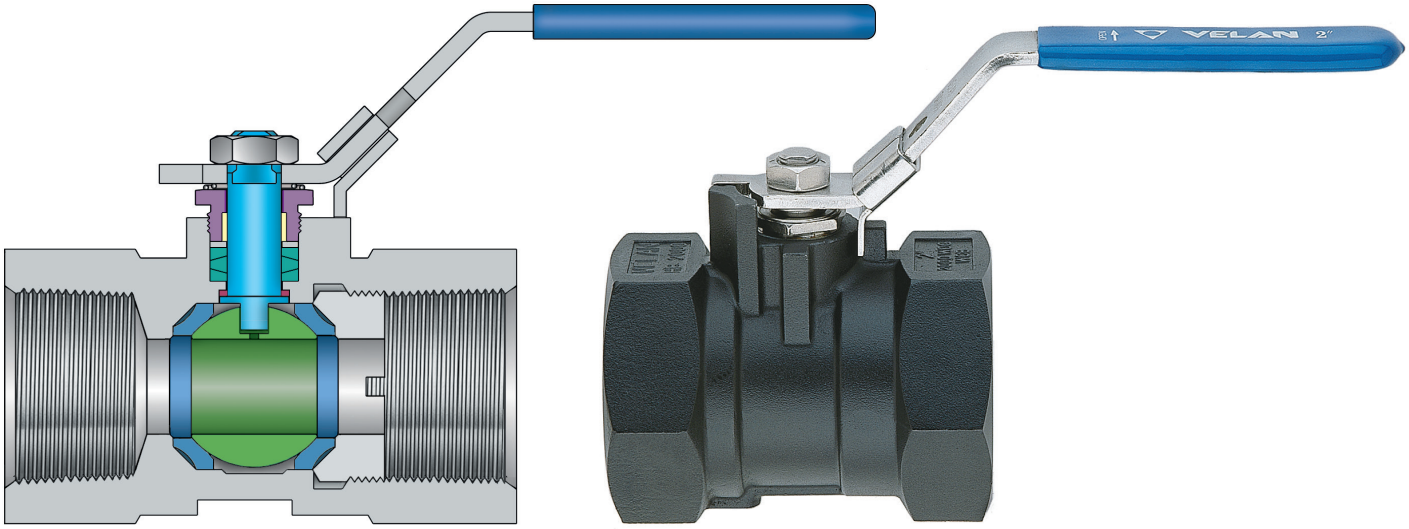
Memoryseal® HB-2000 resilient-seated ball valves

Quick sheet

One-piece, carbon, stainless, and alloy 20 steel

Reduced port, NPS ¼ –2 (DN 8–50), 2000 WOG, threaded



Design features

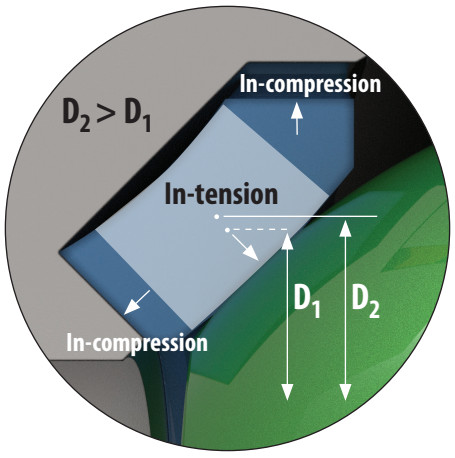
- Exclusive Memoryseal® seats compensate automatically for wear and fluctuations of pressure and temperature.
- Modified PTFE (MPTFE) or Reinforced PTFE (RPTFE) seat material available.
- Multiple solid cup and cone type PTFE stem seal or graphite packing.
- Adjustable self-locking threaded packing nut NPS ½ – 2 (DN 15 – 50).
- Packing nut sleeve prevents side load on packing rings. Eliminates premature wear, enhancing packing life.
- Long cycle life.
- Low, uniform torques.
- Blowout-proof stem.
- Pressurized thrust washer prevents galling, reduces torque and provides secondary stem seal.
- One-piece heavy wall body for high structural strength to ASME B16.34.
- Full size packing chamber.
- Protective metal washer for packing rings.
- Stainless steel handle with safety clip. Oval handwheel also available with safety clip.
- Fire tested in accordance with API 607 Rev. 5/ISO 10497.

Applications

A rugged low-cost ball valve for many industrial, commercial, and original equipment manufacturers. For water, oil, gas and saturated steam up to 150 psig (10.3 bar).

Velan Memoryseal® ball valve technology

The Velan sealing memory is induced into the seats during the assembly process. When the ball is inserted into the valve body, it partially flattens the seat, creating a tensile stress in the seat center. As a result, the seat core increases in diameter from D_1 to D_2 and, like a stretched elastic band, pushes against the ball. This ensures reliable sealing even at vacuum or low pressures.

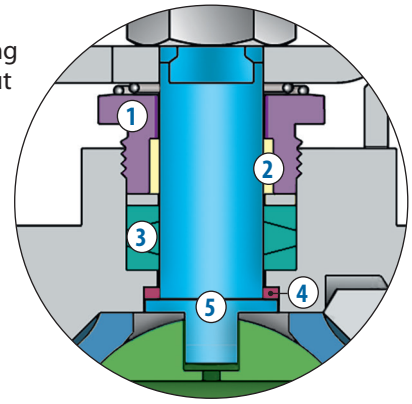


Benefits of Memoryseal® concave-convex flexible, in-tension seats with induced sealing memory

- Greater strength, less fatigue
- Positive bi-directional shutoff
- Uniform torque
- Compensate for temperature fluctuations
- Eliminate cold flow effects
- High cycle life

Stem seal design

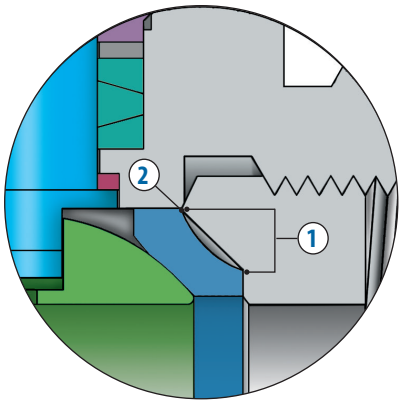
1. Adjustible, self-locking threaded packing nut
2. Packing nut sleeve prevents side thrust
3. PTFE cup and cone packing rings(1)
4. RPTFE thrust washer
5. Blowout-proof stem

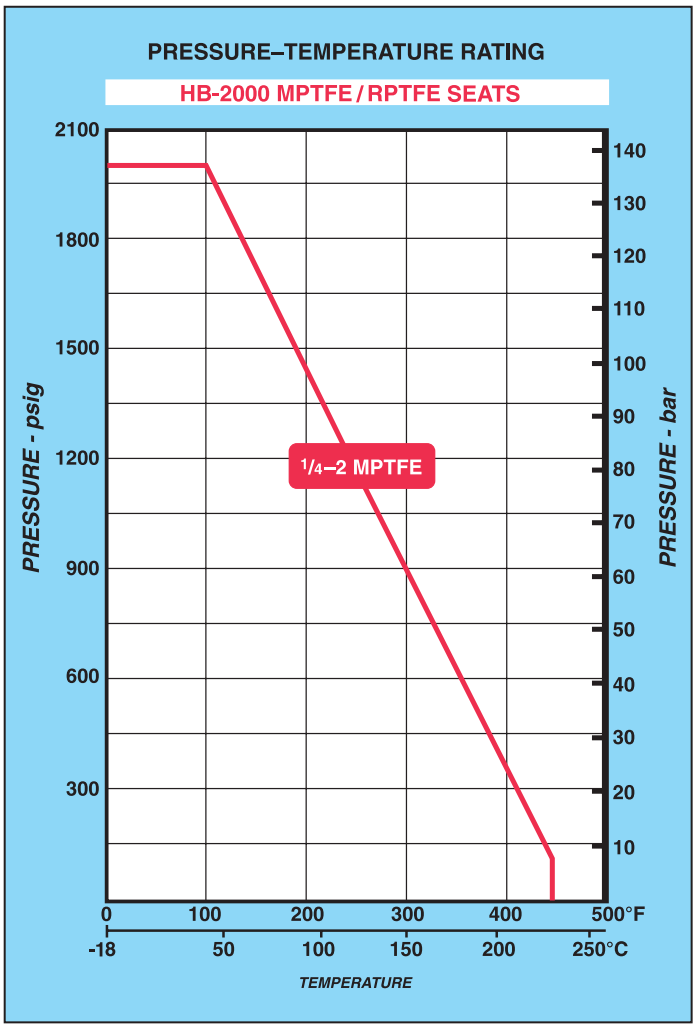


Superior body seal design

Memoryseal® designs incorporate a secondary metal-to-metal contact area in addition to the primary gasket. This one-piece valve uses a solid PTFE seal with metal-to-metal back-up contact.

1. PTFE seat seal contact
2. Metal-to-metal contact





Note: Above chart shows sizes in NPS.

Standard materials

Part	Carbon steel	Stainless steel	Alloy 20
Body	WCB	CF8M	Alloy 20
Seat retainer	WCB	SS 316	Alloy 20
Ball		SS 316	Alloy 20
Seat		MPTFE/RPTFE	
Stem		SS 316	Alloy 20
Thrust washer		RPTFE	
Packing		PTFE	
Packing nut		SS 304	
Packing nut sleeve		RPTFE	
Packing washer		SS 316	
Handle nut		Stainless steel	
Handle		Stainless steel	
Coil spring		Stainless steel	

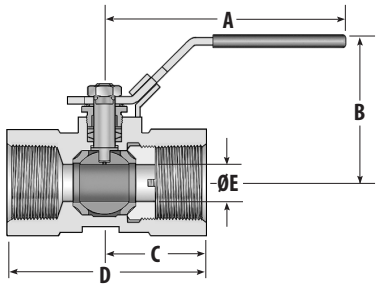
Note: Other materials available

Pressure-temperature ratings

Medium	Service conditions
WOG	2000 psig @ 100°F (138 bar @ 38°C)
WOG	100 psig @ 450°F (7 bar @ 232°C)

Dimensions, weights, and C_Vs

Size NPS DN	Reduced port						
	A	B	C	D	ØE	Weight lb/kg	C_V
¼ 8	2.67 67.8	1.26 32	0.83 21.1	1.58 40.1	0.23 5.8	0.3 0.1	3
⅜ 10	3.24 82.3	1.36 34.5	0.90 22.9	1.75 44.5	0.33 8.4	0.3 0.1	4
½ 15	3.82 97	1.98 50.3	1.30 33	2.43 61.7	0.36 9.1	0.8 0.4	5
¾ 20	3.99 101.3	2.27 57.7	1.43 36.3	2.75 69.9	0.50 12.7	1.1 0.5	10
1 25	4.02 102.1	2.53 64.3	1.73 43.9	3.38 85.9	0.62 15.7	1.9 0.9	14
1¼ 32	6.11 155.2	3.33 84.6	1.94 49.3	3.69 93.7	0.75 19.1	3.2 1.5	33
1½ 40	6.11 155.2	3.42 86.9	2.09 53.1	4.00 101.6	0.99 25.1	4.1 1.9	45
2 50	7.05 179.1	4.14 105.2	2.27 57.7	4.50 114.3	1.21 30.7	6.7 3.0	58



Note: Dimensions shown in inches and mm. K_V is the metric equivalent of C_V. $K_V = C_V \times 0.864$

How to order Velan Memoryseal HB-2000 resilient-seated ball valves

Type of connection	Size of connection			Model number/ Class	Port	Type	Body			Trim (ball /stem)		Seat	Special service
A	B			C	D	E	F			G		H	I
S	0	8	—	B	0	2	0	2	—	S	S	G	A

Example: NPS 2 (DN 50) threaded, HB-2000 regular port one-piece bar stock valve in carbon steel with stainless steel trim and glass-filled PTFE seats for standard service.

A TYPE OF CONNECTION

S Thread NPT

B SIZE OF CONNECTION

Sizes shown in NPS (DN)

01	¼ (8)	**03**	½ (15)	**05**	1 (25)	**07**	1½ (40)
02	⅜ (10)	**04**	¾ (20)	**06**	1¼ (32)	**08**	2 (50)

C MODEL NUMBER / CLASS

B HB-2000

D PORT

0 Regular port

E TYPE

2 Bar stock (one-piece)

F BODY MATERIAL

02	WCB	**13**	SS CF8M	**23**	Alloy 20 (CN7M)

G TRIM MATERIAL (ball/stem)

Code	Ball	Stem	Code	Ball	Stem
AY	Alloy 20	Alloy 20	**SS**	316	316

H SEAT MATERIAL

E	MPTFE	**G**	Glass-reinforced PTFE

I SPECIAL SERVICE

A	Standard	**G**	Oxygen
C	Chlorine	**Z**	Fire-tested to API 607 rev. 5 ISO 10497

Note: Velan valves for NACE service comply with the metallurgical requirements of the current NACE MR0103 and MR0175 / ISO 15156. Material selection is dependent on the actual environment and it is therefore the equipment End User's responsibility to ensure that the materials are suitable for the intended service. Please contact Velan for any questions regarding the application of our products for NACE service.