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Why More Facilities Are Choosing Triple Offset Butterfly Valves Over Gate Valves

Improve Reliability, Reduce Maintenance, and Lower Installation Costs

When specifying valves for isolation service, many facilities automatically default to traditional cast steel gate valves. While gate valves remain a proven solution, modern Triple Offset Butterfly Valves (TOVs) offer significant advantages in performance, reliability, automation, and total cost of ownership.



Key Benefits of Triple Offset Butterfly Valves:

Zero Leakage Performance

Unlike traditional gate valves that allow leakage within API 598 limits, Triple Offset Butterfly Valves provide bi-directional zero leakage sealing with a metal-to-metal, torque-seated design. This delivers enhanced shutoff performance for critical applications.

Isolation and Throttling Capability

Gate valves are designed strictly for on/off service. Triple Offset Butterfly Valves provide both:

- On/off isolation
- Precise throttling capability between 15° and 75° open

This flexibility can reduce the need for additional valve types in your system.

Reduced Maintenance Requirements

Triple Offset technology eliminates sliding seat contact, reducing wear on critical sealing surfaces. Combined with the absence of internal cavities, this results in:

- Lower maintenance requirements
- Increased cycle life
- Improved long-term reliability

Smaller Footprint, Lower Installed Cost

Compared to gate valves, TOVs feature a compact, lightweight design that can significantly reduce:

- Space requirements
- Structural support needs
- Handling and installation costs
- Actuation expenses

Faster Automation

Triple Offset Butterfly Valves utilize:

- Quarter-turn operation
- Standard ISO 5211 mounting
- Compact actuator packages

This allows for faster operation and more efficient automation compared to the larger multi-turn actuators required for gate valves.

Fire-Safe Design

Triple Offset Butterfly Valves are capable of fire-safe service and are tested to API 607 standards, providing added confidence in demanding applications.

Dead-End Service Capability

Many Triple Offset Butterfly Valve designs offer bi-directional dead-end service capability, expanding application flexibility.

High-Temperature Performance

Depending on construction materials, TOVs can operate up to:

- 800°F with carbon steel bodies
- 1000°F with stainless steel bodies and Nitronic stems

Weight Savings That Make a Difference

Triple Offset Butterfly Valves can provide substantial weight reductions compared to equivalent gate valves:

Valve Style	Average Weight Reduction vs. Gate Valve
Lug Style	Up to 80% Lighter
Wafer Style	Up to 86% Lighter
Short Pattern	Up to 59% Lighter
Long Pattern	Up to 44% Lighter

Actual weight savings may vary based on valve size and pressure class.

Is a Triple Offset Butterfly Valve Right for Your Application?

A gate valve may still be the preferred choice when full-bore flow or pigging capability is required. However, for many industrial applications, Triple Offset Butterfly Valves deliver:

- Zero leakage performance
- Lower lifecycle costs
- Easier automation
- Reduced maintenance
- Smaller installation footprint

Our valve specialists can help evaluate your application and determine the best solution for your system requirements.

Interested in learning how a Triple Offset Butterfly Valve could improve performance and reduce operating costs in your facility? Contact our team today for application support, valve selection assistance, or a product consultation.



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