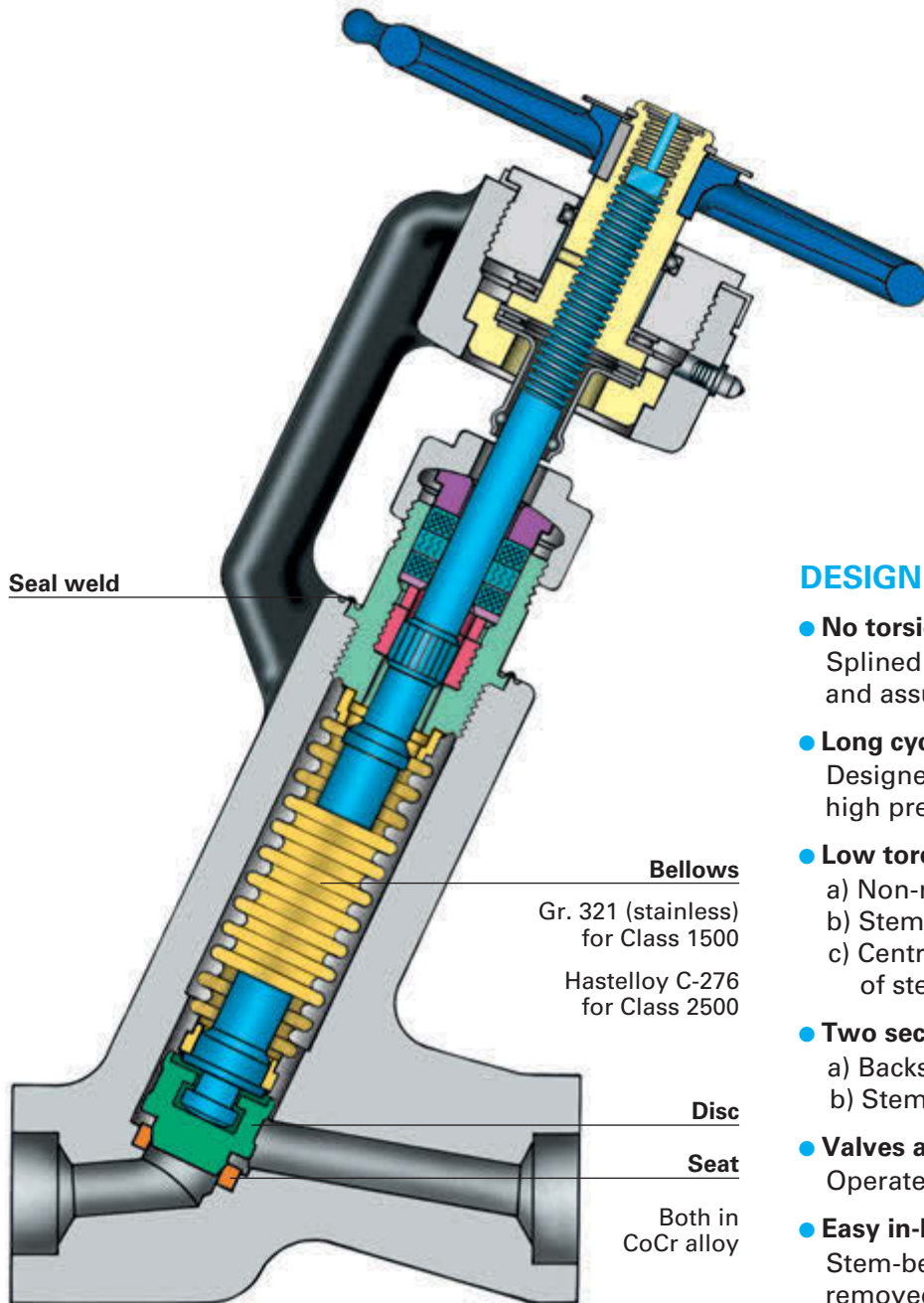


# VELAN SPECIAL SERVICES

## BELLOWS SEAL HERMETICALLY-SEALED Y-PATTERN GLOBE VALVES

NPS ½–2 (DN 15–50)

ASME CLASSES 1500–2500



*In-service photo of Class 2500 hermetically-sealed Y-pattern bellows seal valve.*

### DESIGN FEATURES

- **No torsion of bellows**  
Splined stem prevents torsion of bellows and assures long cycle life.
- **Long cycle life bellows (5,000 cycles)**  
Designed for, and successfully tested in, high pressure–temperature conditions.
- **Low torque due to:**
  - a) Non-rotating stem
  - b) Stem nut thrust bearings
  - c) Central grease fitting for lubrication of stem nut.
- **Two secondary stem seals**
  - a) Backseat
  - b) Stem packing.
- **Valves are fire safe**  
Operate normally during and after fire test.
- **Easy in-line servicing**  
Stem-bellows assembly can easily be removed and replaced on valves with threaded (O-ring seal) bonnet. On seal-welded valves, removal and replacement of weld is necessary. Special power operated tools are available for cutting the seal weld.

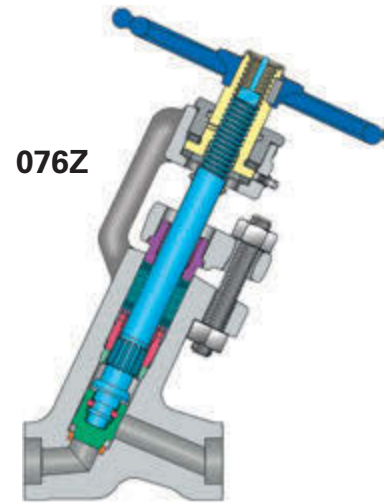
For more information, see our *Bellows Seal Valves catalog (VEL-BS)* at [www.velan.com](http://www.velan.com)

# VELAN FORGED STEEL Y-PATTERN BONNETLESS GLOBE VALVES

CONVENTIONAL PORT OPENING, THREADED, SOCKET WELD, OR BUTT WELD  
NPS ¼–4 (DN 8–100) ASME CLASSES 1690, 2680, 4500

## STANDARD MATERIALS

Part	Materials		
Body	A105N	A 182 Gr. F22	A 182 Gr. F316
Seat (integral)	CoCr alloy	CoCr alloy	CoCr alloy
Disc	CoCr alloy	CoCr alloy	CoCr alloy
Stem	Gr. 410 (stainless)	Gr. 410 (stainless)	Gr. 316B (stainless)
Stem nut	A 439 Austenitic ductile iron Gr. D-2C		
Backseat	CoCr alloy	CoCr alloy	CoCr alloy
Splined bushing	Gr. 630 (stainless)	Gr. 630 (stainless)	Gr. 630 (stainless)
Packing washer	Gr. 304 (stainless)	Gr. 304 (stainless)	Gr. 304 (stainless)
Packing	Graphite	Graphite	Graphite
Split gland bushing	Gr. CA15 (stainless)	Gr. CA15 (stainless)	Gr. CA15 (stainless)
Packing flange	A105	A105	A182 Gr. F304
Gland stud	Gr. B7	Gr. B6	Gr. B8M2
Gland nut	Gr. 2H	Gr. 2H	Gr. 8M
Yoke bushing	Gr. 1020 steel	Gr. 1020 steel	Gr. 1020 steel (nickel plated)
Thrust bearing	Steel	Steel	Steel
Stem protector	Steel	Steel	Steel (nickel-plated)
O-ring	Nitrile rubber	Nitrile rubber	Nitrile rubber
Handwheel	Malleable iron (painted)	Malleable iron (painted)	Malleable iron (painted)
Snap ring	Steel	Steel	Steel
Name plate	Gr. 304 (stainless)	Gr. 304 (stainless)	Gr. 304 (stainless)



## DESIGN SPECIFICATIONS

ITEM	APPLICABLE SPECIFICATION
General design	ASME B16.11
Socket weld design	ASME B16.11
Threaded design	ASME B1.20.1
Butt welding design	ASME B16.25
Testing	ASME B16.34 & MSS-SP-61
Marking	MSS-SP-25

## DIMENSIONS, WEIGHTS AND CV

Size NPS DN	A Port		B End-to-end		C Center- to-top		H Handwheel		BP Clearance open		CF Center- to-end		Weight lb/kg		Cv Flow coefficient	
	1690 2680	4500	1690 2680	4500	1690 2680	4500	1690 2680	4500	1690 2680	4500	1690 2680	4500	1690 2680	4500	1690 2680	4500
¼ 8	0.559 14.2	0.375 9.5	4.88 124	5.75 146	9.63 146	11.75 298	6.00 152	6.00 152	3.63 92	3.25 83	3.20 81	4.19 106	15 7	27 12.2	1.3	1.0
¾ 10	0.559 14.2	0.375 9.5	4.88 124	5.75 146	9.63 245	11.75 298	6.00 152	6.00 152	3.63 92	3.25 83	3.20 81	4.19 106	15 7	27 12.2	2.4	1.3
½ 15	0.559 14.2	0.375 9.5	4.88 124	5.75 146	9.63 245	11.75 298	6.00 152	6.00 152	3.63 92	3.25 83	3.20 81	4.19 106	15 7	27 12.2	2.9	1.5
¾ 20	0.559 14.2	0.559 14.2	4.88 124	7.00 178	9.63 245	14.78 375	6.00 152	10.00 254	3.63 92	6.00 152	3.20 81	3.88 99	15 7	56 25	5.0	5.0
1 25	0.833 21.2	0.559 14.2	5.75 146	7.00 178	13.19 335	14.78 375	8.00 203	10.00 254	5.13 130	6.00 152	4.19 106	3.88 99	33 15	56 25	9.8	5.0
1¼ 32	1.125 28.6	0.833 21.2	7.25 184	10.13 257	16.63 422	18.88 480	12.00 305	12.00 305	7.57 192	7.00 178	4.94 125	6.57 167	67 30	94 43	20	9.8
1½ 40	1.125 28.6	1.125 28.6	7.25 184	12.00 305	16.63 422	20.75 527	12.00 305	18.00 457	7.57 192	8.00 203	4.94 125	8.00 203	67 30	148 67	20	20
2 <sup>(1)(3)</sup> 50	1.688 42.9	1.125 28.6	10.13 257	12.00 305	19.73 501	20.75 527	12.00 305	18.00 457	7.50 190	8.00 203	6.57 167	8.00 203	110 50	148 67	60	26
2½ <sup>(2)(3)(4)</sup> 65	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 <sup>(5)</sup> 406	16.00 <sup>(5)</sup> 406	7.25 184	7.25 184	8.00 203	8.00 203	148 <sup>(6)</sup> 67	148 67	60	47
3 <sup>(2)(4)</sup> 80	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 <sup>(5)</sup> 406	16.00 <sup>(5)</sup> 406	7.25 184	7.25 184	8.00 203	8.00 203	148 <sup>(6)</sup> 67	148 67	60	47
4 <sup>(4)</sup> 100	1.688 42.9	1.50 38.1	12.00 305	12.00 305	20.69 526	20.75 527	16.00 <sup>(5)</sup> 406	16.00 <sup>(5)</sup> 406	7.25 184	7.25 184	8.00 203	8.00 203	148 67	148 67	60	47

(1) 1-piece body valve design.

(2) Valves with butt weld end connection in Classes 1690 and 2680, refer to NPS 2 (DN 50) design.

(3) 2-piece body valve design in Class 4500. 2-piece body valve design in Classes 1690 and 2680 with socket weld and threaded end connection.

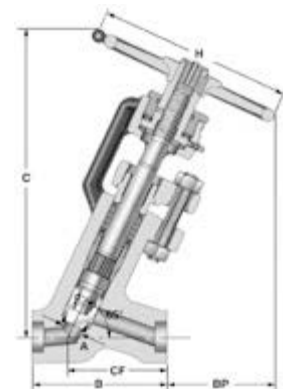
(4) 2-piece body valve design

(5) Impactor handle.

(6) For 1-piece design, with butt weld end connection in Classes 1690 and 2680, weight 110 lbs (50 kg)

ASME CLASS	FIGURE NUMBERS <sup>(7)</sup>		
	Stop valve	Stop check valve	Needle valve
1690	8076Z	8086Z	8096Z
2680	9076Z	9086Z	9096Z
4500	5076Z	5086Z	5096Z

(7) Threaded, socket weld or butt weld connections



**NOTE:** Valves also supplied with impactor handle, electric, pneumatic or gear actuators.