

# **JDV** | JTEM Series Triple Offset Metal-Seated Butterfly Valves



**Carbon Steel, Stainless Steel, and High Alloys**  
**ASME Classes 150 - 2500**

API 609 & ASME B16.34 Design  
Lug, Wafer & Flanged Ends

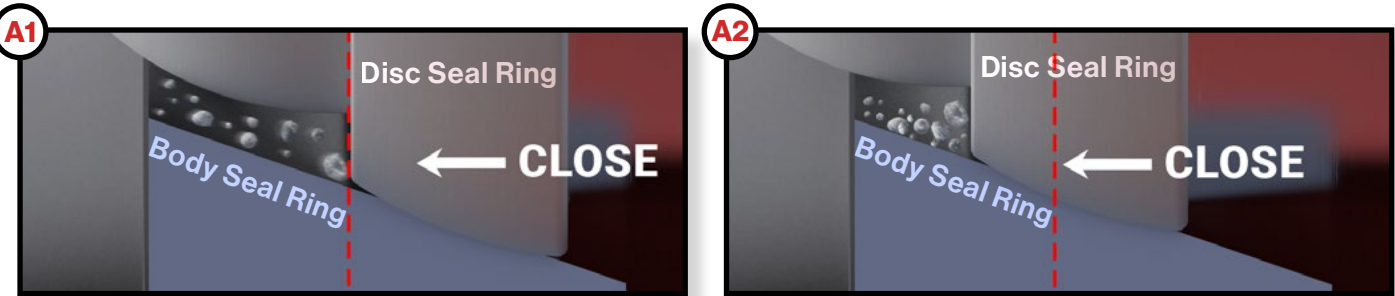
JTEM Series Triple Offset Metal-Seated Butterfly Valves

We are proud to introduce the JDV JTEM Series Triple Offset Metal-Seated Butterfly Valve, which combines an innovative sealing design with superior manufacturing & workmanship to present a unique value in the industry. The JTEM series is ideal for certain applications that pose unique challenges such as abrasive media, high pressure drop, high temperature / thermal cycling, and cryogenic temperatures.

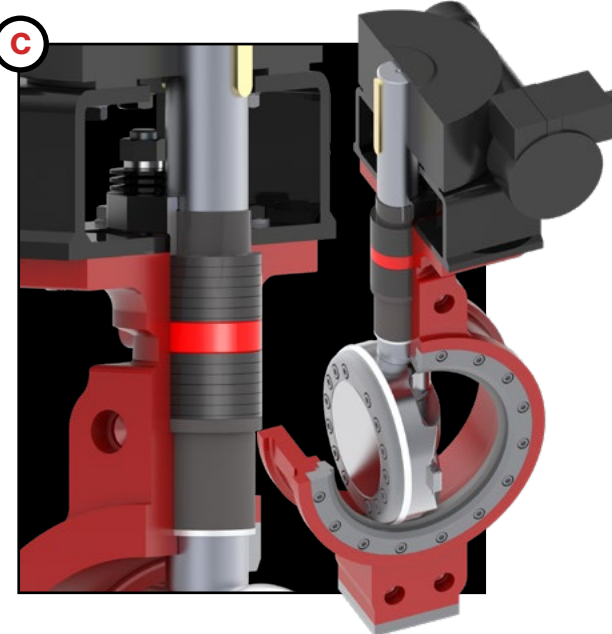
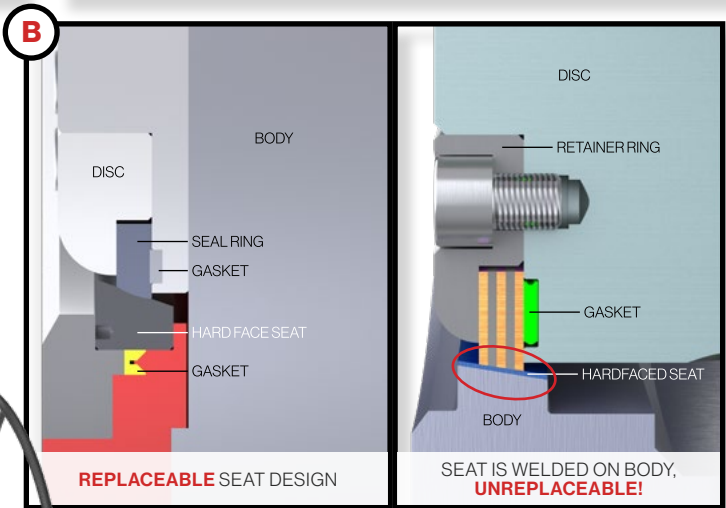
The JTEM series with its true metal-seated triple offset technology gives it superior performance in these challenging applications compared to traditional wedge gate valves and laminated seal triple offset butterfly valves, at a price much more attractive than a typical metal-seated ball valve. In industries as diverse as **Refining, Chemical & Petrochemical, Pulp & Paper, and LNG** – the JTEM series butterfly valve is solving challenging application problems. Let us solve yours next!

Core Features and Benefits

- > **True metal-seated design** (Figure A)
  - Unique scraper ring and solid metal seat provides superior longevity in abrasive, corrosive services.



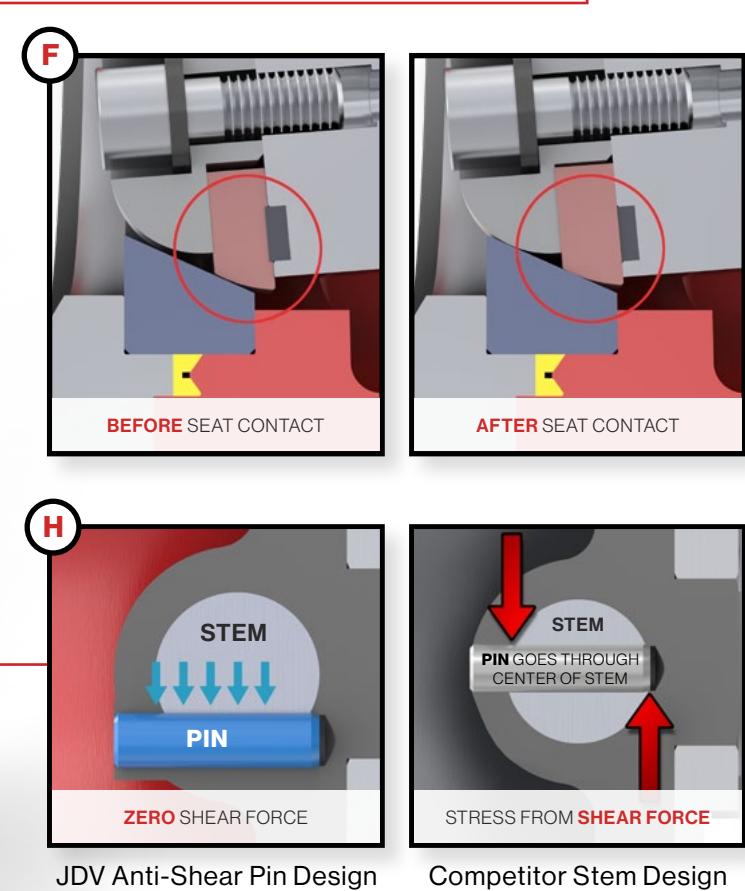
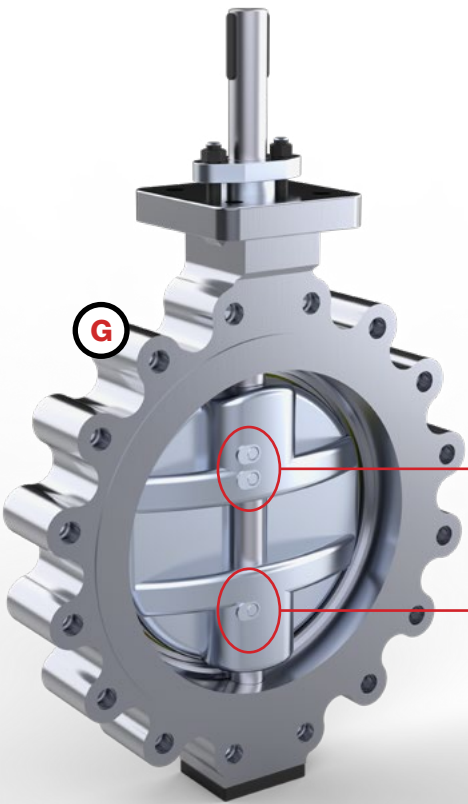
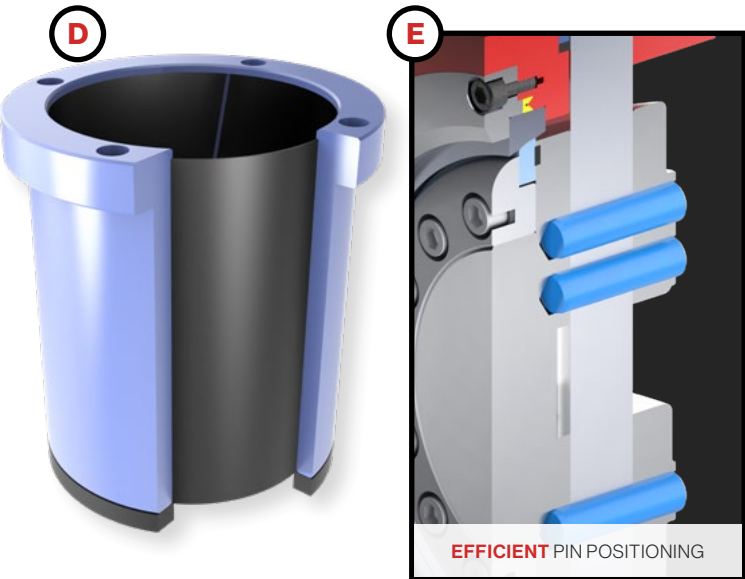
- > **Replaceable seal ring & seat** (Figure B)
  - Lowers total cost of ownership by allowing critical trim components to be easily field-replaceable.



- > **Advanced Fugitive Emissions Stem Packing** (Figure C)
  - JDV's JTEM Series triple offset butterfly valve comes STANDARD with live-loaded packing gland, and API 622 compliant packing for fugitive emissions performance, including in high temperature and/or thermal cycling applications.

Other Standard Features

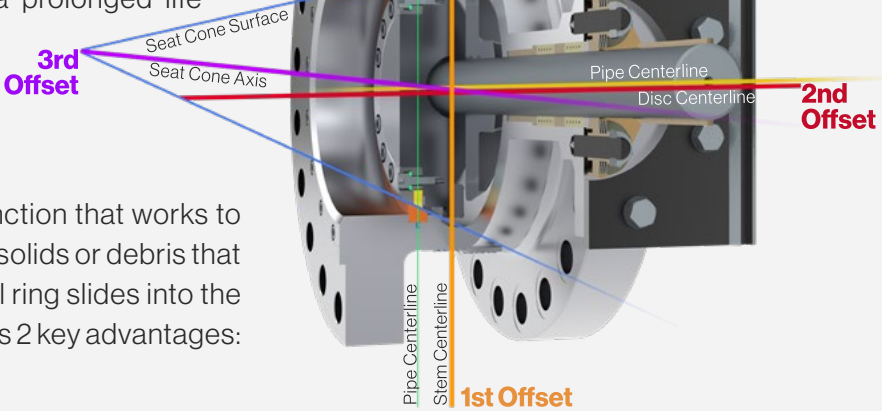
- > **Sealed Stem Bearings** (Figure D)
  - Superior Abrasive Performance
  - Longer Life Cycle
  - Lower Torque
- > **Bi-Directional Sealing Capability**
- > **Anti-Shear Stem Pin Design** (Figures E/G/H)
  - Superior Abrasive Performance
  - Longer Life Cycle
- > **Anti-Blowout Stem**
- > **Single Piece Stem**
  - Increased Strength
- > **ISO Actuator Mounting Pad**
- > **Flexible Disc Seal Design** (Figure F)
  - Eliminates Thermal Expansion Issues



TOV Features

Unique Triple Offset Geometry

The JTEM's innovative double inclined triple offset design inherits the advantages of the typical design and optimizes them to provide the lightest torque, zero leakage, a prolonged life cycle, and an easy maintenance process.



SlideSeal Technology

The JTEM seal design has a unique scraper function that works to clean the seating area on closing thus removing solids or debris that could damage or clog the seating area. The seal ring slides into the seating area upon closing the valve. This provides 2 key advantages:

- 1. The scraper function sweeps debris from the point of contact between disc and seat, providing superior sealing performance and repeatability in media containing solids, particulates, and debris.
- 2. As the disc and seat wear, the sliding action and seal geometry allows the disc to continuously find an optimal point of contact for a tight seal. This ensures repeatable sealing over time. These advantages together allow the SlideSeal technology to provide better sealing than the typical point of contact seal. It helps to ensure bubble tight sealing and prolong the life of the valve even in the most severe of services.

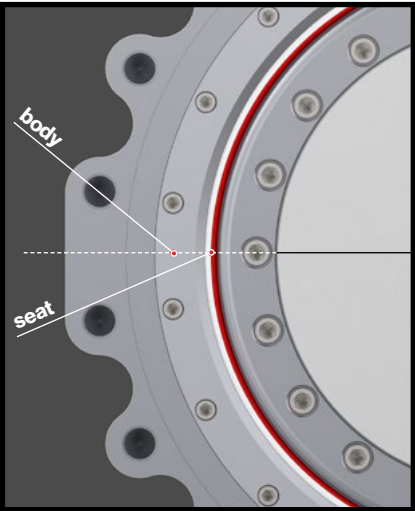
Solid Metal Seal Ring

JDV's unique solid metal seal ring design exhibits superior performance to competitors' traditional laminated seal ring design in highly abrasive media and high pressure drop applications. By eliminating any soft parts that could be damaged by particulates, abrasive media or high pressure drops, the solid metal ring provides a more reliable seal in the toughest conditions.

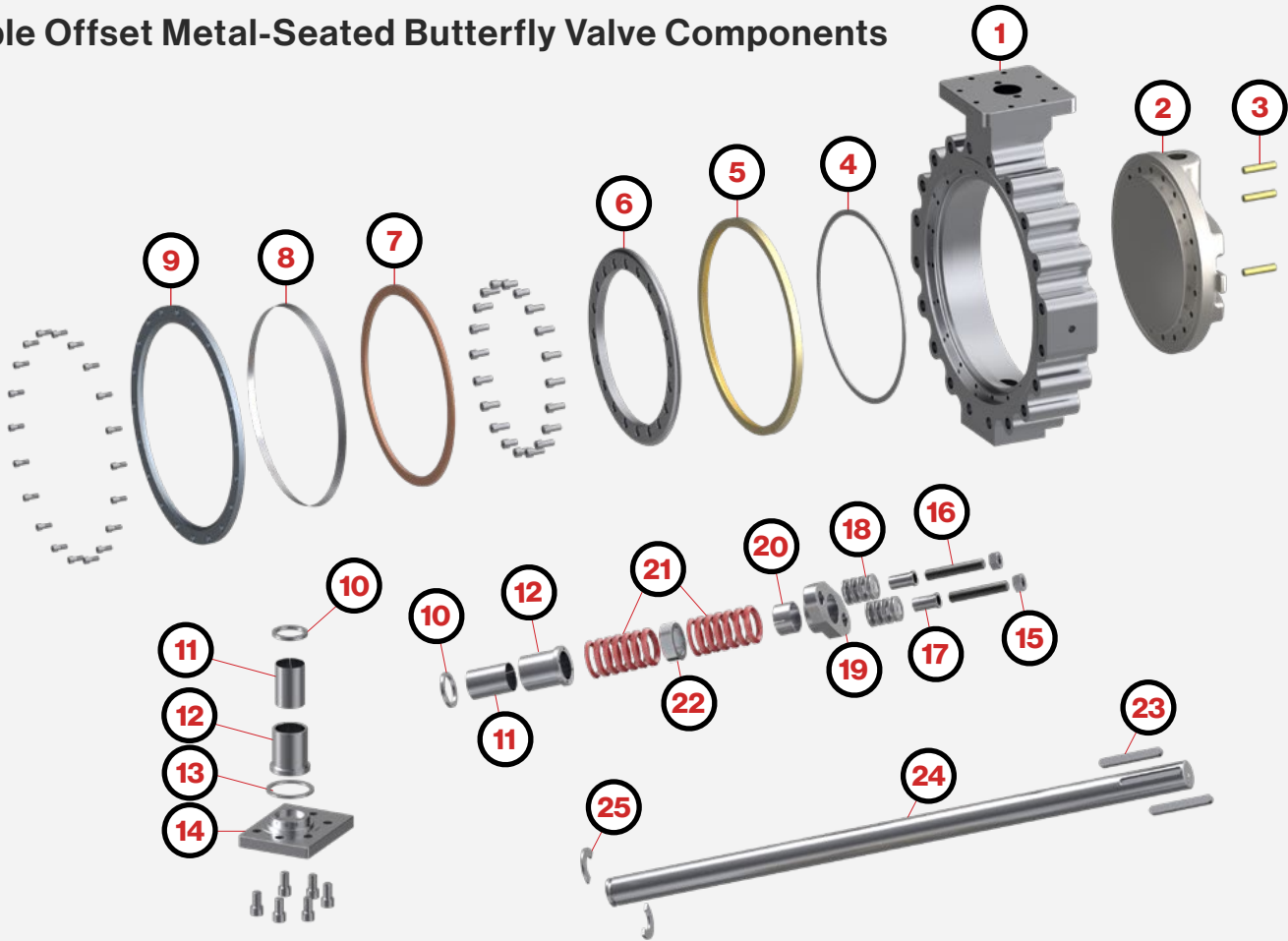


Field Repairable/Replaceable Seal & Seat

While traditional TOV's typically can have the seal ring repaired, those valves have a welded in seat that are not able to be repaired in the field. If there is any damage to the seat, they will need to be pulled out of line and repaired in a specialty shop, or completely replaced – costing you time and money. JDV's JTEM valves feature a removable seal ring AND seat. Our design features alignment holes on the valve body and disc, and easy access to the replaceable parts without full valve disassembly. This allows for an easy field repair if the need should arise.



Triple Offset Metal-Seated Butterfly Valve Components



Bill of Materials

| NO | PART NAME     | NO | PART NAME          | NO | PART NAME     |
|----|---------------|----|--------------------|----|---------------|
| 1  | Body          | 10 | Stem Ring Seal     | 19 | Gland         |
| 2  | Disc          | 11 | Thrust Bearing     | 20 | Gland Bearing |
| 3  | Stem Pin      | 12 | Stem Bushing       | 21 | Stem Packing  |
| 4  | Disc Gasket   | 13 | Cover Gasket       | 22 | Stem Ring     |
| 5  | Seal Ring     | 14 | End Cover          | 23 | Key           |
| 6  | Disc Retainer | 15 | Gland Nut          | 24 | Stem          |
| 7  | Seat          | 16 | Gland Bolt         | 25 | Thrust Washer |
| 8  | Body Gasket   | 17 | Gland Bolt Bushing |    |               |
| 9  | Body Retainer | 18 | Belleville Spring  |    |               |

|                                           |                                                                                  |                                                                                  |                                                                                   |                                                                                            |
|-------------------------------------------|----------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|
|                                           |  |  |  |          |
| VALVE TYPE                                | WEDGE GATE VALVE                                                                 | LAMINATED SEAT TRIPLE OFFSET BUTTERFLY VALVE                                     | JDV'S JTEM SERIES METAL-SEATED TRIPLE OFFSET BUTTERFLY VALVE                      | METAL-SEATED BALL VALVE                                                                    |
| UPFRONT COST                              | ★★★★★<br>Lowest Price                                                            | ★★★★☆<br>Moderate Price                                                          | ★★★★☆<br>Moderate Price                                                           | ★★★☆☆<br>Most Expensive                                                                    |
| REPAIRABILITY                             | ★★★☆☆<br>Almost never economical to repair                                       | ★★★★☆<br>Sometimes economical to repair                                          | ★★★★★<br>Economical and fully field-repairable                                    | ★★★★☆<br>Need special tools & shop to repair                                               |
| PERFORMANCE IN ABRASIVE SERVICE           | ★★★☆☆<br>Performs poorly in abrasive service                                     | ★★★★☆<br>Performs acceptably in mild abrasive service                            | ★★★★★<br>Performs excellent in abrasive service                                   | ★★★★★<br>Performs excellent in abrasive service                                            |
| PERFORMANCE IN THERMAL CYCLING SERVICE    | ★★★☆☆<br>Performs poorly in thermal cycling service                              | ★★★★☆<br>Performs well in thermal cycling service                                | ★★★★★<br>Performs excellent in thermal cycling service                            | ★★★★★<br>Performs excellent in thermal cycling service                                     |
| PERFORMANCE IN HIGH PRESSURE DROP SERVICE | ★★★★☆<br>Gate valve cannot be used for control applications.                     | ★★★★☆<br>Performs acceptably in high pressure drop service                       | ★★★★★<br>Performs excellent in high pressure drop service                         | ★★★☆☆<br>Only special-designed metal-seated ball valves can be used in control application |

Total Cost of Ownership

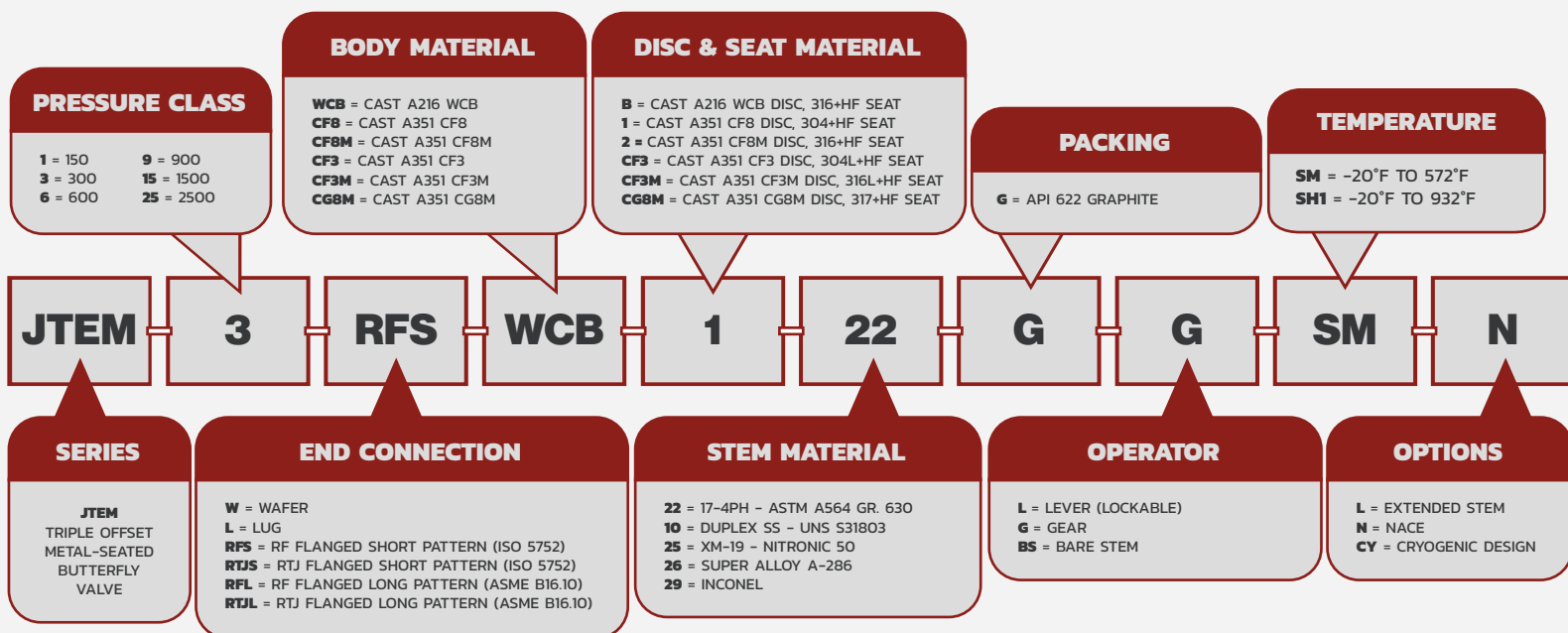
Not only is our JTEM Series butterfly valve able to solve application problems that other valves struggle with, users who choose the JTEM also see continued benefits in field replaceability that further lower the total cost of ownership. Both the solid metal seal ring AND seat ring are field replaceable, making the valve economically repairable to extend service life. Below is a sample cost of ownership calculation that can illustrate the point – and this doesn't even include the costs of downtime and lost production! JTEM Series butterfly valves are the right choice for the long haul.

| COST                    | JTEM 24” 150# REPLACEABLE SEAT & RING | COMPETITOR 24” 150# INTEGRAL SEAL RING | JTEM 12” 600# REPLACEABLE SEAT & RING | COMPETITOR 12” 600# INTEGRAL SEAL RING |
|-------------------------|---------------------------------------|----------------------------------------|---------------------------------------|----------------------------------------|
| INITIAL COST            | \$15,500                              | \$15,500                               | \$4,900                               | \$4,900                                |
| INSTALLATION COST       | \$1,550                               | \$1,550                                | \$490                                 | \$490                                  |
| REMOVAL COST            | \$1,550                               | \$1,550                                | \$490                                 | \$490                                  |
| REPAIR COST             | \$1,550                               | N/A                                    | \$490                                 | N/A                                    |
| REPAIR PARTS            | \$3,472                               | N/A                                    | \$1,236                               | N/A                                    |
| REPLACEMENT VALVE COST  | N/A                                   | \$15,500                               | N/A                                   | \$4,900                                |
| TOTAL COST OF OWNERSHIP | \$23,622                              | \$34,100                               | \$7,606                               | \$10,780                               |
| ESTIMATED SAVINGS       | \$9,08344%                            | N/A                                    | \$3,17442%                            | N/A                                    |



# How To Order Guide

We've created an easy guide to help our customers order these Triple Offset Metal-Seated Butterfly Valves.



**JTEM — 3 — RFS — WCB — 1 — 22 — G — G — SM — N**

JTEM Series Triple Offset Butterfly Valve, ASME Class 300, RF Flanged Short Pattern, WCB Body, CF8 Disc and 304+HF Seat, 17-4PH Stem, Graphite Packing, Gear Operator, Temp Range -20°F to 572°F



JDV-BF-1025