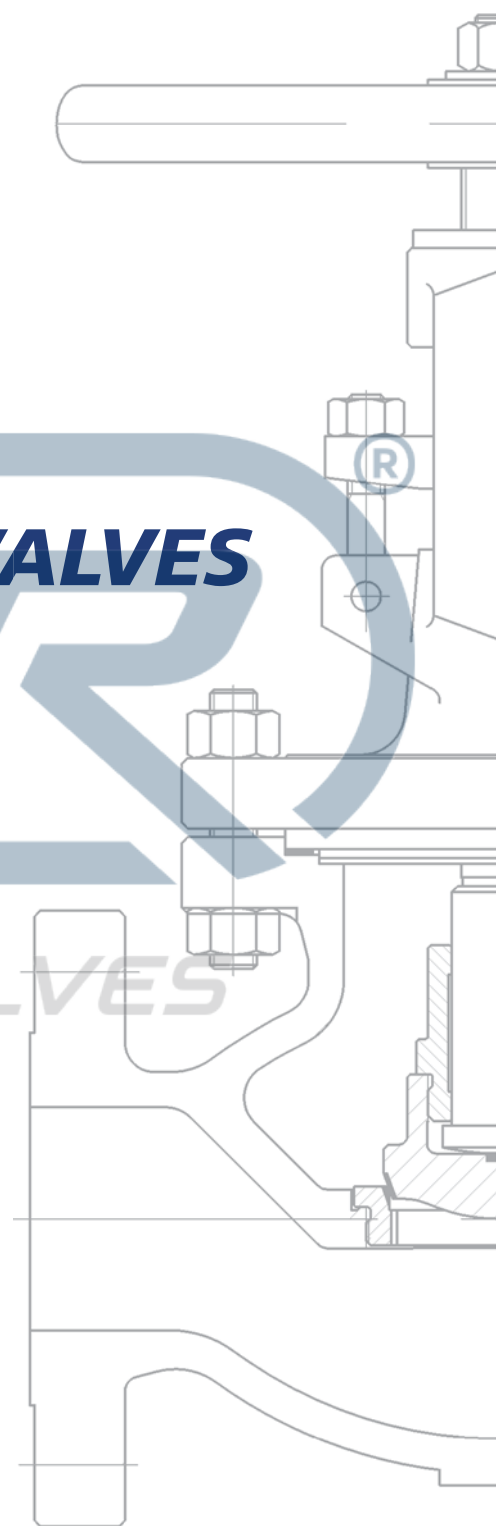


**CAST STEEL GLOBE VALVES  
ASME CLASS 300 LBS.**

*INDUSTRIAL VALVES*



**FIG. GL03**

### DESCRIPTION AND FEATURES

BOLTED BONNET
OUTSIDE SCREW AND YOKE (OS&Y)
RISING STEM
RISING HANDWHEEL
SWIVEL TYPE PLUG DISC
RENEWABLE SEATS
on request : ISO 5210 TOP FLANGE, LOCKING DEVICE,...
SEE Derval'S SPECIAL FEATURES FOR FURTHER EXECUTION

### GENERAL DESIGN SPECIFICATIONS

Design	ASME B16.34 / BS 1873 / API 623
Face to Face	ASME B16.10
End Flange	ASME B16.5 (2" ~ 24") ASME B16.47 (≥ 26")
BW Ends	ASME B16.25
Test	API 598 / API 6D / BS 6755 / EN 12266-1
Marking	MSS-SP25 / C€ P.E.D. 2014/68/EU
Special	NACE MR 01.75 - 01.03/ATEX 2014/34/EU(Ex)

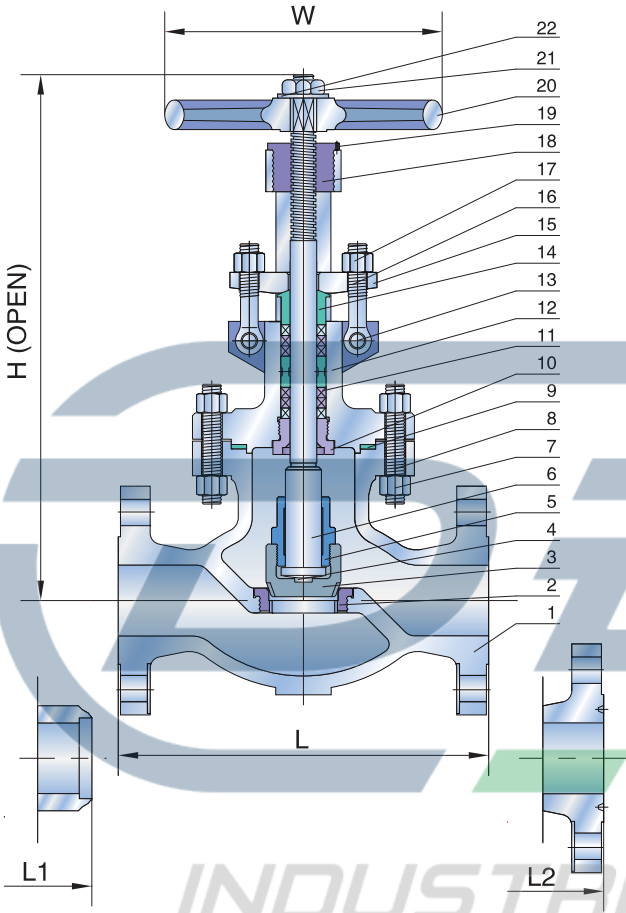
### MAXIMUM ALLOWABLE NON-SHOCK WORKING PRESSURE:

T (°C)	-29 ~ 38	50	100	150	200	250	300	350	375	400	425
P (Bar)	51,1	50,1	46,4	45,2	43,8	41,7	38,7	37,0	36,5	34,5	28,8

### STANDARD MATERIAL OF PARTS

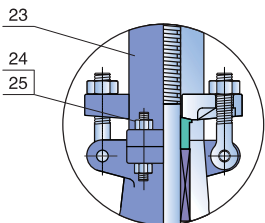
ITEM	PART NAME	MATERIAL
01	Body	ASTM A216 Gr.WCB
02	Seat Ring	Stellite Gr. 6 Faced
03	Disc	ASTM A216 Gr.WCB+13Cr Faced
04	Disc Thrust Plate	ASTM A276 Type 420
05	Disc Nut	ASTM A276 Type 410
06	Stem	ASTM A182 F6a
07	Bonnet Bolt Nuts	ASTM A194 Gr. 2H(M)
08	Bonnet Bolts	ASTM A193 Gr. B7(M)
09	Gasket *	Stainless Steel + Graphite
10	Backseat Bushing	ASTM A276 Type 410
11	Stem Packing *	Braided Graphite & Die Formed Graphite Ring
12	Bonnet	ASTM A216 Gr.WCB
13	Eye Bolt Pins	Carbon Steel
14	Gland	ASTM A276 Type 410
15	Gland Flange	ASTM A216 Gr. WCB
16	Gland Eye Bolts	ASTM A193 Gr. B7(M)
17	Eye Bolt Nuts	ASTM A194 Gr. 2H(M)
18	Stem Nut	ASTM A439 Gr. D-2 / ASTM B148 9A
19	Screw	Carbon Steel
20	Handwheel	Steel
21	Handwheel Nut	ASTM A194 Gr. 2H(M)
22	Washer	Carbon Steel
23	Yoke	ASTM A216 Gr. WCB
24	Yoke Pan Bolt Nuts	ASTM A194 Gr. 2H(M)
25	Yoke Pan Bolts	ASTM A193 Gr. B7(M)
26	Bearing	Steel
27	Lantern Ring <i>On Request</i>	ASTM A276 Type 410

\* Recommended Spare Parts



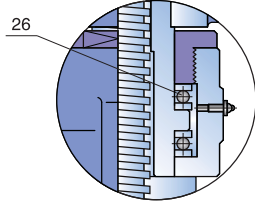
#### YOKE

FOR 10" & LARGER



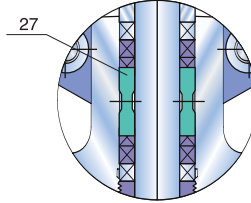
#### BALL BEARING

FOR 12" & LARGER



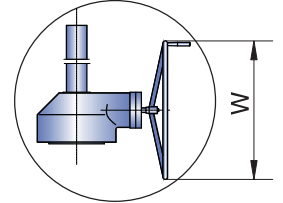
#### LANTERN RING

ON REQUEST



#### GEAR OPERATOR

RECOMMENDED FOR 14" & LARGER



SIZE	mm	40	50	65	80	100	125	150	200	250	300	300	400
	inches	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"	12"	14"	16"
L (RF)	mm	229	267	292	318	356	400	445	559	622	711	838	914
L1 (BW)	inches	9,00	10,50	11,50	12,50	14,00	15,75	17,50	22,00	24,50	28,00	33,00	36,00
L2 (RTJ)	mm	241	283	308	333	371	416	460	575	638	727	854	930
	inches	9,50	11,125	12,125	13,125	14,625	16,375	18,125	22,625	25,125	28,625	33,625	36,625
H (OPEN)	mm	260	385	420	440	525	580	650	900	950	1030	1200	1375
	inches	10,24	15,16	16,54	17,32	20,67	22,83	25,59	35,43	37,40	40,55	47,24	54,13
W	mm	160	200	250	250	350	350	400	550	600	700	800	800
	inches	6	8	10	10	14	14	16	22	24	28	32	32
WEIGHT (RF)	Kg.	20	28	45	55	75	125	165	275	400	640	780	1150
WEIGHT (BW)	Kg.	16	22	35	40	55	100	130	225	330	555	685	1030

# CAST STEEL GLOBE VALVE STANDARD MATERIALS OF PARTS (ASTM)

The following tables suggest standard combination of body / bonnet materials and trim (seat, stem, disc) composition. Different composition are available upon request

ITEM	PART NAME	CARBON STEEL		ALLOY STEEL				STAINLESS STEEL				
		TEMPERATURE (°C)	-29 ~ 427 °C	LOW TEMP. CARBON STEEL	-46 ~ 343 °C	-29 ~ 468 °C	-29 ~ 593 °C	-29 ~ 593 °C	-29 ~ 649 °C	-29 ~ 649 °C	-196 ~ 816 °C	-196 ~ 816 °C
1	Body	A216 WCB	A352 LCB	A217 WC1	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
2	Seat Ring (1)	A 182 F6a	A182 F304	A 182 F6a	A 182 F6a	A 182 F6a	A 182 F6a	A 182 F6a	A182 F304	A182 F316	A182 F304L	A182 F316L
3	Disc (2)	A216 WCB	A352 LCB	A217 WC1	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
4	Disc Thrust Plate	A276 420	A276 304	A276 420				A276 304	A276 316	A276 304L	A276 316L	
5	Disc Nut	A276 410	A276 304	A276 410				A276 304	A276 316	A276 304L	A276 316L	
6	Stem	A 182 F6a	A182 F304	A 182 F6a	A 182 F6a	A 182 F6a	A 182 F6a	A 182 F6a	A182 F304	A182 F316	A182 F304L	A182 F316L
7	Bonnet Bolt Nuts	A194 2H	A194 Gr.7	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8M	A194 Gr.8	A194 Gr.8M
8	Bonnet Bolts	A193 B7	A193 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M	A193 B8	A193 B8M
9	Gasket	CL150-300	304(L)+Graphite	304(L) + Graphite	316(L) + Graphite				316(L) + Graphite			
		CL600-2500 Ring Joint	304(L)		316(L)				316(L)			
10	Backseat Bushing	A276 410	A276 304	A276 410				A276 304	A276 316	A276 304L	A276 316L	
11	Stem Packing	Braided Graphite & Die Formed Graphite Ring		Braided Graphite & Die Formed Graphite Ring				Braided Graphite & Die Formed Graphite Ring				
12	Bonnet	A216WCB	A352LCB	A217 WC1	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
13	Eye Bolt Pins	Carbon steel		A276 410				Stainless Steel				
14	Gland	A276 410	A276 304	A276 410				A276 304	A276 316	A276 304L	A276 316L	
15	Gland Flange	A216 WCB	A352 LCB	A217 WC1	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
16	Gland Eye Bolts	A193 B7	A193 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B16	A193 B8	A193 B8M	A193 B8	A193 B8M
17	Eye Bolt Nuts	A194 2H	A194 Gr.7	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8M	A194 Gr.8	A194 Gr.8M
18	Stem Nut	A439 D2C / B148 9A		A439 D2C / B148 9A				A439 D2C / B148 9A				
19	Screw	Carbon steel		Alloy steel				Stainless Steel				
20	Handwheel	Ductile Iron		Ductile Iron				Ductile Iron				
21	Handwheel Nut	A194 2H	A194 Gr.7	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.8	A194 Gr.8M	A194 Gr.8	A194 Gr.8M
22	Washer	Carbon steel		Alloy steel				Stainless Steel				
23	Yoke	A216 WCB	A352 LCB	A217 WC1	A217 WC6	A217 WC9	A217 C5	A217 C12	A351 CF8	A351 CF8M	A351 CF3	A351 CF3M
24	Yoke Pan Bolt Nuts	A194 2H	A194 Gr.7	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A194 Gr.4	A193 B8	A193 B8M	A193 B8	A193 B8M
25	Yoke Pan Bolts	A193 B7	A193 L7	A193 B16	A193 B16	A193 B16	A193 B16	A193 B16	A194 Gr.8	A194 Gr.8M	A194 Gr.8	A194 Gr.8M
26	Bearing	Steel		Steel				Steel				
27	Lantern Ring On Request	A276 410	A276 304	A276 410	A276 410	A276 410	A276 410	A276 410	A276 304	A276 316	A276 304L	A276 316L

(1): Base material shall be at least equal in corrosion resistance to the body material ( Acc. to API 600 Std.)

(2): Base material only. See trim material for disc surface

Stainless Steel: At temperatures over 538°C, use the material only when the carbon contents is 0.04% or higher.

Derval S.r.l. reserves the right to substitute materials listed above with alternative material approved for designated service.

## TRIM MATERIALS (API 600 STANDARD)

The API TRIM N° 8 is supplied on Derval Valves as standard trim. Materials for other trims are in accordance with the following table. Other trims also according to customer's requirement.

TRIM N°	1	2	5	8	9	10	11	12	13	14	15	16	17
DERVAL DESCRIPTION	F6	304	F6-HF	F6-HFS	Monel	316	Monel-HFS	316-HFS	Alloy 20	Alloy 20-HFS	304-HF	316-HF	347-HF
2 Seat Surface	13Cr.	304	HF	HF	Monel	316	HF	HF	Alloy 20	HF	HF	HF	HF
3 Disc Surface	13Cr.	304	HF	13Cr.	Monel	316	Monel	316	Alloy 20	Alloy 20	HF	HF	HF
6 Stem	F6	F304	F6	F6	Monel	F316	Monel	F316	Alloy 20	Alloy 20	F304	F316	F347
9 Backseat Bushing	F6	304	F6	F6	Monel	316	Monel	316	Alloy 20	Alloy 20	304	316	347

Note: The chart above only lists out some common composition of steel globe valve parts. We may provide other different parts material composition according to the customer's request or based on the actual valve working condition.

## PRESSURE - TEMPERATURE RATINGS

The following pressure-temperature charts are derived from ASME B16.34. They will cover the most commonly used body and bonnet materials in the industry. All Derval Valves are designed to operate through the pressure and temperature ranges shown in these charts for a particular ASME Class Rating and ASTM Material.

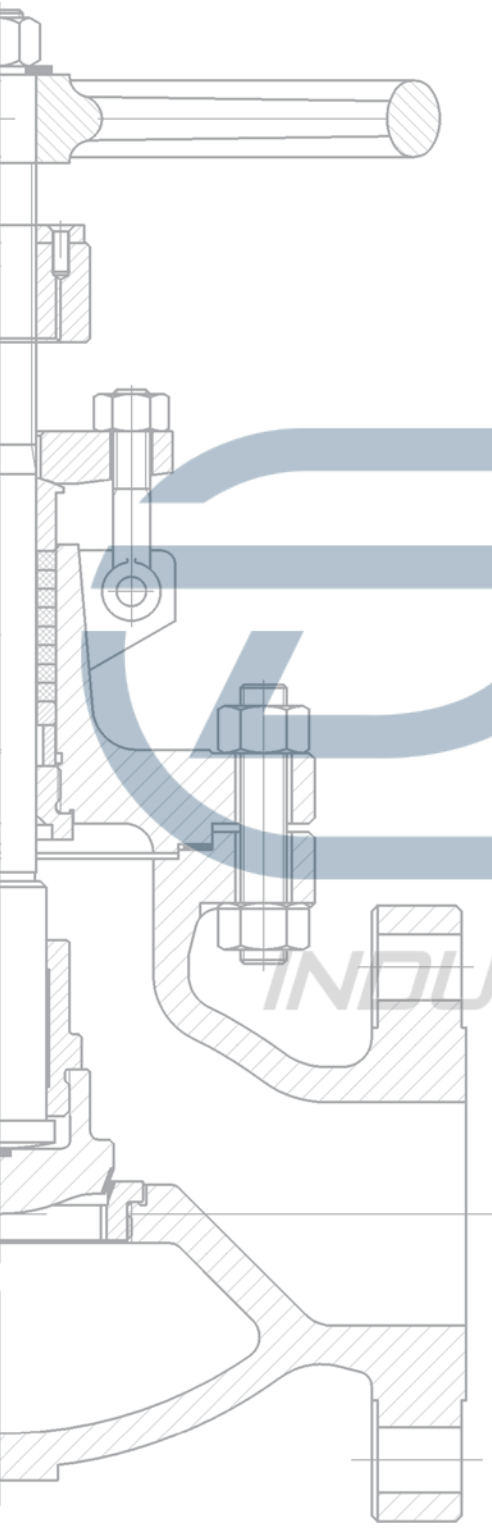
Pressure temperature ratings are based on ASME B16.34 (bar/°C)  
ASTM GROUP MATERIAL STANDARD - TO ASME B16.34

### ASME 300

SERVICE TEMPERATURE °C	ASTM MATERIALS										
	Group 1.1	Group 1.3	Group 1.5	Group 1.9	Group 1.10	Group 1.13	Group 1.14	Group 2.1	Group 2.2	Group 2.1	Group 2.2
	A216 WCB(a)	A352 LCB(b)	A217 WC1(c)	A217 WC6(d)	A217 WC9(e)	A217 C5	A217 C12	CF8(e)	CF8M(e)	CF3(f)	CF3M(g)
WORKING PRESSURES (bar)											
-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	-	-
540	-	-	10,7	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	-	-
(Hydr.) Shell Test	76,7	71,9	71,9	77,6	77,6	77,6	77,6	74,4	74,4	74,4	74,4
(Hydr.) Seat Test	56,2	52,7	52,7	56,9	56,9	56,9	56,9	54,6	54,6	54,6	54,6
(Pneum.) Seat Test	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5	5,5

- a) Permissible, but not recommended for prolonged usage above 427°C (800°F)
- b) Not to be used over 343°C (650°F)
- c) Permissible, but not recommended for prolonged usage above 468°C (875°F)
- d) Not to be used over 593°C (1100°F)

- e) At temperature over 538°C (1000°F), use only when carbon content is 0,04 or higher
- f) Not to be used over 427°C (800°F)
- g) Not to be used over 454°C (850°F)



## **APPLICATION:**

*Derval Globe valves are ideal for shut-off as well as for throttling service.*

*Their flow characteristics permit accurate and repeatable flow control. However, caution must be exercised to avoid extremely close throttling when pressure drop exceeds 20%. This creates excessive noise, vibration and possible damage to valves and piping.*

*They are widely used for water, saturated steam, air, gas, oil and crude oil products.*

*Operating parameters are in accordance with ASME B16.34 standard.*

## **INSTALLATION:**

*Derval Globe valve can be installed into pipeline in any position, however the best location for a perfect leak proof is horizontal with the stem moving vertically (handwheel up).*

*The high quality Derval valves are installed in a large variety of services in the Oil & Gas field, Chemical and Petrochemical industry, in On-shore and Off-shore drilling/refining, Power Generation, Water and Wastewater Treatment industries.*

 **DERVAL** s.r.l.

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