

## Scope:

This process is applicable to the disassembly, cleaning, and reassembly of the 3" and 4" K7 oil metering valves.

## Equipment:

White lithium grease  
3/16" hex/Allen wrench  
Torque wrench suitable for >75-inch pounds  
3/16" hex/Allen bit to fit torque wrench

## 1. Method or topic

1. Refer to Figure 1 below which details the valve to be cleaned. Typical components shown on the drawing are as follows:
  - a. Oil metering valve body: (Body)
  - b. Oil metering valve sleeve of bronze construction with varying orifice size: (Orifice Sleeve)
  - c. Oil metering valve stem. Various models dependent upon flow rate. The small end of the stem is marked accordingly. (Stem)
  - d. Oil metering valve cap: (Cap)
  - e. Oil metering valve indicator collar: (Pointer or Indicator)
  - f. Oil metering valve label: (Label)
  - g. Body O-ring
  - h. 1/4-20 x 1-1/4" SS SHCS cap mounting screws
  - i. 1/4" SS split lock washers for mounting screws
  - j. 1/8" x 7/8" P-15 spring pin used as an anti-rotation device for the sleeve.
  - k. Stem O-ring
2. Disassembly cleaning and reassembly instructions:
  - a. Mark location of connecting linkage or servo coupling with respect to the valve stem.
  - b. Ensure a clean workspace and clean hands before beginning.
  - c. Using the 3/16 Allen wrench, remove the (6) 1/4-20 X 1 1/4" SS SHCS cap mounting screws and Lock washers.
  - d. Carefully pull the Cap/Stem/Indicator assembly from the valve body. Be careful that the bronze sleeve does not come out with the Cap/Stem/Indicator assembly.
  - e. Remove the bronze sleeve and the anti-rotation spring pin.
  - f. Remove the body O-ring seal and set aside. Inspect interior of the valve body and remove any debris, if present.
  - g. Clean all removed components with a mild solution of dish soap (Dawn) and water, washing out any debris that might be inside the valve stem.
  - h. Rinse all components thoroughly

- i. Coat the outside of the bronze sleeve with a light film of white lithium grease.
- j. Carefully reinsert the sleeve into the valve body while lining up the anti-rotation pin hole in the sleeve and the body, then insert the anti-rotation spring pin.
- k. Inspect the body O-ring and replace if it is damaged.
- l. Insert body O-ring into the round groove on the body.
- m. Inspect the Stem O-ring inside the gap. Replace and reinstall, if necessary.
- n. Coat the inside of the bronze sleeve and the outside of the stem with a light film of white lithium grease.
- o. Very carefully, slip the large end of the stem into the sleeve while aligning the indicator with the inlet port of the body. This port will be marked with an “I” stamped into the valve body. Refer to Figure 1 for additional information.
- p. Rotate assembly so that the “Open” on the label” aligns with the inlet port.
- q. Put the lock washer on each of the 6 bolts and insert bolts through the cap and into the body. Finger tight each one in a cross-hatch pattern while rotating the stem in the body for proper alignment. At no time should the stem bind up in the body.
- r. Using a 3/16” Allen/Hex wrench snug each bolt. Then, using a torque wrench, torque each bolt to 75.2-inch pounds (6.27 foot pounds) in a cross hatch pattern.
- s. Wipe down the outside of the valve assembly removing any debris/grease.
- t. Reinstall connecting linkage or servo coupling in the previous location.
- u. Check emissions to ensure safe and clean combustion levels.

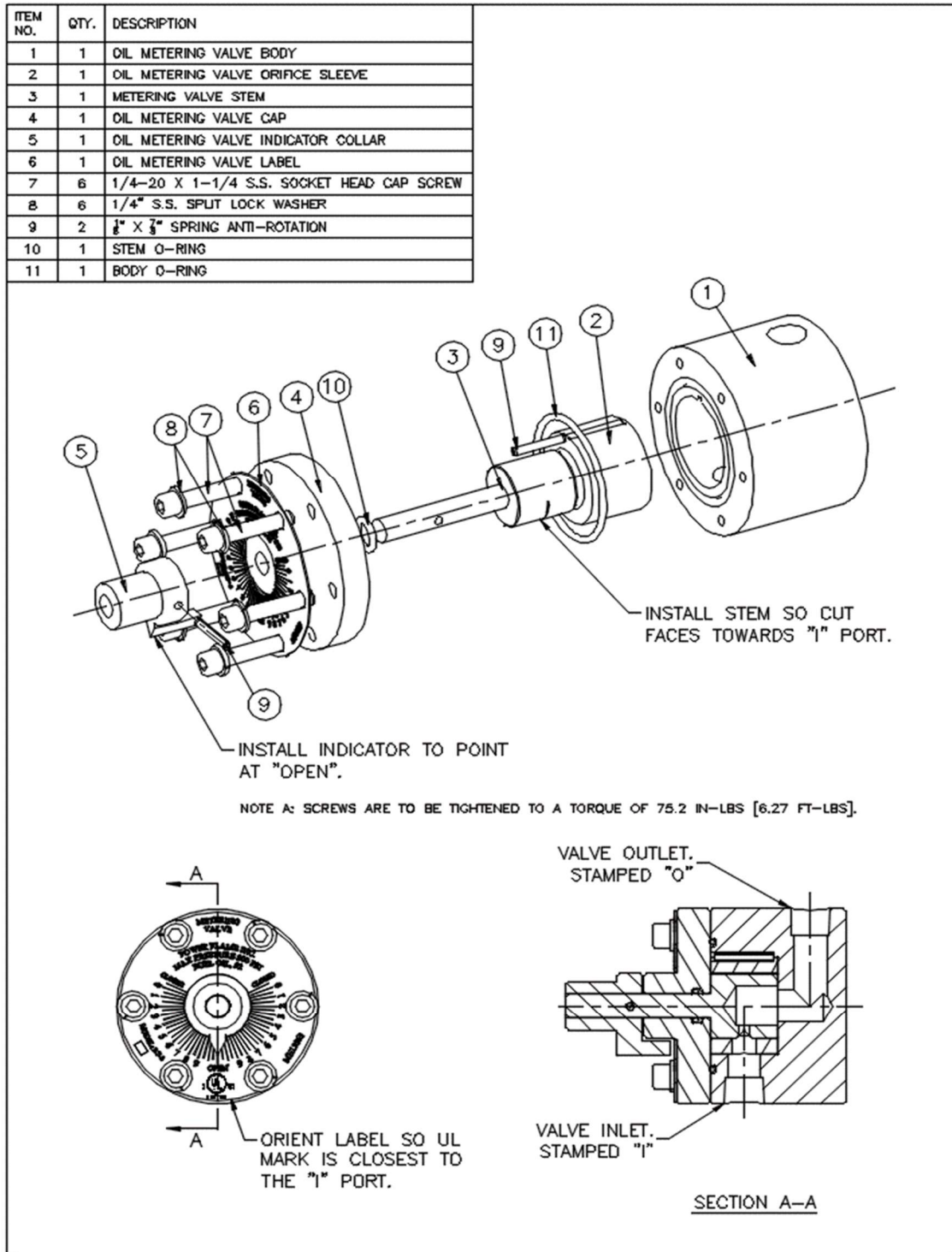


Figure 1. Typical K7 Valve Detail