CAST CARBON STEEL
GLOBE VALVES BOLTED BONNET
2″ - 24″ I Class 150 - Class 1500

All globe valves utilize the “port closure” concept of valves. By this it meant that fluid passes through a specific opening (rather than a general passageway, as in the case of gate valves), and the fluid is controlled by means of a stem-mounted disc or inserted plug in that area.

Despite of lacking the straight through, unobstructed passageway of the gate valve, these globe types are superior in two key aspects - throttling and service-ability under frequent use. They are better at the throttling function because they permit fluid to exit uniformly around the circumference of a seat, rather than “slicing” down to limit passage through a narrowly restricted area.

CAST CARBON STEEL

- GLOBE VALVES CLASS 150
- GLOBE VALVES CLASS 300
- GLOBE VALVES CLASS 600
- GLOBE VALVES CLASS 900
- GLOBE VALVES CLASS 1500

HIGHLIGHTS

Stem

The stems of globe valves are forged from one piece and TW threaded, then mechanized and finally provided with a smooth finishing in order to minimize friction.

Body and Bonnet Gasket

The design of the body-bonnet gasket varies depending on the class of the valve.

Class 150 to 600 globe valves consist of a circular male-female connection with a graphite or spiral wound gasket.

Class 900 and above globe valves consist of a ring type joint.

In pressure seal designs the sealing is achieved through a gasket that takes advantage of the internal pressure of the line. The material most commonly used is high-purity graphite being located between the body and the body retainer ring.

Body and Bonnet

Bodies and bonnets are high quality cast and afterwards precisely machined, directing the attention to prevent stress concentration.

Bonnets are made either of one piece only –the yoke then being an integral part of it – or have two pieces, depending on the size of the valve. This ensures the perfect alignment with the body what leads to an accurate opening and closing.

Bodies of globe valves are designed considering the same characteristics as gate valves, which in this case means that the disc is guided in bigger valve sizes or high pressure service in order to avoid vibrations and better seat.

Backseat

All gate and globe valves have backseat threaded in the bonnet, or for the pressure seal valves, welded to the bonnet.The hard facing is stellite 6 or equivalent.

DESIGN STANDARDS

Bolted Bonnet Globe Valve	ASME B16.34
Bolted Bonnet Globe Valve	BS 1873 & ASME B16.34
Pressure Seal Globe Valve (Long & Short pattern)	ASME B16.34
Face to Face / End to End Dimensions	ASME B16.10 / ISO 5752
End Flanged dimensions	ASME B16.5 / ISO 7005-1, ASME B16.47-A&B MSS SP- 44 & API 605
Butt-weld End dimensions	ASME B16.25
Valve inspection & testing	BS1873, ISO 5208, BS 6755, EN 17266
Pressure - Temperature rating	ASME B16.34

TEST / INSPECTION METHODS & ACCEPTANCE CRITERIA

TEST / INSPECTION	METHOD	ACCEPTANCE CRITERIA
Visual Inspection		MSS SP-55
Marking		MSS SP-25 & ISO5208
Dimensional Inspection		Aplicable valve
Chemical Analysis	ASTM E350	Aplicable Standard
Mechanical Properties	ASTM A370	Aplicable Standard
Liquid Penetrant Inspection	ASTM A165	ASME B16.34
Magnetic Particle Inspection	ASTM E709	ASME B16.34
Radiographic Inspection	ASME B16.34	ASME B16.34
Ultrasonic Inspection	ASTM A388	ASME B16.34
Pressure Testing	API 598 / ISO 5208	API 598 / ISO 5208

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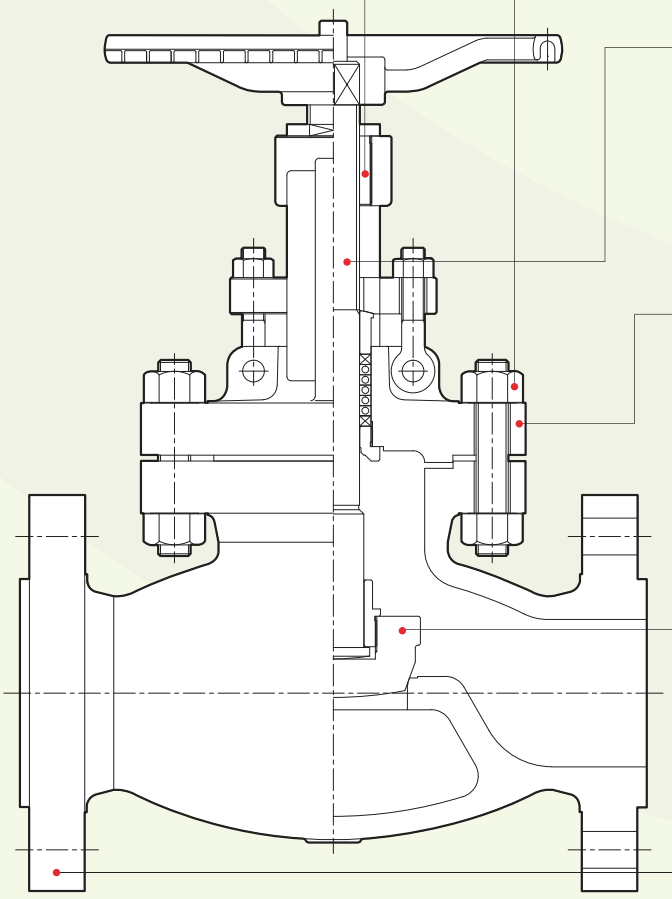
GLOBE VALVES BOLTED BONNET



YOKE BUSH

The standard material of the Yoke bush is Nodular Ni-resist D2 with over a 1150°C(2100°F) dissolution point in conformity with API Std. Specifications.

BOLTING

The body-bonnet bolts are manufactured in accordance with API Std. 600 specifications. The nuts also strictly conform with ANSI B 1.1
The stud bolt nuts, hexagonal, rigid and hot-forged, bear material notation as well as do the bolt nuts made according to ANSI B 18.2.2

STEM

The heat-treated stems of one-piece construction insure adequate mechanical properties and surface hardness. Friction at the time of opening and shutting is reduced to a minmum friction to accurate machining and lapping. The found finished surface of the stem head helps to achieve point contact with the inside of the disc housing to eliminate friction.

BONNET

The bonnet is integral or separate with yoke and is the same material as the body. The body-bonnet flange drilling is spot-faced to exactly meet stud bolt nuts. The back seat bushing in the bonnet guarantees that the packing can be replaced even when the valve is fully opened. The stem packing dimensions of the stuffing box are in accordance with API specifications.

DISC

The disc of our globe valve is a loose disc and can freely revolve around the stem. The prevents friction and galling with the seating surface when the valve is shot. The disc is finished with a conical seating surface that has been ground and lapped to a mirror finish.
It is of one-piece construction, and forged and heat-treated to deliver the required mechanical properties and hardness.

BODY

The cast steel body is designed to insure a wall thickness, which is greater at any point than the minimurn specified by API Std. 600. Port and seat passage dimensions conform to ANSI B 16.5 Pipe fitting.
The screw-in type seat ring is standard to allow interchangeability.
The standard body-bonnet joint is male-female, and the flange is round for all valves, accurate machining insures perfect coaxially of the valve ends and seat ring in addition to exact perpendicularity of the body-bonnet flange.

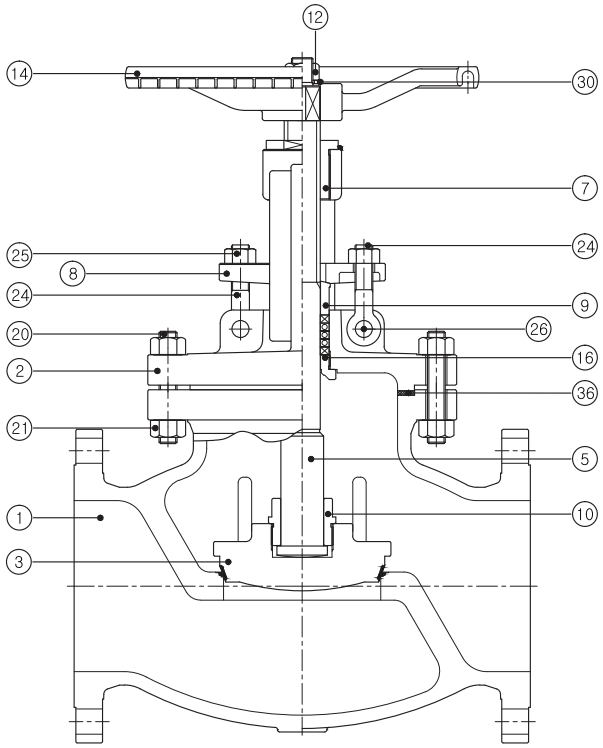
CAST STEEL

INDUSTRIAL VALVES
CAST CARBON STEEL

NO	NAME OF PART	ASTM SPECIFICATION				
		STANDARD	HIGH TEMP. SERVICE			LOW TEMP. SERVICE
1	BODY	A216-WCB+STL	A217-WC6+STL	A217-WC9+STL	A217-C5+STL	A352-LCB+STL
2	BONNET	A216-WCB	A216-WCB	A217-WC9	A217-C5	A352-LCB
3	DISC	A216-CA15/+STL	A217-WC6/+STL	A217-WC9/+STL	A217-C5/+STL	A352-LCB/+STL
5	STEM	A479-410	A479-410	A479-410	A479-410	A479-304
7	YOKE BUSH	A439-D2C				
8	GLAND FLANGE	A105/A283-D				
9	PACKING GLAND	A479-410	A479-410	A479-410	A479-410	A479-304
10	DISC NUT	A479-410	A479-410	A479-410	A479-410	A479-304
16	BACK SEAT RING	A479-410	A479-410	A479-410	A479-410	A479-304
20	BONNET BOLT	A193-B7	A193-B16	A193-B16	A193-B16	A320-L7
21	BONNET NUT	A194-2H	A194-4	A194-4	A194-4	A194-4L
24	HINGE BOLT	A307-B				
25	HINGE NUT	A563-A				
26	HINGE PIN	A576-1020				

* Note 1, In case of 12″ and larger size, we'll use trim material overlayed one on the same or equivalent material of the body.

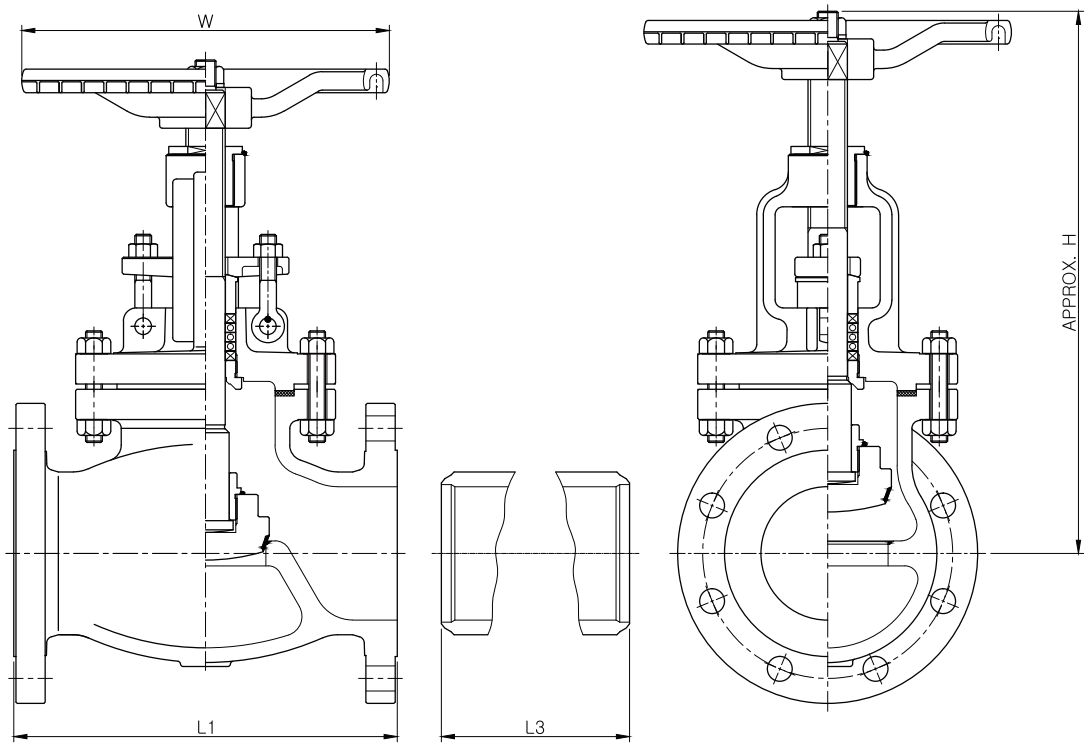
NO	NAME OF PART	ASTM SPECIFICATION
12	WHEEL NUT	A563-A
14	HAND WHEEL	A536-60
30	PLAIN WASHER	A283-D
34	PACKING	GRAPHITE
35	SPIRAL WOUND GASKET	GRAPHITE + 304



CAST STEEL

INDUSTRIAL VALVES
ASME CLASS 150

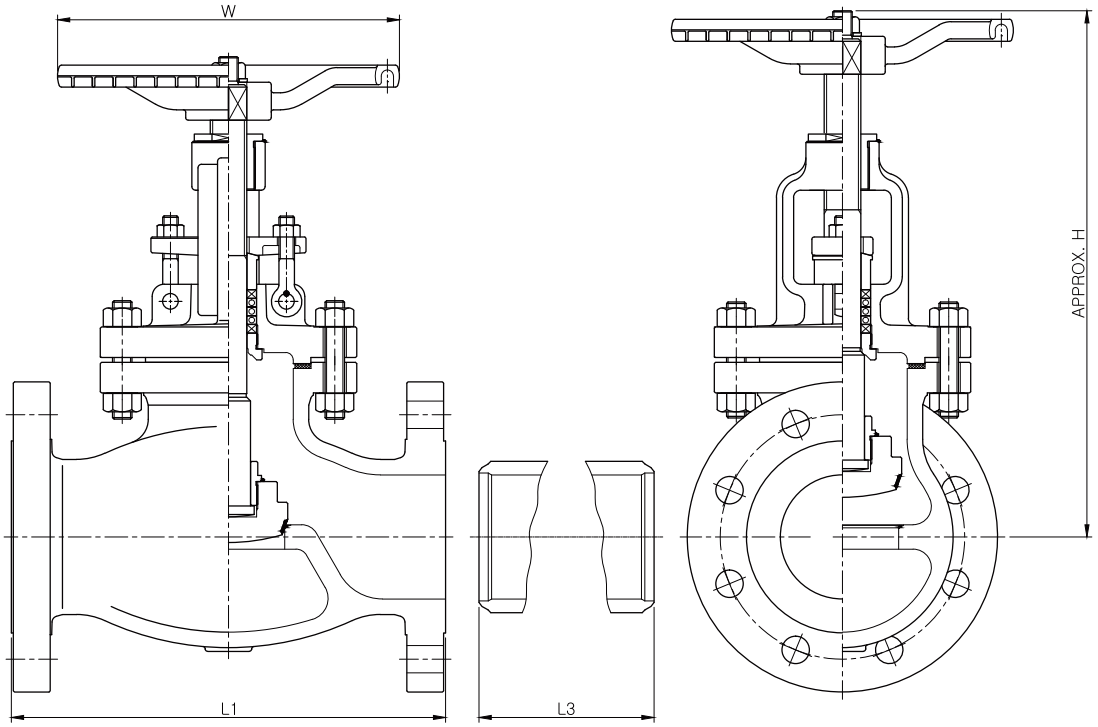
VALVE SIZE	inch	2	2 ½	3	4	5	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L1 & L3	inch	8,0	8,5	9,5	11,5	14,0	16,0	19,5	24,5	27,5	31,0	36,0	38,5	38,5	51,0
	mm	203	216	241	292	356	406	495	622	699	787	914	978	978	1295
H	inch	12,1	12,9	14,4	16,2	18,2	20,6	22,9	27,9	29,1	54,7	62,6	71,7	80,7	90,6
	mm	308	329	366	413	462	525	582	708	740	1390	1590	1820	2050	2300
W	inch	7,1	7,9	9,8	11,0	11,0	12,4	15,7	19,7	19,7	22,0	22,0	24,0	27,6	27,6
	mm	180	200	250	280	280	315	400	500	500	560	560	610	700	700
WEIGHT	LB	46,3	59	72,8	116,9	163,2	209,5	410,1	804,8	804,8	1364,9	1808,1	2154,3	2712,2	3472,9
	kg	21	27	33	53	74	95	186	365	365	619	820	977	1230	1575



CAST STEEL

INDUSTRIAL VALVES
ASME CLASS 300

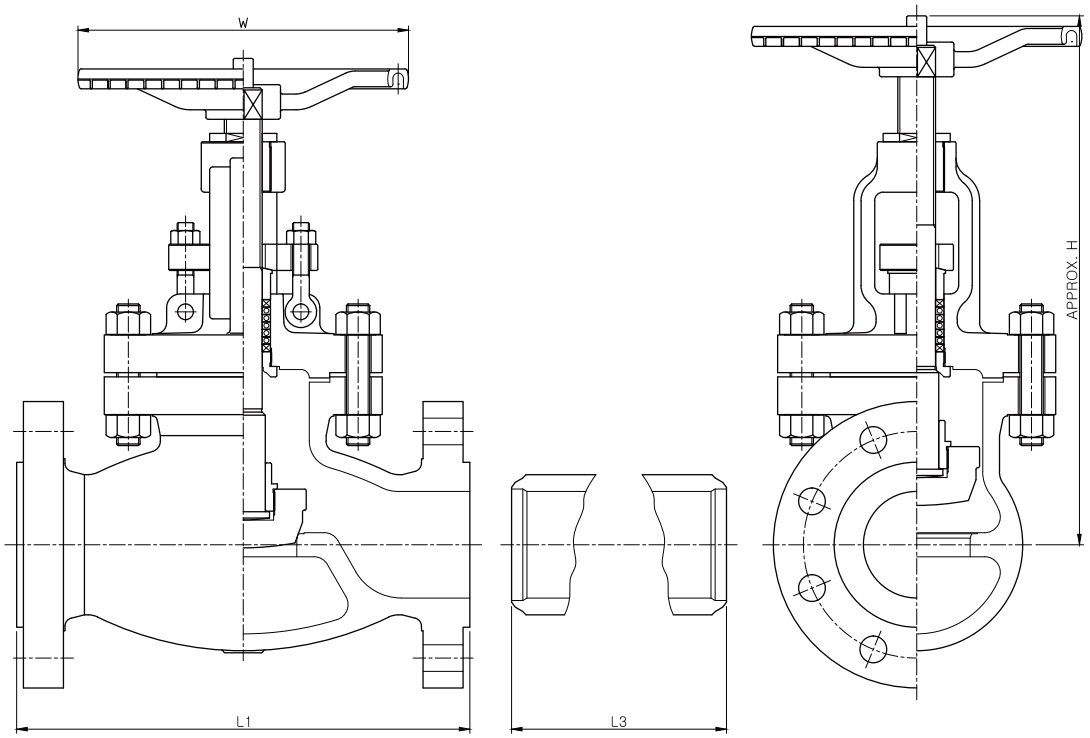
VALVE SIZE		2	2 ½	3	4	5	6	8	10	12	14	16	18	20	24
	mm	50	65	80	100	125	150	200	250	300	350	400	450	500	600
L1 & L3	inch	10,5	11,5	12,5	14,0	15,75	17,5	22,0	24,5	28,0	33,0	34	38,5	40	53
	mm	267	292	318	356	400	445	559	622	711	838	864	978	1016	1346
H	inch	12,6	13,4	14,8	16,9	19,3	22,4	26,8	30,7	41,7	44,5	47,2	55,5	63,0	70,8
	mm	320	340	376	430	490	570	680	780	1060	1130	1200	1410	1600	1800
W	inch	7,1	7,9	9,8	11,0	12,4	15,7	19,7	29,7	29,7	31,5	31,5	35,4	35,4	39,3
	mm	180	200	250	280	315	400	500	710	710	800	800	900	900	1000
WEIGHT	LB	61,7	86,0	99,2	189,6	253,6	330,8	621,8	809,2	1045,2	2529,1	2529,1	3014,2	3572,1	5159,7
	kg	28	39	45	86	115	150	282	367	474	1147	1147	1367	1620	2340



CAST STEEL

INDUSTRIAL VALVES
ASME CLASS 600

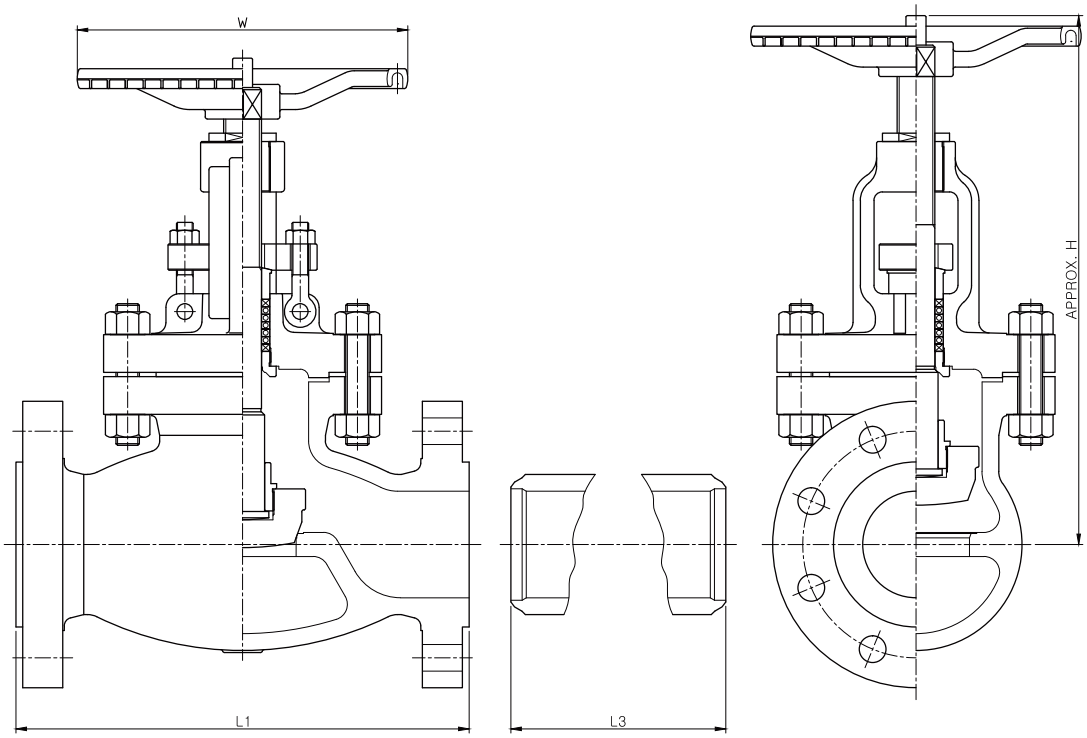
VALVE SIZE		2	2 ½	3	4	5	6	8	10	12	14	16
	mm	50	65	80	100	125	150	200	250	300	350	400
L1 & L3	inch	11,5	13,0	14,0	17,0	20,0	22,0	26,0	310	33,0	35,0	39,0
	mm	292	330	356	432	508	559	660	787	838	889	991
H	inch	13,0	14,5	16,2	19,8	25,6	27,5	31,5	47,2	51,2	59,0	63,0
	mm	330	370	411	504	650	700	800	1200	1300	1500	1600
W	inch	7,9	8,8	11,0	12,4	15,7	15,7	23,6	23,6	24,8	24,8	27,9
	mm	200	224	280	315	400	400	600	600	630	630	710
WEIGHT	LB	114,5	141,1	187,4	330,8	511,3	714,4	1234,8	1741,9	2264,5	2932,7	3825,7
	kg	52	65	85	150	250	324	560	790	1027	1330	1735



CAST STEEL

INDUSTRIAL VALVES
ASME CLASS 900

VALVE SIZE		2	2 1/2	3	4	5	6	8	10	12	14
		50	65	80	100	125	150	200	250	300	350
L1 & L3	inch	14.5	16.5	15.0	18.0	22.0	24.0	29.0	33.0	38.0	40.5
	mm	368	419	381	457	559	610	737	838	965	1029
H	inch	18.5	19.3	21.6	23.6	25.6	33.4	47.2	57.9	65.0	87.0
	mm	470	490	550	600	650	850	1200	1470	1650	2210
W	inch	11.0	12.4	14.0	15.7	15.7	23.6	23.6	24.8	24.8	35.4
	mm	280	315	355	400	400	600	600	630	630	900
WEIGHT	LB	176.4	271.2	154	441	815.9	1101.5	2756.3	4520.3	5843.3	8048.3
	kg	80	123	161	200	370	500	1250	2050	2650	3650



CAST STEEL

INDUSTRIAL VALVES
ASME CLASS 1500

VALVE SIZE	inch	2	2 ½	3	4	5	6	8	10	12	14
	mm	50	65	80	100	125	150	200	250	300	350
L1 & L3	inch	14,5	16,5	18,5	21,5	26,5	27,75	32,75	39,0	44,5	49,5
	mm	368	419	470	546	673	705	832	991	1130	1257
H	inch	27,4	27,4	31,5	40,0	57,1	64,8	77,2	91,0	105,1	126,0
	mm	695	695	799	1015	1450	1645	1960	2310	2670	3200
W	inch	15,7	15,7	19,7	19,7	24,8	28,0	28,0	30,0	30,0	30,0
	mm	400	400	500	500	630	710	710	760	760	760
WEIGHT	LB	271,2	341,8	396,9	749,7	1124,6	1482	4630,5	7055,0	9702,0	11907,0
	kg	123	155	180	340	510	627	2100	3200	4400	5400