

FLOWSEAL^{MS}

brands you trust.



FLOWSEAL[®] MS - Triple Offset Valves
ASME/Imperial

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:	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 & 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

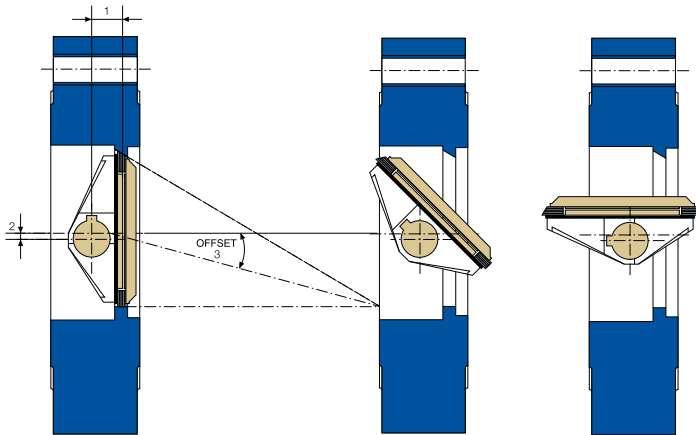
Steel Mills

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:

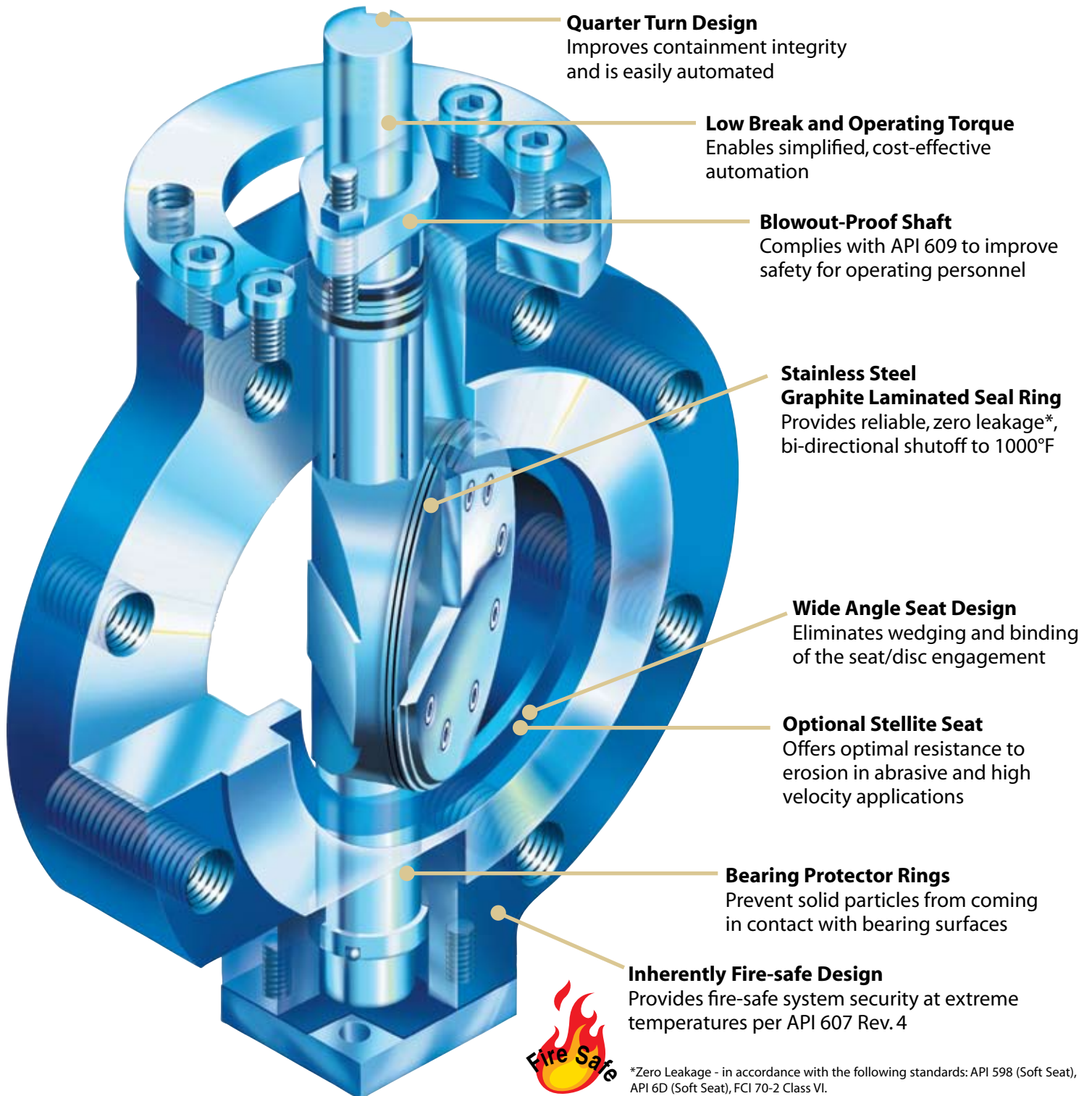
- 1 Exceptional flow control, high Cv, and low Delta P in a single valve
- 2 Zero leakage* capability that results in enhanced performance and safety
- 3 Longer in-service life leading to lower costs of maintenance and replacement
- 4 Replaceable seal ring which allows for quick, easy repair
- 5 Lower 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 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

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



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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 - 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 & Cryogenic Valves

Design: ASME B16.34
ASME SEC VIII
ASME B31.1 and B31.3
API 609

Face to Face Dimensions: ASME B16.10
ISO 5752
API 609

Flange Dimensions: ASME B16.5
ISO 7005

Testing: API 598 (Soft Seat)
API 6D (Soft Seat)
FCI 70-2 Class VI
TA-Luft acc. VDI 2440

Fire Testing: API 607 Rev. 4

Marking: MSS SP-25
EN 19

Quality Assurance: ISO 9001
PED



Cryogenic (Low Temperature) Valves



- For fluid temperatures below -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:

Inch	3"	4"	5"	6"	8"	10"	12"	14"	16"	18"	20"	24"
H	← 11.8 in →						← 19.7 in →					

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NUCLEAR

VALVE SERVICES

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