

Jamesbury™ trunnion flanged ball valve Series 5000 & 6000

Series 5000, Model A, Reduced Bore:

Class 150, 10" - 20" (DN 250 - 500)

Class 300, 8" - 20" (DN 200 - 500);

Series 6000, Model A, Full Bore:

Class 150, 8" - 24" (DN 200 - 600)

Class 300, 6" - 24" (DN 150 - 600)

Installation, maintenance and
operating instructions

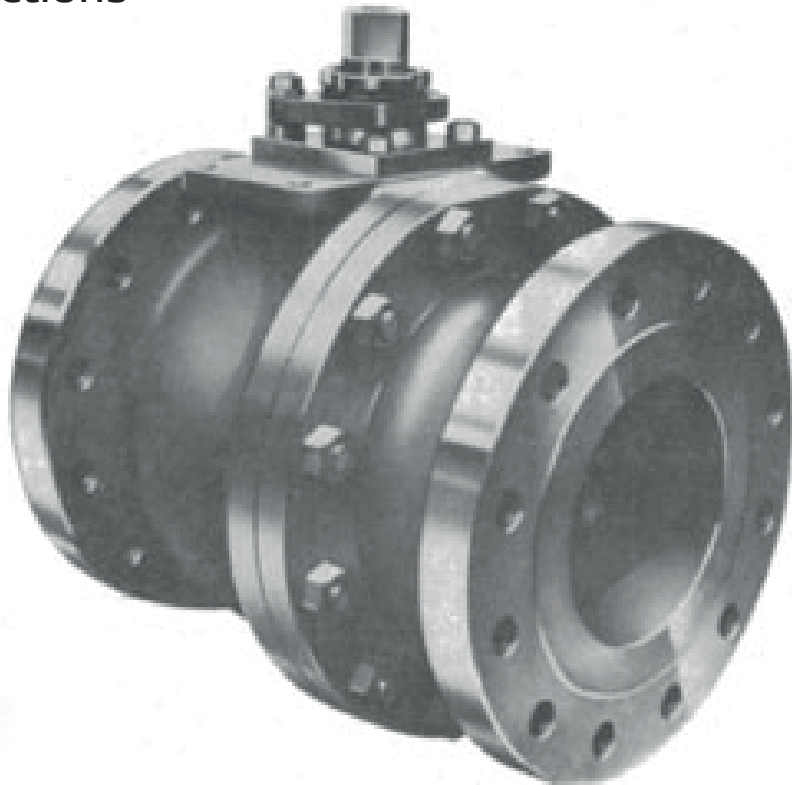


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READ THESE INSTRUCTIONS FIRST!

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 maintenance of the Jamesbury™ Series 6000 Full-Bore, Soft-Seated Trunnion 6" – 24" (DN 150 – 600) Class 150, 8" – 24" (DN 200 – 600) Class 300; Series 5000 Standard-Bore, Soft-Seated Trunnion 10" – 20" (DN 250 - 500) Class 150, 8" - 20" (DN 200 - 500) Class 300 Ball Valves. Please read these instructions carefully and save them for future reference.

WARNING:

AS THE USE OF THE VALVE IS APPLICATION SPECIFIC, A NUMBER OF FACTORS SHOULD BE TAKEN INTO ACCOUNT 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 VALMET FOR MORE INFORMATION.

1.2 VALVE MARKINGS

The valve has an identification plate attached to the body or the pipeline flange (see **Figure 1a and 1b**).

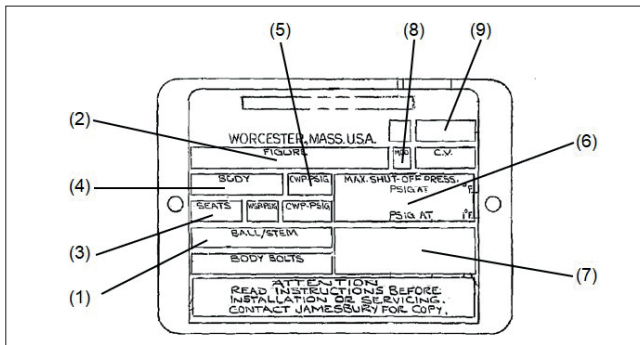


Figure 1a Identification Plate – Model A

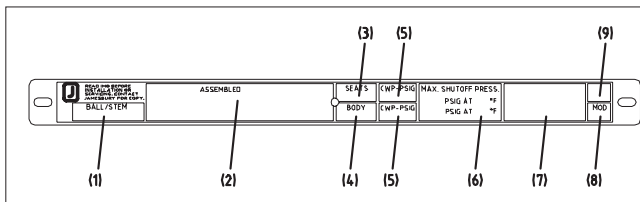


Figure 1b Identification plate – Model B

Identification plate markings:

1. Ball/Stem material
2. Valve catalog code
3. Seat Material
4. Body Material
5. Maximum operating pressure
6. Maximum/minimum shut-off pressure/temperature
7. Approvals/Special Service marking
8. Model
9. Assembly date

1.3 SAFETY PRECAUTIONS

WARNING:

DO NOT EXCEED THE VALVE PERFORMANCE LIMITATIONS!

EXCEEDING THE PRESSURE OR TEMPERATURE LIMITATIONS MARKED ON THE VALVE IDENTIFICATION PLATE 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 PLATE 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 OF 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:

DOUBLE-SEATED BALL VALVE DESIGNS, LIKE THE SERIES 5000 AND 6000, 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!

WARNING:

WHEN HANDLING THE VALVE OR VALVE/ACTUATOR ASSEMBLY, TAKE ITS WEIGHT INTO ACCOUNT! REFERENCE THE APPLICABLE TECHNICAL BULLETIN FOR VALVE WEIGHTS. 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**).

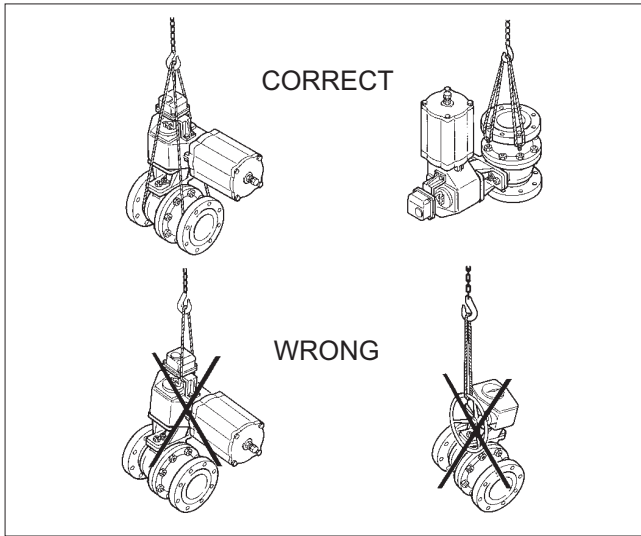


Figure 2 Lifting the valve

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.

If the valve(s) are to be stored for a long duration, follow the recommendations of IMO-S1.

3. INSTALLATION

3.1 GENERAL

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

Flush the pipeline carefully before installing the valve. Foreign objects, such as sand or pieces of welding electrodes, will damage the ball and seats.

The 6" 6300, 8" 5300 and 530S valves are fitted with handles for manual operation. All other sizes are designed for actuator mount only.

3.2 INSTALLING IN THE PIPELINE

WARNING:

THE VALVE SHOULD BE TIGHTENED BETWEEN FLANGES USING APPROPRIATE GASKETS AND FASTENERS COMPATIBLE WITH THE APPLICATION, AND IN COMPLIANCE WITH APPLICABLE PIPING CODES AND STANDARDS. CENTER THE FLANGE GASKETS CAREFULLY WHEN FITTING THE VALVE BETWEEN FLANGES. DO NOT ATTEMPT TO CORRECT PIPELINE MISALIGNMENT BY MEANS OF FLANGE BOLTING!

The valve may be installed in any position and offers tightness in both directions. It is recommended; however, that the valve be installed with the body cap facing upstream. 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 packing (see **Figure 3**).

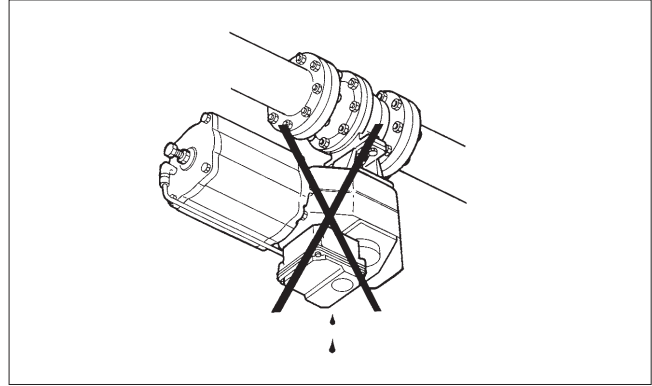


Figure 3 Avoid this mounting position

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 5000 and 6000 Series valves do NOT require insulation to function properly. If desired the valve may be insulated; however, the insulation must not continue above the upper level of the valve (see **Figure 4**).

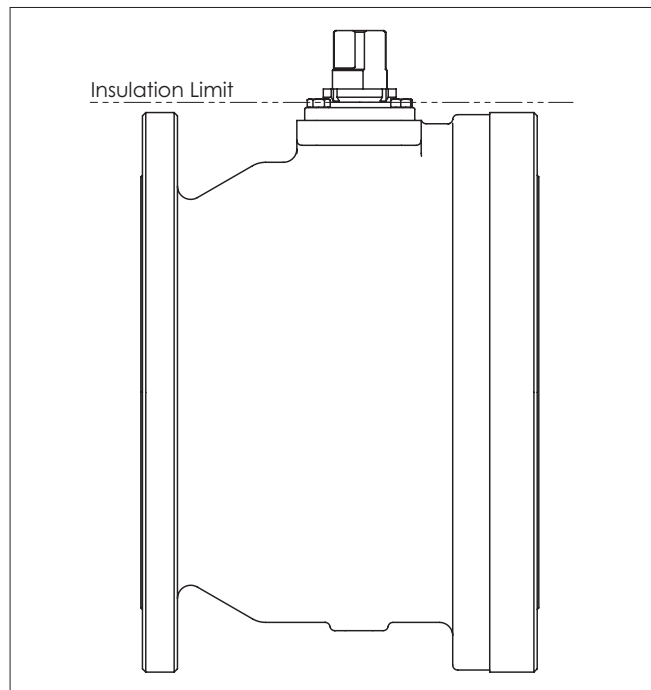


Figure 4 Insulation of the valve

3.4 ACTUATOR

WARNING:

WHEN INSTALLING THE ACTUATOR ON THE VALVE, MAKE SURE THAT THE VALVE ASSEMBLY FUNCTIONS PROPERLY. INSTALLATION INFORMATION FOR VALMET ACTUATORS IS GIVEN IN THE SEPARATE ACTUATOR INSTRUCTIONS MANUALS LISTED IN **TABLE 2**.

The actuator should be installed in a manner that allows plenty of room for its removal.

The upright position is recommended for the actuator.

The actuator must not touch the pipeline, because pipeline vibration may interfere with its operation.

In certain cases, it may be considered advantageous to provide additional support to the actuator. These cases will normally be associated with large actuators or where severe vibration is present. Please contact Valmet for advice.

3.5 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 are correctly adjusted. To adjust any accompanying device(s) refer to the separate control equipment instruction manuals.

4. MAINTENANCE

4.1 GENERAL

Although *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. Valmet recommends inspecting valves at least every five (5) years. Good operating procedure requires periodic observation to ensure that the valve is functioning well. The frequency of observation will depend on the application. Routine maintenance consists of tightening the stem nut (item 15 in **Figure 10**) periodically to compensate for stem seal wear. **NOTE:** If there is weepage past the packing upon installation, "leak-tight" performance may be restored by turning the stem nut (15) an additional 1/4 to 1/2 turn.

When tightening stem seals on actuated valves where the valve is connected to the actuator with a no-play (clamped) coupling, loosen the coupling before tightening the stem nut. Be sure to re-tighten the coupling after the stem nut adjustment is complete.

WARNING:

FAILURE TO RETIGHTEN THE CLAMPED COUPLING MAY RESULT IN DAMAGE TO THE VALVE AND ACTUATOR OR PERSONAL INJURY!

Overhaul maintenance consists of replacing seats and seals. A standard repair kit consisting of these parts may be obtained through your authorized Valmet distributor.

NOTE: Repair kits include secondary stem seal (7), seats (5), body seal (6), stem seals (32), trunnion bearings (27), bearing spacers (28) and stem retainer seal (25). Refer to the Repair Kit chart (see **Table 3**). The body seal is suitable for valves with carbon or 316 stainless steel trim. Other body seal materials, such as Alloy 20/TFE and MONEL/TFE are suitable for other trim and body materials.

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 ACTUATED VALVE

It is generally most convenient to detach the actuator and its auxiliary devices before removing the valve from the pipeline. If the valve package is small or if it is difficult to access, it may be more practical to remove the entire assembly.

NOTE: To ensure proper reassembly, observe the position of the actuator and positioner/limit switch with respect to the valve before detaching the actuator.

WARNING:

ALWAYS DISCONNECT THE ACTUATOR FROM ITS POWER SOURCE, PNEUMATIC, HYDRAULIC OR ELECTRICAL, BEFORE ATTEMPTING TO REMOVE IT FROM THE VALVE!

WARNING:

DO NOT REMOVE A SPRING-RETURN ACTUATOR UNLESS A STOP-SCREW IS CARRYING THE SPRING FORCE!

1. Detach the air supply, electrical supply, hydraulic supply and control signal cables or pipes from their connectors.
2. Loosen the no-play (clamped) coupling.
3. Unscrew the actuator mounting bracket screws.
4. Lift the actuator straight up in line with the valve stem until the coupling between actuator drive and valve stem is completely disengaged.
5. Place actuator in a safe location to avoid damage or personal injury.

4.3 DISASSEMBLY

NOTE: If complete disassembly becomes necessary; it is recommended to replace all seats and seals. Refer to the Repair Kit chart (see **Table 3**).

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

1. Follow the steps in all the **WARNING** sections above before performing any work on the valve.
2. Open and close the valve and leave in the closed position. Place the valve in the vertical position with the body cap end up. **NOTE:** In some sizes the ball protrudes beyond the pipeline flange in the closed position and needs to be raised slightly to avoid damaging the ball sealing surface.
3. If equipped with a manual handle (ref. **Figure 5** – remove the cap screw (18) and washer (19)). Remove Tee (16) and handle (17) from the stem. Remove the stem nut (15), indicator stop (12), spring washers (9), compression ring (21), hex head cap screws (14 & 29) and spacer (31).

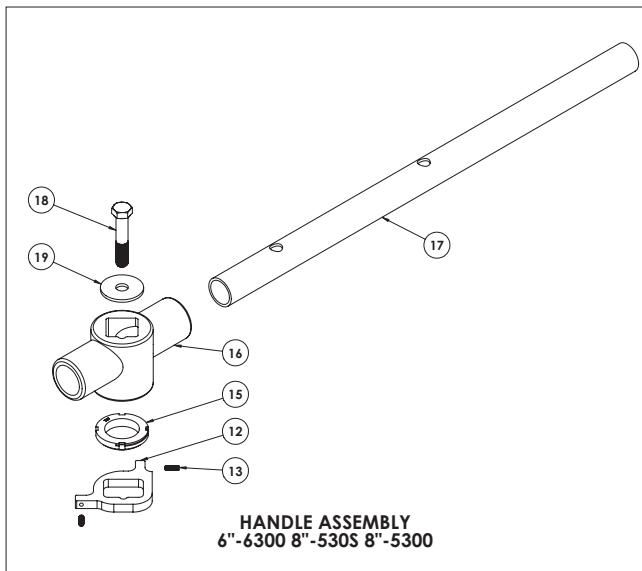


Figure 5 Handle Assembly

4. If actuated valve - Remove the stem nut (15), drive key (if fitted), spring washers (9), compression ring (21), and four hex head cap screws (29).
5. Remove the stem (4) and stem retainer (30) as a sub-assembly by removing cap screws (29). It may be necessary to loosen the stem retainer by tapping with a block of wood and a hammer. Remove and discard stem retainer seal (25).
6. Mark the body joint flanges to assure correct body (1) and body cap (2) orientation during assembly. Remove body stud nuts (11) and remove body cap (2). **BE CAREFUL NOT TO SCRATCH THE BALL.**
7. Remove and discard the body seal (6).
8. Remove the seat (5) from the body cap. It may be necessary to pry the seat from the cap. Use caution not to scratch any sealing surfaces.
9. Lift the ball (3), along with the trunnions (26) as a subassembly out of the body, **BEING CAREFUL NOT TO DAMAGE ANY SEALING SURFACES ON THE BALL.** (The subassembly consists of the ball with trunnion plates on both ends with their appropriate bearings and spacers). **NOTE:** For trunnion ring type designs per inset image in **Figure 10** remove the ring (35) nearest the body cap before removing the ball.
10. Carefully remove the bottom seat (5) out of the body, **BEING CAREFUL NOT TO SCRATCH THE BODY SEALING SURFACE BEHIND THE SEAT.**
11. Remove the trunnions (26) from the hubs on the ball (3).
12. Remove the trunnion bearings (27) and bearing spacers (28) from each trunnion.
13. Push the stem (5) from the top to remove it from the stem retainer (30).
14. Remove and discard the stem bearings (8), and secondary stem seal (7), **BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACES ON THE STEM.**
15. Remove and discard the stem seals (32), **BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACE INSIDE THE STEM BORE.**

4.4 CHECKING PARTS

1. Clean all disassembled parts.
2. Check the stem (4) and ball (3) for damage. Pay particular attention to the sealing and bearing 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,
- b. If the valve is serialized – the serial number (stamped on the valve body),
- c. From **Figure 10**, the ballooned part number, part name and quantity required.

4.5 ASSEMBLY

It is advisable to replace seats and seals if complete disassembly and reassembly become necessary. Refer to the Repair Kit chart (see **Table 3**).

NOTE: Seats, seals and bearings should be lubricated with a lubricant compatible with the media flowing through the valve.

1. Clean all valve components if not done previously.
2. Re-inspect all components for damage before reassembling the valve. Look for damage to the seating areas, stem, body and body cap; and look for wear in the bearing areas. Replace any damaged parts.
3. Carefully clean and polish the ball (3) sealing surface: It should be free of all scratches and grooves.
4. If the ball is slightly damaged, it may be possible to smooth the sealing surface with crocus cloth or equivalent. If deep scratches are present, replace the ball.
5. Place the body (1) and body cap (2) carefully on the pipeline flange, on a soft surface, taking care not to damage the raised face sealing surface.
6. Insert one valve seat (5) in the body with the flat surface against the body (See **Figure 10**). If the valve is ring type design (See inset in **Figure 10**), place trunnion ring (35) on the seat and into the machined diameter in the body. For 10" 6000 and 12" & 14" 5000 align the ring with the clearance grooves in the 6:00 and 12:00 position with the stem considered at 12:00.
7. Place bearing spacer (28) over each ball trunnion.
8. If fitting new trunnion bearings, insert two trunnion bearing halves (27) into each trunnion plate (26) counterbore. The bearing halves should butt together evenly with no overlap at the seams. The seams should be oriented as shown in **Figure 10**.
9. Fit a trunnion plate over each ball trunnion until the plate rests against the bearing spacer (28). This operation must be performed with care and without excessive force or the bearing will be damaged. The plate should be started squarely on the trunnion and it may be necessary to tap the plate on with a plastic mallet. With new bearings it may be necessary to tap and rotate the plate all the way on. Lubrication is helpful. Once installed, without cocking, the plate will be snug but can be rotated smoothly.
10. Align the trunnion plates (26) relative to the ball port in the "closed" position. This will approximate the proper position when the ball and trunnions are lowered into the body. Proceed to Step 13 for ring type trunnion plate designs. Continue to Step 11 for designs in **Figure 10**.
11. With the ball (3) in the "closed" position, lower the ball/trunnion plate subassembly partially into the body. **NOTE:** This procedure is critical and careful attention must be paid to Points A and B of the trunnion plates as shown in **Figure 10**! The shaded portion of Enlargement B represents the outside diameter of the trunnion plate. This surface must pilot in the body counterbore.
12. Carefully lower the subassembly until a trunnion plate enters the counterbore. This can be verified by using a pocket flashlight. Usually one plate will enter the counterbore and the other plate will be out of position. When this happens, it is due to the two plates not being in perfect alignment per Step 10 or not being parallel to each other. Use a plastic mallet or block of wood to rotate the second trunnion plate and cause it to drop into position. It might be necessary to lift the ball slightly. When both plates are correctly seated in the body counterbore, Areas A and B for the trunnion plates will be clearly piloted. Do not proceed further until this procedure is correct. Proceed to Step 14.
13. Lower the ball trunnion plate assembly partially into the body. **NOTE:** For 10" 6000 and 12" & 14" 5000 this procedure is critical and careful attention must be paid to the trunnion plate pilot projection, as shown as "A" in inset in **Figure 10**. These projections must properly engage inside the corresponding trunnion ring (35) in the body.
14. Carefully lower the subassembly into the body and guide the trunnion plates for proper seating. When seated, place the second trunnion ring (35) over the trunnion plate machined diameters.
15. Slide stem bearing (8) over top of the stem (4) and down to the stem shoulder. Place secondary stem seal (7) over stem and down on top of the stem bearing (8).
16. Slide stem retainer (30) over the stem and down on top the secondary stem seal (7).
17. Slide the upper stem seal set (32) over the stem and down into the stem retainer. ("V" shape of the stem seals must point away from the ball, see **Figure 7**).
18. Slide compression ring (21) over stem and down to upper stem seal set (32) in the stem retainer. Add spring washers (9) and indicator plate (12) as applicable.
19. Place stem nut (15), with the side marked "top" facing away from stem retainer (30), over stem and thread down until contact is made with the compression ring (21). (Use a wrench on the bottom stem blade to keep the stem from turning.)
20. Tighten the stem nut until the stem seal set is fully seated, then tighten the nut an additional 1/8 to 1/4 turn.
21. Place the stem retainer seal (25) in the bonnet groove of the body (1).
22. Install stem retainer subassembly into the body and engage the stem in the ball slot. The groove in the top of the stem should be parallel to the ball waterway.

23. Align the stem retainer flange holes with the tapped holes in the bonnet. Lubricate the threads of stem retainer cap screws (29) with Never-Seez® or equivalent. Place the four cap screws (and spacer (31) when applicable) through the stem retainer flange and thread into the body. Tighten according to bolt pattern shown in (Figure 8) and to values in (Table 1).

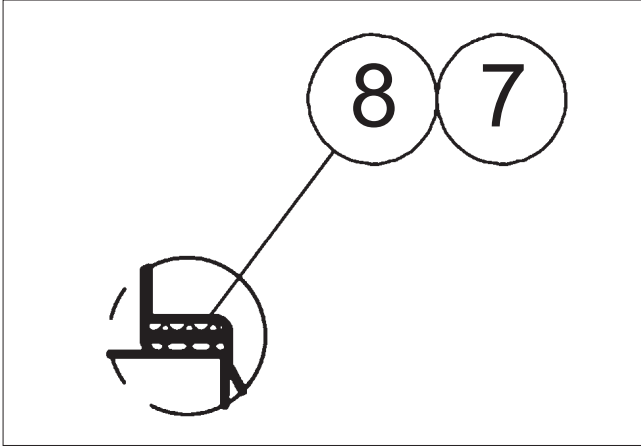


Figure 6 Thrust Bearing Orientations

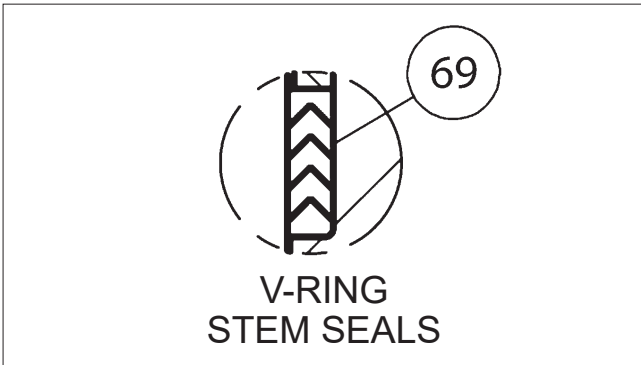


Figure 7 Stem Seal Orientation

24. With a wire brush, clean body studs (10) and stud nuts (11) of foreign material, such as paint, thread locker, grime and commodity. Inspect the threads for damage or defects with appropriate ring or plug gauge. Repair any out-of-tolerance threads or replace in-kind. Check that nut can be run up and down entire usable portion of the threads. See Figure 10.
25. Gently place the body seal (6) into the machined recess of the body (1).
26. Assemble a seat (5) in the body cap (2) with the flat surface of the seat against the body cap. If the seat fits loosely in the cap, apply a compatible lubricant to the underside of the seat to hold it in place. **NOTE:** The ball must be in the fully closed position before proceeding to Step 26. Do NOT install the body cap (2) with the ball in any other position.

27. Place the body cap (2) over body studs (10) being careful to properly orient body cap and body as originally assembled by matching orientation marks made prior to disassembly. Take care not to damage body seal (6) or the cap seat (5) during this operation. Due to seat and seal compression, there may be a 1/8 to 1/4-inch gap at the joint when the faces are parallel.
28. Lubricate the threads and face of nuts (11) with NeverSeez® or equivalent. Install nuts (11) on body studs (10) so that material identification marks will be visible after tightening. Tighten sequentially as shown in the diagram (Figure 11), to the recommended torques as shown in the torque chart (Table 1).

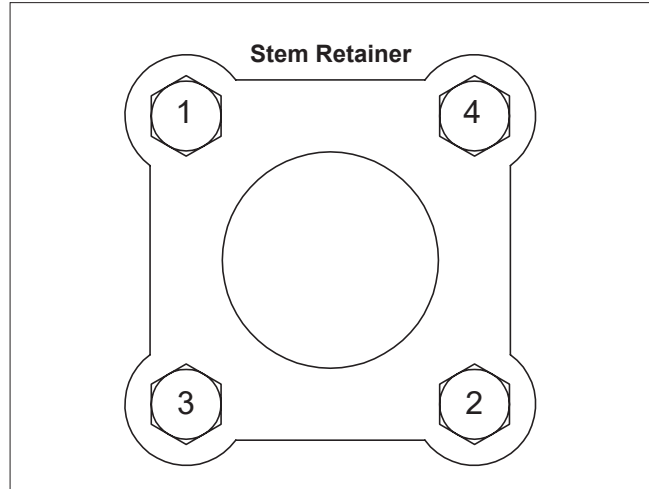


Figure 8 Bolt Tightening Sequence

29. For 6" 6300, 8" 5300 and 530S manual valves, install the handle following the DISASSEMBLY Step 3 in reverse order.
30. Adjust the indicator stop adjusting screws for the proper ball position when in the full open and full closed. For proper alignment, follow these guidelines:
- Valve Open Position: Allowable misalignment of the ball port, in relation to the body port should not exceed 1/16 inch.
 - Valve Closed Position: Scribe a pencil mark on the ball as shown in Figure 9. Open the valve and measure Dimension "B". Adjust the stop according to the dimensions in Table 4.

31. After setting the indicator plate, APPLY A DROP OF LOCKTITE® WICKING COMPOUND OR EQUIVALENT TO THE TWO SET SCREWS.

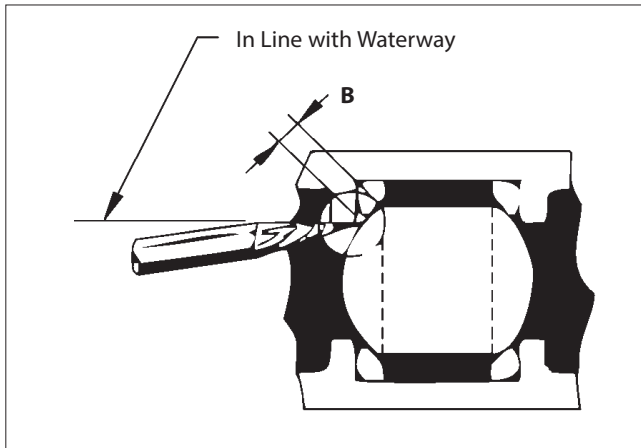


Figure 9 Setting Closed Position

32. Cycle the valve slowly with a gentle back and forth motion building gradually to the full quarter turn. By cycling slowly, the seat lips will seat against the ball. Take care to avoid scratching the ball O.D.

4.6 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 Valmet for advice.

WARNING:

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

5. REPAIR KITS

Standard Repair Kits (**Table 3**) include secondary stem seal (7), stem bearing (8), seats (5), body seal (6), stem seals (32), trunnion bearings (27), bearing spacers (28) and stem retainer seal (25). The trunnion bearing and body gasket are suitable for valves with carbon steel or stainless-steel trim. Consult the factory for replacement parts of valves with trim other than carbon or stainless steel or for seat materials not listed. When ordering repair kits for your valve refer to **Section 1.2, Valve Markings** and check area "3" on your valve's identification plate to determine the correct seat material for your valve.

6. SERVICE / SPARE PARTS

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 actuators.

NOTE: When sending goods to the service center for repair, do not disassemble them. Clean the valve carefully and flush 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. Send valves to the service center in the half open position.

For further information on spare parts and service or assistance visit our website at valmet.com/flowcontrol/valves.

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

- a. Valve catalog code from identification plate,
- b. If the valve is serialized – the serial number (from identification plate)
- c. From **Figure 10**, the ballooned part number, part name and quantity required.

TABLE 1				
Lubricated Torques - ft-lbs (N-m)				
Fastener Size	Fastener Material			
	A193 GR. B7	A193 GR. B8	A193 GR. B7M	A193 GR. B8M
	Fastener Identification Mark			
	B7	B8	B7M	B8M
3/8 – 16 UNC	30 - 38 (40 - 51)	24 - 29 (32 - 39)	23 - 29 (31 - 39)	27 - 35 (37 - 47)
1/2 - 13 UNC	75 - 93 (101 - 126)	57 - 70 (77 - 95)	57 - 71 (77 - 96)	68 - 84 (92 - 114)
5/8 - 11 UNC	150 - 190 (203 - 257)	110 - 140 (149 - 189)	110 - 140 (149 - 189)	130 - 170 (176 - 230)
3/4 - 10 UNC	260 - 330 (352 - 446)	200 - 250 (271 - 338)	200 - 250 (271 - 338)	240 - 300 (325 - 406)
7/8 - 9 UNC	380 - 445 (515 - 603)	290 - 340 (393 - 461)	290 - 340 (393 - 461)	250 - 295 (339 - 400)
1 - 8 UN	575 - 630 (780 - 854)	435 - 510 (590 - 691)	435 - 510 (590 - 691)	385 - 435 (522 - 590)
1-1/8 - 8 UN	850 - 1000 (1152 - 1356)	526 - 615 (713 - 834)	650 - 760 (881 - 1030)	475 - 555 (644 - 752)
1-1/4 - 8 UN	1160 - 1360 (1573 - 1844)	715 - 840 (969 - 1139)	885 - 1030 (1200 - 1396)	625 - 725 (847 - 983)
1-1/2 - 8 UN	2000 - 2360 (2711 - 3199)	1030 - 1120 (1396 - 1518)	1530 - 1800 (2074 - 2440)	900 - 1000 (1220 - 1356)
1-5/8 - 8 UN	2770 - 3390 (3755 - 4595)	1200 - 1400 (1627 - 1898)	2110 - 2600 (2680 - 3525)	n/a
1 3/4 - 8 UN	3450 - 4230 (4677 - 5735)	1510 - 1710 (2047 - 2318)	2630 - 3220 (3566 - 4780)	n/a
2	5260 - 6440 (7130 - 8730)	2245 - 2635 (3044 - 3572)	4000 - 4900 (5420 - 6640)	n/a

TABLE 2	
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
Contact your authorized Valmet Flow Control Distributor for copies of these instructions	

TABLE 3		
VALVE	"T" Seat	"M" Seat
6" 6300 8" 530S / 5300	RKN-54TT	RKN-54MT
8" 6150 10" 5150	RKN-55TT	RKN-55MT
8" 6300 10" 530S / 5300	RKN-56TT	RKN-56MT
10" 6150 12" & 14" 5150	RKN-57TT	RKN-57MT
10" 6300 12" 530S / 5300 14" 5300	RKN-58TT	RKN-58MT
12" 6150 16" 5150	RKN-59TT	RKN-59MT
12" 6300 16" 5300	RKN-60TT	RKN-60MT
14" 6150 18" 5150	RKN-74TT	RKN-74MT
14" 6300 18" 5300	RKN-53TT	RKN-53MT
16" 6150 20" 5150	RKN-62TT	RKN-62MT
16" 6300 20" 5300	RKN-65TT	RKN-65MT
18" 6150	RKN-93TT	RKN-93MT
18" 6300	RKN-86TT	RKN-86MT
20" 6150	RKN-73TT	RKN-73MT
20" 6300	RKN-94TT	RKN-94MT
24" 6150 / 6300	RKN-136TT	RKN-136MT

TABLE 4	
Size – Series	Dimension "B"
6" – 6000 8" – 5000	1-3/32"
8" – 6000 10" – 5000	1-3/16"
10" – 6000 12" & 14" – 5000	1-9/16"
12" – 6000 16" – 5000	1-13/16"
14" – 6000 18" – 5000	1-3/4"
16" – 6000 20" – 5000	1-15/16"
18" – 6000	2-1/4"
20" – 6000	2-9/16"
24" – 6000	2-3/4"

EXPLODED VIEW AND PARTS LIST

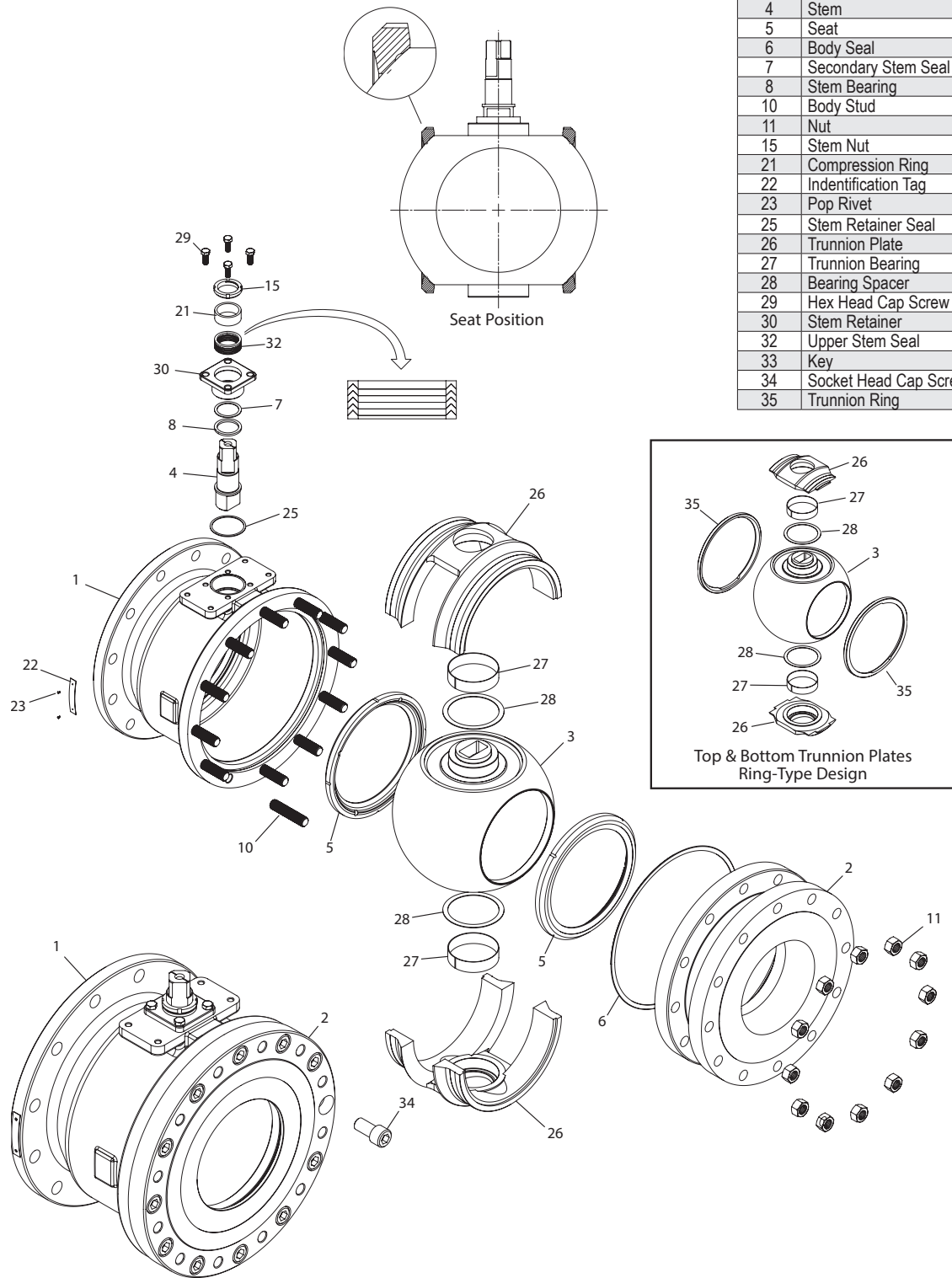
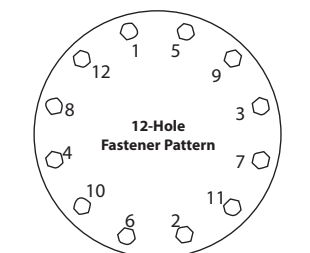
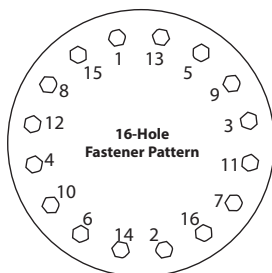


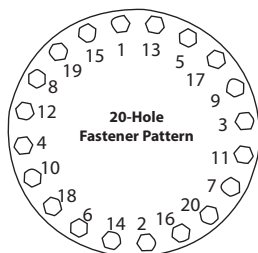
Figure 10.



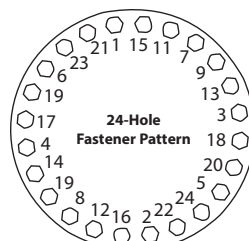
12"-14" (DN 300-350) 5150,
14" (DN 350) 6150, 14" (DN 350) 5300



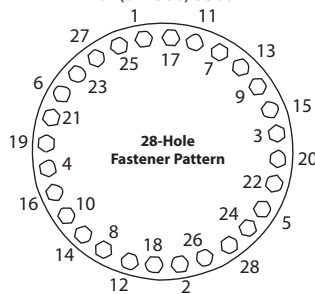
12" (DN 300) 530S/5300,
14" (DN 350) 6300, 16"-20" (DN 400-500)
5150, 16" (DN 400) 6150



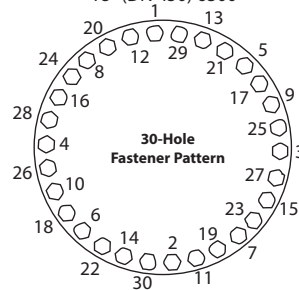
16" (DN 400) 5350



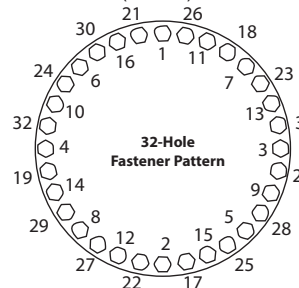
16" (DN 400) 6300, 18" (DN 450) 6150,
20" (DN 500) 5300



18" (DN 450) 6300



20" (DN 500) 6150



20" (DN 500) 6300, 24" (DN 600) 6300

Figure 11.

Subject to change without prior notice.

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Valmet Flow Control Oy

Vanha Porvoontie 229, 01380 Vantaa, Finland.

flowcontrol@valmet.com

Tel. +358 10 417 5000.

www.valmet.com/flowcontrol

