



## ASSEMBLY & DISASSEMBLY OF A ONE-PIECE CANISTER GUARD VALVE

### 1. PURPOSE

To define the process to be followed for assembly and disassembly of a One-Piece Kelly valves.

### 2. APPLICATION

One-Piece Canister Guard valve assembly.

### 3. GENERAL PROCEDURES

#### 3.1 Disassembly

- a) First, the valve must be cycled a few times to release any pressure on the canister.
- b) The canister retaining assembly must then be removed. Make sure the canister is in the open position prior to beginning the removal procedures for the canister retaining assembly. The canister and retaining assembly are accessible through the box connection of the valve. To remove the canister retaining assembly, these steps must be followed:
  - c) Place the valve in a vertical position with the box connection facing up. Ensure that the valve cannot topple over causing property damage or injury.
  - d) Remove the spiral retainer ring using two screwdrivers or one screwdriver and one pair of pliers.
  - e) Lift out the support ring. If the support ring is stuck due to mud caking or buildup, tap down lightly to loosen.
  - f) Using a screwdriver, pry locking segments (4 in all) out of the body groove. One of the short locking segments must be removed first.
  - g) Once the retaining assembly has been removed, the canister is ready to be removed from the valve. To remove the canister from the valve, these steps must be followed:
    - h) Place the valve on a flat surface in a vertical position with the box connection facing down. The valve should rest on a piece of wood or rubber so that the canister will not



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be damaged upon removal. Ensure that the valve cannot topple over causing property damage or injury.

- i) Rotate the canister to a closed position.
- j) Use a long stick-like object with a soft end (wooden dowel, hammer handle, broom handle, etc.) to push the canister from the valve. The canister must be pushed out through the box connection end from which the retaining assembly was removed.
- k) With the canister removed, the operating stem assembly (ies) can be removed. The stem assembly consists of the stem, stem O-ring, and two thrust washers with a thrust bearing between them. It is imperative that all these parts are retrieved from the valve and are accounted-for. To remove the operating stem assembly, this step must be followed:
  - l) Push the stem(s) toward the inside diameter of the valve body. Remove stem (s) from body.

### 3.2 Assembly Instructions

- a) Check I.D. for rust, oxidation, and debris. If found, please remove.
- b) Gather all components necessary to assemble the valve. A complete list of parts can be found online at [www.mmvalve.com](http://www.mmvalve.com). Go to the "Documentation Page", enter the valve serial number and a complete parts list will be available.
  - i. Note: Once all necessary components to assemble the valve has been compiled, the following steps must be followed:
- c) Inspect and lubricate all components, ensuring to replace any worn or damaged component(s). All O-rings should be replaced regardless of wear or damage. While replacing O-rings, visually ensure that none of the removed parts or replacement parts are damaged or defective.
- d) Place the valve in a horizontal position with the box connection upward. Ensure that the valve cannot topple over causing property damage or injury.



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Page:	Page 3 of 3

## **ASSEMBLY & DISASSEMBLY OF A ONE-PIECE CANISTER GUARD VALVE**

- e) Add the thrust bearing assembly to the operating stem(s) by: (1) placing one of the thrust washers on the stem; (2) placing the thrust bearing on the stem; and (3) placing the second thrust washer on the stem.
- f) Add the stem O-rings and backup O-Ring to the operating stem(s). Make sure the backup O-Ring is installed closest to outside of the valve and closest to the hex on the operating stem.
- g) Place the stem(s) in the stem hole(s) located in the body. Position the stem(s) to the closed position. This is established via alignment of the stem indicator with the closed position mark on the body.
- h) Insert the complete canister into the valve body aligning the canister's stem link with the stem in the body. Make sure that the canister is in the closed position. Note: Canisters with dual stem-links have a right and left side. The canister is marked on the cage leg with an "R" (older versions have "M&M") on the cage's right side and the left side is marked with an "L" (older versions have NO MARKS). The right side of the canister is to be aligned with and should engage the stem for valves having only one operating stem. This will assure proper rotational direction of stem positions. In the case of dual operating stems, the stems and body will also have right and left designations, and the canister should be inserted accordingly.
- i) Place the locking segments (4) into the locking segment groove. Place the longer segments in first, followed by the shorter segments.
- j) Place the support ring inside of the locking segments.
- k) Install the spiral retainer ring using one screwdriver.