

Special Instruction

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Installation of Improved Seals for Hydraulic Cylinders: Vented Buffer Seal Assembly, U-Cup Seal, and Straight-Faced Wiper Seal

SMCS Code: 7562-012-SA

Caterpillar Products:
All

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Introduction

This instruction gives the procedure for installing the improved Vented Buffer Seal Assembly, the U-Cup Seal, and the Straight-Faced Wiper Seal in the head of hydraulic cylinders. The improved seals for hydraulic cylinders can be identified by a yellow color and a different design of the wiper seal and the buffer seal.

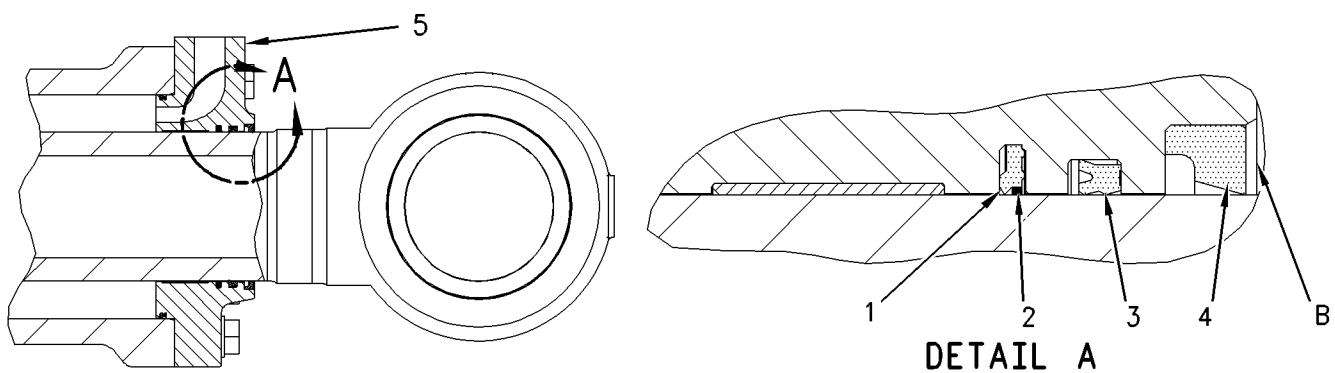


Illustration 1

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1. Refer to Illustration 1 in order to install the polyurethane buffer seal (1) in the inner groove of the cylinder head (5).
2. Refer to Illustration 1 in order to install the backup ring (2) for the buffer seal in the inner groove on top of polyurethane buffer seal (1). Make sure that backup ring (2) is facing toward the rod end.

3. Install the U-Cup seal (3) in the head. Refer to Illustration 1 in order to install the seal with the open end of the "U" facing toward the piston end of the cylinder.

Note: In some cases, the axial width of the Caterpillar U-cup seal may be different from the U-cup seal that is being replaced. The Caterpillar U-cup seal is correctly sized, based on the rod diameter and the seal groove diameter. The difference in size of the Caterpillar U-cup seal will not cause a sealing problem, even though there may be unused space in the seal groove. The U-cup seal will not move from the downstream groove wall when the rod is retracting. Pressure will hold the U-cup seal against the back of the seal groove. Also, the friction on the outside diameter of the seal is much greater than the friction on the inside diameter, which will also keep the seal firmly seated in the back of the seal groove. Because of these factors, the U-cup seal will not touch the upstream side of the seal groove. Therefore, the difference in the axial width between the U-cup seal and the seal groove is not a factor in providing good sealing.

4. Use sandpaper or emery cloth to scuff the surfaces of the counterbore in the cylinder head and the outside diameter of the wiper seal's metal shell (4).
5. Clean the counterbore in the head and the outside diameter of the wiper seal's metal shell with 8T-9011 Component Cleaner or 6V-1541 Quick Cure Primer. Clean the counterbore and the metal shell until neither of the components discolor a clean white towel.

Note: The metal shell of the wiper seal is coated with a corrosion inhibitor. This may prevent proper bonding of the wiper seal to the cylinder head if the inhibitor is not removed. After cleaning, do not touch the counterbore or the metal shell because the oil from your fingers may prevent a good bond. Handle the seal by the lip only.

6. Apply 6V-1541 Quick Cure Primer on the counterbore and the metal shell. Allow the primer to dry. The primer will dry in approximately 30 seconds.
7. Apply 7M-7456 Bearing Mount Compound evenly but do not apply the Bearing Mount Compound excessively. Apply Bearing Mount Compound to the counterbore and to the metal shell. Do NOT allow the Bearing Mount Compound to contact the sealing lip.

8. Refer to Illustration 1 in order to press wiper seal (4) into the cylinder head. Refer to Item (B) in order to make sure that the marking "**THIS SIDE OUT**" on the seal is toward the rod end. The seal should be firmly seated against the bottom of the counterbore. Wipe away any excess Bearing Mount Compound. Allow Bearing Mount Compound to dry for 15 minutes before assembling the hydraulic cylinder.
9. Lightly lubricate the seals with clean hydraulic fluid before installing the head on the cylinder rod.