FLOWSEAL MS

brands you trust.

FLOWSEAL® MS - Triple Offset Valves
DIN/Metric

CRANE®
Energy Flow Solutions

www.craneenergy.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. Metal seated, 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 & Applications

Overview

Size:	DN 80 - 600
Class:	PN 10-100
Materials:	Carbon steel Stainless steel High alloys
Body Types:	Lug Double Flange - Short Pattern
Temperature Range:	-196°C to +550°C
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 & loading rack
Reforming
Steam systems
Vacuum unit
Visbreaker

Chemical Plants
Process
Utilities

Power Industry
District heating
Steam and water applications

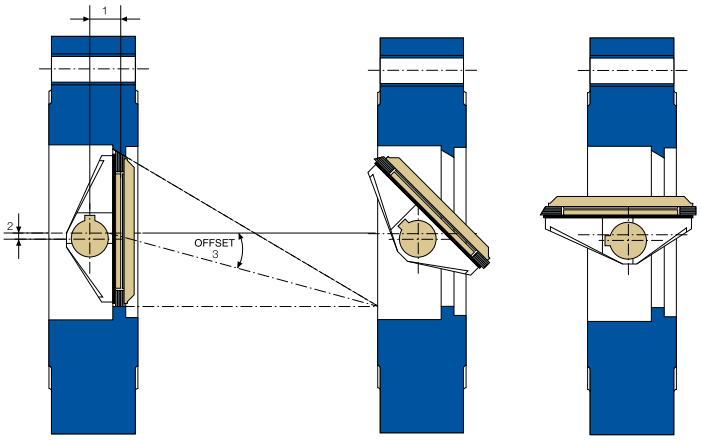
Offshore/Onshore
Gas and oil storage tanks
Petrochemicals
Process in treatment and purification plants
Process on platforms
Tank Farms

Pulp and Paper
Reduction process
Steam applications
Water applications

Steel Mills
Hot gas and steam applications

Water Industry
Desalination
Water
Water treatment
Waste water

Triple Offset Design



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 Flowseal MS 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, Flowseal Metal Seated TOV provides users with the following benefits:

1. Exceptional flow control, high Kv, and low Delta P in a single valve
2. Zero leakage* capability that results in enhanced performance and safety
3. Longer in-service life leading 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 requiring minimal actuation
6. Smaller, lighter valve resulting in lower shipping, handling, and installation costs

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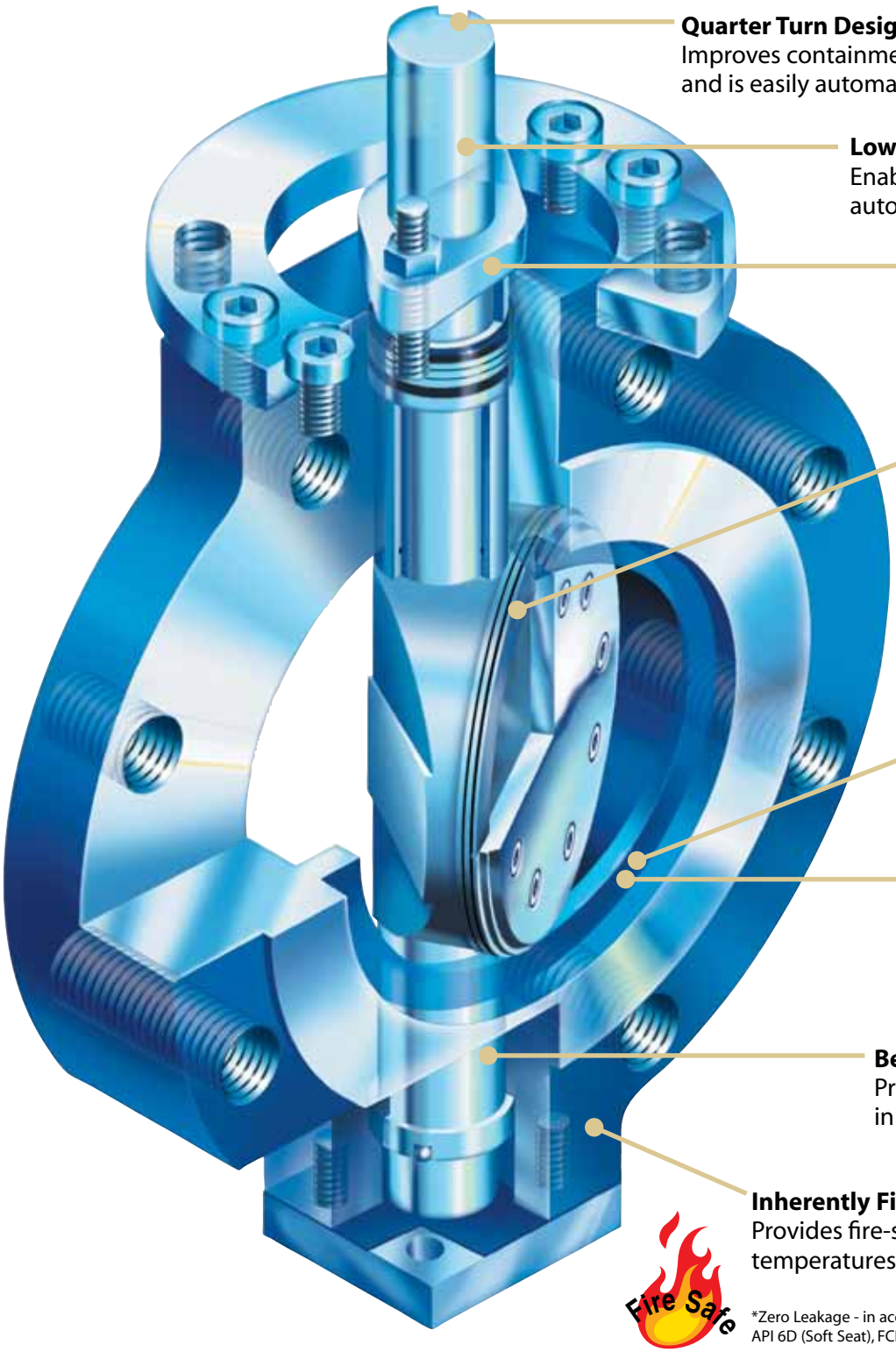
Key Design Features

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

Stainless Steel Graphite Laminated Seal Ring
Provides reliable, zero leakage*, bi-directional shutoff to 550°C

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

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

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

Fire Safe

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

Product Range

Flowseal MS 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 - EN558-1 Series 16**
  Interchangeable with most butterfly valves
- **Flanged Design - Short Pattern - EN558-1 Series 13**
  Most common face-to-face dimensions for triple-offset rotary valves

Lug Pattern

EN558-1
Series 16
DN 80 to 600 - PN 10 - 40
DN 80 to 400 - PN 100
Other sizes available on request.

Double Flange Short Pattern

EN558-1
Series 13
DN 80 to 600
PN 10 - 40
Other sizes available on request.

Product Standards & Cryogenic Valves

Design:	EN593
Face to Face Dimensions:	EN558-1 Series 16 EN558-1 Series 13
Flange Dimensions:	EN / DIN Std. acc. EN1092-1
Testing:	EN Std. according EN 12266-1
Fire Testing:	API 607 Rev. 4
Marking:	EN19
Quality Assurance:	ISO 9001 PED

Cryogenic (Low Temperature) Valves

- For fluid temperatures below -60°C to -200°C
- Body stainless steel
- Disc stainless steel
- Shaft AISI Type 660 SS/1.4980
- Low temperature extension:
  - Prevents ice from forming at the top of the shaft
  - Isolates and insulates the stuffing box
- Length of the extension:

DN	80	100	125	150	200	250	300	350	400	450	500	600
H	← 300 mm →							← 500 mm →				

Maximum: -200°C at max. 25% of nominal pressure.

FLOWSEAL MS

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