Quadrant Valve & Actuator Engineering Specification

Number: IOM- 4 Date: 1/10/2001

Title: 3-Piece Union End NPT & Socket Weld IOM, for: UU-CS & UU-SS

I. Initial Inspection

A. Remove valve from packaging; remove thread protectors and discard.
B. Inspect pipe threads for any damage caused in shipment or handling.
C. Confirm Valve Size is correct for installation.

II. Installation- NPT Ends

A. NOTE: Union Tailpieces are shipped hand tight to facilitate removal of Union Nut and Tailpiece so that Tailpiece can be threaded to piping. If you choose to install piping to assembled valve, TIGHTEN Union Nuts before proceeding.
B. Confirm Male NPT threads on piping to be assembled to valve meet gauging specifications of ASME B1.20.1 (NPT) or B1.20.3 (NPTF).
C. Thread sealant/lubricant is required to establish a bubble-tight seal between piping threads and valve threads. It will not be possible to establish a leak-free seal without thread sealant.
D. Hand-engage piping to each side of valve, and hand tighten.
E. Attach a pipe wrench to the outside diameter of the valve tailpiece having the NPT thread being engaged. Do not hold the body or opposite tailpiece while torqueing pipe into tailpiece.
F. Tighten piping into valve thread using reasonable torque to seal - DO NOT OVER-TORQUE.
G. Use same method to install piping into alternate valve NPT port.

III. Installation- Socket Weld or Butt Weld Ends

A. CAUTION: NEVER ATTEMPT TO WELD INTO PIPING WHILE ASSEMBLED!!
B. Remove Union Nuts (#3) and Weld-End Tailpieces (#2).
C. Inspect Socket Weld and Buttweld ends for any damage.
D. Slide Union Nut, with threads facing valve position, onto pipe to be welded to valve.
E. Weld pipe to tailpiece using appropriate wire/filler materials.
F. Allow assembly to cool.
G. Repeat for opposite side.
H. Thread union nuts onto valve body and apply reasonable torque to compress body seals.

III. Operation:

A. After Installation, confirm handle has adequate clearance by rotating 90 degrees from open to closed position and back to open.

B. All Quadrant ball valves are designed for on-off operation only. DO NOT attempt to "throttle" with Quadrant ball valves, unless they are specifically designed for and tagged "FOR THROTTLING SERVICE".
C. If application is in STEAM PIPING, be cautious when operating valve- handle will be HOT!

IV. Initial Pressurization of System

A. Upon initial pressurization of piping system, check all connections for leaks and correct if required.
B. Once system reaches "Steady State" conditions of operating pressure and operating temperature, it will be necessary to make initial stem packing adjustment. Tighten Part #5, "Stem Packing Nut" to 20-25 in-lbs on ¼"-3/4" sizes, and 35-40 in-lbs on 1"-2" sizes.

V. Maintenance

A. Quadrant Ball Valves require no maintenance other than periodic stem packing adjustment in applications where many cycles of on-off operation occur on a weekly basis.
B. In high-cycle applications, check stem packing area regularly to confirm there is no leakage from stem packing. If leakage occurs, follow step #IV-B to correct.

VI. Repair & Reconditioning- UU-CS & UU-SS Double Union Ball Valves

A. Depressurize line, drain fluid.
B. Hold valve body, remove Union Nuts, remove valve body assembly.
C. Put valve body in a vise with protective jaw covers, clamping so that Retainer (#9) is accessible. DO NOT DAMAGE UNION NUT THREADS!
D. Using a piece of hexagon stock or large Allen wrench, remove Retainer.
E. Move handle to closed position, and remove ball and seats from body cavity.
F. Remove Handle (#13).
G. Remove Packing Nut (#5).
H. Push Stem (#12) down into body cavity.
I. Remove Packing (#11) with packing hook- DO NOT DAMAGE PACKING BORE.

Re-assembly:

A. Install new Packing (#11)
B. Install new Thrust Washer (#4) and insert stem into body cavity and up through Packing. Push up until Thrust Washer contacts body. Align stem flats with body bore.
C. Install Packing Nut (#5). Torque To 30 in-lbs.
D. Install one new Seat (#6) into body cavity, push until seated at base of cavity.
E. Inspect ball for damage. If no defects on spherical surface, align stem slot with stem flats and push into body cavity.
F. Install new Seat (#6) into Retainer (#9) and thread into body. Torque to values below, holding body from turning.
G. Install new Union Seals (#10).
H. Reinstall Body Assembly into piping, using reasonable torque on Union Nuts.

SIZE	RETAINER TORQUE	SIZE	RETAINER TORQUE
¼"-1/2"	15 ft-lbs	1-1/4"	60 ft-lbs
¾"	30 ft-lbs	1-1/2"	120 ft-lbs
1"	50 ft-lbs	2"	250 ft-lbs