GALLI & CASSINA
SK EUROPE

GATE-GLOBE
&
CHECK VALVES

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GATE VALVES

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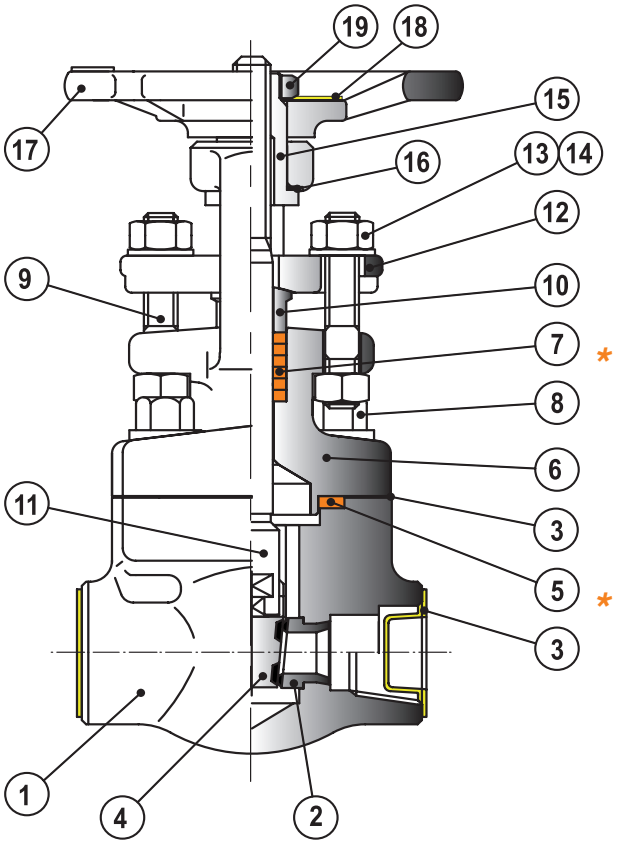
CHART OF CHEMICAL AND PHYSICAL PROPERTIES

Gate Valves Forged Steel Body - DN 1/2" to 2" Class 800 to 1500 Lb

Bolted & Welded Bonnet - Reduced & Full Port



*Recommended Spare Parts

Part	Name	Material
1	Body	A105 N
2	Seat Ring	13% Cr
3	Plug	Plastic
4	Wedge	A276 410
5	Gasket	F304
6	Bonnet	A105 N
7	Packing	Graphoil
8	Hex bolts	A193 B7
9	Gland studs	A193 B7
10	Gland	A276 410
11	Stem	A276 410
12	Gland flange	A105 N
13	Gland nuts	A194 2H
14	Gasket ring	F304
15	Yoke sleeve	A276 410
16	Gasket ring	Stainless Steel
17	Handwheel	A 197
18	Nameplate	F304
19	Handwheel nut	A194 2H

NOTE: Other material upon request

BODY - The forged steel body is designed to the basic dimensional requirements of the applicable specifications as API 602 and ASME B16.34. The body is available in both design full or conventional port.

BONNET - The forged steel bonnet, has an integral backseat and incorporates the stuffing box, which has dimensions as per the applicable specifications such as API 602.

BODY-BONNET JOINT - Two different bonnet joint design are available. These are bolted bonnet, welded bonnet.

GASKET - The bolted bonnet gasket is a contained, controlled compression, spiral wound gasket.

BONNET BOLTING - The bolted bonnet is manufactured in carbon steel, stainless steel or alloy steel.

SEAT RINGS - The seat rings are steel and makeup part of the valve trim.
They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.

WEDGE - The wedge is forged or obtained by investment cast steel according to the valve trim. The seating surfaces are machined and lapped.

STEM - The stem is forged steel and is part of the valve trim. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.

GLAND AND FLANGE - The gland, gland flange assembly utilizes a separate, two pieces design.

GLAND BOLTS E NUTS - The gland bolt and nut assembly is composed by stud, and a double nut arrangement.

YOKE SLEEVE - The yoke sleeve is obtained by a forged stainless steel material.

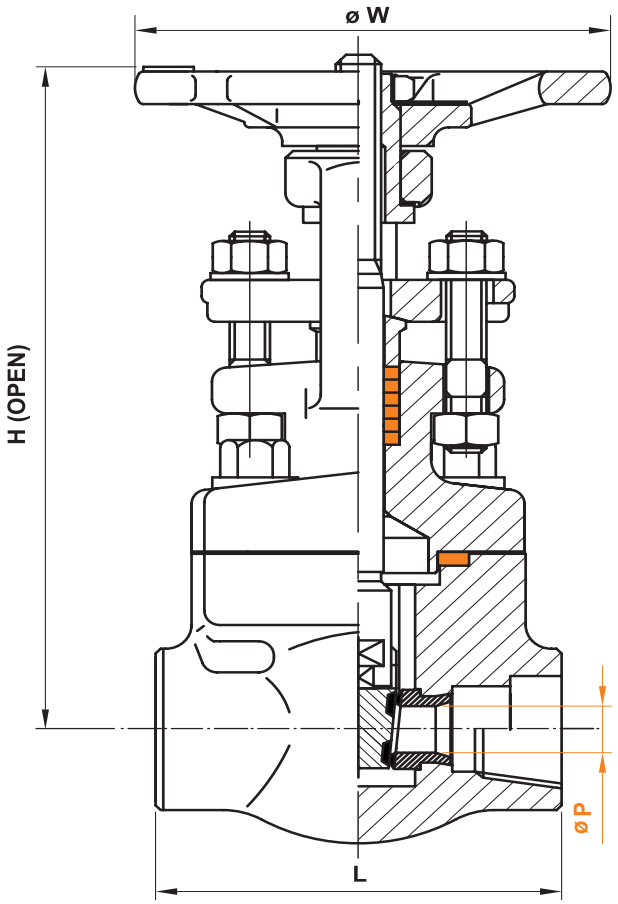
HANDWHEEL - The handwheel is in malleable iron.

Gate Valves Forged Steel Body - DN 1/2 " to 2 "
Class 800 to 1500 Lb

• Outside screw and yoke (Os & y)

• Rising stem - no rising handwheel

Bolted - Bonnet - Reduced & Full Port



BOLTED BONNET GATE REDUCED PORT DIMENSIONS										
SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9	9	79	111	158	197	100	125	2,0	4,3
3/4	12	12	92	111	169	197	100	125	2,3	4,3
1	18	18	111	114	197	236	125	160	4,3	6,6
1 - 1/4	23	23	120	120	236	246	160	160	5,9	8,8
1 - 1/2	30	30	120	140	246	283	160	180	6,9	12,5
2	36	36	140	162	283	330	180	200	11,1	17,2

** Dimensions are expressed in millimetres*

BOLTED BONNET GATE FULL PORT DIMENSIONS										
SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	13	13	92	111	169	197	100	125	2,3	4,2
3/4	18	18	111	120	197	236	125	160	4,3	6,6
1	24	24	120	120	236	246	160	160	5,9	8,8
1 - 1/4	32	32	120	140	246	283	160	180	6,9	12,5
1 - 1/2	38	38	140	178	283	330	180	200	11,1	17,2
2	51	51	178	210	330	354	200	240	15,2	23,5

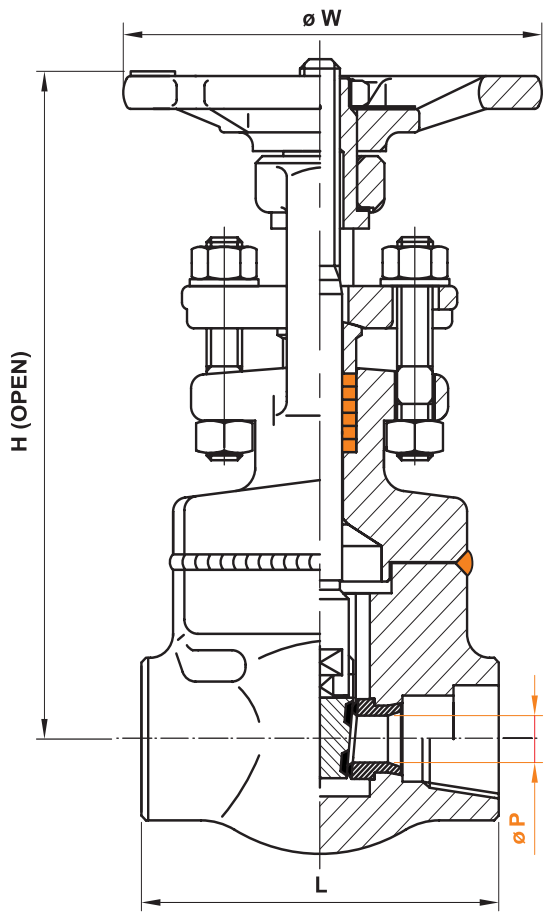
** Dimensions are expressed in millimetres*

Gate Valves Forged Steel Body - DN 1/2 " to 2"
Class 800 to 1500 Lb

• Outside screw and yoke (Os & y)

• Rising stem - no rising handwheel

Welded Bonnet - Reduced & Full Port



WELDED BONNET GATE REDUCED PORT DIMENSIONS

SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9	-	79	111	158	197	100	125	2,0	4,3
3/4	12	-	92	111	169	197	100	125	2,3	4,3
1	18	-	111	114	197	236	125	160	4,3	6,6
1 - 1/4	23	-	120	120	236	246	160	160	5,9	8,8
1 - 1/2	30	-	120	140	246	283	160	180	6,9	12,5
2	36	-	140	162	283	330	180	200	11,1	17,2

** Dimensions are expressed in millimetres*

WELDED BONNET GATE FULL PORT DIMENSIONS

SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	13	-	92	111	169	197	100	125	2,3	4,2
3/4	18	-	111	120	197	236	125	160	4,3	6,6
1	24	-	120	120	236	246	160	160	5,9	8,8
1 - 1/4	32	-	120	140	246	283	160	180	6,9	12,5
1 - 1/2	38	-	140	178	283	330	180	200	11,1	17,2
2	51		178	210	330	354	200	240	15,2	23,5

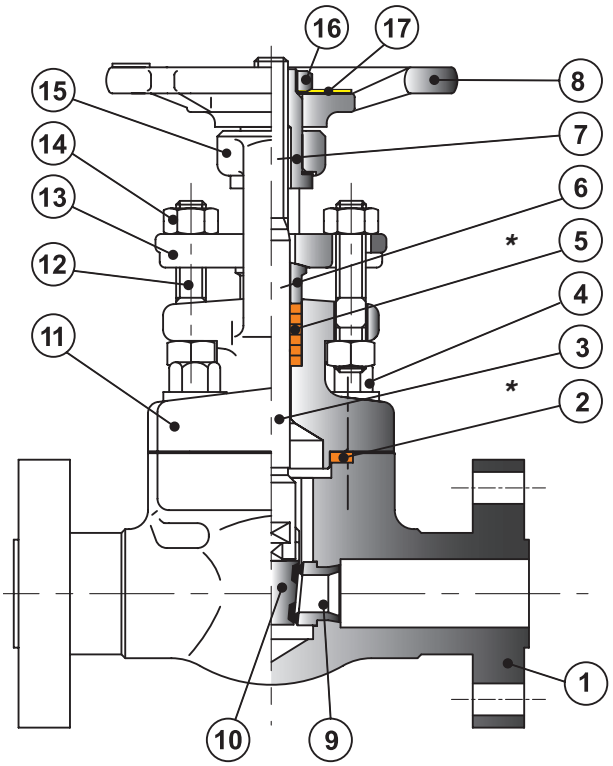
** Dimensions are expressed in millimetres*

Gate Valves Forged Steel Body - DN 1/2 " to 2 "
Class 150 - 300 - 600 Lb

• Outside screw and yoke (Os & y)

• Rising stem - no rising handwheel

Bolted & Welded Bonnet - Reduced & Full Port



** Recommended spare parts*

Part	Name	Material
1	Body	A105 N
2	Body Gasket	F304 + Graphite
3	Stem	A182 F6
4	Hex Head bolts	A193 B7
5	Packing	Graphoil
6	Gland	A276 410
7	Yoke sleeve	A276 410
8	Handwheel	A197
9	Seat Ring	A276 410
10	Wedge	A276 410
11	Bonnet	A105 N
12	Gland studs	A193 B7
13	Gland flange	A105 N
14	Gland nuts	A194 2H
15	Handwheel nut	A194 2H
16	Nameplate	Aluminium

NOTE: Other materials upon request

BODY - The integral forged steel body is designed to the basic dimensional requirements of the applicable specifications such as API 602 ASME B16.34.

BONNET - The forged steel bonnet has an integral backseat and incorporates the stuffing box with dimensions as per the applicable specifications such as API 602.

BODY-BONNET JOINT - Body Bonnet joint design is bolted type.

GASKET - The bolted bonnet gasket is a contained, controlled compression, spiral wound gasket.

BONNET BOLTING - The bonnet bolting is manufactured in carbon steel, stainless steel or alloy steel.

SEAT RINGS - The seat rings are steel and make up part of the valve trim. They are pressed into the valve body and wedged into place, forming a seal with the body. The seating surfaces are ground and lapped.

WEDGE - The wedge is forged according to the valve trim.
The seating surfaces are machined and lapped.

STEM - The stem is forged according to the valve trim. Stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.

GLAND AND FLANGE - The gland, gland flange assembly are a separate, two piece design.

GLAND BOLTS E NUTS - The gland bolt and nut assembly is a stud and composed by a double nut arrangement.

YOKE SLEEVE - The yoke sleeve is forged stainless steel material and is resistant to wear and corrosion.

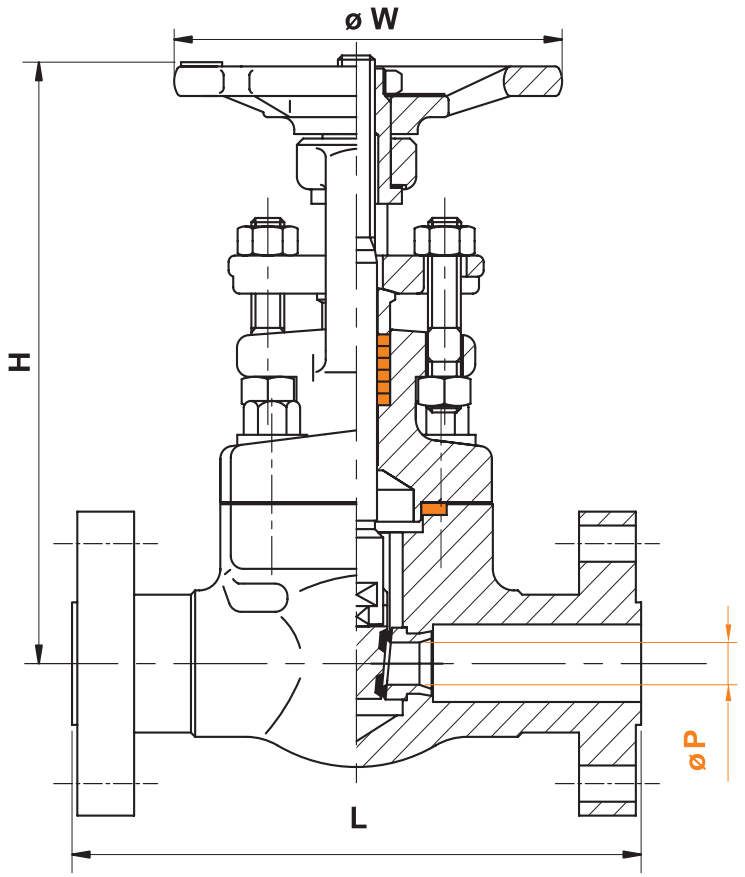
HANDWHEEL - The handwheel is in malleable iron.

Gate Valves Forged Steel Body - DN 1/2 " to 2 "
Class 150 - 300 - 600 Lb

• Outside screw and yoke (Os & y)

• Rising stem - no rising handwheel

Bolted & Welded Bonnet - Reduced & Full Port



Integral Flanges

SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	150#	300#	150#	300#	150#	300#	150#	300#	150#	300#
1/2	10	10	108	139,7	158	158	100	100	4,5	4,8
3/4	13.5	13.5	117	152,4	169	169	100	100	5,2	6,2
1	17.5	17.5	127	165,1	197	197	125	125	8,2	9,3
1 - 1/4	23.8	23.8	140	177,8	236	236	160	160	11,5	14,0
1 - 1/2	28,6	28,6	165	190,5	246	246	160	160	12,5	15,5
2	36,5	36,5	178	215,9	283	283	180	180	20,3	23,4

** Dimensions are expressed in millimetres*

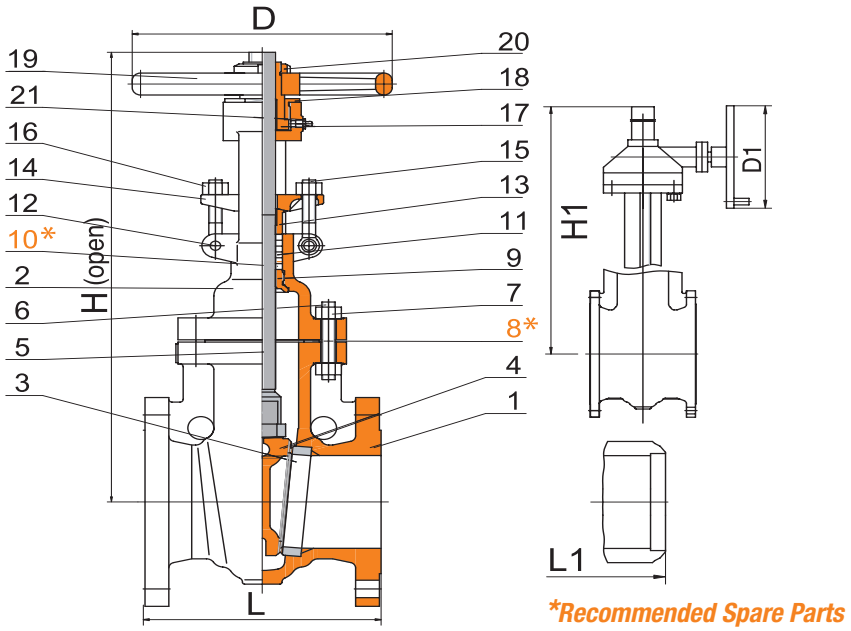
INTEGRAL FLANGED CLASS 600# DIMENSIONS					
SIZE	øP	L(*)	H OPEN (*)	øW(*)	Unit weight (Kg)
inch	Port	End to End	Center to Top Open	Hand wheel	(Kg)
	600#	600#	600#	600#	600#
1/2	10	165	169	100	5,9
3/4	12.5	190	197	100	7,4
1	17.5	216	236	125	10,4
1 - 1/4	22.5	229	246	160	16,2
1 - 1/2	28.5	241	283	160	17,5
2	36	292	320	180	28,3

** Dimensions are expressed in millimetres*

Gate Valves - (Cast Steel Body) - Class 150 to 2500 Lb

• Bolted Bonnet (Os & Y) - Solid or flexible wedge

• Rising Stem - Non Rising Hand Wheel



*Recommended Spare Parts

NOTE: Other material upon request

BASIC DESIGN STANDARDS

Basic design	API 600 API 6D ANSI B16.34
Face to Face	ANSI B16.10
Flanges	up to 24" ANSI B16.5 from 26" MSS SP44 B16.47 API 605
Butt-weld ends	ANSI B16.25
Testing	API 598 API 6D

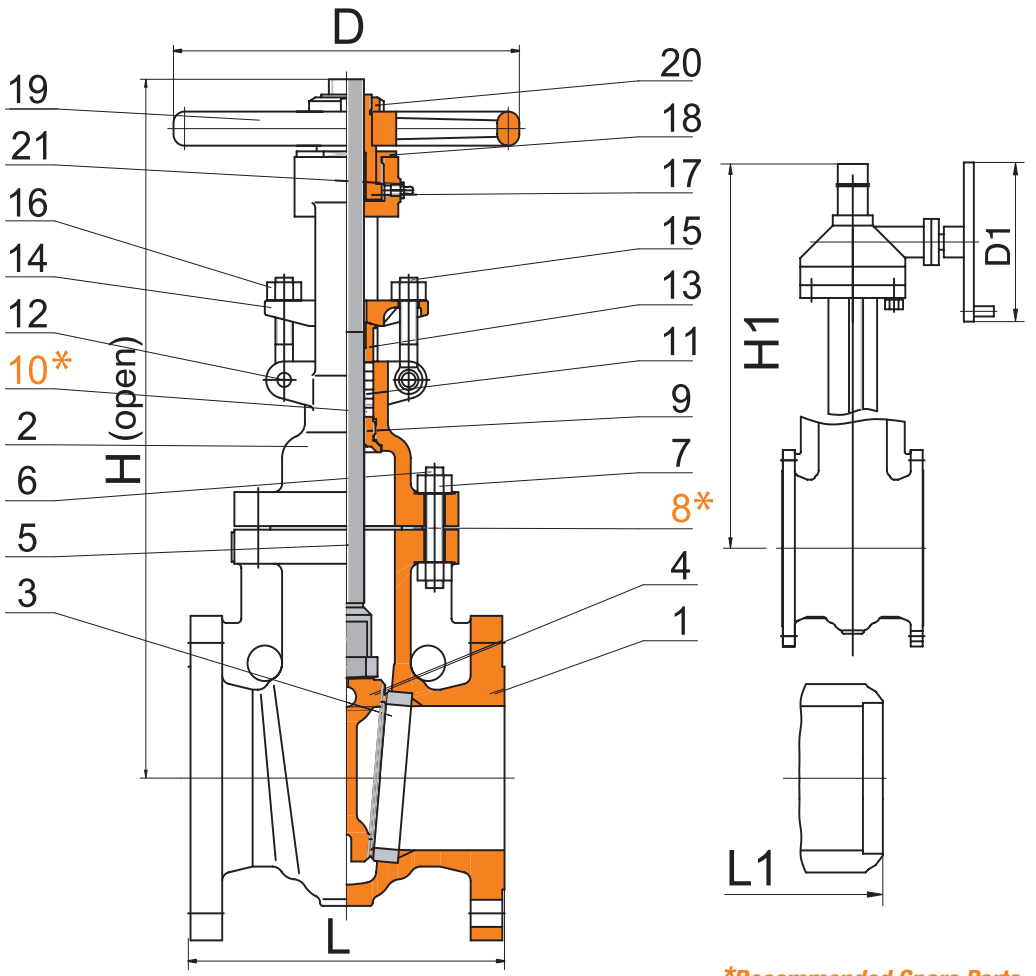
TRIM-MATERIALS ACCORDING TO API 600*

NO	Part Name	TRIM NO								
		1	2	5	8	9	10	12	15	16
3	Seat ring	410	304	STL6	STL6	Monel	316	STL6	STL6	STL6
4	Wedge			STL6	13Cr			316	STL6	STL6
5	Stem			410				316	304	316
9	Backseat									
11	Lantern ring									
13	Gland									

STANDARD MATERIAL SPECIFICATIONS (ASTM)

NO	Part Name	Carbon Steel		Alloy Steel		Stainless Steel			
		WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
1	Body	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
2	Bonnet	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
3	Seat Ring	A105	LF2	F304	F304	F304	F316	304L	316L
4	Wedge	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
6	Bonnet Bolt	B7	L7	B16	B16	B8	B8M		
7	Bonnet Nut	2H	4	4	4	8	8M		
8	Gasket	Graphite + Stainless steel or ring joint							
10	Stem Packing	Graphite							
12	Pin	A276-410							
14	Gland Flange	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
15	Gland Eyebolt	B7	L7	B16		B8	B8M		
16	Gland Nut	2H	4	4		8	8M		
17	Stem Nut	A439 D2							
18	Retaining Nut	Carbon steel	F6						
19	Handwheel	Ductile Iron or Steel							
20	Handwheel Lock Nut	Carbon Steel				F6			
21	Grease Nipple	Stainless steel							

Gate Valves - (Cast Steel Body) - Class 150 Lb - DN 2" to 48"



*Recommended Spare Parts

Size		Dimensions in mm						
Inches	mm	L (RF)*	L1 (BW)*	H	H1	D	D1	Weight Kg
2"	50	177.8	215.9	386.1	-	200	-	19
2 1/2"	65	190.5	241.3	520.7	-	250	-	24
3"	80	203.2	282.4	520.7	-	250	-	33
4"	100	228.6	304.8	604.5	-	350	-	49
6"	150	266.7	403.4	774.7	-	350	-	87
8"	200	292.1	419.1	957.6	-	350	-	132
10"	250	330.2	457.2	1211.6	-	450	-	203
12"	300	355.6	501.7	1412.2	1465.6	500	310	265
14"	350	381.0	571.5	1531.6	1600.2	600	310	491
16"	400	406.4	609.6	1765.3	1821.2	600	310	533
18"	450	431.8	660.4	1963.4	2014.2	600	460	640
20"	500	457.2	711.2	2131.1	2179.3	600	460	780
22"	550	508.0	762.0	2382.5	2451.1	720	600	990
24"	600	508.0	812.8	2565.4	2628.9	420	600	1192
26"	650	558.8	863.6	-	2768.6	-	600	1600
28"	700	609.6	914.4	-	3030.2	-	-	1850

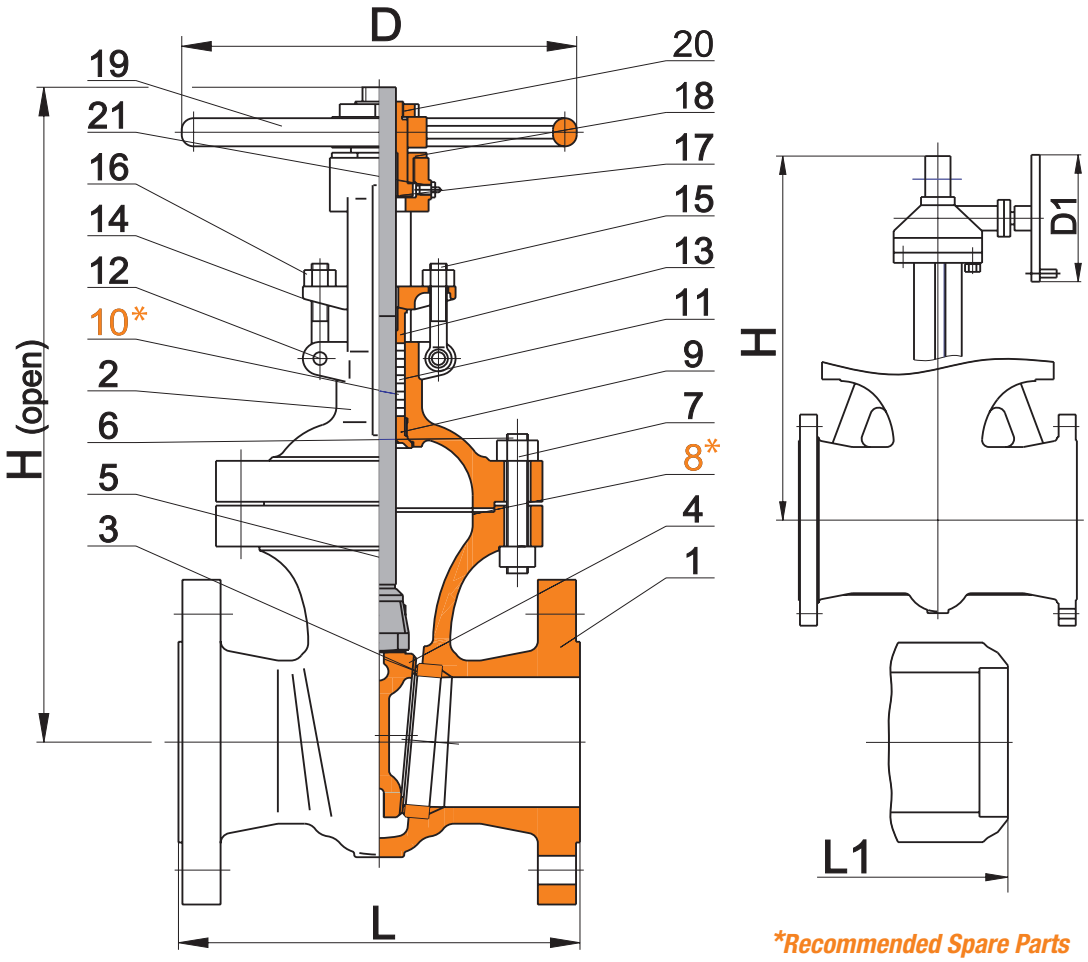
Size		Dimensions in mm						
Inches	mm	L (RF)*	L1 (BW)*	H	H1	D	D1	Weight Kg
30"	750	609.6	914.4	-	3230.9	-	600	2100
32"	800	660.4	965.2	-	3360.4	-	600	2550
36"	900	711.2	1016.0	-	3789.7	-	800	3300
40"	1000	762.0	1066.8	-	4254.5	-	800	4500
42"	1050	812.8	1092.2	-	4719.3	-	800	5500
48"	1200	863.6	1168.4	-	5374.6	-	1000	8900

NOTE: Other size upon request

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 8"
- Welded Seat Ring
- Solid wedge up to 2 1/2"
- Flexible Wedge 3" and above
- Available with Gear Operator

Gate Valves - (Cast Steel Body) - Class 300 Lb - DN 2" to 48"



*Recommended Spare Parts

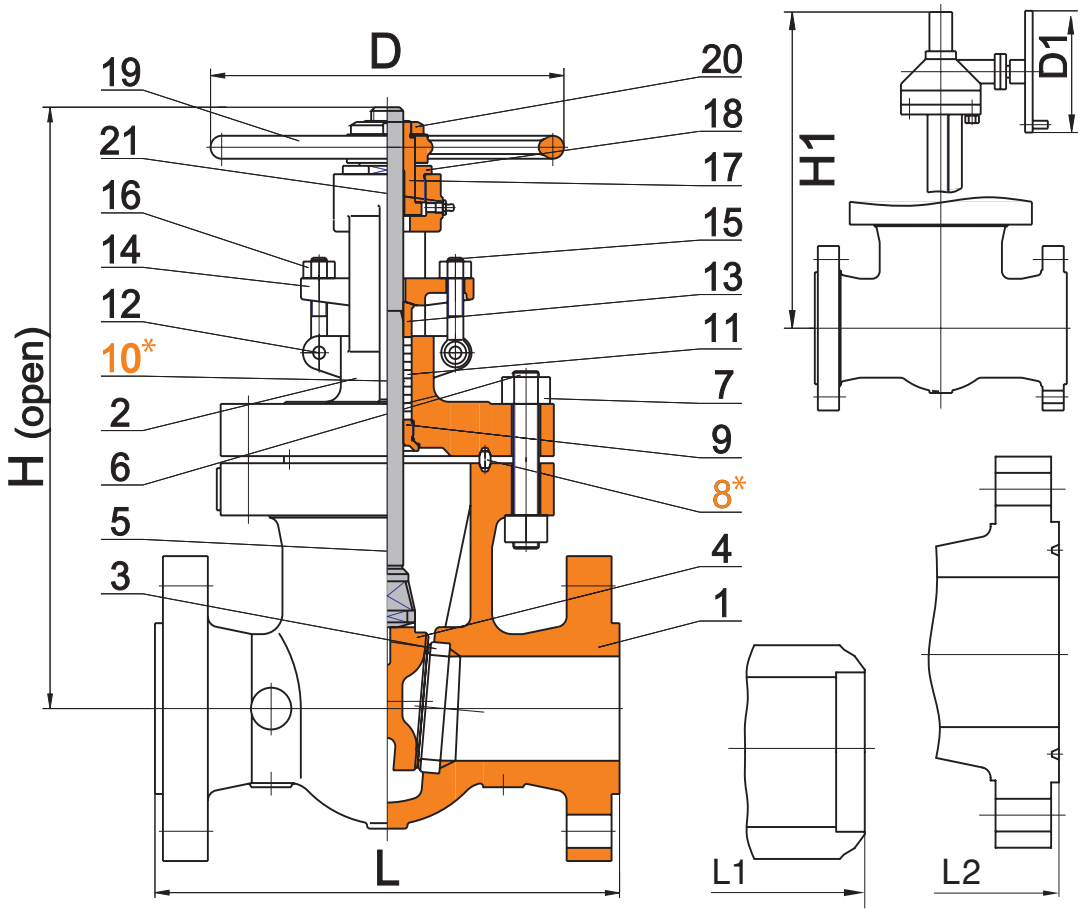
Size		Dimensions in mm					
Inches	mm	L (RF)* L1 (BW)*	H	H1	D	D1	Weight Kg
2"	50	215.9	408.9	-	200	-	24
2 1/2"	65	241.3	467.4	-	200	-	41
3"	80	282.4	535.9	-	250	-	54
4"	100	304.8	627.4	-	300	-	76
6"	150	403.4	810.3	861.1	350	240	143
8"	200	419.1	1010.9	1059.2	450	240	222
10"	250	457.2	1244.6	1300.5	500	310	370
12"	300	501.7	1458.0	1506.2	600	310	505
14"	350	762.0	1625.6	1666.2	600	310	765
16"	400	838.2	1795.8	1856.7	600	460	1010
18"	450	914.4	1993.9	2044.7	600	460	1300
20"	500	990.6	2197.1	2255.5	720	600	1700
22"	550	1092.2	2456.2	2507.0	900	600	2100
24"	600	1143.0	2634.0	2684.8	900	600	2420
26"	650	1244.6	-	2880.4	-	600	2800
28"	700	1346.2	-	3124.2	-	600	3200

Size		Dimensions in mm					
Inches	mm	L (RF)* L1 (BW)*	H	H1	D	D1	Weight Kg
30"	750	1397.0	-	3279.1	-	600	4050
32"	800	1524.0	-	3484.9	-	600	5200
34"	850	1625.6	-	3660.1	-	800	-
36"	900	1727.2	-	3888.7	-	800	7500
40"	1000	1930.4	-	4417.1	-	800	9000
42"	1050	1981.2	-	4640.6	-	1000	-
48"	1200	2235.2	-	5303.5	-	1000	-

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 4"
- Bolted Bonnet with bolted yoke from 6"
- Welded Seat Ring
- Solid wedge up to 2 1/2"
- Flexible Wedge 3" and above
- Available with Gear Operator

Gate Valves - (Cast Steel Body) - Class 600 Lb - DN 2" to 48"



*Recommended Spare Parts

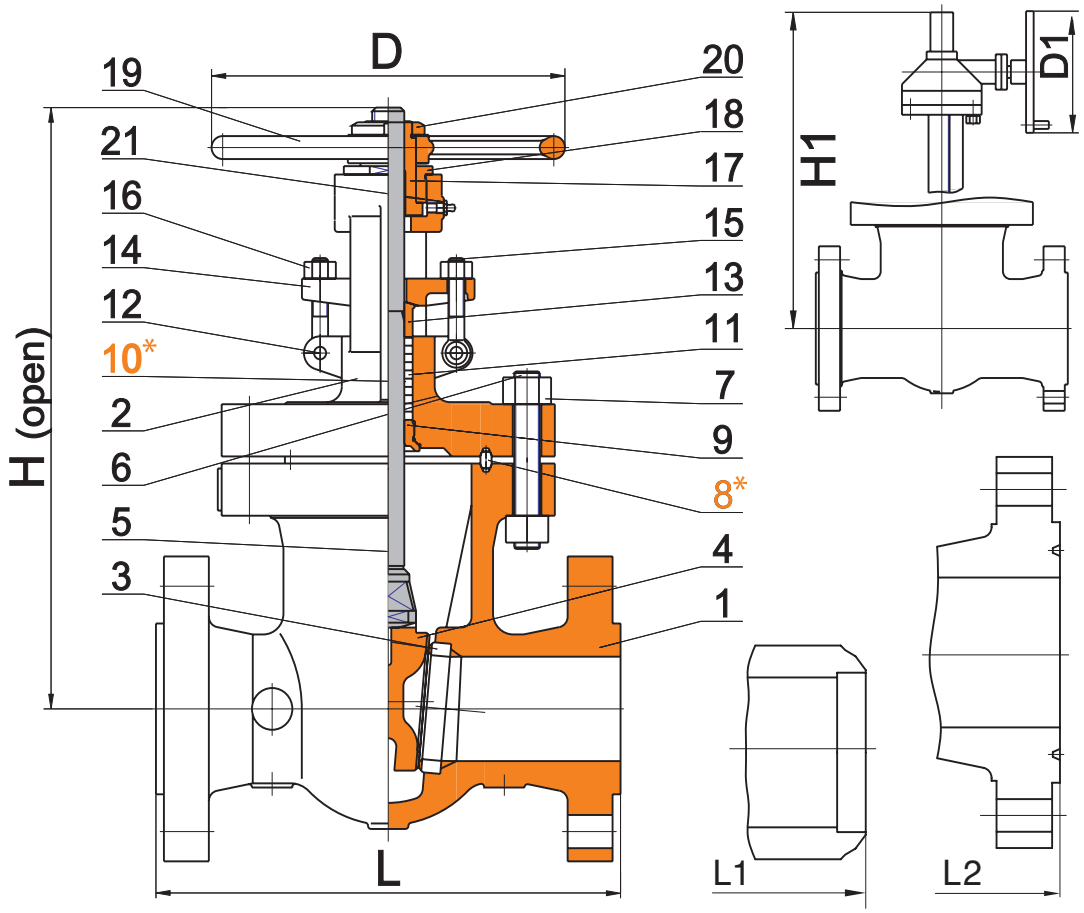
Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	292.1	295.1	421.6	-	200	-	33
2½"	65	330.2	333.2	495.3	-	200	-	51
3"	80	355.6	358.6	569.0	-	250	-	70
4"	100	431.8	434.8	678.2	-	300	-	127
6"	150	558.8	561.8	894.1	939.8	500	500	280
8"	200	660.4	663.4	1084.6	1148.1	600	600	450
10"	250	787.4	790.4	1277.6	1305.6	600	600	760
12"	300	838.2	841.2	1503.7	1549.4	600	600	980
14"	350	889.0	892.0	1661.2	1666.2	720	600	1240
16"	400	990.6	993.6	1884.7	1932.9	720	800	1540
18"	450	1092.2	1095.2	2039.6	2090.4	800	800	2250
20"	500	1193.8	1200.2	2230.1	2280.9	1000	800	2700
22"	550	1295.4	1305.1	2415.5	2468.9	1000	800	3200
24"	600	1397.0	1406.7	2636.5	2689.9	1000	800	3800
26"	650	1447.8	1460.5	-	2740.7	-	800	4600
28"	700	1549.4	1562.1	-	3248.7	-	800	5200
30"	750	1651.0	1663.7	-	3449.3	-	800	7000

Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
32"	800	1778.0	1793.7	-	3650.0	-	800	9800
34"	850	1930.4	1946.1	-	3850.6	-	800	-
36"	900	2082.8	2098.5	-	4048.8	-	800	15000
40"	1000	2286.0	-	-	4285.0	-	1000	17500
42"	1050	2438.4	-	-	4602.5	-	1000	-
48"	1200	2540.0	-		5240.0		1000	-

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 4"
- Bolted Bonnet with bolted yoke from 6"
- Welded Seat Ring
- Solid wedge up to 2½"
- Flexible Wedge 3" and above
- Available with Gear Operator

Gate Valves - (Cast Steel Body) - Class 900 Lb - DN 2" to 30"



*Recommended Spare Parts

Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	368.3	371.3	480.1	-	300	-	77
3"	80	381.0	384.0	594.4	-	350	-	111
4"	100	457.2	460.2	696.0	-	400	-	171
6"	150	609.6	612.6	947.4	1043.9	500	460	374
8"	200	736.6	739.6	1148.1	1249.7	550	460	598
10"	250	838.2	841.2	1320.8	1397.0	720	460	1063
12"	300	965.2	968.2	1503.7	1661.2	720	600	1800
14"	350	1028.7	1038.4	1630.7	1849.1	720	600	2300
16"	400	1130.3	1140.0	-	1930.4	-	800	2900
18"	450	1219.2	1231.9	-	2232.7	-	800	4100
20"	500	1320.8	1333.5	-	2334.3	-	1000	5200
22"	550	1422.4	-	-	2489.2	-	1000	4900
24"	600	1549.4	1568.5	-	2992.4	-	1000	7900
26"	650	1600.2	-	-	2946.4	-	1000	7000
28"	700	1701.8	-	-	3251.2	-	1000	9800
30"	750	1828.8	-	-	3454.4	-	1000	14500

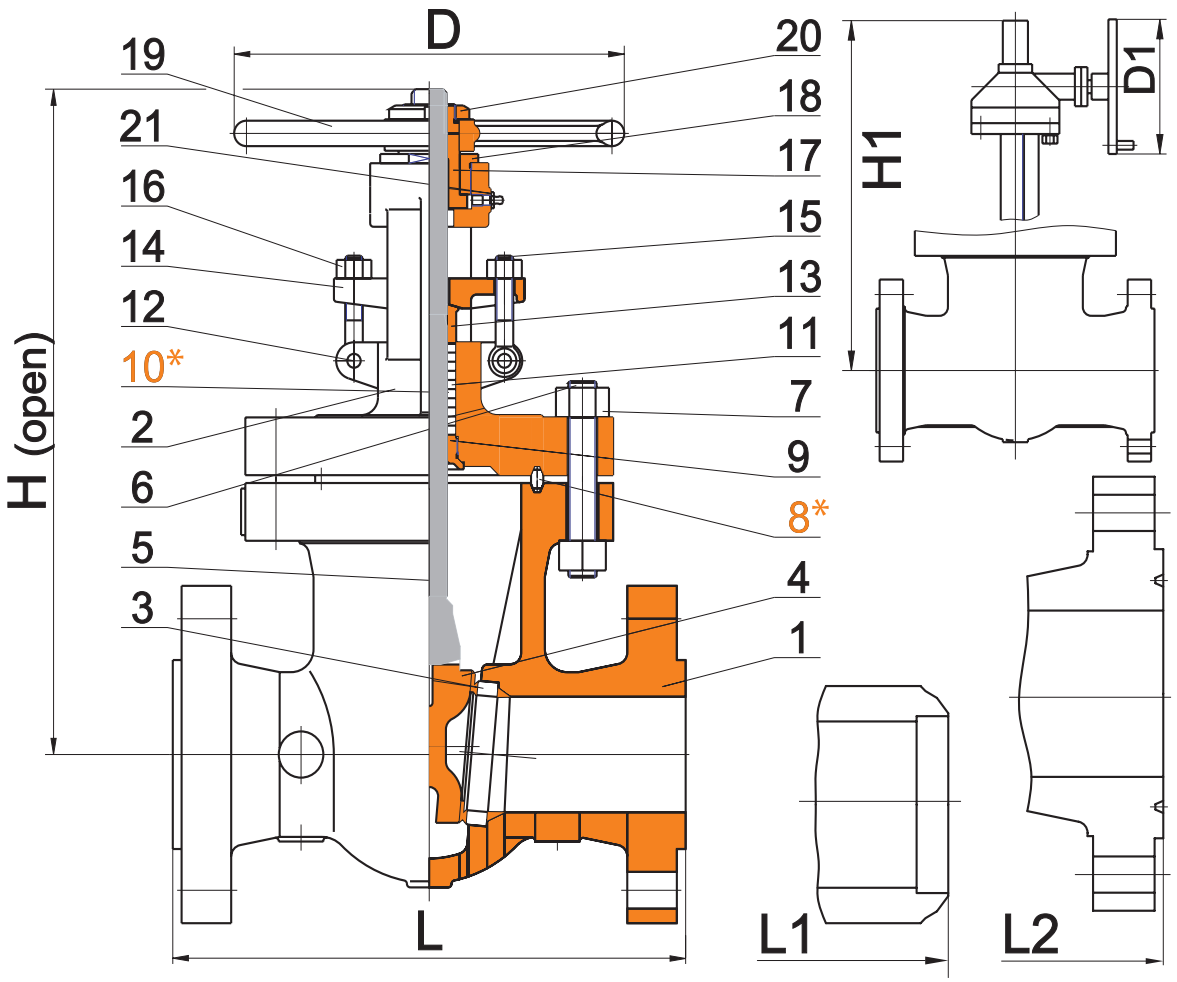
Over size 30" available upon Customer's request

Bolted Bonnet Pressure Seal type available, according to customer's requirement

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 4"
- Bolted Bonnet with bolted yoke from 6"
- Welded Seat Ring
- Solid wedge up to 2 ½"
- Flexible Wedge 3" and above
- Available with Gear Operator

Gate Valves - (Cast Steel Body) - Class 1500 - DN 2" to 30"



*Recommended Spare Parts

Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	368.3	371.3	480.1	-	300	-	77
3"	80	469.9	472.9	645.2	-	350	-	173
4"	100	546.1	549.1	756.9	-	400	-	271
6"	150	704.9	712.5	965.2	1219.2	600	460	580
8"	200	831.9	842.8	1168.4	1409.7	720	460	980
10"	250	990.6	1000.3	1424.9	1640.8	800	460	1950
12"	300	1130.3	1146.0	-	1760.2	-	600	3100
14"	350	1257.3	1276.4	-	1950.7	-	600	4100
16"	400	1384.3	1218.2	-	2179.3	-	800	5200
18"	450	1536.7	1559.1	-	2331.7	-	800	7500
20"	500	1663.7	1686.1	-	2435.9	-	1000	8500
22"	550	1790.7	-	-	2700.0	-	1000	9500
24"	600	1943.1	1971.5	-	2964.2	-	1000	17000
26"	650	2032.0	-	-	3365.5	-	1000	-
28"	700	2171.7	-	-	3363.0	-	1000	-
30"	750	2311.4	-	-	3604.3	-	1000	

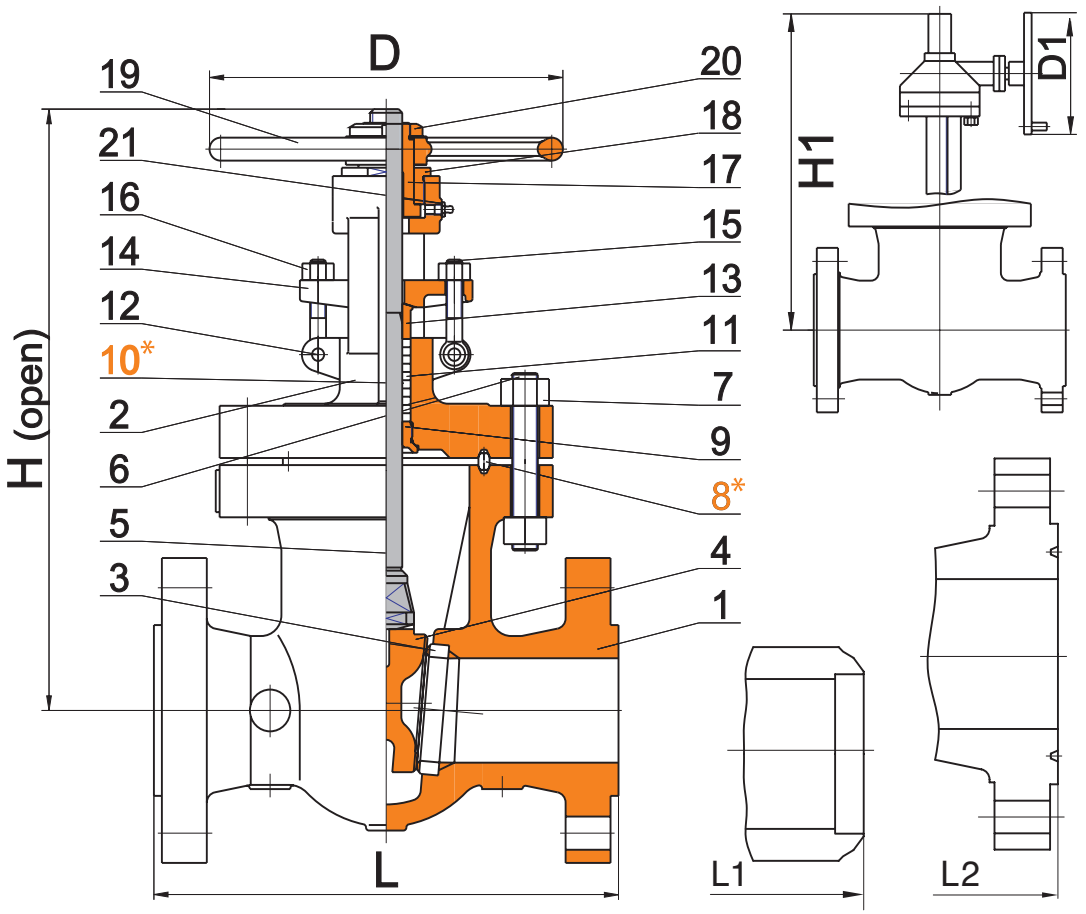
Over size 30" available upon Customer's request

Bolted Bonnet Pressure Seal type available, according to customer's requirement

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 4"
- Bolted Bonnet with bolted yoke from 6"
- Welded Seat Ring
- Solid wedge up to 2 ½"
- Flexible Wedge 3" and above
- Available with Gear Operator

Gate Valves - (Cast Steel Body) - Class 2500 Lb - DN 2" to 12"



*Recommended Spare Parts

NOTE: Other material upon request

Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	450.9	453.9	563.9	-	350	-	140
3"	80	577.9	584.2	721.4	-	460	-	270
4"	100	673.1	682.8	871.2	-	500	-	540
6"	150	914.4	927.1	-	1452.9	-	600	1700
8"	200	1022.4	1038.1	-	1612.9	-	600	2600
10"	250	1270.0	1292.4	-	2080.3	-	600	4600
12"	300	1422.4	1444.8	-	2280.	-	600	7200

Over size 12" available upon Customer's request

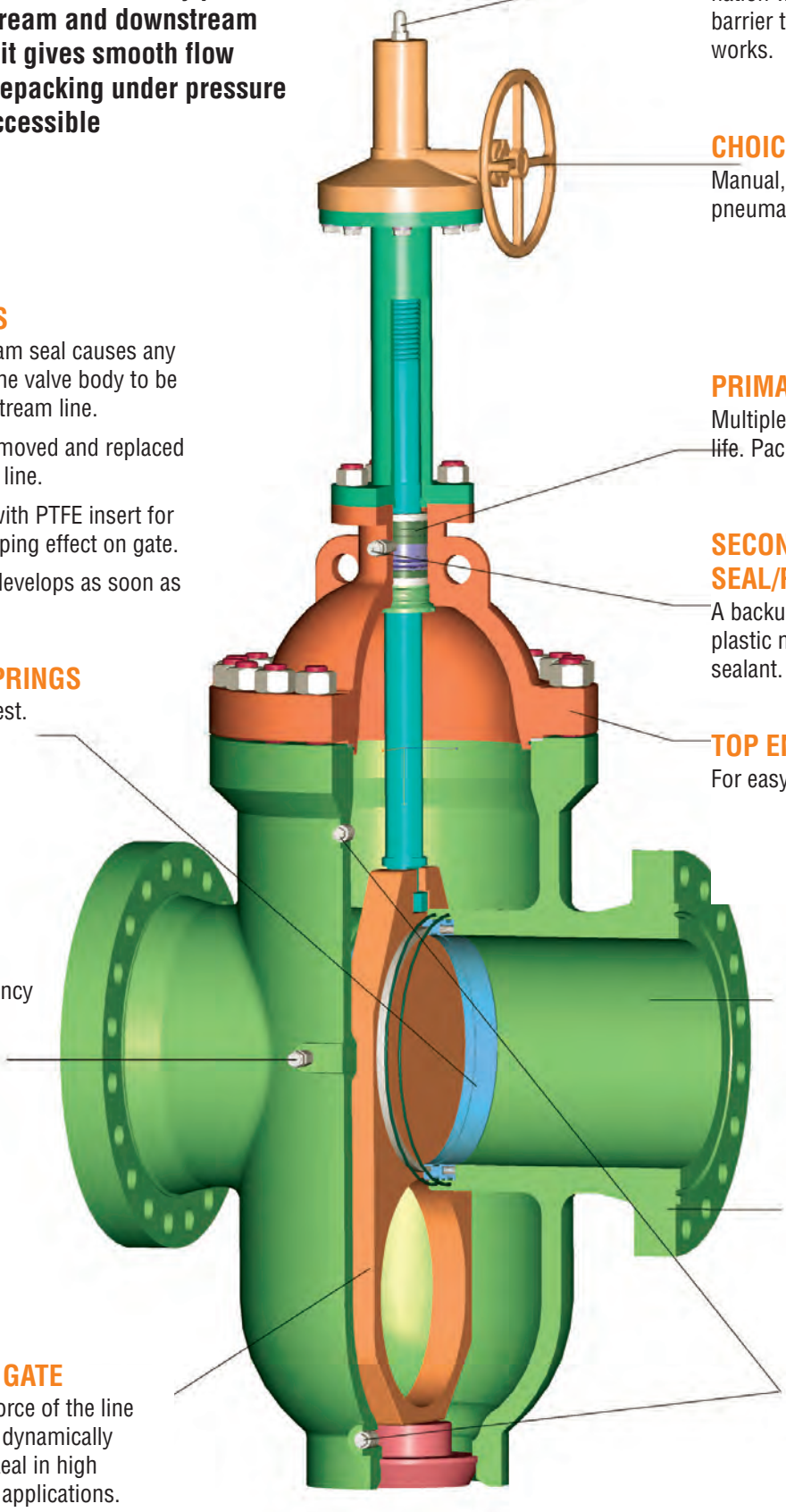
Bolted Bonnet Pressure Seal type available, according to customer's requirement

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet with integral yoke up to 4"
- Bolted Bonnet with bolted yoke from 6"
- Welded Seat Ring
- Solid wedge up to 2 ½"
- Flexible Wedge 3" and above
- Available with Gear Operator

Through Conduit Gate Valves - (Cast Steel Body) Class 150 to 1500 Lb

- **Most economical pipeline Gate valve**
- **Excellent double block and bleed capability**
- **Automatic relief of excess body pressure**
- **Total seal upstream and downstream**
- **Through conduit gives smooth flow**
- **Easy upkeep, repacking under pressure**
- **Seats easily accessible**
- **Fire safe**



SELF DOSITIONNING INDICATOR ROD AND SEAL ASSEMBLY

Ensures a long lasting combination wiping and moisture barrier to protect internal top works.

CHOICE OF OPERATORS

Manual, electric, hydraulic, or pneumatic type.

FLOATING SEATS

Upstream/downstream seal causes any excess pressure in the valve body to be relieved into the upstream line.

Seat rings can be removed and replaced whilst the valve is in line.

Seats are provided with PTFE insert for initial sealing and wiping effect on gate.

Metal to metal seal develops as soon as pressure increases.

PRIMARY STEM SEALS

Multiple chevron rings for long life. Packing is fire safe.

SECONDARY STEM SEAL/PACKING INJECTOR

A backup safety feature using plastic non flammable stem sealant.

MECHANICAL SPRINGS

Available upon request.

TOP ENTRY

For easy in line maintenance.

FULL BORE

Permits the passage of cleaning and scraping tools (pigs/spheres etc.). Turbulence and pressure drops are minimized.

SEAT LUBRICATION FITTINGS

Available for emergency seat sealing on 6" and larger size. Body fitting are available on valves smaller than 6".

CAST STEEL BODY CONSTRUCTION

Allows wide combination of body and trim material including regular low temperature and stainless steel.

FLOATING SLAB GATE

Utilizes the natural force of the line pressure to obtain a dynamically tight downstream saeal in high pressure differential applications.

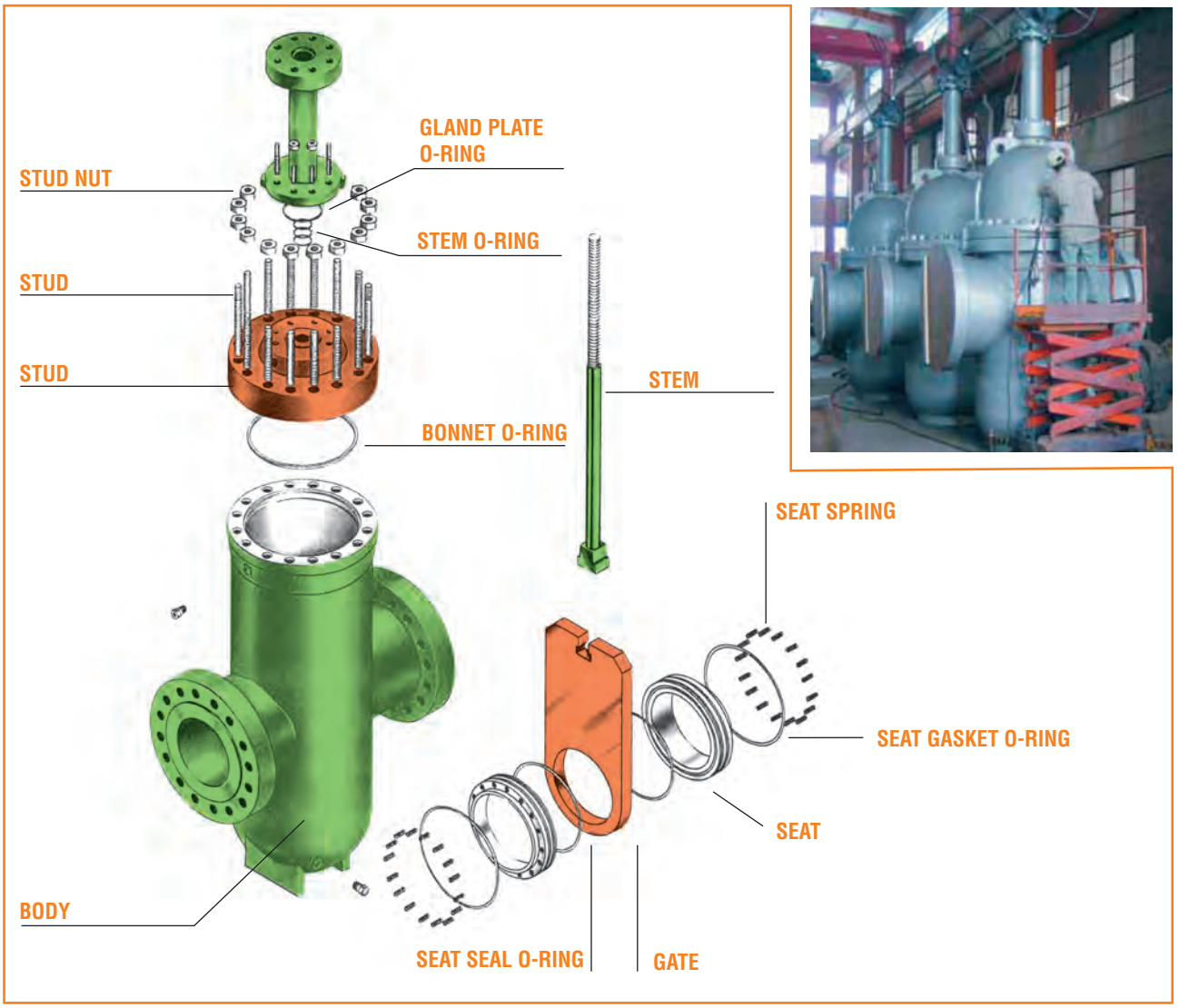
VENT/DRAIN FITTING

For releasing of trapped body pressure and liquids.

Through Conduit Gate Valves - (Cast Steel Body) Class 150 to 1500 Lb

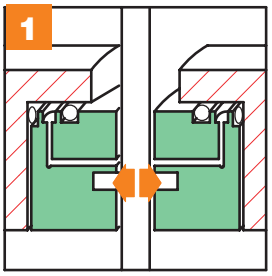
Through Conduit Gate Valves are designed, manufactured and tested in fully accordance with API 6D, to comply with the applications in the Gas and Oil transmission and distribution industry

Through Conduit Gate Valves are available in a range of size from 2” to 48” in classes 150, 300, 600 from 2” to 24” class 900 to 1500

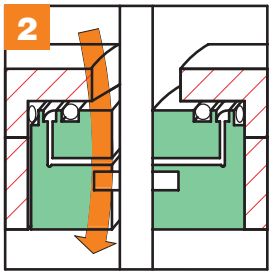


NOTE: Other material upon request

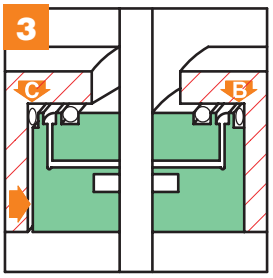
AUTOMATIC RELIEF OF THERMAL BODY PRESSURE-UPSTREAM, DOUBLE BLOCK AND BLEED CAPABILITY



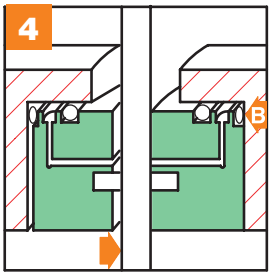
With valve closed, the seal (A) is initially established by raised PTFE ring on seat faces.



Upstream pressure forces gate againts the PTFE ring on the downstream seat. A double seal is established: PTFE-to-metal and meatal-to-metal. O-ring (B) avoid any down-stream flow.

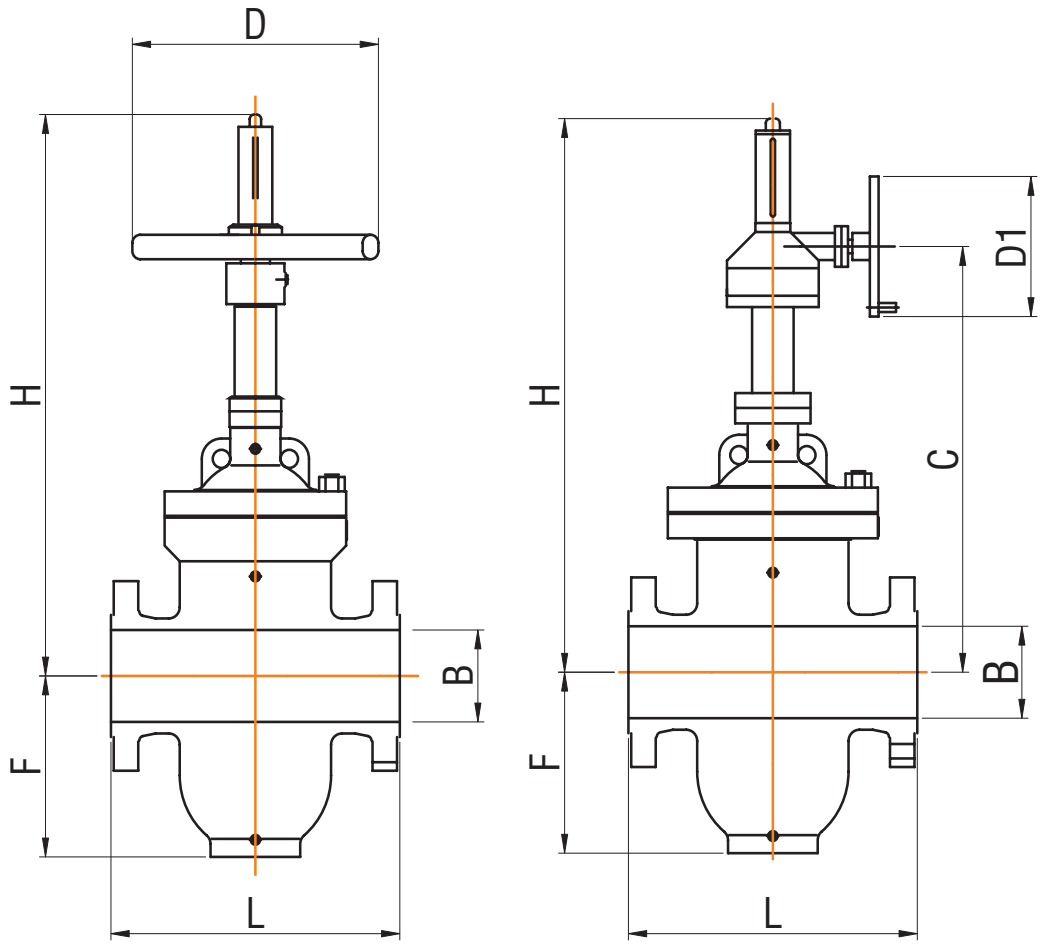


Bleeding body pressure the upstream seal is activated by upstream line pressure. A double seal is established: PTFE-to-metal and metal-to-metal. O-ring(B) avoid any down-stream flow.



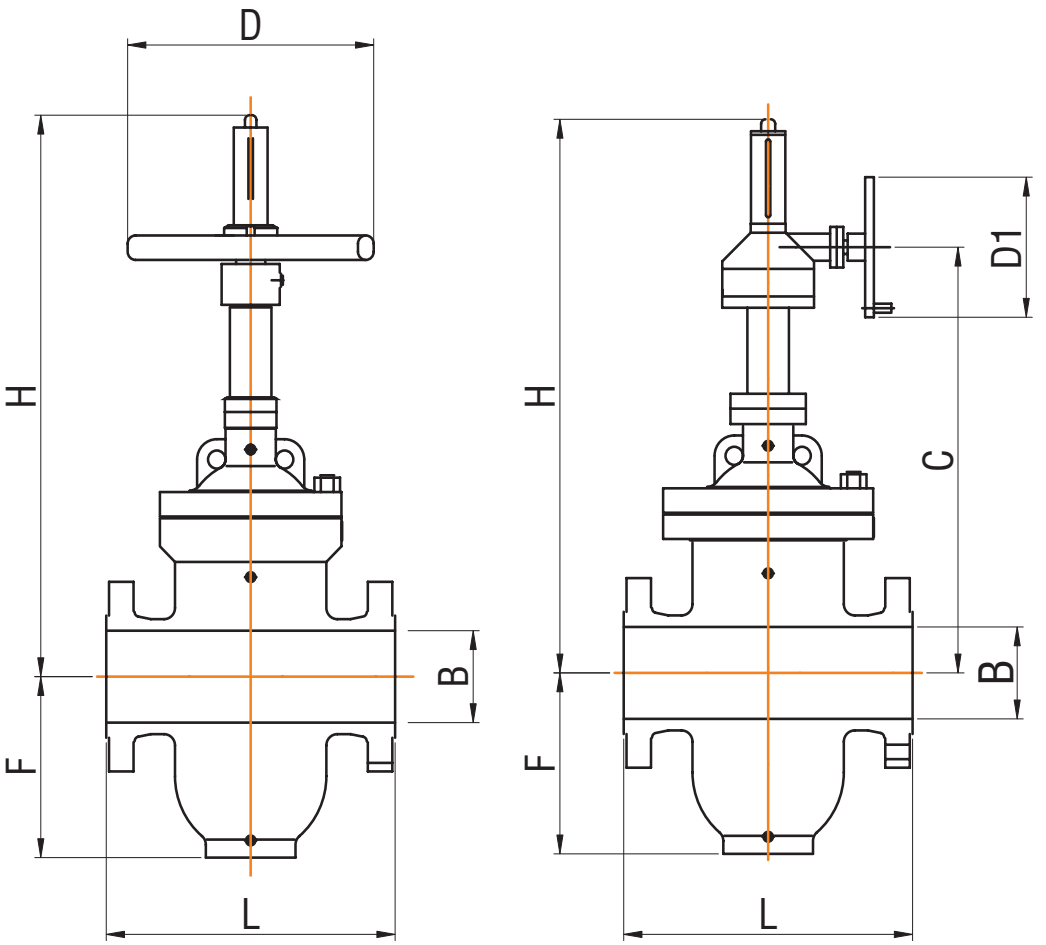
Upstream seal automatically relieves excessive body pressure a used by thermal expansion.

Through Conduit Gate Valves - (Cast Steel Body)
Class 150 - DN 2" to 48"



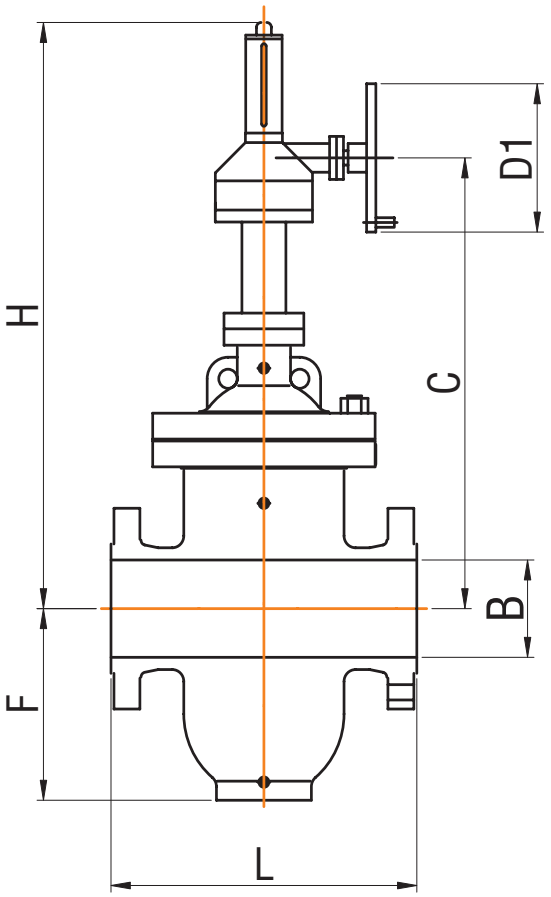
CLASS 150 Lb DIMENSIONS						
Size	**L**	**B**	**F**	**H**	**D**	**D1**
2"	178	51	152	584	250	-
3"	203	76	203	679	250	-
4"	229	102	254	864	250	-
6"	267	152	343	1153	350	-
8"	292	203	419	1330	350	-
10"	330	254	495	1511	400	-
12"	356	305	578	1743	450	-
14"	381	337	641	1930	1314	0
16"	406	387	721	2105	1445	0
18"	432	438	797	2235	1575	0
20"	457	489	876	2496	1708	0
24"	508	591	1045	2870	1981	0
26"	559	635	1111	3048	2235	0
28"	610	686	1191	3232	2289	0
30"	660	737	1270	3461	2426	0
36"	813	876	1499	3988	2880	0
42"	-	1022	1715	4521	3251	-
48"	-	1168	1873	4724	3454	-

Through Conduit Gate Valves - (Cast Steel Body)
Class 300 Lb - DN 2" to 48"



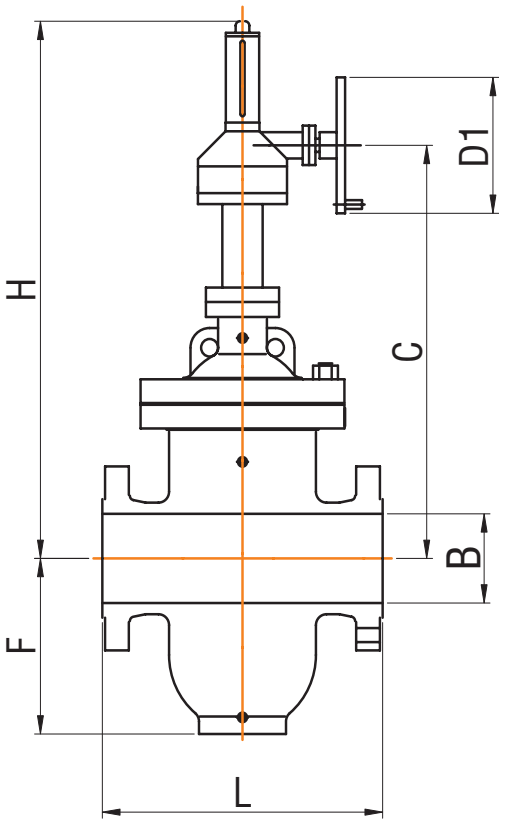
CLASS 300 Lb DIMENSIONS						
Size	**L**	**B**	**F**	**H**	**D**	**D1**
2"	216	51	152	584	250	-
3"	283	76	203	679	250	-
4"	305	102	254	864	250	-
6"	403	152	343	1162	350	-
8"	419	203	419	1441	350	-
10"	457	254	495	1619	400	-
12"	502	305	578	1880	450	-
14"	762	337	641	1930	1346	0
16"	838	387	721	2105	1483	0
18"	914	438	797	2235	1659	0
20"	991	489	895	2699	1876	0
24"	1143	591	1067	2940	2194	0
26"	1245	635	1146	3099	2375	0
28"	1346	686	1245	3277	2438	0
30"	1397	737	1346	3607	2737	0
36"	1727	876	1613	4318	3318	0
42"	-	1022	1753	4572	3683	-
48"	-	1168	1905	4801	4064	-

Through Conduit Gate Valves - (Cast Steel Body)
Class 600 Lb - DN 2" to 48"



CLASS 600 Lb DIMENSIONS						
Size	**L**	**B**	**F**	**H**	**D**	**D1**
2"	292	51	152	591	250	-
3"	356	76	203	686	250	-
4"	432	102	254	870	250	-
6"	559	152	346	1162	350	-
8"	660	203	425	1441	350	-
10"	787	254	508	1664	400	-
12"	838	305	591	1880	450	610
14"	889	337	649	1772	1359	610
16"	991	387	740	2061	1556	610
18"	1092	438	803	2197	1692	750
20"	1194	489	914	2492	1876	750
24"	1397	591	1073	2883	2232	750
26"	1448	635	1165	3099	2375	0
28"	1549	686	1235	3499	2604	0
30"	1651	737	1346	3607	2731	0
36"	2083	876	1622	4337	3318	0
42"	-	40	73	180	145	0
48"	-	46	79	189	160	0

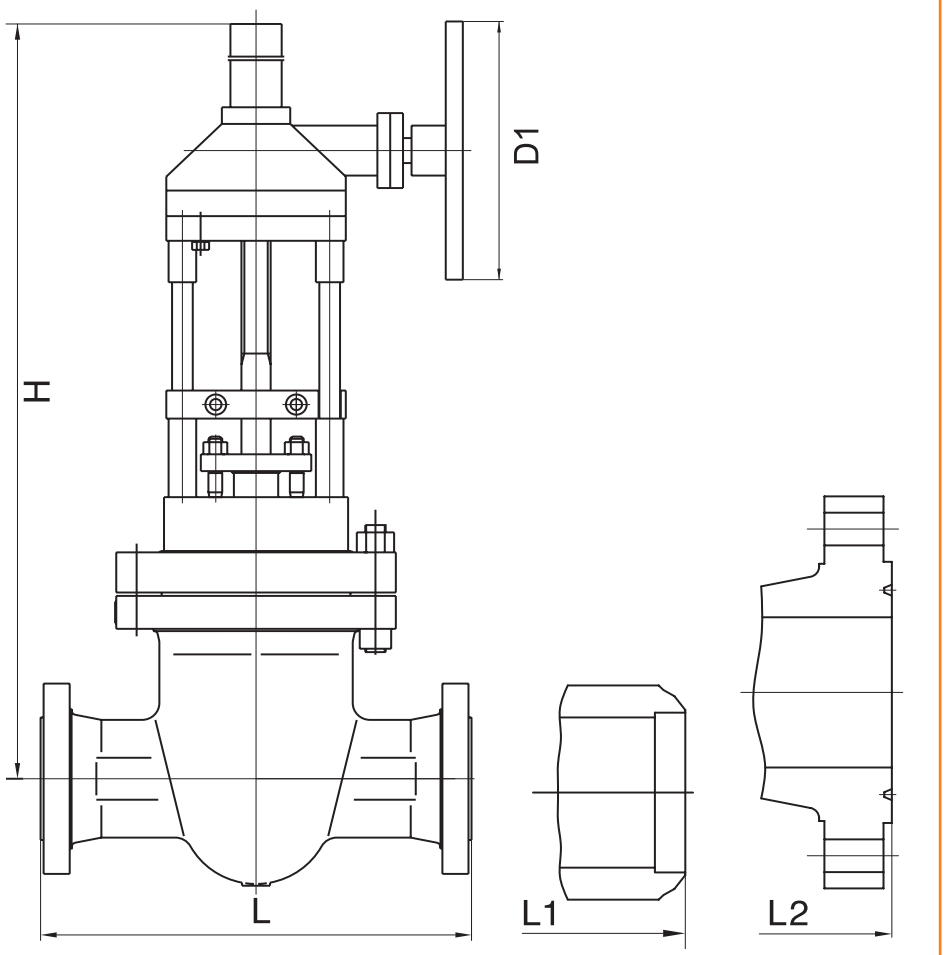
Through Conduit Gate Valves - (Cast Steel Body)
Class 900 - 1500 Lb - DN 2" to 24"



CLASS 900 Lb DIMENSIONS						
Size	**L**	**B**	**F**	**H**	**D**	**D1**
2"	368	51	152	591	250	-
3"	381	76	203	686	250	-
4"	457	102	254	870	250	-
6"	610	152	346	1162	400	-
8"	737	203	432	1441	400	-
10"	838	254	511	1664	450	610
12"	965	305	597	1880	500	610
14"	1029	324	664	1772	1359	610
16"	1130	375	768	2061	1692	610
18"	1219	425	860	2464	1829	750
20"	1321	479	946	2626	2083	750
24"	1549	572	1130	2883	2232	750

CLASS 1500 Lb DIMENSIONS						
Size	**L**	**B**	**F**	**H**	**D**	**D1**
2"	368	51	152	591	250	-
3"	470	76	203	686	250	-
4"	546	102	254	870	250	-
6"	705	146	375	1175	400	-
8"	832	194	475	15016	400	450
10"	991	241	567	1737	450	450
12"	1130	289	662	1954	500	610
14"	1257	318	664	1772	1359	610
16"	1384	362	768	2061	1692	610
18"	1537	-	860	2464	1829	750
20"	1664	-	946	2626	2083	750
24"	1943	-	1130	2883	2232	750

Parallel Double Disc Gate Valves - (Cast Steel Body)
Class 600 to 1500 Lb - DN 2" to 24"



STANDARD MATERIAL SPECIFICATIONS (ASTM)	
Body	WCB - WC6 WC9 - C5 - CF8M
Trims	API 600 - TRIM 1 TRIM 5 - TRIM 8 TRIM 16
Seal	Graphite, S.S + Graphite, Soft Steel
Stud Bolts **Nut**	B7/2H B7M/2HM - B8/8 B16/4
Operated mode	Available with Gear Operator Electric Actuator

STANDARD DESCRIPTION

- **Outside Screw & Yoke - Bolted Bonnet**
- **Parallel Double Disc**
- **Welded Seat Ring**

NOTE: Other material upon request

Dimensions in mm

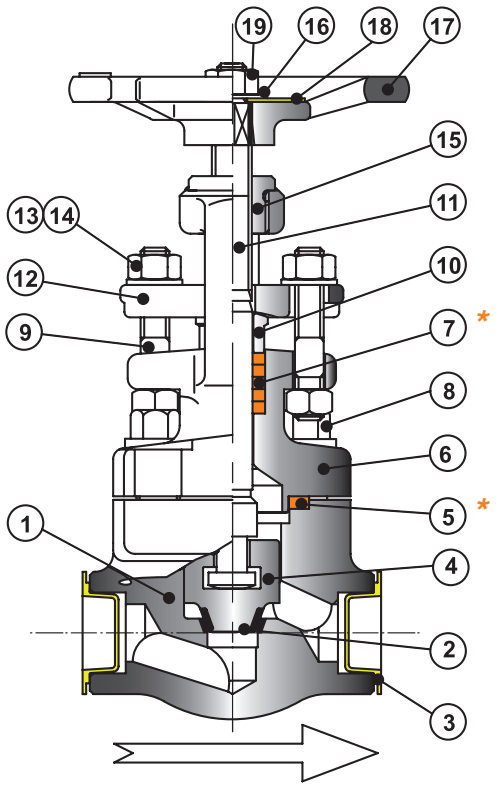
SIZE / CLASS	inches	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600
600 LB	L-L1	292	330	356	508	559	559	660	787	838	889	991	1092	1194	1397
	L2	295	333	359	498	562	562	664	791	841	892	994	1095	1200	1407
	H	422	494	551	677	746	894	1099	1278	1503	1662	1884	2040	2230	2642
	D1	200	250	250	300	400	500	600	600	600	610	610	813	813	813
900 LB	L-L1	368	419	381	457	559	610	737	838	965	1029	1130	1219	1321	1549
	L2	371	422	384	460	562	613	740	841	968	1038	1140	1232	1334	1568
	H	479	547	595	697	889	948	1148	1321	1503	1631	1812	2119	2330	2690
	D1	300	300	350	400	500	600	600	610	610	610	610	610	610	610
1500 LB	L-L1	368	419	470	546	-	705	832	991	1130	1257	1384	-	-	-
	L2	371	422	473	549	-	711	841	1000	1146	1276	1407	-	-	-
	H	479	572	645	756	-	964	1167	1425	1651	1945	2250	-	-	-
	D1	300	300	400	500	-	600	610	610	610	610	610	-	-	-

Globe Valves Forged Steel Body - (Bolted & Welded Bonnet - Type) DN 1/2" to 2" - Class 800 to 1500 Lb

• Outside screw and yoke (Os & y)

• Rising stem - rising handwheel

Reduced & Full Port



FLOW DIRECTION

*Recommended Spare Parts

Part	Name	Material
1	Body	A105 N
2	Seat Ring	13% Cr
3	Plug	Plastic
4	Disc	A276 410
5	Gasket	F304
6	Bonnet	A105 N
7	Packing	Graphoil
8	Hex bolts	A193 B7
9	Gland studs	A193 B7
10	Gland	A276 410
11	Stem	A276 410
12	Gland flange	A105 N
13	Gland nuts	A194 2H
14	Gasket ring	F304
15	Yoke sleeve	A276 410
16	Gasket ring	Stainless Steel
17	Handwheel	A 197
18	Nameplate	F304
19	Handwheel nut	A194 2H

NOTE: Other material upon request

BODY - The forged steel body is and designed to the basic dimensional requirements of the applicable specifications as API 602 and ASME B16.34. The body is available in both design the full or conventional port.

BONNET - The forged steel bonnet has an integral backseat and incorporates the stuffing box, which has dimensions as per the applicable specifications such as API 602.

BODY-BONNET JOINT - Two different bonnet joint design are available. These are bolted bonnet, welded bonnet.

GASKET - The bolted bonnet gasket is a contained, controlled compression, spiral wound gasket.

BONNET BOLTING - The bolted bonnet is manufactured in carbon steel, stainless steel or alloy steel.

SEAT - The body seat is should be screwed or integral type.

DISC - The forged disc is according to the valve trim. The disc is a swivel plug type design.

STEM - The stem is forged steel and part of the valve trim. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.

GLAND AND FLANGE - The gland, gland flange are separate, two pieces design.

GLAND BOLTS E NUTS - The gland bolt and nut assembly is a stud and composed by double nut arrangement.

YOKE SLEEVE - The yoke sleeve is obtained by forged stainless steel material and it is resistant to wear and corrosion.

HANDWHEEL - The handwheel is in malleable iron.

SPECIFICATIONS

Basic Design: API 602/BS 5352

P/T Rating: ASME B16.34

Testing: API 598

Face to face: Manufacturer STD

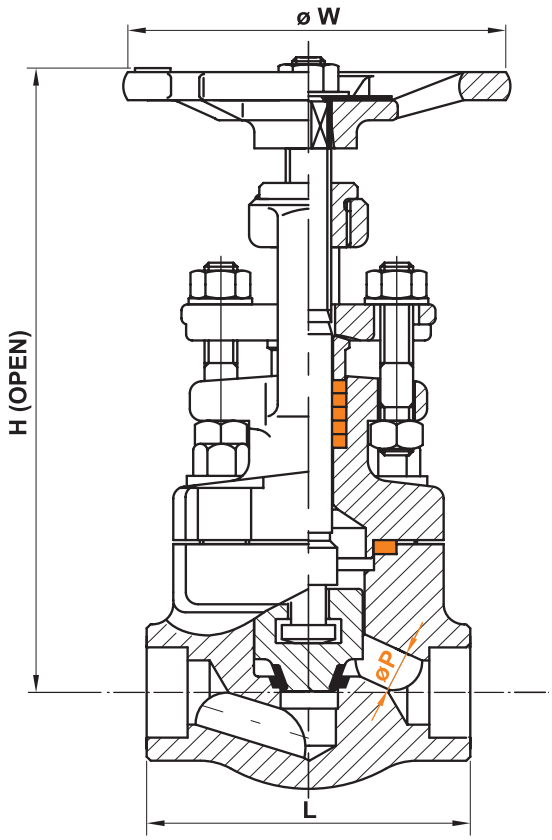
Socket Weld and: ASME B16.11

Screwed and: ASME B1.20.1

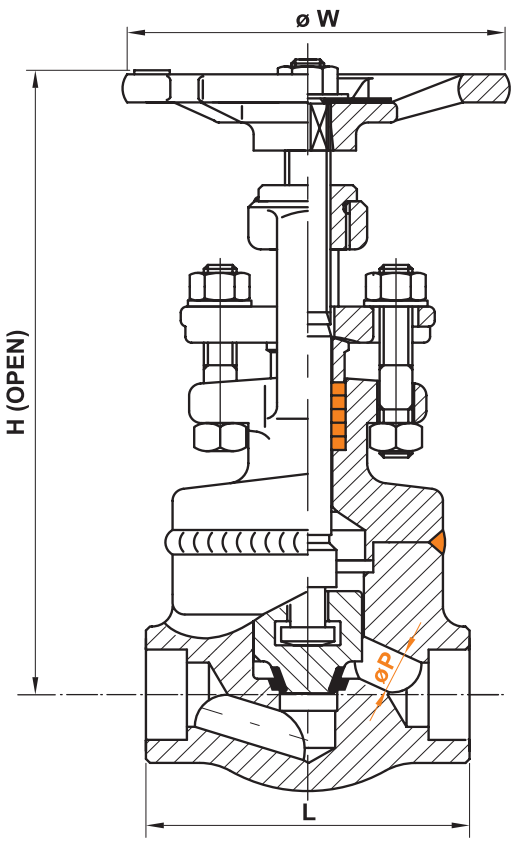
Globe Valves Forged Steel Body - (Bolted & Welded Bonnet - Type)
DN 1/2" to 2" - Class 800 to 1500 Lb

• Outside screw and yoke (Os & y)

• Rising stem - rising handwheel



BOLTED BONNET TYPE



WELDED BONNET TYPE

BOLTED & WELDED BONNET GLOBE REDUCED PORT DIMENSIONS

SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9	9	79	111	166	207	100	125	1,9	3,7
3/4	12,5	12,5	92	111	171	207	100	125	2,1	3,7
1	17,5	17,5	111	114	207	240	125	160	3,5	6,8
1 - 1/4	22,5	22,5	120	152	240	258	160	160	6,0	7,6
1 - 1/2	29,5	29,5	152	172	258	330	160	180	7,5	11,6
2	35	35	172	220	330	355	180	200	11,4	15,0

** Dimensions are expressed in millimetres*

BOLTED & WELDED BONNET GLOBE FULL PORT DIMENSIONS

SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9	9	92	111	171	207	100	125	2,1	3,6
3/4	12,5	12,5	111	130	207	240	125	160	3,5	6,8
1	17,5	17,5	120	152	240	258	160	160	6,0	7,6
1 - 1/4	22,5	22,5	152	172	258	330	160	180	7,5	11,6
1 - 1/2	29,5	29,5	172	220	330	355	180	200	11,4	15,0
2	35	35	200	235	355	370	200	240	14,6	21,9

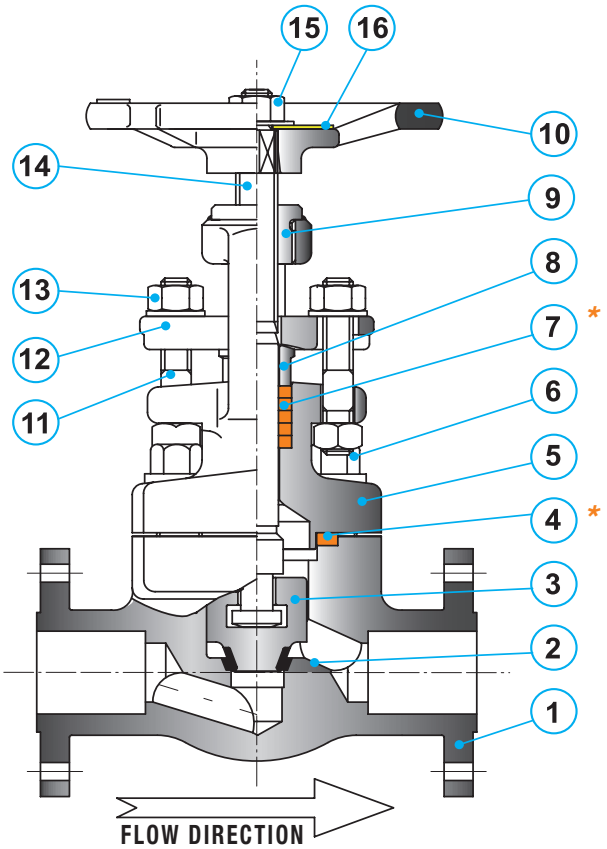
** Dimensions are expressed in millimetres*

Globe Valves Forged Steel Body - DN 1/2" to 2"

• Outside screw and yoke (Os & y)

• Rising stem - rising handwheel

Bolted & Welded Bonnet - Reduced & Full Port



**Recommended Spare Parts*

Part	Name	Material
1	Body	A105 N
2	Seat Ring	13% Cr
3	Plug	Plastic
4	Wedge	A276 410
5	Gasket	F304
6	Bonnet	A105 N
7	Packing	Graphoil
8	Hex bolts	A193 B7
9	Gland studs	A193 B7
10	Gland	A276 410
11	Stem	A276 410
12	Gland flange	A105 N
13	Gland nuts	A194 2H
14	Gasket ring	F304
15	Yoke sleeve	A276 410
16	Gasket ring	Stainless Steel
17	Handwheel	A 197
18	Nameplate	F304
19	Handwheel nut	A194 2H

NOTE: Other material upon request

BODY - The integral forged steel body is designed to the basic dimensional requirements of the applicable specifications as API 602 and ASME B16.34 face to face dimension is according to B16.10, end flanged type is ASME B16.5.

BONNET - The forged steel bonnet has an integral backseat and incorporates the stuffing box, with dimensions as per the applicable specifications such as API 602.

BODY-BONNET JOINT - Bonnet joint design is bolted type.

GASKET - The bolted bonnet gasket is a contained, controlled compression, spiral wound gasket.

BONNET BOLTING - The bolted bonnet is manufactured in carbon steel, stainless steel or alloy steel.

SEAT - The body seat is steel and make up part of the valve trim.

DISC - The forged disc is swivel type, and is in according to the valve trim. The disc seating surface is a plug type design.

STEM - The stem is forged steel and part of the valve trim. The stem is designed to the basic dimensional requirements of the applicable specifications such as API 602.

GLAND AND FLANGE - The gland, gland flange assembly utilizes a separate, two piece design.

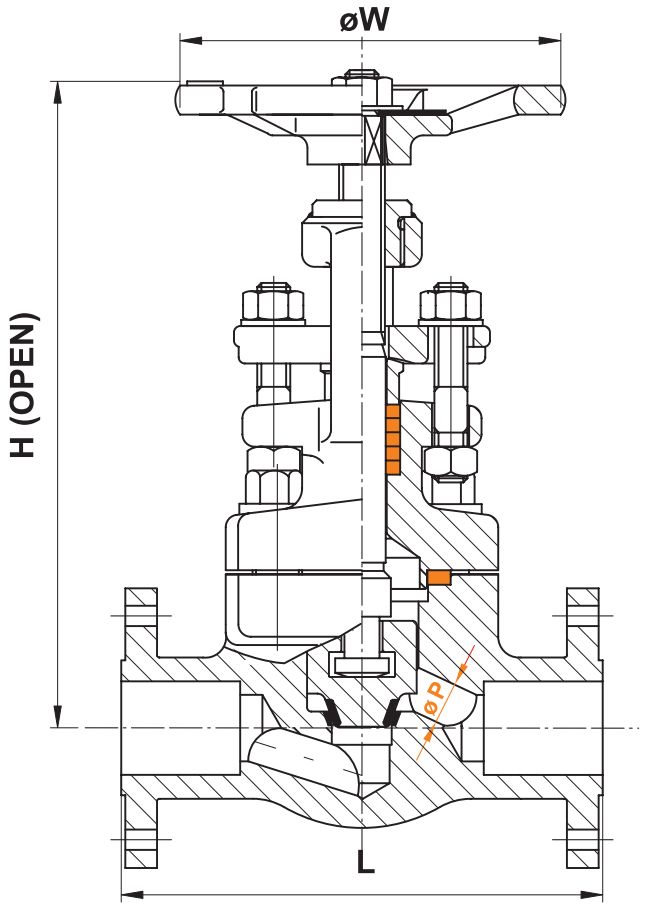
GLAND BOLTS E NUTS - The gland bolt and nut assembly is a stud and composed by double nut arrangement.

YOKE SLEEVE - The yoke sleeve is forged stainless steel material and is resistant to wear and corrosion.

HANDWHEEL - The handwheel is in malleable iron.

Globe Valves Forged Steel Body - DN 1/2" to 2"
Class 150 - 300 - 600 Lb

Bolted & Welded Bonnet - Reduced & Full Port



INTERGRAL FLANGES

INTEGRAL FLANGED CLASS 150# & CLASS 300# DIMENSIONS										
SIZE	øP(*)		L(*)		H OPEN (*)		øW(*)		Unit weight (Kg)	
inch	Port		End to End		Center to Top Open		Hand wheel		(Kg)	
	150#	300#	150#	300#	150#	300#	150#	300#	150#	300#
1/2	9	9	108	152	166	166	100	100	4,5	4,8
3/4	12,5	12,5	117	178	171	171	100	100	6,9	7,7
1	17,5	17,5	127	203	207	207	125	125	9,8	11,0
1 - 1/4	22,5	22,5	140	216	240	240	160	160	13,5	16,8
1 - 1/2	29,5	29,5	165	229	258	258	160	160	19,5	21,2
2	35	35	203	267	330	330	180	180	28,0	32,6

** Dimensions are expressed in millimetres*

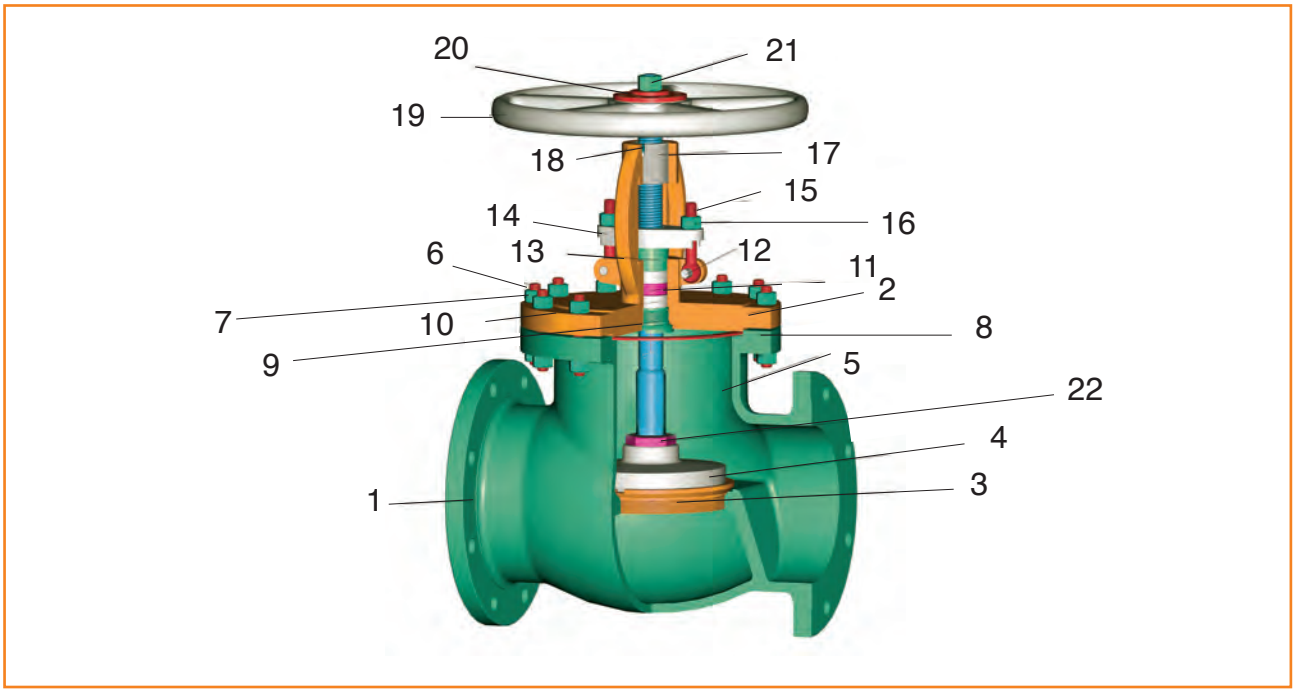
INTEGRAL FLANGED CLASS 600# DIMENSIONS					
SIZE	øP	L(*)	H OPEN (*)	øW(*)	Unit weight (Kg)
inch	Port	End to End	Center to Top Open	Hand wheel	(Kg)
	600#	600#	600#	600#	600#
1/2	9	165	171	100	5,6
3/4	12,5	190	207	100	7,8
1	17,5	216	240	125	12,5
1 - 1/4	22,5	229	258	160	17,0
1 - 1/2	29,5	241	330	160	23,5
2	35	292	380	180	38,8

** Dimensions are expressed in millimetres*

Globe Valves (Cast steel body) - Class 150 to 2500 Lb

• Bolted Bonnet (OS & y)

• Rising stem - rising handwheel



NOTE: Other material upon request

N°	Part Name
01	Body
02	Bonnet
03	Seat Ring
04	Disc
05	Stem
06	Bonnet Bolt
07	Bonnet Nut
08	Gasket
09	Backseat
10	Stem Packing
11	Lantern Ring
12	Pin
13	Gland
14	Gland Flange
15	Gland Eyebolt
16	Gland Nut
17	Stem Nut
18	Screw
19	Handwheel
20	Washer
21	Handwheel Lock Nut
22	Disc Nut

BASIC DESIGN STANDARDS

Basic design	BS 1873 ANSI B16.34
Face to Face	ANSI B16.10
Flanges	up to 24" ANSI B16.5 from 26" MSS P44 B16.47 API 605
Butt-weld ends	ANSI B16.25
Testing	API 598

TRIM-MATERIALS ACCORDING TO API 600*

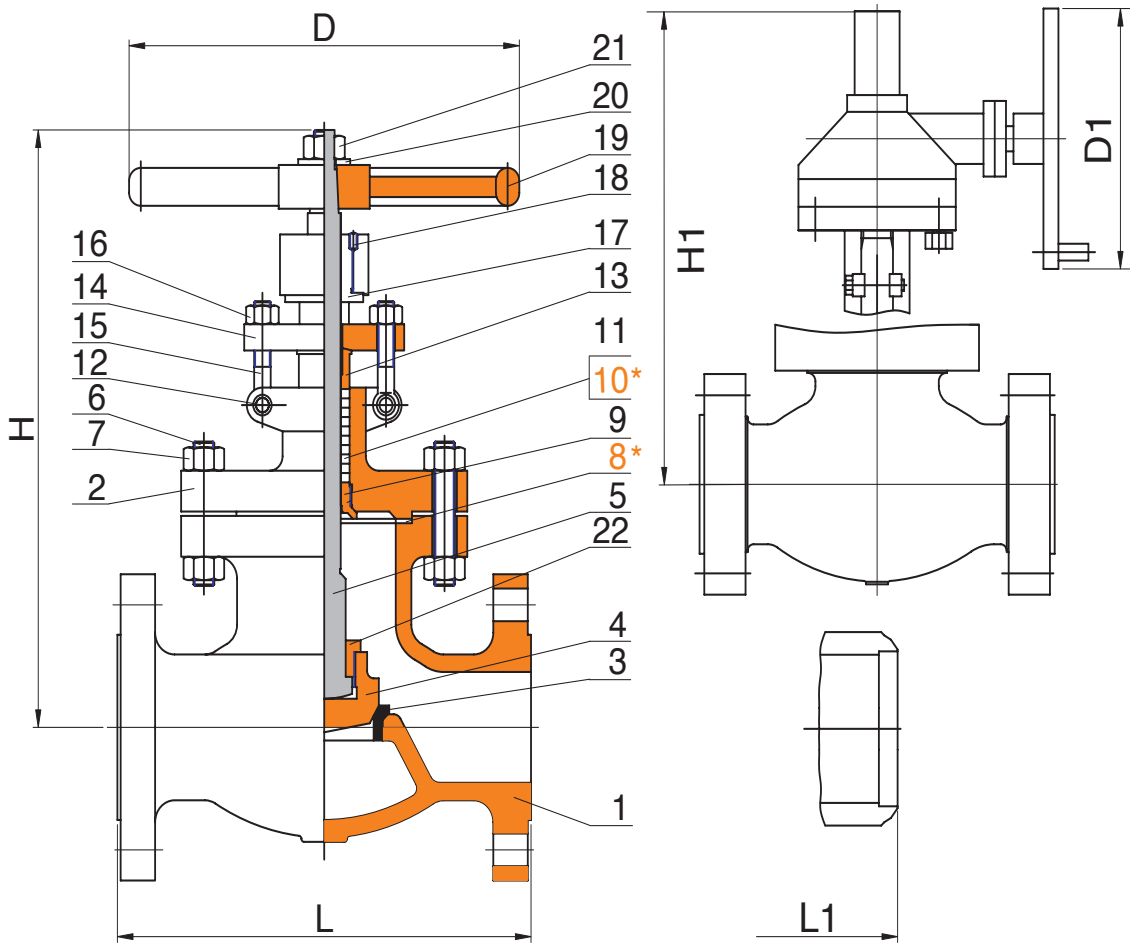
NO	Part Name	TRIM NO								
		1	2	5	8	9	10	12	15	16
3	Seat Ring	410	304	STL6	STL6	Monel	316	STL6	STL6	STL6
4	Disc			STL6	13 Cr			316	STL6	STL6
5	Stem			410				316	304	316
9	Backseat									
11	Lantern ring									
13	Gland									
22	Disc Nut									

** Body & Trim Material Design Also According to Customer's requirement.*

STANDARD MATERIAL SPECIFICATIONS (ASTM)

NO	Part Name	Carbon Steel		Alloy Steel		Stainless Steel			
		WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
1	Body	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
2	Bonnet	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
3	Seat Ring	A105	LF2	F304	F304	F304	F316	304L	316L
4	Disc	WCB	LCB	WC6	C5	CF8	CF8M	CF3	CF3M
6	Bonnet Bolt	B7	L7	B16	B16	B8	B8M		
7	Bonnet Nut	2H	4	4	4	8	8M		
8	Gasket	Graphite + Stainless steel or ring joint							
10	Stem Packing	Graphite							
12	Pin	A276-410							
14	Gland Flange	WCB	LCB	A105		CF8	CF8M	CF3	CF3M
15	Gland Eyebolt	B7	L7	B16		B8	B8M		
16	Gland Nut	2H	4	4		8	8M		
17	Stem Nut	A439 D2							
18	Screw	Carbon steel							
19	Handwheel	Ductile Iron or Steel							
20	Washer	Carbon Steel							
21	Handwheel Lock Nut	Carbon Steel				F6			

Globe Valves (Cast steel body) -Class 150 Lb - DN 2" to 36"



*Recommended Spare Parts

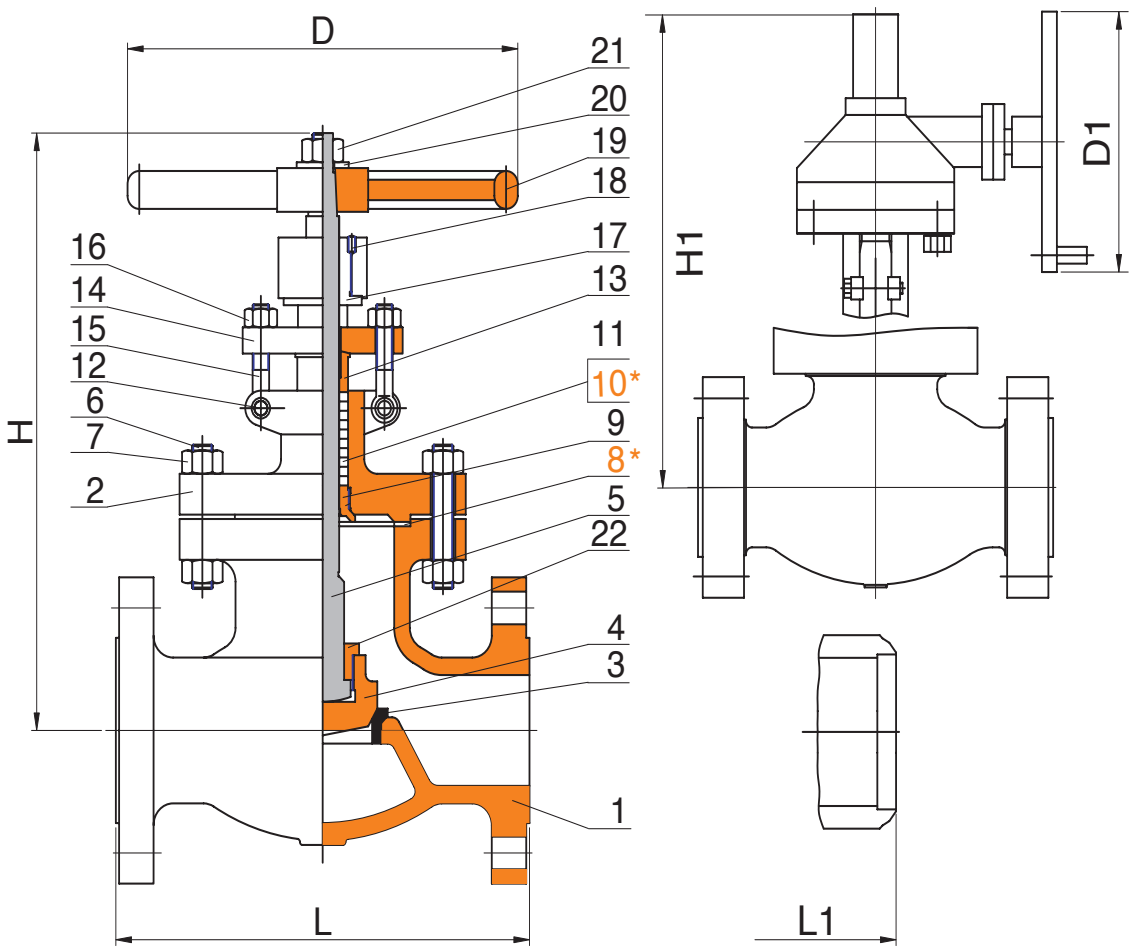
Size		Dimensions in mm						
Inches	mm	L (RF)* L1 (BW)*	H	H1	D	D1	Weight Kg
2"	50	203.2	378.0	-	200	-	22
2 1/2"	65	215.9	416.1	-	240	-	30
3"	80	241.3	387.1	-	280	-	40
4"	100	292.1	467.1	-	280	-	61
6"	150	406.4	539.0	-	400	460	103
8"	200	495.3	605.0	-	600	460	170
10"	250	622.3	852.9	893.1	600	460	320
12"	300	698.5	931.9	972.8	600	460	479
14"	350	787.4	1071.1	1080.0	700	460	580
16"	400	914.4	1146.1	1160.0	1000	600	790
18"	450	977.9	1201.9	1273.1	1000	600	1025
20"	500	977.9	-	1419.9	-	800	1248
22"	550	1066.8	-	1569.5	-	800	-
24"	600	1275.1	-	1719.1	-	800	1950
26"	650	1295.4	-	1868.7	-	1000	-
28"	700	1447.8	-	2018.0	-	1000	-

Size		Dimensions in mm					
Inches	mm	L (RF)*-L1 (BW)*	H	H1	D	D1	Weight Kg
30"	750	1524.0	-	2167.1		1000	-
32"	800	1524.0	-	2317.0		1000	-
36"	900	1955.8	-	2466.9		1000	-

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Screw Seat Ring up to 6"
- Welded Seat Ring from 8"
- Available with Gear Operator

Globe Valves (Cast steel body) - Class 300 Lb - DN 2" to 30"



*Recommended Spare Parts

Size		Dimensions in mm					
Inches	mm	L (RF)* - L1 (BW)*	H	H1	D	D1	Weight Kg
2"	50	266.7	382.0	-	200	-	27
2 1/2"	65	292.1	461.0	-	240	-	39
3"	80	317.5	426.0	-	280	-	53
4"	100	355.6	495.1	-	280	-	75
6"	150	444.5	588.0	634.5	450	460	155
8"	200	558.8	797.8	844.6	600	460	310
10"	250	622.3	914.4	960.1	700	600	483
12"	300	711.2	1040.9	972.8	700	600	690
14"	350	787.4	1055.1	1167.9	900	800	786
16"	400	914.4	1376.2	1304.5	-	800	1190
18"	450	977.9	-	1441.2	-	800	1600
20"	500	977.9	-	1578.6	-	1000	1900
22"	550	1117.6	-	1714.5	-	1000	-
24"	600	1275.1	-	1851.2	-	1000	2900
26"	650	1295.4	-	1987.8	-	1000	-
28"	700	1498.6	-	2125.0	-	1500	-

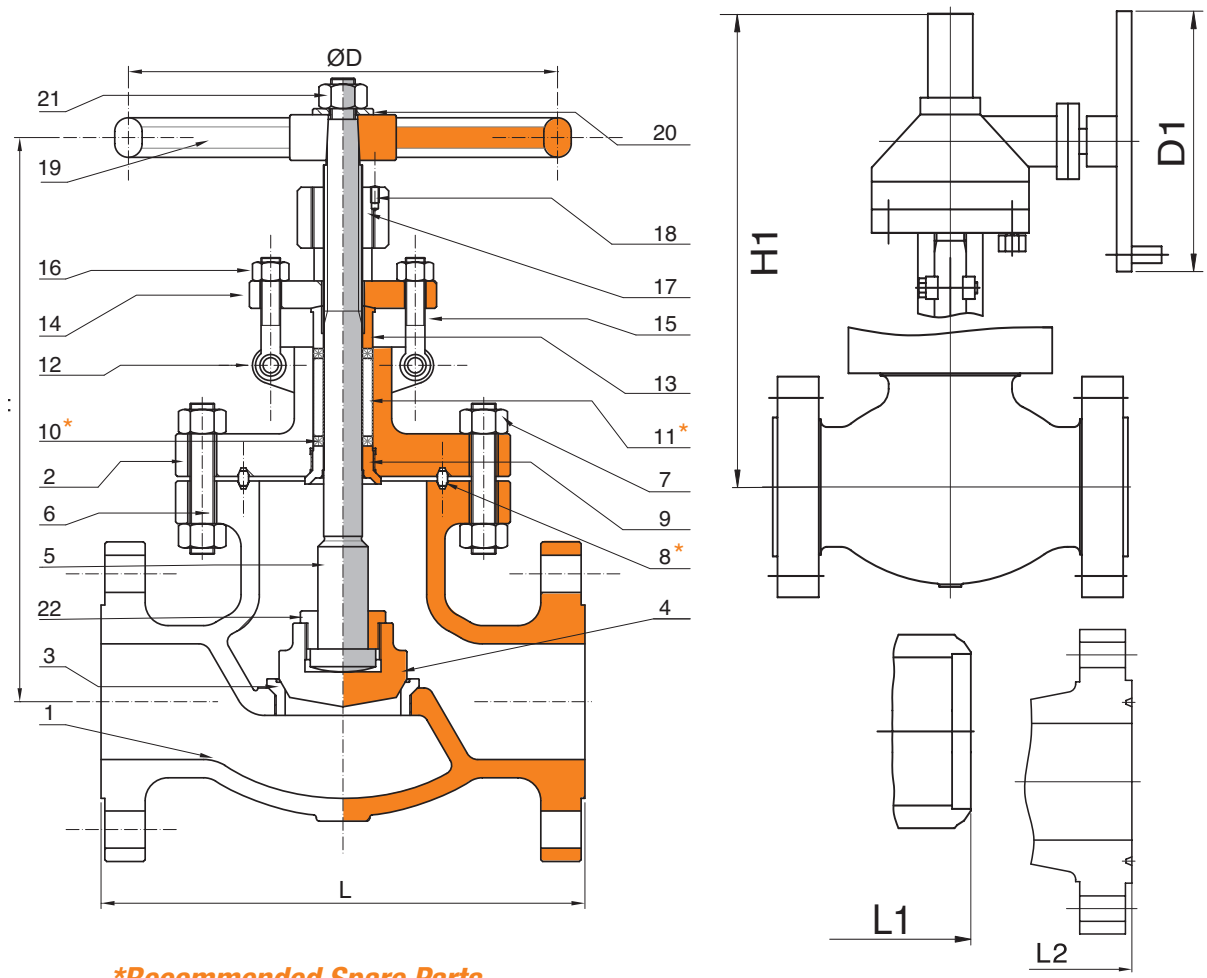
Size		Dimensions in mm					
Inches	mm	L (RF)*-L1 (BW)*	H	H1	D	D1	Weight Kg
30"	750	1593.9	-	2279.9	-	1500	-

Over size 30" available upon Customer's request

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Screw Seat Ring up to 6"
- Welded Seat Ring from 8"
- Available with Gear Operator

Globe Valves (Cast steel body) - Class 600 Lb - DN 2" to 30"



*Recommended Spare Parts

Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	292.1	295.1	445.0	-	250	-	44
2 1/2"	65	330.2	333.3	-	-	-	-	52
3"	80	355.6	358.7	541.0	-	320	-	76
4"	100	431.8	434.9	642.1	-	450	-	126
6"	150	558.8	561.9	805.9	-	600	-	327
8"	200	660.4	663.5	943.1	990.1	700	600	496
10"	250	787.4	790.5	1049.0	1095.3	700	600	720
12"	300	838.2	841.3	1212.1	1215.4	1000	800	1070
14"	350	889*	892.1	1426.2	1294.9	1000	1000	1750
16"	400	990.6	993.7	-	1431.5	-	1000	2260
18"	450	1092.2	1095.3	-	1568.2	-	1000	2900
20"	500	1193.8	1200.2	-	1705.6	-	1000	3500
22"	550	1295.4	1305.1	-	1841.5	-	1000	-
24"	600	1397.0	1406.7	-	2003.6	-	1500	4600
26"	650	1447.8	1460.5	-	2140.2	-	1500	-
28"	700	1600.2	1612.9	-	2277.4	-	1500	-
30"	750	1651.0	1663.7	-	2432.3	-	1500	-

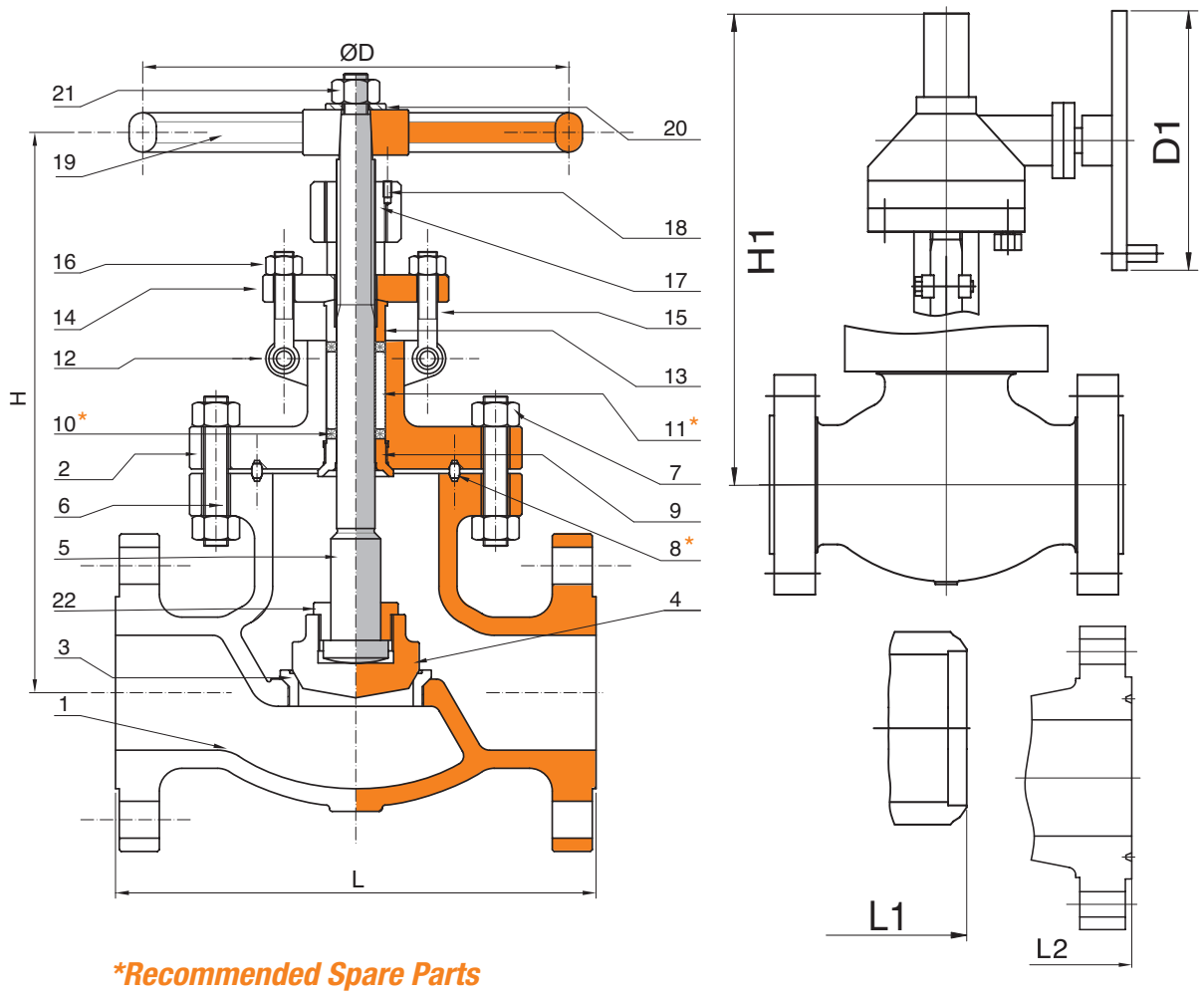
Over size 30" available upon Customer's request

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Screw Seat Ring up to 6"
- Welded Seat Ring from 8"
- Available with Gear Operator

Globe Valves (Cast steel body) - Class 900 Lb - DN 2" to 24"

• Bolted Bonnet Pressure Seal type available, according to customer's requirement.



*Recommended Spare Parts

Over size 24" available upon customer request

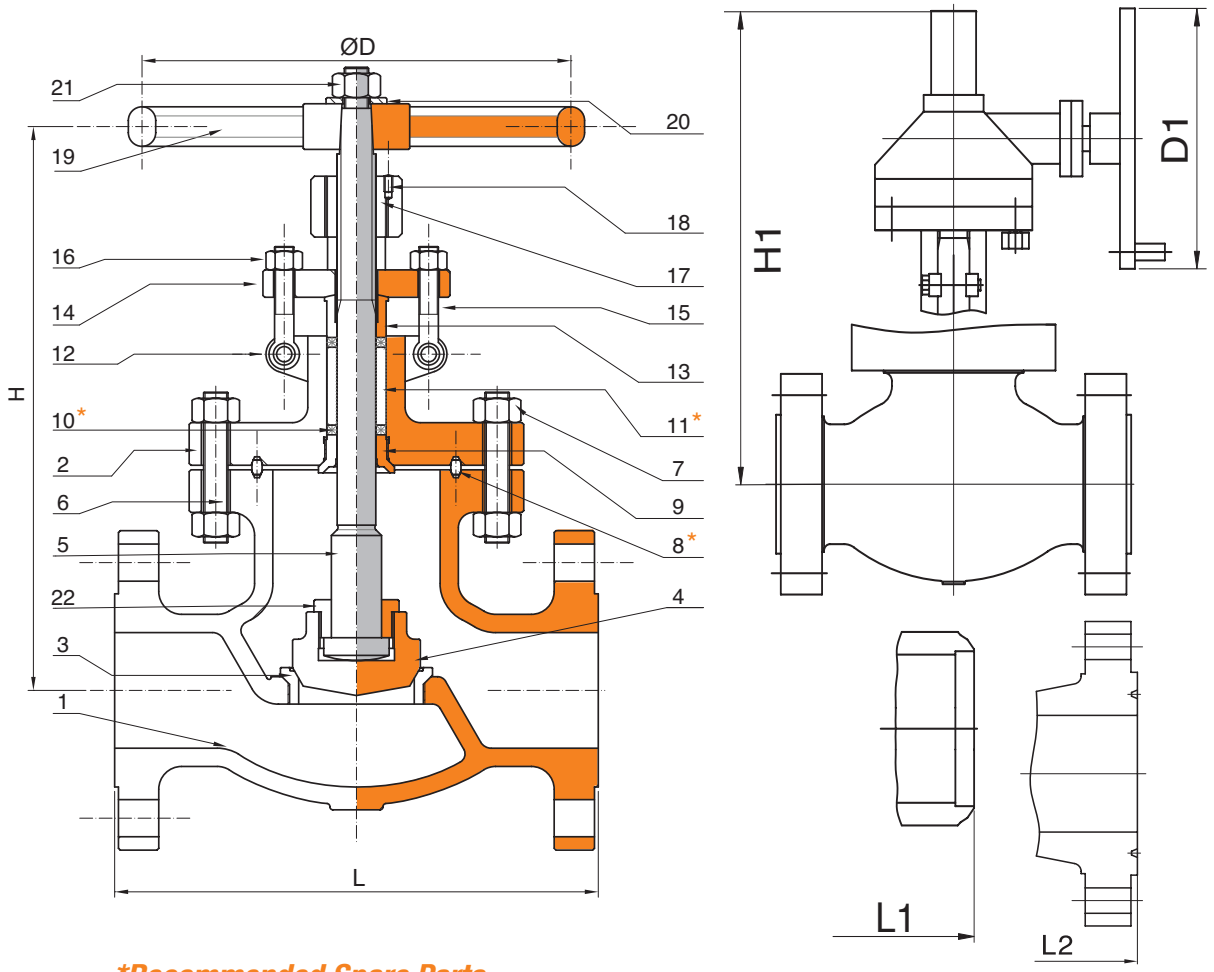
Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	368.3	371.4	521.97	-	320	-	84
2½"	65	419.1	422.2	521.97	-	320	-	139
3"	80	381.0	384.1	646.94	-	500	-	132
4"	100	457.2	460.3	717.04	789.9	550	460	221
6"	150	609.6	612.7	852.93	920.0	700	600	404
8"	200	736.6	739.7	1104.9	1010.9	900	600	722
10"	250	838.2	841.3	-	1329.9	-	800	1300
12"	300	965.2	968.3	-	1450.1	-	800	1800
14"	350	1028.7	1038.4	-	1596.6	-	1000	3150
16"	400	1130.3	1127.3	-	1750.1	-	1000	4100
18"	450	1219.2	1231.9	-	1889.3	-	1500	-
20"	500	1320.8	1333.5	-	2028.2	-	1500	-
22"	550	1320.8	-	-	2166.9	-	1500	-
24"	600	1549.4	1568.5	-	2306.8	-	1500	-

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Screw Seat Ring up to 6"
- Welded Seat Ring from 8"
- Available with Gear Operator

Globe Valves (Cast steel body) - Class 1500 Lb - DN 2" to 24"

• Bolted Bonnet Pressure Seal type available, according to customer's requirement.



*Recommended Spare Parts

Over size 24" available upon customer request

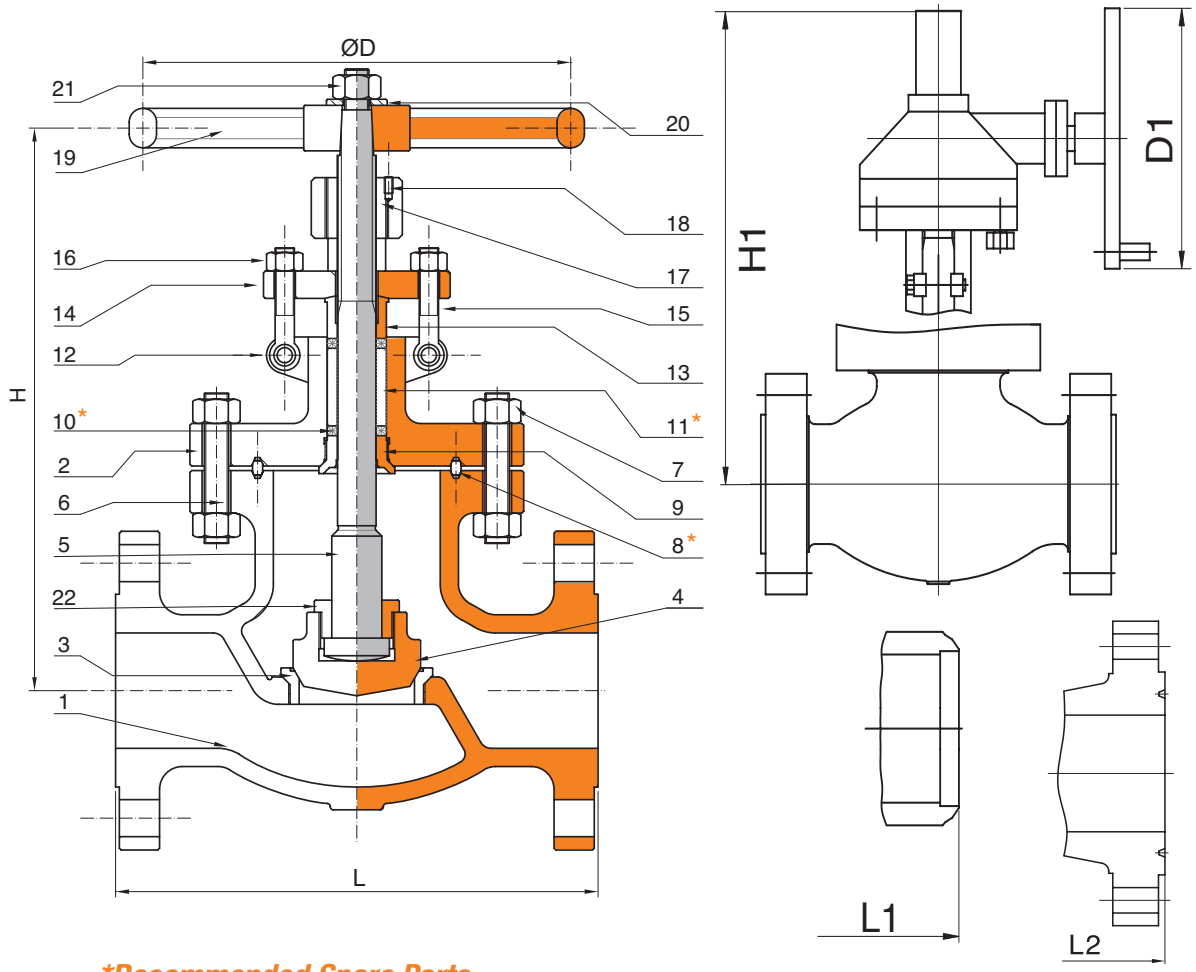
Size		Dimensions in mm						
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1	Weight Kg
2"	50	368.3	371.4	4522.0	-	400	-	91
2 1/2"	65	419.1	422.2	522.0	-	400	-	139
3"	80	469.9	473.0	728.0	-	550	-	205
4"	100	546.1	549.2	766.1	825.0	550	600	271
6"	150	704.9	712.5	996.7	1050.0	800	750	850
8"	200	831.9	842.8	-	1196.9	-	800	1210
10"	250	990.6	1000.3	-	1426.2	-	1000	2200
12"	300	1130.3	1146.1	-	1551.7	-	1000	3100
14"	350	1257.3	1276.4	-	1698.2	-	1500	5400
16"	400	1384.3*	1406.7	-	1864.4	-	1500	6900
18"	450	1536.7	1559.1	-	2016.3	-	1500	-
20"	500	1663.7	1686.1	-	2155.2	-	1500	-
22"	550	-	-	-	-	-	-	-
24"	600	1943.1	1971.6	-	2425.7	-	1550	-

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Screw Seat Ring up to 6"
- Welded Seat Ring from 8"
- Available with Gear Operator

Globe Valves (Cast steel body) - Class 2500 Lb - DN 2" to 12"

• Bolted Bonnet Pressure Seal type available, according to customer's requirement.

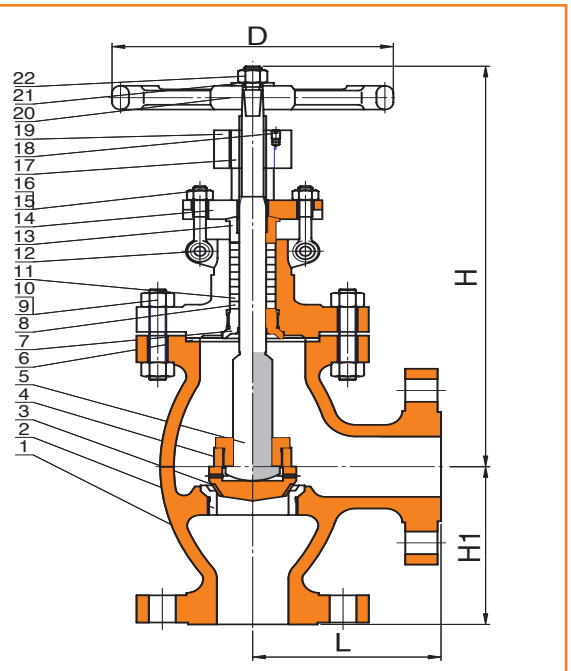


*Recommended Spare Parts

Over size 12" available upon customer request.

Size		Dimensions in mm					
Inches	mm	L (RF)*-L1 (BW)*	L2 (RTJ)*	H	H1	D	D1
2"	50	450.9	453.9	718.8	-	406.4	-
2 1/2"	65	508.0	514.4	800.1	-	508	-
3"	80	577.9	584.2	883.9	-	558.8	-
4"	100	673.1	682.8	-	1259.8	-	609.6
6"	150	914.4	927.1	-	1905.0	-	609.6
8"	200	1022.4	1038.1	-	2463.8	-	1016.0
10"	250	1270.0	1292.4	-	2844.8	-	1016.0
12"	300	1422.4	1444.8	-	3251.2	-	1219.2

Angle Globe Valves (Cast steel body) - DN 2" to 14"
Class 150 TO 1500 Lb



STANDARD MATERIAL SPECIFICATIONS

NO	Part Name	WCB	CF8M	CF8
1	Body	A105+410	316	304
2	Seat ring	A105+410	316	304
3	Disc	WCB+410	CF8M	CF8
4	Disc Nut	420	316	304
5	Stem	410	316	304
6	Gasket	Graphite + Soft Steel		
7	Back Seat ring	F6	316	304
8	Packing	Graphite		
9	Bolt B	B8M	B8	
10	Nut2H	8M	8	
11	Packing	Graphite		
12	Pin1035	316	304	
13	Gland	410	316	304
14	Gland Flange	WCB	CF8M	CF8
15	Eyebolt	B7	B8M	B8
16	Eyebolt nut	2H	8M	8
17	Stem nut	D-2	D-2	D-2
18	Screw	1035	410	410
19	Bonnet	WCB	CF8M	CF8
20	Handwheel	A47	A47	A47
21	Washer	1035	1065	1065
22	Handwheel nut	1035	1035	1035

STANDARD DESCRIPTION

- Outside Screw & Yoke
- Bolted Bonnet
- Available with Gear Operator & Automatic
- Special features according to Customer's requirement

Size — Class 150 Lb (Dimensions in mm)

Inches	mm	L (RF)*	H1	H	D
2"	50	102	102	390	200
2 1/2"	65	108	108	522	250
3"	80	121	121	522	250
4"	100	146	146	606	250
6"	150	203	203	778	350
8"	200	248	248	958	350
10"	250	311	311	1212	450
12"	300	349	349	1414	500
14"	350	394	394	1535	600

Size — Class 300 Lb

Inches	mm	L (RF)*	H1	H	D
2"	50	133	133	410	200
2 1/2"	65	146	146	468	200
3"	80	159	159	536	250
4"	100	178	178	629	300
6"	150	222	222	810	350
8"	200	279	279	1012	450
10"	250	311	311	1245	500
12"	300	356	356	1460	600
14"	350	-	-	-	-

Size — Class 900 Lb

Inches	mm	L (RF)*	H1	H	D
2"	50	184	184	480	300
2 1/2"	65	210	184	560	350
3"	80	191	184	596	350
4"	100	229	184	700	400
6"	150	305	184	947	500
8"	200	368	184	1148	550
10"	250	419	184	1320	700
12"	300	483	184	1505	700
14"	350	514	184	1630	700

Dimensions in mm

Size — Class 600 Lb

Inches	mm	L (RF)*	H1	H	D
2"	50	146	146	423	200
2 1/2"	65	165	165	498	250
3"	80	178	178	570	250
4"	100	216	216	678	300
6"	150	279	279	896	500
8"	200	330	330	1088	600
10"	250	394	394	1278	600
12"	300	419	419	1504	600
14"	350	-	-	-	-

Size — Class 1500 Lb

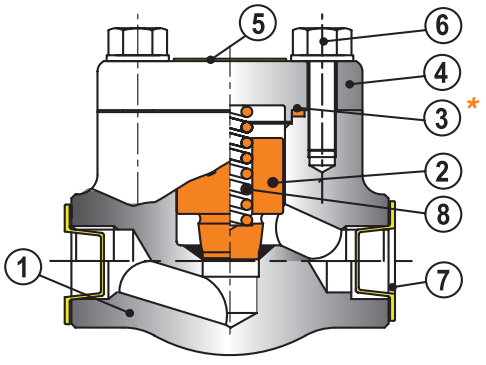
Inches	mm	L (RF)*	H1	H	D
2"	50	184	184	480	300
2 1/2"	65	210	210	565	350
3"	80	235	235	650	350
4"	100	273	273	757	400
6"	150	353	353	965	600
8"	200	416	416	1168	700
10"	250	495	495	1425	800
12"	300	565	565	1633	800
14"	350	629	629	1799	800

Check Valves Forged Steel Body - DN 1/2" to 2" Class 800 to 1500 Lb

• Bolted & Welded Cover

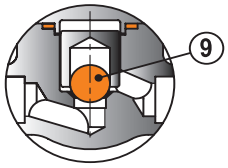
• Screwed & Socket Weld Ends

PISTON CHECK



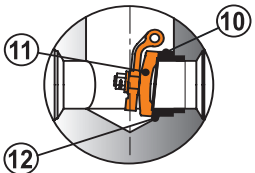
FLOW DIRECTION

BALL CHECK



FLOW DIRECTION

SWING CHECK



FLOW DIRECTION

*Recommended Spare Parts

Part	Name	Material
1	Body	A105 N
2	Piston Disc	A276 410
3	Gasket	F304 + Graphite
4	Cover	A105 N
5	Nameplate	Aluminium
6	Hex Head Bolt	A193 B7
7	Plug	Plastic
8	Spring	Stainless Steel
9	Ball	A182 F304
10	Hinge pin	A276 410
11	Hinge	A105 N
12	Disc	A276 410

Design	API 602 BS 5352
Flanges	ASME / ANSI B16.5
P/T Rating:	ASME / ANSI B16.34

NOTE: Other material upon request

BODY - The forged steel body is designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34.

COVER - The forged steel cover is designed to the basic dimensional requirements of the applicable specifications such as API 602 and ASME B16.34.

ODY-COVER JOINT - Two different cover joint design are available. These are bolted and welded cover.

GASKET - The bolted cover gasket is a contained, controlled compression, spiral wound gasket.

COVER BOLTING - The cover bolting is manufactured in carbon steel, stainless steel or alloy steel.

SEAT - The body seat for the piston and ball check is an integral weld overlay and are part of the valve trim. The swing check valve is supplied with a separate seat ring which is pressed into the valve body.

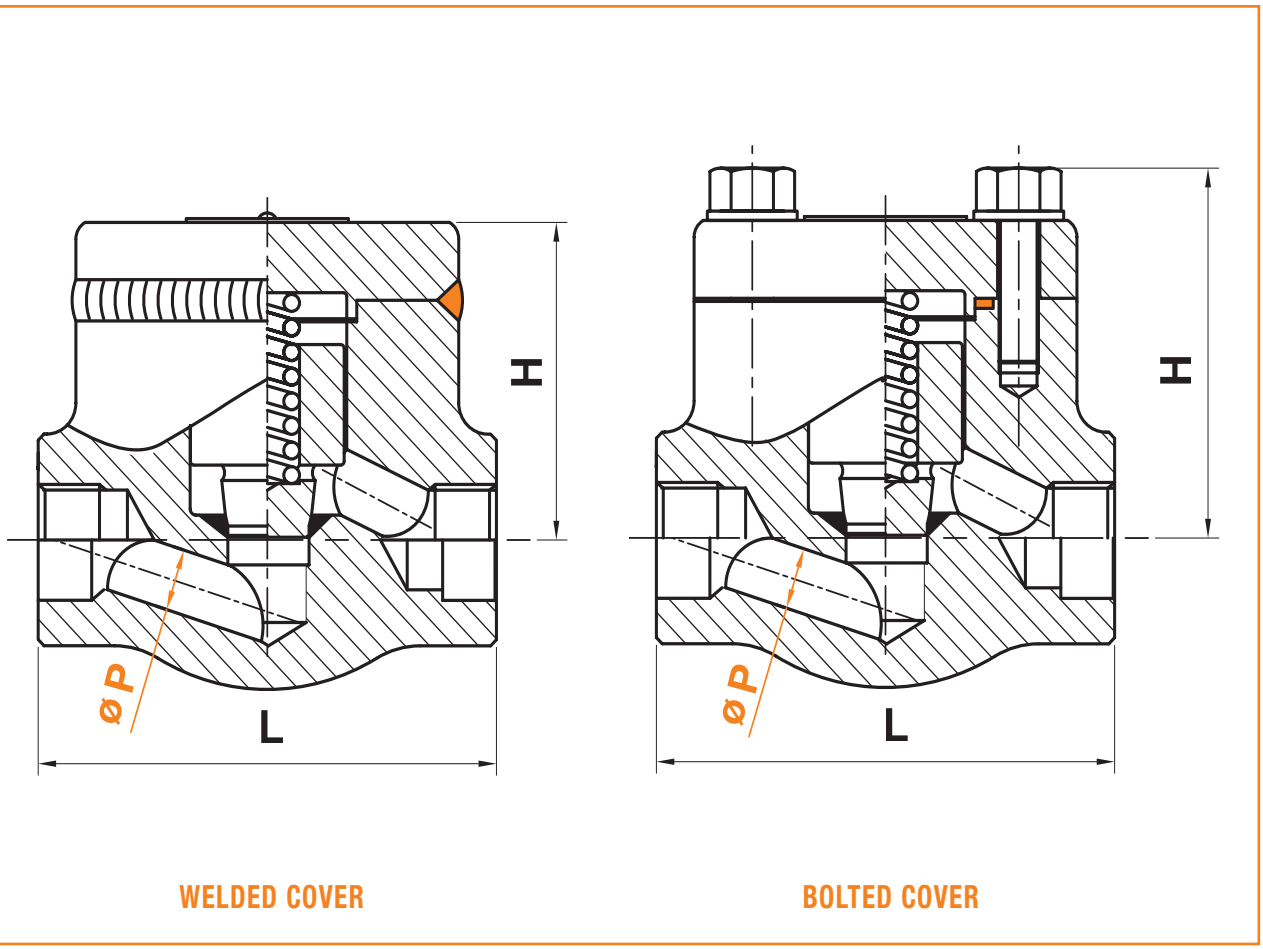
PISTON, BALL OR DISC - The piston, ball or disc are forged according to the valve trim.

SPRING - The spring is in stainless steel material.

Check Valves Forged Steel Body - DN 1/2" to 2" Class 800 to 1500 Lb

• Bolted & Welded Cover

• Reduced & Full Port



WELDED COVER

BOLTED COVER

BOLTED & WELDED COVER CHECK REDUCED PORT DIMENSIONS

SIZE	øP (*)				L (*)		H (*)		Unit weight (Kg)	
inch	Ball & Piston Port		Swing Port		End to end		Center to Top Open		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9,5	9,5	10	10	79	111	61	79	1,2	3,4
3/4	12,7	12,7	13,5	13,5	92	111	65	79	1,5	3,4
1	17,5	17,5	17,5	17,5	111	130	79	97	3,1	5,5
1 - 1/4	23,8	23,8	23,8	23,8	120	152	95	104	3,9	6,0
1 - 1/2	29,5	29,5	29	29	152	172	103	120	5,6	9,2
2	36,5	36,5	36,5	36,5	172	220	118	139	8,9	12,9

** Dimensions are expressed in millimetres*

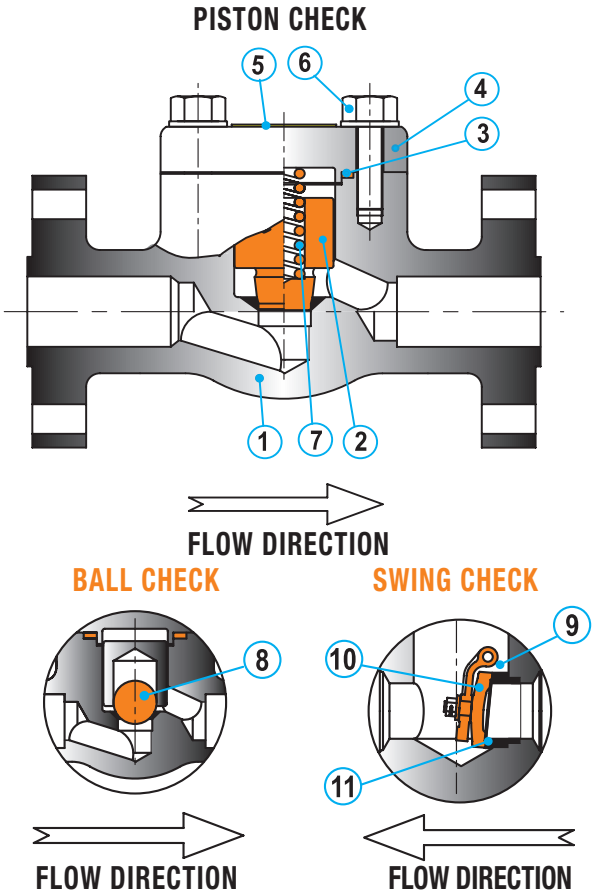
BOLTED & WELDED COVER CHECK FULL PORT DIMENSIONS

SIZE	øP (*)				L (*)		H (*)		Unit weight (Kg)	
inch	Ball & Piston Port		Swing Port		End to end		Center to Top Open		(Kg)	
	800#	1500#	800#	1500#	800#	1500#	800#	1500#	800#	1500#
1/2	9,5	9,5	10	10	92	111	65	79	1,5	3,3
3/4	12,7	12,7	13,5	13,5	111	130	79	97	3,1	5,5
1	17,5	17,5	17,5	17,5	120	152	95	104	3,9	6,0
1 - 1/4	23,8	23,8	23,8	23,8	152	172	103	120	5,6	9,2
1 - 1/2	29,5	29,5	29	29	172	220	118	139	8,9	12,9
2	36,5	36,5	36,5	36,5	200	220	132	215	12,5	16,2

** Dimensions are expressed in millimetres*

Forged Steel Body Check Valves- DN 1/2" to 2" Class 150 to 600 Lb

• Bolted Cover



Part	Name	Material
1	Body	A105 N
2	Piston Disc	A276 410
3	Gasket	F304 + Graphite
4	Cover	A105 N
5	Nameplate	Aluminium
6	Hex Head Bolt	A193 B7
7	Spring	Stainless Steel
8	Ball	A182 F304
9	Hinge pin	A276 410
10	Hinge	A105 N
11	Disc	A276 410

Design	**API 602** **BS 5352**
Flanges	**ASME / ANSI B16.5**
P/T Rating:	**ASME / ANSI B16.34**

NOTE: Other materials upon request

BODY - The integral forged steel body is designed to the basic dimensional requirements of the applicable specifications as API 602 and ASME B16.34.

COVER - The forged steel cover is designed to the basic dimensional requirements of the applicable specifications such as API 602 and B16.34.

BODY-COVER JOINT - Cover joint design is bolted type.

GASKET - The bolted cover gasket is a contained, controlled compression, spiral wound gasket.

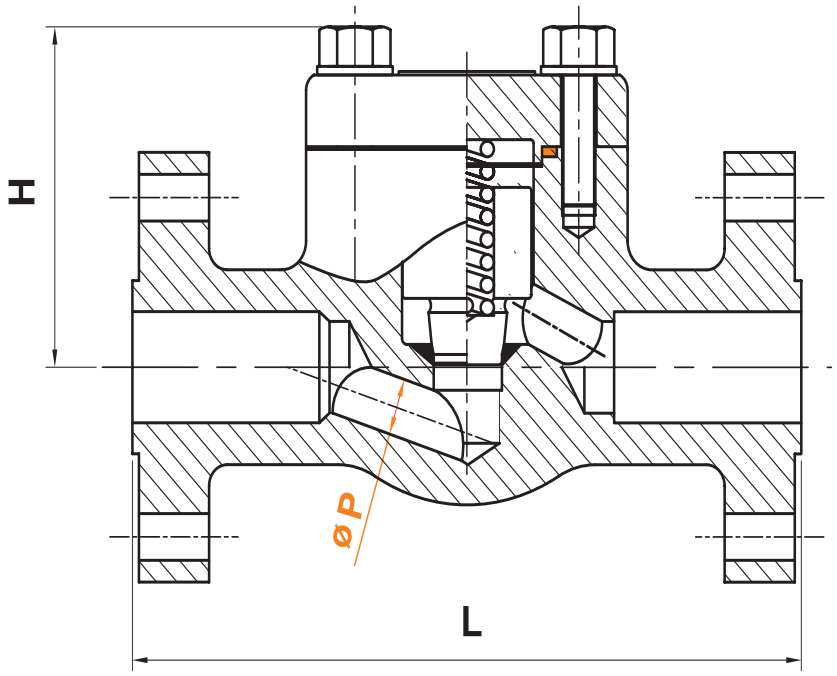
BONNET BOLTING - The cover bolting is manufactured in carbon steel, stainless steel or alloy steel

SEAT - The body seat for the piston and ball check is an integral weld overlay and are part of the valve trim. The swing check valve is supplied with a separate seat ring pressed into the valve body.

PISTON, BALL OR DISC - The piston, ball or disc is forged according to the valve trim.

SPRING - The spring supplied is in stainless steel material.

Forged Steel Body Check Valves Bolted Cover- DN 1/2" to 2"
Integral flanges ends - Class 150 to 600 Lb



FULLPORT - CLASS 150 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	4.25	4.62	5	6.50	8
	mm	108	117.5	127	165	203
H	inch	2.95	3.35	3.94	4.92	5.51
	mm	75	85	100	125	140
Weight	kg	2,8	3,6	5,2	10	16

REDUCED PORT - CLASS 150 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	4.25	4.62	5	6.50	8
	mm	108	117.5	127	165	203
H	inch	2.95	2.95	3.35	4.33	4.92
	mm	75	75	85	110	125
Weight	kg	2,3	3,1	4,5	8,4	14

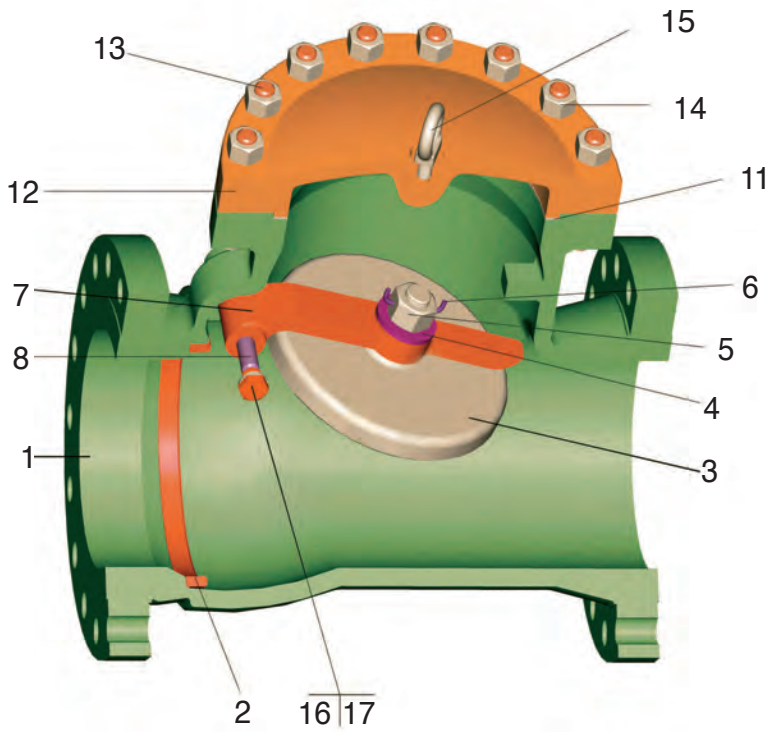
FULLPORT - CLASS 300 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	6	7	8*	9.02*	10.51
	mm	152,5	178	203*	229*	267
H	inch	2.95	3.54	3.94	4.72	5.91
	mm	75	90	100	120	150
Weight	kg	3,6	6,4	8,2	15	21

REDUCED PORT - CLASS 300 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	6	7	8*	9.02*	10.51
	mm	152,5	178	203*	229*	267
H	inch	2.95	3.15	3.46	4.53	5.12
	mm	75	80	88	115	130
Weight	kg	3,4	5,3	7,5	14	19

FULLPORT - CLASS 600 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	6.50	7.51	8.50	9.50	11.50
	mm	165	191	216	241	292
H	inch	2.95	3.54	3.94	4.72	5.91
	mm	75	90	100	120	150
Weight	kg	3,8	6,5	8,5	16	23

REDUCED PORT - CLASS 600 Lb						
Size	**inch**	**1/2**	**3/4**	**1**	**1 1/2**	**2**
	mm	**15**	**20**	**25**	**40**	**50**
L	inch	6.50	7.51	8.50	9.50	11.50
	mm	165	191	216	241	292
H	inch	2.83	3.15	3.35	4.53	5.12
	mm	72	80	85	115	130
Weight	kg	3,5	5,7	8	14,5	19,5

Cast Steel Swing Check Valves - Class 150 to 2500 Lb



SPECIFICATIONS

- Basic Design: API 6D
- Face to face: ASME B16.10
- Flanges: Up to 24" ASME B 16.5
- Over 24": MSS SP 44
  ASME B 16.47
  API 605
- BW Ends: ASME B16.25
- Testing: API 598

NOTE: Other materials upon request

N°	Part Name
01	Body
02	Seat
03	Disc
04	Washer
05	Disc Nut
06	Disc Pin
07	Hinge
08	Pin
09	Nameplate (not represented)
10	Rivet (not represented)
11	Cover Gasket
12	Cover
13	Stud Bolt
14	Nut
15	Eyebolt
16-17	Plug Gasket - Plug

TRIM-MATERIALS ACCORDING TO API 600*

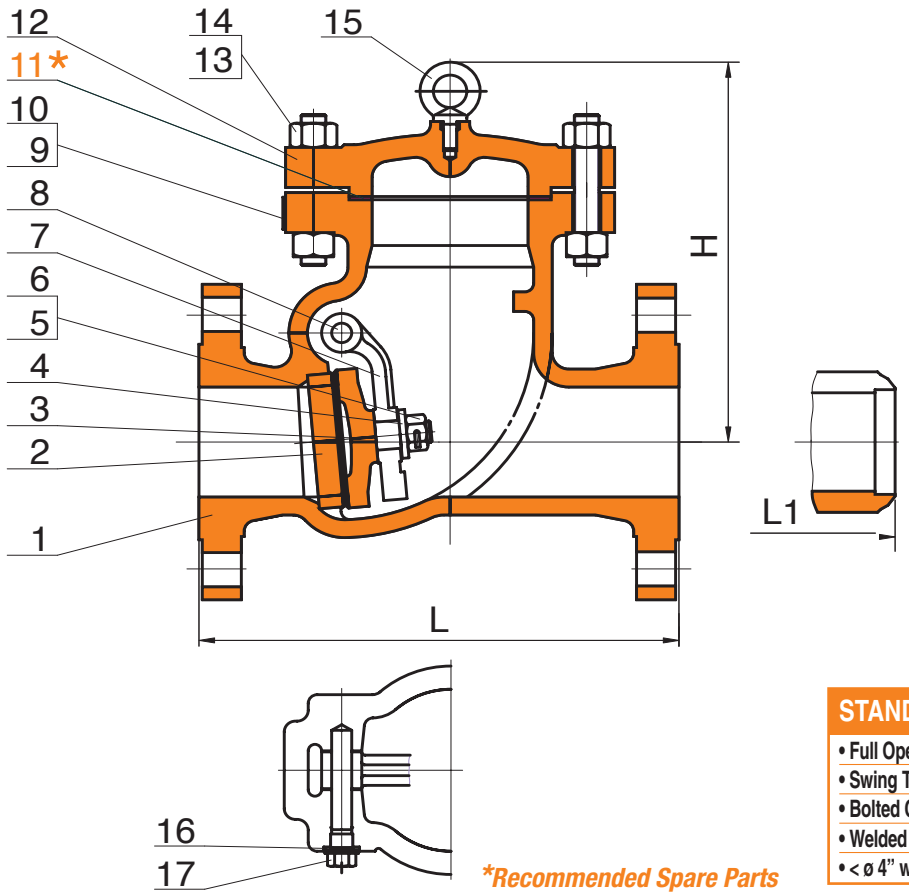
NO	Part Name	TRIM NO												
		1	2	5	8	9	10	11	12	14	15	16	18	70
2	Seat	410	304	STL6	STL6	Monel	316	STL6	STL6	STL6	STL6	STL6	STL6	Bronze
3	Disc			STL6	410			Monel	316	Alloy 20	STL6	STL6	STL6	
4	Washer			410							304	316	Alloy 20	
5	Disc Nut													
6	Disc Pin													
8	Pin													
17	Plug													

** Body & Trim Material Design Also According to Customer's requirement.*

STANDARD MATERIAL SPECIFICATIONS (ASTM)

NO	Part Name	Carbon Steel		Alloy Steel	Stainless Steel	
		WCB	LCB	WC6	CF8	CF8M
1	Body	WCB	LCB	WC6	CF8	CF8M
2	Seat	A105	LF2	F11	304	316
3	Disc	WCB	LCB	WC6	CF8	CF8M
7	Hinge	WCB	LCB	WC6	CF8	CF8M
9	Nameplate	304				
10	Rivet	304				
11	Cover Gasket	Graphite + Stainless steel				
12	Cover	WCB	LCB	WC6	CF8	CF8M
13	Stud Bolt	B7M	L7M	B16	B8	B8
14	Nut	2HM	7M	4	8	8
15	Eyebolt	1025				
16	Plug Gasket	Graphite + Stainless steel				

Cast Steel Body Swing Check - Class 150 Lb - 300 Lb - DN 2" to 48"



*Recommended Spare Parts

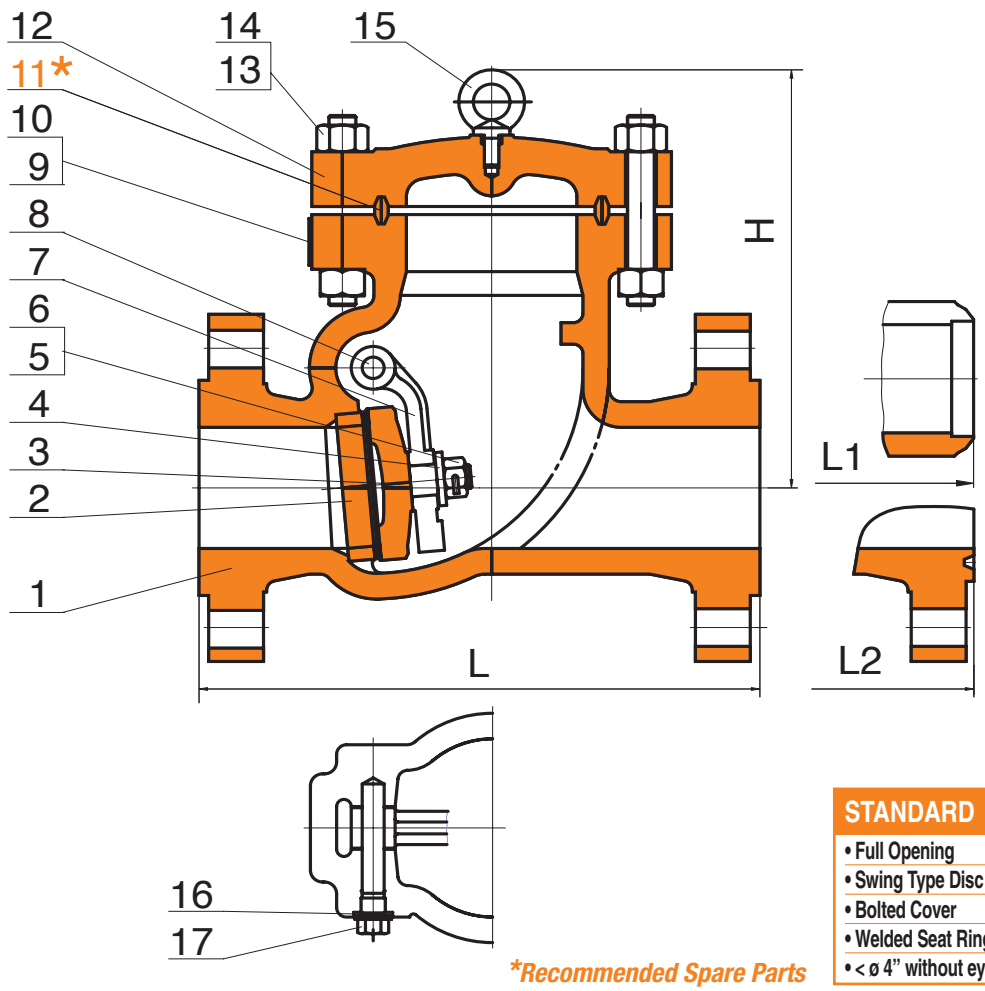
STANDARD DESCRIPTION

- Full Opening
- Swing Type Disc
- Bolted Cover
- Welded Seat Ring
- < ø 4" without eyebolt

Size		Class 150 Lb			Class 300 Lb		
Inches	mm	L (RF)*-L1 (BW)*	H	Weight Kg	L (RF)*-L1 (BW)*	H	Weight Kg
2"	50	203.2	146	19	266.7	178	24
2 1/2"	65	216.0	160	22	292.1	190	33
3"	80	241.3	172	28.5	317.5	231	44
4"	100	292.1	209	49	355.6	268	75
6"	150	355.6	312	76	444.5	328	124
8"	200	495.3	363	140	533.4	406	188
10"	250	622.3	444	207	622.3	460	325
12"	300	698.5	519	330	711.2	550	475
14"	350	787.4	596	409	838.2	608	690
16"	400	863.6	611	602	863.6	666	900
18"	450	977.9	655	680	977.9	695	1100
20"	500	977.9	668	750	1016.0	700	1330
22"	550	1066.8	724	-	1346.2	825	-
24"	600	1295.4	763	1280	1593.9	1080	1950
32"	800	1524.0	1060	2900	2082.8	1475	4900
36"	900	1956.0	1350	3690	2235.2	1770	6300
48"	1200	2590.8	1870	-	2743.2	2070	-

*Face to face, end to end dimensions in millimetres

Cast Steel Body Swing Check - Class 600 Lb - 900 Lb
DN 2" to 30"



*Recommended Spare Parts

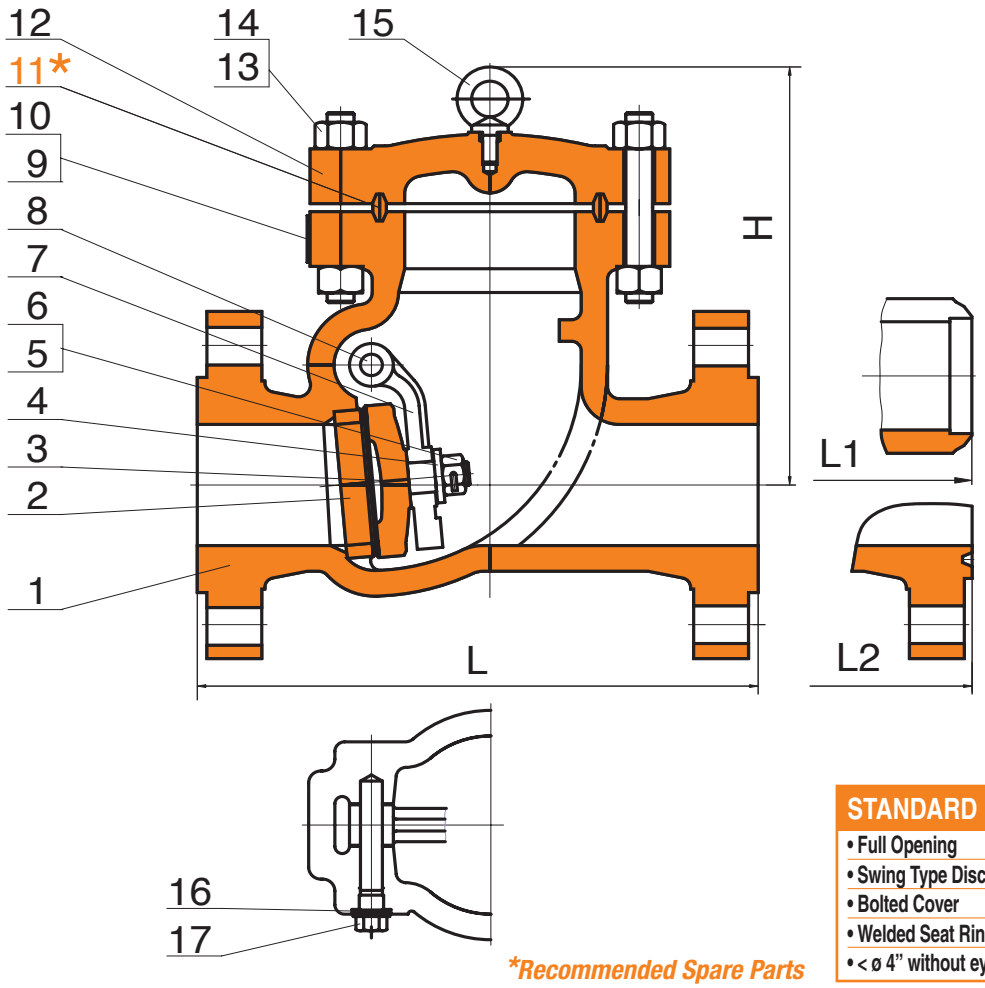
STANDARD DESCRIPTION

- Full Opening
- Swing Type Disc
- Bolted Cover
- Welded Seat Ring
- < ø 4" without eyebolt

Size		Class 600 Lb				Class 900 Lb			
inches	mm	$L_{(RF)}$*	L1 (BW)* L2 (RTJ)*	H	Weight Kg	$L_{(RF)}$*	L1 (BW)* L2 (RTJ)*	H	Weight Kg
2"	50	292.1	295.3	225	39	368.3	371.5	308	70
2 1/2"	65	330.2	333.4	250	49	419.1	422.1	325	88
3"	80	355.6	358.6	270	61	381.0	384.2	315	98
4"	100	431.8	434.8	310	103	457.2	460.2	350	137
6"	150	558.8	561.8	400	230	609.6	612.6	453	333
8"	200	660.4	663.4	460	354	736.6	739.6	506	510
10"	250	787.4	790.6	580	626	838.2	841.2	616	840
12"	300	838.2	841.2	618	790	965.2	968.2	674	1180
14"	350	889.0	892.0	657	820	1028.7	1038.4	830	1680
16"	400	990.6	993.6	710	1400	1130.3	1140.0	886	1980
18"	450	1092.2	1095.4	764	1800	1219.2	1231.9	1003	2400
20"	500	1193.8	1200.2	882	2300	1320.8	1333.5	1076	3200
24"	550	1397.0	1406.7	1020	3330	1549.4	1568.5	1360	5500
30"	600	1651.0	1663.7	1280	6200	1828.8	1851.2	1660	-

Dimensions are expressed in millimetres

Cast Steel Body Swing - Check Class 1500 Lb - 2500 Lb
DN 2" to 24"



*Recommended Spare Parts

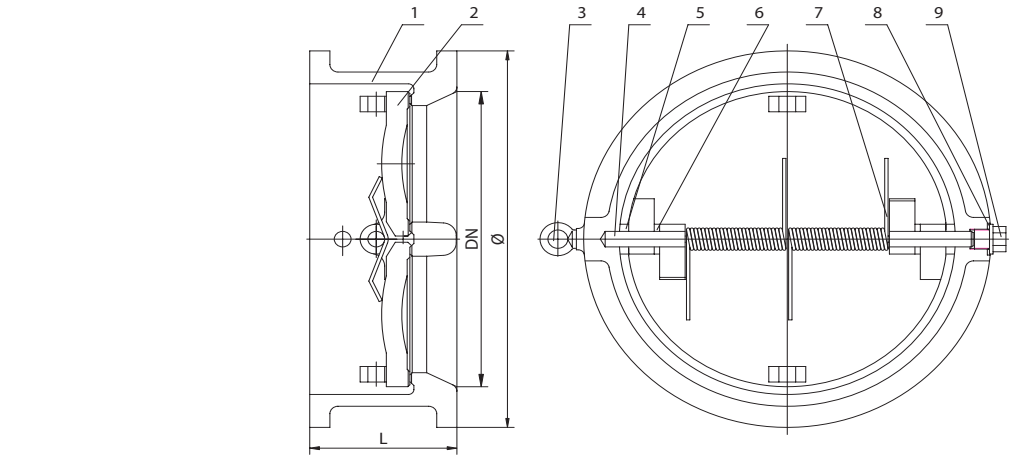
STANDARD DESCRIPTION

- Full Opening
- Swing Type Disc
- Bolted Cover
- Welded Seat Ring
- < ø 4" without eyebolt

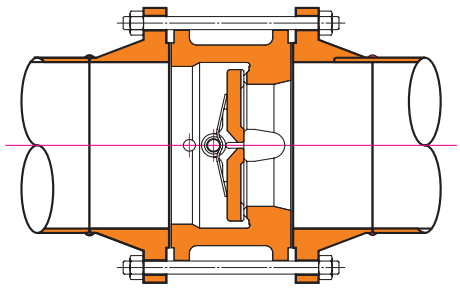
Size		Class 1500 Lb			Class 2500 Lb		
inches	mm	L1 (BW)* L2 (RTJ)*	L2 (RTJ)*	H	L1 (BW)* L2 (RTJ)*	L2 (RTJ)*	H
2"	50	368.3	371.5	308	450.9	453.9	416
2 1/2"	65	419.1	422.1	325	508.0	514.4	421
3"	80	469.9	473.0	342	577.9	584.2	441
4"	100	546.1	549.1	410	673.1	682.8	479
6"	150	704.9	711.2	514	914.4	927.1	511
8"	200	831.9	841.5	592	1022.4	1038.1	712
10"	250	990.6	1000.3	673	1270.0	1292.4	854
12"	300	1130.3	1146.0	755	1422.4	1444.8	1000
14"	350	1257.3	1276.4	838	-	-	-
16"	400	1384.3	1406.7	1054	-	-	-
18"	450	1536.7	1559.1	1305	-	-	-
20"	500	1663.7	1686.1	1450	-	-	-
24"	600	1943.1	1971.5	1690	-	-	-

Dimensions are expressed in millimetres

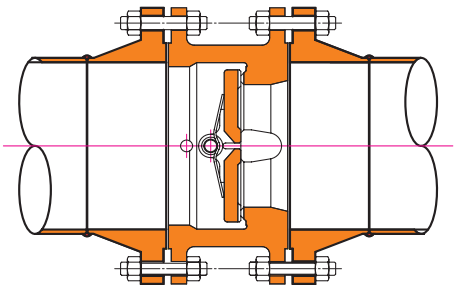
Dual Plate Wafer Check Valves (Cast steel Body)
Class 150 Lb to 600 Lb - DN2" to 36" Class 900 Lb to1500 Lb - DN 2" to 24"



WAFER TYPE



FLANGED TYPE



Dual Plate Check Valves API 594 can be Wafer Type or Flanged Type

NOTE: Other materials upon request

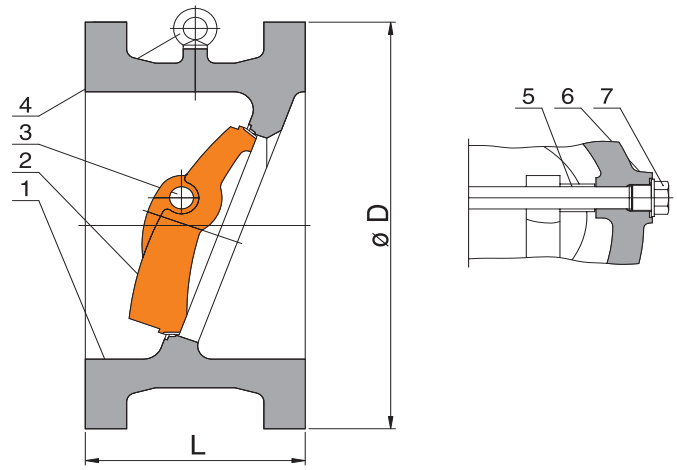
STANDARD MATERIAL SPECIFICATIONS (ASTM)*				
		Carbon Steel	Stainless Steel	
NO	Part Name	WCB	LCB	CF8M
1	Body	WCB + 410	LCB + 316	CF8M
2	Disc	WCB + 410	LCB + 316	CF8M
3	Spring		316 / Inconel	
4	Hinge Pin	410	316	316
5	Pin	410	316	316
6	Bearing	410	316	316
7	Washer	410	316	316
8	Bush	410	316	316
9	Packing		Graphite	
10	Gland	410	316	316
11	Stud Bolt	B7	L7	B8
12	Nut	2H	7	8

** Body & Trim Material Design Also According to Customer's requirement.*

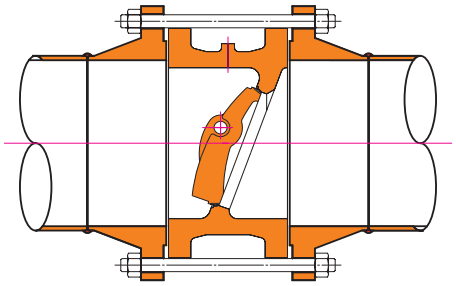
CLASS \ SIZE	inches	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	32"	36"
	mm	50	80	100	150	200	250	300	350	400	450	500	600	750	800	900
150 LB	L (RF)	60	73	73	98	127	146	181	184	191	203	219	222	305	318	368
	D	103	136	175	220	277	340	408	451	515	549	603	717	883	940	1048
	Weight kg	3.2	6.4	9.5	16	36	52	97	123	133	141	215	358	662	685	710
300 LB	L (RF)	60	73	73	98	127	146	181	222	232	264	292	318	368	394	483
	D	111	149	181	251	308	362	422	485	540	597	654	774	953	1006	1118
	Weight kg	3.2	7.7	10.5	20	40	56	98	176	210	295	365	520	950	1270	1635
600 LB	L (RF)	60	73	79	136	165	213	229	273	305	362	368	438	505	559	635
	D	111	149	194	267	321	400	458	492	565	613	683	791	972	1022	1130
	Weight kg	3.2	7.7	12.7	36	72	118	164	186	330	394	544	820	1578	1743	2120
900 LB	L (RF)	70	83	102	159	206	248	305	356	384	468	533	559	-	-	-
	D	143	168	206	289	359	435	498	521	575	638	699	838	-	-	-
	Weight kg	8.2	11.8	19.1	54	122	196	293	396	532	611	637	1230	-	-	-
1500 LB	L (RF)	70	83	102	159	206	248	305	356	384	468	533	559	-	-	-
	D	143	175	210	283	352	435	521	578	641	705	756	902	-	-	-
	Weight kg	8.2	12.7	20.5	56	128	205	373	484	588	791	1275	2713	-	-	-

Dimensions are expressed in millimetres

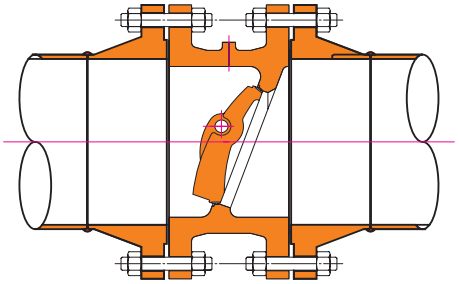
Wafer Tilting Disc (Cast steel Body) - Check Valves - DN 2" to 24" Class 150 Lb to 1500 Lb



WAFER TYPE



FLANGED TYPE



Tilting Check Valves API 594 can be Wafer Type or Flanged Type

STANDARD MATERIAL SPECIFICATIONS (ASTM)*				
		Carbon Steel	Alloy Steel	Stainless Steel
NO	Part Name	WCB	LCB	CF8M
1	Body	WCB + STL	LCB + 316	CF8M
2	Disc	WCB + 410	LCB + 316	CF8M
3	Hinge Pin	410	316	316
4	Eyebold	1025		
5	Bush	410	316	316
6	Plug Gasket	Graphite + Stainless steel		
7	Plug	1025	LF2	316

BASIC DESIGN STANDARDS	
Basic Design	API 594
Face to Face	API 594
Flanges up to 24"	ANSI B16.5
Flanges from to 26"	ANSI B16.47
Testing	API 598

NOTE: Other materials upon request

SIZE / CLASS	inches	2"	3"	4"	6"	8"	10"	12"	14"	16"	18"	20"	24"
	mm	50	80	100	150	200	250	300	350	400	450	500	600
150 LB	L (RF)	60	73	73	98	127	146	181	184	191	203	219	222
	D	102	136	175	220	277	340	408	451	515	549	603	717
300 LB	L (RF)	60	73	73	98	127	146	151	222	232	264	292	318
	D	111	149	181	251	308	362	422	485	540	597	654	774
600 LB	L (RF)	60	73	79	136	165	213	229	273	305	362	368	438
	D	111	149	194	267	321	400	458	492	565	613	683	791
900 LB	L (RF)	70	83	102	159	206	248	305	356	384	468	533	559
	D	143	168	206	289	359	435	498	521	575	638	699	838
1500 LB	L (RF)	70	83	102	159	206	248	305	356	384	468	533	559
	D	143	175	210	283	352	435	521	578	641	705	756	902

Dimensions are expressed in millimetres

ANSI CLASS 150 Pressure -Temperature Ratings to ANSI B16.34

Temperature	WORKING PRESSURE (bar)										
C°	WCB (a)	LCB (b)	WC1 (c)	WC6 (d)	WC9 (d)	C5	C12	CF8	CF8M	CF3 (e)	CF3M (f)
- 29 to 38	19.6	18.4	18.4	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0
50	19.2	18.1	18.3	19.2	19.2	19.2	19.2	18.4	18.4	18.4	18.4
100	17.7	17.3	17.7	17.7	17.7	17.7	17.7	15.7	16.2	15.7	16.2
150	15.8	15.8	15.8	15.8	15.8	15.8	15.8	13.9	14.8	13.9	14.8
200	14.0	14.0	14.0	14.0	14.0	14.0	14.0	12.6	13.7	12.6	13.7
250	12.1	12.1	12.1	12.1	12.1	12.1	12.1	11.7	12.1	11.7	12.1
300	10.2	10.2	10.2	10.2	10.2	10.2	10.1	10.2	10.2	10.2	10.2
350	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4	8.4
400	6.5	-	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5	6.5
425	5.6	-	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
450	4.7	-	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7	4.7
500	2.8	-	2.8	2.8	2.8	2.8	2.8	2.8	2.8	-	2.8
525	1.9	-	1.9	1.9	1.9	1.9	1.9	1.9	1.9	-	-
550	-	-	-	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	-	-
600	-	-	-	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	-	-
650	-	-	-	-	-	1.3 (g)	1.3 (g)	1.3 (g)	1.3 (g)	-	-
700	-	-	-	-	-	-	-	1.3 (g)	1.3 (g)	-	-
750	-	-	-	-	-	-	-	1.3 (g)	1.3 (g)	-	-
800	-	-	-	-	-	-	-	1.0 (g)	1.0 (g)	-	-

a) Permissible, but not recommended for prolonged usage above 425°C (800°F)
b) Not be used over 343°C (650°F)
c) Permissible, but not recommended for prolonged usage above 455°C (850°F)
d) Not be used over 593°C (1100°F)
e) Not be used over 425°C (800°F)
f) Not be used over 455°C (850°F)
g) For welding end valves only

ANSI CLASS 300 Pressure -Temperature Ratings to ANSI B16.34

Temperature	WORKING PRESSURE (bar)										
C°	WCB (a)	LCB (b)	WC1 (c)	WC6 (d)	WC9 (d)	C5	C12	CF8	CF8M	CF3 (e)	CF3M (f)
- 29 to 38	51.1	47.9	47.9	51.7	51.7	51.7	51.7	49.6	49.6	49.6	49.6
50	50.1	47.3	47.6	51.1	51.2	51.7	51.7	47.8	48.1	47.8	48.1
100	46.4	45.1	46.6	48.8	49.0	51.5	51.5	40.9	42.2	40.9	42.2
150	45.2	44.0	45.0	46.4	46.6	50.2	50.2	36.3	38.5	36.3	38.5
200	43.8	42.7	44.2	45.5	44.8	48.8	48.8	32.8	35.7	32.8	35.7
250	41.7	40.6	43.1	44.5	44.2	46.3	46.3	30.5	33.4	30.5	33.4
300	38.7	37.7	42.0	42.4	42.4	42.4	42.4	29.1	31.6	29.1	31.6
350	37.0	36.0	40.2	40.2	40.2	40.2	40.2	28.1	30.4	28.1	30.4
400	34.5	-	36.6	36.6	36.6	36.6	36.6	27.5	29.1	27.5	29.1
425	28.8	-	35.1	35.1	35.1	34.5	35.1	27.2	28.7	27.2	28.7
450	20.0	-	33.8	33.8	33.8	30.9	33.8	26.9	28.1	26.9	28.1
500	8.8	-	24.1	27.8	27.8	20.3	27.5	26.1	26.8	-	26.8
525	5.2	-	15.0	23.0	21.9	15.4	22.6	23.9	26.3	-	-
550	-	-	-	12.8	16.4	11.7	17.0	21.8	25.0	-	-
600	-	-	-	5.9	7.6	6.5	7.2	16.7	21.4	-	-
650	-	-	-	-	-	3.0	3.5	10.5	14.1	-	-
700	-	-	-	-	-	-	-	6.0	9.9	-	-
750	-	-	-	-	-	-	-	3.7	5.9	-	-
800	-	-	-	-	-	-	-	2.1	3.5	-	-

a) Permissible, but not recommended for prolonged usage above 425°C (800°F)
b) Not be used over 343°C (650°F)
c) Permissible, but not recommended for prolonged usage above 455°C (850°F)
d) Not be used over 593°C (1100°F)
e) Not be used over 425°C (800°F)
f) Not be used over 455°C (850°F)
g) For welding end valves only

ANSI CLASS 600/900 Pressure -Temperature Ratings to ANSI B16.34

Temperature	WORKING PRESSURE (bar)																					
	WCB (a)		LCB (b)		WC1 (c)		WC6 (d)		WC9 (d)		C5		C12		CF8		CF8M		CF3 (e)		CF3M (f)	
	600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900	600	900
29 to 38	102.1	153.2	95.7	143.6	95.8	143.6	103.4	155.1	103.4	155.1	103.4	155.2	103.4	155.2	99.2	148.9	99.3	148.9	99.2	148.9	99.3	148.9
50	100.2	150.2	94.6	141.9	95.3	142.9	102.3	153.4	102.4	153.6	103.4	155.2	103.4	155.2	95.7	143.5	96.3	144.4	95.7	143.5	96.3	144.4
100	92.8	139.1	90.2	135.3	93.2	139.8	97.5	146.3	98.1	147.1	103.1	154.6	103.1	154.6	81.8	122.6	84.4	126.6	81.8	122.6	84.4	126.6
150	90.5	135.7	87.9	131.9	89.9	134.9	92.7	139.1	93.3	139.9	100.4	150.6	100.4	150.6	72.7	109.0	77.0	115.5	72.7	109.0	77.0	115.5
200	87.6	131.5	85.4	128.0	88.4	132.6	91.0	136.4	89.7	134.5	97.6	146.4	97.6	146.4	65.5	98.3	71.3	107.0	65.5	98.3	71.3	107.0
250	83.4	125.2	81.2	121.8	86.2	129.2	88.9	133.4	88.4	132.7	92.7	139.0	92.7	139.0	61.1	91.6	66.8	100.2	61.1	91.6	66.8	100.2
300	77.5	116.2	75.4	113.1	84.1	126.1	84.9	127.3	84.9	127.3	84.9	127.3	84.9	127.3	58.1	87.2	63.3	94.9	58.1	87.2	63.3	94.9
350	73.9	110.9	71.9	107.9	80.5	120.7	80.5	120.7	80.5	120.7	80.5	120.7	80.5	120.7	56.1	84.2	60.8	91.3	56.1	84.2	60.8	91.3
400	69.0	103.5	-	-	73.2	109.8	73.2	109.8	73.2	109.8	73.2	109.8	73.2	109.8	54.9	82.4	58.2	87.3	54.9	82.4	58.2	87.3
425	57.5	86.3	-	-	70.2	105.3	70.2	105.3	70.2	105.3	69.0	103.5	70.2	105.3	54.3	81.5	57.3	86.0	54.3	81.5	57.3	86.0
450	-	-	-	-	67.6	101.4	67.6	101.4	67.6	101.4	61.8	92.7	67.6	101.4	53.7	80.6	56.2	84.2	53.7	80.6	56.2	84.2
500	-	-	-	-	48.1	72.2	55.6	83.4	55.6	83.4	40.5	60.8	55.0	82.5	52.1	78.2	53.7	80.5	-	-	53.7	80.5
525	-	-	-	-	30.1	45.1	40.5	60.8	43.8	65.8	30.8	46.3	45.2	67.8	47.8	71.6	52.6	78.9	-	-	-	-
550	-	-	-	-	-	-	25.5	38.3	32.7	49.1	23.4	35.0	34.0	50.9	43.6	65.4	49.9	74.9	-	-	-	-
600	-	-	-	-	-	-	11.8	17.6	15.3	22.9	13.1	19.6	14.4	21.5	33.4	50.1	42.9	64.3	-	-	-	-
650	-	-	-	-	-	-	-	-	-	-	6.0	9.0	7.0	10.4	21.0	31.6	28.2	42.4	-	-	-	-
700	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12.0	17.9	19.9	29.8	-	-	-	-
750	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7.3	11.0	11.0	17.6	-	-	-	-
800	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4.1	6.2	7.0	10.5	-	-	-	-

a) Permissible, but not recommended for prolonged usage above 425°C (800°F)
b) Not be used over 343°C (650°F)
c) Permissible, but not recommended for prolonged usage above 455°C (850°F)
d) Not be used over 593°C (1100°F)
e) Not be used over 425°C (800°F)
f) Not be used over 455°C (850°F)

ANSI CLASS 1500 Pressure -Temperature Ratings to ANSI B16.34

Temperature	WORKING PRESSURE (bar)										
C°	WCB (a)	LCB (b)	WC1 (c)	WC6 (d)	WC9 (d)	C5	C12	CF8	CF8M	CF3 (e)	CF3M (f)
- 29 to 38	255.3	239.4	239.4	258.6	258.6	258.6	258.6	248.1	248.1	248.1	248.1
50	250.4	236.5	238.2	255.7	256.0	258.6	258.6	239.2	240.6	239.2	240.6
100	231.9	225.5	233.0	243.8	245.2	257.7	257.7	204.4	211.0	204.4	211.0
150	226.1	219.8	224.8	231.9	233.2	251.0	251.0	181.7	192.5	181.7	192.5
200	219.1	213.4	221.0	227.4	224.2	243.9	243.9	163.8	178.4	163.8	178.4
250	208.6	202.9	215.4	222.3	221.1	231.7	231.7	152.7	166.9	152.7	166.9
300	193.7	188.5	210.1	212.1	212.1	212.1	212.1	145.3	158.1	145.3	158.1
350	184.8	179.8	201.1	201.2	201.2	201.2	201.2	140.3	152.1	140.3	152.1
400	172.5	-	182.9	182.9	182.9	182.9	182.9	137.3	145.6	137.3	145.6
425	143.8	-	175.5	175.5	175.5	172.5	175.5	135.8	143.3	135.8	143.3
450	100.2	-	169.0	169.0	169.0	154.5	169.0	134.3	140.4	134.3	140.4
500	44.0	-	120.3	139.0	139.0	101.3	137.5	130.3	134.1	-	134.1
525	25.9	-	75.2	101.3	109.6	77.1	113.0	119.4	131.5	-	-
550	-	-	-	63.8	81.8	58.4	84.9	109.1	124.8	-	-
600	-	-	-	29.4	38.2	32.6	35.9	83.6	107.2	-	-
650	-	-	-	-	-	15.0	17.4	52.6	70.6	-	-
700	-	-	-	-	-	-	-	29.9	49.7	-	-
750	-	-	-	-	-	-	-	18.3	29.4	-	-
800	-	-	-	-	-	-	-	10.3	17.5	-	-

a) Permissible, but not recommended for prolonged usage above 425°C (800°F)
b) Not be used over 343°C (650°F)
c) Permissible, but not recommended for prolonged usage above 455°C (850°F)
d) Not be used over 593°C (1100°F)
e) Not be used over 425°C (800°F)
f) Not **be used over 455°C (850°F)**
g) For welding end valves only

ENGINEERING DATA - PRESSURE - TEMPERATURE RATIING TO ASME B16.34
FORGED MATERIALS

	Carbon Steel (A105-LF2)					F11					F22				
Temp. °C	150	300	600	800	1500	150	300	600	800	1500	150	300	600	800	1500
-29+38	19,6	51,1	102,1	136,2	255,3	20,0	51,7	103,4	137,9	258,6	20,0	51,7	103,4	137,9	258,6
50	19,2	50,1	100,2	132,7	250,4	19,2	51,1	102,3	136,5	255,7	19,2	51,2	102,4	136,5	256,0
100	17,7	46,4	92,8	123,5	231,9	17,7	48,8	97,5	130,2	243,8	17,7	49,0	98,1	130,2	245,2
150	15,8	45,2	90,5	120,5	226,1	15,8	46,4	92,7	123,5	231,9	15,8	46,6	93,3	124,0	233,2
200	14,0	43,8	87,6	117,1	219,1	14,0	45,5	91,0	121,0	227,4	14,0	44,8	89,7	120,5	224,2
250	12,1	41,7	83,4	111,5	208,6	12,1	44,5	88,9	117,0	222,3	12,1	44,2	88,4	117,0	221,1
300	10,2	38,7	77,5	102,5	193,7	10,2	42,4	84,9	111,5	212,1	10,2	42,4	84,9	111,5	212,1
350	8,4	37,0	73,9	98,3	184,8	8,4	40,2	80,5	108,2	201,2	8,4	40,2	80,5	108,2	201,2
375	7,4	36,5	72,9	97,0	182,3	7,4	38,8	77,6	104,0	194,0	7,4	38,8	77,6	104,0	194,0
400	6,5	34,5	69,0	92,2	172,5	6,5	36,6	73,2	97,5	182,9	6,5	36,6	73,2	97,5	182,9
425	5,6	28,8	57,5	76,5	143,8	5,6	35,1	70,2	94,2	175,5	5,6	35,1	70,2	94,2	175,5
450	4,7	20,0	40,1	51,8	100,2	4,7	33,8	67,6	89,1	169,0	4,7	33,8	67,6	89,1	169,0
475	3,7	13,5	27,1	35,1	67,7	3,7	31,7	63,3	84,8	158,3	3,7	31,7	63,3	84,8	158,3
500	-	-	-	-	-	2,8	29,8	55,6	73,2	139,0	2,8	27,8	55,6	73,2	139,0
525	-	-	-	-	-	1,9	20,3	40,5	56,5	101,3	1,9	21,9	43,8	58,2	109,6
550	-	-	-	-	-	-	12,8	25,5	34,1	63,8	-	16,4	32,7	40,8	81,8
575	-	-	-	-	-	-	8,5	17,0	22,5	42,5	-	11,7	23,4	28,3	58,5
600	-	-	-	-	-	-	5,9	11,8	14,2	29,4	-	7,6	15,3	22,0	38,2

	F304					F316					F304L				
Temp. °C	150	300	600	800	1500	150	300	600	800	1500	150	300	600	800	1500
-29+38	19.0	49.6	99.2	132.4	248.1	19.0	49.6	99.3	132.4	248.1	15.9	41.4	82.7	110.3	206.8
50	18.4	47.8	95.7	126.5	239.2	18.4	48.1	96.3	128.0	240.6	15.3	40.0	79.9	105.8	199.8
100	15.7	40.9	81.8	108.3	204.4	16.2	42.2	84.4	113.2	211.0	13.2	34.5	69.0	92.7	172.4
150	13.9	36.3	72.7	97.0	181.7	14.8	38.5	77.0	102.9	192.5	12.0	31.2	62.5	83.5	156.1
200	12.6	32.8	65.5	87.9	163.8	13.7	35.7	71.3	95.5	178.4	11.0	28.7	57.4	76.2	143.5
250	11.7	30.5	61.1	81.5	152.7	12.1	33.4	66.8	89.2	166.9	10.2	26.7	53.4	72.0	133.5
300	10.2	29.1	58.1	77.2	145.3	10.2	31.6	63.3	84.0	158.1	9.7	25.5	50.5	66.9	126.2
350	8.4	28.1	56.1	74.0	140.3	8.4	30.4	60.8	80.9	152.1	8.4	24.0	48.1	64.0	120.2
375	7.4	27.8	55.5	73.8	138.8	7.4	29.7	59.4	79.0	148.5	7.4	23.6	47.2	62.7	118.0
400	6.5	27.5	54.9	73.0	137.3	6.5	29.1	58.2	77.6	145.6	6.5	23.2	46.3	61.0	115.8
425	5.6	27.2	54.3	72.8	135.8	5.6	28.7	57.3	76.3	143.3	5.6	22.7	45.4	60.8	113.5
450	4.7	26.9	53.7	72.0	134.3	4.7	28.1	56.2	74.8	140.4	4.7	22.3	44.5	60.0	111.3
475	3.7	26.6	53.1	71.5	132.8	3.7	27.4	54.7	73.5	136.8	-	-	-	-	-
500	2.8	26.1	52.1	70.0	130.3	2.8	26.8	53.7	72.2	134.1	-	-	-	-	-
525	1.9	23.9	47.5	64.0	119.4	1.8	25.8	51.6	68.9	129.0	-	-	-	-	-
550	-	21.8	43.6	57.8	109.1	-	25.0	49.9	67.5	124.8	-	-	-	-	-
575	-	20.1	40.1	55.2	100.4	-	24.1	48.2	63.2	120.5	-	-	-	-	-
600	-	16.7	33.4	43.6	83.6	-	21.4	42.9	58.1	107.2	-	-	-	-	-
625	-	13.1	26.2	35.0	65.4	-	18.3	36.5	49.5	91.3	-	-	-	-	-
650	-	10.5	21.0	28.1	52.6	-	14.1	28.2	38.3	70.6	-	-	-	-	-

NOTE

1) Following grades permissible but not recommended for prolonged use:

1.1 Carbon steel A 105 over 454°C (do not use A 181 for any class listed).

1.2 F11 & F22 over 593°C

1.3 F304L over 427°C

1.4 F316L over 454°C

2) Temperature limitation for material grades not listed, see: B16.5, B16.34 and API 602

3) Types and grades of material used for bolting and gaskets, also influence temperature limitation.

PRESSURE TEST TABLES IN ACCORDANCE WITH API 598 ASME B16.34

MATERIALS		150#	300#	600#	800#	1500#
ASTM A105 - A350 LF2 ASTM A216 WCB	BODY	31	78	155	210	385
	SEAT	22	57	115	150	285
ASTM A182 - F11 - F22 - F44 - F51	BODY	31	78	155	210	390
	SEAT	22	57	115	150	285
ASTM A182 - F304 - F316	BODY	30	76	150	206	375
	SEAT	21	55	110	146	275
ASTM A182 - F304 - F316L	BODY	25	62	125	166	315
	SEAT	18	46	91	122	230

According to API 598 - ANSI B16.34

Pressure are expressed in Bar

Chart of Chemical and Physical Properties

CHEMICAL COMPOSITION																	MECHANICAL PROPERTIES			
ASTM	UNS Nr.	MRK	C	Mn	P	S	Si	Ni	Cr	Mo	Al	Ti	N	Ta	Cu	W	Tensile/Strength	Yield/Strenght	Elong. 2" min	Reduc. Area
																	min.Psi (Mpa)	*min.Psi (Mpa)*	*min.%*	*min.%*
CARBON STEELS																				
A105-96	K03504		0,35 max	0,60÷1,05	0,04	0,05	0,10÷0,35	0,04 max	0,3 max	0,12 max	-	-	-	-	0,4 max	0,03 max	70 (485)	36 (250)	22	30
A350-LF2	K03011		0,30 max	0,60÷1,35	0,035	0,04	0,15÷0,30	0,04 max	0,3 max	0,12 max	-	-	-	-	0,12 max	0,03 max	70-95 (415-585)	36 (250)	22	30
LOW ALLOY STEELS																				
A182-F1	K12822		0,28 max	0,60÷0,90	0,045	0,045	0,15÷0,35	-	-	0,44÷0,65	-	-	-	-	-	-	70 (485)	40 (275)	20	30
A182-F5	K41545		0,15 max	0,30÷0,60	0,03	0,03	0,50 max	0,50 max	4,0÷6,0	0,44÷0,65	-	-	-	-	-	-	70 (485)	40 (275)	20	30
A182-F5A	K42544		0,25 max	0,60 max	0,04	0,03	0,50 max	0,50 max	4,0÷6,0	0,44÷0,65	-	-	-	-	-	-	90 (620)	65 (450)	20	50
A182-F9	K90941		0,15 max	0,30÷0,60	0,03	0,03	0,50÷1,00	-	8,0÷10,0	0,90÷1,10	-	-	-	-	-	-	85 (585)	55 (380)	20	40
A182-F11 2	K11572		0,10÷0,20	0,30÷0,80	0,04	0,04	0,50÷1,00	-	1,00÷1,50	0,44÷0,65	-	-	-	-	-	-	70 (485)	40 (275)	20	30
A182-F22 1	K21590		0,05÷0,15	0,30÷0,60	0,04	0,04	0,50 max	-	2,00÷2,50	0,87÷1,13	-	-	-	-	-	-	60 (415)	30 (205)	20	35
MARTENSITIC STAINLESS STEELS																				
A182-F6A	S41000		0,15 max	1,00 max	0,04	0,03	1,00 max	0,50 max	11,5÷13,5	-	-	-	-	-	-	-	70 (485)	40 (275)	18	35
A182-F6NM	S41500		0,05 max	0,5÷1,0	0,03	0,03	0,60 max	3,5÷5,5	11,5÷14,0	0,5÷1,0	-	-	-	-	-	-	115 (790)	90 (620)	15	45
AUSTENITIC STAINLESS STEELS																				
A182 F304	S30400		0,08 max	2,0 max	0,045	0,03	1,0 max	8,0÷11,0	18,0÷20,0	-	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F304H	S30409		0,04÷0,10	2,0 max	0,045	0,03	1,0 max	8,0÷11,0	18,0÷20,0	-	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F304L	S30403		0,035 max	2,0 max	0,045	0,03	1,0 max	8,0÷13,0	18,0÷20,0	-	-	-	-	-	-	-	70 (485)	25 (170)	30	50
A182 F316	S31600		0,08 max	2,0 max	0,045	0,03	1,0 max	10,0÷14,0	16,0÷18,0	2,00÷3,00	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F316H	S31609		0,04÷0,10	2,0 max	0,045	0,03	1,0 max	10,0÷14,0	16,0÷18,0	2,00÷3,00	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F316L	S31603		0,035 max	2,0 max	0,045	0,03	1,0 max	10,0÷15,0	16,0÷18,0	2,00÷3,00	-	-	-	-	-	-	70 (485)	25 (170)	30	50
A182 F317	S31070		0,08 max	2,0 max	0,045	0,03	1,0 max	11,0÷15,0	16,0÷18,0	3,0÷4,0	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F321	S32100		0,08 max	2,0 max	0,045	0,03	1,0 max	9,0÷12,0	17,0 min	-	-	5xC÷0,70	-	-	-	-	75 (515)	30 (205)	30	50
A182 F321H	S32109		0,04÷1,0	2,0 max	0,045	0,03	1,0 max	9,0÷12,0	17,0 min	-	-	4xC÷0,70	-	-	-	-	75 (515)	30 (205)	30	50
A182 F347	S34700		0,08 max	2,0 max	0,045	0,03	1,0 max	9,0÷13,0	17,0÷20,0	-	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F347H	S34709		0,04÷0,10	2,0 max	0,045	0,03	1,0 max	9,0÷13,0	17,0÷20,0	-	-	-	-	-	-	-	75 (515)	30 (205)	30	50
A182 F348	S34800		0,08 max	2,0 max	0,045	0,03	1,0 max	9,0÷13,0	17,0÷20,0	-	-	-	-	0,10 max	-	-	75 (515)	30 (205)	30	50
A182 F348H	S34809		0,04÷0,10	2,0 max	0,045	0,03	1,0 max	9,0÷13,0	17,0÷20,0	-	-	-	-	0,10 max	-	-	75 (515)	30 (205)	30	50
A182 F10	S33100		0,01÷0,20	0,50÷0,80	0,04	0,03	1,00÷1,40	19,0÷22,0	7,0÷9,0	6,0÷6,5	-	-	-	-	-	-	80 (550)	30 (205)	30	50
A182 F44	S31254		0,02 max	1,00 max	0,03	0,01	0,80 max	17,5÷18,5	19,5÷20,5	6,0÷6,5	-	-	0,18÷0,22	-	0,50÷1,00	-	94 (650)	44 (300)	35	50
A182 F45	S30815		0,05÷0,10	0,80 max	0,04	0,03	1,40÷2,00	10,0÷12,0	20,0÷22,0	-	-	-	0,14÷0,20	-	-	-	87 (600)	45 (310)	40	50
A182 F46	S30600		0,018 max	2,00 max	0,02	0,02	3,7÷4,3	14,0÷15,5	17,0÷18,5	0,20 max	-	-	-	-	-	-	78 (540)	35 (240)	40	50
A182 F47	S31726		0,03 max	2,00 max	0,045	0,03	0,75 max	13,0÷17,5	18,0÷20,0	4,0÷5,0	-	-	0,10 max	-	-	-	75 (525)	30 (205)	40	50
A182 F348	S31726		0,03 max	2,00 max	0,045	0,03	0,75 max	13,5÷17,5	17,0÷20,0	4,0÷5,0	-	-	0,10÷0,20	-	-	-	80 (550)	35 (240)	40	50
A182 F49	S34565		0,03 max	5,7÷7,0	0,03	0,01	1,0 max	16,0÷18,0	23,0÷25,0	4,0÷5,0	-	-	0,4÷0,6	-	-	-	115 (795)	60 (415)	35	40
FERRITIC - AUSTENITIC STAINLESS STEELS																				
A182 F50	S31200		0,03 max	2,00 max	0,045	0,03	1,00 max	5,5÷6,5	24,0÷26,0	1,2÷2,0	-	-	0,14÷0,20	-	-	-	100÷130 (690÷900)	65 (450)	25	50
A182 F51	S31803		0,03 max	2,00 max	0,03	0,02	1,00 max	4,5÷6,5	21,0÷23,0	2,5÷3,5	-	-	0,08÷0,20	-	-	-	90 (620)	65 (450)	25	45
A182 F52	S32950		0,03 max	2,00 max	0,035	0,01	0,60 max	3,5÷5,2	26,0÷29,0	1,00÷2,50	-	-	0,15÷0,35	-	-	-	100 (690)	70 (485)	15	-
A182 F53	S32750		0,03 max	1,2 max	0,035	0,02	0,8 max	6,0÷8,0	24,0÷26,0	3,0÷5,0	-	-	0,24÷0,32	-	0,5 max	-	116 (800)	80 (550)	15	-
A182 F54	S32740		0,03 max	1,0 max	0,030 max	0,020 max	0,8 max	6,0÷8,0	24,0÷26,0	2,50÷3,50	-	-	0,24÷0,32	-	0,20÷0,80	1,50÷2,50	116 (800)	80 (550)	15	30
A182 F55	S322760		0,03 max	1,0 max	0,03	0,01	1,00 max	6,0÷8,0	24,0÷26,0	3,00÷4,00	-	-	0,20÷0,30	-	0,50÷1,00	0,50÷1,00	109÷130 (750÷895)	80 (550)	25	45
NICKEL ALLOY																				
B564	N04400	MONEL400	0,30 max	2,0	-	0,024	0,5	63 min	-	-	-	-	-	-	28÷34	-	70 (485)	25 (170)	35	-
B564	N08825	INCOLY825	0,05 max	1,0	-	0,03	0,5	38÷46	19,5÷23,5	2,50÷3,50	0,2	0,60÷1,20	-	-	1,5÷3,0	-	85 (586)	35 (241)	30	-
B564	N06600	INCONEL600	0,15 max	1,0	-	0,015	0,5	72 min	14,0÷17,0	-	-	-	-	-	0,5	-	80 (552)	35 (241)	30	-
B564	N06625	INCONEL625	0,10 max	0,5	0,015	0,015	0,5	58,0 min	20,0÷23,0	8,0÷10,0	0,4	0,4	-	-	0,5	-	120 (827)	60 (414)	30	-
B562	N08020	ALLOY 20	0,07 max	2,0	0,045	0,035	1,0	32,0÷38,0	19,0÷21,0	2,00÷3,00	-	-	-	-	3,00÷4,00	-	80 (552)	35 (241)	30	50
B335	N10001	HASTELLOY	0,05 max	1,0	0,04	0,03	1,0	Rem.	1,0	26,0÷30,0	-	-	-	-	-	0,2÷0,4	115 (745)	46 (315)	35	-
B381-F2	R50400	TITANIUM	0,10 max	-	-	-	-	-	-	-	-	Rem.	-	-	-	-	50 (345)	40 (275)	20	30

CHARTS OF CHEMICAL AND PHYSICAL PROPERTIES

CHART OF CHEMICAL

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