CATERPILLAR®

Service Repair Manual

Models

950H WHEEL LOADER

Product: WHEEL LOADER
Model: 950H WHEEL LOADER J5J
Configuration: 950H WHEEL LOADER J5J01501-UP (MACHINE) POWERED BY C7 ENGINE

Disassembly and Assembly
IT62H Integrated Toolcarrier and 950H and 962H Wheel Loaders Machine Systems
Media Number -RENR8881-01 **Publication Date -01/06/2009** **Date Updated -08/06/2009**

i02372748

Piston Pump (Brake, Hydraulic Fan) - Disassemble

SMCS - 1387-015-QP; 4268-015-QP; 5070-015-BRK; 5070-015-HFN

Disassembly Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	1P-0510	Driver Gp	1
B	1P-1858	Pliers	1
C	9S-9152	Bearing Puller	1

Start By:

a. Remove the fan drive pump. Refer to Disassembly and Assembly, "Piston Pump (Hydraulic Fan) - Remove".

NOTICE

Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting, and repair of the product. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids.

Refer to Special Publication, NENG2500, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat products.

Dispose of all fluids according to local regulations and mandates.

1. Be sure that the outside of the piston pump is thoroughly clean prior to disassembly.

Illustration 1 g00670363

2. In order to protect the shaft seal, use an adhesive tape to cover the drive shaft.

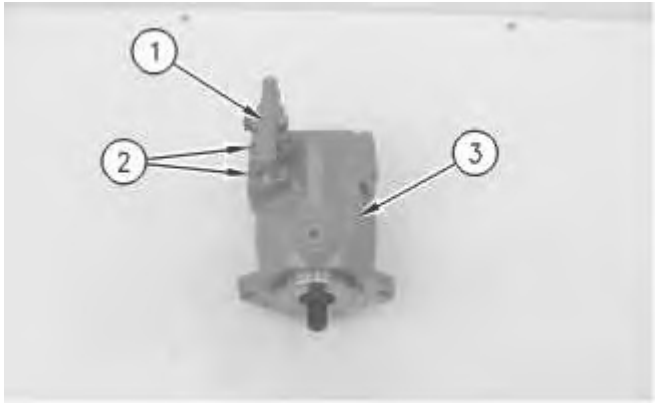

Illustration 2 g00669721

3. Remove bolts (2) and pressure and flow compensator valve (1) from piston pump (3).

Illustration 3 g00670188

4. Remove O-ring seals (4) from compensator valve (1).

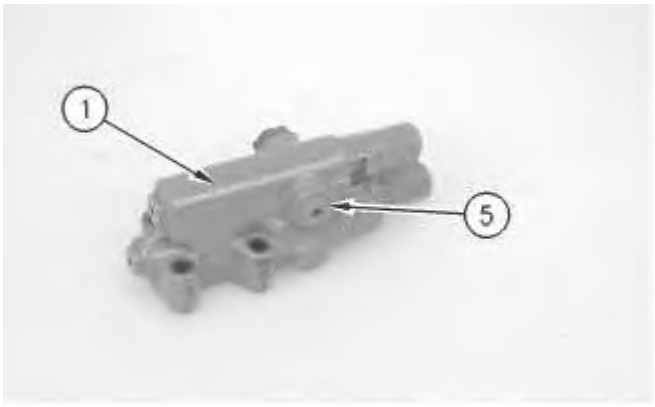

Illustration 4 g00670190

5. Remove plug (5) from compensator valve (1). Repeat for opposite side.

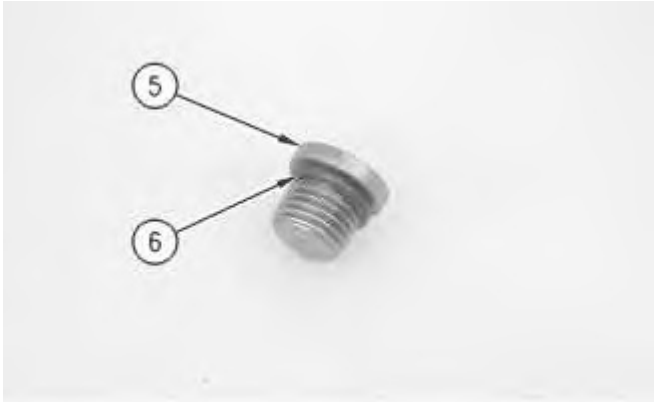

Illustration 5 g00670191

6. Remove O-ring seal (6) from plug (5).

Illustration 6 g00670192

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

7. Remove plug (7) from compensator valve (1).

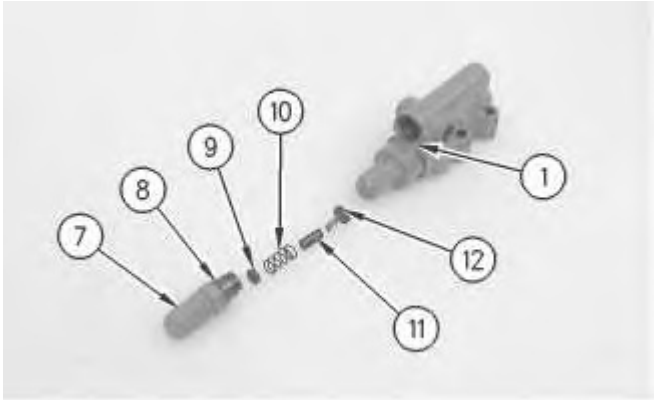

Illustration 7 g00670195

8. Remove O-ring seal (8) from plug (7). Remove plate (9), spring (10), spring (11), and guide (12) from compensator valve (1).

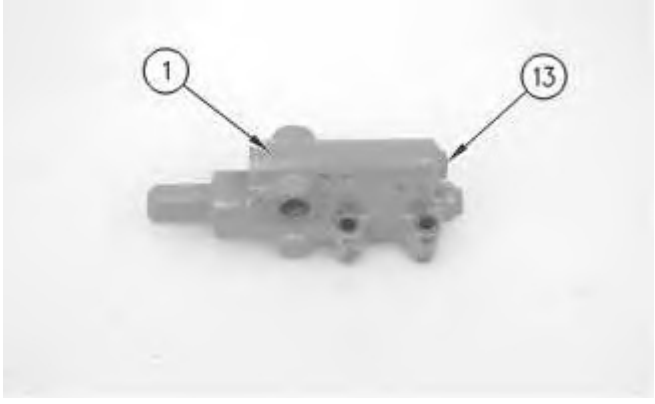

Illustration 8 g00670197

9. Remove plug (13) from compensator valve (1).

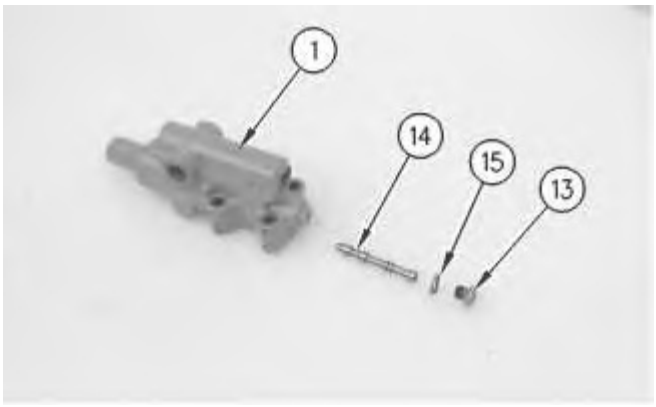

Illustration 9 g00670198

10. Remove spool (14) from compensator valve (1). Remove spacer (15) from plug (13).

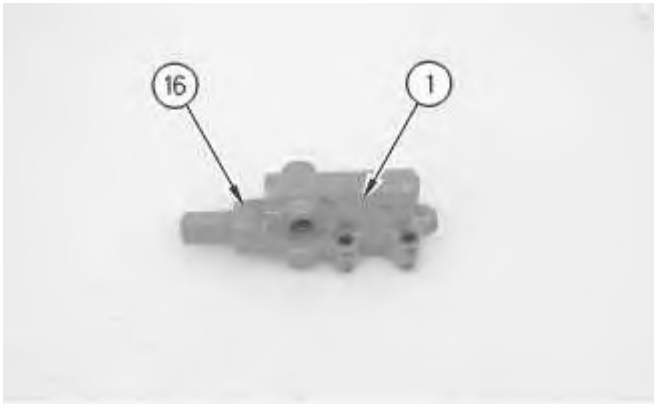

Illustration 10 g00670199

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

11. Remove plug (16) from compensator valve (1).

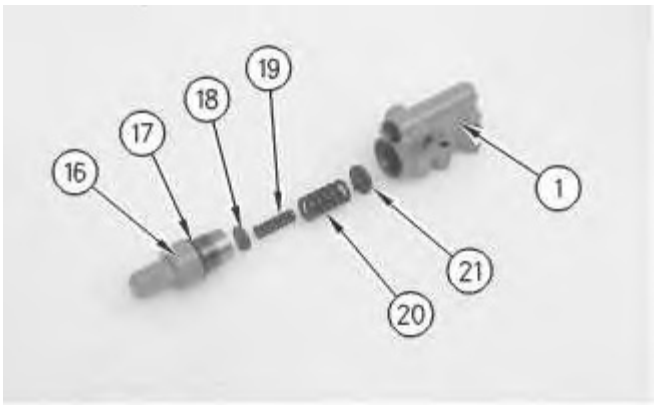

Illustration 11 g00670201

12. Remove O-ring seal (17) from plug (16). Remove plate (18), spring (19), spring (20), and guide (21) from compensator valve (1).

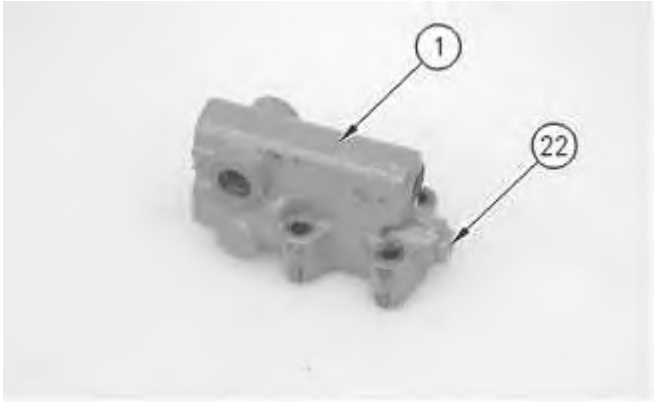

Illustration 12 g00670202

13. Remove plug (22) from compensator valve (1).

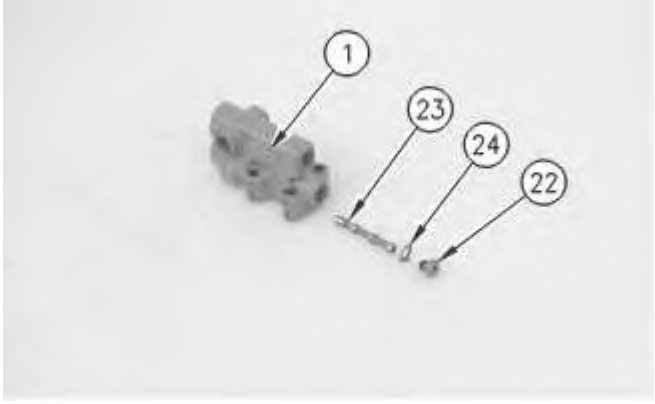

Illustration 13 g00670203

14. Remove spool (23) from compensator valve (1). Remove spacer (24) from plug (22).

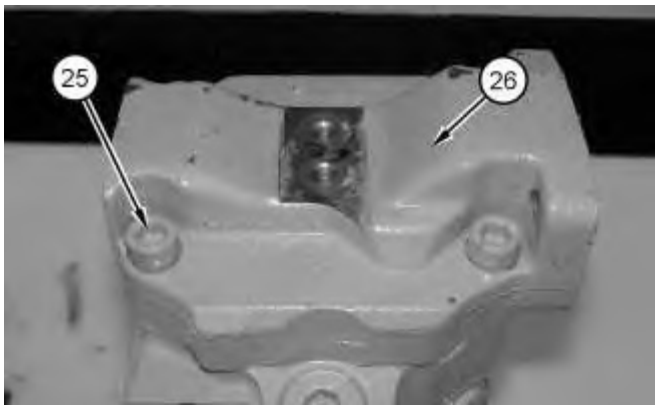

Illustration 14 g01140683

15. Remove bolts (25) from head assembly (26).

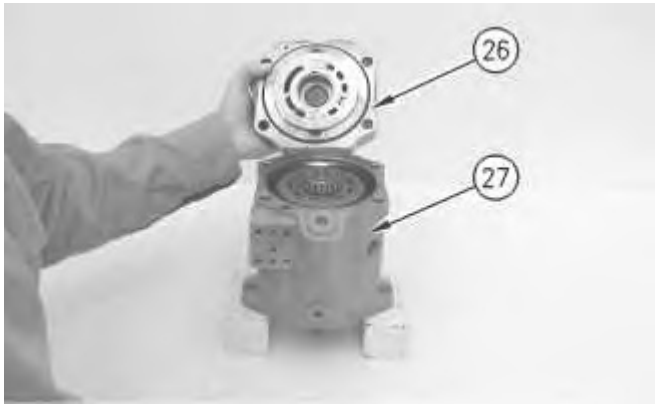

Illustration 15 g00669723

16. Remove head assembly (26) from pump body (27).

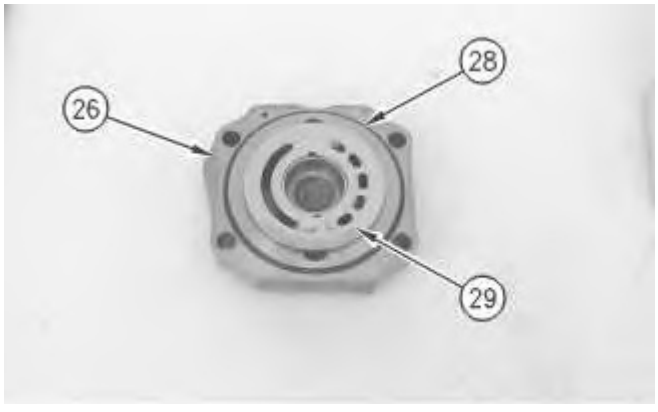

Illustration 16 g00669727

17. Remove O-ring seal (28) and port plate (29) from head assembly (26).

Illustration 17 g00669728

18. Remove bearing cup (30).

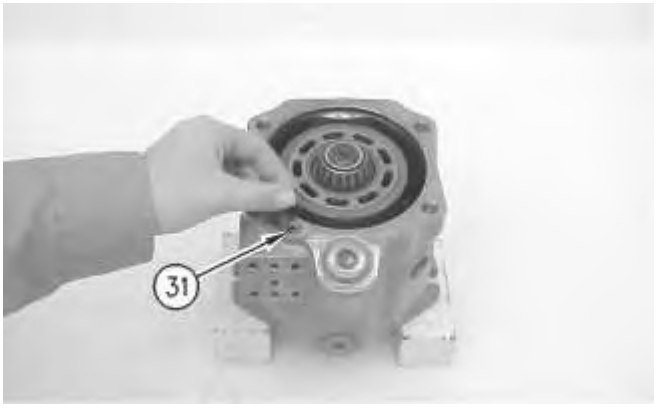

Illustration 18 g00669729

19. Remove O-ring seal (31).

Illustration 19 g00669730

20. Remove bearing cone (32) from the shaft.

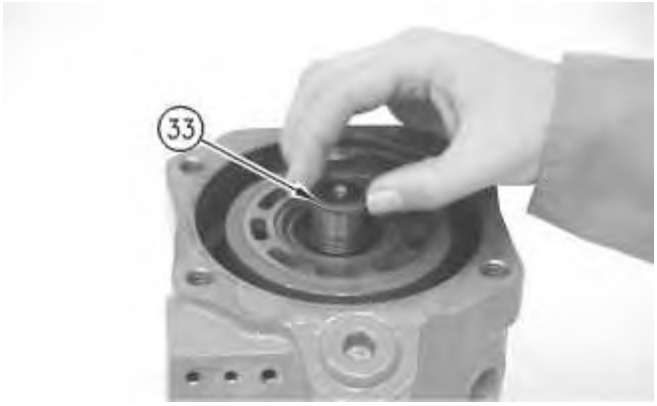

Illustration 20 g00669731

21. Remove adjustment shim (33).

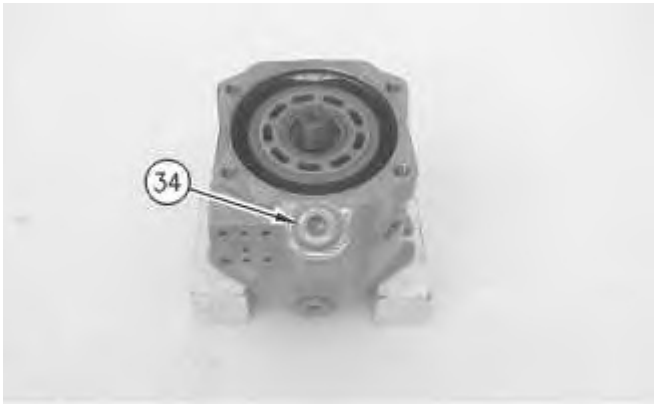

Illustration 21 g00669732

22. Remove plug (34).

Illustration 22 g00669738

23. Remove O-ring seal (35) from plug (34).

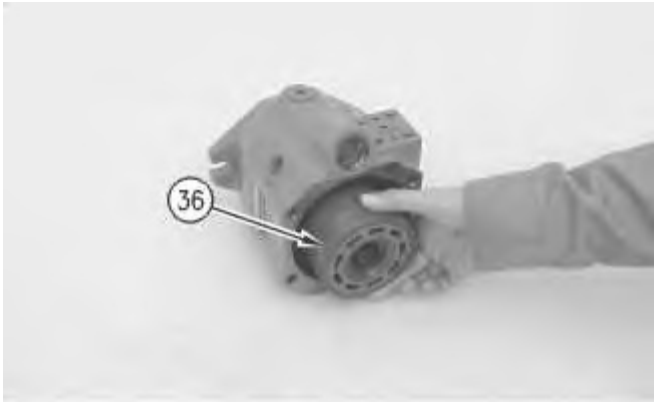

Illustration 23 g00669742

24. Carefully place the pump in a horizontal position.
25. Remove rotary group (36).

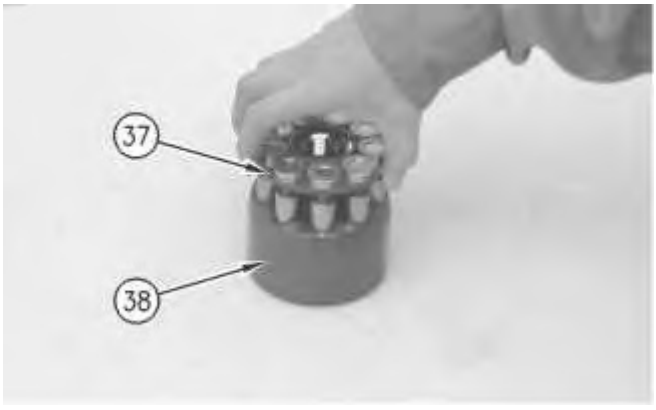

Illustration 24 g00669741

26. Remove piston assemblies (37) from barrel assembly (38).

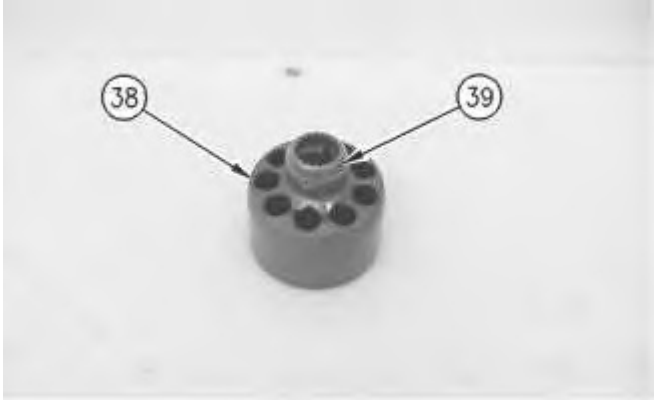

Illustration 25 g00669743

27. Remove retaining ball (39) from barrel assembly (38).

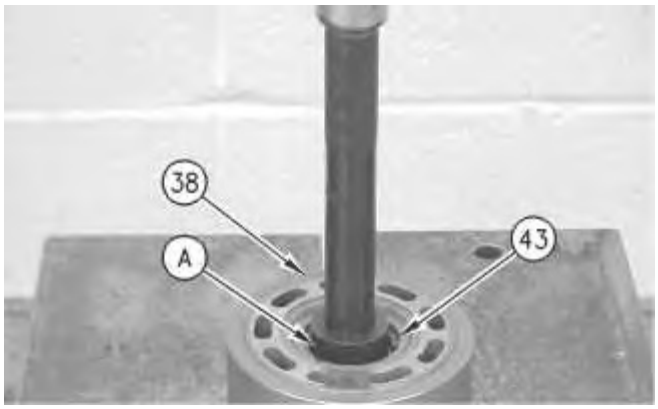

Illustration 26 g00669744

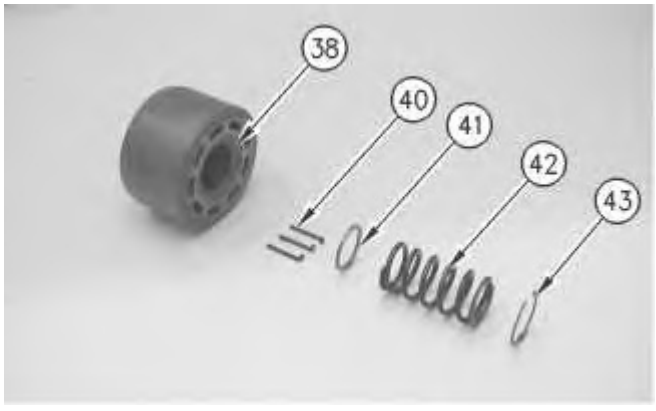

Illustration 27 g00669745

WARNING

Sudden release of spring force can cause injury.

To prevent the possibility of injury, follow the procedure to relieve the spring pressure.

Note: There is spring force against retaining ring (43). When retaining ring (43) is removed, the spring force will be released. Removal of the internal components in barrel (38) should be performed in a press. This is done in order to retain spring (42) and retaining ring (43).

28. Use a press and Tooling (A) to compress the spring in barrel assembly (38).
29. Use Tooling (B) to remove retaining ring (43) from the barrel assembly (38).
30. Remove retaining ring (43), spring (42), guide (41), and pins (40) from the barrel.

Illustration 28 g00670204

31. Move the swashplate up and down in order to remove the control piston (44).

Illustration 29 g00670205

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

Note: In order to release piston rod (45) from the swashplate, lift the swashplate a little and move the piston rod sideways.

32. Remove piston rod (45).

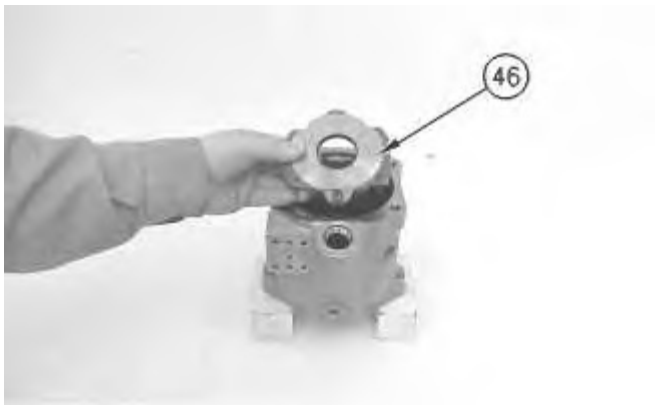

Illustration 30 g00670206

33. Remove swashplate (46).

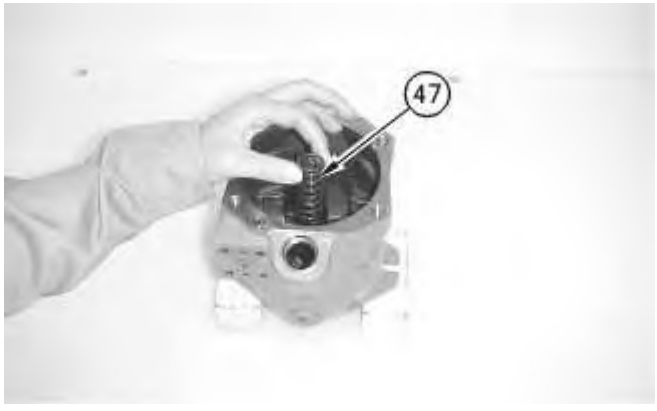

Illustration 31 g00670207

34. Remove spring (47).

Illustration 32 g00670223

35. Remove bearings (48).

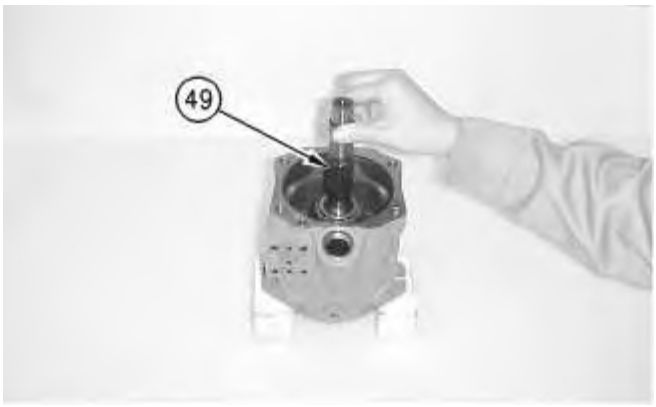

Illustration 33 g00670298

36. Remove shaft assembly (49).

Illustration 34 g00670301

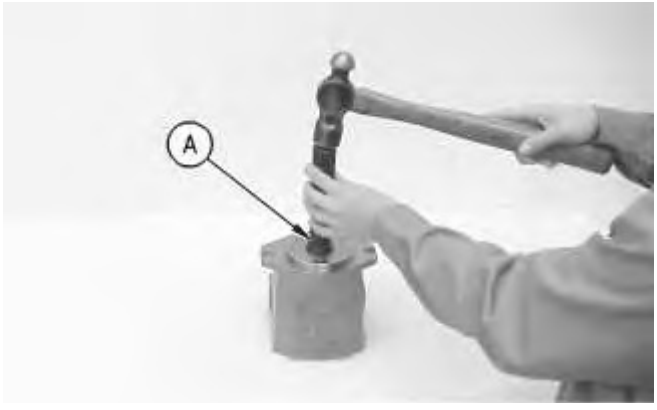

Illustration 35 g00670302

37. Remove retaining ring (50).

38. Use Tooling (A) to remove seal (51).

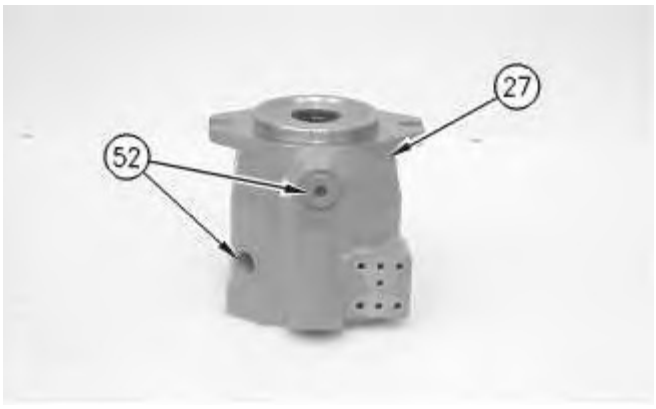

Illustration 36 g00670360

39. Remove two plugs (52) from pump body (27). Inspect the O-ring seals on the plugs. Replace the O-ring seals, if necessary.

Illustration 37 g00670361

40. Remove bearing cup (53) from pump body (27).

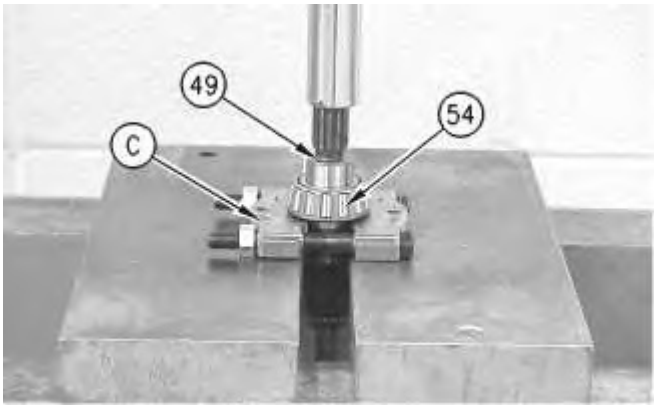

Illustration 38 g00670362

41. Use Tooling (C) and a suitable press to remove bearing cone (54) from shaft (49).

Product: WHEEL LOADER
Model: 950H WHEEL LOADER J5J
Configuration: 950H WHEEL LOADER J5J01501-UP (MACHINE) POWERED BY C7 ENGINE

Disassembly and Assembly
IT62H Integrated Toolcarrier and 950H and 962H Wheel Loaders Machine Systems
Media Number -RENR8881-01 **Publication Date -01/06/2009** **Date Updated -08/06/2009**

i04491134

Piston Pump (Brake, Hydraulic Fan) - Assemble

SMCS - 1387-016-QP; 4268-016-QP; 5070-016-BRK; 5070-016-HFN

Assembly Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	1P-0510	Driver Group	1
B	1P-1858	Pliers	1
C	8H-8581	Feeler Gauge	1
D	8T-5096	Indicator	1
E	1S-0256	Pliers	1
F	1U-7978	Screwdriver	1
G	8H-8581	Feeler Gauge	1

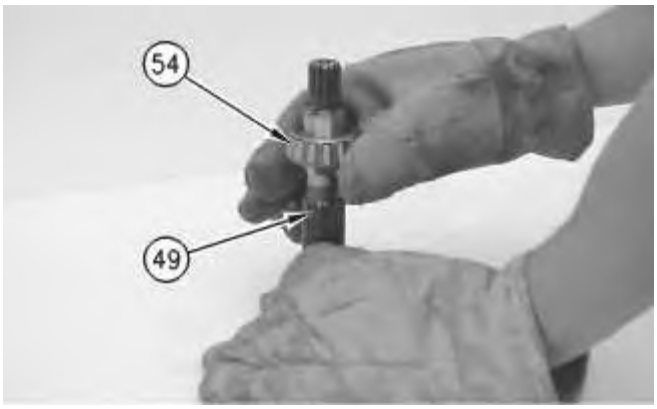

Illustration 1 g00670525

1. Use the proper equipment to handle bearing cone (54) . Raise the temperature of bearing cone (54) . Install bearing cone (54) onto the shaft (49) .

Illustration 2 g00670361

2. Use the proper equipment to handle the bearing cup. Lower the temperature of bearing cup (53) and install the bearing cup in pump body (27) .

Illustration 3 g00670360

3. Inspect the O-ring seals on plugs (52) . Replace the O-ring seals, if necessary. Install plugs (52) in pump body (27) .

Illustration 4 g00670531

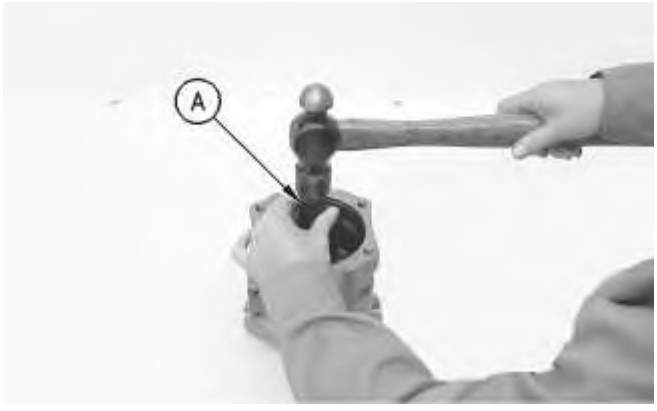

Illustration 5 g00670532

4. Install retaining ring (50) . Use Tooling (A) to install seal (51) (not shown).

Illustration 6 g00670298

5. Install shaft assembly (49) .
6. Use the following steps to determine the proper preload on the bearings of the pump assembly.

Illustration 7 g00669728

a. Use the proper equipment to handle the bearing cup. Lower the temperature of bearing cup (30) and install the bearing cup in head assembly (26) .

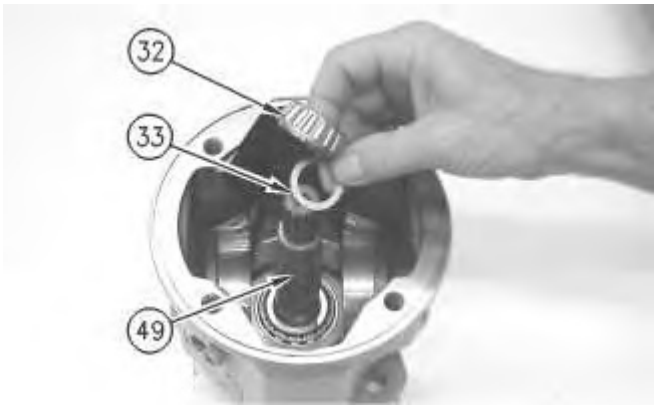

Illustration 8 g00670604

Typical Example

b. Install adjustment shim (33) and bearing cone (32) onto shaft assembly (49) .

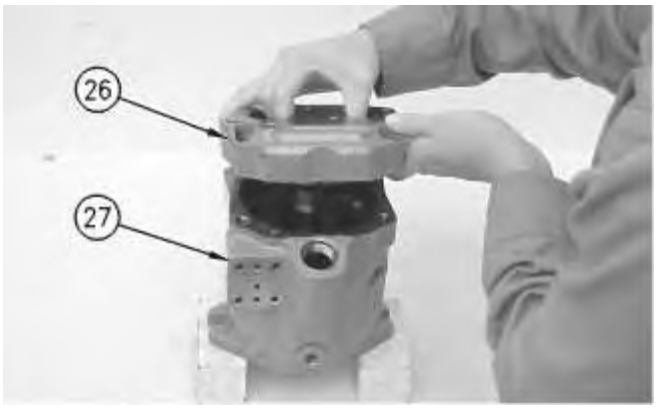

Illustration 9 g00670605

c. Position head assembly (26) onto pump body (27) .

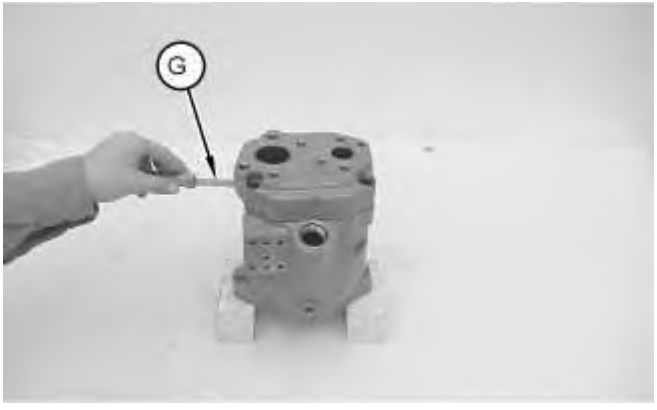

Illustration 10 g01140689

d. Use Tooling (G) to measure the distance between the head and the pump housing.

e. Take measurements at three equal intervals on the surface between the head and the pump housing.

f. The average of the three dimensions should be between zero and 0.05 mm (0.002 inch).

g. If necessary, grind adjustment shim (33) in order to obtain the correct dimension between the head and the pump housing. It may be necessary to replace the shim with a new part.

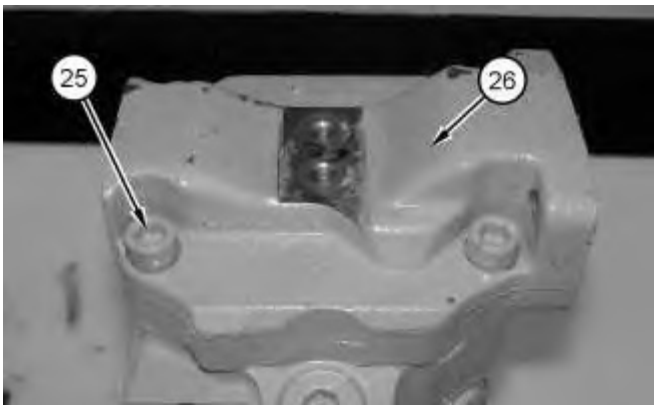

Illustration 11 g01140683

h. Install bolts (25) in the head and pump housing (27) . Tighten bolts (25) to a torque of 100 ± 20 N·m (75 ± 15 lb ft).

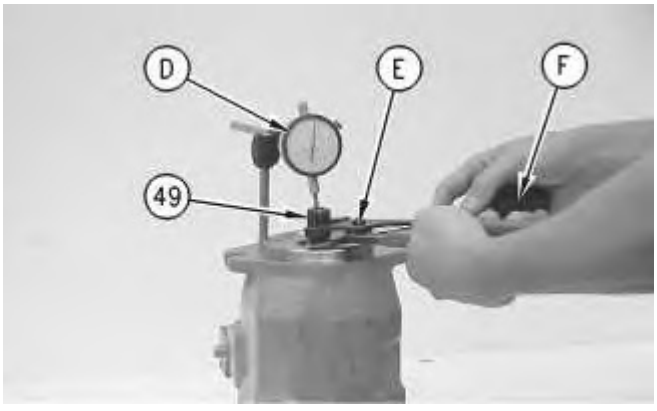

Illustration 12 g00670626

i. Use Tooling (D) , Tooling (E) , and Tooling (F) to check end play in shaft (49) . If end play exists in the shaft assembly, repeat Step 6 until the correct dimension between the head and the pump housing is reached.

j. Remove bolts (25) and head assembly (26) from pump body (27) . Remove bearing cone (32) and adjustment shim (33) from shaft (49) .

k. Proceed with the assembly of the fan drive pump.

Illustration 13 g00670223

7. Install bearings (48) .

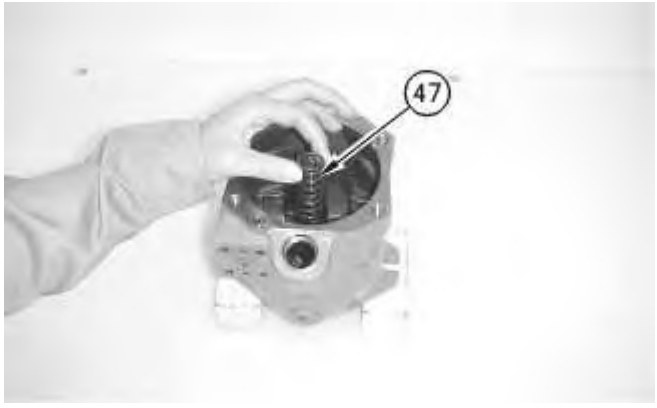

Illustration 14 g00670207

8. Install spring (47) .

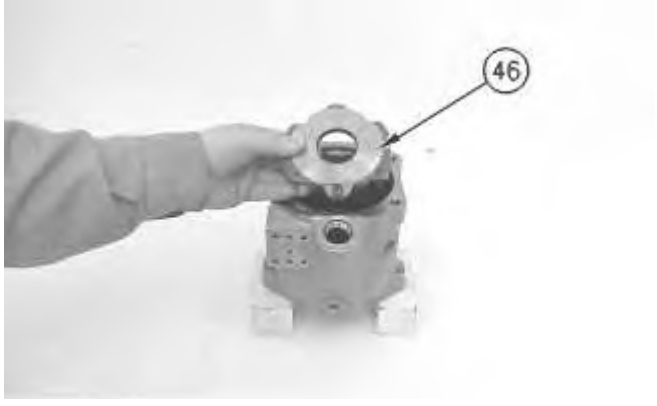

Illustration 15 g00670206

9. Install swashplate (46) .

Illustration 16 g00670205

WARNING

Personal injury can result from being struck by parts propelled by a released spring force.

Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

Note: Note that there is a correct connection of the piston rod and the swashplate.

10. Install piston rod (45) .

Illustration 17 g00670204

11. Install control piston (44) .

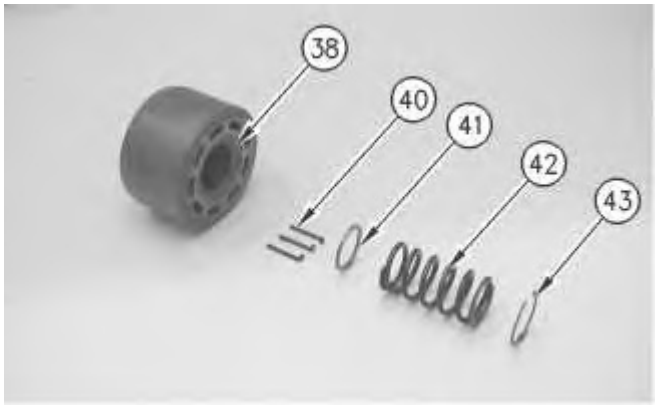

Illustration 18 g00669745

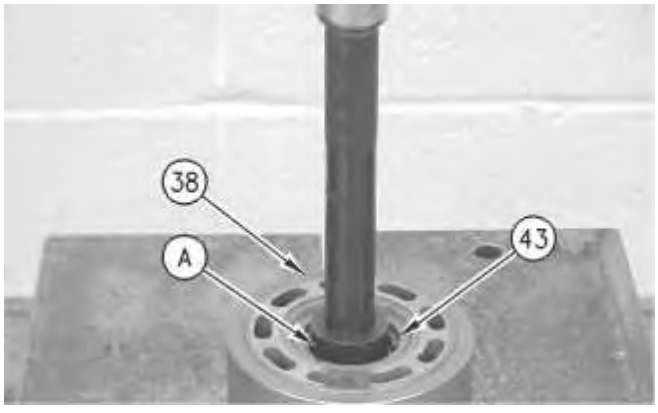

Illustration 19 g00669744

WARNING

Improper assembly of parts that are spring loaded can cause bodily injury.

To prevent possible injury, follow the established assembly procedure and wear protective equipment.

Note: There is spring force against retaining ring (43) . When retaining ring (43) is not seated properly, the spring force will be released. Installation of the internal components in barrel (38) should be performed in a press. This is done in order to retain spring (42) and retaining ring (43) .

12. Install pins (40) , guide (41) and spring (42) in barrel assembly (38) .
13. Use a suitable press and Tooling (A) to compress the spring (42) in barrel assembly (38) .

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first, and then click the above link

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14. Use Tooling (B) to install retaining ring (43) .

15. Slowly release compression on spring (42) . Make sure that the retaining ring (43) is seated properly.

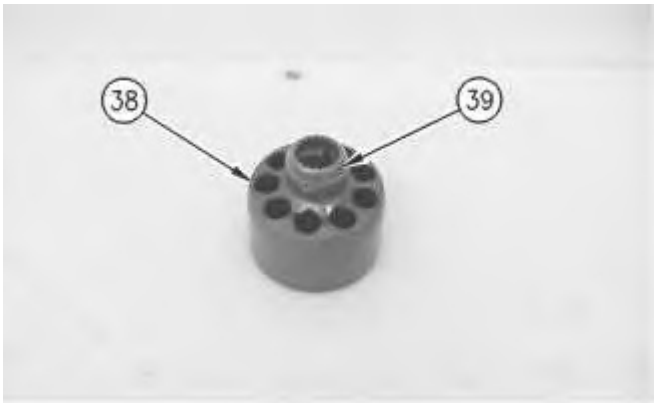

Illustration 20 g00669743

16. Install retaining ball (39) on barrel assembly (38) .

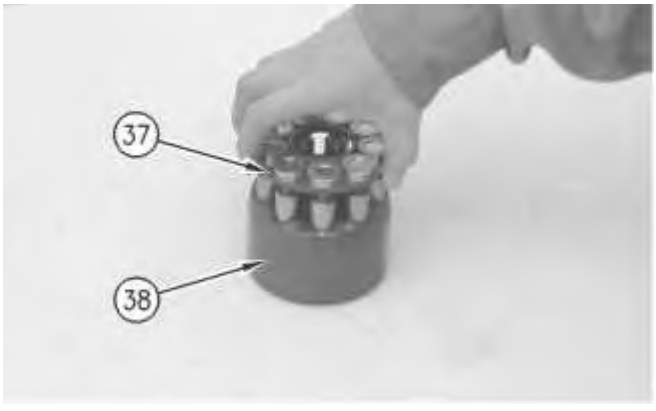

Illustration 21 g00669741

17. Install piston assemblies (37) in barrel assembly (38) .