

KEYSTONE

V A L V E U S A . I N C .

Installation and Maintenance Instructions Figure 106 Butterfly Valve with Elastomer Seat 24" — 48"

Flange and Pipe Compatibility: The Figure 106 valve is made to be used between all types of ANSI 125 and 150 pound flat or raised face flanges. Flange gaskets are unnecessary as the Keystone butterfly seat face design eliminates the need for gaskets. Lined pipe, heavy wall pipe or flanges must have a minimum allowable inside diameter (Dimension "Q") at the centered body face to clear the disc sealing edge when opening the valve.

Installation Information: The Keystone valve is non-directional and will control flow equally well in either direction. For the best results in slurry service regarding sedimentation, position the valve assembly to have the stem in the horizontal position and the lower disc edge to open in the downstream direction. To install the valve between existing ANSI flanges, the flanges must be spread sufficiently before placing the valve in position to prevent distortion and/or damage to the sealing face of the seat. In new construction using ANSI welding type flanges, the following method of installation has proven beneficial. With the disc in the nearly closed position, center each companion flange bore to the body face bore. Make up flange bolting in the tapped holes in each body face. Use the flange-body-flange assembly for fit-up and centering to the pipe. Tack weld the flanges to the pipe. Remove the bolting and valve assembly from between the flanges. **Important: Do not finish weld the flanges to the pipe with the valve bolted between the flanges as this will result in serious heat damage to the seat.** Finish welding the flanges to the pipe and allow the flanges to cool completely.

Installation Instructions: Observe that the disc sealing edge is in line with the keyway in the stem. Rotate the stem clockwise to position the disc within the body at least $\frac{3}{8}$ " away from the body face. After spreading the flanges, center the valve body between the flanges and span the valve body with all flange bolts possible. Turn the disc to the fully open position. Next, maintain the valve to flange alignment while gradually removing the flange spreaders and tightening the flange bolting handtight. Slowly close the valve clockwise to check for adequate disc clearance. Return the disc to the fully open position and cross-tighten all bolting to the proper torque specification. Again, check for adequate disc clearance. If the installation is satisfactory, the valve is ready for service.

Maintenance: Routine maintenance or lubrication is not required.

Repairs: The Keystone F106 valve seat, bushings, and packing are field replaceable. Proceed by turning the disc to the nearly closed position, loosen all flange bolting, remove necessary bolting, spread the flanges if necessary, and remove the valve from between the flanges.

Valve Disassembly: Turn the disc to the 45° open position. Proceed by removing the operator or actuator, taper pins with "O" rings, stem, packing and bushing. Remove the disc by pulling or "rolling" the disc out of the seat bore. To remove the seat from the body, pry under both seat edges at one point, collapse the seat into the shape of a round bottom heart configuration (♥), and pull the seat out of the body bore. Discard the parts to be replaced.

Valve Assembly: Clean all reusable parts. If possible, use Silicone base oil or lubricant to facilitate assembly. Collapse the seat into the shape of a round bottom heart configuration (♥), firmly place the "bottom" part of the seat into position taking care to align the lower stem holes, snap the seat into position within the body and check all stem holes for proper alignment. Install the disc and align the stem holes. Insert bushing-packing assemblies in the sequence shown, sectional view drawing No. SM0787. Liberal quantities of lubricant should be used. Install gland follower, thrust plate, gasket and retainer plate **hand-tight**. Using a rotary downward pressure, insert the stem exercising care that proper alignment of all parts is retained. Stem weight should be sufficient to permit insertion. If not, parts alignment should be rechecked. Driving the stem in place can result in seat damage and subsequent leakage. Taper pin holes in disc and stem should be oriented and taper pins driven in place. "O" ring, washer and retainer nut are then installed. Tighten retainer plate screws at bottom gland securely and snug-up gland follower. (Packing is pressure actuated design and does not require mechanical loading.) Install actuator. Test cycle several times to assure proper assembly and operation. The F106 valve is now ready for re-installation and service.