

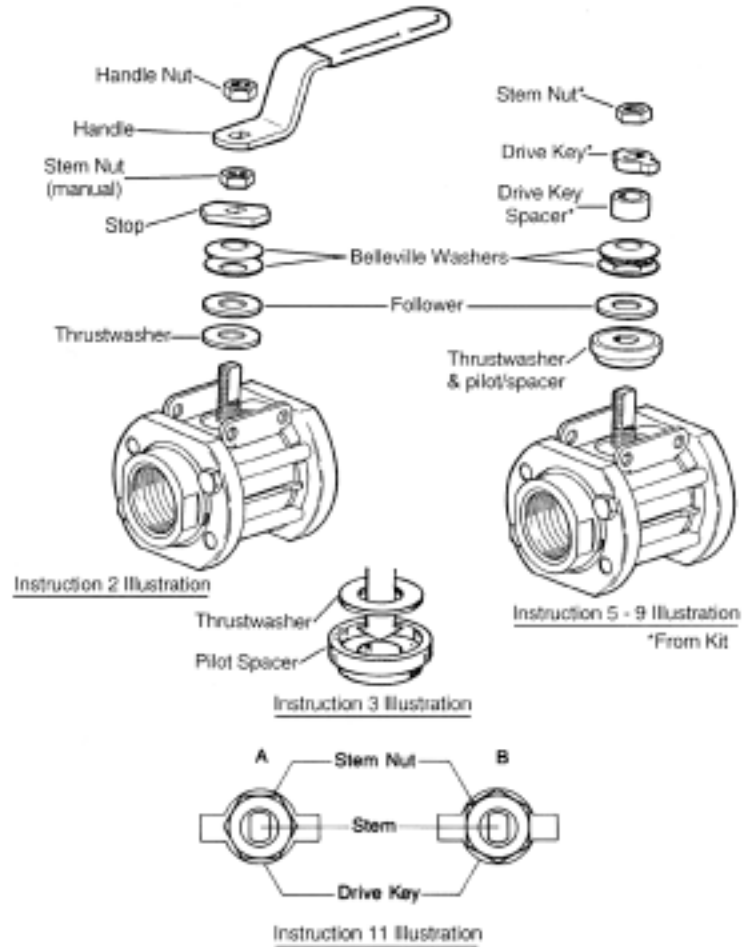


# Instructions for Installing Actuator Drive-Keys on 0.5, 0.6 & 0.8 Port 89 Series Ball Valves

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These instructions cover the conversion of manual (handle-operated) valves for actuated operation. In addition to the valve and actuator, a mounting kit is also necessary to complete the installation.

1. Turn valve to 'open' position
2. Remove handle nut, handle, stem nut, stop, Belleville washers, follower and thrustwasher.
3. Place thrustwasher in pilot spacer counterbore.
4. Place pilot spacer in position on stem. Be sure that the raised face of the pilot spacer engages the hole in the stop bracket.
5. Place the follower in position atop the thrustwasher. Note: The follower used on manually operated 0.5 port valves must be replaced with the follower from the mounting kit. These parts may be distinguished by their thickness: The follower on the manual valve is .103" (2.6mm) thick; whereas the follower for the actuated valve is .060" (1.5mm) thick.
6. Place the Belleville washers on the follower. The Belleville washers must be installed with their concave (cupped) surfaces facing each other.
7. Place the drive key spacer on the Belleville washers.
8. Place the drive key in position on the drive key spacer. The drive key has a rounded edge on one side (the 'draw' side) and a square edge on the opposite side (the 'shear' side). Install the drive key 'draw' side down.
9. Assemble the stem nut. The proper nut for actuated valves is 1/2" across the flats. The 0.5 port uses the same nut for actuated valves as for manual.



10. Install a wooden or plastic dowel through the valve to prevent turning as the stem nut is tightened. Tighten the stem nut until the Belleville washers beneath the drive key spacer have fully compressed (flattened) signalled by an abrupt increase in resistance to further tightening.
11. Check the orientation of the stem nut to the drive key. In order to achieve desired orientation, loosen the nut until the nut / drive key relationship corresponds to Illustration A or B above. This should not require more than one-twelfth (1/12) turn of the nut.