

Jamesbury control valves

ICV & ICVA

Flanged injection control valves

type 1500, 2" (DN 50)

Installation, maintenance and
operating instructions

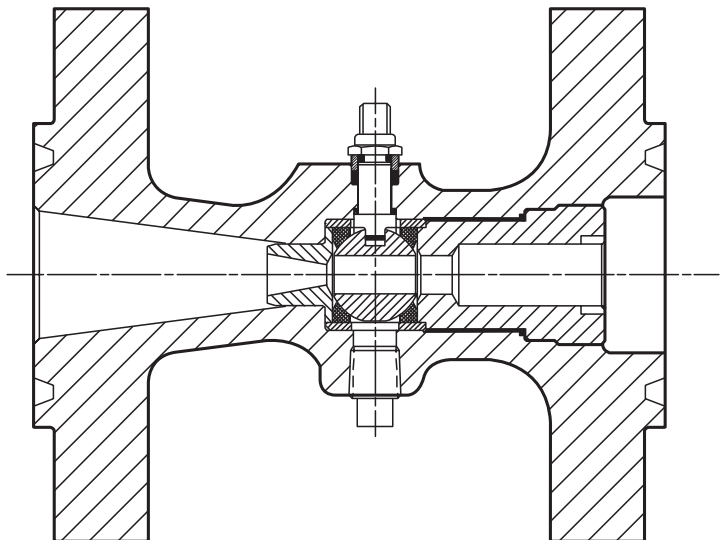


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READ THESE INSTRUCTIONS FIRST!

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

This instruction manual contains important information regarding the installation, operation and troubleshooting of 2" (DN 50) Type 1500 ICV and ICVA Flanged Injection Control Valve. Please read these instructions carefully and save them for further reference.

WARNING

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

WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE FLUID INVOLVED.

DEPRESSURIZE THE LINE AND CYCLE THE VALVE AS FOLLOWS:

- A. PLACE THE VALVE IN THE OPEN POSITION AND DRAIN THE LINE.
- B. CYCLE THE VALVE TO RELIEVE RESIDUAL PRESSURE IN THE BODY CAVITY BEFORE REMOVAL FROM THE LINE.
- C. AFTER REMOVAL AND BEFORE ANY DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.

SEAT AND BODY RATINGS - THE PRACTICAL AND SAFE USE OF THIS PRODUCT IS DETERMINED BY BOTH THE SEAT AND BODY 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.

IT IS IMPORTANT TO REFER TO THE TAG FASTENED ON EACH VALVE FOR MAXIMUM PRESSURE RATINGS AND MATERIAL DESCRIPTION. IF THE TAG IS MISSING, REFER TO VALMET FOR MAXIMUM RATINGS.

2. INSTALLATION

Refer to the **MAINTENANCE** Section for stem packing 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. Leaktight performance will be restored by a simple packing adjustment described in the **MAINTENANCE** Section.

Flow through the valve shall be with the insert facing up-stream. The body has flow direction arrows. The valve must be installed with the insert up-stream to attain the proper Cv control and to maximize valve life. Follow the recommended practices of the gasket manufacturer when tightening flange bolts.

Flange bolts must be assembled as shown on page 5 of this IMO for coupling clearance if an actuator is to be used on the valve.

2.1 DISASSEMBLY

Tools needed to disassemble *Jamesbury* valves may be ordered as service parts from your local distributor or the Valmet home office.

NOTE: If complete disassembly becomes necessary, replacement of all seats and seals is recommended. Refer to the Repair Kit chart.

1. Read the **WARNING** Section before performing any work.
2. Be sure to cycle the valve - leave in the closed position. (Use the stem blade as reference.)
3. Remove the stem nut (15) and compression ring (21).
4. Using a spanner wrench, unscrew and remove the insert (2).
5. Remove and discard the body seal (6).
6. Slowly place the valve in a vertical position, insert end down on a clean soft surface such as a folded rag or piece of cardboard. The ball (3) and one seat (5) should fall out. If they don't, use a piece of wood or some other soft material to gently tap the ball (from the end of the valve opposite the insert). This will unseat the parts without damaging them. Turn the valve over with insert end up and remove one spacer (37) from the end of the sleeve (34).
7. Remove the plug (26) from the bottom of the valve body (1).
8. From the outside, press the stem (4) into the valve body and remove through the plug hole of the body (1).
9. Pry out and discard the old stem seals. Be careful not to scratch any sealing surfaces in the valve body.
10. Carefully pry the sleeve (34), spacer (37), bottom seat (5), and diffuser (31) out of the body if necessary. Do not scratch the diffuser seat face. It may be necessary to tap the diffuser (31) with a piece of wood or some other soft material from opposite the insert end.

2.2 ASSEMBLY

A good lubricant compatible with the flow medium should be applied lightly to seats, seals, spacers, ball and stem to facilitate assembly and for ease of initial operation. It is advisable to replace seats, spacers, diffuser, sleeves and seals if complete disassembly and reassembly becomes necessary. Refer to the Repair Kit chart on page 3.

1. Apply Loctite® Gasket Eliminator #515 or equivalent to small end of diffuser (31). Put two beads 360° around surface (**see Figure 4A**), and guide the diffuser (small end first) into the body (1) and into the waterway.
2. Install the spacer (37) into the body (1) and let it drop to the bottom. Insert the sleeve (34) into the body (1) until the sleeve (34) rests on the spacer (37). Make sure that the two holes on the O.D. of the sleeve line up with the stem hole and plug hole.
3. Slide one valve seat (5) sideways into the body (1) to below the bonnet opening, and tilt it into place so that the proper surface (**see Figure 1**) will be adjacent to the ball (3), **BEING CAREFUL NOT TO CUT OR SCRATCH THE SEAT.**
4. Assemble one stem bearing (8) onto the stem (4). From outside the body (1), insert the two stem seals (7) into the stem hole.

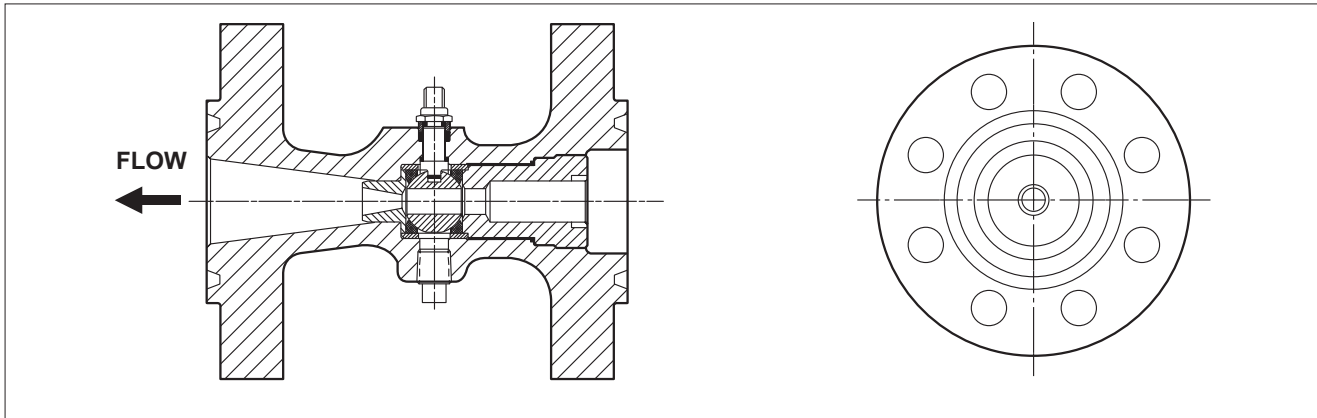


Figure 1.

5. Insert the stem (4) with stem bearing (8) into the plug hole of the body (1) and into the cavity. Press the stem (4) gently into the stem bore until resistance is felt, being careful not to scratch the seals. A small hole is provided in the stem so a string or wire may be used to pull the stem through the stem bore.
6. Holding the stem in place from the bottom, drop on the compression ring (21). Screw on the stem nut (15).
7. Install and tighten down the nut until the stem comes snugly into place. Rotate the stem gently to assure proper seating. **NOTE:** Tighten the nut until the stem seals are fully seated, then tighten the nut an additional 1/4 turn.
8. Apply either PTFE tape or PTFE paste onto threads of plug (26). Insert the plug (26) into the hole in the bottom of the valve body (1), tighten plug.
9. Using a spanner wrench, screw the insert (2) into the body until it is fully seated, and then mark its position (**as shown in Figure 2**). Counting the number of turns, remove the insert.
10. Insert the ball (3), rotating it onto the stem (4) in the closed position. If necessary, turn the stem blade to align with the ball slot.
11. Insert the second spacer (37) and the second seat (5) so that the sealing surface of the seat is towards the ball.
12. Insert the body seal (6) and gently press it into the groove in the body.
13. Using a thread lubricant compatible with the media, screw the insert (2) into the body and tighten to 170 – 200 FT•LBS (231 – 271 N•m). If a torque wrench is not available, tighten the insert the same number of turns as in step 8 until the marks line up according to the 11/32" (8.73 mm) dimension (**illustrated in Figure 3**).
14. Cycle the valve slowly with a gently back and forth motion to build gradually to the full quarter turn. By cycling slowly the seat lips will assume a permanent seal shape against the ball. A fast turning motion at this point may cut the seats before they have a chance to form the proper seal.

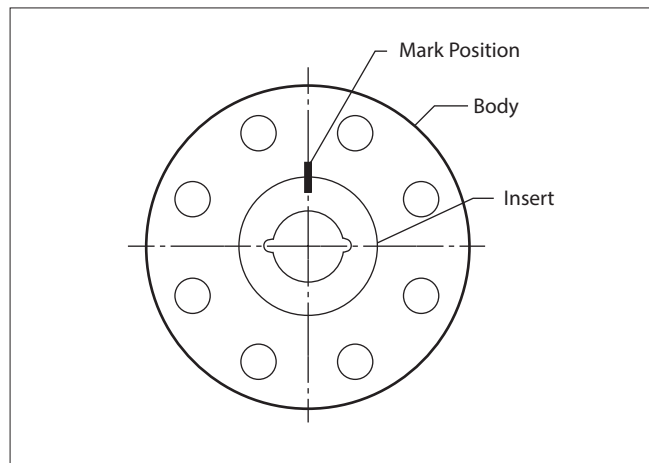


Figure 2.

3. MAINTENANCE

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. The inspection and maintenance frequency depends on the actual application and process condition.

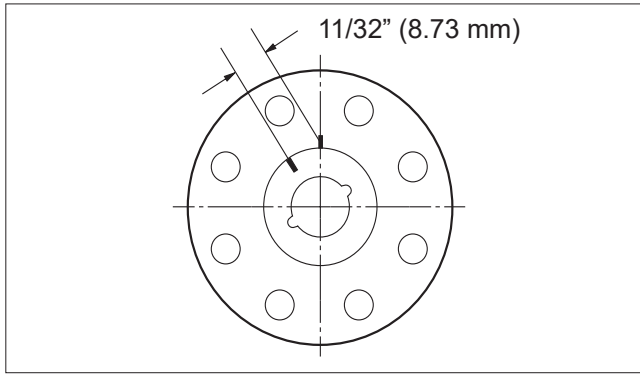


Figure 3.

Routine maintenance consists of tightening the packing nut (15) periodically to compensate for stem seal wear. Tighten the packing nut (15) until snug, then tighten an additional 1/4 turn. When tightening stem seals on actuated valves, loosen the no-play coupling before tightening the stem nut. Overhaul maintenance consists of replacing seats and seals. A standard Repair Kit consisting of these parts may be obtained through your Valmet distributor.

4. WHEN ACTUATOR MOUNTING

IMPORTANT: When the actuator is removed to service the valve, **PROPER ALIGNMENT OF THE ACTUATOR DRIVER AND VALVE STEM IS ESSENTIAL WHEN THE ACTUATOR IS REMOUNTED.** With a split no-play coupling, tighten the coupling bolts before final tightening of the valve bracketry bolts. Refer to the last page for details on mounting an actuator onto the valve and identification of valve/actuator linkage components.

5. MANUAL OPERATION

1. To change from an actuated to a manual control valve, loosen the socket head cap screw (5) and remove the four hex head cap screws (15) and lockwashers (16). Remove the actuator from the mounting bracket (2). Withdraw the reducer (10) from inside the coupling halves (3) and (4).
2. Insert the stud (9) into proper bonnet hole as shown in (Figure 6) and bottom out in hole.
3. Place the indicator pointer (3) over the stud (9) with the pointer end up away from the valve. Place center locknut (5) over the stud (9) and tighten the locknut (5) until it is snug against the indicator pointer (3). Do not tighten at this point.
4. Place the indicator plate (2) onto the stem assuring that the stud (9) is protruding through the radius slot in the indicator plate (2). Note that the wording "MAX" and "MIN" flow on the indicator plate (2) should be facing up away from the valve.
5. Place the handle (1) on the stem so that the handle end is pointing away from the slot in the indicator plate (2).
6. Thread in the handle bolt (4) and tighten.
7. Place the flatwasher (8), lockwasher (7) and hex nut (6) onto the stud (9) and hand tighten.
8. Turn the handle (1) so that the valve is in the full open position. Position the indicator pointer (3) so that it is lined up with the mark nearest "MAX" flow. Tighten the locknut (5).
9. The nut (6) is tightened only to lock the valve in position.

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 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 flowcontrol@valmet.com.

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 4**, the ballooned part number, part name and quantity required.

REPAIR KITS	
Repair Kits for ICV & ICVA	
Delrin® & Filled PTFE Seats	RKN-116-RM*
Delrin Seats	RKN-116-RT*
Peek® Seats	RKN-116-LT*
ICV with 5/8 Port	RKN-178-RT, LT, RM**
ICVA with 11/32 Port	RKN-177-RT, LT, RM***

NOTES:

- * Repair kits for ICV & ICVA, RKN-116 include two seats (5) or one seat (5) and one seat (10), two stem seals (7), one stem bearing (8), one body seal (6).
- ** Repair kits for ICV 5/8 Port, RKN-178 include two seats (5) or one seat (5) and one seat (10), two stem seals (7), one stem bearing (8), one body seal (6), one 5/8 port diffuser, and Loctite Gasket Eliminator #515.
- *** Repair kits for ICVA 11/32 Port, RKN-177 include two seats (5) or one seat (5) and one seat (10), two stem seals (7), one stem bearing (8), one body seal (6), one 11/32 port diffuser, and Loctite Gasket Eliminator #515.

7. WELDING WARNING

WARNING:

WELDING AND/OR GRINDING OF STAINLESS STEEL AND OTHER ALLOY STEELS CONTAINING CHROMIUM METAL MAY CAUSE THE RELEASE HEXAVALENT CHROMIUM. HEXAVALENT CHROMIUM, CHROMIUM(VI) OR CR(VI), IS KNOWN TO CAUSE CANCER. BE SURE TO USE ALL APPROPRIATE PPE WHEN WELDING METALS CONTAINING CHROMIUM. IF YOU HAVE ANY QUESTIONS CONSULT YOUR SUPERVISOR.

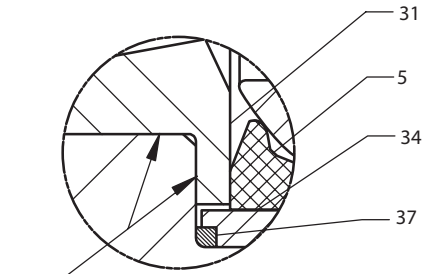
PARTS LIST		
ITEM	PART NAME	QTY
1	Body	1
2	Insert	1
3	Ball	1
4	Stem	1
5	Seat	*
6	Body Seal	1
7	Stem Seal	2
8	Stem Bearing	1
10	Seat	1**
15	Stem Nut	1
21	Compression Ring	1
26	Plug	1
31	Diffuser	1
34	Sleeve	1
37	Spacer	2

* Quantity is 2 on LT. and RT. Coded valves.
Quantity is 1 on RM coded valves, and it is black or dark colored.

** This seat is only used on RM coded valves, and it is lighter colored.

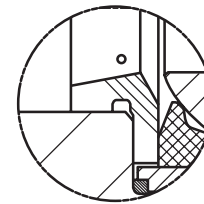
NOTE: On RM coded valves, the black colored material (5) is always placed up-stream and the lighter colored seat (10) is always placed down-stream.

EXPLODED VIEW



Assemble using Loctite Gasket Eliminator #515 on these surfaces.

Figure 4A



OBSOLETE

Figure 4B

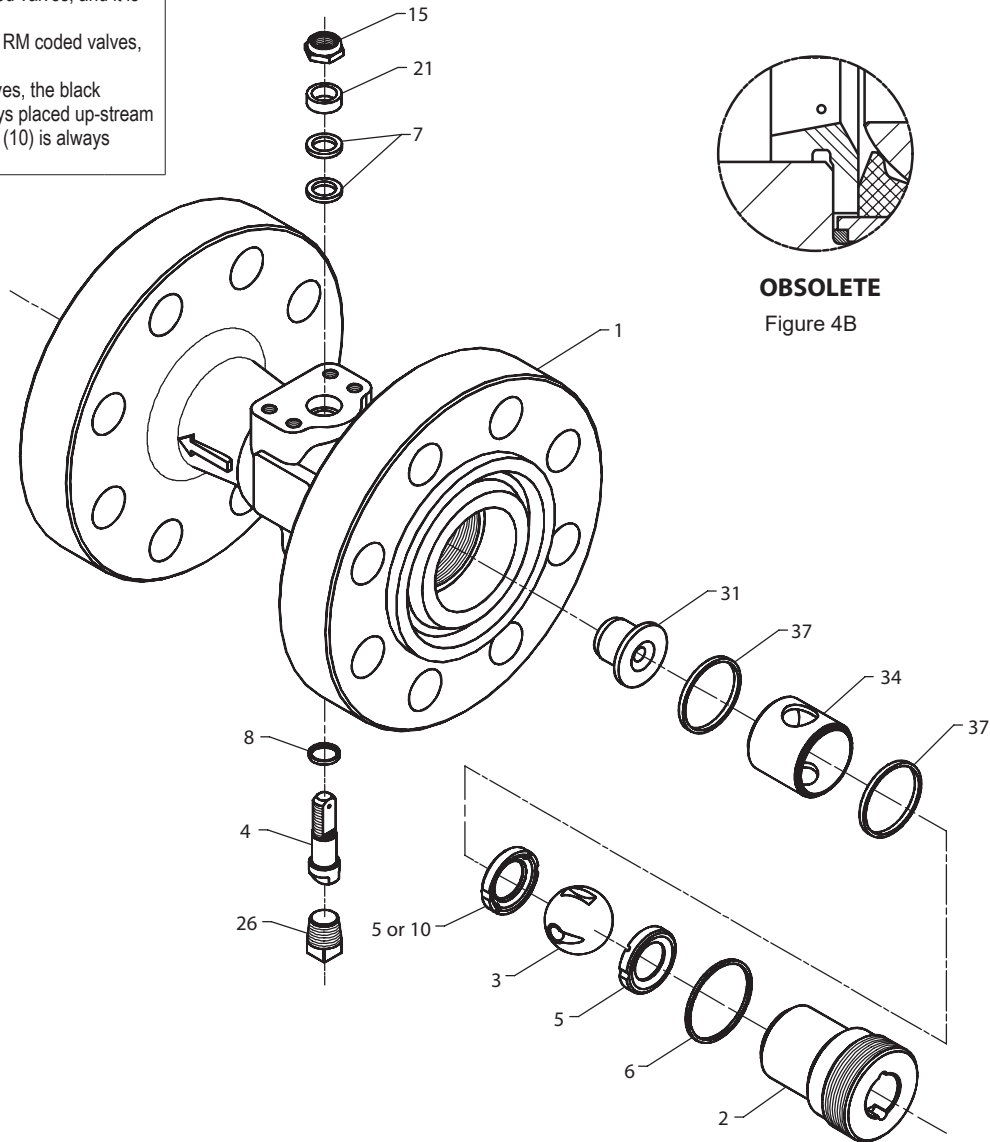


Figure 4.

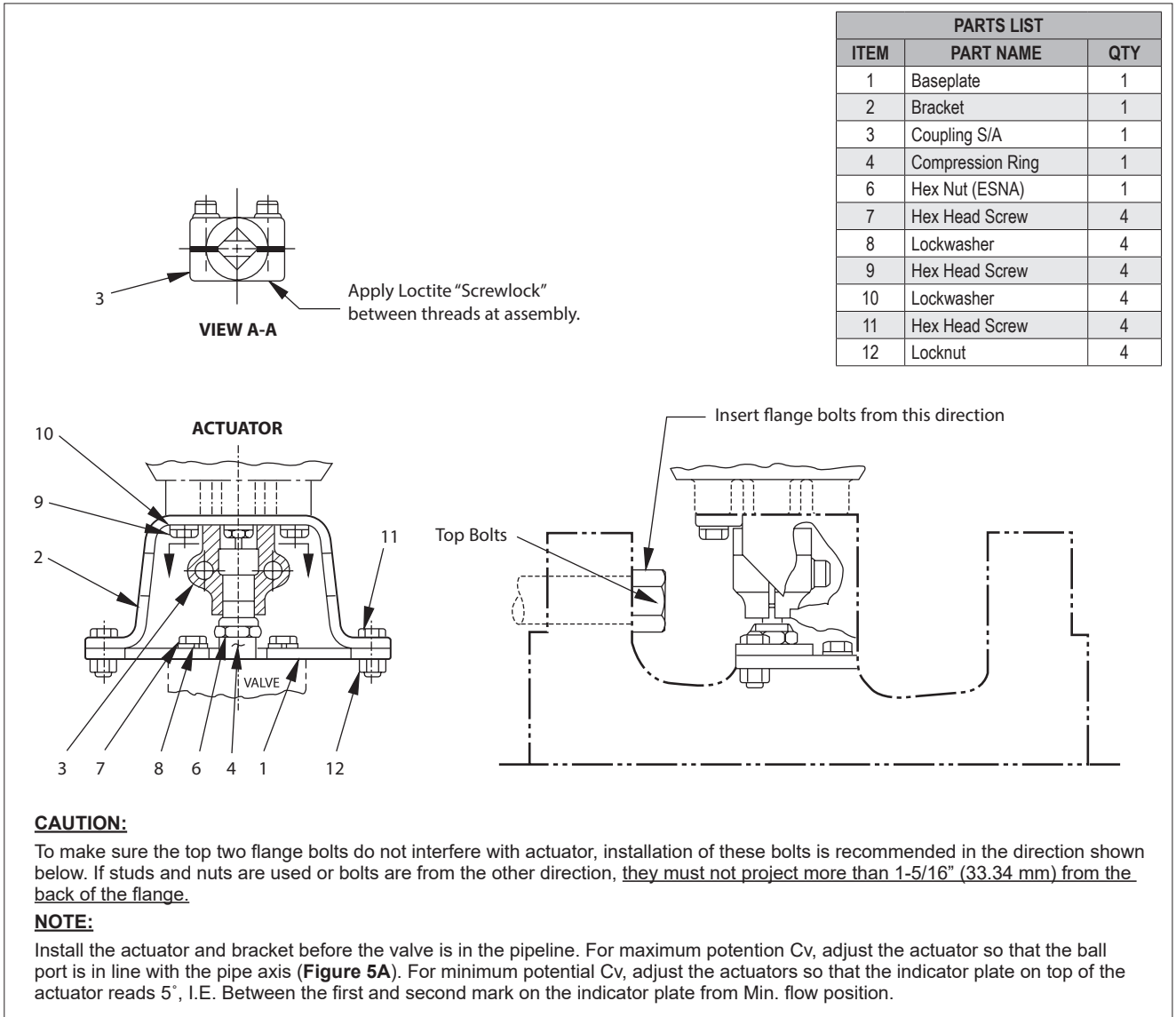


Figure 5.

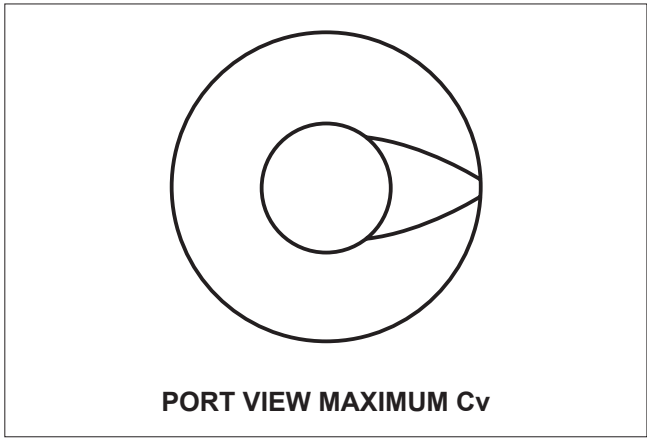


Figure 5A

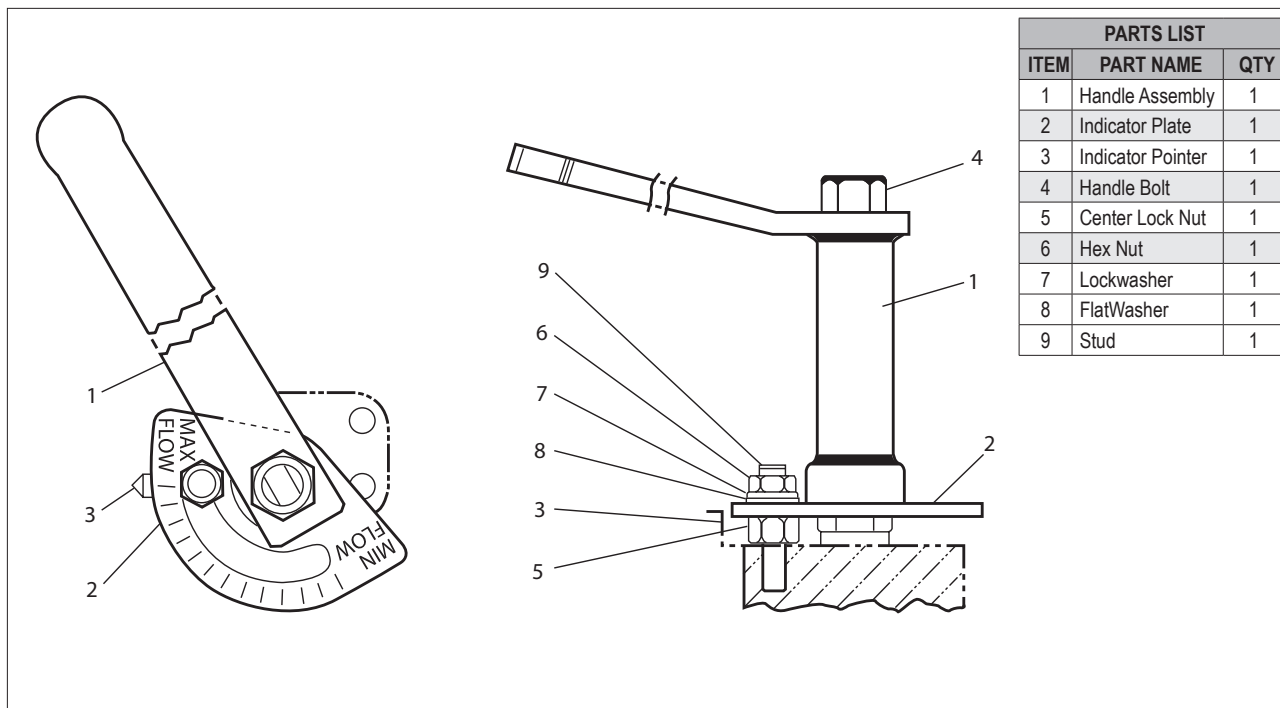


Figure 6

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

