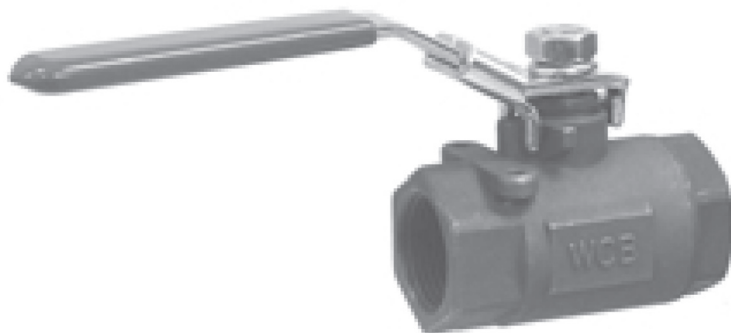


# NELES

## Ball valves series 100

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 Series 100 Ball Valves. Please read these instructions carefully and save them for future 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 DISASSEMBLY, CYCLE THE VALVE AGAIN SEVERAL TIMES.
3. WHEN INSTALLING OR REMOVING PIPING FROM THE VALVE, PLACE A WRENCH ON THE BODY OR THE BODY CAP NEAREST THE END BEING WORKED. MAKE CERTAIN BODY CAP END OF THE VALVE DOES NOT TURN OUT OF THE VALVE BODY. (BODY/ BODY CAP JOINT IS A RIGHT HAND THREAD.)

## 2. INSTALLATION

### 2.1 Screwed End Valves

Screwed end valves have NPT threads (not Dryseal type). To insure a leaktight joint, liberal use of a compatible pipe joint compound is necessary. It is recommended 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.

## 3. MAINTENANCE

Periodically observe the valve to be sure of proper performance. More frequent observation is recommended under extreme operating conditions.

Routine maintenance consists of tightening the stem nut 1/8 turn periodically to compensate for the wear caused by the stem turning against the resilient PTFE seal.

### 3.1 DISASSEMBLY

**Note:** Replacement of all seats and seals is advised whenever the valve is completely disassembled. When prying out soft parts, be sure not to scratch or damage any metal parts.

1. Close the valve. Remove the stem nut (16), shakeproof washer (9), handle (15), and gland nut (18). (See **Figure 1**).
2. Unscrew and remove the body cap (2) and seal (6). Loctite® is applied to the cap (2) at assembly so heat may be required.

3. If the ball (3) and seats (5) do not fall from the body with the ball in the fully closed position, then gently tap the ball (3) out from the end opposite the body cap (2). Be sure to use a soft material that will not damage the ball.
4. Push the stem (4) from the top of the valve into the body (3) and remove it through the body cap (2) end of the body (1).
5. Remove the stem bearing (8) and stem seals (7). The stem seals may have to be pried out. Be careful not to damage the gland nut (18) threads in the body (1).

### 3.2 Assembly

**Note:** Recommended greases are shown in (**Table 1**).

1. Press stem seals (7) into valve body (1).
2. Clamp the valve body (1) securely in a vise with the body cap side facing up.
3. Apply grease to one seat (5) and drop the seat (5) into the valve body (1) with the flat surface on the bottom.
4. Apply grease to the stem (4) and insert the stem bearing (8) over the stem (4).
5. Insert the stem (4) through the open end of the body (1) up into the stem hole.
6. Align the stem (4) blade inside the body (1) with the slot in the ball (3). Grease and insert the ball (3).
7. Grease and insert the second seat (5) into the body (1) so that the sealing surface of the seat is towards the ball (3).
8. Insert the body seal (6) into the body (1).
9. Apply *LOCTITE 680* or equivalent, one bead 360° around the body cap (2) covering a minimum of two threads.  
**Note:** Body (1) and body cap (2) threads must be prepared according to *LOCTITE* instructions before assembly.
10. Insert the body cap (2), screw it down and tighten to the torque specified in (**Table 2**).
11. Grease and insert the gland nut (18). Tighten until snug, plus and additional 1/4 - 1/2 turn.
12. Place the handle (15), shakeproof washer (9), and stem nut (16) over the stem (4). Tighten the stem nut (16) until snug.
13. Cycle the valve slowly twice to ensure proper assembly.

Table 1 – Recommended Grease	
Stem, Ball, Seat	*Chevron Duralith EP2
Gland Nut	*FEL-PRO 51168 Food Grade Anti-Seize Lubricant

\* Or equivalent

Table 2 – Body Cap Tightening Torque Requirement – ft-lbs (Nm)		
Valve Size	152M (WCB)	156M (CF8M)
1/4" (DN 6)	21.7 (29.4)	26.0 (35.2)
3/8" (DN 10)	21.7 (29.4)	26.0 (35.2)
1/2" (DN 15)	26.0 (35.2)	30.4 (41.2)
3/4" (DN 20)	34.7 (47.0)	39.0 (52.9)
1" (DN 25)	43.4 (58.8)	47.7 (64.7)
1-1/4" (DN 30)	56.4 (76.5)	60.7 (82.3)
1-1/2" (DN 40)	78.1 (105.9)	95.4 (129.3)
2" (DN 50)	95.4 (129.3)	104.1 (141.1)

#### 4. REPAIR KITS/SPARE PARTS

For further information on spare parts and service or assistance visit our web-site at [www.neles.com](http://www.neles.com).

Table 3 – Repair Kits			
Valve Size	Repair Kit	Valve Size	Repair Kit
1/4" & 3/8" 15M (DN 6 & 10)	RKN-250	1-1/4" 15M (DN 30)	RKN-254
1/2" 15M (DN 15)	RKN-251	1-1/2" 15M (DN 40)	RKN-255
3/4" 15M (DN 20)	RKN-252	2" 15M (DN 50)	RKN-256
1" 15M (DN 25)	RKN-253	–	–

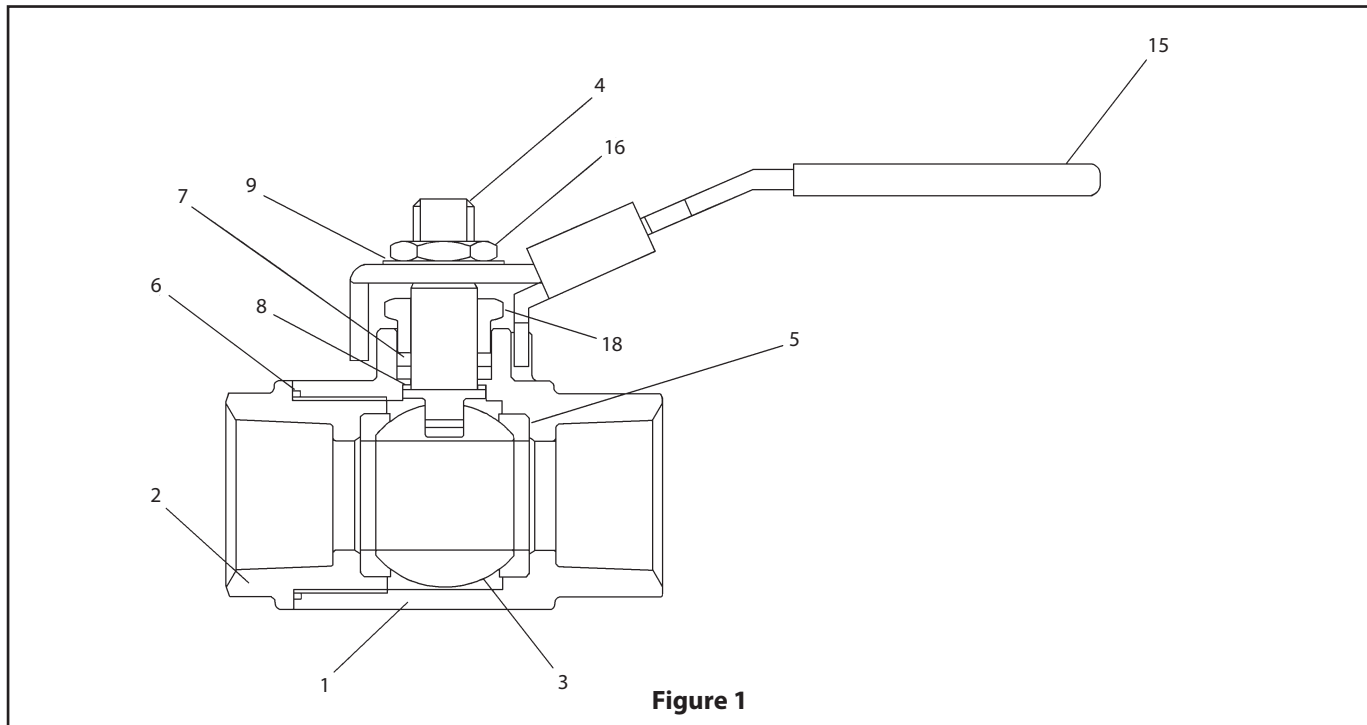


TABLE 4 – BILL OF MATERIALS AND PARTS LIST			
Part Number	Part Name	Body Material	
		Carbon Steel 152M	316 Stainless Steel 156M
1	Body	Carbon Steel	316 Stainless Steel
2	Body Cap	Carbon Steel	316 Stainless Steel
3	Ball	316 Stainless Steel	
4	Stem	316 Stainless Steel	
5	Seat	Reinforced PTFE	
6	Body Seal	Reinforced PTFE	
7	Stem Seal	Reinforced PTFE	
8	Stem Bearing	Reinforced PTFE	
9	Shakeproof Washer	Carbon Steel	316 Stainless Steel
15	Handle	Carbon Steel	316 Stainless Steel
16	Stem Nut	Carbon Steel	316 Stainless Steel
18	Gland Nut	Carbon Steel	316 Stainless Steel

## 5. ACCESSORIES

### 5.1 Stem Extension

This section contains important information regarding the installation, operation and troubleshooting of the Jamesbury Series 100 Ball Valve Stem Extensions. Please read these instructions carefully.

#### 5.2 Warning

TO PREVENT INJURY, DO NOT ATTEMPT TO MOUNT A STEM EXTENSION TO A PRESSURIZED VALVE.

### 5.4 Description

Jamesbury Stem Extensions are designed to manually actuate valves when valve handle accessibility is difficult. These stem extensions are available in 4" (102 mm) lengths as standard, to accommodate varying service conditions.

### 5.5 Installation

#### Disassembly

1. Close the valve by rotating the handle clockwise.
2. Remove the upper stem nut, lock washer, and handle. Save these parts for assembly onto the stem extension.

#### Assembly

1. Place the indicator stop plate (2) onto the stem, making sure the bent tab is in the same orientation that the handle was.
2. Screw the extension shaft (1) onto the stem until it bottoms on the stem. If the drilled and tapped holes for the set screws do not line up with the flats of the stem, rotate stem and back off until these holes are aligned with the flats.

3. Apply *LOCTITE 272* or equivalent on the socket set screw threads (4). Then screw them into the threaded holes at the bottom of the extension until they are tight.
4. Place the weather seal (3) over the extension shaft (1) and slide it down half way.
5. Next, place the handle, lock washer, and upper stem nut onto the top of the extension shaft. Tighten the upper stem nut.

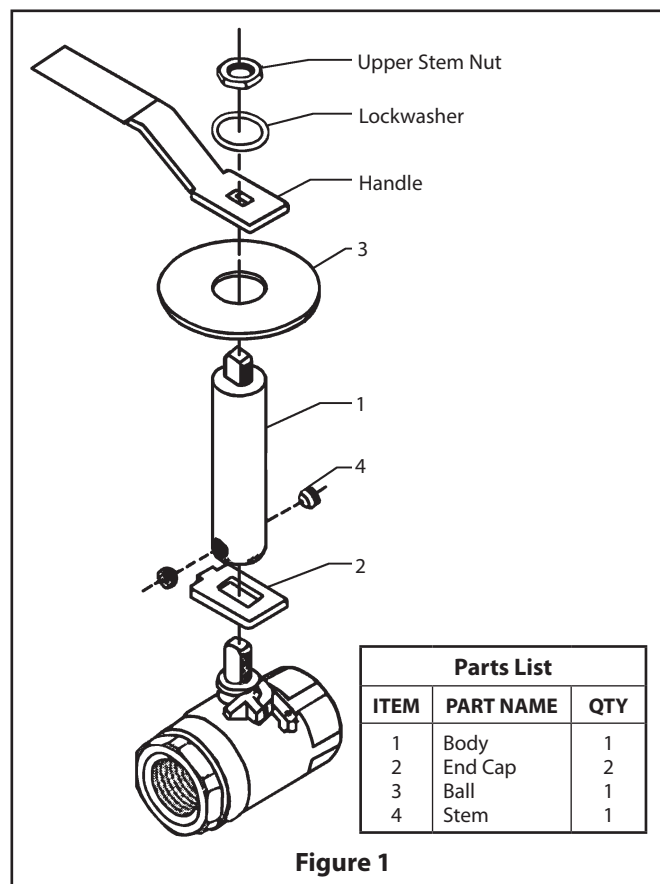


Figure 1

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