On/Off metal-to-metal ball valve
Long life under extreme conditions

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Specification</th>
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<tbody>
<tr>
<td>100% tight shut off</td>
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<tr>
<td>Friction-free opening and closing</td>
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<tr>
<td>Low-torque operation</td>
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<tr>
<td>Mechanically energized sealing</td>
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<tr>
<td>Single metal-to-metal wear-resistant</td>
<td>Reduced or full (piggable)</td>
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<td>seat</td>
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<tr>
<td>Bi-directional</td>
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<td>Self-cleaning</td>
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<td>In-line service</td>
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<td>Stem packing exchange while under full</td>
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<td>pressure in service</td>
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<td>Vertical or horizontal installation</td>
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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

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.

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**DESIGN STANDARDS**

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

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**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

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**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

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