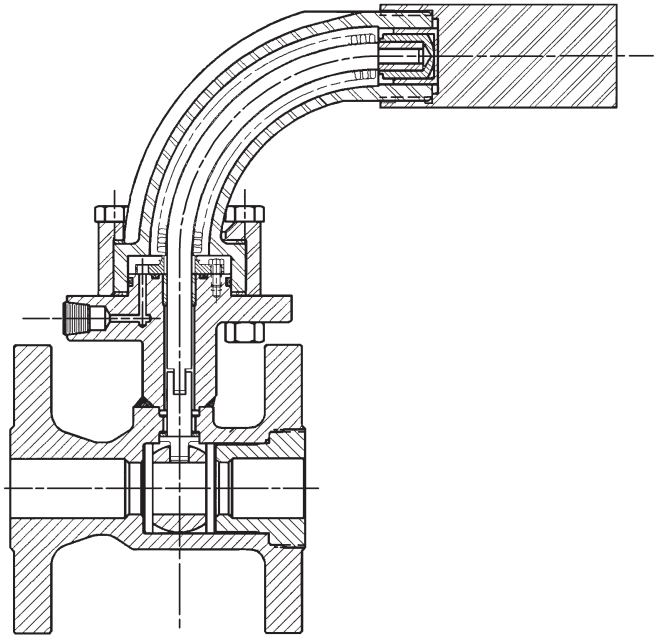
Jamesbury™ flanged ball valves equipped with KEROTEST™ handle assemblies for:

Series 5000, Standard bore, Class 150 & 300, 1/2" - 2" (DN 15 - 50); Series 6000, Full Bore, Class 150 & 300, 3/4" - 1-1/2" (DN 20 - 40)

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 the Jamesbury™ 1/2” – 2” (DN 15 – 50) Series 5000 and 3/4” – 1-1/2” (DN 20 – 40) Series 6000 Flanged Ball Valves equipped with Kerotest Handle Assemblies. 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.

1.1 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 DEVISE. DISCONNECT ANY PNEUMATIC SUPPLY LINES, ANY ELECTRICAL POWER SOURCES AND MAKE SURE SPRINGS IN SPRINGRETURN 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! 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.

2. MAINTENANCE

Good operating procedure requires periodic observation to ensure that the valve is functioning well. The frequency of observation will depend upon the application.

WARNING:

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

1. WEAR ANY PROTECTIVE CLOTHING OR EQUIPMENT NORMALLY REQUIRED WHEN WORKING WITH THE FLUID INVOLVED.
2. 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.

3. INSTALLATION

Flow through the valve can be in either direction. It is recommended, however, that a flanged valve be installed with the insert facing upstream.

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!

3.1 DISASSEMBLY

NOTE: If complete disassembly becomes necessary, replacement of all seats and seals is recommended.

1. When performing any work on this valve, use normal safety precautions to protect yourself against residual fluid or trapped pressure in the line.
2. Depressurize and drain the line. **CYCLE THE VALVE SEVERAL TIMES BEFORE DOING ANY WORK**. This will relieve any pressure still inside the valve.
3. Remove the valve from the line and cycle the valve several times again leaving in the closed position.
4. Disassembly of Kerotest Handle:

A. Unscrew set screw (28) and remove, loosen handle (11). **DO NOT REMOVE!**

B. Loosen four cover fasteners (22). **DO NOT REMOVE!**

C. Remove handle (11) from the housing (9).

D. Remove bearings (25) from housing and remove gasket (27) from the handle.

E. Remove cover screws (22).

F. Slip cover (8) over housing (9) and remove.

G. Remove housing (9). The O-ring seal between the housing (9) and the bonnet will resist removal.

H. Remove bearings (18).

I. Remove bellows screws (21) from bellows flange.

J. Remove bellows (7) from handle stem (4). Take care not to stretch or kink bellows.

K. Remove housing seal (16) and bellows seal (15) O-rings from the bonnet.

L. Remove handle stem (4).

M. Remove handle bearing (14) from bonnet bore.

5. Using a spanner wrench, unscrew and remove the insert (2).

NOTE: Use caution when loosening the insert, especially during the initial break.

6. Remove and discard the body seal (12).
7. With the valve closed, 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 (5) and one seat (6) 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.
8. Insert a wood, plastic, or other soft dowel into the bonnet bore and push the inner stem (3) into the valve and remove.
9. Remove and discard the old stem bearing (13). **Be careful not to scratch and surface in the valve body**.
10. Carefully pry the bottom seat (6) out of the body. **Do not scratch the body seat face.**

3.2 ASSEMBLY

A good lubricant compatible with the fluid medium should be applied to seats, seals, ball and stem to facilitate assembly and initial operation.

Slide one valve seat (6) into the body (1) to below the bonnet opening, and tilt it into place so that the proper surface will be adjacent to the ball (5) **being careful not to scratch the seat**.

Position the valve so that the bonnet end faces down.

Assemble the stem bearing (13) onto the inner stem (3).

11. Slide the inner stem and bearing subassembly, slotted end first, through the insert end of the valve body (1) toward the bonnet bore.
12. Maneuver the inner stem (3) into the bonnet bore until it is stopped by the shoulder in the body. The stem tang should be protruding into the valve body.
13. Position the flats of the inner stem tang so that they will mate with the slot in the ball (5).
14. 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 1**). Counting the number of turns, remove the insert.

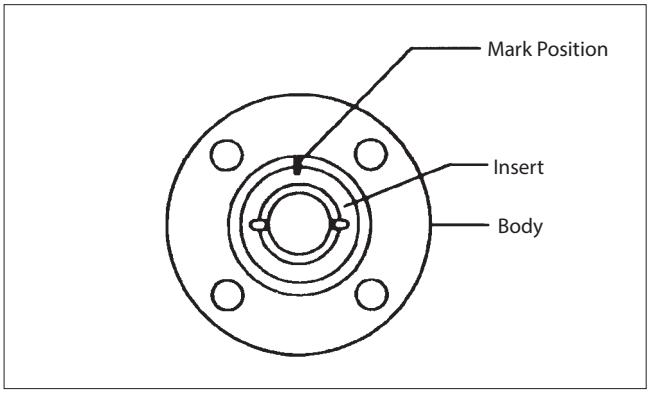

Figure 1.

15. Gently lower the ball (5) into the valve until the inner stem fully engages the slot in the ball.
16. Insert the second seat (6) so that the sealing surface of the seat is towards the ball.
17. Insert the body seal (12) and gently press it into the groove in the body.

18. Using a thread lubricant compatible with the media, screw the insert (2) into the body and tighten with the required torque in (**Table 1**). (Be sure that slot in ball is fully visible.) If a torque wrench is not available, tighten the insert the same number of turns as in Step 3 until the marks line up according to the dimension 'A' shown in (**Table 1**) and illustrated in (**Figure 2**).

Table 1		
Series 6000 Valves		
Valve Size	**Torque**	**A**
3/4 (DN 20)	125 – 150 lb-ft (170 – 203 Nm)	5/16" (7.9 mm)
1 (DN 25)	125 – 150 lb-ft (170 – 203 Nm)	11/32" (8.7 mm)
1-1/2 (DN 40)	170 – 200 lb-ft (231 – 271 Nm)	7/16" (11.11 mm)
Series 5000 Valves		
Valve Size	**Torque**	**A**
1/2 (DN 15)	80 - 100 lb-ft (108 – 136 Nm)	7/32" (5.6 mm)
3/4 (DN 20)	80 - 100 lb-ft (108 – 136 Nm)	1/4" (6.35 mm)
1 (DN 25)	125 - 150 lb-ft (170 – 203 Nm)	5/16" (7.9 mm)
1-1/2 (DN 40)	170 - 200 lb-ft (231 – 271 Nm)	3/8" (9.5 mm)
2 (DN 50)	170 - 200 lb-ft (231 – 271 Nm)	7/16" (11.11 mm)

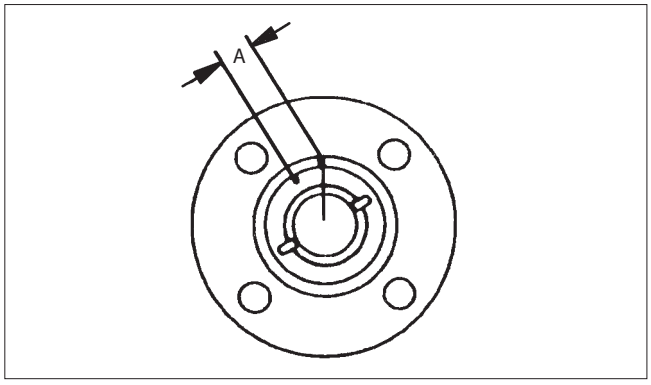

Figure 2.

19. **Assembly of Handle Device to Valve**. Use halocarbon 25-10M to lubricate seals and bearings.
    A. Install bearing (18) over bonnet hub.
    B. Install handle bearing (14) into bonnet bore.
    C. Install bellows seal O-ring (15) into face groove on bonnet.
    D. Install housing seal O-ring (16) into hub groove on bonnet.
    E. Insert tang end of handle stem (4) into valve making sure it fully engages the slot in the inner stem (3).
    F Install the bearing (26) on the end of the handle stem (4).
    G. Install the bellows assembly (7) over the handle stem (4).
    H. Line up the leak off hole in the bellows flange with the leak off hole in the bonnet face.
    I. Secure the bellows assembly (7) to the bonnet face using the bellows screws (21). Torque to 2-10 in-lbs (3 – 14 Nm) for #8-32unc, and 8-11 ft-lbs (11 – 15 Nm) for 1/4-20unc (Refer to JSA-44). Tighten in a cross pattern sequence.
    J. Pressurize the waterway with 5 to 10 psi (.345 to .69 bar) air. Check the bellows flange joints for leaks.
    K. Install housing (9) over bellows assembly. Use force necessary to push housing over O-ring on bonnet, taking care not to damage the O-ring.
    L. Install bearing (18) over housing (9) until it rests squarely on the housing hub.
    M. Install cover (8) over housing (9). Align housing stop with cover rib.
    N. Secure cover to bonnet using cover screws (22), cover nuts (23) and lock washer. Cycle the valve while tightening the fasteners.This will eliminate possible binding of the stem.
    O. Tighten all cover screws to 20 lb-ft (27 Nm).
    P. Install bearing (25) over bellows cap.
    Q. Install gasket (27) over bearing (25).
    R. Screw handle (11) onto housing (9) to 25 lb-ft (34 Nm) torque using a strap wrench.
    S. Screw set screw (28) into handle (11) and tighten.
    T. Cycle the valve several times. Retighten cover screws (22) to 30-40 lb-ft (41 – 54 Nm) for 3/8" screws and 50-60 lb-ft (68 – 81 Nm) for 7/16" screws.

4. REPAIR KITS/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. Send valves to the service center in the half open position.

For further information on spare parts and service or assistance visit our web-site at **www.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 3, the ballooned part number, part name and quantity required.

5. 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		
ITEM	NAME	QTY.
1	Body	1
2	Insert or Cap	1
3	Stem, Inner	1
4	Stem, Handle	1
5	Ball	1
6	Seats	2
7	Bellows Ass'y	1
8	Cover	1
9	Housing	1
11	Handle	1
12	Body Seal	1
13	Stem Bearing	1
14	Bearing, Handle	1
15	Seal, Bellows	1
16	Seal, Housing	1
18	Bearing	2
21	Screw, Bellows	8
22	Screw, Cover	4
23	Nut, Cover	4
25	Bearing	1
26	Bearing	1
27	Gasket	1
28	Screw, Set	1
29	Plug	1
34	Drive Screw	3

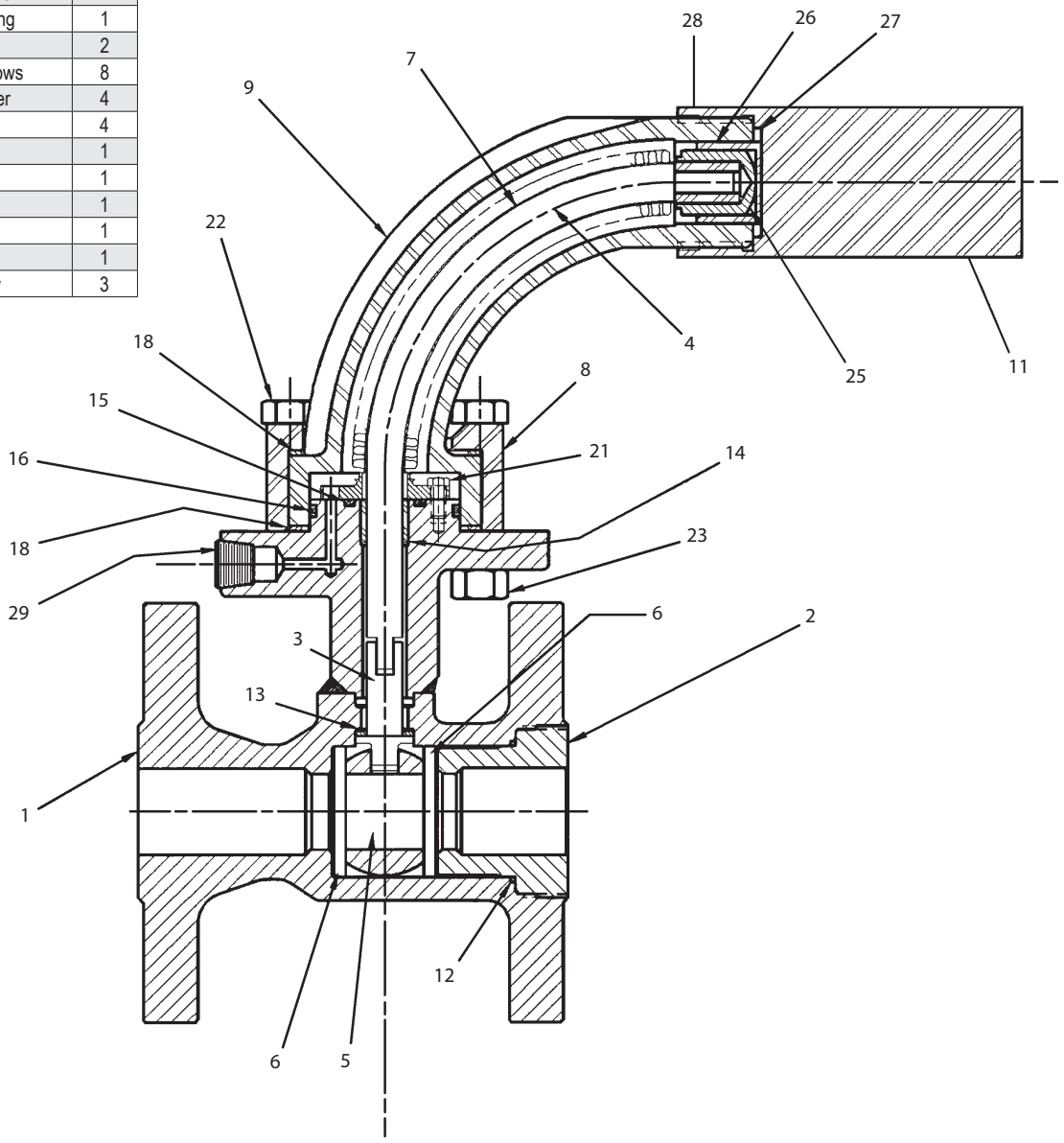

Figure 3.

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