

NELES

Thread-end ball valves with ISO bonnet

A style model D

1/4" – 2" (DN8 - 50)

Installation, maintenance and
operating instructions

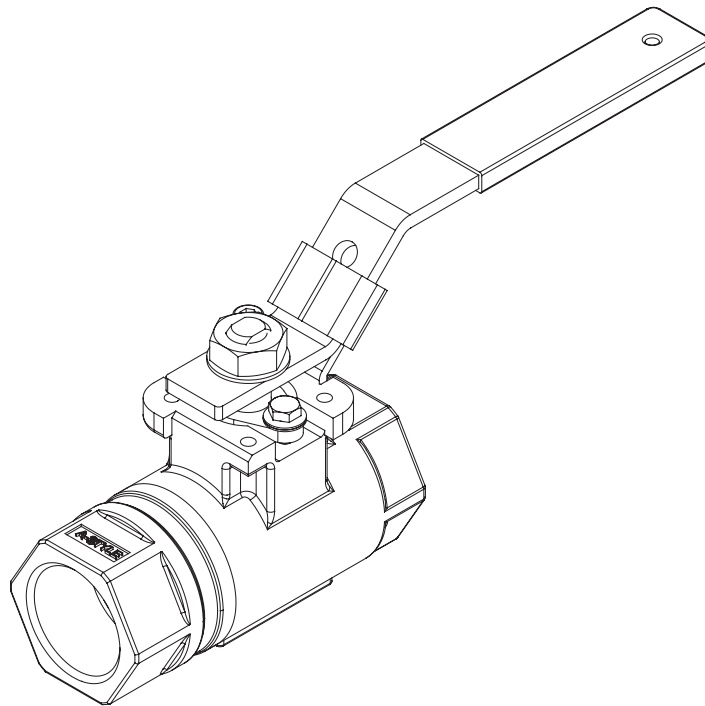


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READ THESE INSTRUCTIONS FIRST!

These instructions provide information about safe handling and operation of the valve.

If you require additional assistance, please contact the manufacturer or manufacturer's representative.

SAVE THESE INSTRUCTIONS!

Addresses and phone numbers are printed on the back cover.

1. GENERAL

1.1 Scope of the Manual

This instruction manual contains important information regarding the installation, operation and troubleshooting of the Jamesbury® 1/4" – 2" (DN8 – 50) A Style Model D Ball Valves with ISO Bonnet. Please read these instructions carefully and save for further reference.

WARNING

AS THE USE OF THE VALVE IS APPLICATION SPECIFIC, MANY FACTORS SHOULD BE CONSIDERED WHEN SELECTING A VALVE FOR A GIVEN APPLICATION. THEREFORE, SOME OF THE SITUATIONS IN WHICH THE VALVES ARE USED ARE OUTSIDE THE SCOPE OF THIS MANUAL.

IF YOU HAVE ANY QUESTIONS CONCERNING THE USE, APPLICATION OR COMPATIBILITY OF THE VALVE WITH THE INTENDED SERVICE, CONTACT NELES FOR MORE INFORMATION.

WARNING

DOUBLE-SEATED BALL VALVE DESIGNS, LIKE THE A STYLE SERIES, CAN UNDER CERTAIN CONDITIONS TRAP FLUID IN THE BALL CAVITY. RAISING THE TEMPERATURE OF THE TRAPPED FLUID CAUSES THE INTERNAL VALVE PRESSURE TO RISE. EXTREME TEMPERATURE RISE CAN BUILD UP EXCESSIVE PRESSURE WHICH COULD LEAD TO UNCONTROLLED PRESSURE RELEASE. DAMAGE OR PERSONAL INJURY MAY RESULT.

1.2 Valve Markings

The non-ASME rated A Style valves [A & AZ] do not have an identification plate. Important valve information is stamped directly on the bottom of the valve body. (see **Figure 1**).

1 - **1 AZ2236XTD**
2 - **SEAT CWP 2000 PSI**
3 - **WSP 475 PSI**
4 - **C18 ASSEMBLED IN USA**

Figure 1 Stamped Body

Identification markings:

- 1 Valve catalog code
- 2 Cold working pressure (psi)
- 3 Working steam pressure (psi)
- 4 Assembly date code

1.3 Safety Precautions

WARNING:

DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS! EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE, OR BODY, MAY CAUSE DAMAGE AND LEAD TO UNCONTROLLED PRESSURE RELEASE. DAMAGE OR PERSONAL INJURY MAY RESULT.

WARNING:

SEAT AND BODY RATINGS!

THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY RATINGS. READ THE IDENTIFICATION MARKINGS AND CHECK BOTH RATINGS. THIS PRODUCT IS AVAILABLE WITH A VARIETY OF SEAT MATERIALS. SOME OF THE SEAT MATERIALS HAVE PRESSURE RATINGS THAT ARE LESS THAN THE BODY RATINGS. ALL THE BODY AND SEAT RATINGS ARE DEPENDENT ON VALVE TYPE AND SIZE, SEAT MATERIAL, AND TEMPERATURE. DO NOT EXCEED THESE RATINGS!

WARNING:

BEWARE OF BALL MOVEMENT!

KEEP HANDS, OTHER PARTS OF THE BODY, TOOLS AND OTHER OBJECTS OUT OF THE OPEN FLOW PORT. LEAVE NO FOREIGN OBJECTS INSIDE THE PIPELINE. WHEN THE VALVE IS ACTUATED, THE BALL FUNCTIONS AS A CUTTING DEVICE. DISCONNECT ANY PNEUMATIC SUPPLY LINES, ANY ELECTRICAL POWER SOURCES AND MAKE SURE SPRINGS IN SPRING-RETURN ACTUATORS ARE IN THE FULL EXTENDED/RELAXED STATE BEFORE PERFORMING ANY VALVE MAINTENANCE. FAILURE TO DO THIS MAY RESULT IN DAMAGE OR PERSONAL INJURY!

WARNING:

WHEN HANDLING THE VALVE OR VALVE/ACTUATOR ASSEMBLY, TAKE ITS WEIGHT INTO ACCOUNT! NEVER LIFT THE VALVE OR VALVE/ACTUATOR ASSEMBLY BY THE ACTUATOR, POSITIONER, LIMIT SWITCH OR THEIR PIPING. PLACE LIFTING DEVICES SECURELY AROUND THE VALVE BODY. FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN DAMAGE OR PERSONAL INJURY FROM FALLING PARTS (SEE **FIGURE 2**).

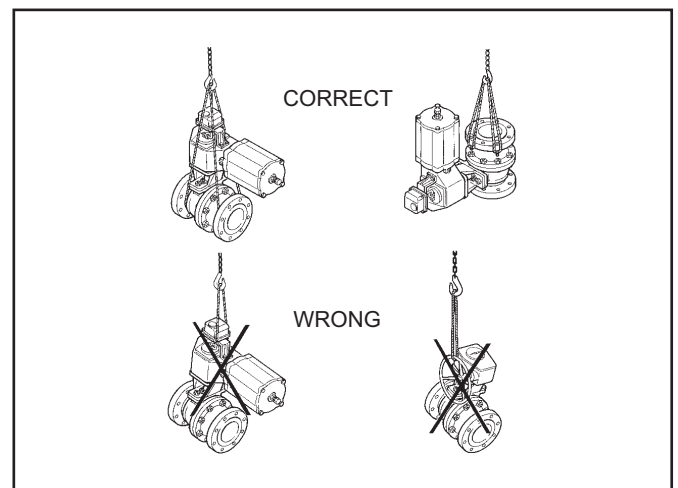


Figure 2 Lifting the valve

2. TRANSPORTATION AND STORAGE

Check the valve and the accompanying devices for any damage that may have occurred during transport.

Store the valve carefully. Storage indoors in a dry place is recommended.

Do not remove the flow port protectors until installing the valve.

Move the valve to its intended location just before installation.

The valve is usually delivered in the open position.

3. INSTALLATION

3.1 General

Screwed end valves have NPT threads. To insure a leak tight joint, liberal use of a compatible pipe joint compound is necessary. The A Style may be installed for flow in either direction. It is recommended, however, that a screwed valve be installed with the body cap facing upstream. Use standard piping practices when installing valves with threaded parts. When tightening the valve to the pipe, apply the wrench to the end nearest the pipe being worked (see **Figure 3**).

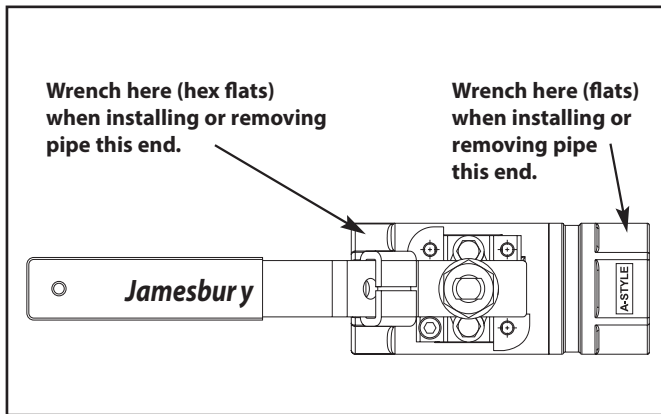


Figure 3 Wrench Instructions

It is not recommended to install the valve with the stem on the underneath side because dirt in the pipeline may then enter the body cavity and potentially damage the stem seals (see **Figure 4**).

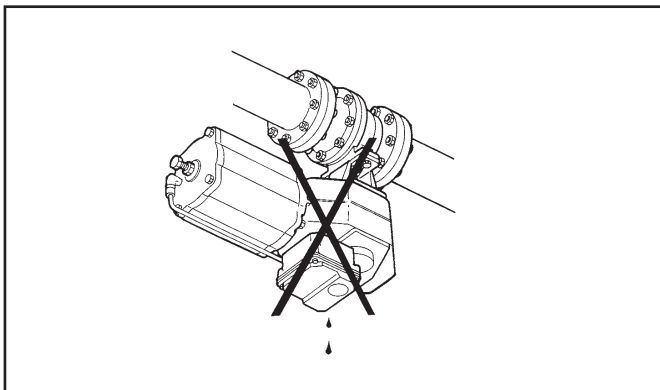


Figure 4 Avoid this mounting position

Remove the flow port protectors and check that the valve is clean inside. Clean valve if necessary.

Flush the pipeline carefully before installing the valve.

Foreign objects, such as sand or pieces of welding electrodes, will damage the ball and seats.

3.2 Installing in the pipeline

Refer to the Section 4, **MAINTENANCE** for stem seal adjustment. If there is weepage past the stem seals upon installation, it means the valve may have been subject to wide temperature variations in shipment. Leak-tight performance will be restored by a simple stem seal adjustment described in the **MAINTENANCE** section.

3.3 Valve Insulation

Jamesbury Thread-end Ball Valves do not require insulation. If desired, the valve may be insulated; however, the insulation must not continue above the upper level of the valve (see **Figure 5**).

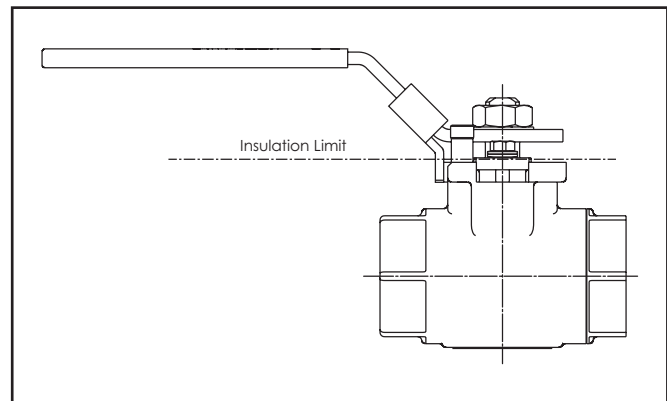


Figure 5 Insulation Limit

3.4 Commissioning

Ensure that there is no dirt or foreign objects left inside the valve or pipeline. Flush the pipeline carefully. Make sure that the valve is fully open when flushing.

Ensure that all nuts, fittings, and cables are properly fastened.

If so equipped, check that the actuator, positioner and/or switch is correctly adjusted. Actuator adjustment is explained in **Section 5**. To adjust any accompanying device(s) refer to the separate control equipment instruction manuals.

4. MAINTENANCE

4.1 General

Although Neles *Jamesbury* valves are designed to work under severe conditions, proper preventative maintenance can significantly help to prevent unplanned downtime

and in real terms reduce the total cost of ownership. Neles recommends inspecting valves at least every five (5) years. The inspection and maintenance frequency depends on the actual application and process condition.

Always loosen and tighten fasteners with the appropriate wrench to avoid damaging the valve, handle, linkage, actuator, fittings or flats.

1. Routine Maintenance consists of tightening the compression plate hex head cap screws periodically to compensate for the wear caused by the stem turning against the stem seals. Check to make sure that the compression plate hex head cap screws are tightened to the torque listed in **(Table 1)**.
2. Overhaul Maintenance consists of replacing seats and seals. A standard Repair Kit consisting of these parts may be obtained from your Neles Distributor (See **Table 4**).

| TABLE 1 | | |
|---------------------------|---------------|------------|
| Hex Head Cap Screw Torque | | |
| Valve Size | Torque IN•LBS | Torque N•m |
| 1/4" & 3/4" (DN 8 & 20) | 15 | 1.7 |
| 1" & 1-1/4" (DN 25 & 30) | 20 | 2.3 |
| 1-1/2" & 2" (DN 40 & 50) | 32 | 3.6 |

NOTE: Repair Kits contain the seats and stem seals for both the fire-tested and non-fire-tested valves. Refer to the **ASSEMBLY** Section for details on the correct installation of these parts.

WARNING:

FOR YOUR SAFETY IT IS IMPORTANT THE FOLLOWING PRECAUTIONS BE TAKEN PRIOR TO REMOVAL OF THE VALVE FROM THE PIPELINE OR BEFORE ANY DISASSEMBLY:

1. WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE FLUID INVOLVED.
2. DEPRESSURIZE THE PIPELINE AND CYCLE THE VALVE AS FOLLOWS:
 - A. PLACE THE VALVE IN THE OPEN POSITION AND DRAIN THE PIPELINE.
 - B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BODY CAVITY BEFORE REMOVAL FROM THE PIPELINE.
 - C. AFTER REMOVAL AND BEFORE ANY DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.

4.2 Disassembly

NOTE: If complete disassembly becomes necessary it is recommended to replace all seats and seals. Refer to the Repair Kit chart (see **TABLE 4**).

NOTE: Always use original OEM parts to make sure that the valves functions properly.

This section covers disassembly of the valve after removal from the piping. **NOTE: Seal Welded valves cannot be disassembled; Special Application Code "W".**

1. Comply fully with all **WARNINGS** prior to working on the valve.
2. Open and close the valve and leave in the closed position.
3. Remove the handle nut (16), lockwasher (19), and handle (17).
4. Remove hex head cap screws (29), disc springs (31) and compression plate (20).
5. Clamp the valve body (1) securely in a vise.
6. Unscrew and remove the body cap (2)

NOTE: Thread locking compound is used to prevent unwanted rotation of the body cap (2). Heat may be required for disassembly.

7. Remove and discard the old body seal (6). Be careful not to damage the sealing surfaces.
8. With the ball in the closed position, remove ball (3) and seats (5). **NOTE:** A piece of wood or other soft material may be used to unseat the parts from the opposite side. Be careful not to damage the ball or seating surfaces in the body.
9. Press the stem (4) into the body (1) and remove it through the open end.
10. Carefully remove and discard the stem seal (8) and stem bearing (24) being careful not to damage the bearing surfaces. **NOTE:** Fire-Tite® construction contains a secondary stem seal (7) and 2 stem bearings (13), in place of the non-Fire-Tite stem bearing (24). Also, valves with graphite stem seals (8) have an additional upper stem bearing (10) and an anti-extrusion ring (55).
11. Use a wire brush to remove any remaining thread lock compound from the body cap (2) and body (1) threads. Be careful not to scratch or damage the body seal surfaces.

4.3 Checking Parts

1. Clean all disassembled parts.
2. Check the stem (4) and ball (3) for damage. Pay particular attention to the sealing areas.
3. Check all sealing and gasket surfaces of the body (1) and body cap (2).
4. Replace any damaged parts.
5. Replace any fastener where the threads are damaged or have been heated, stretched or corroded.
6. Replace any parts that have cracks, gouges or pits that will affect sealing.

NOTE: When ordering spare parts, always include the following information:

- a. Valve catalog code from Identification plate or body stamping,
- b. If the valve is serialized – the serial number (stamped on the valve body or identification plate),

- c. From **Figure 8**, the ballooned part number, part name and quantity required.

4.4 Assembly

NOTE: Repair Kits contain replacement seals for *Fire-Tite* and non-*Fire-Tite* constructions.

1. Inspect the parts to ensure sealing surfaces are in good condition and all parts are properly cleaned and prepared for assembly.
2. Clamp the body (1) securely in a vise with the body joint opening facing up.
3. Insert the seat (5) into the body (1) with the flat side down, as shown in (**Figure 7**).
4. Place the stem bearing (24) on the stem (4). **NOTE:** *Fire-Tite* valves have 2 stem bearings (13) and a secondary stem seal (7) as shown in (**Figure 8**).
5. Insert the stem (4) with the bearing(s) into the valve body and through the stem bore in the body, as shown in (**Figure 8**).
6. Holding the stem in place from the inside, install the stem seal (8) and the compression plate (20). For valves with graphite stem seals (8), install upper stem bearing (10) and anti-extrusion ring (55) prior to installing the stem seal (8).
7. Place the disc springs (31) on the hex head cap screws (29). Disc spring orientation is shown in (**Figure 8**). Install the hex head cap screws through the compression plate and bring them down hand tight.
8. While pressing the stem (4) outward from inside the body, tighten the hex head cap screws to the torque provided in (**Table 1**). Apply torque evenly, alternating between the two cap screws so that the compression plate will be parallel with the valve body bonnet.
9. Align the stem to the ball slot. Insert the ball (3) so that the internal stem blade fits into the ball slot.
10. To prepare for final assembly, obtain a torque wrench. When assembling without a torque wrench, install the body cap (2) into the body (1) without the second seat or the body seal. Tighten firmly by hand or snug with a wrench. Draw a line across the body joint to identify the fully installed position (See **Figure 10**). The line should be clearly visible on both the body (1) and the body cap (2). Remove the body cap (2) and continue with the assembly.
11. Insert the second seat (5) with the flat facing up. Insert the body seal (6).
12. Apply Loctite™ 272 or equivalent thread locking compound to the threads in a single generous bead, 360 degrees around the body cap (2) threads. Spread the compound until threads are evenly coated. Ideally, thread roots will be filled with the compound with only the crests protruding (See **Figure 9**).
13. Install the body cap (2) hand tight. Wipe away excess Loctite.

14. With a torque wrench, tighten the body cap (2) to the torque listed in (Table 2). When assembling without a torque wrench, tighten the body cap (2) until fully installed and the lines made in step 10 show the body cap (2) has rotated past the fully aligned position (**Figure 9**). Wipe away excess Loctite.
15. Install handle (17), lockwasher (19) and handle nut (16) and tighten to torque listed in (**Table 3**).
16. Cycle the valve slowly to ensure smooth operation.

| TABLE 2 | | |
|---------------|------|-----------------------|
| Insert Torque | | |
| Valve Size | | Torque – FT•LBS (N•m) |
| Inches | DN | |
| 1/4-1/2 | 8-15 | 100 (136) |
| 3/4 | 20 | 150 (203) |
| 1 | 25 | 250 (339) |
| 1-1/4 | 30 | 350 (476) |
| 1-1/2 | 40 | 400 (542) |
| 2 | 50 | 500 (678) |

| TABLE 3 | | |
|-------------------|--------|-----------------------|
| Handle Nut Torque | | |
| Valve Size | | Torque – FT•LBS (N•m) |
| Inches | DN | |
| 1/4 – 3/4 | 8 – 20 | 9 (12) |
| 1, 1-1/4 | 25, 30 | 23 (31) |
| 1-1/2, 2 | 40, 50 | 33 (45) |

4.5 Testing the Valve

WARNING:

WHEN PRESSURE TESTING, EXERCISE CAUTION AND MAKE SURE ALL EQUIPMENT USED IS IN GOOD WORKING CONDITION AND APPROPRIATE FOR THE INTENDED PRESSURE.

If the valve is to be tested prior to returning to service make sure the test pressures are in accordance with an applicable standard.

When testing the valve for external tightness, keep the ball in the half open position.

If testing the valve seat tightness, please contact Neles for advice.

WARNING:

WHEN PERFORMING ANY TESTS, NEVER EXCEED THE MAXIMUM OPERATING PRESSURE OR MAXIMUM SHUT-OFF PRESSURE LISTED ON THE IDENTIFICATION PLATE OR BODY!

5. ACTUATOR MOUNTING

5.1 General

These actuator mounting instructions describe the steps required to assemble the *Jamesbury* ¼ - 2" (DN8-50) Standard Bore, Series A Style Model D Thread-end Ball Valves to actuators. Linkage kits that are needed to mount specific Neles

actuators to different types and sizes of *Jamesbury* valves can be identified by Neles or your authorized Neles Distributor.

5.2 Valve Preparation

1. With the valve removed from the pipeline, turn the valve to the closed position.
2. On valves with handles, remove the handle. DO NOT loosen the hex head cap screws (29), (see **Figure 8**).

WARNING:

FOR YOUR SAFETY IT IS IMPORTANT THAT THE FOLLOWING PRECAUTIONS BE TAKEN!

BEFORE INSTALLING THE VALVE AND ACTUATOR, BE SURE THE INDICATOR POINTER ON TOP OF THE ACTUATOR IS CORRECTLY INDICATING THE VALVE'S POSITION. FAILURE TO ASSEMBLE THESE TO INDICATE THE CORRECT VALVE POSITION COULD RESULT IN DAMAGE OR PERSONAL INJURY!

WHEN INSTALLING A LINKAGE KIT OR SERVICING THE VALVE/ACTUATOR ASSEMBLY, THE BEST PRACTICE IS TO REMOVE THE ENTIRE ASSEMBLY FROM SERVICE!

AN ACTUATOR SHOULD BE REMOUNTED ON THE SAME VALVE FROM WHICH IT WAS REMOVED. THE ACTUATOR MUST BE ADJUSTED FOR THE PROPER "OPEN" AND "CLOSE" POSITIONS EACH TIME IT IS REMOVED!

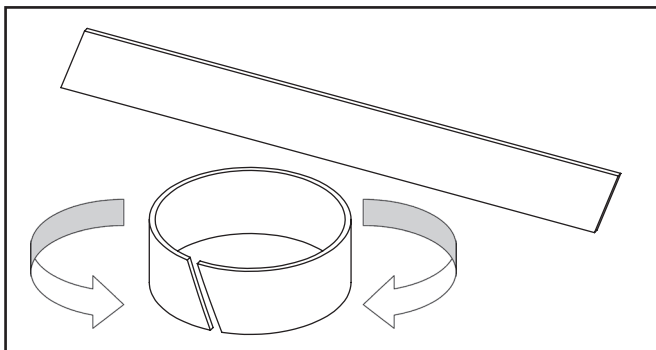
THE LINKAGE KITS HAVE BEEN DESIGNED TO SUPPORT THE WEIGHT OF THE NELES ACTUATOR AND RECOMMENDED ACCESSORIES. USE OF THE LINKAGE TO SUPPORT ADDITIONAL EQUIPMENT OR ADDITIONAL WEIGHT SUCH AS PEOPLE, LADDERS, ETC., MAY RESULT IN THE FAILURE OF THE LINKAGE, VALVE, OR ACTUATOR; AND MAY CAUSE DAMAGE OR PERSONAL INJURY!

When these valves are equipped with an actuator, and the actuator is removed to service the valve, proper alignment of the actuator driver and valve stem is essential when the actuator is remounted.

Linkage kits that are needed to mount specific Neles actuators to different types and sizes of *Jamesbury* valves can be identified by Neles or your authorized Neles Distributor.

5.3 Bracket Preparation – (see Figure A)

1. Roll the bearing strip (3) about its length into a circular shape.
2. Place the bearing strip (3) into round opening in the top center of the bracket (2). Ends of the bearing must not overlap.



3. Slide the bearing (3) into the bracket (2) until about half of its width is protruding from the bottom of the top bracket flange.

4. Inspect the coupling (1) and locate the end that will engage the actuator.

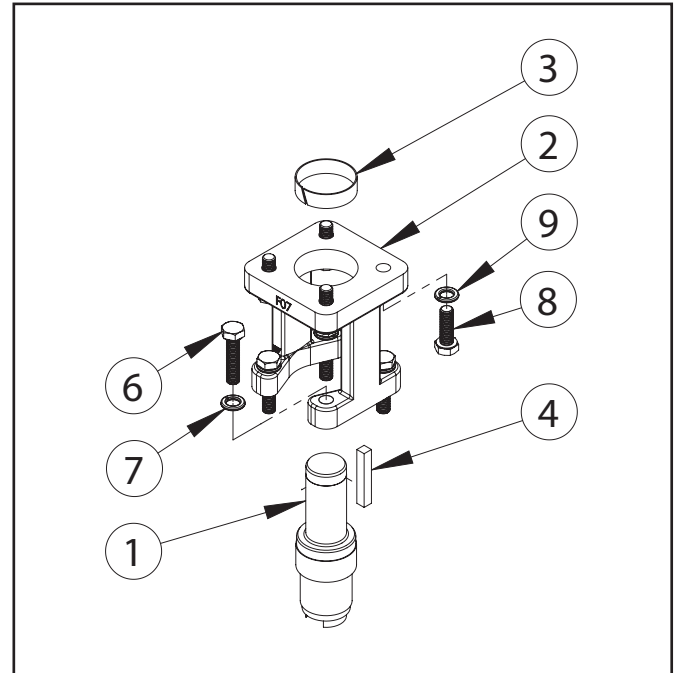


Figure A Linkage Assembly – Key Drive

5. Insert the actuator end of the coupling (1) from the bottom of the bracket (2) into the protruding bearing (3).
6. Press the coupling (1) upward until the bearing (3) sits flush on the bearing shoulder of the coupling (1) and is flush with the top flange of the bracket (2). (See **Figure B**)

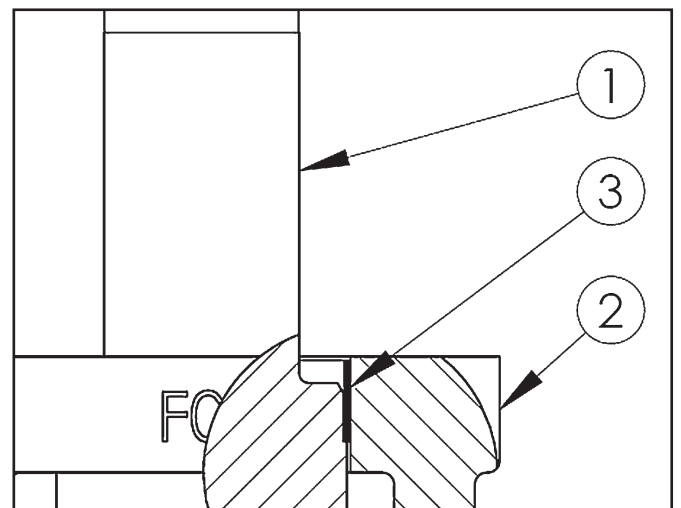


Figure B Proper Bearing Location

5.4 Bracket Attachment to Valve

1. Lower the bracket/coupling assembly on the valve, aligning the slot in the bottom of the coupling (1) with top of the valve stem.
2. Align the four bracket mounting screw holes with the tapped holes on the valve bonnet.
3. Insert the four hex head cap screws (6) and lockwashers (7) into the tapped holes. Tighten to values in **Table 5**.

5.5 Actuator versus Valve Position

IMPORTANT: The actuator and valve position must agree before further assembly.

Since the valve has already been set in the closed position (Step 1 under Valve Preparation), make sure that the actuator is also in the closed position. **EXCEPTION:** if mounting a spring-return actuator for “spring-to-open” operation; cycle the valve to the open position and proceed with the actuator AND valve in the open position.

5.6 Coupling to Actuator

Key Drive Actuators (**Figure A**): Install the key (4) into the key slot of the coupling (1). The key should be filed to closely fit into coupling and actuator keyway. If the fit is loose, apply Loctite® Keyfit or equivalent.

Male/Female Square Drive Actuators (**Figure C**): No coupling prep required.

5.7 Bracket Attachment to Actuator

1. Place the actuator onto the valve and bracket assembly aligning the holes in the bracket with the holes in the actuator, and aligning the actuator drive with the coupling. Install the four hex head cap screws (8) and four lockwashers (9) through the bracket and into the actuator. Apply slightly more than finger-tightness to these fasteners, but **DO NOT TIGHTEN**.
2. Cycle the actuator a couple of times, allowing the assembly to position itself for proper actuator-drive to valve-drive alignment. Tighten the four hex head cap screws (8) securing the bracket to the actuator using the values in **Table 5 or 6** as applicable.

| Bolt Size | Torque to Cast/Ductile Body Actuators | | |
|-----------|---------------------------------------|--------|------|
| | No Lubrication | | |
| | ft-lbs | in-lbs | N-m |
| 1/4 | 8 | 96 | 11 |
| 5/16 | 16 | 192 | 22 |
| 3/8 | 27 | 324 | 37 |
| 7/16 | 45 | 540 | 61 |
| 1/2 | 67 | 804 | 91 |
| 9/16 | 100 | 1200 | 136 |
| 5/8 | 135 | 1620 | 183 |
| 3/4 | 225 | 2700 | 305 |
| 7/8 | 335 | 4020 | 454 |
| 1 | 520 | 6240 | 705 |
| 1-1/8 | 700 | 8400 | 949 |
| 1-1/4 | 990 | 11880 | 1342 |
| M6 | 7 | 84 | 9 |
| M8 | 14 | 168 | 19 |
| M10 | 28 | 336 | 38 |
| M12 | 48 | 576 | 65 |
| M16 | 115 | 1380 | 156 |
| M20 | 225 | 2700 | 305 |
| M30 | 783 | 9396 | 1062 |
| M36 | 1347 | 16164 | 1826 |

| Bolt Size | Torque to Aluminum Body Actuators | | |
|-----------|-----------------------------------|--------|------|
| | No Lubrication | | |
| | ft-lbs | in-lbs | N-m |
| 1/4 | 6 | 72 | 8 |
| 5/16 | 12 | 144 | 16 |
| 3/8 | 20 | 240 | 27 |
| 7/16 | 30 | 360 | 41 |
| 1/2 | 50 | 600 | 68 |
| 9/16 | 70 | 840 | 95 |
| 5/8 | 90 | 1080 | 122 |
| 3/4 | 160 | 1920 | 217 |
| 7/8 | 250 | 3000 | 339 |
| 1 | 360 | 4320 | 488 |
| 1-1/8 | 520 | 6240 | 705 |
| 1-1/4 | 700 | 8400 | 949 |
| M6 | 5 | 60 | 7 |
| M8 | 11 | 132 | 15 |
| M10 | 22 | 264 | 30 |
| M12 | 38 | 456 | 52 |
| M16 | 90 | 1080 | 122 |
| M20 | 170 | 2040 | 230 |
| M30 | 570 | 6840 | 773 |
| M36 | 950 | 11400 | 1288 |

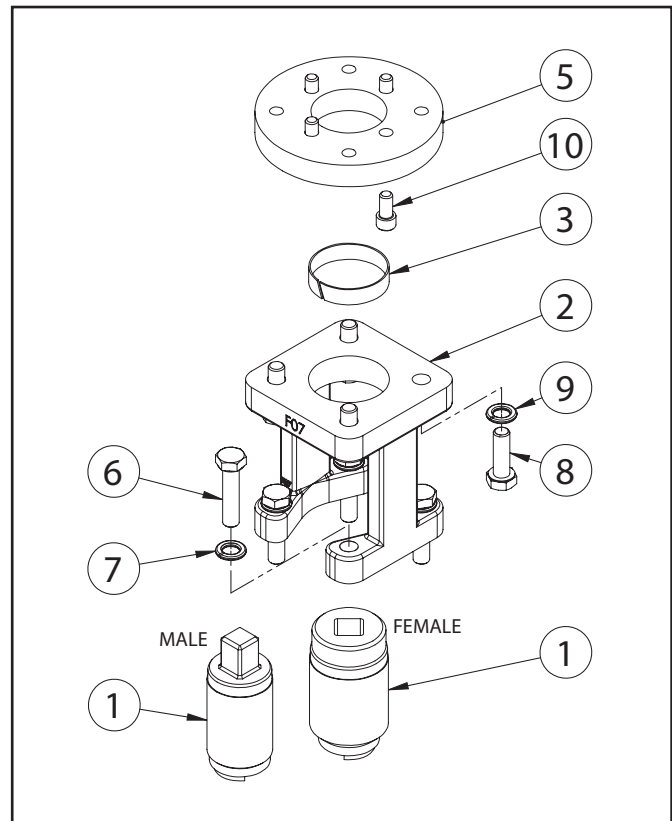


Figure C Linkage Assembly – Square Drive

5.8 Open/Close Position Adjustment

NOTE: Refer to the appropriate Installation, Maintenance, and Operating Instructions (IMO) for specific directions on how to adjust the actuator travel stops or limit switch (see **Table 7**).

| TABLE 7 | |
|--|------------------------------|
| Actuator Installation, Maintenance and Operating Instructions | |
| Actuator | IMO |
| QPX | 215 |
| VPVL | 553 |
| B1C | 6 BC 71 |
| B1J | 6 BJ 71 |
| BCH | 6 BCH 70 |
| M | 549 |
| ADC | I440, I4500 or I4600 |
| ESR | I7016 |
| I | I6500, I6600 or I6700 |
| LCR | I1262 |
| LCU | I1263 |
| Q6 | I1227 or I1383 |
| QX | I3000 |
| V | I2100, I2475, I2500 or I5500 |
| Torq-Handle® | 71 |
| Contact your authorized Neles Distributor for copies of these instructions | |

The actuator travel stops should be adjusted so that there is proper ball position in the full open and full close valve position. Use the following procedures to determine correct ball position.

Valve Open Position: With the valve in the open position (actuator is against the "OPEN" travel stop), The maximum allowable misalignment of the ball port in relation to the body port is 1/32 inch (0.8 mm) on either side of the ball. Do not use the seat ID to measure misalignment since, in many cases; it is larger than the ball or body port.

Valve Close Position: With the valve in the closed position (actuator is against the "CLOSE" travel stop), make a pencil mark on the ball at the 9:00 o'clock and 3:00 o'clock locations as shown in (Figure 6). Open the valve part way, and measure dimension "A". This measurement should deviate no more than $\pm 1/32$ inch (± 0.8 mm) from the value given in (Table 8) for all valves.

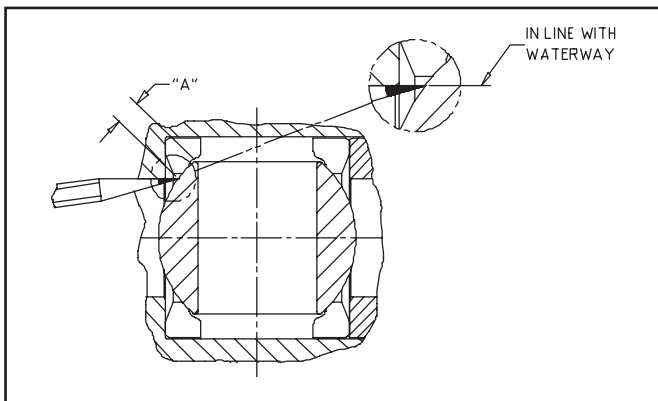


Figure 6 Correct Ball Position

| TABLE 8 | |
|--|---------------------------|
| Dimension "A" for Valve Closed Position Adjustment | |
| Valve Size | Dimension "A" - inch (mm) |
| 1/4" - 1/2" (DN8-15) | 0.11 (2.79) |
| 3/4" (DN20) | 0.14 (3.56) |
| 1" (DN25) | 0.17 (4.32) |
| 1 1/4" (DN32) | 0.22 (5.59) |
| 1 1/2" (DN40) | 0.25 (6.35) |
| 2" (DN50) | 0.28 (7.11) |

6. SERVICE / SPARE PART

We recommend that valves be directed to our service centers for maintenance. The service centers are equipped to provide rapid turn-around at a reasonable cost and offer new valve warranty with all reconditioned valves.

NOTE: When sending goods to the service center for repair, do not disassemble them. Clean the valve carefully and flush the valve internals. Include the material safety datasheet(s) (MSDS) for all media flowing through the valve. Valves sent to the service center without MSDS datasheet(s) will not be accepted.

For further information on spare parts and service or assistance visit our web-site at www.neles.com/valves.

NOTE: When ordering spare parts, always include the following information:

- Valve catalog code from identification plate,
- If the valve is serialized – the serial number (from identification plate)
- From **Figure 8**, the ballooned part number, part name and quantity required.

EXPLODED VIEW AND PARTS

| PARTS LIST | | |
|------------|----------------------------|-----|
| ITEM | PART NAME | QTY |
| 1 | Body | 1 |
| 2 | Insert | 1 |
| 3 | Ball | 1 |
| 4 | Stem | 1 |
| 5 | Seat | 2 |
| 6 | Body Seal | 1 |
| 7* | Secondary Stem Seal | 1 |
| 8 | Stem Seal | 1 |
| 10*** | Stem Bearing | 1 |
| 13* | Stem Bearing | 2 |
| 16 | Handle Nut | 1 |
| 17 | Handle | 1 |
| 19 | Shakeproof Washer | 1 |
| 20 | Compression Plate | 1 |
| 22** | Identification Tag | 1 |
| 24 | Stem Bearing Non-Fire-Tite | 1 |
| 25 | Socket Head Cap Screw | 1 |
| 26 | Spacer | 1 |
| 29 | Hex Head Cap Screw | 2 |
| 31 | Disc Spring | 4 |
| 55*** | Anti-Extrusion Ring | 1 |

* Fire-Tite valves only
 ** Non-Fire-Tite valves only
 *** Used for graphite upper stem seals only.

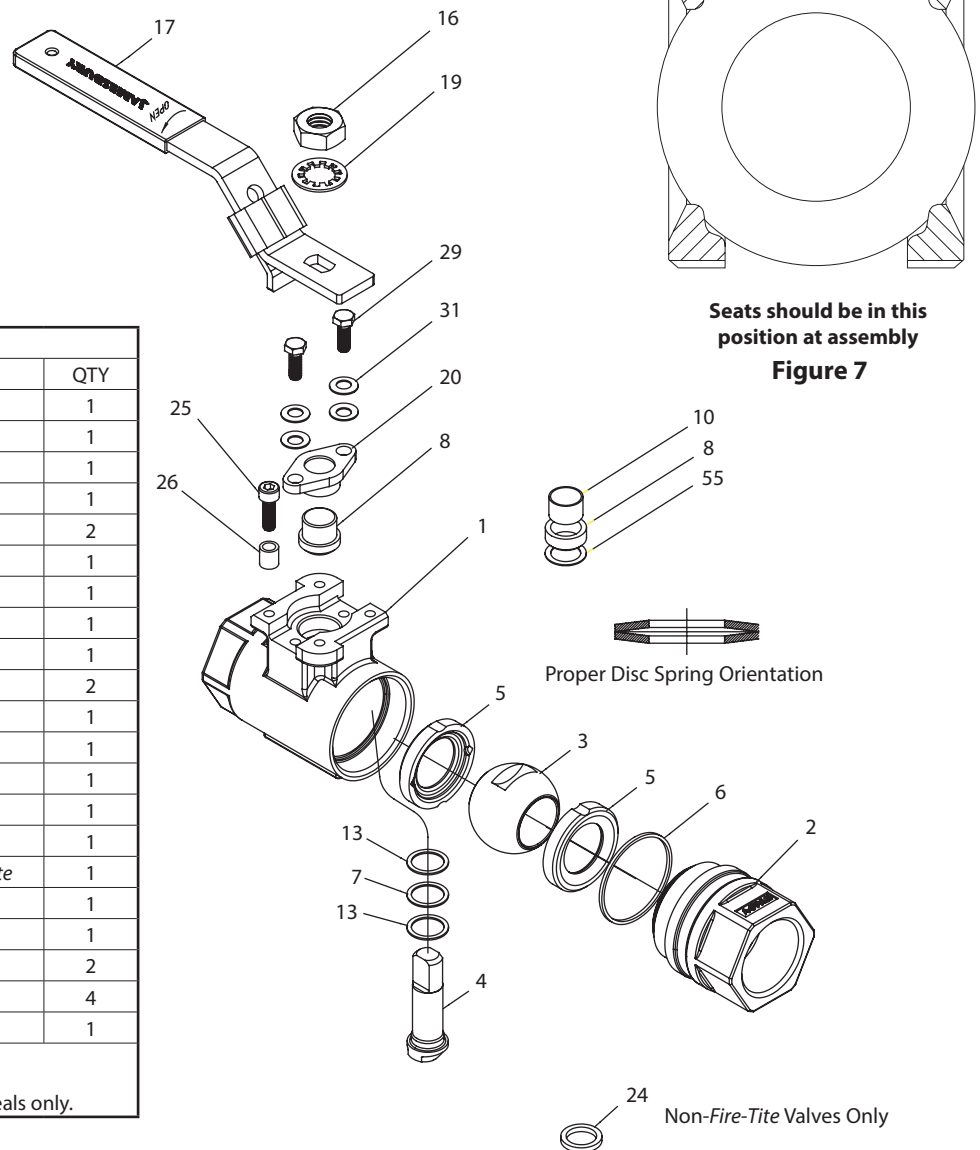
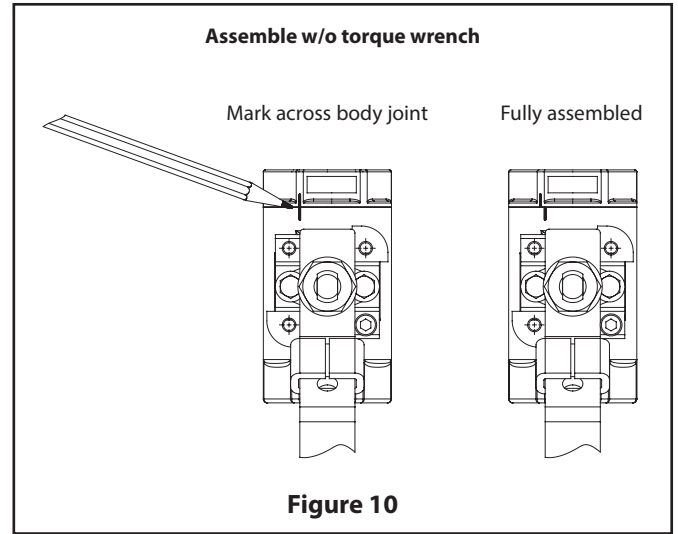
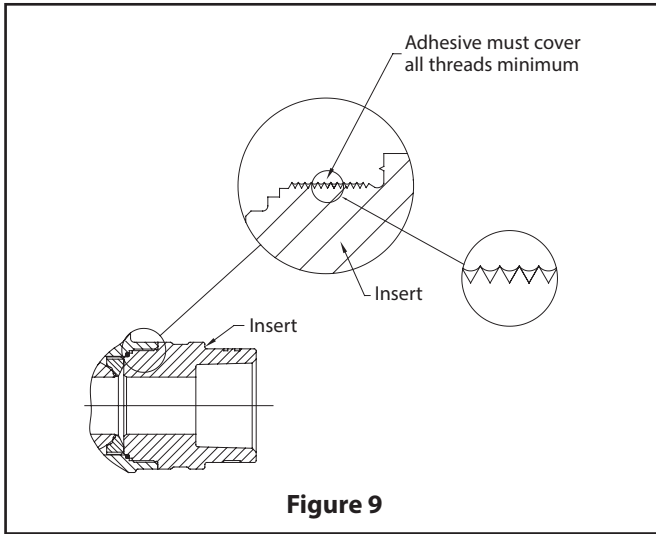


Figure 8



| TABLE 4 – REPAIR KITS | | | | | | |
|------------------------------|-----------------------------------|------------------------|----------------------|--------------------------|--------------------------|----------------------|
| REPAIR KITS | VALVE SIZE – INCHES (MM) | | | | | |
| VALVE SIZE | 1/4" – 1/2" (DN8 – 15) | 3/4" (DN20) | 1" (DN25) | 1-1/4" (DN30) | 1-1/2" (DN40) | 2" (DN50) |
| XTREME® Seats | RKN-354XT | RKN-355XT | RKN-356XT | RKN-357XT | RKN-358XT | RKN-359XT |
| PTFE Seats | RKN-354TT | RKN-355TT | RKN-356TT | RKN-357TT | RKN-358TT | RKN-359TT |
| Acetal Seats | RKN-354RT | RKN-355RT | RKN-356RT | RKN-357RT | RKN-358RT | RKN-359RT |
| UHMW Seats | RKN-354UU | RKN-355UU | RKN-356UU | RKN-357UU | RKN-358UU | RKN-359UU |

VALVE CODES

| | | | | | | | |
|----------|----------|----------|----------|-----------|-----------|-----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1 | A | Z | C | 22 | 71 | XT | D |

Example: 1" A Style, *Fire-Tite*, Chlorine Service, Carbon Steel Body, Monel Trim, *Xtreme* Seats, model D

JAMESBURY BRAND A-STYLE BALL VALVE

| 1. sign | Valve Size (inch / mm) |
|---------------|--|
| inches | 1/4, 3/8, 1/2, 3/4, 1, 1 1/4, 1 1/2, 2 |
| DN | 8, 10, 15, 20, 25, 30, 40, 50 |

| 5. sign | Body Material |
|-----------|--|
| 22 | Carbon Steel (<i>Fire-Tite</i> only) |
| 36 | Stainless Steel (<i>Fire-Tite</i> only) |

| 2. sign | Body Style |
|----------|---------------------------|
| A | <i>Fire-Tite</i> Standard |

| 6. sign | Trim Material |
|-----------|--|
| 00 | Same as body material (Carbon Steel not available) |
| 36 | 316 Stainless Steel |
| 71 | Monel |
| HB | 316SS Ball / 17-4PH Stem |

| 3. sign | Pressure Class Conformance |
|--------------|-----------------------------|
| blank | Non- <i>Fire-Tite</i> |
| Z | <i>Fire-Tite</i> to API 607 |

| 7. sign | Seat Material |
|-------------------------------------|---------------------|
| <i>Fire-Tite</i> Options | |
| TT | PTFE Seats |
| XT | <i>Xtreme</i> Seats |
| <i>Non-Fire-Tite</i> Options | |
| RT | Acetal Seats |

| 4. sign | Special Service |
|--------------|-----------------------|
| blank | Standard Service |
| C | Chlorine |
| O | Oxygen |
| V | High Vacuum |
| VC | High Vacuum Certified |
| TG | Top Ground |
| STGR | Top & Bottom Ground |
| W | Seal Welded |

| 8. sign | Valve Model |
|----------|-----------------|
| D | A Style Model D |

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