

2022

# DATA SHEET

## API VALVES & ACTUATOR

Supplied by



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Professional Valve Manufacturer



**FUKUYAMA CO.,LTD**

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## GATES

The valve's design provides the following specific advantages for reliable performance and long life, even in fluid, gas, steam, and hot water critical services up to 650° F (343° C).  
Size 6" to 24"(150mm to 600mm).Classes:150 to 900.Design:API 6D,Ends RF,RTJ. Style:expanding gate.  
Materials:WCC,LCC,Alloy Grades.Operated:Hand wheel,bevel gear .

### Protection of Seat Faces

Seat faces are outside the flow stream and in full contact with the gate, in both fully open and fully closed positions, greatly extending the seat life.

### Smooth, Continuous Conduit for Flow

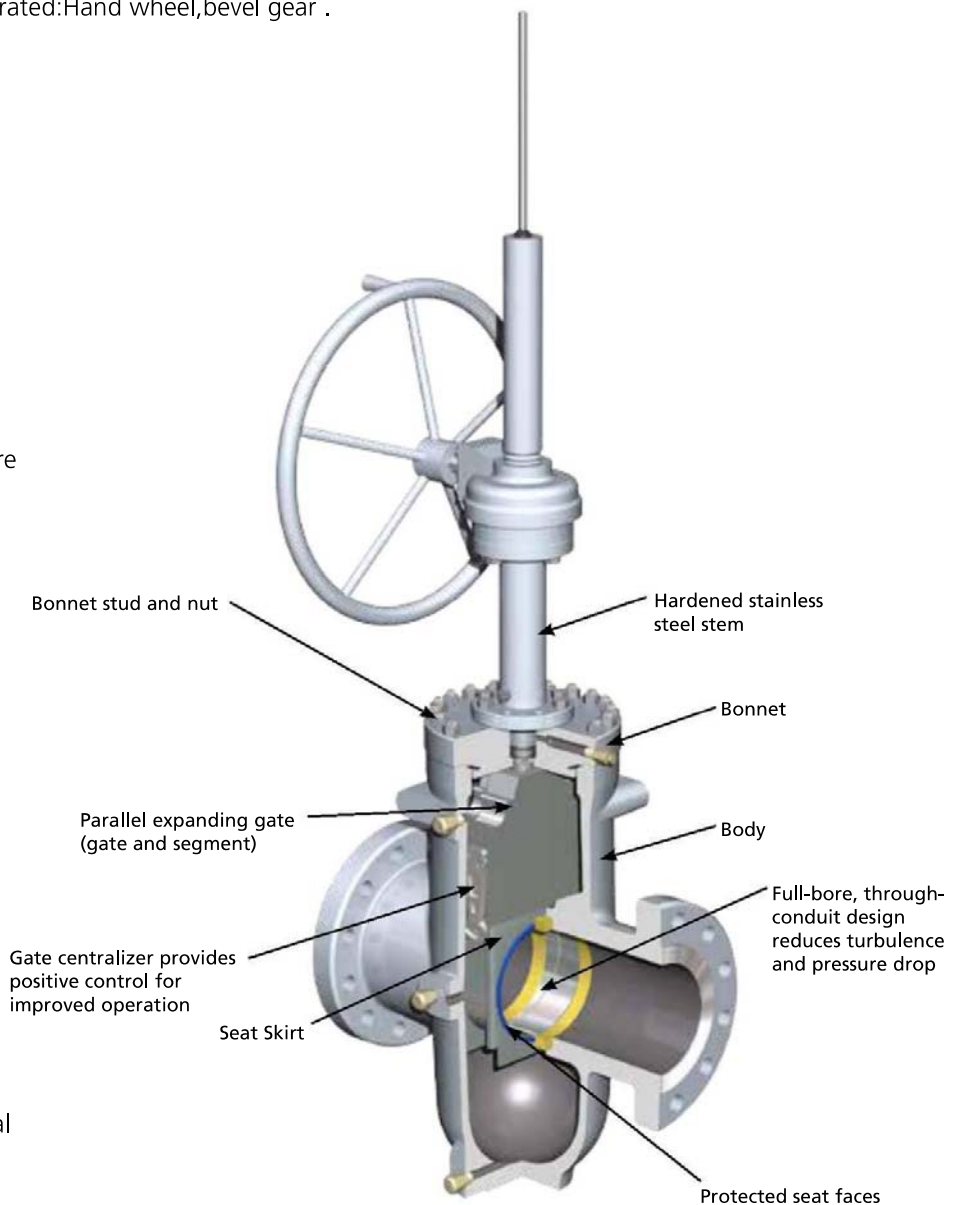
Destructive turbulence is nearly eliminated. In a full-bore valve, pressure drop through the valve is no greater than that through an equal length of equal diameter pipe.

### Tight Mechanical Seal and Double Block-and-Bleed Capability

The valve's parallel expanding gate design provides a tight mechanical seal, upstream and downstream simultaneously, which is normally unaffected by pressure variations or vibration.

### Metal-to-Metal Mechanical Sealing

The seal is unaffected by pressure surges, vibration, or heat under normal operating conditions. First, the seat insert contacts the gate. Then, the insert is compressed and a metal-to-metal seal is established.



## FEATURES

### 1. Through-Conduit Parallel Expanding Gate Valve

- Provides a tight mechanical seal
- Full-bore design reduces pressure drop and allows passage of all types of scrapers (pigs)
- Nickel-plated gate and segment standard

### 2. Fugitive Emissions-Tested SLS Stem Seal

- Stem seal is completely contained in the bonnet
- Stem is centralized by bearings
- Nickel-plated stem standard
- Seal is self-adjusting and does not depend on plastic packing
- PTFE compound resists virtually all ladings
- Pedestal supports the seal and acts as a stem scraper
- 2" to 12" (50 mm to 300 mm) Class 150 to 900 valves are fire-tested to API 6FA

### 3. Interference Fit Seats

- Double sealing and in-line replaceable
- Upstream and downstream sealing
- Block-and-bleed per API 6D standards
- Simple design is resistant to dirty service
- Insert initiates the seal and helps clean the gate
- Seals are compatible with virtually all ladings
- Seats may be lubricated to promote long life, reduce operating torques or effect a seal in an emergency
- Fire-tested to API 6FA

### 4. Bolted Bonnet Valve is In-Line Repairable

- Bonnet seal resists virtually all landings
- Design provides metal-to-metal, tight sealing ideal for high temperature applications

### 5. Yoke-Tube Upper Flanges Comply with MSS-SP102 Standards

- Simplifies operator mounting
- Can also be manufactured to comply with ISO 5240

### 6. Single-Piece Cast Body Center Section

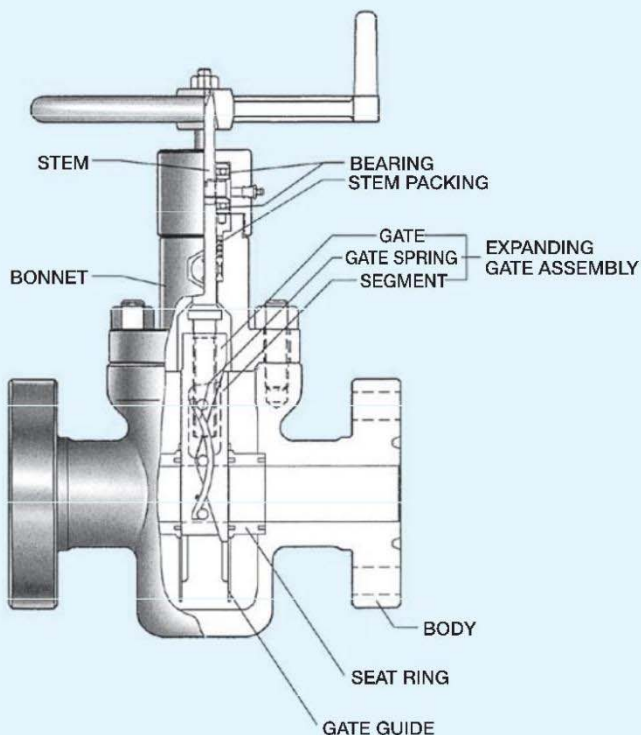
- Provides the necessary strength to resist pipeline bending
- Smooth shape reduces stress concentrations
- Made from pressure vessel quality steel

# API 6A EXP GATE VALVE

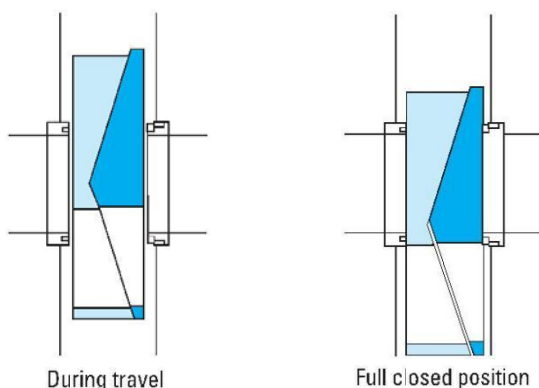
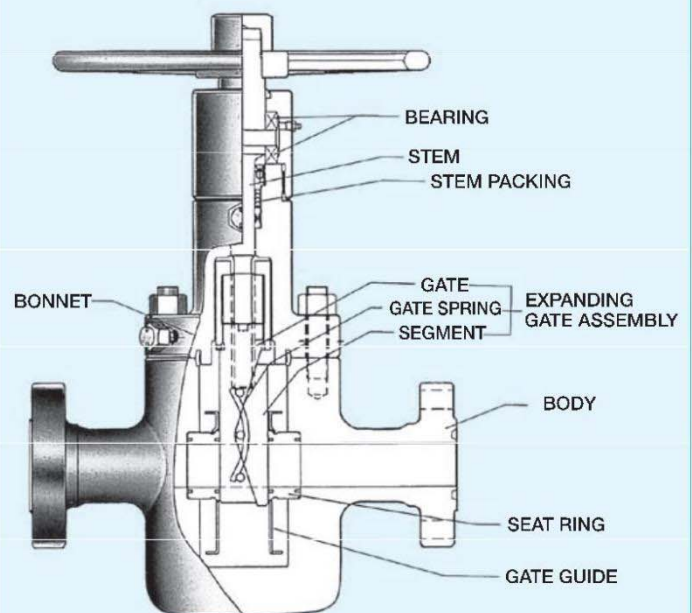
## MAIN FEATURES

- Full Bore Through Conduit
- Block and Bleed Mechanism
- Long-Life Seats
- Floating Seats with Self-Relief Function
- In-line Maintenance
- Primary Soft Seal and Secondary Metal-to-Metal Seal
- Metal-to-Metal Stem Back Seat
- Low Torque for Easy Operation
- Non-Rising and Non-Balanced Stem Design (Balanced Stem Design for 1.13/16"~4.1/16"-10,000 WP. and 15,000 WP is available.)
- Forged Body and Bonnet Construction

Sizes: 2 1/16" to 7 1/16" × 6 3/8"  
 Pressure Rating (Psi): 2000, 3000, 5000  
 Design: API 6A. Ends: RTJ, THRD. Style: EXP.  
 Materials: AA, BB, CC, DD, EE, FF  
 TEMP (°C): -46~+343. PSL-3. PR-2



Sizes: 2 1/16" to 4 1/16"  
 Pressure Rating (Psi): 10000, 15000  
 Design: API 6A. Ends: RTJ, THRD. Style: EXP.  
 Materials: AA, BB, CC, DD, EE, FF  
 TEMP (°C): -46~+343. PSL-3. PR-2



### EXPANDING GATE

The expanding gate gives a positive seal when the valve is fully opened or closed. When the valve is in the full open or closed position, the gate assembly is mechanically actuated against the upstream and downstream seats to provide positive sealing. When the gate moves between the open and closed positions, it becomes smaller in thickness resulting in reduced friction for smoother operation.

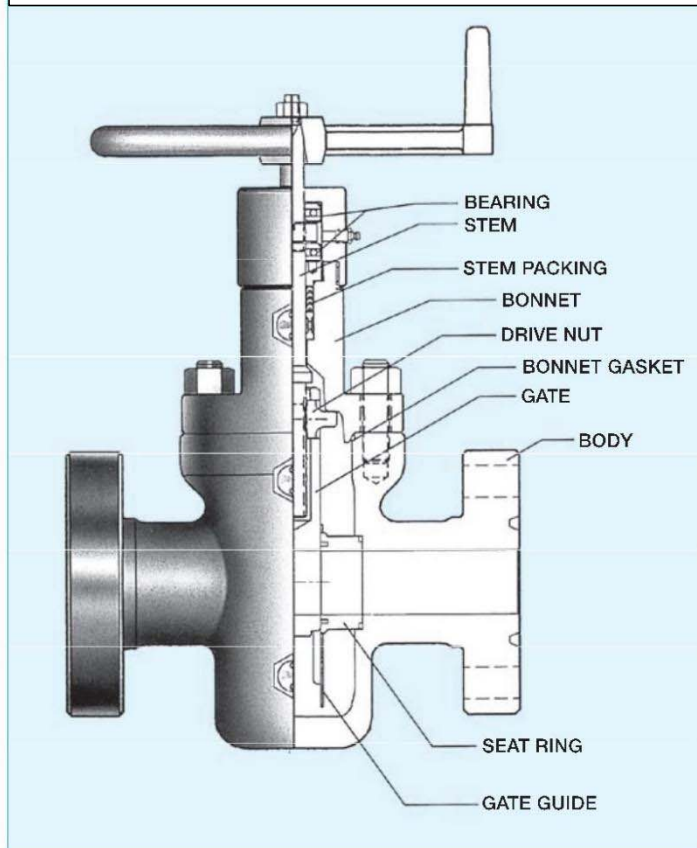


# API 6A SLAB GATE VALVE

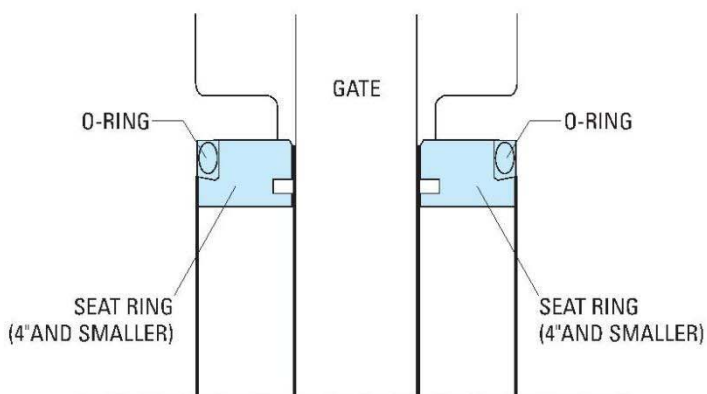
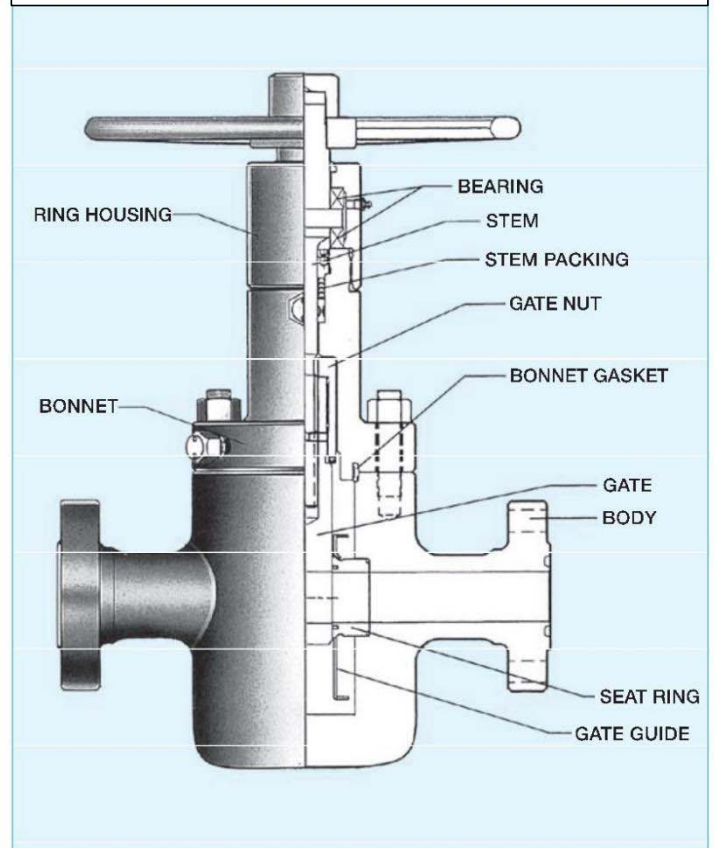
## MAIN FEATURES

- Full Bore Through Conduit
- Block and Bleed Mechanism
- Long-Life Seats
- Floating Seats with Self-Relief Function
- In-line Maintenance
- Primary Soft Seal and Secondary Metal-to-Metal Seal
- Metal-to-Metal Stem Back Seat
- Low Torque for Easy Operation
- Non-Rising and Non-Balanced Stem Design (Balanced stem Design for 1.13/16"~4.1/16"-10,000 WP. and 15,000 WP. is available.)
- Forged Body and Bonnet Construction

Sizes: 2 1/16" to 7 1/16" × 6 3/8"  
 Pressure Rating (Psi): 2000, 3000, 5000  
 Design: API 6A. Ends: RTJ, THRD. Style: Slab.  
 Materials: AA, BB, CC, DD, EE, FF  
 TEMP (°C): -46~343. PSL-3. PR-2



Sizes: 2 1/16" to 4 1/16"  
 Pressure Rating (Psi): 10000, 15000  
 Design: API 6A. Ends: RTJ, THRD. Style: Slab.  
 Materials: AA, BB, CC, DD, EE, FF  
 TEMP (°C): -46~343. PSL-3. PR-2



## DOUBLE SEAT SEAL

The seat ring has a resin seat seal insert. When the valve is closed, a positive double seal is formed by the contract of resin-to-metal (primary seal) and metal-to-metal (secondary seal) on the upstream and downstream seats.

## API6A HYDRAULIC ACTUATOR (Double Spring)

HYDRAULIC ACTUATOR		D180	D220	D255	D305	D365
STANDARD		API6A				
RATING		3000 PSI				
TEMP.		PU(-29°C ~ +121°C)				
MATERIAL		BB				
PR		2				
PSL		2				
THRUST	MAX	47 KN	122 KN	159 KN	225 KN	402 KN
	MIN	11 KN	12 KN	19 KN	28 KN	40 KN
TRAVEL	MAX	70 mm	102 mm	156 mm	170 mm	200 mm
SHUT TIME		1 ~ 2 s	3 ~ 4 s	5 ~ 8 s	7 ~ 10 s	12 ~ 15 s
COLLOCATE GATE VALVE		2.1/16-3M.5M	3.1/8-3M.5M 4.1/16-3M	2.1/16-10M 4.1/16-5M 5.1/8-3M.5M	3.1/8-10M 4.1/16-10M	5.1/8-10M 7.1/16-5M.10M

GATE BONNET/STEM	
STANDARD	API6A
SIZE	2.1/16" ~ 7.1/16"
RATING	3000 PSI. 5000 PSI.10000 PSI.
TEMP.	PU(-29°C ~ +121°C)
MATERIAL	AA.BB.CC.DD.EE.FF
PR	2
PSL	2

\*Long service life of seals: seals are designed with self-sealing structure suitable for dynamic sealing, reciprocating piston guide structure, and the cover end with dust - proof anti - scaling sealing ring, etc., can ensure a long service life.

\*Atmospheric shell protection: atmospheric shell design, as a structural protection member of cylinder block, piston and spring, such as internal pressure leakage, play a role in buffering and isolation, to prevent damage to personnel or equipment.

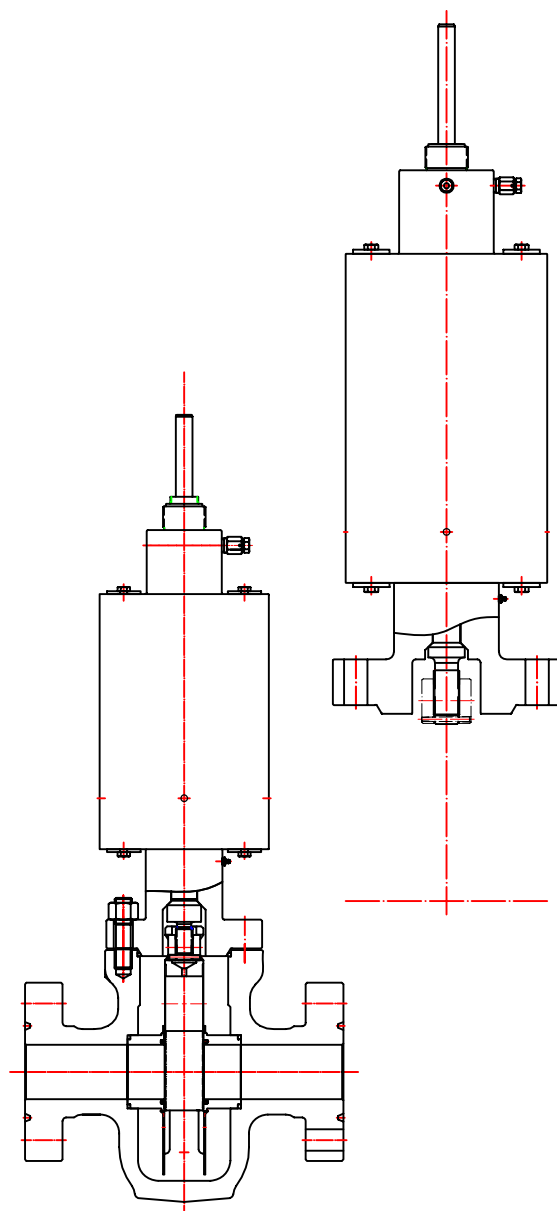
\*Corrosion control: All non-stainless steel parts are treated with anti-corrosion coating to improve corrosion resistance.

\*Overpressure protection: pressure chamber is provided with a pressure relief device, through which can overpressure relief. Protect operators from injury.

\*Reliable verification of bonnet seal/packing seal/stem back seal: test fitting by bonnet connection,the overall sealing performance can be verified to ensure the reliability of sealing.

\*Valve position limit setting: The valve position limit is provided with an adjusting washer located at the top of the tightly packed gland. During the opening process,contact the lower end of the stem nut with the upper end of the adjusting washer to ensure that the valve position is fully opened.

\*Multiple protection against well fluid pollution sources: metal to metal stem back seal,bonnet/stem self-sealing packing seal and secondary O-seal.





## Gates

**Sizes:** 1/4" to 2" (5 mm to 50 mm)

**Classes:** 150 to 1500

**Design:** API 602

**Ends:** FLGD, THRD, SW, BW

**Materials:** A105, LF2, Alloy Grades

forged steel bolted and welded bonnet gate valves are ideal for bi-directional flow and tight shutoff. Due to the flow characteristics of the wedge-to-seat design, gate valves should be operated in the full-open or full-closed position. Gate valves are utilized in applications where minimum pressure drop is desired.



## Globes

**Sizes:** 1/4" to 2" (5 mm to 50 mm)

**Classes:** 150 to 1500

**Design:** API 602

**Ends:** FLGD, THRD, SW, BW

**Materials:** A105, LF2, Alloy Grades

forged steel bolted and welded bonnet globe valves are ideal for unidirectional, controlled flow. The flow characteristics of a globe valve are repeatable, consistent and easy to control at various open positions, which makes the design ideal for general flow regulation.

The Y-pattern globe valves offer the same flow capabilities as standard globes. The smooth Y-pattern allows for less turbulence and lower pressure drops.

## Checks

**Sizes:** 1/4" to 2" (5 mm to 50 mm)

**Classes:** 150 to 1500

**Design:** API 602

**Ends:** FLGD, THRD, SW, BW

**Materials:** A105, LF2, Alloy Grades

forged steel bolted and welded bonnet check valves yield minimal restrictions to low-velocity environments and are ideal for preventing backflow in unidirectional flow applications in horizontal or upward (vertical) flow. Piston and ball check valves with a spring allow for both horizontal and vertical installation.





## Gates

**Sizes:** 2" to 12" (50 mm to 300 mm)

**Classes:** 150 to 900

**Design:** API 600

**Ends:** RF, RTJ, BW

**Style:** Flex Wedge

**Materials:** WCB, LCC, Alloy Grades

cast steel gate valves are ideal for bi-directional flow and tight shutoff. Due to the flow characteristics of the wedge-to-seat design, gate valves should be operated in the full-open or full-closed position. Concentrated flow across the seats of a partially opened gate valve risks possible seat damage, therefore throttling is not recommended. Gate valves are utilized in applications where minimum pressure drop is desired.

## Globes

**Sizes:** 2" to 12" (50 mm to 300 mm) **Classes:** 150 to 900

**Design:** API 623

**Ends:** RF, RTJ, BW

**Style:** Plug Type Disc

**Materials:** WCB, LCC, Alloy Grades

cast steel globe valves are ideal for unidirectional, controlled flow. The flow characteristics of a globe valve are repeatable, consistent and easy to control at various open positions, which makes the design ideal for general flow regulation.



## Checks

**Sizes:** 2" to 12" (50 mm to 300 mm) **Classes:** 150 to 900

**Design:** API 594

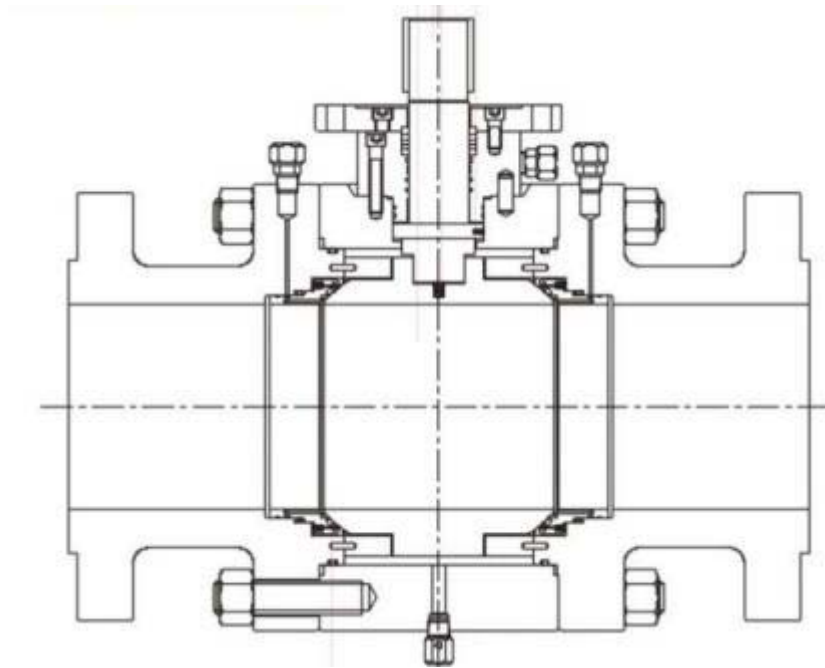
**Ends:** RF, RTJ, BW

**Style:** Swing and Tilting Disc **Materials:** WCB, LCC, Alloy Grade

cast steel check valves yield minimal restriction to low-velocity environments and are ideal for preventing backflow in unidirectional flow applications in horizontal or upward (vertical) flow. The tilting disc design offers closing that reduces the possibility of slamming.

Sizes: 2" to 12" (50 mm to 300 mm)  
Classes: 150 to 900  
Design: API 6D  
Ends: RF, RTJ  
Style: Fixed axis  
Materials: Carbon, Alloy  
Applicable Medium: Natural gas, oil, etc.  
Applicable Temp:  $-46^{\circ}\text{C} \sim +150^{\circ}\text{C}$ .

## **Fixed Axis Ball Valve**



### **Explain for Structure**

Trunnion

Floating seat

Valve External Double sealing

The separation design of ball and stem

Anti-static

**Full-bore structure and reduced-bore structure**

## Valve driven

We can supply two types of manual operated valves, one with hand level and the other on with hand operation device. The

We can also supply valves driven by electrical actuator, pneumatic hydraulic and hydro-pneumatic actuator.

## Full Weld Ball Valve

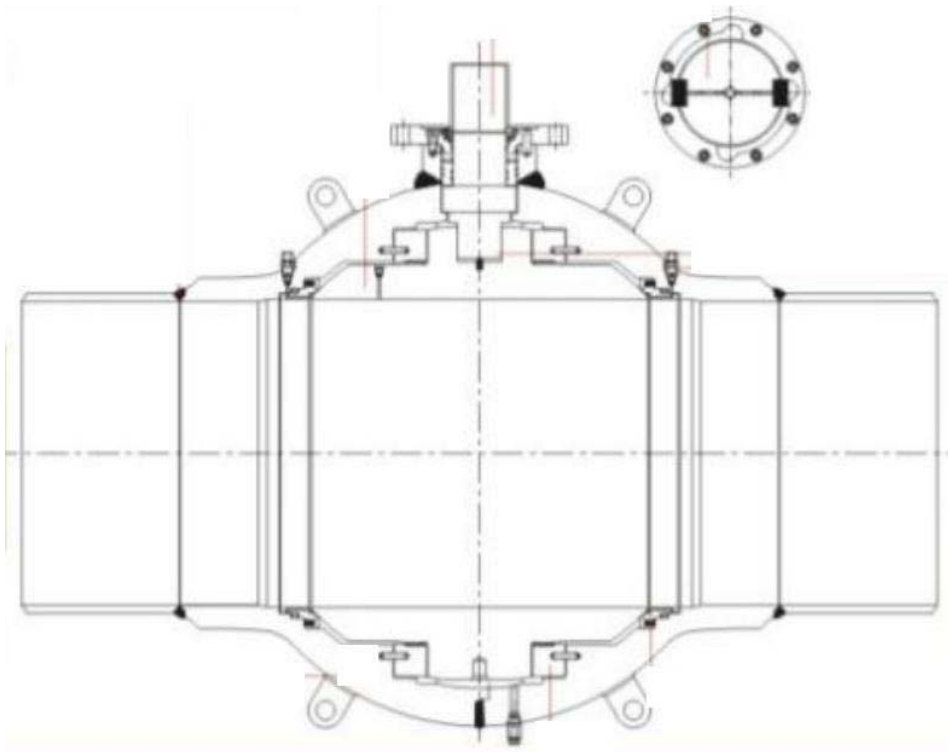
Sizes: 6" to 12" (150 mm to 300 mm)

Classes: 150 to 900

Design: API 6D

Ends: RF, RTJ, BW

Style: Full weld



Materials: Carbon Alloy

Applicable Medium: Natural gas, oil, etc.

Applicable Temp:  $-46^{\circ}\text{C} \sim +150^{\circ}\text{C}$ .

Stem key limit device

Anti-static

Trunnion ball

Floating seat

Full welded

**Unique seat sealing structure**

Spherical body

**Seat multistage seal structure**

Separated ball and stem

**Secondary seat seal device**