



One Piece Low Torque Kelly Valve

Preventive Maintenance Service Video
Disassembly and Assembly Procedures

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**Disassembly and Assembly Procedures for
Global Manufacturing, Inc. One Piece Low Torque Kelly Valves**

SAFETY CONSIDERATIONS

- Safety glasses should be worn along with other protective clothing as required.
- Proper tools and restraining devices (vises, clamps, etc.) should be used to secure the valve in a safe manner.
- Valve maintenance should be performed in a safe and suitable work area as designated by your supervisor.
- Personnel performing these operations should be familiar with Global one piece low torque kelly valves and their uses.
- If unsure of any part of the operation, check with the valve manufacturer before proceeding.

These instructions are intended for disassembly and assembly of Global Manufacturing, Inc. one piece low torque kelly valves only.

These written procedures are to be used in conjunction with Global Manufacturing, Inc.'s One Piece Low Torque Kelly Valve Preventive Maintenance Service Video.

**Disassembly and Assembly Procedures for
Global Manufacturing, Inc. One Piece Low Torque Kelly Valves**

VALVE DISASSEMBLY

FIGURE 1

1. Remove the valve from the drillstring. Clean the outside and inside in preparation for disassembly.
2. Ensure that the valve is in the closed position before beginning disassembly.

FIGURE 2

3. Remove the spiral wound retainer ring and the solid retainer ring through the box end of the valve.
4. Slide the four segments of the split ring toward the valve bore and remove.
5. Remove the spacer and upper seat.
6. Remove the ball and body o-ring.
7. Rotate the valve stem 45° toward the open position and remove from body.
8. Remove the stop ring, lower seat, spring insert, and nested spring from the body.
9. Remove all seals and o-rings.
10. Inspect the o-ring and seal ring grooves on the seat for burrs or scratches.
11. Inspect all surfaces on the ball and stem to ensure that there are no scratches or excessive wear.
12. Inspect the valve bore, seat bore, o-ring groove, and stem bore, to ensure that there are no internal scratches or excessive wear.
13. Inspect the box and pin threaded connections for excessive wear and damage.

VALVE ASSEMBLY

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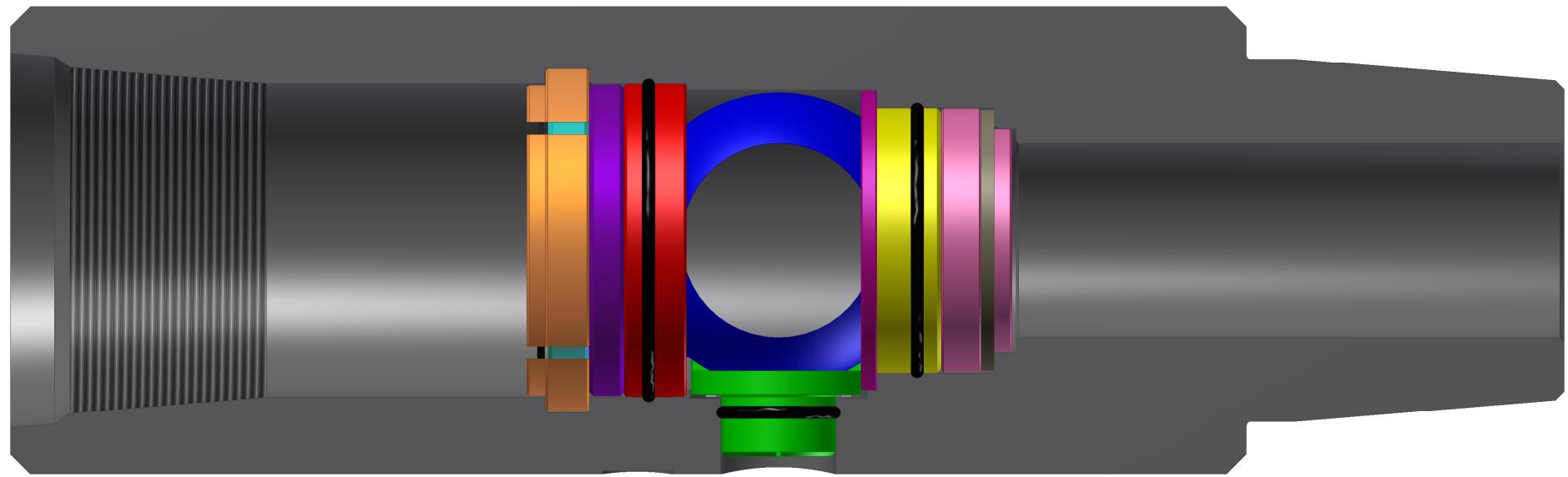


Figure 1

**Disassembly and Assembly Procedures for
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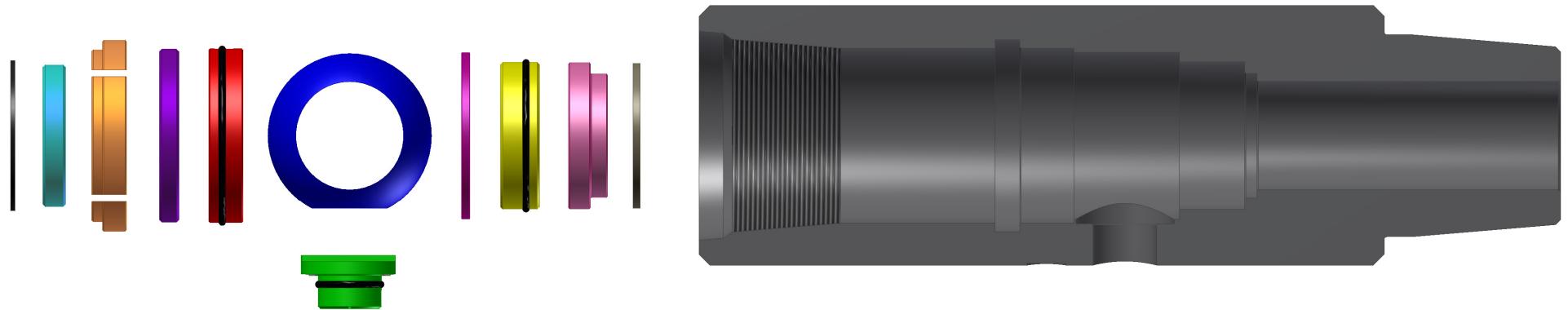


Figure 2

Disassembly and Assembly Procedures for Global Manufacturing, Inc. One Piece Low Torque Kelly Valves

1. Replace all seals, o-rings, and any worn or damaged parts (ball, seats, valve body, etc.).
2. As necessary, use emery cloth to remove any sharp edges from the operating stem hole.

FIGURE 3

3. Apply a high grade lithium based grease to the inside bore of the valve. Install nested spring on the shoulder inside the body. The spring should slide freely into bore.
4. Install spring insert into the body against the nested spring.
5. Apply grease to the lower seat, o-ring, and seal ring. Install the o-ring and Teflon seal ring on the seat.
6. Gently place the lower seat in the body (Teflon seal side out) and tap into place with a rubber mallet using caution not to damage the Teflon o-ring.
7. Install the stop ring on the shoulder inside the body. The stop ring should slide freely into the bore.

FIGURE 4

8. Apply grease to the operating stem, o-ring, and the Teflon anti-friction ring. Install the o-ring and the Teflon anti-friction ring on the stem.
9. Install the stem using caution to properly orient cam flats to allow the valve to fully open and close.

FIGURE 5

10. Note the proper orientation of the valve stem in the closed position.

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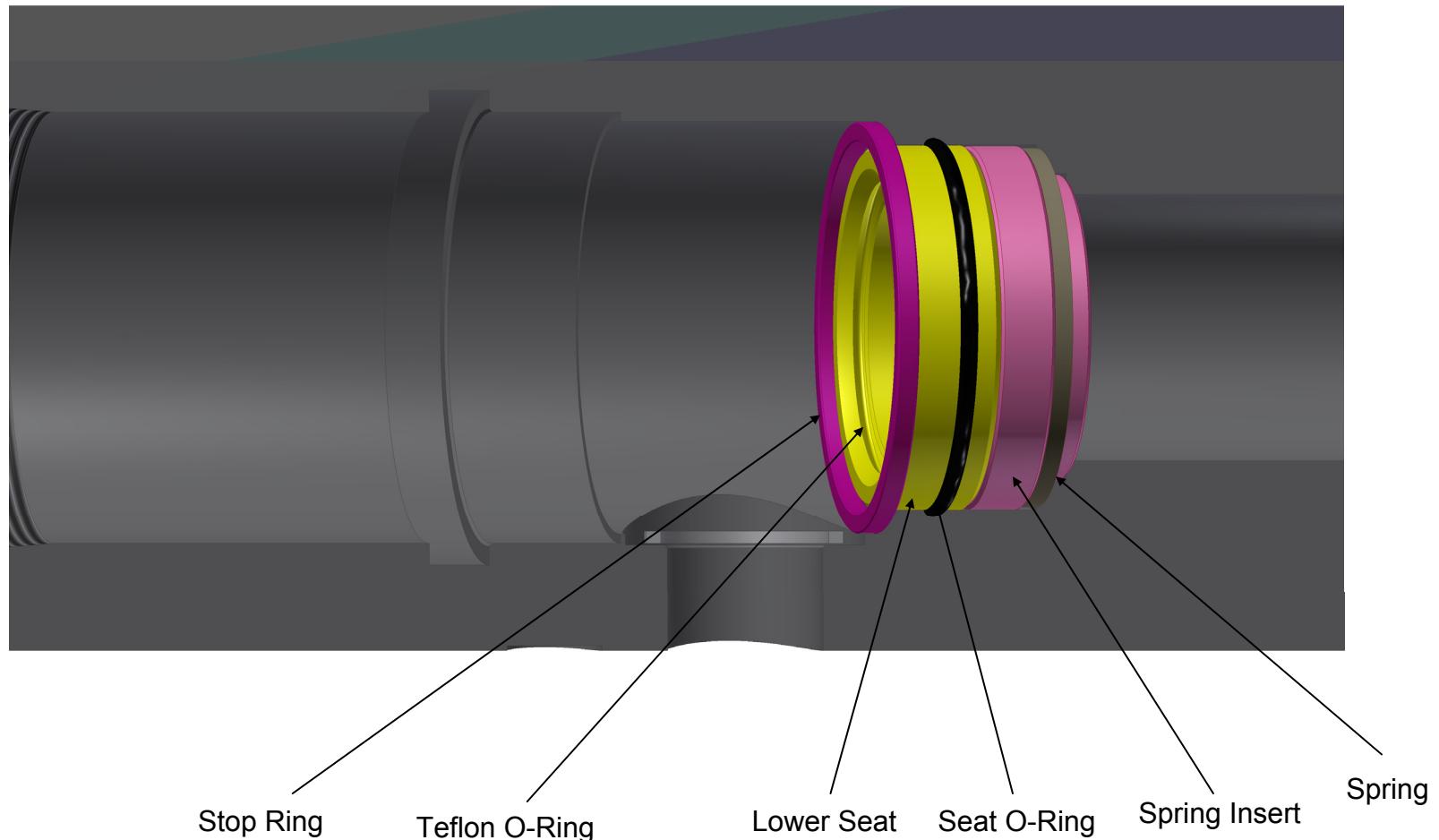


Figure 3

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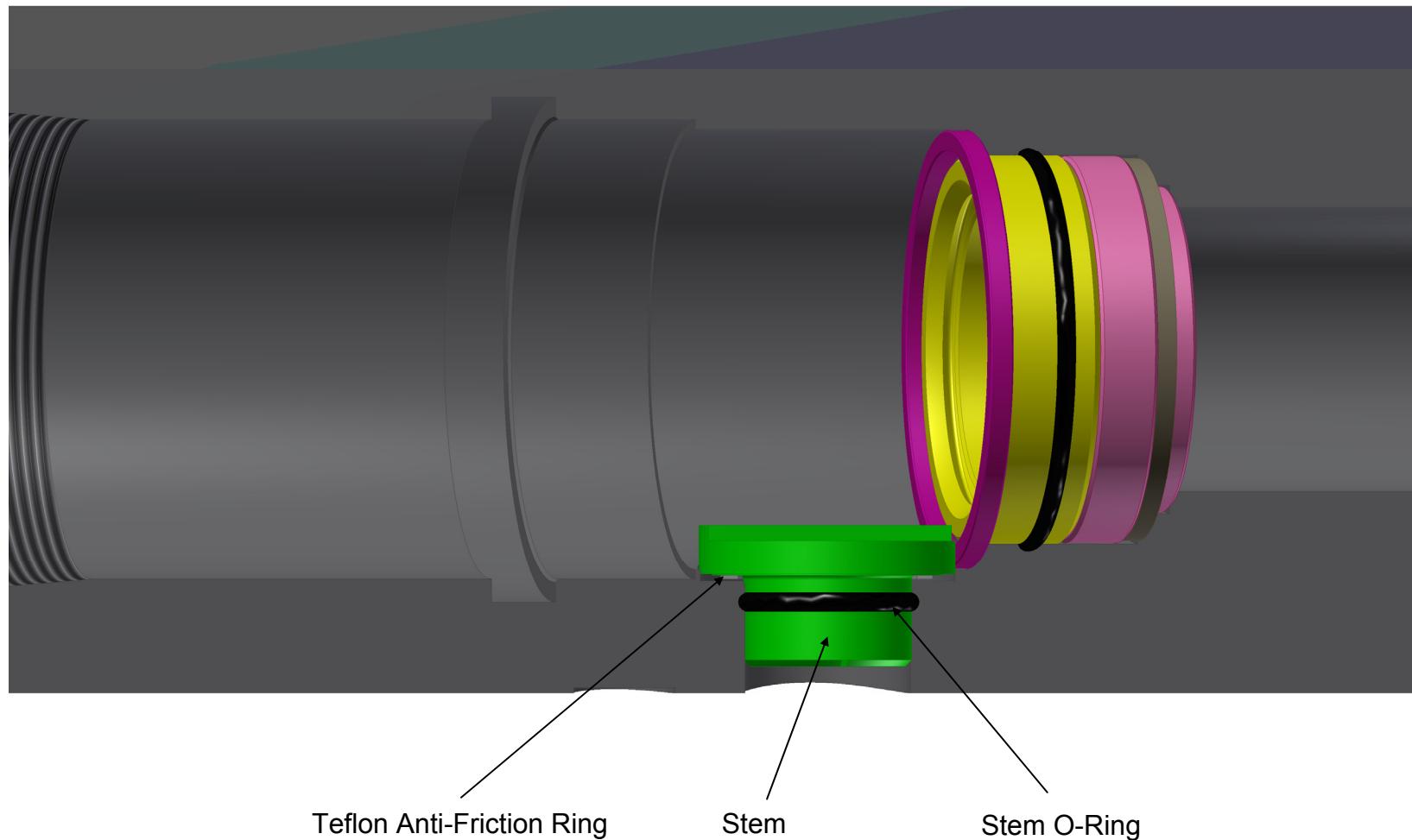


Figure 4

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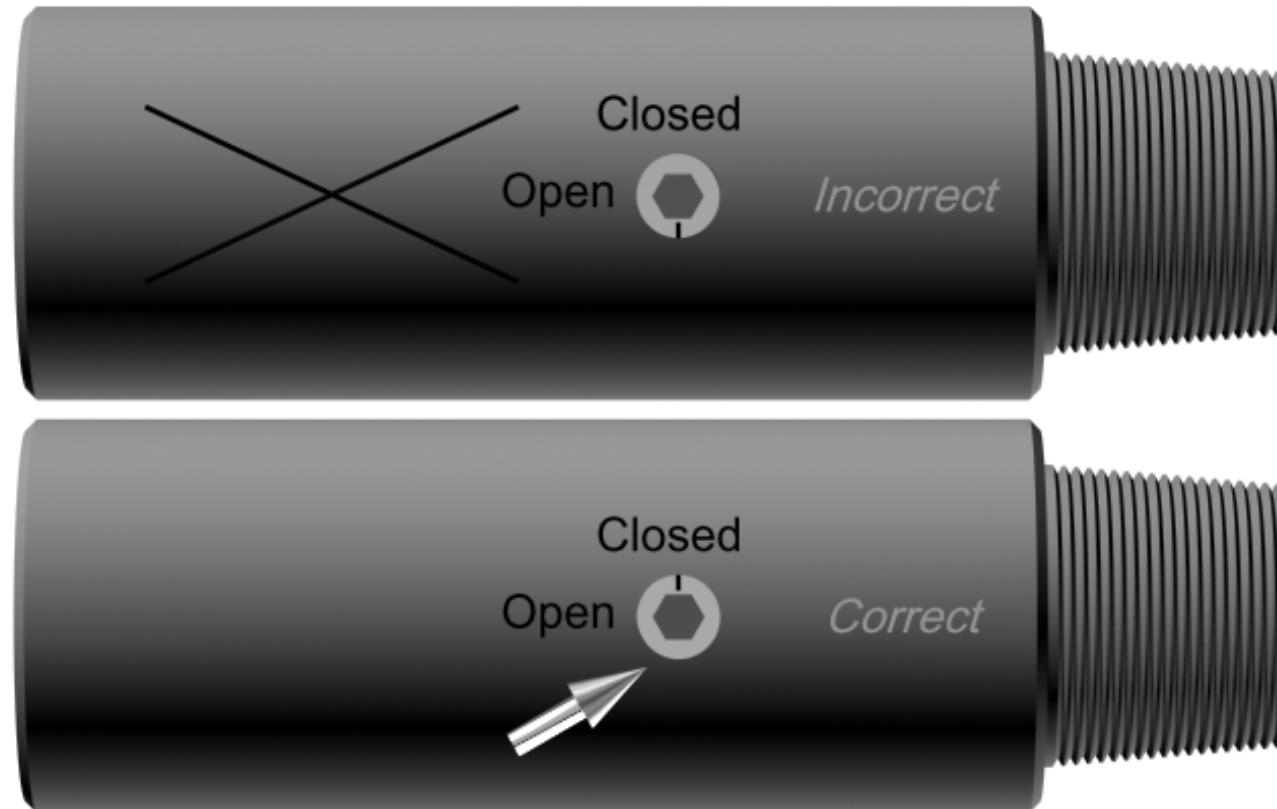


Figure 5

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FIGURE 6

11. Install the body o-ring (with back up rings as required).
12. Apply grease to the ball. Insert until resting on the seat with the operating stem key in the ball groove.
13. Apply grease to the upper seat and seal ring. Install the Teflon seal ring on the seat.
14. Gently place upper seat in the body (Teflon seal side in) and tap into place with a rubber mallet using caution not to damage Teflon o-ring.

FIGURE 7

15. Install the spacer ring. Open the valve and use a pulling tool to pull the spacer ring to the bottom of the split ring groove.
16. Install the split rings into the groove.

FIGURE 8

17. Release the pulling tool. Install the retainer ring into the bore of the split ring.
18. Install the spiral retainer ring.
19. Check for smooth operation of the valve by opening and closing the valve with the operating stem.

FIGURE 9

20. Fully open the valve and ensure that there is no offset between the bore and the open ball.
21. Test the valve to manufacturer's specifications to ensure no leakage.
22. Store the valve in the full open position until installed in the drillstring.

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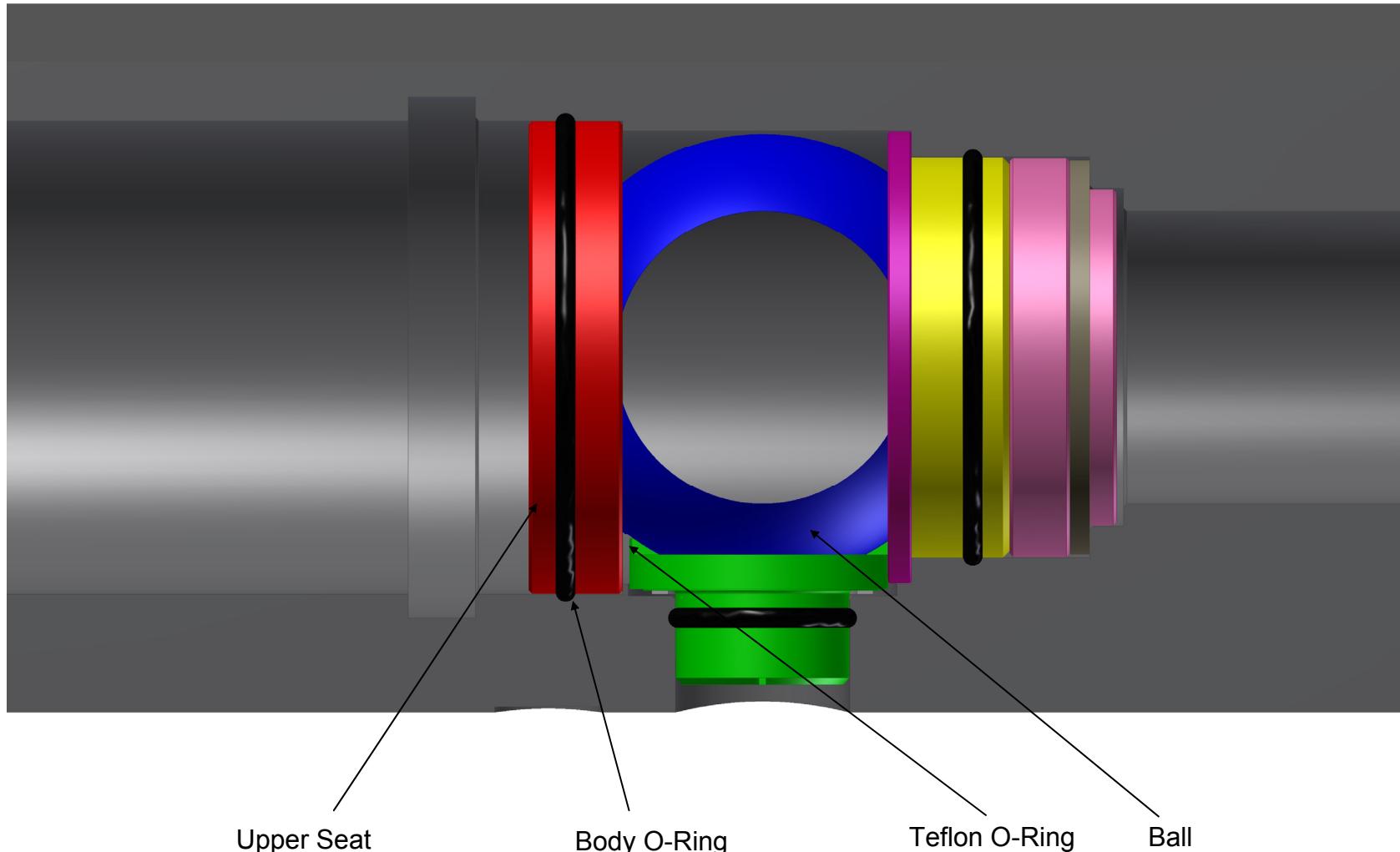


Figure 6

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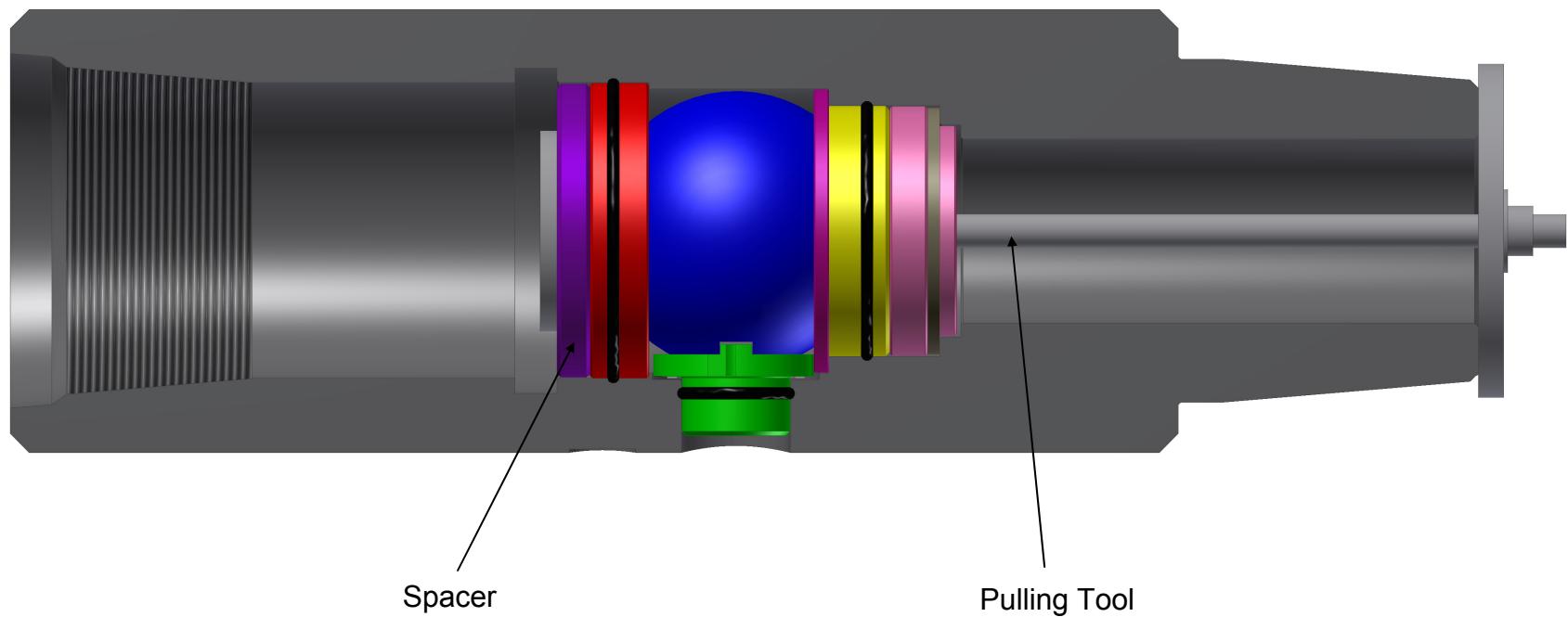


Figure 7

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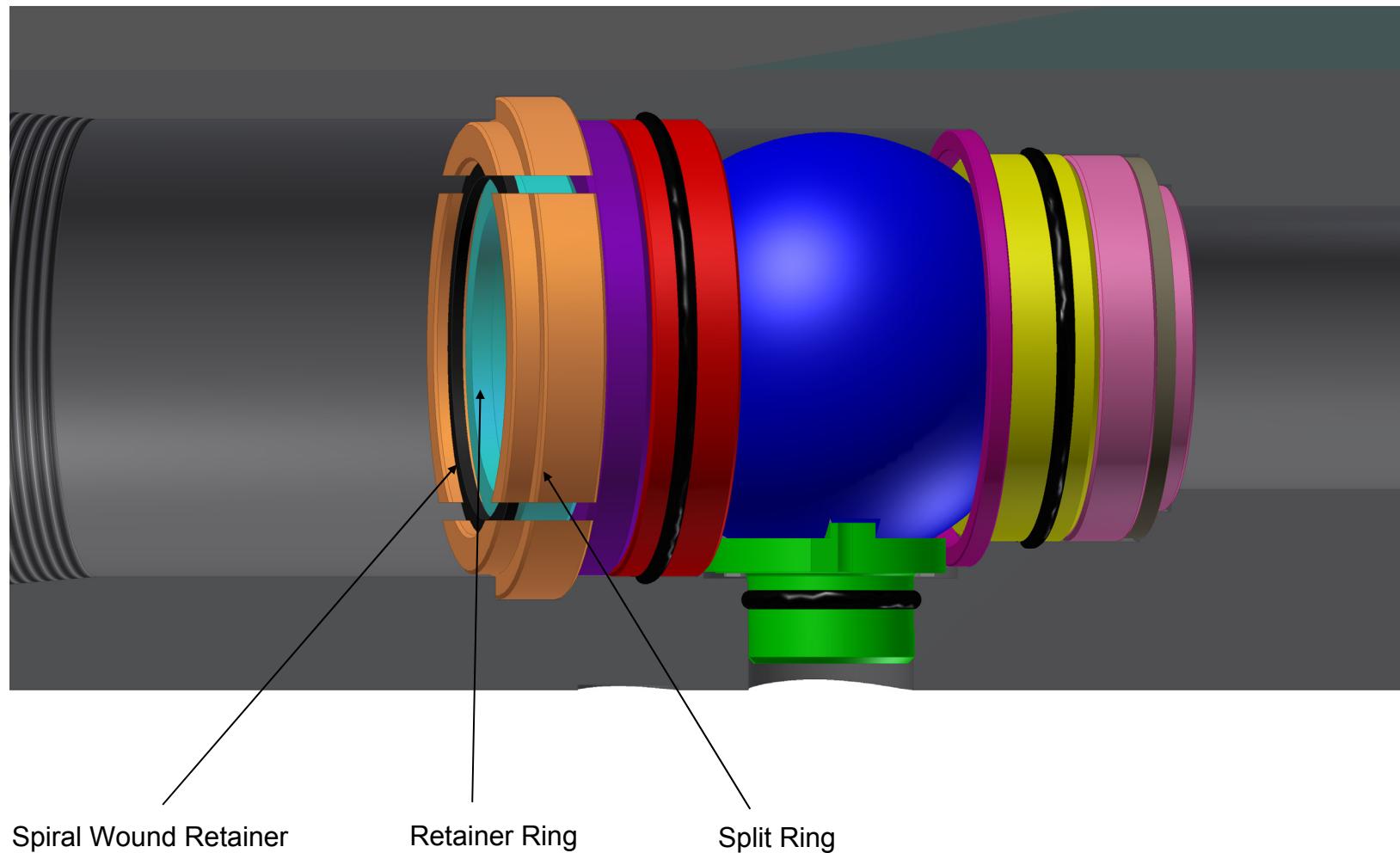


Figure 8

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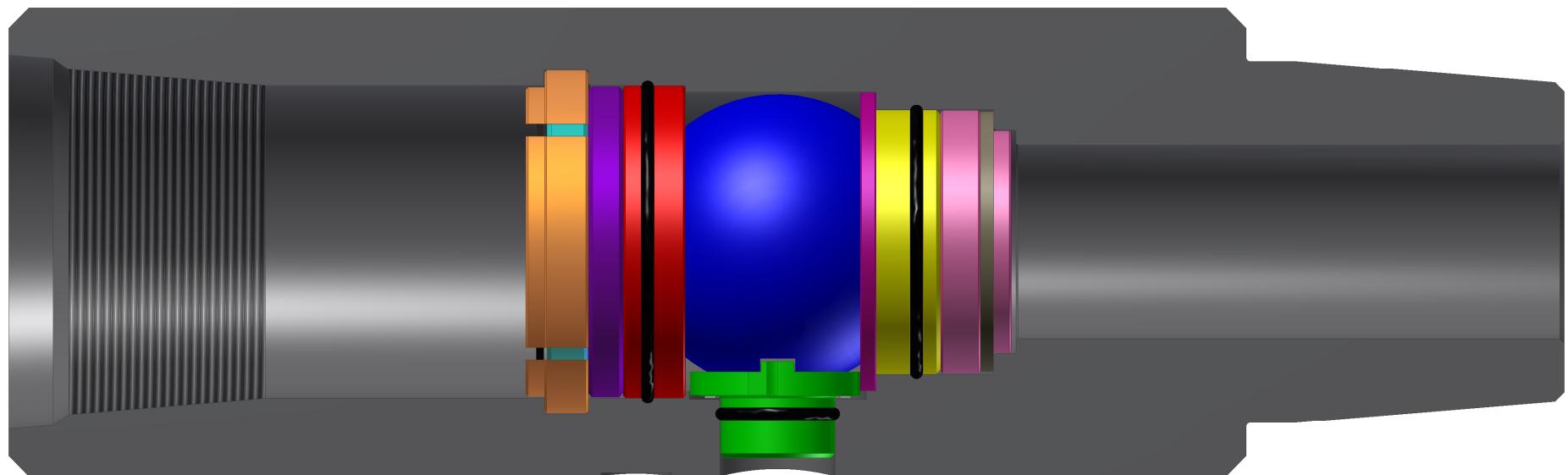


Figure 9