

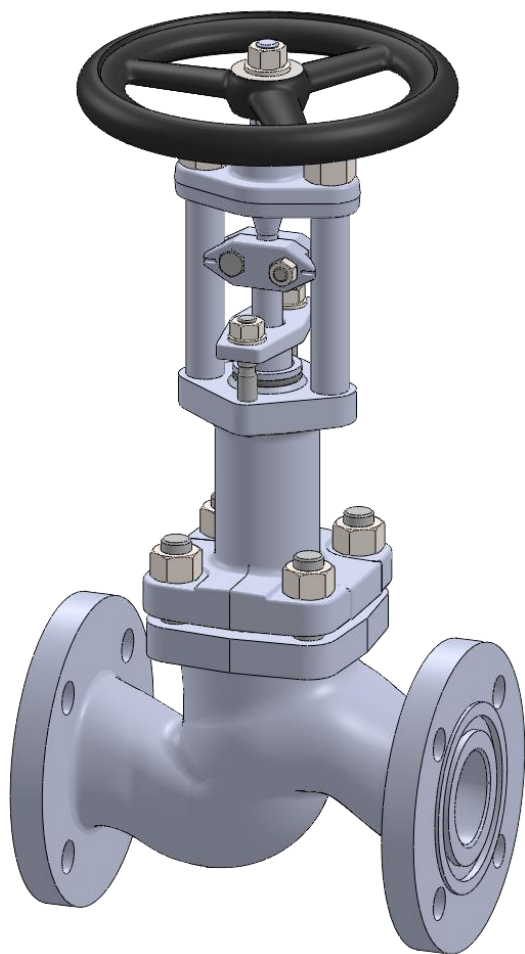


**PHÖNIX**

**STRACK**

**DAUME**  
REGELARMATUREN

**SIP** Solent & Pratt  
Phönix Ltd



# Globe Valve

## Type 350

## Class 300

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## Model 350

Straight Way / Protected Bellows

### Applications & Design Features

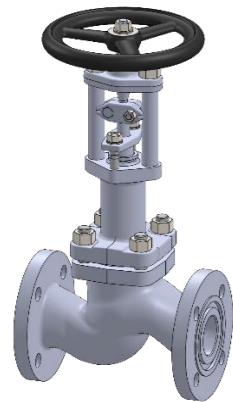
#### Applications

Model 350 is designed for critical service applications involving lethal, toxic, corrosive, inflammable, volatile, radiating, or expensive fluids. A Fire-Safe approved design per DIN EN 10497 is available for applications that have to comply with fire security standards.

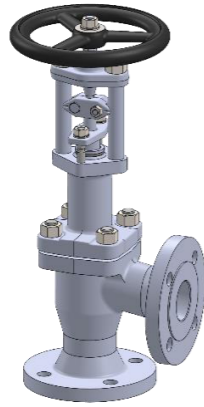
High vacuum resistant design 10<sup>-3</sup> to 10<sup>-8</sup> mbar, helium leakage test is possible if required  
the most common applications are

- Dry Chlorine (Cl<sub>2</sub>)
- Anhydrous Hydrogen Chloride (HCl)
- Vinyl Chloride Monomer (VCM)
- Ethylene Dichloride (EDC)
- Anhydrous Hydrofluoric Acid (HF)
- Isocyanites (MDI, TDI, HDI, etc.)
- heat transfer fluid application (steam, hot oil, molten Sodium, etc.) and
- fluids of similar nature.

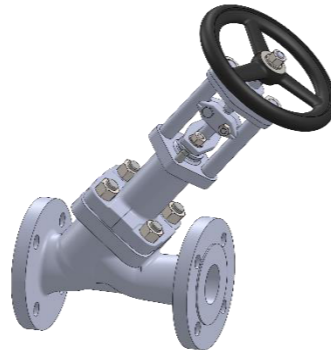
The unique valve design guarantees reliable and excellent protection against leaks or fugitive emissions. The stem seal requires virtually no maintenance due to leak free weld connections of the bellows with bonnet and stem. Constant packing monitoring and re-packing is eliminated. In the unlikely event of a bellows failure the backup packing guarantees safe valve performance until the next scheduled shutdown.



Straight



Angle



Y-Pattern

#### Design Features

##### Bellows and Packing

- bellows protected in extended bonnet against direct impingement from product flow
- multiple walls and hydroformed bellows
- up to 50.000 bellows operations guaranteed

##### Stem

- two-piece stem protects the bellows against torque stress
- design eliminates stem bearings along with their maintenance needs
- guided stem on top and bottom
- one-piece stem design upon request

##### Body and Bonnet

- bodies are forgings or castings with larger than required wall thickness and integral flanges
- extended bonnet provides for good thermal insulation
- body bonnet joint gasket is fully confined to prevent gasket flow or blowout

##### Seats

- solid hardfacings for outstanding corrosion and wear resistance
- knife edge metal-to-metal seat for bubble-tight shutoff
- replaceable disc for inexpensive maintenance

= zero emissions, zero seat leakage, low maintenance

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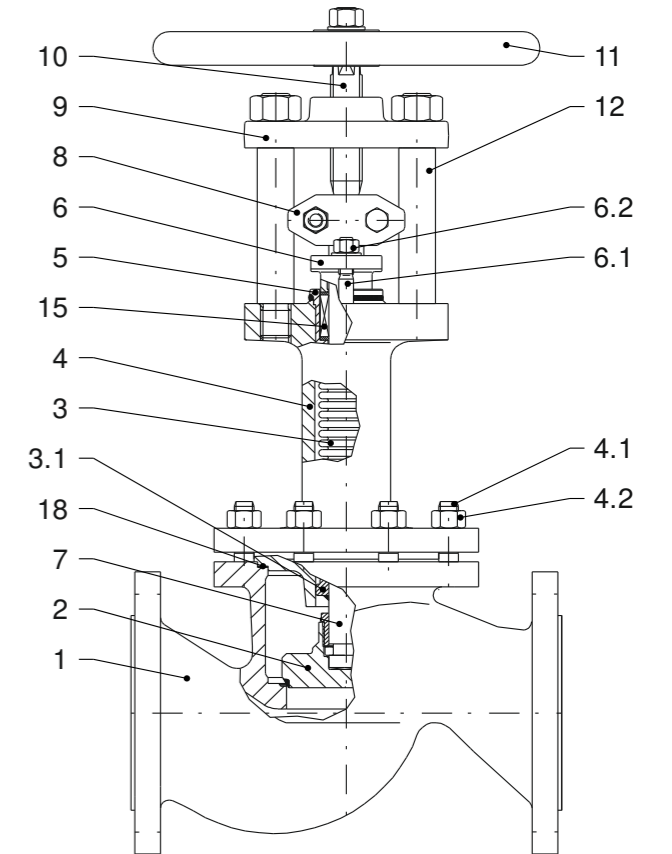
### Standard Materials of Construction

#### Options

Other materials per customer requirements are available!

#### Notes

Phoenix reserves the right to change product design and specification without notice!



#### Materials

Item	Part Name	Carbon steel Model 350C UP TO 842°F	low temp. Carbon steel Model 350T -58°F UP TO 572°F	Stainless steel Model 350V -328°F UP TO 752°F
1	Body Seat overlay	A105 / A216 WCB ER307 (≈ 200HRB)	A350 LF2 / A352 LCC ER307 (≈ 200HRB)	A182 F316L / A351 CF8M like body (≈ 200HRB)
2	Disc Overlay	AISI 420 hardened / A105 ER410 (≈ 300HRB)	A479 GR.316TI / A350 LF2 STELLITE 6 (≈ 42HRC)	A479 GR.316TI Stellite 6 (≈ 42HRC)
3	Bellows	A240 GR.316TI	A240 GR.316TI	A240 GR.316TI
3.1	Guide ring	A479 GR.316TI	A479 GR.316TI	A479 GR.316TI
4	Bonnet	A105 / A216 WCB	A350 LF2 / A352 LCC	A182 F316L / A351 CF8M
4.1	Stud bolt	A193 GR.B7	A193 GR.B8M	A193 GR.B8M
4.2	Hex. nut	A194 - 7L	A194 GR.8M	A194 GR.8M
5	Stuffing box body	A479 GR.316TI	A479 Gr. 316TI	A479 Gr. 316TI
6	Gland follower	A216 WCB	A352 LC3	A351 CF8M
6.1	Stud bolt	Carbon steel	A193 GR.B8M	A193 GR.B8M
6.2	Hex. nut	Carbon steel	A194 GR.8M	A194 GR.8M
7	Lower stem	A479 GR.316TI	A479 GR.316TI	A479 GR.316TI
8	Coupling	A351 CF8M	A351 CF8M	A351 CF8M
9	Bridge	A105, QPQ-nitrided	A105, QPQ-nitrided	A105, QPQ-nitrided
10	Upper stem	AISI 431	AISI 431	AISI 431
11	Handwheel	CAST IRON	CAST IRON	Cast iron
12	Pillar	C35	AISI 431	AISI 431
15	Packing	Graphite	PTFE-silk *	Graphite
18	Gasket	Grooved SS / graphite	Grooved SS / graphite	Grooved SS / graphite

\* ≥ 220°C Packing of pure graphite



### Model 350

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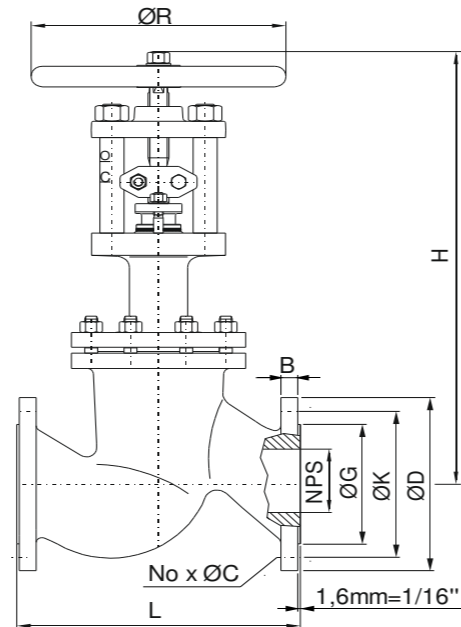
Class 300 Sizes 1/2" - 20"

#### Options

- Other customer specific designs on request

#### Notes

- Designed in acc. with asme b 16.34
- Marking acc. to MSS SP-25, ISO 5209 (EN19, AD-A4, CE)
- Standard tests acc. to API 598, ISO 5208
- Preservation acc. to manufacturer standard
- Connections: Flanges acc. to ASME B16.5  
Butt Weld Ends acc. to ASME B16.25  
Socket Weld Ends acc. to ASME B16.11
- F-T-F Dimensions: Flanges acc. to ASME B16.10  
Butt Weld Ends acc. to ASME B16.10  
Socket Weld Ends acc. to manufacturer standard



#### Dimensions & Weights & Flow Coefficients

NPS	Unit	Globe		Flange facing type B1					Weight	Kv [m³/h]	cv [USGal/min]
		L	H	ØR	ØG	ØK	No x ØC	ØD			
1/2"	[mm] [in]	152 5.98	360 14.17	150 5.91	35 1.38	67 2.64	4 x 16 4 x 0.63	95 3.74	12.7 0.50	6.5 kg 14.3 lbs	3.4 3.95
3/4"	[mm] [in]	178 7.01	345 13.58	150 5.91	43 1.69	83 3.27	4 x 19 4 x 0.75	117 4.61	14.2 0.56	7 kg 15.4 lbs	7 8.14
1"	[mm] [in]	203 7.99	365 14.37	150 5.91	51 2.01	89 3.50	4 x 19 4 x 0.75	124 4.88	15.7 0.62	8 kg 17.6 lbs	9.5 11.05
1 1/4"	[mm] [in]	215 8.46	430 16.93	200 7.87	64 2.52	99 3.90	4 x 19 4 x 0.75	133 5.24	17.5 0.69	14 kg 31 lbs	18 20.93
1 1/2"	[mm] [in]	229 9.02	430 16.93	200 7.87	73 2.87	114 4.49	4 x 22 4 x 0.87	155 6.10	19 0.75	16 kg 35 lbs	27 31
2"	[mm] [in]	267 10.51	465 18.31	200 7.87	92 3.62	127 5.00	8 x 19 8 x 0.75	165 6.50	20.6 0.81	19 kg 42 lbs	40 47
2 1/2"	[mm] [in]	292 11.50	460 18.11	200 7.87	105 4.13	149 5.87	8 x 22 8 x 0.87	191 7.52	23.9 0.94	29 kg 64 lbs	78 91
3"	[mm] [in]	318 12.52	520 20.47	250 9.84	127 5.00	168 6.61	8 x 22 8 x 0.87	210 8.27	26.9 1.06	38 kg 84 lbs	113 131
4"	[mm] [in]	356 14.02	625 24.61	315 12.40	157 6.18	200 7.87	8 x 22 8 x 0.87	254 10.00	30.2 1.19	60 kg 132 lbs	179 208
5"	[mm] [in]	400 15.75	625 24.61	315 12.40	186 7.32	235 9.25	8 x 22 8 x 0.87	279 10.98	33.3 1.31	95 kg 209 lbs	256 298
6" *	[mm] [in]	444 17.48	835 32.87	400 15.75	216 8.50	270 10.63	12 x 22 12 x 0.87	318 12.52	35.1 1.38	125 kg 276 lbs	405 471
8" *	[mm] [in]	559 22.01	895 35.24	500 19.69	270 10.63	330 12.99	12 x 25 12 x 0.98	381 15.00	39.6 1.56	190 kg 419 lbs	693 806
10" *	[mm] [in]	622 24.49	1020 40.16	500 19.69	324 12.76	387 15.24	16 x 28 16 x 1.10	445 17.52	46 1.81	305 kg 672 lbs	1047 1217
12" *	[mm] [in]	711 27.99	1125 44.29	630 24.80	381 15.00	451 17.76	16 x 32 16 x 1.26	521 20.51	49.3 1.94	425 kg 937 lbs	1460 1698
14" *	[mm] [in]	980 38.58	1395 54.92	720 28.35	413 16.26	514 20.24	20 x 32 20 x 1.26	584 22.99	52.3 2.06	540 kg 1190 lbs	1780 2070
16" *	[mm] [in]	1100 43.31	1400 55.12	720 28.35	470 18.50	572 22.52	20 x 35 20 x 1.38	648 25.51	55.6 2.19	800 kg 1764 lbs	2024 2353
20" *	[mm] [in]	1300 51.18	1500 59.06	720 28.35	584 22.99	686 27.01	24 x 35 24 x 1.38	775 30.51	62 2.44	1300 kg 2866 lbs	3100 3605

\* Nominal Sizes with Equilibrating Disc



### Model 350

Straight Way / Protected Bellows

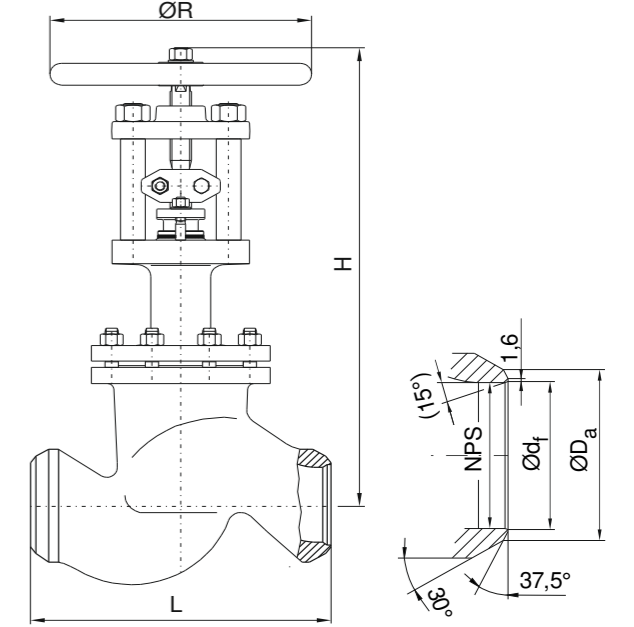
Class 300 Sizes 1/2" - 20"

#### Options

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#### Notes

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- F-T-F Dimensions: Flanges acc. to ASME B16.10  
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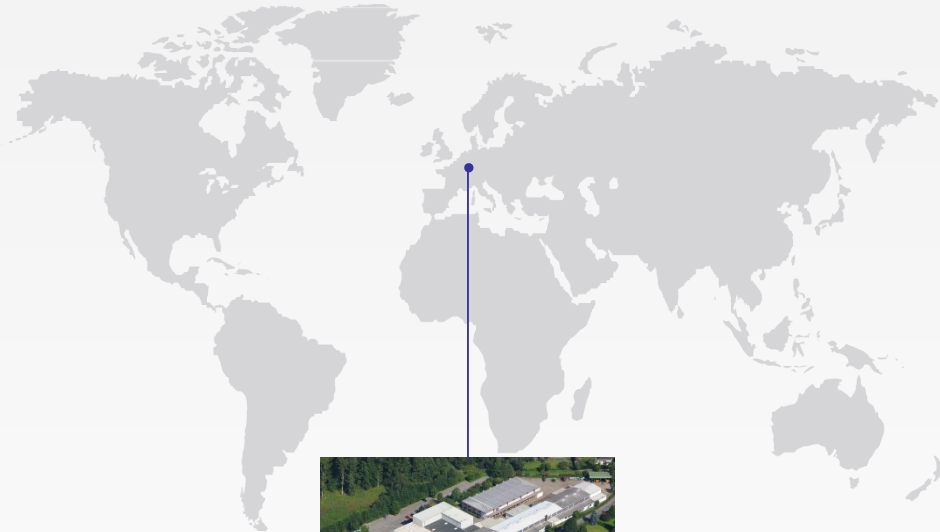


#### Dimensions & Weights & Flow Coefficients

NPS	Unit	Globe		ØR	Butt Weld Ends			Weight	Kv [m³/h]	cv [USGal/min]
		L	H		ØDₐ	Ødₜ	Schedule			
1/2"	[mm] [in]	130 5.12	360 14.17	150 5.91	21.5 0.85	15.5 0.61	40	5.2 kg 11.5 lbs	3.4 3.95	
3/4"	[mm] [in]	150 5.91	345 13.58	150 5.91	27 1.06	21 0.83	40	5 kg 11 lbs	7 8.14	
1"	[mm] [in]	160 6.30	365 14.37	150 5.91	34 1.34	27 1.06	40	5.5 kg 12.1 lbs	9.5 11.05	
1 1/4"	[mm] [in]	180 7.09	430 16.93	200 7.87	42 1.65	35 1.38	40	11 kg 24 lbs	18 20.93	
1 1/2"	[mm] [in]	200 7.87	430 16.93	200 7.87	48.5 1.91	41 1.61	40	11.5 kg 25 lbs	27 31	
2"	[mm] [in]	230 9.06	465 18.31	200 7.87	60.5 2.38	52.5 2.07	40	14 kg 31 lbs	40 47	
2 1/2"	[mm] [in]	292 11.50	460 18.11	200 7.87	73 2.87	63 2.48	40	21 kg 46 lbs	78 91	
3"	[mm] [in]	318 12.52	520 20.47	250 9.84	89 3.50	78 3.07	40	28 kg 62 lbs	113 131	
4"	[mm] [in]	356 14.02	625 24.61	315 12.40	114 4.49	102 4.02	40	43 kg 95 lbs	179 208	
5"	[mm] [in]	400 15.75	625 24.61	315 12.40	141 5.55	128 5.04	40	74 kg 163 lbs	256 298	
6" *	[mm] [in]	444 17.48	835 32.87	400 15.75	168 6.61	154 6.06	40	97 kg 214 lbs	405 471	
8" *	[mm] [in]	559 22.01	895 35.24	500 19.69	219 8.62	203 7.99	40	148 kg 326 lbs	693 806	
10" *	[mm] [in]	622 24.49	1020 40.16	500 19.69	273 10.75	255 10.04	40	244.5 kg 539 lbs	1047 1217	
12" *	[mm] [in]	711 27.99	1125 44.29	630 24.80	324 12.76	303 11.93	STD	338 kg 745 lbs	1460 1698	
14" *	[mm] [in]	980 38.58	1395 54.92	720 28.35	356 14.02	336.5 13.25	STD	724 kg 1596 lbs	1780 2070	
16" *	[mm] [in]	1100 43.31	1400 55.12	720 28.35	406 15.98	387.5 15.26	STD	659 kg 1453 lbs	2024 2353	
20" *	[mm] [in]	1300 51.18	1500 59.06	720 28.35	516 20.31	489 19.25	STD	1088 kg 2399 lbs	3100 3605	

\* Nominal Sizes with Equilibrating Disc

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