



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



## COMPANY PROFILE

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 GVL organization has achieved SIL 3 Certification by an independent 3<sup>rd</sup> party agency. Our standard product design of Series B & GB are of the trunnion mounted, bolted body forged type ball ball valves.



### CANADA

API 6D: 6D-1342  
API 6A: 6A-2204  
API Spec Q1: Q1-4181  
ISO 9001:2015: 0052985-01



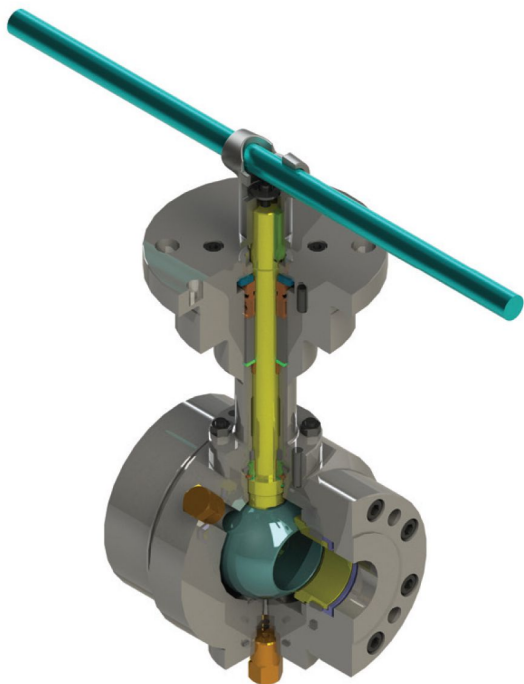
### CHINA

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

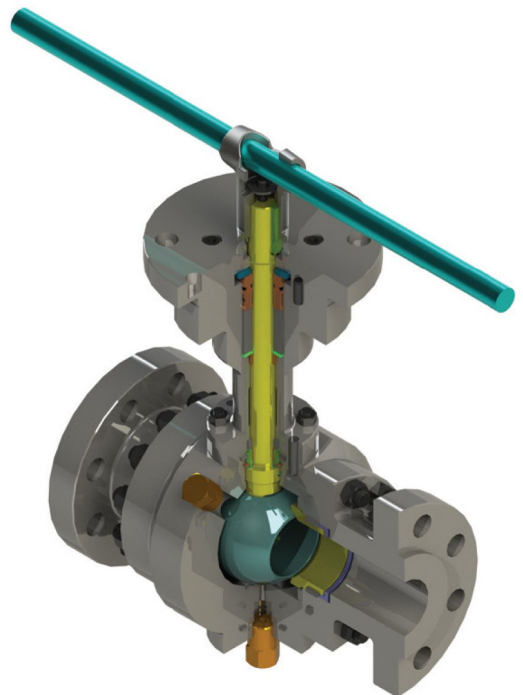


### USA

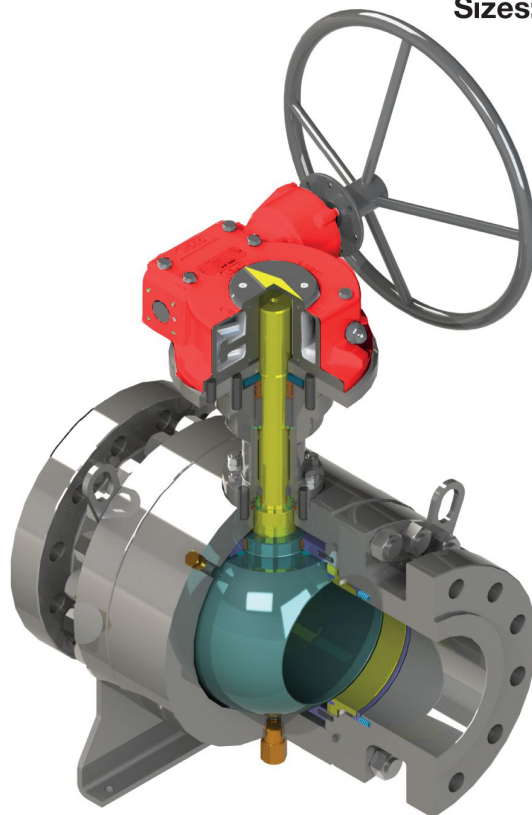
## PRODUCT SERIES



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



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



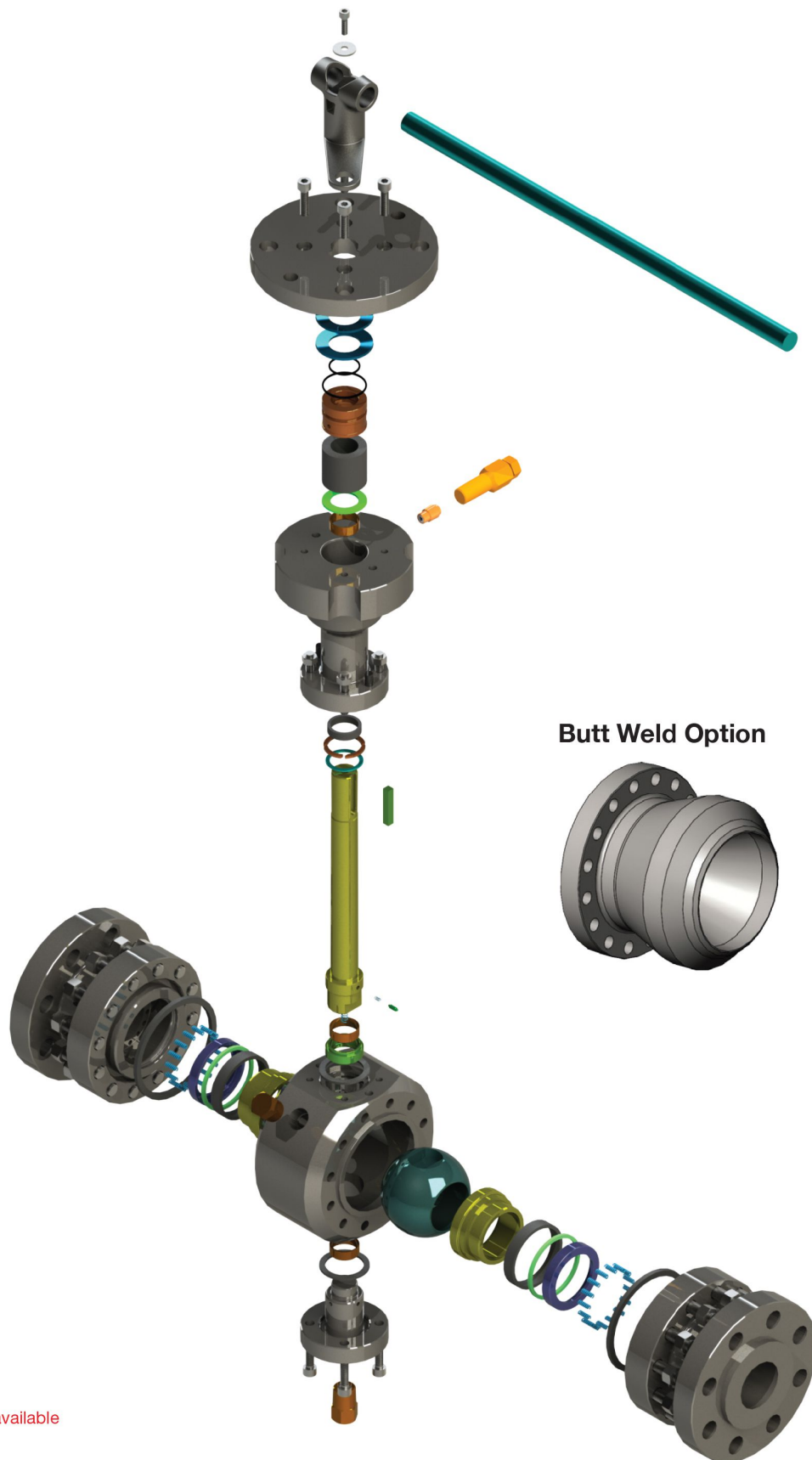
**Model GB**  
ANSI Class 150 to 2500  
Sizes: 2" - 36"

## B Series Exploded View – ANSI Class 150 Wafer Body



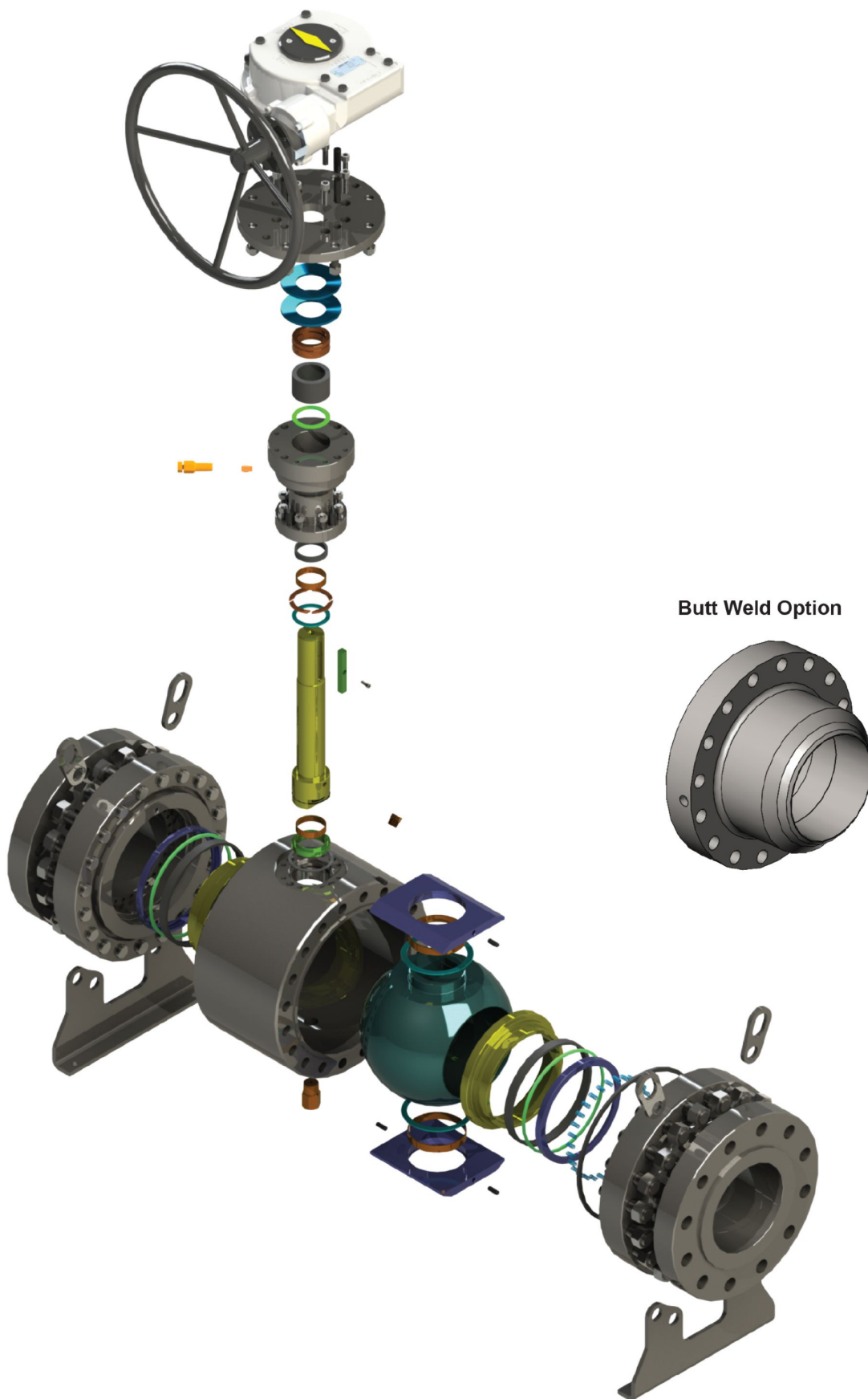
Gear operated option is available

## B Series Exploded View – ANSI Class 300 To 1500



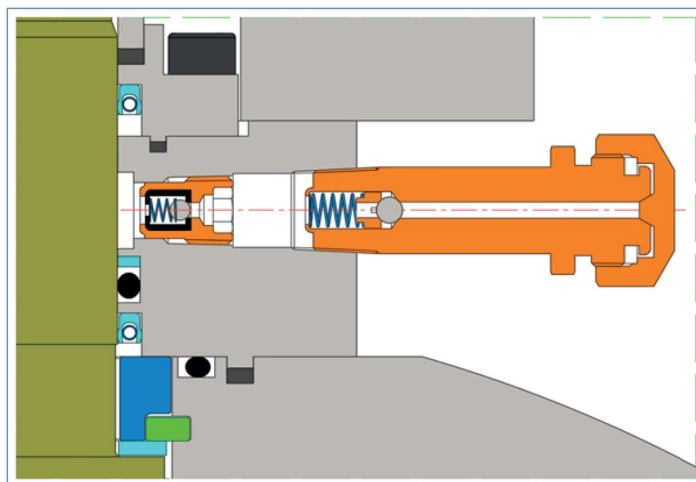
Gear operated option is available

## GB Series Exploded View – ANSI Class 150 To 2500



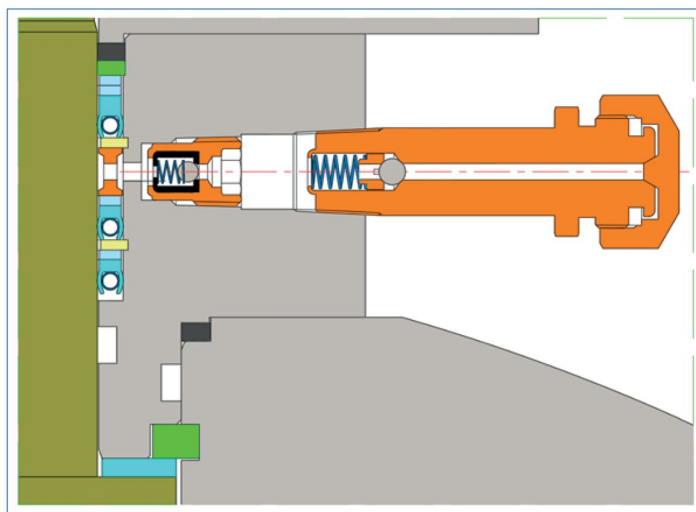
## FUGITIVE EMISSION CERTIFIED STEM SEALING OPTIONS

ISO 15848-1  
ENDURANCE CLASS CO3 TIGHTNESS CLASS AM



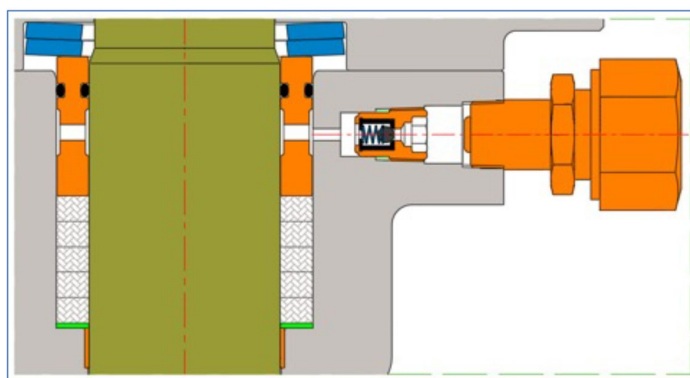
+ 200°C

API STANDARD 641



+ 240°C

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



+ 350°C

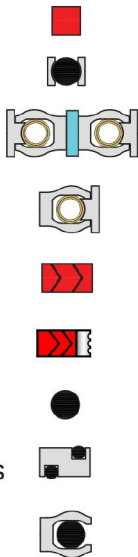
## DESIGN FEATURES

### FEATURES

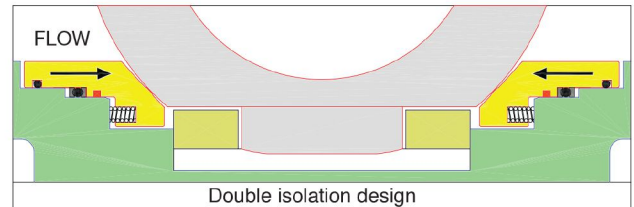
- Bolted body type, 3 piece
- Trunnion mounted, double block and bleed
- Full and reduced bore
- All forged steel components
- Double piston effect, self relieving seats, or combination of the two seat designs
- Anti-blow out stem design per API 608
- Anti-Static devices
- Firesafe certified to API 607,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

### SEAT TO BODY SEALING OPTIONS:

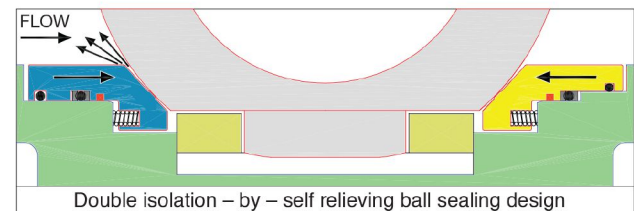
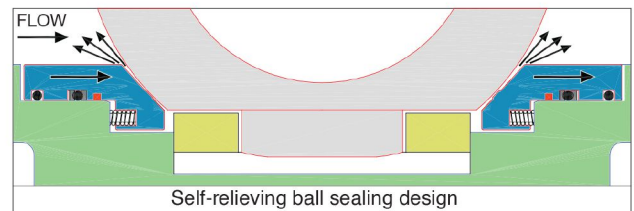
- Graphite
- O-ring with back-up rings
- DPE spring energized lip-seal
- SPE spring energized lip-seal
- Chevron® V-ring packing - SPE
- Chevron® V-ring packing with metallic ring - DPE
- Elastomeric O-ring
- DPE shuttle with elastomeric o-rings
- Elastomeric O-ring loaded U-seal



## Optional Valve Seat Sealing Designs

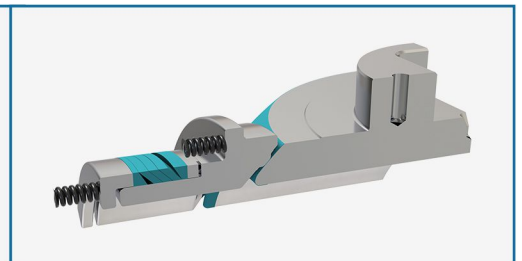
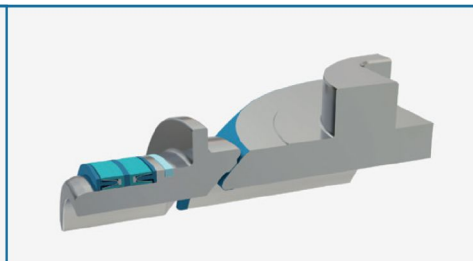
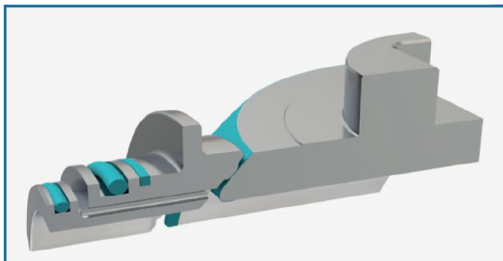


API 6D - DIB1



API 6D - DIB2

### SEAT TO BALL OPTIONS:



UP TO 240°C (464°F)

UP TO 240°C (464°F)

UP TO 350°C (662°F)

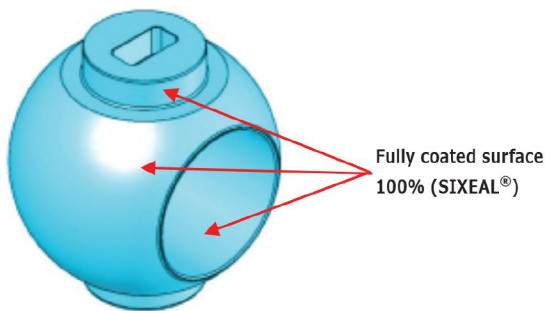
Note: Higher temperature design is available upon request.

## COATING OPTIONS

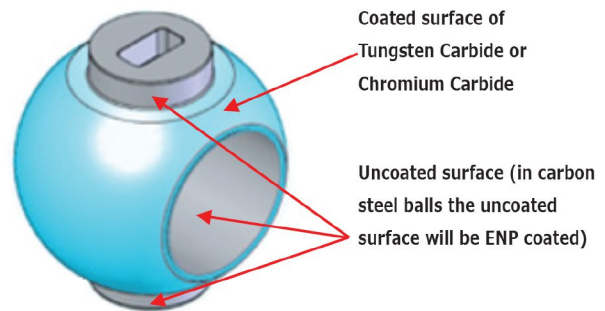
SIXEAL® is recommended onto our GVS® Trunnion Mounted Metal to Metal and Severe Service, soft seated Ball Valves where high resistance to abrasion, corrosion and wearing are required. For example, in slurry and sandy environments SIXEAL® is a viable alternative to HVOF coating.

### 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.



## RECESSED BALL FEATURES

### COMMON PROBLEMS WITH BALL VALVES HANDLING CORROSIVE AND EROSIVE MEDIA

#### BALL PITTING

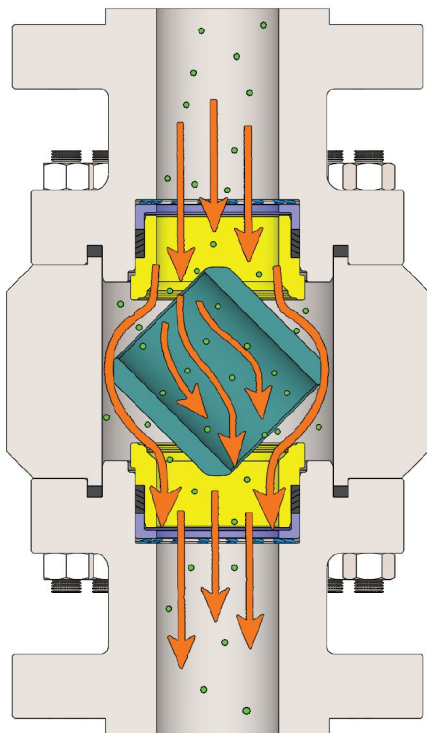
When the valve is in closed position, the upstream face which is exposed to the corrosive gases and fluids tend to pit the area of the ball bounded by the valve seat, causing the critical smooth surface finish to become rough. Because the ball is fitted with zero clearance to the seats, any roughness 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

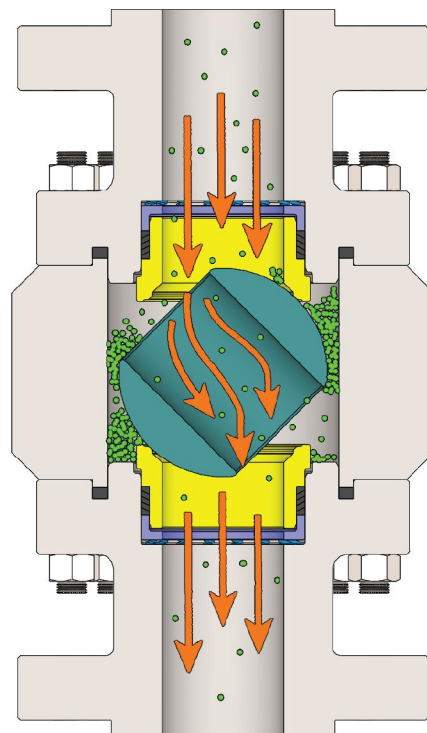
Valves that handle fluids and gases that tend to deposit crustations or leave residue on the inner valve surfaces will become hard to operate. With the ball valve in the closed position for lengthy time periods, the build-up of deposits adheres to the ball face within the seat boundaries, causing interference 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**

## OTHER METAL TO METAL PRODUCTS WE MANUFACTURE

### VCI®-201M Series

Metal to Metal seated, 3 pieces bolted body ball valve in 1/2" to 4", in NPT, SW, BW & RF flanges with temperature range up to +350°C (+662°F).



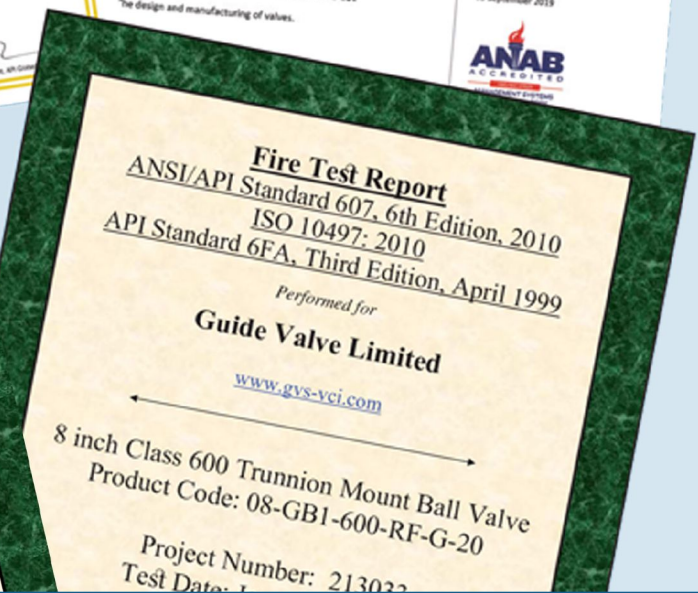
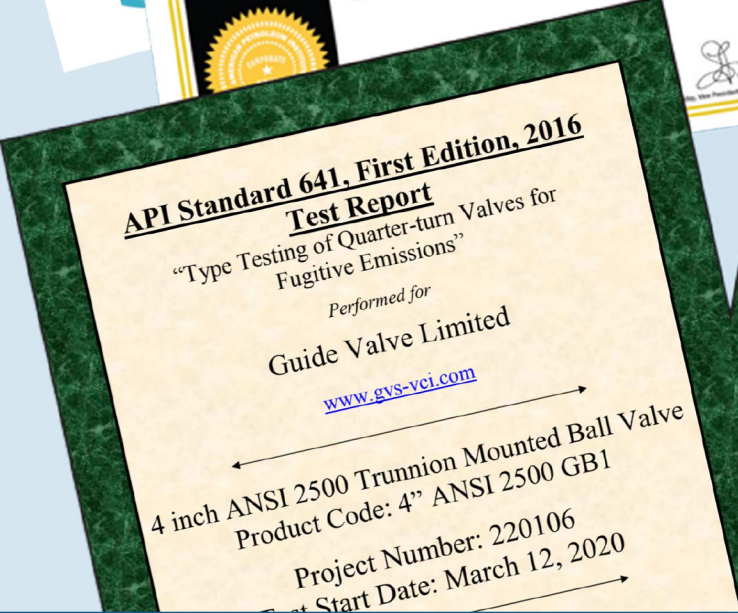
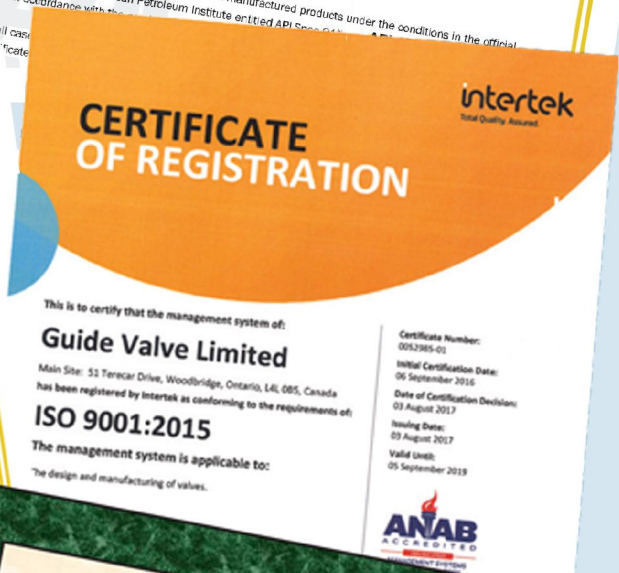
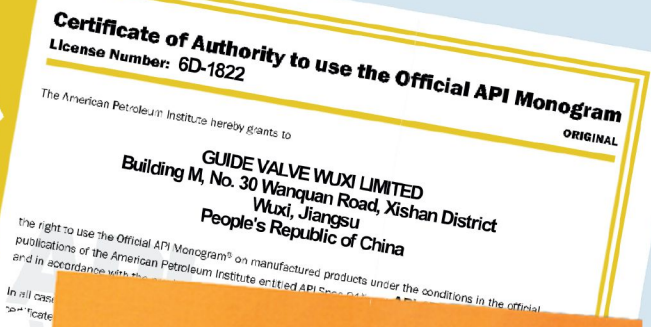
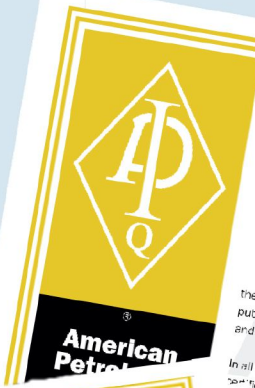
### VCI®-F200M Series

Metal to Metal seated ball 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 an 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 compatability 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 Ends to ANSI class 900 and to sizes of 2".





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