

## **DISASSEMBLY & SERVICE INSTRUCTIONS**

### **A) To disassemble operating parts without removing hydrant from the ground:**

1. Open hydrant valve fully with the VALVE HANDLE (03).
2. Remove the SOCKET HEAD BOLT (01) with 5mm hex wrench.
3. Remove the VALVE HANDLE (03) & replace the SOCKET HEAD BOLT (01) to avoid misplacement.
4. Loosen the hex PACKING NUT (04) - no need to remove it.
5. Using a pipe wrench, remove the DISCHARGE HEAD (10). The hydrant RISER PIPE (13) should be held with a pipe wrench during this operation to prevent loosening the hydrant in the ground.
6. Gently slide the SERVICE WRENCH down inside hydrant body. (The wrench will not engage if the valve is not fully open, refer to step 1.)
7. Rotate the wrench slowly until the wrench teeth drop into the slots on the bronze VALVE BODY (24E).
8. Turn the wrench counter-clockwise (approximately 10 turns) to free the valve mechanism (use a pipe wrench to hold the RISER PIPE (13) to prevent unthreading of the hydrant at the bottom).
9. Once the valve mechanism is free, remove the SERVICE WRENCH.
10. Remove the entire valve assembly by grasping the OPERATING SHAFT (09) and lifting the assembly out of the hydrant.

### **B) Inspection of Operating Mechanism:**

Visually inspect all parts:

1. Ensure that the bronze VALVE BODY (24E) rotates freely over the full range of the stainless steel VALVE SCREW (19) and that the seating surface is free of nicks, burrs, or other signs of wear.
2. Ensure that all holes are free of foreign material.
3. Inspect the O-ring (23E) on the bronze VALVE BODY (replacement is normally recommended).
4. Inspect the stainless steel VALVE DISC (20) and the VALVE BODY (24E) - there should be no nicks, burrs, or signs of wear on seating surfaces.

### **C) Disassembly of Operating Mechanism (most easily done in shop):**

1. Insert the SHAFT EXTENSION (12) in a vise and remove the stainless steel DISC RETAINER NUT (21), RETAINER PIN (26) and VALVE DISC (20). NOTE: Newer models (1996+) have a LEFT-HAND thread on the DISK RETAINER NUT (21). Inspect the O-ring (25) - replacement is recommended.
2. Unscrew the bronze VALVE BODY (24E) (handle carefully to avoid damage to the seating surface).

### **D) Servicing Self Draining External Valve(s):**

1. Remove the external DRAIN VALVE ASSEMBLY (37E) from the stainless steel VALVE HOUSING (14Ex) with a 1" wrench (older models use a 5/8" wrench).
2. Tip the bronze DRAIN VALVE BODY (27E) upside down in palm of hand and the DRAIN VALVE BALL (17E) and DRAIN VALVE SPRING (18E) will fall out. The BALL SEAL O-RING (29E) should remain in place.
3. Inspect the drain valve components for breakage, wear or debris.

## RE-ASSEMBLY INSTRUCTIONS

1. Replace the stainless steel DRAIN VALVE SPRINGS (18E), the DRAIN VALVE BALL (17E) and the DRAIN BALL SEAL O-RING (29E) in the DRAIN VALVE BODY (27E). Ensure that the DRAIN BODY SEAL (28E) is properly in place in the VALVE HOUSING (14Ex). Tighten the DRAIN VALVE ASSEMBLY (37E) securely into the VALVE HOUSING (14Ex) with a 1" wrench (older models use a 5/8" wrench. DO NOT OVER-TIGHTEN.
2. Screw the bronze VALVE BODY (24E) assembly back onto the stainless steel VALVE SCREW (19).
3. Replace the O-RING (23E) on the bronze VALVE BODY (24E). Lubricate the new O-RING (23E), using a proper O-ring lubricant (glycerin is readily available and is therefore recommended). Carefully stretch the new O-RING (23E) over the bronze VALVE BODY (24E).
4. Install a new O-RING (25) at end of the stainless steel VALVE SCREW (19) (lubricate first).
5. Lubricate the stainless steel VALVE DISC (20) and push over O-RING (25).
6. Replace the DISC RETAINER NUT (21) and tighten. (Note that the DISC RETAINER NUT has a left-hand thread and will tighten against a shoulder and the VALVE DISC (20) should rotate freely.) Install a new RETAINER PIN (26) in the end of the VALVE SCREW (19).
7. Visually inspect inside the hydrant RISER PIPE (13) and VALVE HOUSING (14Ex) and remove any debris.
8. Ensure that there is ample lubrication on the O-RING (23E) and that the bronze VALVE BODY (24E) is on the upper part of the VALVE SCREW (19).
9. Lower the valve assembly carefully down into hydrant body and screw back in with the hydrant wrench. Using a torque wrench, tighten the valve body to the correct torque:

<b>1½" Hydrants (E15 series):</b>	<b>120-130 ft-lbs (163-175 N-m)</b>
<b>2" Hydrants (E20 series):</b>	<b>140-150 ft-lbs (190-200 N-m)</b>
10. Replace the DISCHARGE HEAD (10) (use thread sealing compound) and tighten securely.
11. Tighten the bronze PACKING NUT (04). NOTE: There should be no leakage of water around the shaft when the hydrant is in use.
12. Replace the VALVE HANDLE (03), SOCKET HEAD BOLT (01) and FLAT WASHER (02).
13. Close the valve by turning the VALVE HANDLE (03), clockwise.