



6400 Corporate Avenue
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PLEASE READ THE FOLLOWING INFORMATION PRIOR TO INSTALLING AND USING COLONIAL VALVES, STRAINERS, AND OTHER ASSOCIATED PRODUCTS. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN SERIOUS INJURY.

INSTALLATION, OPERATION AND MAINTENANCE INSTRUCTIONS

Lug Type butterfly valves are installed into a system using two sets of bolts & washers, and no nuts. The valve is installed between two flanges using a separate set of bolts & washers for each flange. This setup permits either side of the piping system to be disconnected without disturbing the other side.

If you install this valve to the end of piping, we recommend that you install a “Blind Flange” on the downstream side to prevent against the accidental opening of the valve.

1. Colonial Valve warrants its products against defective material and workmanship only. Colonial Valve does not assume responsibility for damage or injuries resulting from improper installation, misapplication, or abuse of any product.
2. Colonial Valve does not assume responsibility for damage or injury resulting from chemical incompatibility between its products and the process fluids to which they are subjected. Compatibility charts provided in Colonial Valve literature are based on ambient temperatures of 73°F. The charts are based on information provided by raw material suppliers, and are for reference only. The installer should always test to determine application suitability.
3. Consult Colonial Valve literature to determine operating pressure and temperature limitations before installing any Colonial Valve product. **Note that the maximum recommended fluid velocity through any Colonial Valve product is eight feet per second.** Higher flow rates can result in possible damage due to water hammer effect. Consult with the adjoining pipe and pipe-fittings manufacturers' installation instructions to determine the maximum flow velocity for your piping system. Also note that maximum operating pressure is dependent upon material selection as well as operating temperature. **Colonial Valve products are designed primarily for use with non-compressible liquids. They should NEVER be used or tested with compressible fluids such as compressed air or gas.**
4. **Systems should always be depressurized and drained prior to maintenance on butterfly valves. We recommend protective gloves and safety goggles when performing system maintenance.**
5. Temperature effect on piping systems should always be considered when the systems are initially designed. Piping systems must be designed and supported to prevent excess mechanical loading on Colonial Valve equipment due to system misalignment, weight, shock, vibration, and the effects of thermal expansion and contraction.
6. Because PVC and CPVC will have reduced impact resistance and flexural strength as temperatures approach 32°F (0°C) and lower, caution is recommended if using pipe, valves or fittings below this temperature.
7. Published operating torque requirements are based upon testing of new valves using clean water at 70F. Valve torque is affected by many factors including fluid chemistry, viscosity, flow rate, and temperature. These should be considered when sizing electric or pneumatic actuators.
8. **Install the valve no closer than 5 pipe diameters from a pump, or directional-changing fitting, or other sources of turbulence.**



WARNING: Cancer and Reproductive Harm – www.P65Warnings.ca.gov

INSTALLATION

1. Lug Type Butterfly Valves have female threaded ports at each bolt location to receive bolts. One bolt and washer will be needed for each female-threaded port. See the table on page two for proper bolt sizing.
2. Colonial butterfly valves are self-gasketed. The use of additional gaskets is not necessary and not recommended.
3. When installed between two existing flanges, the flanges should be separated to provide clearance on the face to face of the valve. This will prevent the valve sealing surfaces from distortion during installation. **Pipe flanges should be clean and, free of debris including old gasket material.** A light coating of a silicone or mild soap & water lubricant, applied to the flange sealing surface and disc seating area, will aid in installation.
4. Colonial Valve Butterfly Valves are designed for use with all pipe flanges that have bores equal to or larger than Schedule 80 pipe.
5. **Valves must be opened to approximately 15° when installed. Do not open or close fully during installation to prevent damage.**
6. **Install the valves using well lubricated bolts. With a torque wrench, uniformly tighten nut to approximately the foot pounds specified in the chart below, in an alternating sequence, diametrically opposed to the previously tightened nut. Final tightening should be performed in the same sequence following the recommended torque.**
7. **ALIGNMENT:** The parallel and axial misalignment of the flange surface must be under the values listed below:
 - ✓ Valve size 2 – 3” Axial misalignment 0.04”, Parallel misalignment 0.03”
 - ✓ Valve size 4 – 6” Axial misalignment 0.04”, Parallel misalignment 0.03”
 - ✓ Valve size 8 – 12” Axial misalignment 0.06”, Parallel misalignment 0.04”



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INSTALLATION

8. Normal pipe hanger spacing is recommended. **Do not allow valve to support the weight of pipe.** When using pneumatic or electric actuators, additional support directly to the actuator is recommended.

OPERATION

- ✓ When installation is complete, check for proper alignment. Fully open and close the valve 3 or 4 times. With a lever installed, fully squeeze the handle and hold in for the full stroke 90° stroke of the lever. For optimum operation the lever handle should be held up until full stroke of valve is reached. The handle should be relaxed only at end of stroke. If the valve is actuated by a gear operator, then slowly cycle the valve to the open and closed positions 3 or 4 times after installing.
- ✓ If an operating nut has been installed on the gear operator, **note that the valve is "right – to – close"**
- ✓ **Maximum operation pressure:**
 - For Lug Type BFV installed in-line at ambient temperature is 150 PSI for 2 - 10", 100 PSI for 12".
 - For Lug Type BFV used in "Dead-End" or "End-of-line" Service (No downstream flanges and disc in closed position): 3" - 12" 75 psi.
 - ✓ Consult published pressure-derating tables if using with fluids above 73 ° F.

MAINTENANCE & DISASSEMBLY OF VALVE

- ✓ Minimal valve maintenance is required. The valve is field-replaceable. Handles and gear-operators can be replaced. Handle Assembly: Remove nut on handle and lift handle off of valve.
- ✓ Gear Operator: remove four (4) hex nuts and the washers that hold the actuator to the body.
- ✓ Pneumatic / Electric Actuator: removed by unscrewing either four (4) socket head cap screws or hex nuts which hold the actuator to the valve.
- ✓ **To remove the valve from the pipeline, close valve and loosen and remove the bolts on the downstream side first.**

FLANGE ASSEMBLY INFORMATION

Flange: ANSI / ASME B16.5 Class 150

BFV Size	Bolt Size	Bolt Length (in)	Qty per Flange	Flat Washers (Qty)	Recommended Tightening Torque (Ft-lbs.)	Bolt Set Part Number, 316 SS*
3"	1/2 - 13	2.00	4	8	15-20	V30LBFKS
4"	1/2 - 13	2.25	8	16	15-20	V40LBFKS
6"	5/8 - 11	2.75	8	16	25-35	V60LBFKS
8"	5/8 - 11	3.25	8	16	35-40	V80LBFKS
10"	3/4 - 10	3.75	12	24	45-55	V100LBFKS
12"	3/4 - 10	4.25	12	24	45-55	V120LBFKS

*Bolt sets contain the proper size and quantity required to mount the valve between two flanges.