EliteValve

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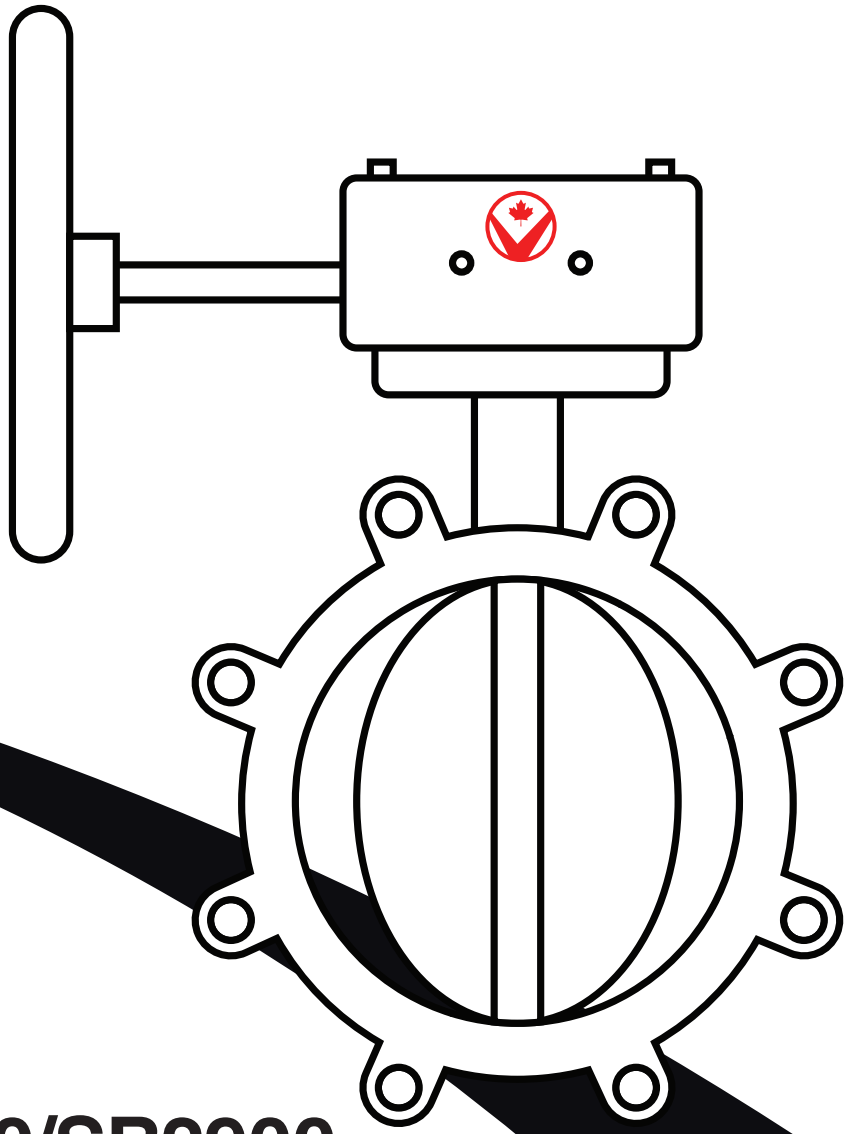

BF2300/BF2400/SB2900 Butterfly Valve

Installation, Operation, & Maintenance Manual

Customized valve solutions for the toughest applications.

Safety First!

Safety messages in this manual are identified by the following:

= Danger!

Failure to heed the following warning or instruction could result in injury or death.

= Attention!

Failure to follow this procedure could result in equipment damage or injury.

Disclaimer

- Safety precautions should be taken at ALL times when working with industrial valves. Transportation, installation, commissioning and maintenance actions should only be carried out by skilled professionals with the qualified experience required for using the appropriate tools and equipment involved. Proper understanding of relevant procedures, processes, applications, and valve operation are required.
- Personnel involved in the installation or maintenance of valves should always be aware of the potential emission of process material and should take all necessary safety precautions. Always wear the required personal protective equipment when dealing with any hazardous materials. Always handle valves that are removed from service with the assumption that process material remains within the valve.
- The correct Personal Protective Equipment (PPE) should be worn at all times when working with industrial valves. This may include, but not be limited to, protective footwear, hard hats, safety glasses, and high-visibility clothing.

Material or design suggestions provided by Elite Valve, either directly or indirectly through product quotation or sale, are solely for general information purposes. Technical and any other necessary review by the customer is expected, and it is ultimately the responsibility of the customer to determine product suitability and application based on the customer's own needs and criteria. Elite Valve and its employees assume no liability in this regard.

Elite Valve reserves the right to make design and material changes without notice or obligation. Design features and materials of construction as described in this manual are for informational purposes only.

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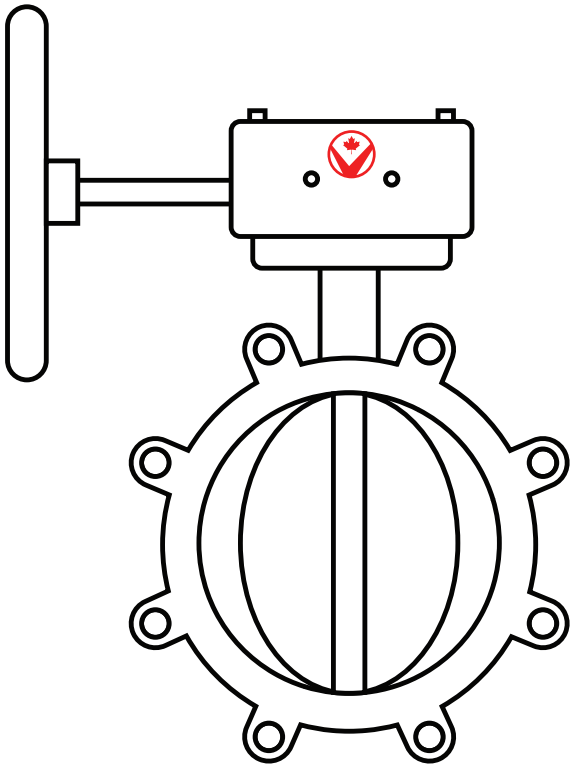

Introduction

This manual is intended for use by personnel involved with the transportation, storage, installation, operation, or maintenance of Elite Valve products.

Inspection

Elite Valve products are carefully packaged to provide maximum protection during shipment. Upon receipt, carefully inspect the product for damage and notify your carrier of any issues.

Storage

If valves are not to be installed upon receipt, then it is recommended that they be stored in the original factory packing in a clean dry warehouse until ready for installation. Ensure all valves have flange covers installed protecting serrated finishes and valve internals. If storage is longer than 6 months, please refer to our Long Term Valve Storage and Preservation Manual for more details.

Transportation

It is safest to transport the valves on the skid or crate originally supplied. For large valves, use proper lifting straps, in good condition, to safely lift the valve by placing around the body of the valve.

⚠ Do not lift by the disc or by placing straps through the open body.

⚠ Do not attach ropes or hooks to handwheels for the purpose of lifting.

Pre-Installation

Actuators should be mounted and tested prior to installation to ensure correct functionality.

⚠ Ensure all Lock-out and Tag-out procedures have been properly implemented.

⚠ Check the valve identification tag for materials, and operating pressure to be sure they are appropriate for the application.

⚠ Check the flange/connection type/rating of the valve and ensure they are compatible with the size/type of pipeline connection.

Ensure flange bolts (or studs and nuts) are the correct size, thread, length, and grade for the application. Refer to appropriate valve drawing for dimensions.

Ensure the pipeline is correctly aligned and correct any misalignments prior to installation. Misaligned pipelines can create stress on the valve body causing premature wear.

Remove any foreign material such as dirt, scale, oil, grease, or weld spatter from the valve and pipeline threads or flange faces before installation.

Ensure the sealing edge of the disc and valve seat are clean.

Installation

⚠ Elite Valve recommends that installation is performed by qualified technicians only.

Elite Valve recommends that valves (ideally) be installed with a minimum of six pipe diameters upstream and four pipe diameters downstream from any other valves, pumps, elbows, or fittings.

Elite Valve recommends that butterfly valves be installed with the shaft in a vertical position and the actuator above the valve. It is acceptable to install the valve with the shaft in a horizontal position if necessary, ensuring that the lower edge of the disc opens downstream. The horizontal mounting position may also be considered when used for light slurry (solids) applications to provide a self-cleaning action on the seat and reduce wear on the lower shaft bearings.

Do not use gaskets when installing resilient seat butterfly valves. The seat material on the face of the valve serves as a gasket.

- Spread the pipeline flanges to allow enough space for the valve to be inserted without contact.

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- Install the butterfly valve between pipeline flanges with the disc in the “Almost Closed” (80%-90%) position. Ensure disc is not protruding past the face of the valve.
- Insert the valve between the flanges using the correct lifting technique (See Transportation). Ensure the seat faces are not damaged while inserting the valve.

  For lugged style valves:

  - Center the valve between the flanges and locate flange bolts by placing them in position through the pipeline flanges and into the first few threads of the valve body. DO NOT TIGHTEN.

  For wafer style valves:

  - Loosely install studs through the pipeline flanges and the upper and lower valve alignment holes. Install remaining studs, hand-tight only, while maintaining alignment of valve between the flanges. DO NOT TIGHTEN.
- Open the valve fully and check for interference between the disc and the pipe. Adjust pipe/valve alignment as required to eliminate any interference.
- Tighten the bolts evenly in a criss-cross pattern.
- Maintain alignment of the mating pipeline flanges at all times during installation.

Operation

Lever Operators

To operate, squeeze the handle and the locking lever together and turn the handle to the desired position and release the locking lever.

The valve is closed by rotating the handle in a clockwise direction and opened by rotating in a counter-clockwise direction.

The valve is fully closed when the handle is perpendicular to pipe and fully open when the handle is parallel to the pipe. Markings on the notch plate denote the ‘open’ and ‘closed’ positions when the handle is in-line.

Figure 1: Handle showing closed position

Figure 2: Handle showing open position

If the handle is removed while the valve is in service, take care to note the position of the handle on the shaft so that it can be re-installed in the correct position.

Gearbox Operators

To operate, turn the handle in the direction indicated to open and close the valve. Valve position is shown by the position indicator on top of the gearbox.

Actuated Valves

Butterfly valves may also be actuated by a pneumatic, or electric actuator. For details regarding actuator operation, please consult the appropriate actuator manual.

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Routine Maintenance

While there are no regular maintenance requirements for the Industrial BFV, Light Slurry BFV and PTFE Lined BFV, Elite Valve recommends performing the following periodic checks:

- A visual inspection of the valve to assess condition and identify any leaks at the flange connection or shaft
- Verify flange bolting is tight and adjust as required
- Check actuator connections and condition to ensure reliable operation
- Test operate the valve (if possible) to ensure it is unrestricted

When working on, or maintaining process valves, personnel should always be aware of the potential emission of process material and should take all necessary safety precautions. Always wear the required personal protective equipment when dealing with any hazardous materials. Always handle valves with the assumption that process fluid remains in the valve.

Lock-out Provision

If a manually operated valve is required to be locked out for line maintenance, move the valve to the fully open or fully close position (as required) and insert the lock-out device through the lock-out provision on the top of the valve. For actuated valves, follow the lock-out procedure detailed in the appropriate actuator manual.

Figure 3 - Lock out provision for valve in Closed position

Removal from Service

If the valve is required to be removed from service, be sure to verify the following conditions and follow any relevant site requirements and procedures:

Loosening flange bolts on a pressurized valve can cause the release of fluids in the pipeline. Relieve pipeline pressure before loosening flange bolts to avoid causing injury or damage to the pipeline.

Do not remove the operator or actuator from the valve while the line is under pressure

Identify the pipeline media and ensure the correct PPE is utilized to protect against hazardous/toxic/flammable materials

- Ensure the line is depressurized and drained
- Place the valve in 80-90% closed position

Ensure all Lock-out and Tag-out procedures have been properly implemented.

The accidental operation of a valve actuator can cause injury or damage. Ensure any powered actuators are correctly disconnected and locked out prior to removing the valve from service.

- If the valve is actuated (pneumatically, hydraulically or electrically) follow procedures from the actuator manual to correctly disconnect and lock-out the actuator to prevent injury or damage caused by accidental operation
- Support the valve according to techniques outlined in 'Transportation' section
- Remove flange bolts and spread the pipeline flanges
- Remove valve from pipeline

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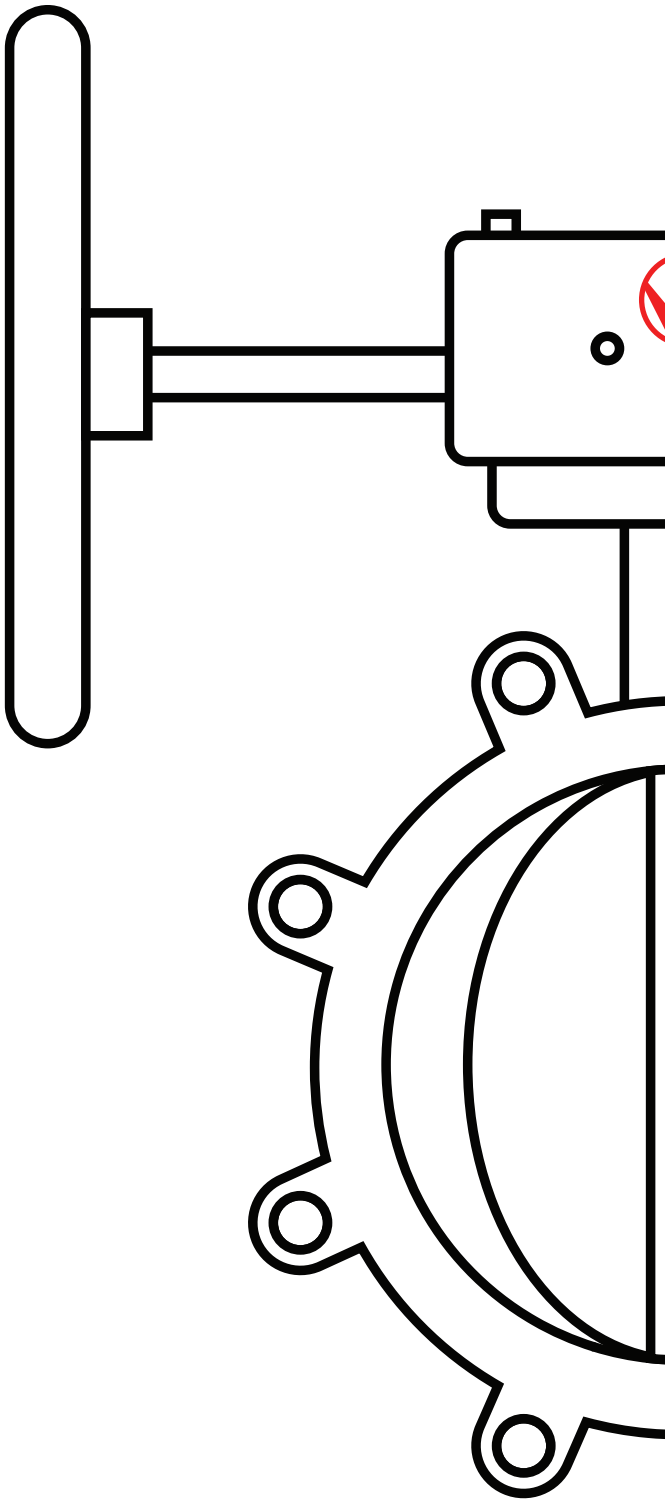
Troubleshooting

If you are experiencing performance issues with this valve, please refer to the matrix below. If the issue is still unresolved, please reach out to your distributor for assistance or contact the factory for support.

Symptom	Possible Causes	Action
Actuated valve does not open or close.	Actuator disconnected from power source.	Check actuator power source.
Valve does not fully close.	Debris is jammed between disc and seat.	Open valve fully to allow flow to clear debris.
	Closed position on actuator is out of adjustment.	Adjust closed position or stop according to actuator manual.
	Disc has separated from shaft.	Replace valve.
Valve leaks when closed.	Closed position on actuator is out of adjustment.	Adjust closed position or stop according to actuator manual.
	Seat or disc is worn or damaged.	Replace valve.
Valve does not fully open.	Open position on actuator is out of adjustment.	Adjust open position or stop according to actuator manual.
	Disc has separated from shaft.	Replace valve.
Leakage detected between body and flanges.	Flange bolts are not tight.	Tighten flange bolts in a criss-cross pattern.
	Flange gaskets were installed.	Remove flange gaskets.
	Flange seals are damaged.	Replace valve.
Leakage detected between body and actuator.	O-ring shaft seals have failed.	Replace valve.



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Limited Warranty

Elite Valve (Seller) warrants to Purchaser that for a period ending as of the earlier of twelve (12) months from the installation date and eighteen (18) months from the shipment date ("Warranty Period"), Products manufactured by Seller will be free from defects in materials and workmanship when used for the purposes for which they designed and manufactured. The warranty exclusions include, without limitation, (I) any defects caused by faulty installation performed by Purchaser or third parties, (II) any damage caused by the contractors or tradesman of the Purchaser, (III) any damage caused by improper use or misuse, including exposure to excessive temperatures, moisture or cleaning agents and solvents and (IV) any damage caused during transportation or improper storage.

Products manufactured by a third party ("Third Party Product") may constitute, contain, be contained in, incorporated into, attached to or packaged together with, the Products. Third Party Products are not covered by the warranty in Section 11(A). Third Party Products are subject only to the limited warranties provided by the manufacturer of the Third Party Products.

The Seller shall not be liable for a breach of the warranty set forth unless: (i) Purchaser gives written notice to Seller of the defect during the Warranty Period and, in any event, within fourteen (14) days of the time when Purchaser discovers or the defect; (ii) Seller is given a reasonable opportunity after receiving the notice to investigate and/or to verify Purchaser's claim that the Products are defective. If requested, to do so by the Seller, the Purchaser shall return (freight prepaid) such Products to Elite Valve Canada factory in accordance with the Sellers Return Authorization procedures.

Subject to above, with respect to any such Products during the Warranty Period, Seller shall, in its sole discretion, either: (i) repair or replace such Products (or the defective part) or (ii) credit or refund the price of such Products at the contract rate provided.

The Seller is not liable for any costs associated with repairs that have been performed by the Purchaser or third parties unless written permission has been granted. In no event shall Seller be liable for other than the repair or replacement of any defective Products. In no event shall Seller be liable for any damages, direct or indirect, special or consequential, including, without limitation, damages for lost profits, business interruption, or economic loss arising out of defects in the Products.

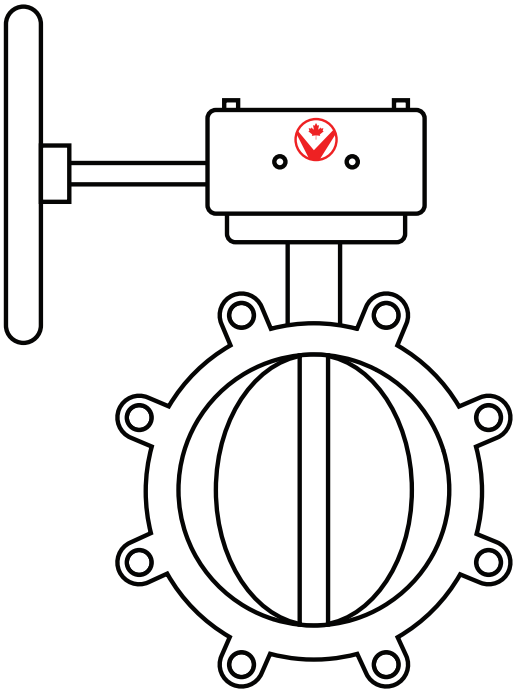
Sales and Service

To find your nearest distributor or to download the latest product information including brochures, drawings, manuals, and instructional videos please visit our website.

www.elitevalve.com

For application and product support, contact Elite Valve directly:

Toll Free: (888) 339-7758



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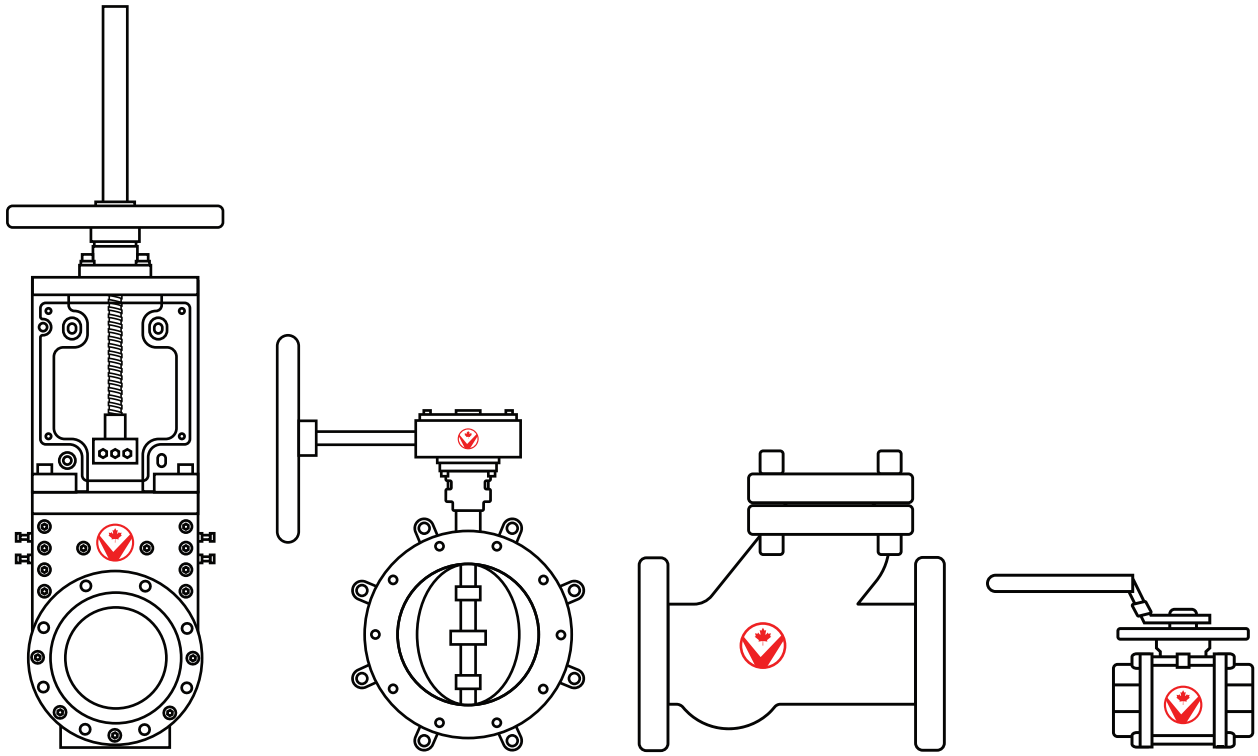

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Our North American manufacturing and testing facility is located in Oakville, Ontario and houses over 190,000 sq ft of inventory.

Contact us at sales@elitevalve.com and our engineering team will work with you to address your process application needs.

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