brands you trust.

XOMOX® TOV - Triple Offset Valves

www.cranechempharma.com
Key Features

Proven triple offset design for a variety of applications requiring zero leakage* performance. This design offers quality and reliability with superior customer service and support.

Key Features

1. Triple offset design provides bi-directional zero leakage* shutoff
2. Self-centering disc prevents binding due to thermal shaft expansion
3. Clamped seal ring with flat gasket provides even compression and consistent sealing performance
4. Supported shaft prevents shaft deflection and seal leakage
5. Inherently fire-safe design

*Zero Leakage – in accordance with the following standards: API 598 (Soft Seat), API 6D (Soft Seat), FCI 70-2 Class VI.
Overview

Size: 3" to 24"

Class: 150-600

Materials: Carbon steel
          Stainless steel
          High alloys

Body Types: Lug
           Double Flange - Short Pattern
           Double Flange - Long Pattern

Temperature Range: -320°F to +1000°F

Fire Tested: API 607 Rev. 4

Applications

Refineries
- Crude oil / Product tank storage
- Crude unit
- Dock / Marine
- FC Cracking unit
- Hydro-treating
- Hydrogen plant
- Isomerization
- Product blending and loading rack
- Reforming
- Steam systems
- Vacuum unit
- Visbreaker

Chemical Plants
- Process
- Utilities

Power Industry
- District heating
- Steam and water

Offshore/Onshore
- Gas and oil storage tanks
- Petrochemicals
- Process in treatment and purification plants
- Process on platforms
- Tank Farms

Pulp and Paper
- Reduction process
- Steam
- Water

Steel Mills
- Hot gas and steam

Water Industry
- Desalination
- Water
- Water treatment
- Waste water

www.cranechempharma.com
As the name implies, there are three separate offsets designed into the valve. Two of the offsets apply to the location of the shaft with respect to the center line of the bore and the center line of the disc/seat sealing surfaces.

The third offset in the design is the axis of the seat cone angle that is inclined from the center line of the valve bore to minimize rubbing of the seat/seal contact surfaces during operation and to preserve sealing integrity over the cycle life of the valve. This wide angle seat also eliminates wedging or binding of the disc.

The CRANE ChemPharma, XOMOX® TOV features unique designs in the disc/shaft engagement and in the precision-machined seat and seal ring of identical eccentric shape. These features, combined with the eccentric movement, provide longer cycle life, lower operating torque, and increased temperature capability. Additionally, the torque-seated resilient metal seal ring assures consistent bi-directional zero leakage* performance.

A Superior Solution to Gates and Globes

In comparison to gate and globe valves, XOMOX® TOV provides users with the following benefits:

1. Exceptional flow control, high Cv, and low Delta P in a single valve
2. Zero leakage* capability that results in enhanced performance and safety
3. Longer in-service life leads to lower costs of maintenance and replacement
4. Replaceable seal ring which allows for quick, easy repair
5. Lower operating torque and quarter-turn design requires minimal actuation
6. Smaller, lighter valve results in lower shipping, handling, and installation costs

*Zero Leakage - in accordance with the following standards: API 598 (Soft Seat), API 6D (Soft Seat), FCI 70-2 Class VI.
Key Design Features

Quarter Turn Design
Improves containment integrity and is easily automated

Low Break and Operating Torque
Enables simplified, cost-effective automation

Blowout-Proof Shaft
Complies with API 609 to improve safety for operating personnel

Bearing Protector Rings
Prevent solid particles from coming in contact with bearing surfaces

Stainless Steel Graphite Laminated Seal Ring
Provides reliable, zero leakage*, bi-directional shutoff up to 1000°F

Wide Angle Seat Design
Eliminates wedging and binding of the seat/disc engagement

Optional Stellite Seat
Offers optimal resistance to erosion in abrasive and high velocity applications

Inherently Fire-safe Design
Provides fire-safe system security at extreme temperatures per API 607 Rev. 4

*Zero Leakage – in accordance with the following standards: API 598 (Soft Seat), API 6D (Soft Seat), FCI 70-2 Class VI.
XOMOX® TOV product range offers three face-to-face dimension options which gives both cost savings and greater flexibility in piping design or retrofit opportunities.

- **Lug Design - API 609**
  Interchangeable with most butterfly valves

- **Flanged Design - Short Pattern - ISO 5752**
  Most common face-to-face dimensions for triple-offset rotary valves

- **Flanged Design - Long Pattern - ASME B16.10**
  Direct replacement of gate valves and ball valves without piping modifications

---

**Lug Pattern**

- API 609
- Table 2
- 3” to 24” - 150/300 Class
- 3” to 16” - 600 Class

Other sizes available on request.

---

**Double Flange Short Pattern**

- ISO 5752
- Table 4 Short
- 3” to 24”
- 150/300 Class

Other sizes available on request.

---

**Double Flange Long Pattern**

- ASME B16.10
- Tables 1 & 2 (Gate)
- 4” to 12”
- 150/300 Class

Other sizes available on request.
Product Standards and Cryogenic Valves

<table>
<thead>
<tr>
<th>Design: ASME B16.34</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME SEC VIII</td>
</tr>
<tr>
<td>ASME B31.1 and B31.3</td>
</tr>
<tr>
<td>API 609</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Face-to-Face</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME B16.10</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME B16.5</td>
</tr>
<tr>
<td>ISO 7005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Flange Dimensions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASME B16.5</td>
</tr>
<tr>
<td>ISO 7005</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Testing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>API 598 (Soft Seat)</td>
</tr>
<tr>
<td>API 6D (Soft Seat)</td>
</tr>
<tr>
<td>FCI 70-2 Class VI</td>
</tr>
<tr>
<td>TA-Luft acc. VDI 2440</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Fire Testing:</th>
</tr>
</thead>
<tbody>
<tr>
<td>API 607 Rev. 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marking:</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSS SP-25</td>
</tr>
<tr>
<td>EN 19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Quality Assurance:</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO 9001</td>
</tr>
<tr>
<td>PED</td>
</tr>
</tbody>
</table>

Cryogenic (Low Temperature) Valves

- For fluid temperatures ranging from -76°F to -328°F
- Stainless steel body
- Stainless steel disc
- AISI Type 660 shaft
- Low temperature extension:
  - Prevents ice from forming at the top of the shaft
  - Isolates and insulates the stuffing box
- Length of the extension:

<table>
<thead>
<tr>
<th>Inch</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>5&quot;</th>
<th>6&quot;</th>
<th>8&quot;</th>
<th>10&quot;</th>
<th>12&quot;</th>
<th>14&quot;</th>
<th>16&quot;</th>
<th>18&quot;</th>
<th>20&quot;</th>
<th>24&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>11.8 in</td>
<td>19.7 in</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>