

## Step-by-Step Guide to Replacing a Permco M257 Seal Kit

Replacing the seal kit on a Permco M257 hydraulic gear motor requires careful attention to cleanliness and proper procedure. Here is the step-by-step guide based on official Permco technical documentation.

### Before You Begin: Safety & Preparation

#### ⚠ Critical Safety Steps:

- Depressurize the System: Ensure the hydraulic system is fully depressurized before any disassembly.
- Lockout/Tagout: Follow proper lock and tag procedures to prevent accidental startup.
- Clean Environment: Work in a clean area to prevent contamination. Clean the exterior of the motor thoroughly before disassembly.

#### Required Tools:

- Non-petroleum based degreaser
- Permatex Aviation Form-A-Gasket #3 (or equivalent)
- Arbor press
- Seal insertion tool (Permco Q-1956-3 for M257 series)
- Seal insertion plug (Permco M5151 for M257 series)
- Clean grease (compatible with hydraulic systems)
- Appropriate wrenches and vise

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### Step 1: Disassemble the Motor

1. Remove the motor from the hydraulic system.
2. Carefully disassemble the motor housing to access the internal components.
3. Note the orientation and position of all seals and components during disassembly for correct reassembly.

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### Step 2: Clean the Shaft End Cover Bore

Clean the bore\*\* in the shaft end cover using a **non-petroleum based degreaser**.

This is critical—any contamination left in the bore will compromise the new seal.

### Step 3: Install the New Shaft Seal

The M257-S seal kit contains:

- 1 x W62-49-8\*\* Motor Shaft Seal
- 2 x TA-2995-246\*\* Housing Gasket Seals
- 4 x 280-1774-073\*\* Thrust Plate Side Seals
- 4 x 280-1774-074\*\* Thrust Plate End Seals
- 2 x 280-1774-075\*\* Thrust Plate Backups

#### For the shaft seal installation:

1. **Coat the outer edge** of the new shaft seal with Permatex Aviation Form-A-Gasket #3 (or equivalent).
2. **Orient the seal correctly:** Install with the **metal side facing up**.
3. **Press the seal** into the mounting flange until flush, using an arbor press and the M5151 insertion plug.
4. **Wipe off** any excess sealant.

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### Step 4: Assemble the Internal Components

1. **Place the shaft end cover** in a vise with the pilot facing down.
2. **Place the thrust plate** onto the bearings or over the bushings.
3. **Lightly coat with grease** both the Q-1956-3 seal insertion tool and the gearshaft.
4. **Slide the insertion sleeve** partially up through the shaft seal from the pilot side of the shaft end cover.
5. **Slide the gearshaft** into the sleeve and push down gently until the gear contacts the thrust plate.
6. **Remove the sleeve** from the end of the gearshaft.

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### Step 5: Install Remaining Seals

Install the remaining seals from the kit:

- Housing Gasket Seals\*\* (TA-2995-246) – position as per original assembly
- Thrust Plate Side Seals\*\* (280-1774-073) – 4 pieces
- Thrust Plate End Seals\*\* (280-1774-074) – 4 pieces
- Thrust Plate Backups\*\* (280-1774-075) – 2 pieces

**Important:** Note the orientation of all seals during disassembly and install new ones in the same configuration.

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### Step 6: Reassemble the Motor

Reverse the disassembly procedure:

1. Carefully reassemble all motor housing components.
  2. Torque all fasteners to manufacturer specifications.
  3. Do not over-tighten bolts, as this may damage seals or cause leakage .
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### Step 7: Final Checks

1. **Rotate the motor shaft** in both directions to ensure smooth operation.
  2. **Inspect for proper assembly** before reinstalling in the system.
  3. **Test for leaks** after reinstallation under operating conditions.
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### Important Notes

- **Use genuine Permco parts:** Always use original manufacturer-recommended seal kits.
- **Seal kit composition:** The M257-S kit contains only seals—no hardware is included.
- **Handle seals with care:** Do not bend, twist, or stretch seals excessively during installation.