

GLOBE VALVE



A Globe Valves is a linear motion Valve and are primarily designed to stop, start and regulate flow. The disk of a Globe Valve can be totally removed from the flow path or it can completely close the flow path.

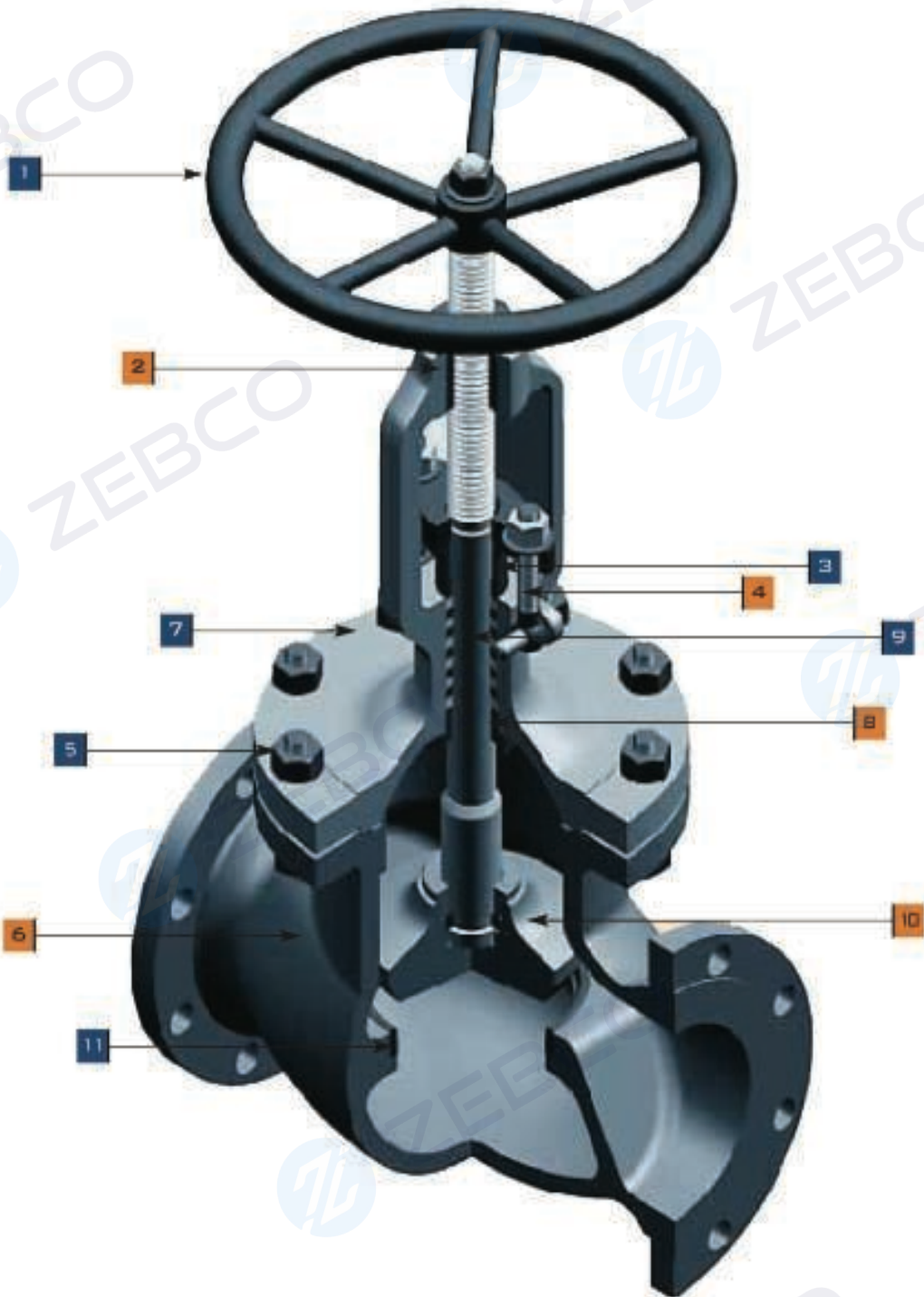
The fundamental principle of the Globe Valve operation is the perpendicular motion of the disk away from the seat. This ensures that the ring-shaped space between the disk and seat ring gradually close as the Valve is closed. This property gives a Globe Valve reasonably good throttling capability. Therefore, the Globe Valve can be used for starting and stopping flow and to regulate flow.

Advantages of using Globe Valves:

- Good shutoff capability
- Reasonably good throttling capability

Construction of a Globe Valve

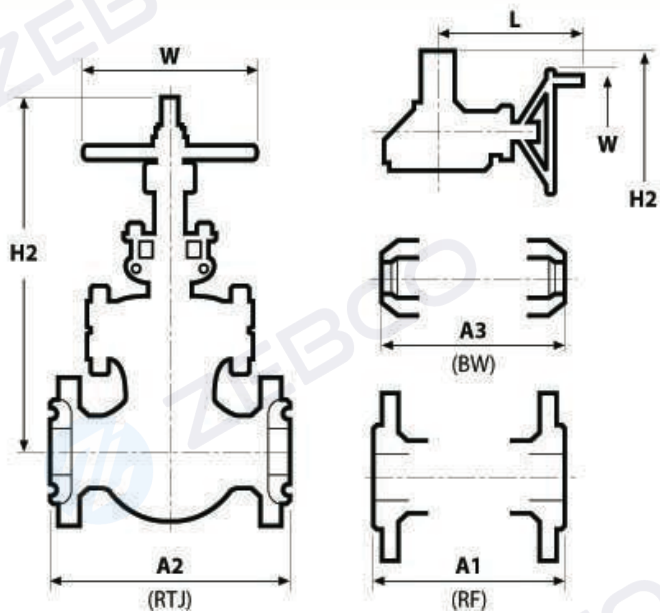
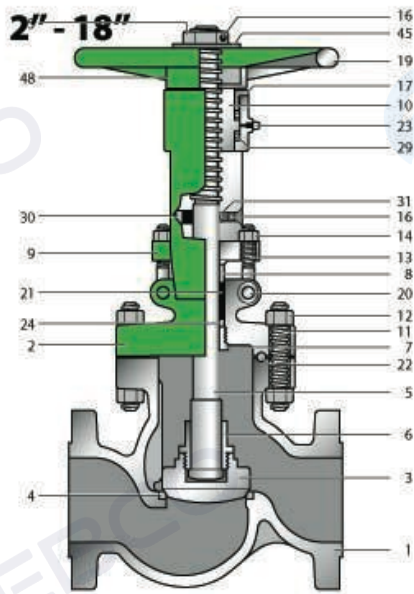
Globe Valves consists of three main parts: body, Bonnet, and trim. The body is generally connected to other equipment by means of flanged, screwed or welded connections. The Bonnet, which containing the moving parts, is attached to the body, usually with bolts, to permit maintenance. The Valve trim consists of the stem, the disc and the seat rings.



CAST STEEL, OUTSIDE SCREW AND YOKE, RISING STEM, SWIVEL PLUG DISC, RENEWABLE BODY SEAT RING, GLAND REPACKING UNDER PRESSURE.

- 1 **HANDWHEEL** : The Spoked hand wheel is fabricated from steel pipe. The hub has a square hole for coupling with the stem, and for large size the hub is coupled with the yoke sleeve by means of a tongue. (like Gate Valve)
- 2 **YOKESLEEVE** : The yoke sleeve is made of Cast Aluminum bronze having high resistance to wear and a high melting point. It is screwed into the bonnet properly sized to withstand the stresses which develop when opening and closing the valve. For large sizes the yoke sleeve is designed like for gate valves.
- 3 **GLAND AND FLANGE** : They are in forged steel and are normally supplied in two pieces, self aligning design to permit the gland to descend parallel to the stem even if the eyebolt are unevenly tightened.
- 4 **GLAND BOLT AND NUT** : The forged steel gland bolts are of the eyebolt type which can be swung outward for case of gland repacking. They are fixed to the bonnet by hinge pins.
- 5 **BONNET BOLTING** : Bonnet studs and Nuts are manufactured from alloy steel to the relevant ASTM standard.
- 6 **BODY** : The body is in cast steel. The basic dimension, i.e. wall thickness, face to face and flanges comply with the relevant API and ANSI standards. The body to bonnet flange is circular and the sealing surfaces for connection to the bonnet are recessed in the 150 and 300 lb series and ring joint in the higher class. The body is threaded for a renewable seat. The bodies from 8" onward are provided with three guides at 120°, to guide the disc. Bosses are provided for drain taps or by-pass piping.
- 7 **BONNET** : The bonnet is in cast steel. It is machined to accept the yoke sleeve and incorporates a stuffing box dimensioned in accordance with the API standard.
- 8 **BONNET BUSHING** : The bonnet bushing or backseat is in forged stainless and forms part of the trim. Special attention is given to its machining.
- 9 **STEM** : The stem is in forged stainless steel and is part of the trim. A ground backseat is provided to ensure a perfectly tight seal to the stuffing box when the valve is fully open. The stem is attached to the disc by means of a threaded ring which allows the disc to rotate. The stem is ground to minimize friction and prevent damage to gland packing. The threading is trapezoidal ACME type.
- 10 **DISC** : The disc is part of the trim. It is forged stainless steel for diameters up to 8" and in cast steel for larger valves. It is normally supplied of the flat, tapered or plug type or, on request, of the regulating type, always free to rotate on the stem. Special attention is given to the seating face which is ground and lapped.
- 11 **SEAT RING** : The ring is in forged stainless steel and is part of the trim. Its outer diameter is threaded and its bore is notched to ease installation and dismantling. Special attention is given to the seating face which is ground and lapped, for a perfectly tight seal. Welded-in-seat ring may be supplied upon request.

Remarks : A lantern ring is furnished only on request, in this case the stuffing box shall be tapped and fitted with an NPS ¼ plug.



BILL OF MATERIAL

No.	NAME OF PART	ASTM SPECIFICATION						
		CARBON STEEL	HIGH TEMPERATURE SERVICE			LOW TEMPERATURE SERVICE	STAINLESS STEEL	
1	BODY	A216 - WCB	A217-WC6	A217-WC9	A217-C5	A352-LCB/LCC/LC2/LC3	CF8M	CF8C
2	BONNET	A216 - WCB	A217-WC6	A217-WC9	A217-C5	A352-LCB/LCC/LC2/LC3/LCC	CF8M	CF8C
3	DISC	A105 + CR13	A217-WC6	A217-WC9	A217-C5	A352-LCB/LCC/LC2/LC3/LCC	CF8M	CF8C
4	BODY SEAT RING	A105 + HARD FACE	A182-F11	A182-F22	A182-F5A	A182-F304	F316	F347
5	STEM	A276-410	A182-F6A	A182-F60	A182-F6Q	A182-F304	F316	F347
6	DISC GLAND	A217-CA15	A217-CA15	A217-CA15	A217-CA15	A182-F304	F316	F347
7	BONNET BUSH	A276-410	A276-410	A276-410	A276-410	A276-304	F316	F347
8	PACKING GLAND	A276-410	A276-410	A276-410	A276-410	A276-304	F316	F347
9	GLAND FLANGE	A105	A105	A105	A105	A360-LF2	CF8M	CF8C
10	YOKE SLEEVE	A439-D2C	A439-D2C	A439-D2C	A439-D2C	B147-B8	F316	F347
11	BONNET BOLT	A193-B7M	A193-B16	A193-B16	A193-B16	A320-L7M	A193-B8	A193-B8
12	BONNET NUT	A194-2HM	A194-4	A194-4	A194-4	A194-7M	A194-8	A194-8
13	GLAND BOLT	A193-B7M	A193-B7	A193-B7	A193-B7	A320-L7M	A193-B8	A193-B8
14	HANDLE NUT	STEEL						
15	SET SCREW	STEEL						
16	SLEEVE GLAND	STEEL						
17	HANDWHEEL	A395						
18	GLAND NUT	A194-2HM	A194-2H	A194-2H	A194-2H	A194-4	A194-8	A194-8
19	HINGE PIN	A276-410	A276-410	A276-410	A276-410	A276-304	F316	F347
20	PACKING	GRAPHITE						
21	GASKET	SPIRAL WOUND + GRAPHITE / RING JOINT						
22	GREASE NIPPLE	STEEL					BRONZE	BRONZE
23	LANTERN	A276-410	A276-410	A276-410	A276-410	A276-304	F316	F347
24	BEARING	COMMERCIAL						
25	STOPPER	A283-D						
26	KEY	STEEL						
27	WASHER	STEEL						
28	IMPACT	A216-WCB	A217-WC6	A217-WC9	A217-C5	A352-LCB/LCC/LC2/LC3	CF8M	CF8C

CLASS 150 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	nps	2	2.5	3	4	6	8	10	12	14	16	18
SIZE	dn	50	65	80	100	150	200	250	300	350	400	450
A1 (RF)	in	8.0	8.5	9.5	11.5	16.0	19.5	24.5	27.5	31.0	36.0	38.5
	mm	203	216	241	292	406	495	622	699	787	914	978
A2 (BW)	in	/	/	/	/	/	/	/	/	/	/	/
	mm	/	/	/	/	/	/	/	/	/	/	/
A3 (RTJ)	in	8.0	8.5	9.5	11.5	16.0	19.5	24.5	27.5	31.0	36.0	38.5
	mm	203	216	241	292	406	495	622	699	787	914	978
H2	in	15.3	14.8	17.0	19.5	22.6	28.0	31.4	39.1	54.6	53.4	78.0
	mm	388	376	433	495	574	710	797	991	1387	1356	1980
W	in	7.9	8.8	8.8	9.8	14.0	14.0	17.7	17.7	22.0	22.0	24.0
	mm	200	224	224	250	355	355	450	450	560	560	610
L	in	/	/	/	/	/	/	/	/	16.3	16.3	17.0
	mm	/	/	/	/	/	/	/	/	414	414	432
WGT (RF)	lb	44.1	77.2	88.2	123.5	229.3	401.3	650.5	904	1510	1985	3969.0
	kg	20	35	40	56	104	182	295	410	685	903	1800
WGT (BW)	lb	33.1	66.2	70.6	90.4	183.0	330.8	496.1	728	1312	1764	3638.3
	kg	15	30	32	41	83	150	225	330	595	800	1650

CLASS 300 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	nps	2	2.5	3	4	6	8	10	12	14	16
SIZE	dn	50	65	80	100	150	200	250	300	350	400
A1 (RF)	in	10.5	11.5	12.5	14.0	17.5	22.0	24.5	28.0	33.0	34.0
	mm	267	292	318	357	445	559	622	711	838	864
A2 (BW)	in	11.12	12.12	13.12	14.62	18.12	22.62	25.12	28.62	39.62	42.62
	mm	283	308	333	371	460	575	638	727	1006	1083
A3 (RTJ)	in	10.5	11.5	12.5	14.0	17.5	22.0	24.5	28.0	33.0	34.0
	mm	267	292	318	357	444	559	622	711	838	864
H2	in	15.6	16.3	18.2	21.7	29.2	31.5	44.6	46.1	56.5	70.7
	mm	396	415	462	550	741	800	1132	1172	1435	1797
W	in	7.9	8.8	9.8	14.0	17.7	22.0	22.0	28.0	28.0	31.5
	mm	200	224	250	355	450	560	560	710	710	800
L	in	/	/	/	/	/	/	16.3	18.4	18.4	20.7
	mm	/	/	/	/	/	/	414	468	468	526
WGT (RF)	lb	70.6	92.6	141.0	220.5	419.0	595.4	1168.7	2240	2546.8	3748.5
	kg	32	42	64	100	190	270	530	1016	1155	1700
WGT (BW)	lb	66.2	66.2	105.8	194.0	328.5	441	970.2	1997.7	2216	3309.7
	kg	30	30	48	88	149	200	440	906	1005	1501

CLASS 600 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	nps	2	2.5	3	4	6	8	10	12	14	16
SIZE	dn	50	65	80	100	150	200	250	300	350	400
A1	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0
(RF)	mm	292	330	356	432	559	660	787	838	889	991
A2	in	11.62	13.12	14.12	17.12	22.12	26.12	31.12	33.12	35.12	39.12
(BW)	mm	295	333	359	435	562	664	790	841	892	994
A3	in	11.5	13.0	14.0	17.0	22.0	26.0	31.0	33.0	35.0	39.0
(RTJ)	mm	292	330	356	432	559	660	787	838	889	991
H2	in	16.0	19.8	19.9	22.4	29.9	51.8	59.5	69.9	70.9	76.0
	mm	407	502	505	568	759	1315	1511	1775	1800	1930
W	in	8.8	9.8	11.0	14.0	17.7	28.0	31.5	35.4	35.4	35.4
	mm	224	250	280	355	450	710	800	900	900	900
L	in	/	/	/	/	/	18.4	20.7	26.4	26.4	26.4
	mm	/	/	/	/	/	468	626	670	670	670
WGT	lb	94.8	154.4	172.0	300.0	619.6	1301	2099	3528	5953.5	7938.0
(RF)	kg	43	70	78	136	281	590	952	1600	2700	3600
WGT	lb	72.8	121.3	132.3	216.1	454.2	1125	1746	3263.4	5534.6	7386.8
(BW)	kg	33	55	60	98	206	510	792	1480	2510	3350

CLASS 900 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	nps	2	2.5	3	4	6	8	10	12	14	16
SIZE	dn	50	65	80	100	150	200	250	300	350	400
A1	in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
(RF)	mm	368	419	381	457	610	737	838	965	1029	1130
A2	in	14.62	16.62	15.12	18.12	24.12	29.12	33.12	38.12	40.88	44.88
(BW)	mm	371	422	384	460	613	740	841	968	1038	1140
A3	in	14.5	16.5	15.0	18.0	24.0	29.0	33.0	38.0	40.5	44.5
(RTJ)	mm	368	419	381	457	610	737	838	965	1029	1130
H2	in	27.4	27.3	30.5	33.7	50.7	65.6	63.0	67.1	87.0	103.1
	mm	695	695	775	855	1288	1665	1600	1705	2210	2620
W	in	15.7	15.7	15.7	15.7	22.0	31.5	31.5	35.4	35.4	35.4
	mm	400	400	400	400	560	800	800	900	900	900
L	in	/	/	/	/	16.3	20.7	20.7	26.4	26.4	26.4
	mm	/	/	/	/	414	526	526	670	670	670
WGT	lb	271.2	341.8	231.5	441	1101.5	2756.3	4520.3	5843.3	8048.3	9481.5
(RF)	kg	123	155	105	200	500	1250	2050	2650	3650	4300
WGT	lb	205.1	264.6	196.2	335.2	903.2	2425.5	4123.4	5292.0	7386.8	8600.0
(BW)	kg	93	120	89	152	410	1100	1870	2400	3350	3900

CLASS 1500 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	nps	2	2.5	3	4	6	8	10	12	14	16
SIZE	dn	50	65	80	100	150	200	250	300	350	400
A1 (RF)	in	14.5	16.5	18.5	21.5	27.75	32.75	39.0	44.5	49.5	54.5
	mm	368	419	470	546	705	832	991	1130	1257	1384
A2 (BW)	in	14.62	16.62	18.62	21.62	28.0	33.13	39.38	45.12	50.25	55.38
	mm	371	422	473	549	711	841	1000	1046	1276	1407
A3 (RTJ)	in	14.5	16.5	18.5	21.5	27.75	32.75	39.0	44.5	49.5	54.5
	mm	368	419	470	546	705	832	991	1130	1257	1384
H2	in	27.4	27.3	31.5	40.0	53.0	77.2	91.0	105.1	126.0	160.0
	mm	695	695	799	1015	1345	1960	2310	2670	3200	4064
W	in	15.7	15.7	19.7	19.7	28.0	28.0	30.0	30.0	30.0	30.0
	mm	400	400	500	500	710	710	760	760	760	760
L	in	/	/	/	/	18.4	18.4	20.2	20.2	22.3	22.3
	mm	/	/	/	/	468	468	512	512	567	567
WGT (RF)	lb	271.2	341.8	396.9	749.7	1482	4630.5	7056.0	9702.0	11907.0	14773.5
	kg	123	155	180	340	672	2100	3200	4400	5400	6700
WGT (BW)	lb	205.1	264.6	297.7	621.8	1217.1	4190.0	6174.0	8379.0	10363.5	12789.0
	kg	93	120	135	282	552	1900	2800	3800	4700	5800

CLASS 2500 – CARBON & STAINLESS STEEL GLOBE VALVES

DIMENSIONS & WEIGHTS

VALVE	Nps	2	2.5	3	4	6	8	10	12
SIZE	Dn	50	65	80	100	150	200	250	300
A1 (RF)	In	17.75	20.0	22.75	26.5	36.0	40.25	50.0	56.0
	Mm	451	508	578	673	914	1022	1270	1422
A2 (BW)	In	17.87	20.25	23.0	26.88	36.5	40.87	50.88	56.88
	Mm	454	514	584	683	927	1038	1292	1445
A3 (RTJ)	In	17.75	20.0	22.75	26.5	36.0	40.25	50.0	56.0
	Mm	451	508	578	673	914	1022	1270	1422
H2	In	28.3	31.5	34.8	50.0	75.0	97.0	110.2	138.0
	Mm	720	800	885	1260	1905	2465	2800	3505
W	In	15.7	19.7	19.7	24.0	24.0	30.0	30.0	30.0
	Mm	400	500	500	610	610	760	760	760
L	In	/	/	/	20.2	17.0	22.3	22.3	22.3
	Mm	/	/	/	512	432	567	567	567
WGT (RF)	Lb	419.0	661.5	771.8	1852.2	5071.5	10584.0	14994.0	18742.5
	Kg	190	300	350	840	2300	4800	6800	8500
WGT (BW)	Lb	352.8	529.2	617.4	1521.5	4410.0	9702.0	13230.0	16537.5
	Kg	160	240	280	690	2000	4400	6000	7500