49 -0.0	49.2 48.8	17	7

DIMENSIONAL DATA CLASS -1500

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕSWE		D	Aprox. Wt.
						BS 3799	ASME B16.11		
15	½	12	100	100	78	+0.3 21.8 -0.0	22.2 21.8	11	1.450
20	3/4	16	124	124	90	+0.3 27.4 -0.0	27.6 27.2	14	2.200
25	1	19	145	104	97	+0.3 34.1 -0.0	34.3 33.9	14	3.915
32	1¼	31	170	170	120	+0.3 42.9 -0.0	43.1 42.7	14	5.400
40	1½	31	170	170	120	+0.3 49 -0.0	49.2 48.8	14	7

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(WEIGHT GIVEN IN KGS)**

FORGED STEEL CHECK VALVES - ASME B16.34

DIMENSIONAL DATA CLASS -2500

DN	NPS	ϕb	L1(BWE)	L2(SWE)	H	ϕSWE		D	Aprox. Wt. ⏄
						BS 3799	ASME B16.11		
15	½	11	130	130	75	+0.3 21.8 -0.0	22.2 21.8	11	10.3
20	3/4	14	130	130	75	+0.3 27.4 -0.0	27.6 27.2	14	11.8
25	1	19	130	130	75	+0.3 34.1 -0.0	34.3 33.9	14	12.7

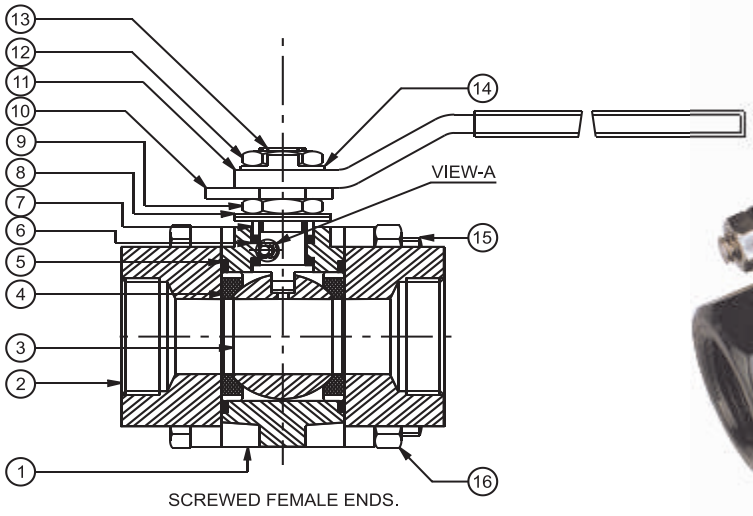
NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⏄ WEIGHT GIVEN IN KGS)**

TEST PRESSURES

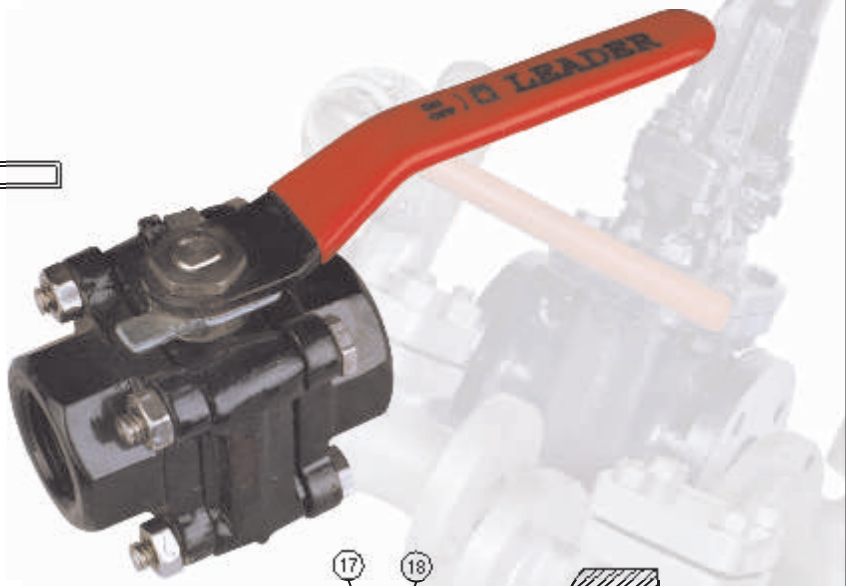
CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
800	207 Bar	3003 Psi g	152 Bar	2205 Psi g	N.A.	N.A.
1500	384 Bar	5568 Psi g	282 Bar	4075 Psi g	N.A.	N.A.
2500	639 Bar	9272 Psi g	469 Bar	6785 Psi g	N.A.	N.A.

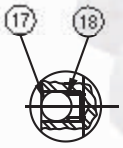
FORGED STEEL BALL VALVES-
BSEN ISO 17292, ASME B16.34 (Fire Safe)

SPECIFICATIONS: Three Piece, Full Bore/Reduced Bore Design, Blow out proof stem & floating ball design.

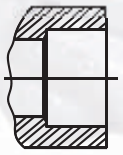


SCREWED FEMALE ENDS.





ANTISTATIC DESIGN
(VIEW-A)



SOCKET WELDED ENDS.

NOTES :
1) UNLESS OTHERWISE SPECIFIED, SOCKET WELD ENDS SHALL CONFIRM TO BSEN ISO 17292 TABLE-5.
2) PLEASE FOLLOW LATEST YEAR FOR STANDARD.

STANDARD MATERIAL COMBINATION

P.NO.	DESCRIPTION	MATERIALS	SPECIFICATIONS
1.	BODY	F.C.S.	ASTM A 105
2.	PIPE CONNECTOR	F.C.S.	ASTM A 105
3.	BALL	S.S./C.S.S.	ASTM A 276 TYPE 304/ ASTM A 351 CF8
4.	SEAT	VIRGIN UNIFILLED OIL FREE PTFE	
5.	BODY SEAL	VIRGIN UNIFILLED OIL FREE PTFE	
6.	STEM & GLAND SEAL	VIRGIN UNIFILLED OIL FREE PTFE	
7.	GLAND	S.S.	ASTM A 276 TYPE 304
8.	BELLEVILLE WASHER	SPRING STEEL	ZINC PLATED
9.	STEM NUT	S.S.	ASTM A 276 TYPE 304
10.	STOPER PLATE	CARBON STEEL	IS 2062
11.	LEVER (ZINC PLATED)	CARBON STEEL PLATE WITH PLASTIC SLEEVE	
12.	LEVER NUT	S.S.	ASTM A 276 TYPE 304
13.	STEM	S.S.	ASTM A 276 TYPE 304
14.	LOCKING WASHER	CARBON STEEL	IS 2062
15.	BOLTS/STUDS	ALLOY STEEL	ASTM A 193 Gr. B7
16.	NUTS	H.T. STEEL	ASTM A 194 Gr,2H
17.	ANTISTATIC BALL	S.S.	TYPE 316
18.	SPRING	S.S.	TYPE 316

Body Material Combination with CF3, CF3M, CF8, CF8M, (Investment Casting) also provided.

FORGED STEEL BALL VALVES/FIRE SAFE-
BSEN ISO 17292, ASME B16.34

TRIM MATERIAL COMBINATION (ON REQUEST)

Trim No.	Seat Ring Face	Wedge Seat Face	Stem	Backseat Bush	Lantern Ring
1	F6a/13%Cr.	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
2	F304	F304	F304/AISI304	F304/AISI304	F304/AISI304
5	STELLITE	STELLITE	F6a/AISI410	F6a/AISI410	F6a/AISI410
8	STELLITE	F6a/13%Cr.	F6a/AISI410	F6a/AISI410	F6a/AISI410
9	MONEL	MONEL	MONEL	MONEL	MONEL
10	F316	F316	F316/AIS1316	F316/AIS1316	F316/AIS1316
12	316+STELLITE	316	F316/AISI316	F316/AISI316	F316/AISI316
13	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20	ALLOY 20

NOTE: Other Trim Combination can be provided as Trim Material Combination.

• All dimensions in mm

DIMENSIONAL DATA CLASS - 800 (REDUCED BORE)

DN	L	ϕb	H	NPT	LL	ϕSWE $^{+0.5}_{-0.0}$	(Min.) D	Aprox.Wt. ⏊
15mm	60	9.5	80	½"	165	21.8	11	0.7
20mm	70	12.5	82	3/4"	165	27.4	14	0.75
25mm	85	19	103	1"	180	34.1	14	1.44
32mm	95	25	112	1 1/4"	180	42.9	14	2.6
40mm	110	32	118	1 ½"	230	49	14	3.15
50mm	120	40	122	2"	272	61	17	3.285

DIMENSIONAL DATA CLASS - 800 (FULL BORE)

DN	L	ϕb	H	NPT	LL	ϕSWE $^{+0.5}_{-0.0}$	(Min.) D	Aprox.Wt. ⏊
8mm	60	9.5	80	1/4"	165	-	9.5	0.7
10mm	60	9.5	80	3/8"	165	-	9.5	0.7
15mm	70	12.5	82	½"	165	21.8	11	0.75
20mm	85	19	103	3/4"	180	27.4	14	1.44
25mm	95	25	112	1"	180	34.1	14	2.6
32mm	110	32	118	1 1/4"	230	42.9	14	3.15
40mm	120	40	122	1½"	272	49	14	3.285

NOTE: The above data is subject to change without notice due to our continuing product improvement program. **(⏊ WEIGHT GIVEN IN KGS)**

TEST PRESSURES

CLASS	SHELL TEST (HYDROSTATIC)		SEAT TEST			
			HYDROSTATIC		PNEUMATIC	
800	207 Bar	3003 Psi g	152 Bar	2205 Psi g	6.9 bar	100 Psi g

CRYOGENIC & LOW TEMPERATURE SERVICE VALVES

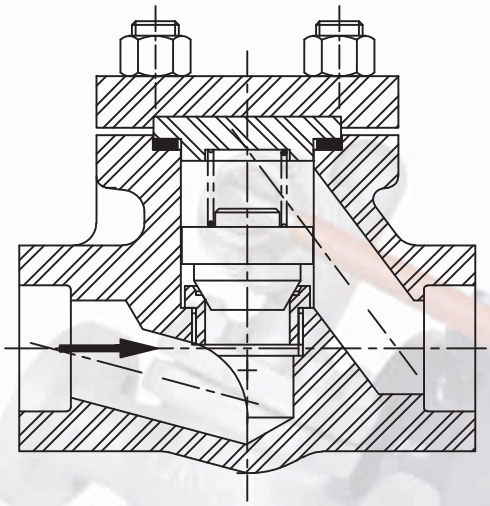
Features and benefits

Adapted to Special Service

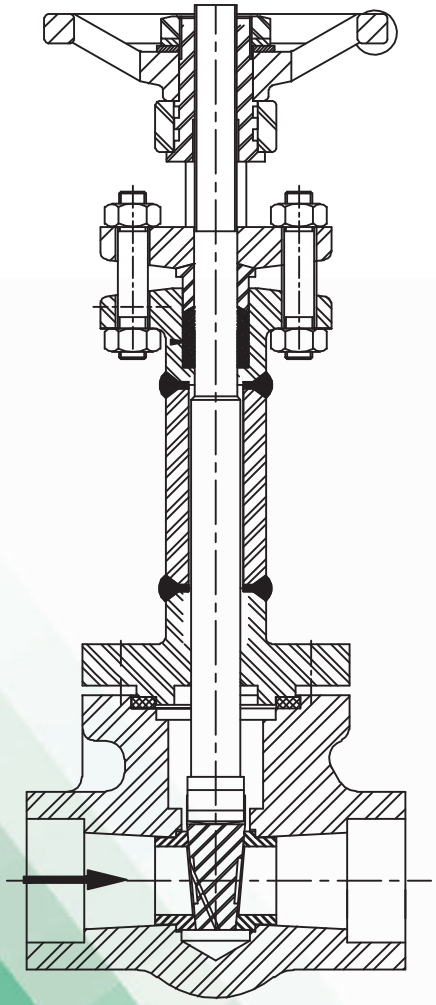
Extended bonnets with sufficient gas column length, are supplied for all valves to keep stem packing at sufficient distance away from the cold fluid to remain functional.

Flexible wedges with Stellite seating faces for cryogenic service.

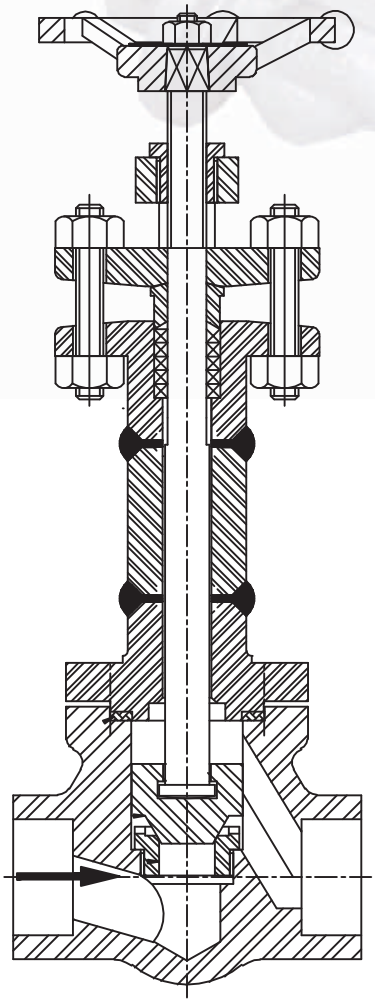
Cleaning: All cryogenic valves are thoroughly degreased and cleaned and pipe ends are sealed to prevent contamination.



CHECK VALVE



GATE VALVE



GLOBE VALVE