



**GVS® Trunnion Mounted
Metal Seated Ball Valves**



FUGITIVE EMISSION CERTIFIED

www.gvs-vci.com

Guide Valve Limited, established in 1980 with its headquarters in Ontario, Canada, specializes in the manufacturing of valves.

We are the manufacturer of the trademark brands such as, GVS®, VCI®, Lowe & GVS®-Malema. Our products are based on the most advanced technologies and are used in all sectors from petrochemical refining, process to transportation and distribution of the end product.

GVS® valves are designed, manufactured & tested according to API 6D, API 6A and CSA Z245.15 and available to API 608. The GVS Products has achieved SIL 3 Certification by an independent 3rd party agency. Our standard product design of Series B & GB are of the trunnion mounted, bolted body forged type ball valves.



CANADA

API 6D: 6D-1342
API Spec Q1: Q1-4181
ISO 9001:2015: 0052985-01

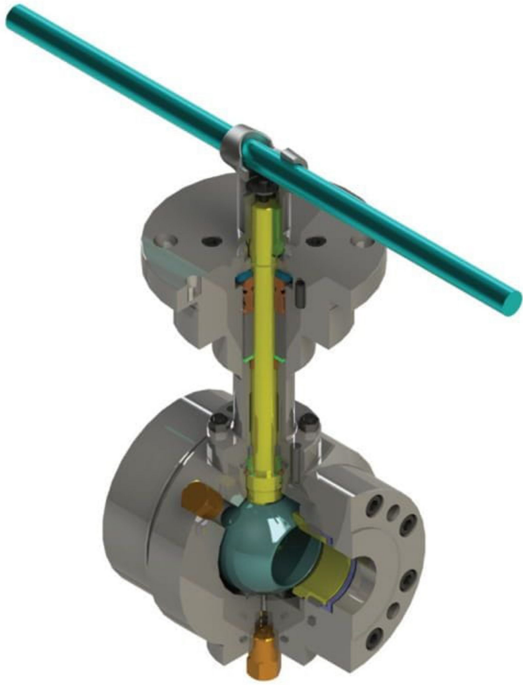


CHINA

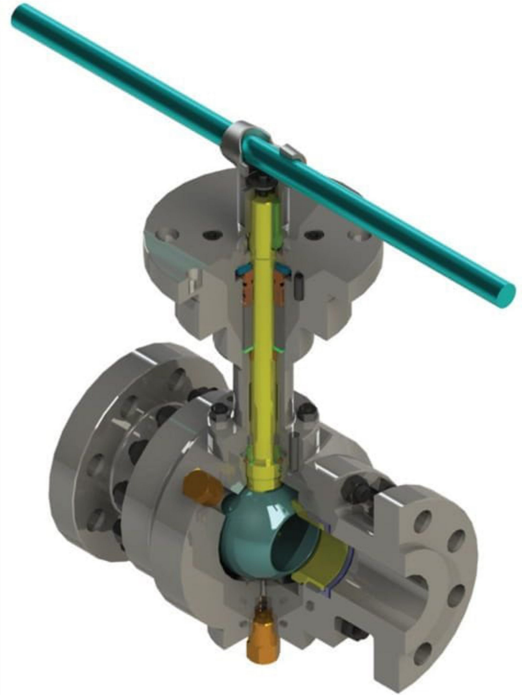
API 6D: 6D-1822
API 6A: 6A-2250
API Spec Q1: Q1-3641
ISO 9001:2015: ISO-3983



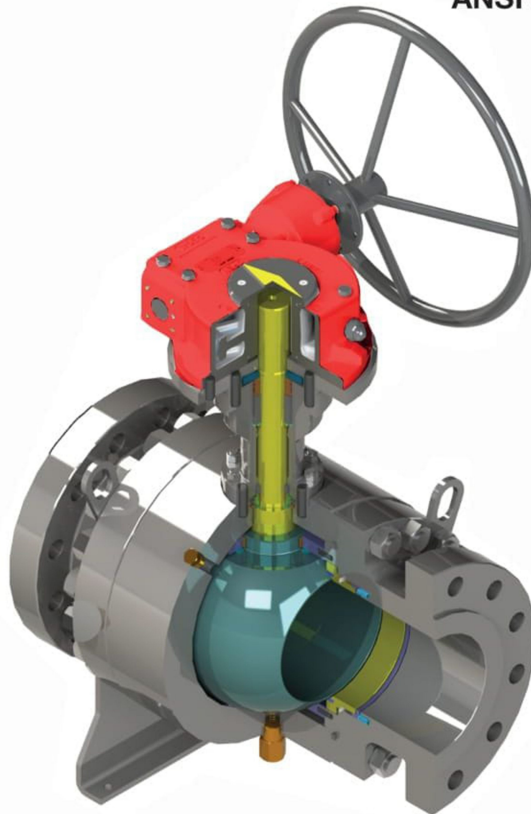
USA



Model B
 Sizes: 2" - 4"
 ANSI Class 150#



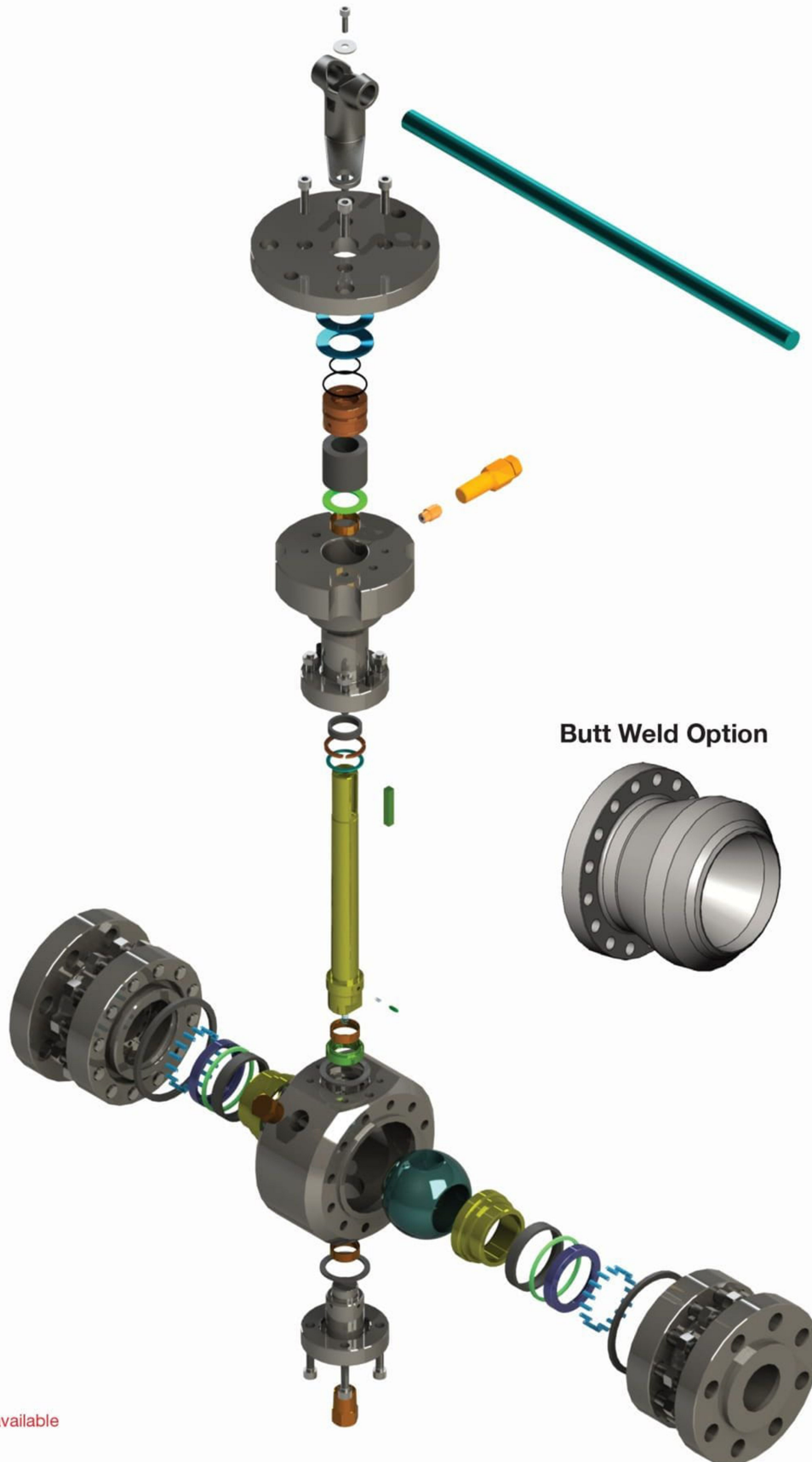
Model B
 Sizes: 2" - 4"
 ANSI Class 300 - 1500#



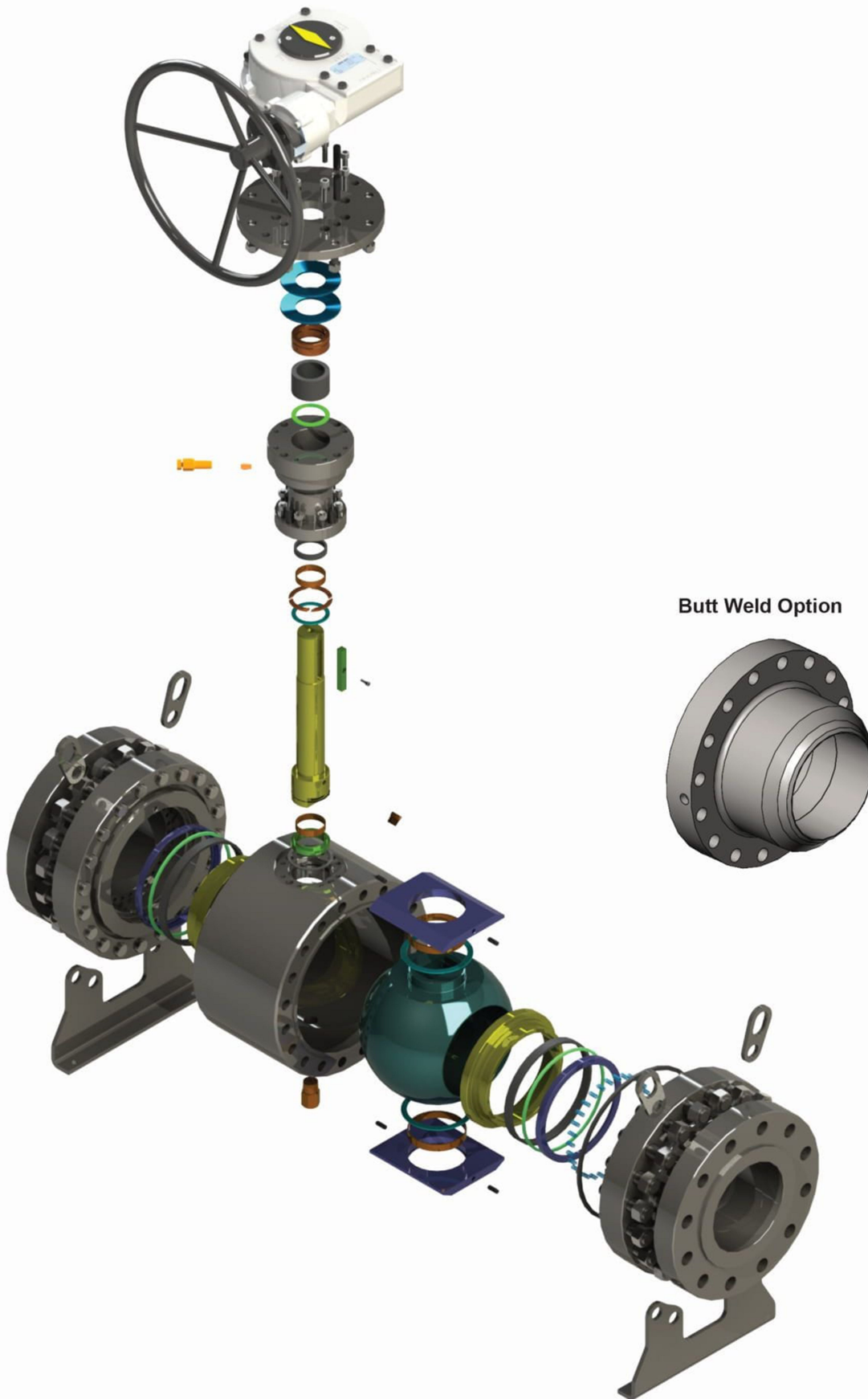
Model GB
 Sizes: 2" - 36"
 ANSI Class 150 - 2500#



Gear operated option is available

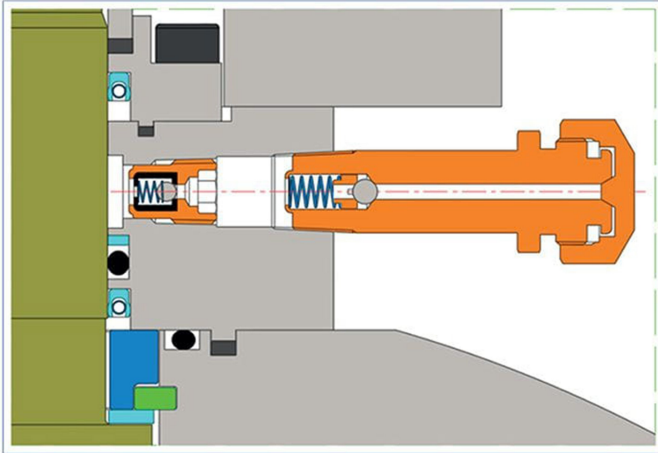


Gear operated option is available



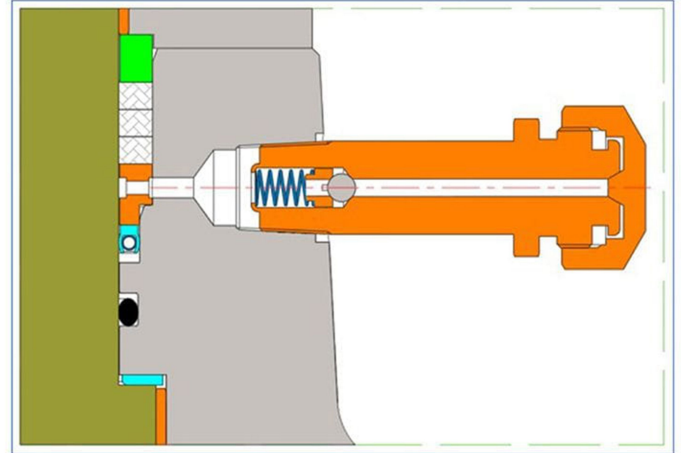
Butt Weld Option

ISO 15848-1
ENDURANCE CLASS CO3 TIGHTNESS CLASS AM



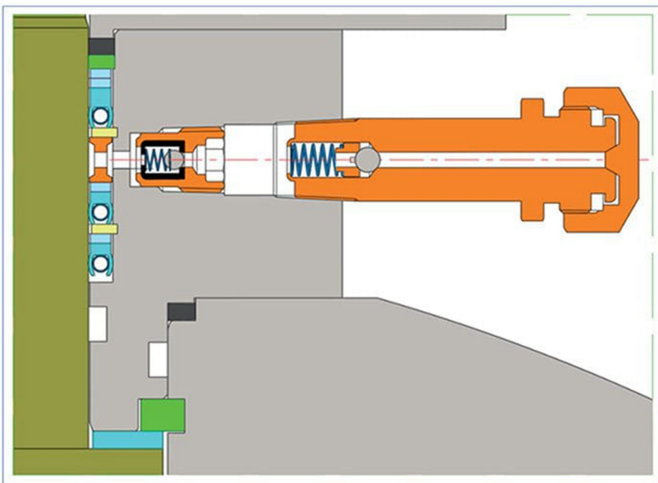
+ 200°C

CERTIFICATION IN PROCESS



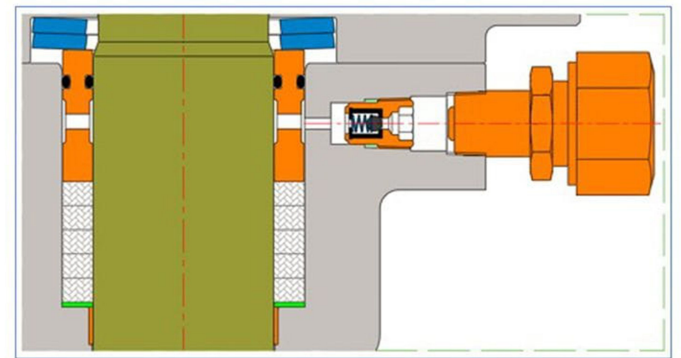
+ 240°C

API STANDARD 641



+ 240°C

API STANDARD 641
ISO 15848-1
ENDURANCE CLASS CO2 TIGHTNESS CLASS CH

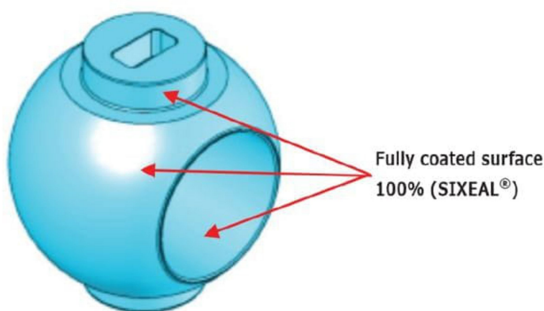


+ 350°C

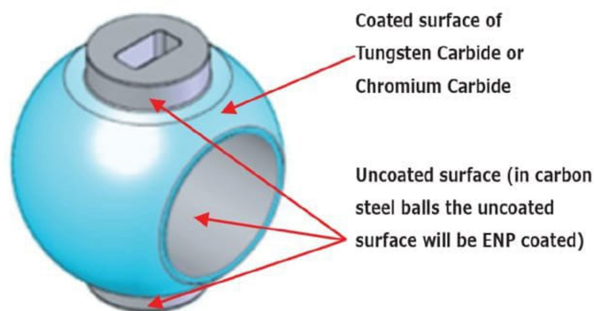
SIXEAL® is recommended onto our GVS® Trunnion Mounted Metal to Metal and Severe Service, soft seated Ball Valves where high resistance to abrasion, corrosion and wearing are required. For example, in slurry and sandy environments SIXEAL® is a viable alternative to HVOF coating.

SIXEAL® Technology:

Micro-particles of silicon carbide are added into the ENP bath to obtain a final plating in which incorporated sub-particles are evenly distributed all over the treated surfaces. The result is a homogeneous hard-faced element strongly incorporated in a nickel matrix, matching the hardness properties of silicon and the chemical resistance of ENP. This uniquely developed process is based on electroless nickel plating procedure. SIXEAL® coating thickness is maintained equally all over the coated surfaces, "complete ball".



SIXEAL®



Tungsten Carbide / Chromium Carbide

Coatings	ENP	Tungsten Carbide	Chromium Carbide	SIXEAL®
Typical Hardness (Hv)	1000	1050	850	1200
Recommended Operating Temperature (°C)	-196 up to 240	-196 up to 230	-146 up to 550	-196 up to 550
Thickness (µm)	10 - 75	150 - 400	150 - 400	15 - 75
STD Roughness (Ra)	0.20	0.25	0.25	0.20
Superfinishing (Ra)	0.10	0.15	0.15	0.10
Perfect Fit	Excellent	Excellent	Excellent	Excellent
Hardness	Excellent	Excellent	Fair	Excellent
Coating Uniformity On All Surfaces	Yes	No	No	Yes
Constant Torque Performance	Good	Good	Fair	Good
Wearing, Abrasion and Erosion Resistance	Good	Good	Fair	Excellent

Note: Higher temperature coating is available upon request.

Note: Cladding is available upon request.

COMMON PROBLEMS WITH BALL VALVES HANDLING CORROSIVE AND EROSIVE MEDIA

BALL PITTING

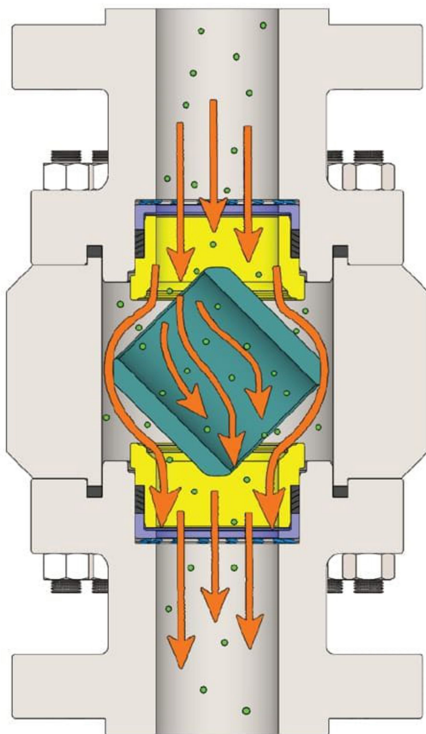
When the valve is in closed position, the upstream face which is exposed to the corrosive gases and fluids tend to pit the area of the ball bounded by the valve seat, causing the critical smooth surface finish to become rough. Because the ball is fitted with zero clearance to the seats, any roughness or protrusions caused by corrosive or erosive attack will damage the valve seats during the rotation of the ball. Once the seats are damaged, effective sealing is lost. Continued cycling increases the seat damage.

FLUID DEPOSITS

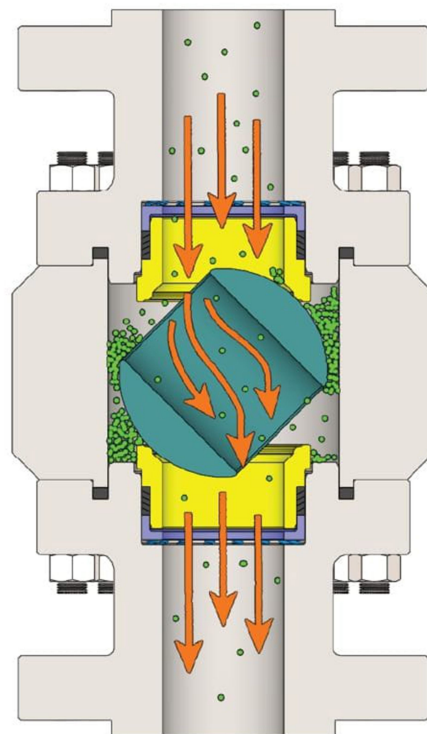
Valves that handle fluids and gases that tend to deposit crustations or leave residue on the inner valve surfaces will become hard to operate. With the ball valve in the closed position for lengthy time periods, the build-up of deposits adheres to the ball face within the seat boundaries, causing interference with the valve seats during valve cycles. Only a few thousandths deposit on the ball face will increase turning torque and damage seats. Excessive crustations or residue on the ball face will make the valve inoperative.

ADVANTAGES OF A VALVE WITH THE RECESSED BALL FEATURE

- Debris build-up on ball surface does not come into contact with the seat surface
- Longer valve in-service life
- Less contact area between ball and seats
- Lower valve running torque



Recessed Ball Valve



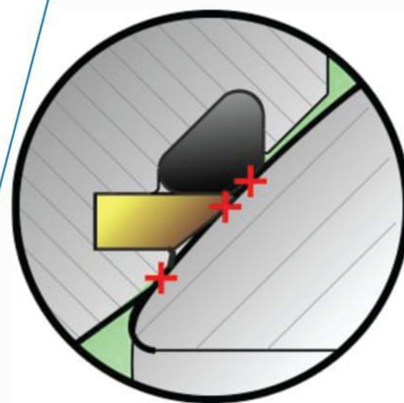
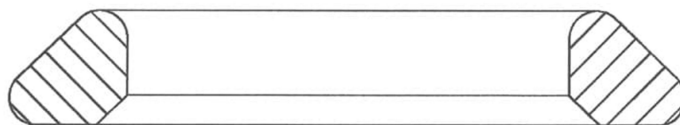
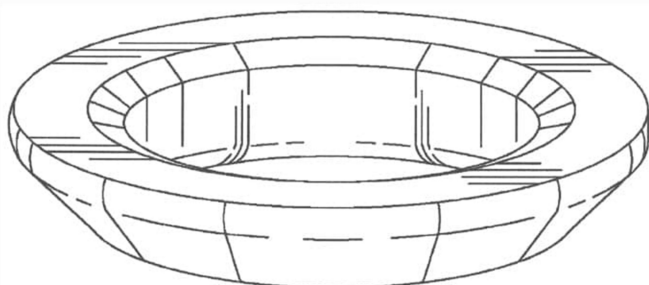
Typical Ball Valve

Triple Seat Seal Feature

Triple seat feature is offered by Guide Valve Limited to assure tight sealing in both low pressure and high pressure operation points. Triple sealing is suitable for many applications; in particular for critical condition to guarantee tight sealing in every pressure condition. This is achieved by means of combining Guide Valve's unique seat to ball design which is incorporating our patented special shaped Delta seat with the Protector / Scraper seat and metal seat design.

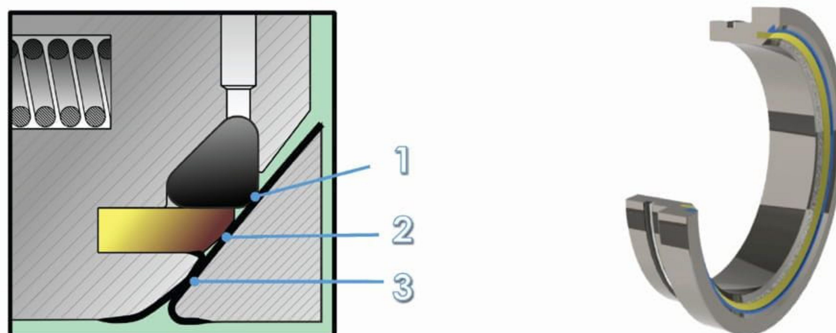
Triple seat to ball sealing design allows to have three different type of seals: resin, elastomeric (Delta) and metal sealing.

The special shaped Delta seat (US design patent#: US 731, 035S and Canadian design patent#: 155048) ensures zero leakage at very low pressure and continues to provide shut-off at higher pressures.

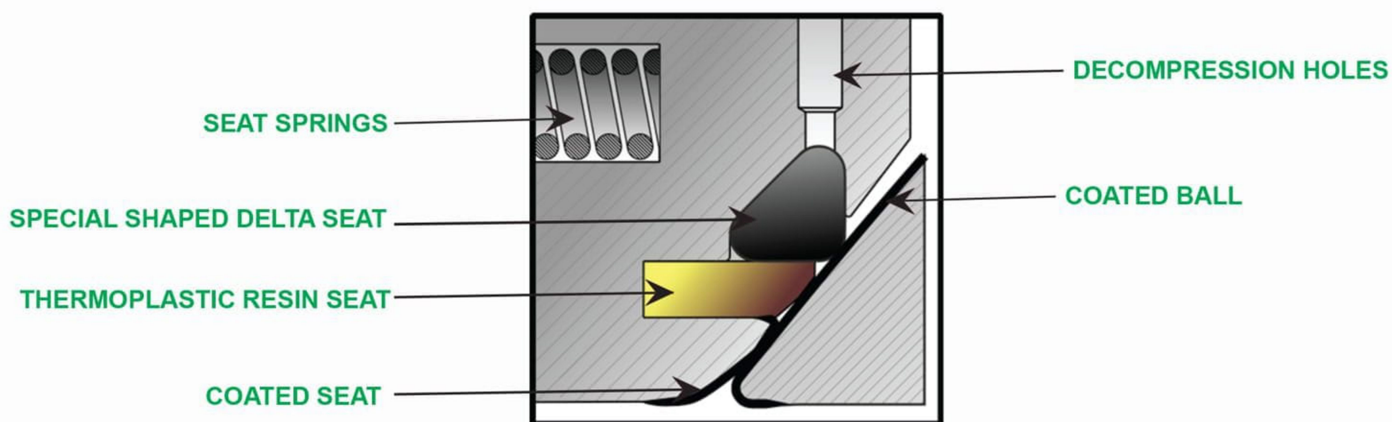


Resin seat insert provides seat to ball shut-off performance as well as protecting the special shaped Delta seat.

Furthermore, the metal contact face of the seat to the ball provides ball to seat shut-off sealing and protects the resin and elastomeric seats from wearing and scraping.



	1	2	3
ANSI Valve Class	Elastomeric (Delta) sealing working from:	Resin sealing working from:	Metal sealing working from:
150	0 psi	0 psi	0 psi
300			
600			
900			
1500			
2500			



ANTI-EXPLOSIVE DECOMPRESSION SEALS

All of the elastic compounds present a permeability to gases at different levels. The pressured gas penetrates below the O-ring surface forming air pockets in the intermolecular spaces. The quantity of absorbed gas depends on the type of the compound, the gas in contact with it, the temperature and pressure of the gas.

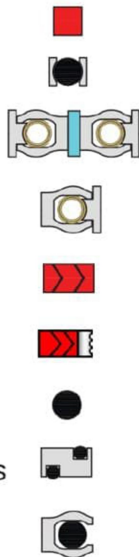
The instance described previous can be the cause of damage to the O-ring, if it is followed by an abrupt reduction in pressure and the consequent dilation of the ring, the gas included in the compound has an explosive behavior. The explosion of the air pockets contained in the compound causes the laceration of the O-ring surfaces. All GVS® Triple Seated Trunnion Mounted Ball valves have AED, "Anti-Explosive Decompression" O-ring. Therefore the above "Explosive Decompression" can not occur.

FEATURES

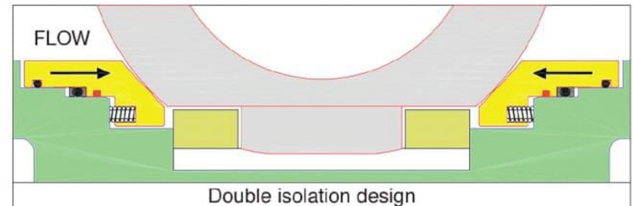
- Bolted body type, 3 piece
- Trunnion mounted, double block and bleed
- Full and reduced bore
- All forged steel components
- Double piston effect, self relieving seats, or combination of the two seat designs
- Anti-blow out stem design per API 608
- Anti-Static devices
- Fugitive Emission Certified
- Firesafe Certified to API Standards 607 & 6FA
- Emergency grease stem sealing
- Emergency grease Seat-to-Ball sealing available
- Optional shut-off ratings
- NACE MR0175 SOUR

SEAT TO BODY SEALING OPTIONS:

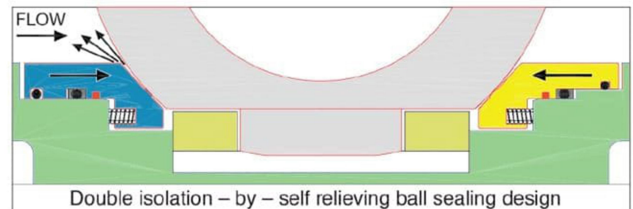
- Graphite
- O-ring with back-up rings
- DPE spring energized lip-seal
- SPE spring energized lip-seal
- Chevron® V-ring packing - SPE
- Chevron® V-ring packing with metallic ring - DPE
- Elastomeric O-ring
- DPE shuttle with elastomeric o-rings
- Elastomeric O-ring loaded U-seal



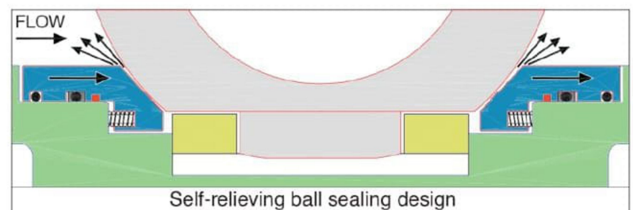
Optional Valve Seat Sealing Designs



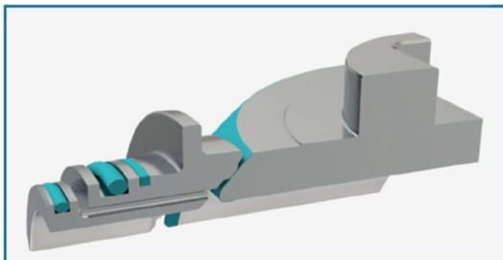
API 6D - DIB1



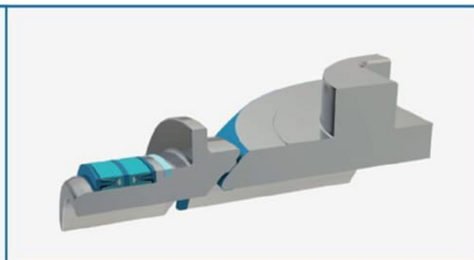
API 6D - DIB2



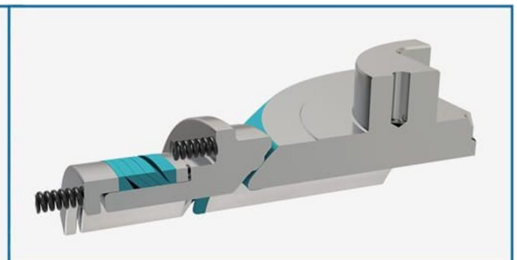
SEAT ASSEMBLY OPTIONS:



O-Rings
UP TO +240°C (464°F)



Lip Seals
UP TO +240°C (464°F)



Graphoil Rings
UP TO +350°C (662°F)



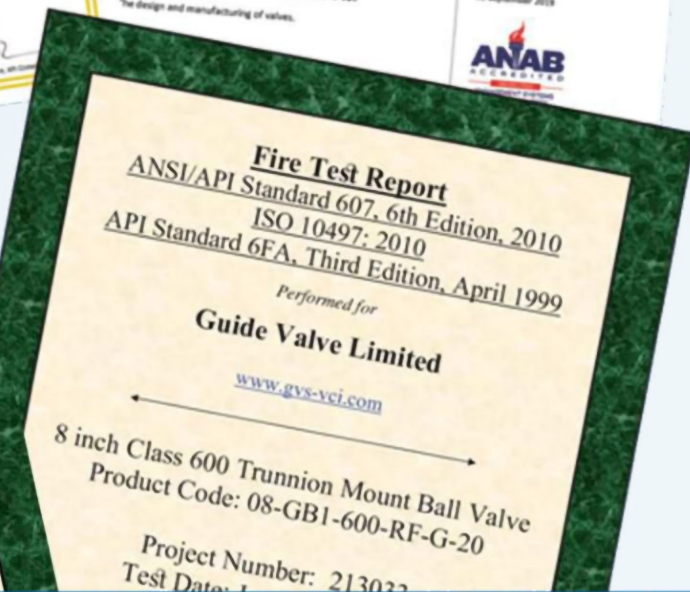
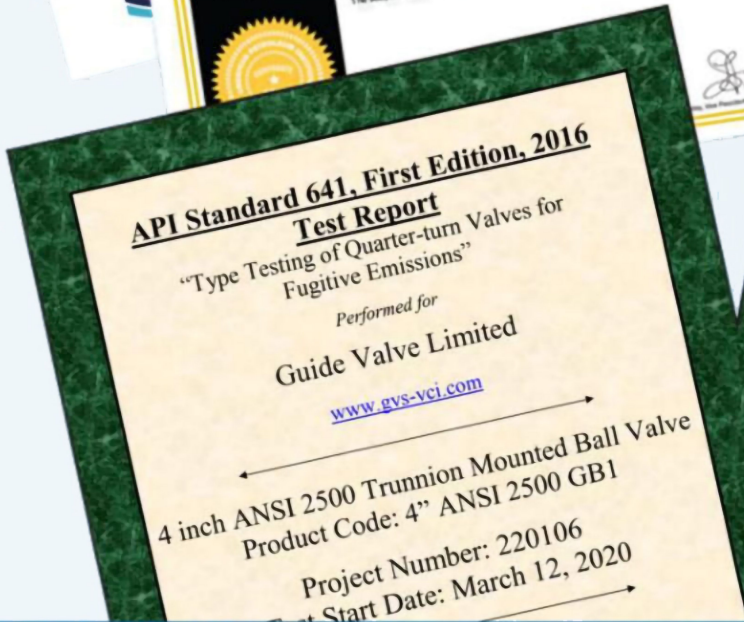
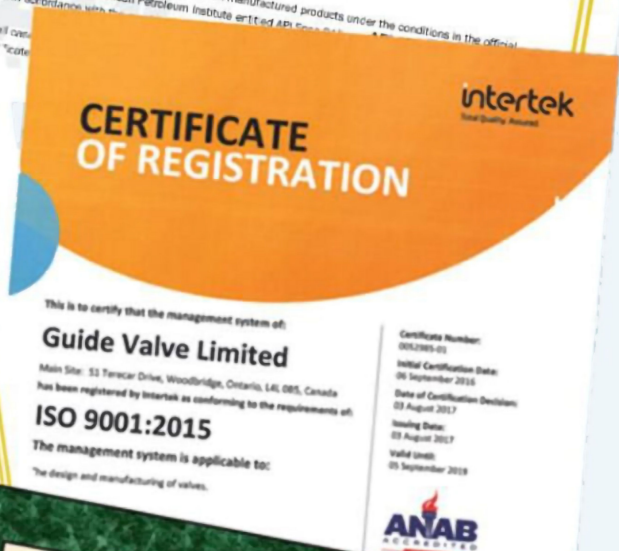
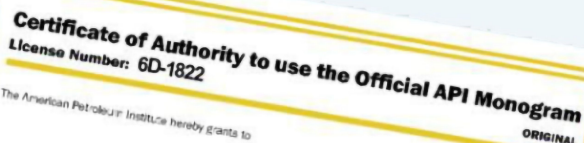
VCI®-F200M Series

Metal to Metal seated valve in 1/2" to 12" of ANSI Class 150 to 2500, RF Flanged, Full Ported, Bolted Body style with temperature to +350°C (+662°F).

Lowe Valve Series

The Lowe valve design offers a unique quarter turn rotary wedge action, Metal to Metal seated valve which provides bubble tight shut-off performance. Features such as non-lubricated, low torque, quarter turn operation, multiple wear compensation adjustments, back seating and economical quarter turn actuator compatibility are an integral part of this valve. The Lowe valve is a proven high pressure, high temperature valve to +649°C (+1200°F). Available in Carbon Steel and Stainless Steel construction with Threaded, Socket-Weld, Butt-Weld or Flanged End to ANSI class 900 and to sizes of 2".





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