



## Quadrant Valve & Actuator Engineering Specification

Number: IOM- 5A

Date: 2/1/2003

Title: NPT and Weld-End Seal-Welded Ball Valve IOM, for:

SB-CS/SS  
S6-CS/SS

S5-SS & S3-CS/SS  
S10-SS

### I. Initial Inspection

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

### II. Installation

- A. 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).
- B. 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.
- C. We recommend that the "tailpiece" (Part # 2) end of the valve be installed on the high pressure side, towards the pressure generating source.
- D. Hand-engage piping to each side of valve, and hand tighten.
- E. Attach an adjustable wrench (NOT a pipe wrench) to the flats provided on the valve body or valve tailpiece having the NPT thread being engaged. Do not hold the body while torqueing pipe into tailpiece or vice-versa.  
**CAUTION:** Valve will be permanently damaged or destroyed if tailpiece is rotated relative to body, or body is rotated relative to 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. 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 1/4”-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**

- A. None of the Quadrant Ball Valves listed are field repairable or shop rebuildable.

#### **VII. Modification of Piping Layout**

- A. Many times, the reason valves are purchased is to allow modifications to the original piping layout sometime in the future. In these cases, the valve is closed, sometimes with full pressure on the “upstream” side of the valve, and pressure/line fluid is drained from the downstream side of the valve.
- B. The next step is the removal of piping from the “downstream” side of the valve to allow downstream piping modifications:

**CAUTION!! CAUTION!! CAUTION!! CAUTION!!**

ALWAYS ENGAGE AN ADJUSTABLE WRENCH ON THE “FLATS” AT THE END OF THE VALVE WHERE DOWNSTREAM PIPING IS ATTACHED, AND CAREFULLY REMOVE PIPE FROM VALVE BODY, INSURING THAT VALVE DOES NOT ROTATE AND TAILPIECE DOES NOT UNTHREAD FROM BODY.

# **Title: IOM for Socket & Butt Weld End SB-SS, S3-SS, S6-SS & S10-SS**

## **I. Initial Inspection**

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

## **II. Installation- Socket Weld or Butt Weld Ends**

- A. NOTE: Extreme care must be used to insure seats & seals are not damaged!!**
- B. Inspect piping to be welded to valve for correct preparation and any damage.
- C. Place handle in FULL OPEN POSITION.
- D. Wrap a rag that has been soaked with WATER around center of valve body and secure. Do not wet weld ends.
- E. Insert piping into one socket weld end (or align pipe to butt weld end) and “tack” weld in two spots.
- F. Wait one minute, then insert piping into opposite weld end and “tack” weld in two spots.
- G. Before welding, confirm valve location, orientation and clearance is acceptable.
- H. Weld pipe to one end of valve using appropriate wire/filler materials as quickly as possible.
- I. Allow assembly to cool for at least 5 minutes.
- J. Confirm rag is still wet- if not, re-soak rag and re-secure to center of valve body.
- K. Repeat item H. for opposite side.

## **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 1/4”-3/4” sizes, and 35-40 in-lbs on 1”-2” sizes.

## **V. Maintenance**

- C. 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.
- D. 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- Seal Welded Ball Valves**

- B. None of the Quadrant Ball Valves listed are field repairable or shop rebuildable.