

# Keystone Installation and Maintenance Instructions

## Fig. 100 Butterfly Valve (Standard with Elastomer Seat)

### FLANGE AND PIPE COMPATIBILITY:

The Fig. 100 valve is made to be used between all types of ANSI 125 and 150 lb. 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 disk sealing edge when opening the valve.

### INSTALLATION INFORMATION:

The Keystone valve is nondirectional 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 disk edge to open 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 disk in the nearly closed position, center each companion flange bore to the body face bore, and make-up the bolting. 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 disk sealing edge is in line with the parallel flats (or keyway) on the stem. Rotate the stem clockwise to position the disk within the body at least 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 disk 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 disk clearance. Return the disk to the fully open position and cross-tighten all bolting to the proper torque specification. Again, check for adequate disk clearance. If the installation is satisfactory, the valve is ready for service after installing the valve operator or actuator.

### MAINTENANCE:

Routine maintenance or lubrication is not required.

### REPAIRS:

The Keystone butterfly valve is field repairable. If in time it is necessary to replace certain parts, the valve must be removed from the line. Proceed by turning the disk 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 disk to the almost open position. Proceed by removing the operator or actuator, disk screws with O-Rings, stem, packing, and bushing. Remove the disk by pulling or "rolling" the disk 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-based oil or lubricant to facilitate assembly except between the seat and the body. 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 disk with the screw holes toward the body top plate and align the stem holes. Install the packing, bushing, and stem. Use a rotary downward pressure on the stem to facilitate assembly while paying particular attention that the seat is not damaged due to any misalignment of the stem holes. Align the counter-drilled portion of the stem screw holes with the disk screw holes. Place O-Rings on the disk screws. Install the disk screws and tighten securely.

### TESTING:

It is the responsibility of those performing maintenance and/or repairs to test the equipment prior to re-installation.