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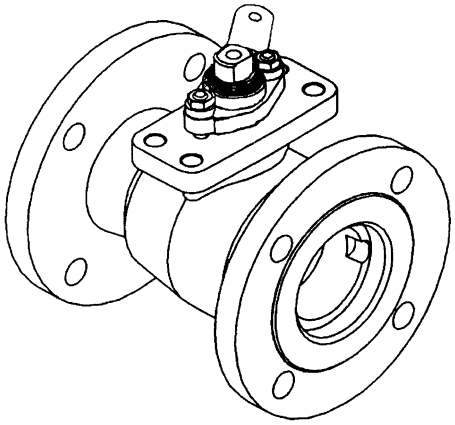

INSTALLATION, MAINTENANCE, AND OPERATING INSTRUCTIONS

DN 80, 100 & 150 (PN10 & PN16) & (PN25 & PN40) STANDARD BORE SERIES 7000 FLANGED BALL VALVES

Read entire instructions carefully before installation or servicing

1 GENERAL

This instruction manual contains important information regarding the installation, operation and maintenance of the Jamesbury® DN 80, 100 & 150 Standard Bore Series 7000 Flanged Ball Valves. Please read these instructions carefully and save them for further reference.

1.1 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:

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

2 INSTALLATION

Refer to the **MAINTENANCE** Section for packing/v-ring set adjustment.

If there is weepage past the packing/v-ring set 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 packing adjustment described in the **MAINTENANCE** Section.

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

IMPORTANT: The valve should be tightened between flanges using appropriate gaskets and fasteners for the service, in compliance with applicable piping codes and standards.

3 MAINTENANCE

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 bonnet stud nuts **(Item 18 in Figure 5)** periodically to compensate for stem seal wear.

Overhaul maintenance consists of replacing seats and seals. A standard service kit consisting of these parts may be obtained through your Metso Automation Distributor.

NOTE: Service kits include thrust bearing (70), secondary stem seal (71), two seats (7), body gasket (65), packing/v-ring set (69), and spring (36).

TABLE 1 – SERVICE KITS*					
Seat Material	Valve Size				
	DN 80 710D/716D 725D/740D	DN 100 710D/716D	DN 100 725D/740D	DN 150 710D/716D	DN 150 725D/740D
PTFE	RKN-174-TTT	RKN-175-TTT	RKN-176-TTT	RKN-196-TTT	RKN-197-TTT
FILLED PTFE	RKN-174-MTT	RKN-175-MTT	RKN-176-MTT	RKN-196-MTT	RKN-197-MTT
PEEK	RKN-174-LGG	RKN-175-LGG	RKN-176-LGG	RKN-196-LGG	RKN-197-LGG
PFEP	RKN-174-FTT	RKN-175-FTT	RKN-176-FTT	RKN-196-FTT	RKN-197-FTT
PFA SEATS & SEALS	RKN-174-BPT	RKN-175-BPT	RKN-176-BPT	RKN-196-BPT	RKN-197-BPT
XTREME®	RKN-174-XTZ	RKN-175-XTZ	RKN-176-XTZ	RKN-196-XTZ	RKN-197-XTZ
* For grounded valves, grounding washers listed below are also needed when ordering. (One per valve)					
	DN 80		**DN 100**		**(DN 150**
PN10/PN16	004-0847-60		004-0847-60		004-0848-60
PN25/PN40	004-0847-60		004-0848-60		004-0849-60

3.1 Disassembly

Tools needed to disassemble Jamesbury valves such as the "insert field wrench" mentioned in step 5 and shown in **(Figure 6),** may be ordered as (kit# 40-044-0154-00) for DN 80 & 100 Series 7000, and (kit# 40-060-9022-00) for DN 150 Series 7000 from your local Metso Automation Distributor.

NOTE: If complete disassembly becomes necessary, replacement of all seats and seals is recommended. Refer to the Service Kit chart **(See Table 1).**

1. Follow the steps in the **WARNING** Section before performing any work on the valve.
2. Open the valve.
3. Remove the handle screw (35), holding the handle to the stem.
4. Remove the handle (31).
5. The insert design requires that the insert be unthreaded in a counterclockwise motion using the following method using the insert field wrench: Assemble the field wrench as follows, **(refer to Figure 6):**
   A. Place driver (A) into the insert slots.
   B. Put the plate (C) on top of the driver (A).
   C. Place the studs (E) through the plate (C) and flange holes. Thread the nuts (F) onto the stud below the flange.
   D. On the top side of the plate (C) put a flat washer (G), die spring (H), flat washer (G), and nut (F). Tighten to slightly compress springs.
6. Place a pipe or rod through the driver (A) and loosen the insert by turning counterclockwise.
7. Remove the tool and lift out the insert.
8. Place the valve in the vertical position with the insert end up.
9. Lift out the body gasket (65), seat (7), and ball (3). Rotate the stem so that the ball is in the closed position for removal. The spring (36), which is between the bottom of the stem (5) and ball (3), may fall out at this time. If the spring does fall out with the ball, remove it from the stem to prevent it from being lost.
10. Carefully remove the bottom seat (7) out of the body, **BEING CAREFUL NOT TO SCRATCH THE BODY SEALING SURFACE BEHIND THE SEAT.**
11. Remove the retaining ring (34), spring (33), and the indicator stop (32).
12. Remove the bonnet stud nuts (18), stop bushing (37), compression plate (9).
13. Press the stem (5) from the top into the valve body and remove it through the insert end of the body.
14. Remove and discard the thrust bearings (70), and secondary stem seal (71), **BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACES IN THE BODY.**
15. Remove the packing/v-ring set (69), **BEING CAREFUL NOT TO SCRATCH ANY SEALING SURFACE INSIDE THE STEM BORE.**
16. If the valve is to be grounded, clean packing bore with crocus cloth or equivalent, to a bare metal surface.

3.2 Assembly

It is advisable to replace seats and seals if complete disassembly and reassembly become necessary. Refer to the Service Kit chart **(Table 1).** A good lubricant compatible with the flow medium **MUST** be applied to the insert threads to prevent galling during assembly. A good lubricant compatible with the flow medium should be applied to all seats, seals, and the ball to facilitate assembly and for initial operation.

1. Clean all valve components.
2. 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 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. Slide one valve seat (7) sideways into the body (1) to below the stem bore, and tilt it into place so that the proper surface **(see Figure 4)** will be adjacent to the ball (3), being careful not to cut or scratch the seat.
6. From the inside, insert the thrust bearing (70), secondary stem seal (71), and the second of two thrust bearings into the stem bore.

7. Insert the stem (5) through the insert end of the body (1), being careful not to scratch the thrust bearing, and press it gently up into the stem bore until resistance is felt from the thrust bearing. Holding the stem in place from the bottom, insert the packing/v-ring set (69) **(See Figure 3 for proper v-ring orientation),** over the stem (5). If valve is to be statically grounded, remove one middle v-ring, replace the header ring and place grounding washer on top.
8. Place compression Plate (9) over studs (14). Place a stop bushing (37) and a bonnet stud nut (18) on each bonnet stud and tighten nuts alternately so that the compression plate (9) remains parallel with the body bonnet. Tighten down the nuts until the packing/v-ring set is fully seated, then tighten the nuts an additional 1/4 turn.
9. 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.
10. Place the valve in a vertical position, insert end up, on a clean surface such as a folded rag or a piece of cardboard. Place the spring (36) in the hole in the bottom of the stem (5). Insert the ball (3) rotating it onto the stem (5) in the closed position, being careful not to dislodge the spring from the stem. If necessary, turn the stem blade to align with the ball slot. Make certain that the stem blade is in the middle of the ball slot, i.e., equal distance from the ends of the slot. Rotate the ball if necessary. **(See Figure 4.)**
11. Place the second seat (7) into the insert (2) with the proper surface adjacent to the ball.
12. Insert the body gasket (65) into the body, and gently press it into the groove.
13. Apply a lubricant compatible with the flowing medium to the insert threads and screw the insert (2) into the body. The tightening of the insert should be done using the insert field wrench. The insert must be tightened the same number of turns as in Step 9, insuring that the marks are no more than 1/8" (3.18 mm) apart, as shown in **(Figure 2).**
14. Place the indicator stop (32) over the stem (5) and down flush with the compression plate (9).

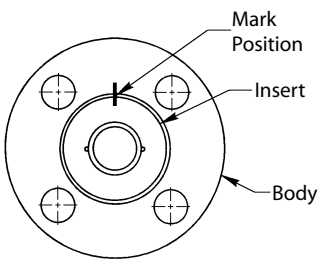

Figure 1

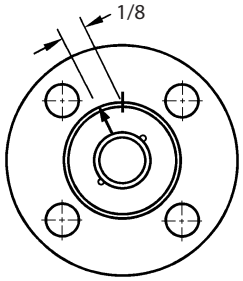

Figure 2

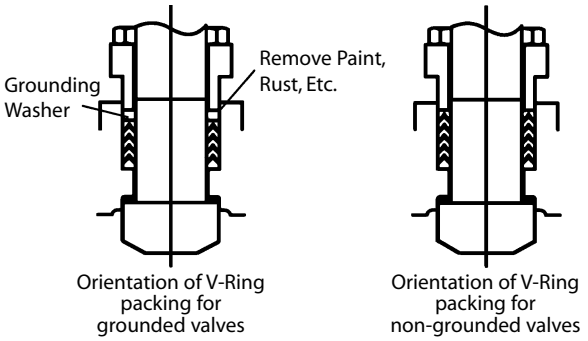

Figure 3

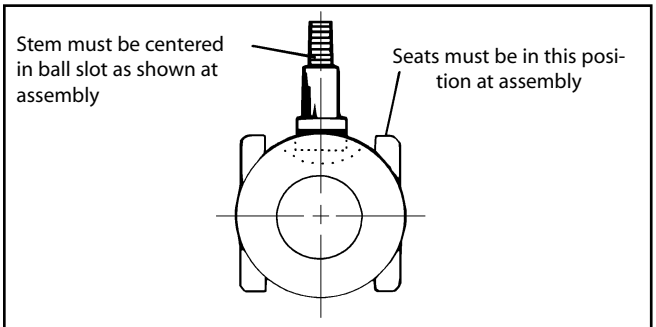

Figure 4

15. Place the spring (33) over the stem (5) on top of the indicator stop (32). Secure the spring and indicator stop by placing the retaining ring (34) over the stem (5) until it is flush with the shoulder on the stem.
16. Place the handle (31) on the stem and fasten with the handle screw (35) securely.
17. Cycle the valve slowly with a gentle back and forth motion to build 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.
18. If the valve is to be grounded, test as follows:
    A. Using an ohmmeter accurate to ±10%, check continuity between top of the stem and body base metal. Also check between the ball and the body base metal. Take care to avoid scratching the ball O.D.
    B. Resistance in either the open, half open, or closed position should not exceed 10 ohms using a source not exceeding 12 volts.

4 ACTUATOR MOUNTING

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. In case of valves and actuators connected with a split no-play (clamped) coupling, tighten the coupling bolts before final tightening of the valve bracket bolts.

5 REPAIR KITS/SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at **www.jamesbury.com**

VALVE PARTS

ITEM	PART NAME	QTY.
1	Body	1
2	Insert	1
3	Ball	1
5	Stem	1
7	Seat	2
9	Compression Plate	1
14	Bonnet Stud	2
18	Bonnet Stud Nut	2
25*	Identification Tag	1
31	Handle	1
32	Indicator Stop	1
33	Spring	1
34	Retaining Ring	1
35	Handle Screw	1
36	Spring	1
37	Stop Bushing	2
65	Body Gasket	1
69	Packing/V-Ring Set	1
70	Thrust Bearing	2
71	Secondary Stem Seal	1

*** Not Shown**

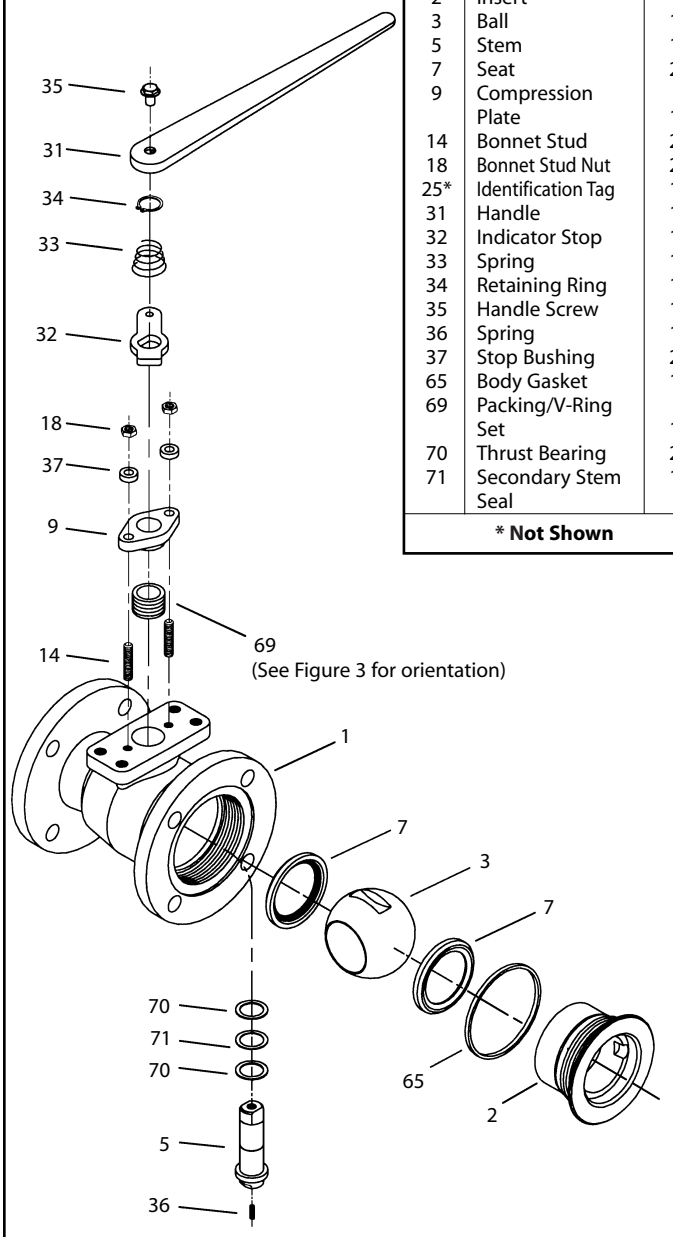

Figure 5

Insert Field Wrench Parts List

DN 80 & 100 = Kit# 40-044-0154-00,

DN 150 = Kit# 40-044-0155-500

ITEM	PART NAME	QTY.
A	Driver	1
C	Plate	1
D	Socket-Head Cap Screw	2
E	Threaded Rod	2
F	Hex Nut	4
G	Flat Washer	4
H	Die Spring	2

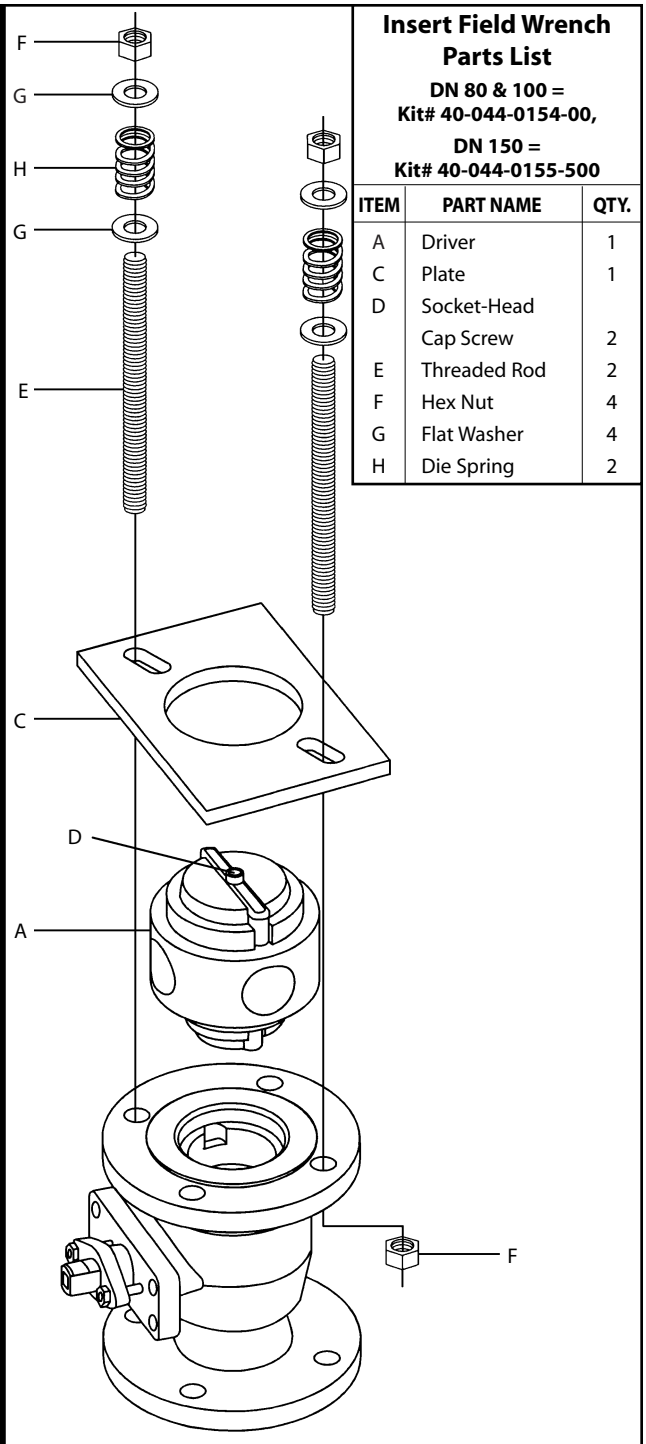

Figure 6

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