

DISASSEMBLY OF A ONE-PIECE VALVE

First, the valve must be cycled a few times to release any pressure on the canister.

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:

- 1. 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.**
- 2. Remove the spiral retainer ring using two screwdrivers or one screwdriver and one pair of pliers.**
- 3. Lift out the support ring. If the support ring is stuck due to mud caking or buildup, tap down lightly to loosen.**
- 4. Using a screwdriver, pry locking segments (4 in all) out of the body groove. One of the short locking segments must be removed first.**

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:

- 1. Place the valve on a flat surface in a vertical position with the pin connection facing up. The valve should rest on a piece of wood or rubber so that the canister will not be damaged upon removal. Ensure that the valve cannot topple over causing property damage or injury.**
- 2. Rotate the canister to a closed position.**
- 3. 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.**

With the canister removed, the operating stem assembly(ies) can be removed. The stem assembly consists of the stem, stem o'rings, 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:

- 1. Push the stem(s) toward the inside diameter of the valve body.**

After cleaning, inspecting and replacing any worn parts, the valve can be reassembled.

ASSEMBLY OF A ONE-PIECE VALVE

First, gather all of the components necessary to assemble the valve. To make sure all of the proper parts for assembly have been acquired, check the parts list for the specific valve type being assembled. To do this, go to www.mmvalve.com and enter the serial number of the valve being assembled into the product search feature. By doing this you should be provided with an option to view the parts list for that valve. The following is a general list of all of the components needed:

1. One-Piece Valve Body
2. Complete Canister
3. Operating Stem(s)
4. Thrust Bearing(s)
5. Thrust Washers
6. Locking Segments
7. Support Ring
8. Spiral Retainer Ring
9. Upper Seat O'Ring
10. Upper Seat Back-Up Ring
11. Operating Stem O'Ring(s)
12. Operating Stem Back-Up Ring(s)
13. Hex Wrench

Once all of the components necessary to assemble the valve have been compiled, the following steps must be followed:

1. 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. In the course of replacing o'rings, visually ensure that none of the removed parts or replacement parts are damaged or defective.
2. Place the valve in a vertical position with the box connection upward. Ensure that the valve cannot topple over causing property damage or injury.
3. 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.
4. Add the stem o'rings to the operating stem(s).
5. Replace 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.
6. 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 canister leg with an "R" (older versions have "M&M") on the canister'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.

- 7. Place the locking segments (4) into the locking segment grove . Place the longer segments in first, followed by the shorter segments.**
- 8. Place the support ring inside of the locking segments.**
- 9. Install the spiral retainer ring using one screwdriver.**

The valve is now ready to be pressure tested.

MAINTENANCE

M&M Canister Guard™ Valves are designed to require minimal maintenance. Like any tool joint, the connections should be protected and handled as per common industry practices. The most important exercise in maintenance of the valves is to operate frequently even if in storage. Secondly, when being stored after use, even for short durations, it is best to rinse the valve externally with water, flush clean internally with water, blow out any remaining water with air, and store in the closed position. Thirdly, the operating wrench should be kept for its intended purpose and replaced if damaged. Be sure the wrench is inserted into the operating stem's recess to its full depth. This will prevent damage to the wrench and stem. The valve should be disassembled and inspected approximately every nine to twelve months. Even if there is no detectable damage, all seals should be replaced during assembly.