## **CATERPILLAR®**

# Service Repair Manual

## **Models**

135H Motor Grader

Model: 135H MOTOR GRADER AMX

Configuration: 135H Motor Grader AMX00001-UP (MACHINE) POWERED BY 3126B Engine

#### **Disassembly and Assembly** 120H and 135H Motor Graders Machine Systems

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i07430989

### Piston Pump (Hydraulic and Steering) - Assemble

**SMCS -** 4306-016; 5070-016

### **Assembly Procedure**

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
В	1P-1861	Retaining Ring Pliers	1
D	1P-0510	Driver Group	1
Е	8T-5096	Dial Indicator Group	1
F	-	Loctite LB 8632 Silicone Lubricant (1)	-
	-	Loctite LB 8104 Silicone Lubricant (2)	-
	-	Loctite LB 8801 Silicone Lubricant (3)	-
	-	Loctite LB Superlube (4)	-
G	-	Loctite 243	-

<sup>(1)</sup> North America

**Note:** The axial end play must be adjusted if the swashplate, the swashplate bearings, the shaft, the shaft bearings, the head, or the housing has been replaced.

1. During the assembly of the piston pump, check the condition of all the O-ring seals and the lip seals that are used in the pump. If any of these seals are damaged, use new parts for replacement.

<sup>(2)</sup> EAME

<sup>(3)</sup> Asia Pacific Division

<sup>(4)</sup> South America

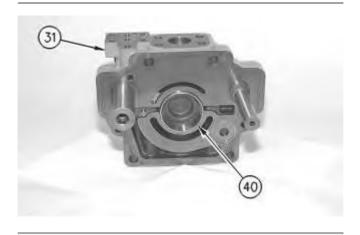


Illustration 1 g00991054

2. Lower the temperature of bearing cup (40). Use Tooling (D) to install bearing cup (40) in head (31). Install bearing cup (40) until the bearing cup is seated.

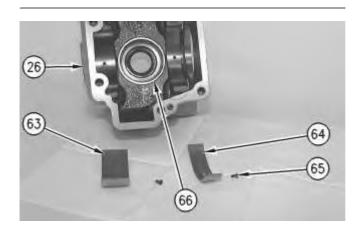


Illustration 2 g00990468

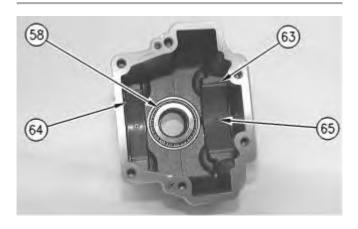


Illustration 3 g00990696

- 3. Lower the temperature of bearing cup (66). Use Tooling (D) to install bearing cup (66) in housing (26). Install bearing cup (66) until the bearing cup is seated.
- 4. Install bearing (58) in housing (26).

5. Install bearing (63) and bearing (64) into housing (26). Install set screws (65).

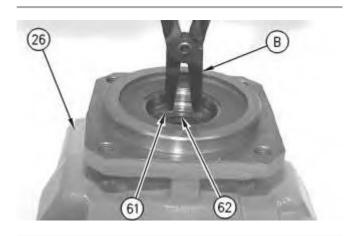


Illustration 4 g00990391

6. Use Tooling (D) to install lip seal (62) in housing (26) until the lip seal is seated. The sealing lip must face inward. Lubricate the sealing lip lightly with hydraulic oil before installation. Use Tooling (B) to install retaining ring (61) into housing (26).

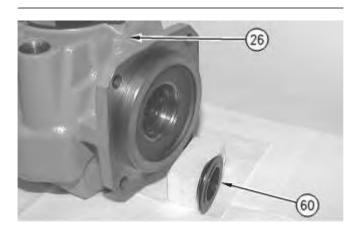


Illustration 5 g00990390

7. Install shield (60) into housing (26).

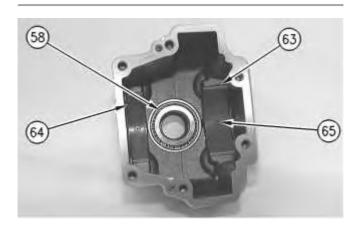


Illustration 6 g00990696

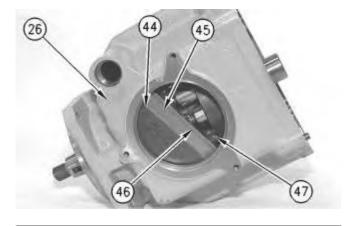


Illustration 7 g00990376

8. Place a light coat of hydraulic oil on bearing (64) and bearing (65). The hydraulic oil will hold swashplate (54) in position during the following steps. Install swashplate (44) into housing (26). Swashplate (44) should fit into bearing (64) and bearing (65).

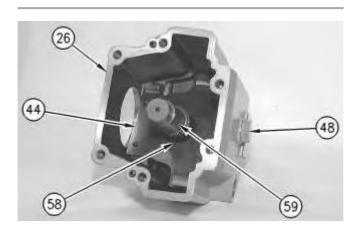


Illustration 8 g00990697

- 9. Place housing (26) onto support blocks to allow space for installation of shaft (59). Shaft (59) extends beyond the end of housing (26). Install shaft (59) through swashplate (44), through bearing (58) (not shown), and through housing (26).
- 10. Install plug (48) into housing (26). Install the O-ring seal into housing (26).

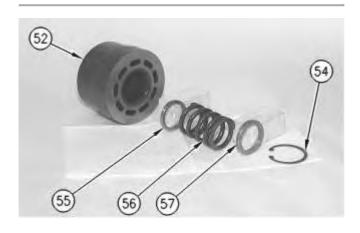


Illustration 9 g00990382

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