

## NON CONTACT RISING STEM BALL VALVE



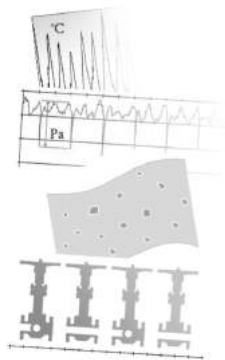
### On/Off metal-to-metal ball valve

Long life under extreme conditions

Size	1" ~ 36"
Bore	Reduced or full (piggable)
Pressure	150# ~ 2500#
Temperature	-196°C ~ 538°C
Connections	Wide choice on request
Materials	Wide choice on request



## GENERAL INFORMATION



For any combination of the following conditions:

- Fluctuating and/or extreme temperature
- Fluctuating and/or extreme pressure
- Medium with solid particles
- Frequent switching

### Characteristics:

- 100% tight shut off
- Friction-free opening and closing
- Low-torque operation
- Mechanically energized sealing
- Single metal-to-metal wear-resistant seat
- Bi-directional
- Self-cleaning
- In-line service
- Stem packing exchange while under full pressure in service
- Vertical or horizontal installation

## APPLICATIONS

### Molecular Sieve

For long life and easy maintenance  
Shell Prelude, FPSO Tartaruga Verde, Ichthys Onshore LNG, Jazan Refinery, Yanbu Refinery

### Hydrogen service (NACE)

For reliability under high pressure condition  
Porvoo Refinery, Jubail Refinery, Jinling Refinery

### Sand and slurry applications

For durable sealing surfaces  
Grangemouth, Hammerfest LNG Plant

### Emergency blow/shut down service

For fast opening and closing  
Bayu Undan, Kristin Offshore Platform

### Cryogenic service

For smooth operation under extreme temperature  
HMC Polymers PP Plant, ColdBox Platform

### Petrochemical

For long life and easy maintenance  
Schkopau Germany, Saudi Kayan HDPE Project

### Hot oil installations

For smooth operation under extreme temperature  
Djeno Moho Bilondo Congo, Sakhalin Russian Federation

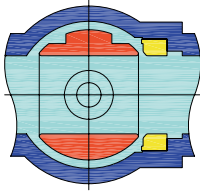
### Steam service

Fields Girasol Y Moriche Colombia

## HOW RSBV WORKS

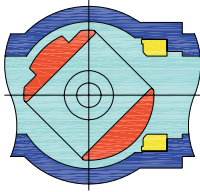
### Open position

Optimum flow is ensured by the design of the ball (red). To close the valve, the handwheel is turned in clockwise direction. The stem begins to lower and the ball begins to rotate.



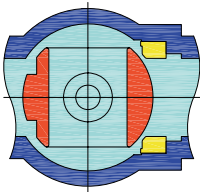
### Rotating

Continuous turning of the handwheel causes the precision spiral part of the stem to act against ball roll pins leading to 90° ball rotation. Rotation of the ball is friction-free.



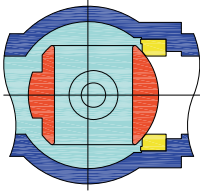
### Sealing

Nearing the end of the closing cycle, the ball has rotated full 90° without touching the seat (yellow). The internals are cleaned due to high flow.

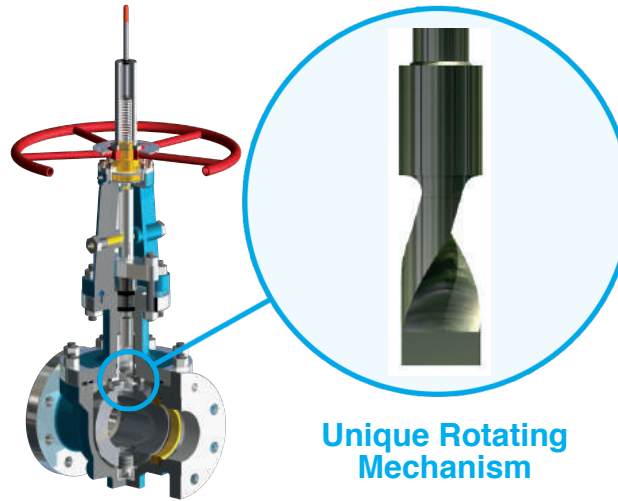


### Closed position

Final turns of the handwheel cause an angled flat surface on the lower stem to mechanically wedge the ball tightly against the seat.



## CONTROL SEAL BENEFITS



**Unique Rotating Mechanism**

### Fast opening and closing

Due to strong metal rotating mechanism

### Maintenance friendly

Due to rotating mechanism inside valve, stemguides and gland packing outside pressurized area

### Less fugitive emissions

Due to no stem rotation, less stress on gland packing

### Less spare parts needed

Due to less moving parts

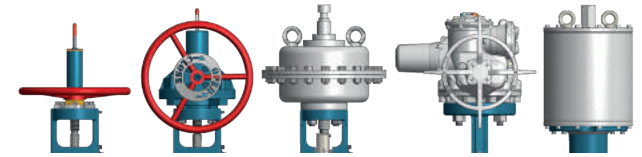
### Self-lubricating rotating mechanism

Due to rotating mechanism inside valve

## CUSTOMER REQUIREMENTS

### Produced project by project based on customer requirements:

- Valves can be supplied in a variety of materials and are also available in accordance with DIN standards
- Stem extension for extreme temperature
- Valves can be adjusted for underground service
- Sand&Slurry design for medium containing with up to 50% hard particles
- Bellow seal for lethal media and zero emission
- Valves can be supplied with handwheel, gearbox, electric actuator, pneumatic actuator, hydraulic actuator or any other actuation requested



## DESIGN STANDARDS

Design	API 6D, ASME B16.34
Face to Face dimensions	API 6D, ASME B16.10, B16.47
Flanges	ASME B16.5, B16.25
Fire Safe	ISO 10497, API 6FA, BS 6755
Fugitive Emission	ISO 15848, TÜV, Shell MESC SPE 77-312
Testing	API 598
Marking	CE, MSS-SP-25
Topworks	ISO 5210



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