



Two Piece Low Torque Kelly Valve

Disassembly and Assembly Procedures

Global Manufacturing, Inc.
Lafayette, Louisiana USA 70508
Ph (337) 237-1727
Fax (337) 232-9353

**Disassembly and Assembly Procedures for
Global Manufacturing, Inc. Two 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 two 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. two piece low torque kelly valves only.

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

**Disassembly and Assembly Procedures for
Global Manufacturing, Inc. Two 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.
3. Break the service connection and separate the valve body and bottom sub.

FIGURE 2

4. Remove the ball and valve stem from the body.
5. Remove the seat from the body.
6. Remove the seat from the bottom sub.
7. Remove the spring from the bottom sub.
8. Remove the Teflon anti-friction ring and all seals and o-rings.
9. Inspect the o-ring and seal ring grooves on the seat for burrs or scratches.
10. Inspect the ball and stem to ensure that there are no scratches or excessive wear.
11. Inspect the valve body and bottom sub to ensure that there are no scratches or excessive wear.
12. Inspect the box & pin threaded connections for excessive wear or damage.

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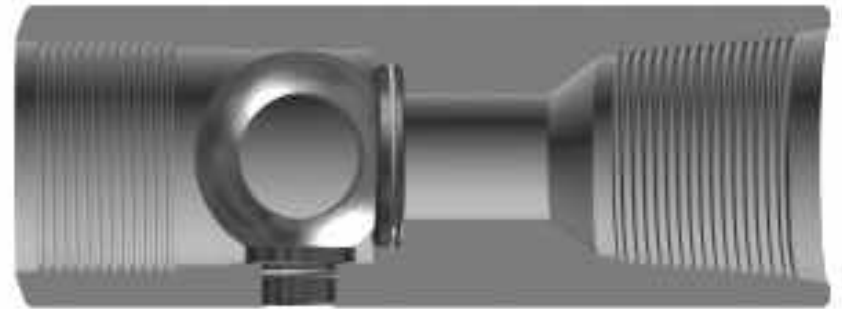


Figure 1

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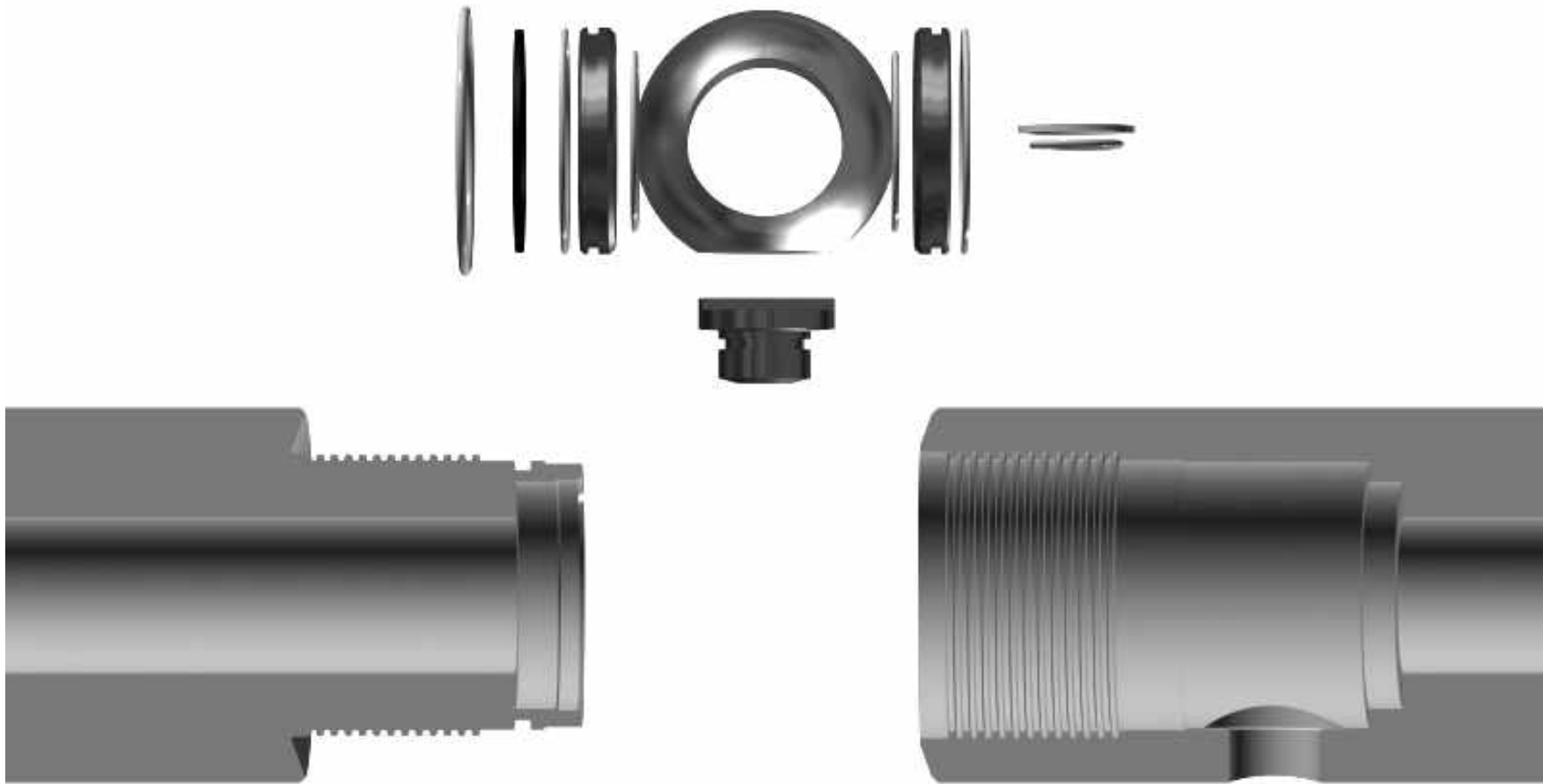


Figure 2

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VALVE ASSEMBLY

1. Replace all seals, o-rings and any worn or damaged parts (ball, seats, body, bottom sub, etc.)

FIGURE 3

2. Install the body o-ring on the bottom sub and apply grease to the inside ridge of the sub.
3. Install the spring on the shoulder inside the sub. The spring should slide freely into the bore.
4. Apply a high grade lithium based grease to the seat, o-ring, and seal ring. Install the o-ring and Teflon seal ring on the seat.
5. Gently place the seat in the bottom sub (Teflon seal side out) and tap into place with a rubber mallet using caution not to damage the Teflon o-ring.
6. Apply pipe dope (containing 40 to 60% by weight of finely powdered metallic zinc and less than 0.3% active sulfur) to the service connection threads.

FIGURE 4

7. As necessary, use an emery cloth to remove any sharp edges from the operating stem hole.
8. Apply grease to the valve bore, stem hole, seat, o-ring, and seal ring. Install the o-ring and seal ring on the seat.
9. Gently place the 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.
10. Apply grease to the operating stem, o-ring, and seal ring. Install the o-ring and Teflon anti-friction ring on the operating stem.

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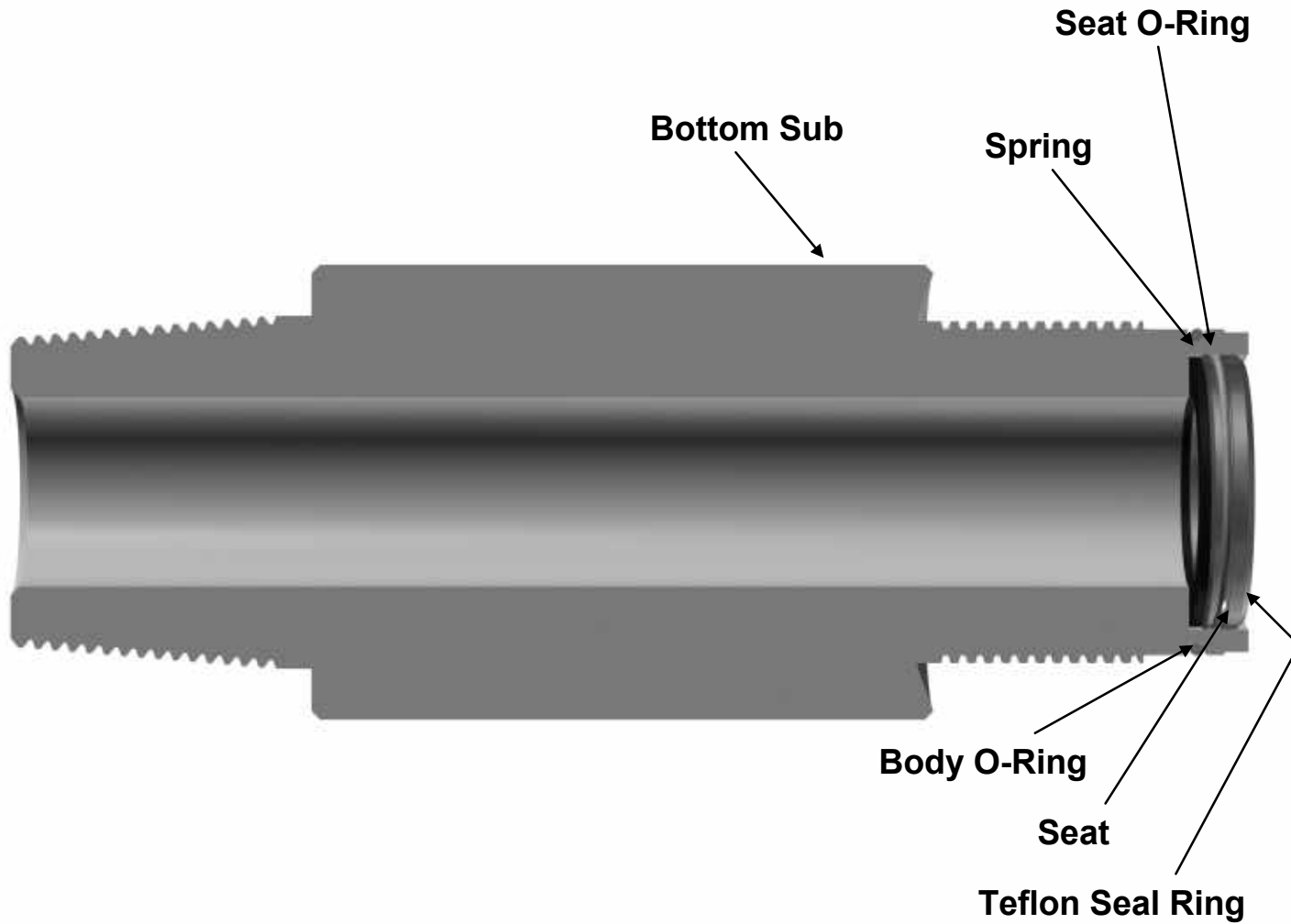


Figure 3

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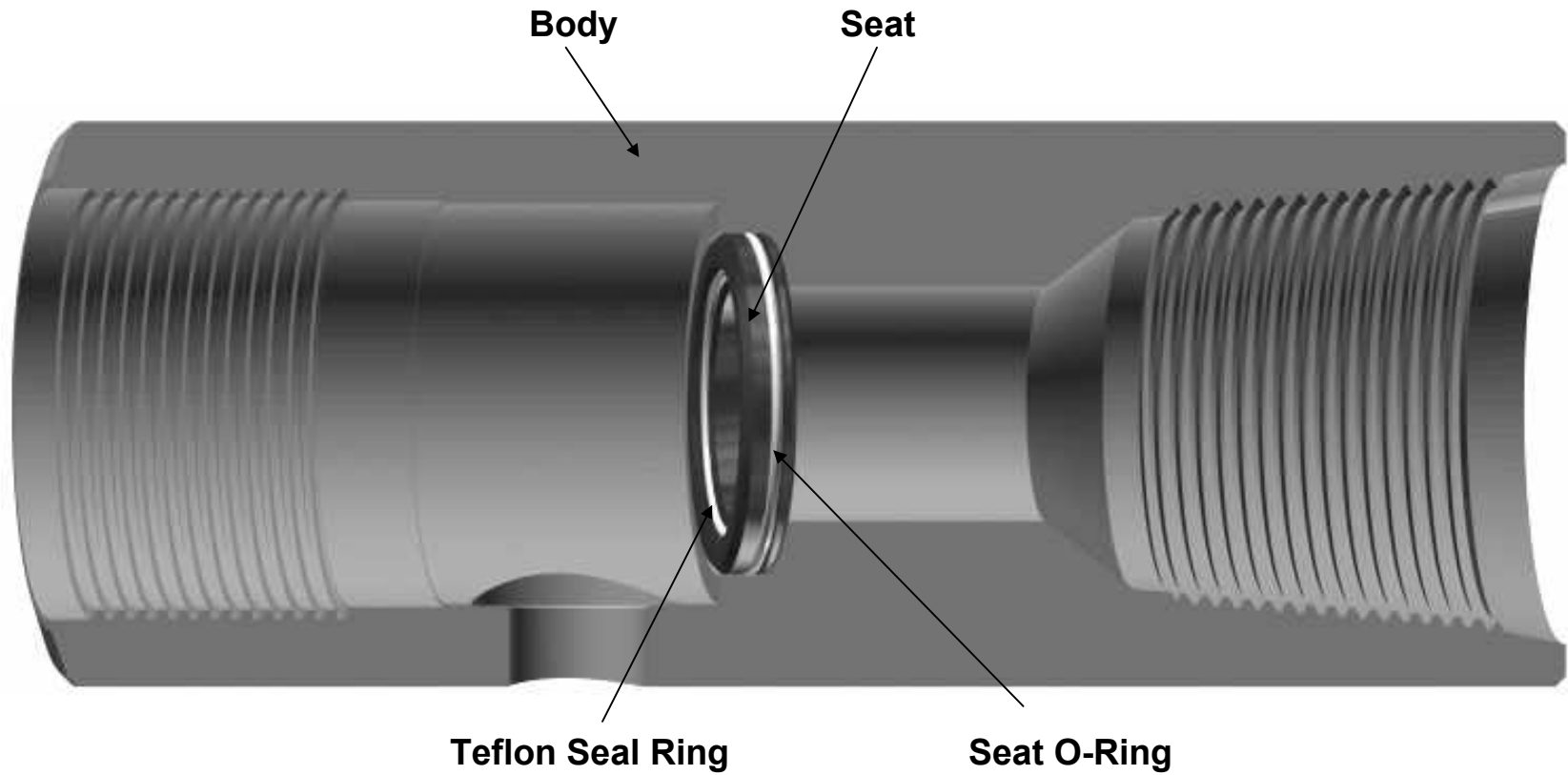


Figure 4

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FIGURE 5

11. Install the operating stem using caution to properly orient the cam flats to allow the valve to fully open and close.
12. Note the proper orientation for the valve stem in the closed position.

FIGURE 6

13. Apply grease to the ball. Insert until resting on the seat with the operating stem key in the ball groove.
14. Note the proper orientation of the seats (Teflon seal rings toward the ball).
15. Apply pipe dope to the service connection threads.

FIGURE 7

16. Screw the bottom sub back onto the valve body until drag is felt. At this point, rotate the ball and stem 5° to 7° toward full open and hand tighten.
17. Check for smooth operation of the valve by opening and closing the valve.
18. Fully open the valve and ensure that there is no offset between the bore and the open ball.

FIGURE 8

19. Fully close the valve. Rotate the ball and stem 5° to 7° toward full open to prevent damage to the stem during make-up.
20. Make up the service connection to the manufacturer's recommended torque.
21. Test the valve to the 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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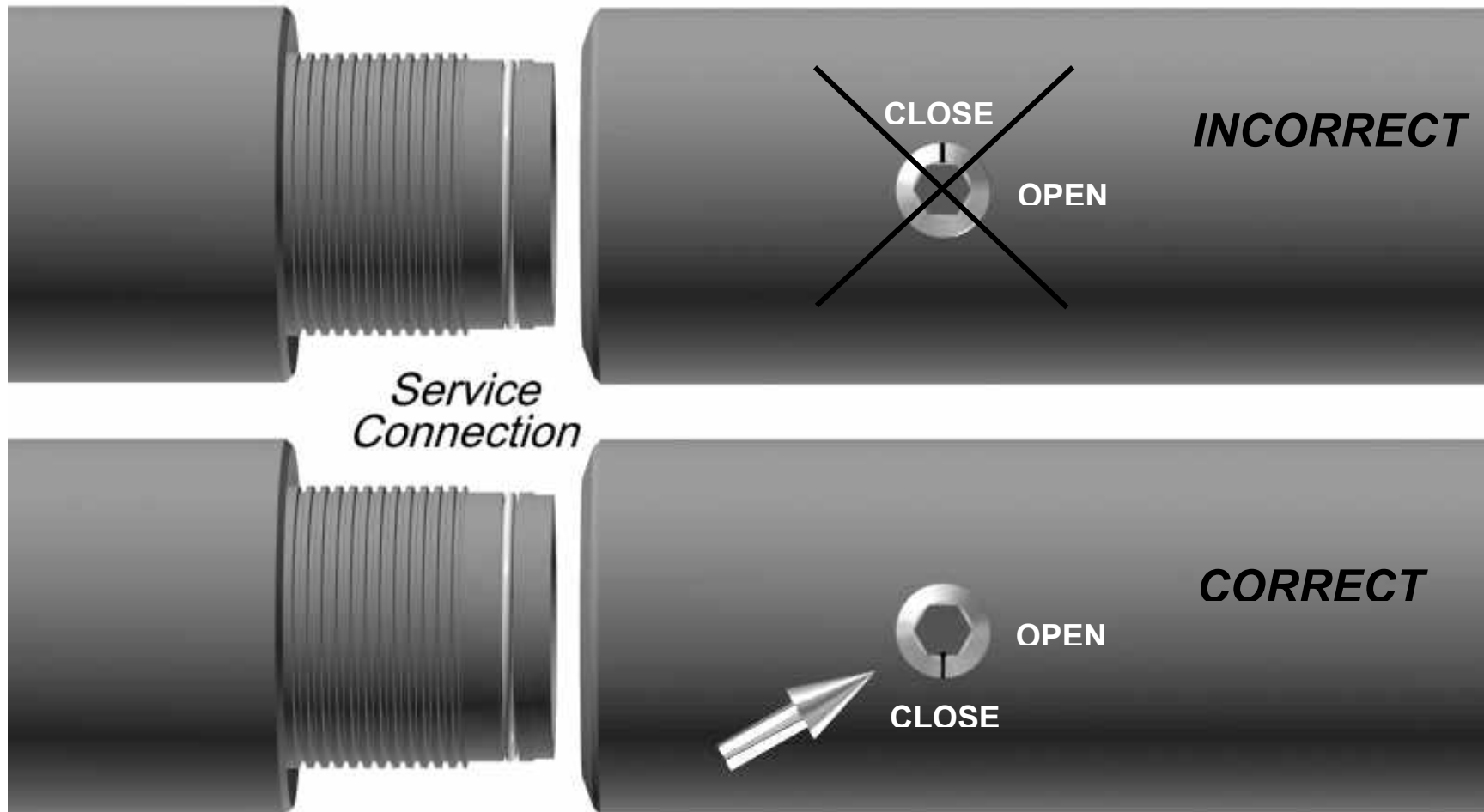


Figure 5

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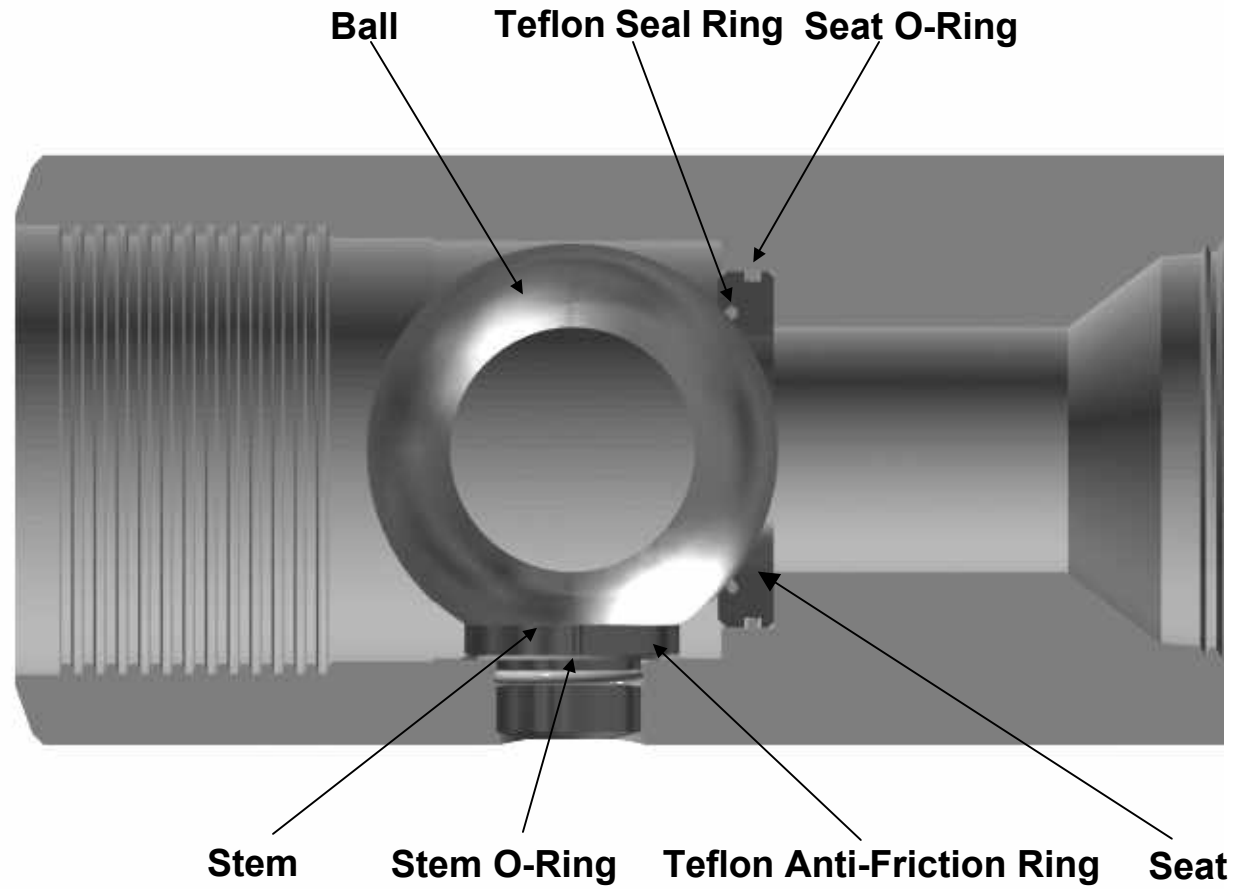


Figure 6

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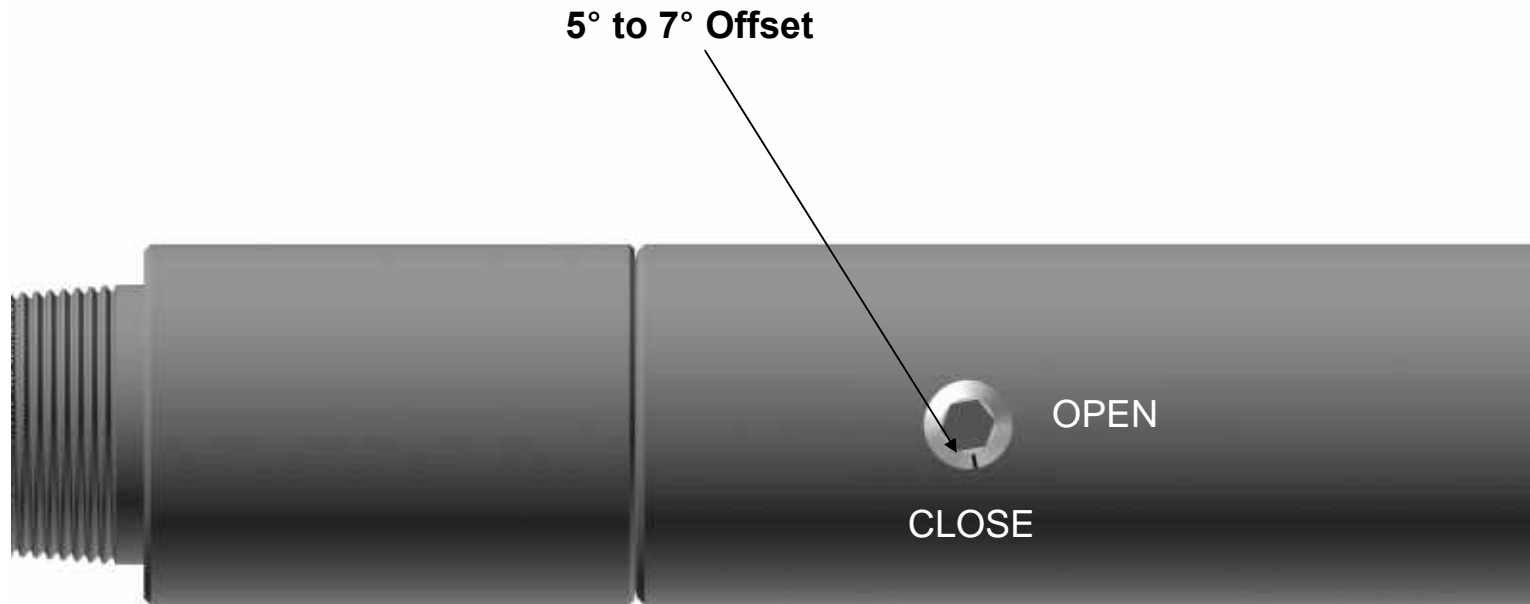


Figure 7

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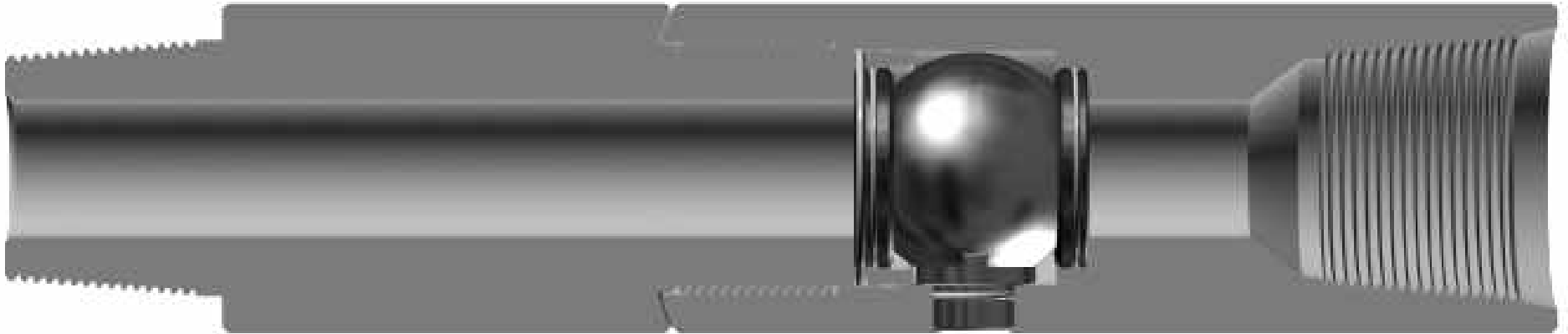


Figure 8