

Product: TRACK-TYPE TRACTOR

Model: D3K2 LGP TRACK-TYPE TRACTOR GAE

Configuration: D3K2 XL & LGP Track Type Tractor GAE00001-UP (MACHINE) POWERED BY C4.4 Engine

Disassembly and Assembly D3K2, D4K2 and D5K2 Track-Type Tractors Machine Systems

Media Number -KENR5647-02

Publication Date -01/11/2013

Date Updated -25/10/2018

i05194238

Piston Pump (Winch)

SMCS - 5070

Specifications

Note: Callouts in the Specifications section differ from the callouts in the remaining sections of the story.

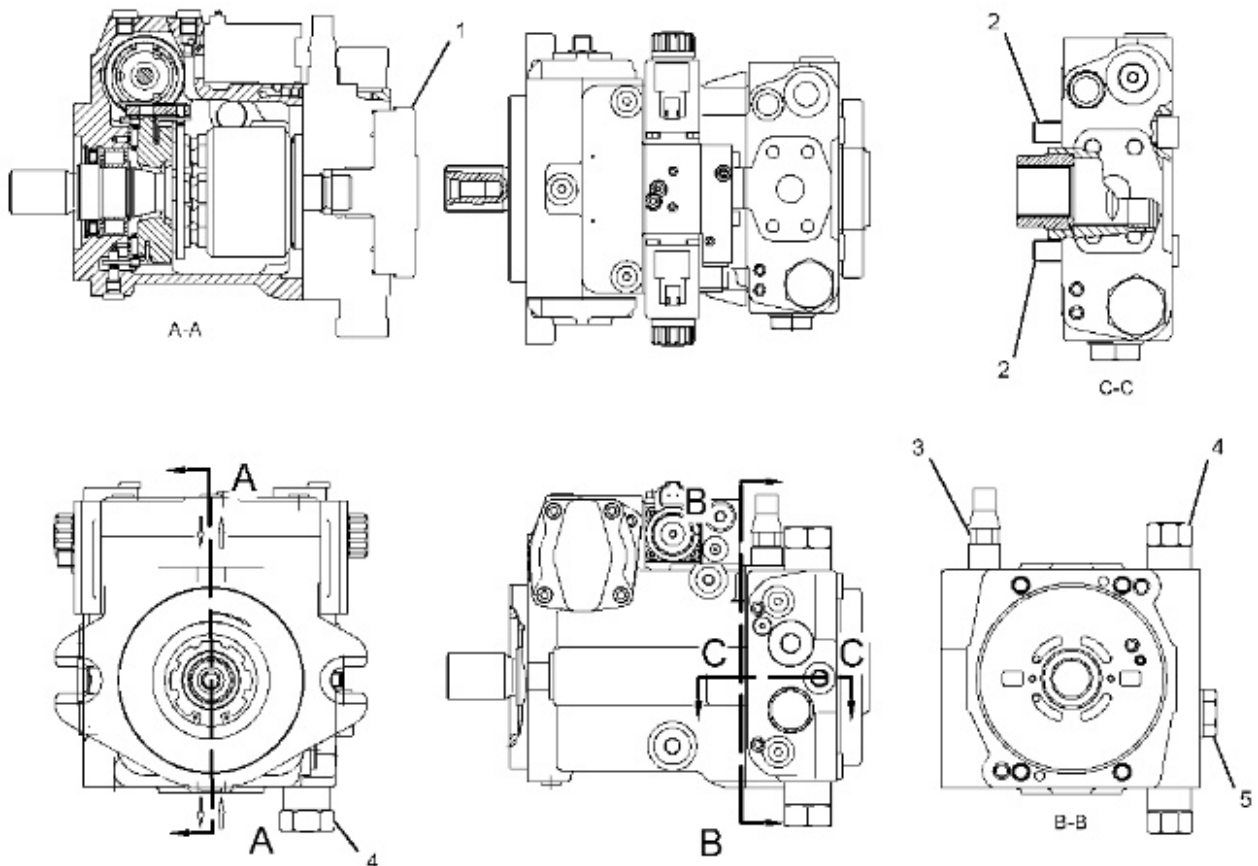


Table 1

Specification for 358-5018 Piston Pump Gp			
Item	Qty	Part	Specification Description
1	1	212-7037 Charge Pump	Displacement of the charge pump per revolution is 8.6 cc (0.5 cubic inch).
2	4	108-3819 Bolt	Torque to 205 ± 10 N·m (151.19980 ± 7.37560 lb ft)
3	2	212-7035 Relief Valve Gp	Torque to 160 ± 8 N·m (118 ± 6 lb ft).
4	1	154-9445 Relief Valve Gp	Torque to 35.0 ± 1.8 N·m (25.8 ± 1.3 lb ft).
5	1	212-6679 Relief Valve Gp	Torque to 70.0 ± 3.5 N·m (51.6 ± 2.6 lb ft).
-	-	-	Rotation of the pump is clockwise.
-	-	-	Displacement of the pump is ± 40.0 cc (± 2.4 cu in).
-	-	-	Flow at rated speed is 160 L/min (42 US gpm).
-	-	-	Crossover relief valve Pressure setting is 44150 ± 750 kPa (6403 ± 109 psi).
-	-	-	Pressure override setting is 41150 ± 500 kPa (5968 ± 73 psi).

Removal Procedure

Table 2

Required Tools			
Tools	Part Number	Part Description	Qty
A	1U-9200	Lever Puller Hoist	1

Start By:

- A. Remove the bottom guard.
 - B. Release the system pressure (hydraulic).
 1. Drain the hydraulic oil into a suitable container for proper storage or disposal.
-

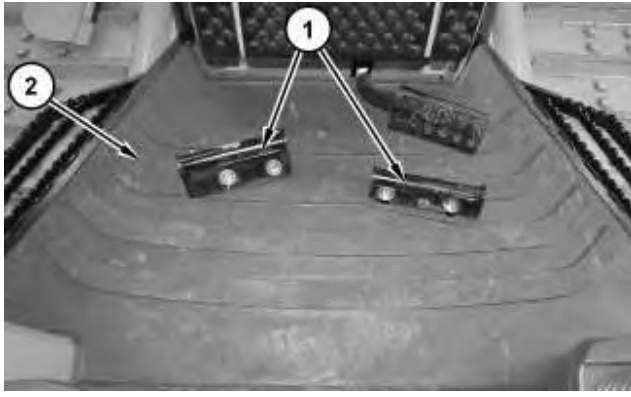


Illustration 2

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2. Remove support assemblies (1) . Remove floor mat (2) .

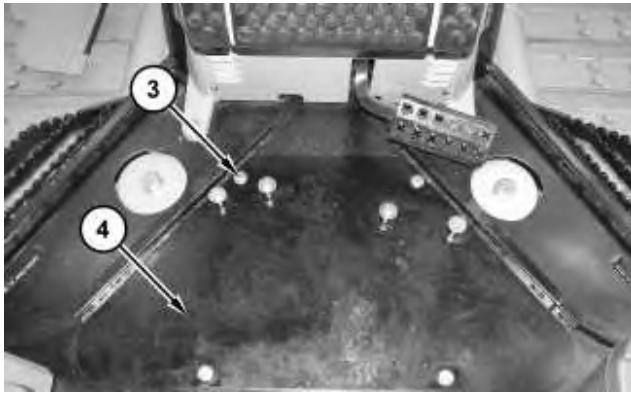


Illustration 3

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3. Remove bolts (3) . Remove plate (4) .

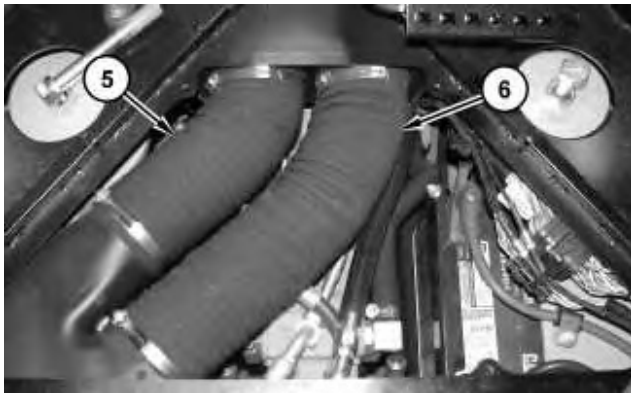


Illustration 4

g02728110

4. Remove hose clamps (5) . Remove hoses (6) .



Illustration 5

g01365087

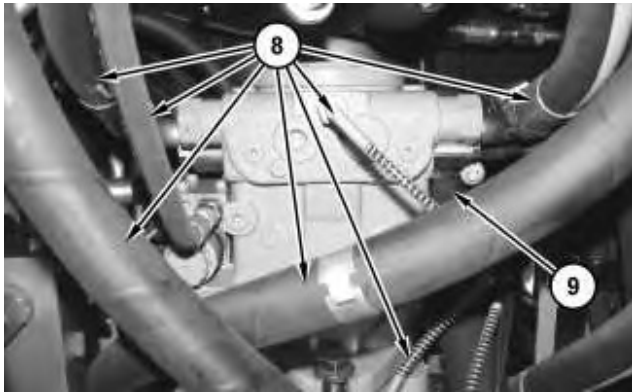


Illustration 6

g01365090

5. Disconnect bracket (7) . Disconnect hose assemblies (8) . Disconnect hose (9) .



Illustration 7

g01365106

6. Disconnect harness assemblies (10) .

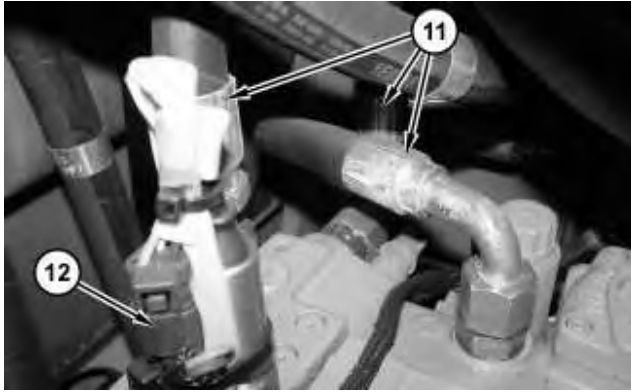


Illustration 8

g01365112

7. Disconnect hose assemblies (11) . Disconnect harness assemblies (12) .

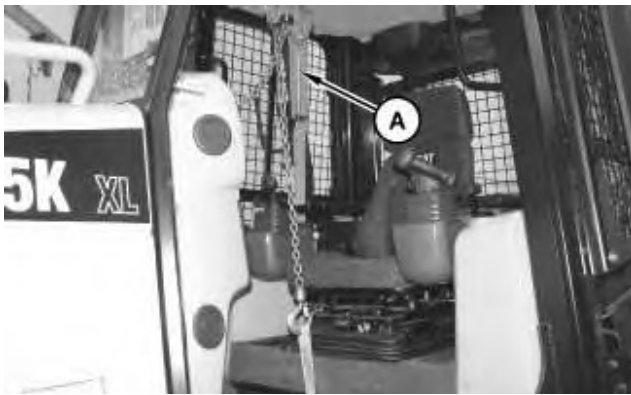


Illustration 9

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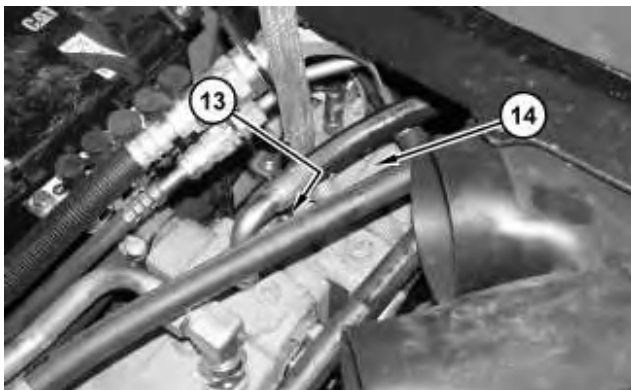


Illustration 10

g01365120

8. Attach a suitable lifting device and Tooling (A) to piston pump (14) . Remove bolts (13) .
9. Remove piston pump (14) . The weight of piston pump (14) is approximately 36 kg (80 lb).



Illustration 11

g01365148

10. Remove O-ring seal (15) .

Installation Procedure

1. Install piston pump (winch) (14) in reverse order of the removal.

Disassembly Procedure

Table 3

Required Tools			
Tool	Part Number	Part Description	Qty
A	147-3497	Compressor	1
B	1U-7600	Slide Hammer	1
C	8H-0663	Bearing Puller Gp	1

Start By:

- A. Remove the piston pumps.

Note: Regular maintenance and frequent inspections are routine precautions. Practice preventive maintenance before damage occurs. Preventive maintenance can help to avoid a failure. If a failure occurs, an accurate diagnosis of the cause can prevent a recurrence. Information is available to analyze failures for piston pumps and motors. Refer to Special Publication, SEBD0641, "Analyzing Axial Piston Pump and Motor Failures".

Note: Many times, the installation of new parts is not necessary. The installation of used parts during reconditioning is acceptable. Used parts can result in a substantial cost reduction. Reusable information is available on piston pumps and motors. Refer to Special Publication, SEBF8032, "Guideline For Reusable Parts - Piston Pumps and Motors". During reconditioning, correct any conditions that might have caused the original failure.

Note: The hydraulic oil must be contained in the proper manner. Refer to Special Publication, NENG7004, "Contamination Control Catalog".

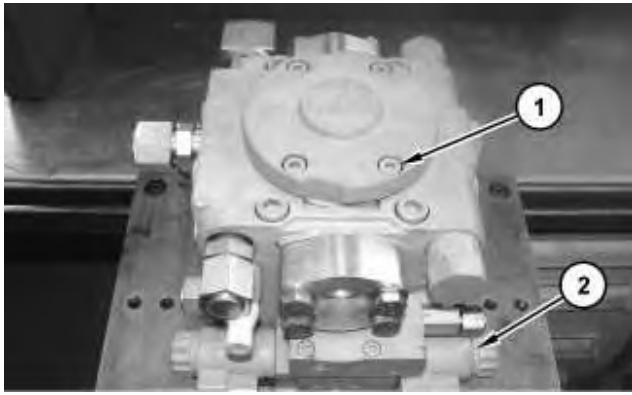


Illustration 12

g02885976

1. Remove bolts (1) and coil assemblies (2) .



Illustration 13

g02886001

2. Remove flange assemblies (3) , adapters (4) , sensor group (5) , and elbow (6) .
-

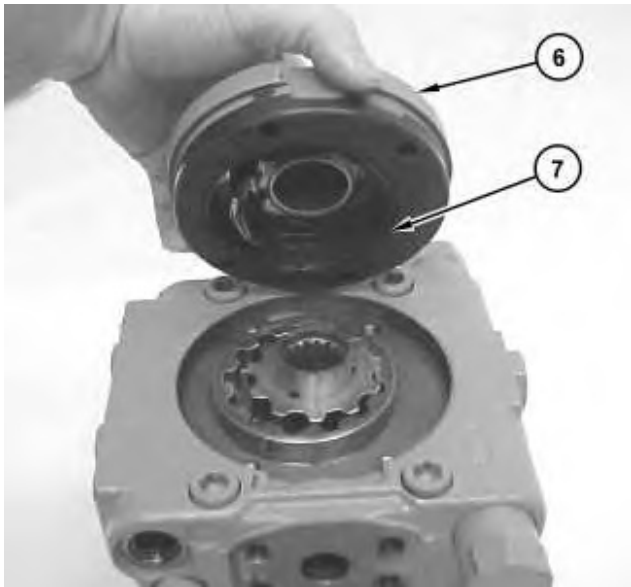


Illustration 14

g02886036

3. Mark the position of the housing for charge pump assembly (6) for reassembly purposes. Remove the housing for the charge pump assembly (6) .
4. Remove O-ring seal (7) .

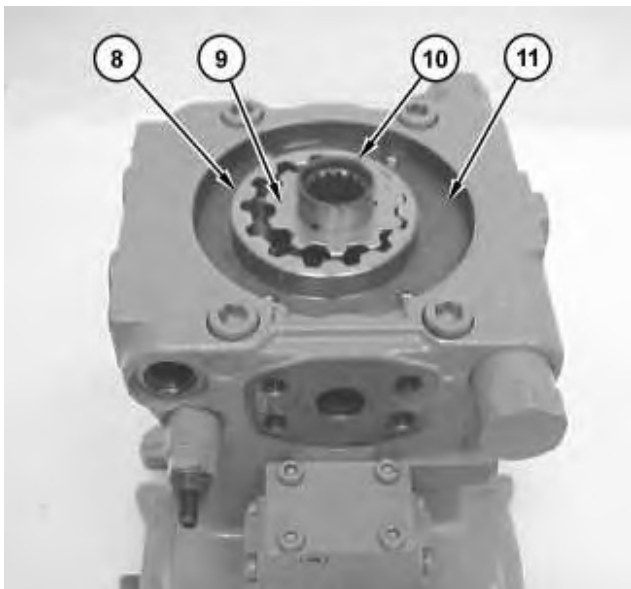


Illustration 15

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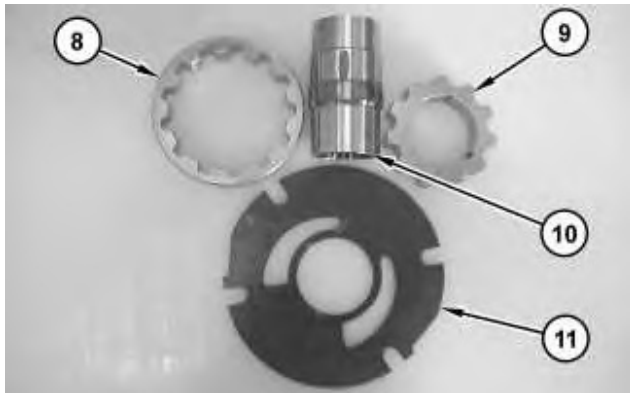


Illustration 16

g02886039

5. Mark the alignment of gears (8) and (9) and of wear plate (11) for reassembly purposes. Remove gears (8) and (9) . Remove coupler (10) and remove wear plate (11) .

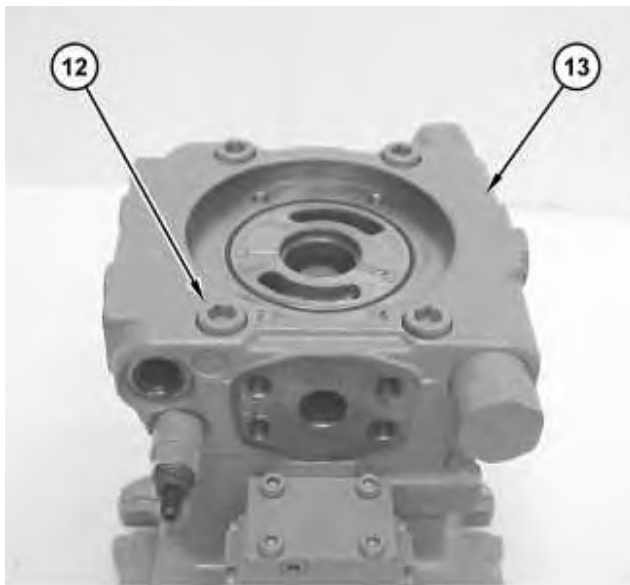


Illustration 17

g02886041

6. Remove bolts (12) .
7. Remove head assembly (13) .
-

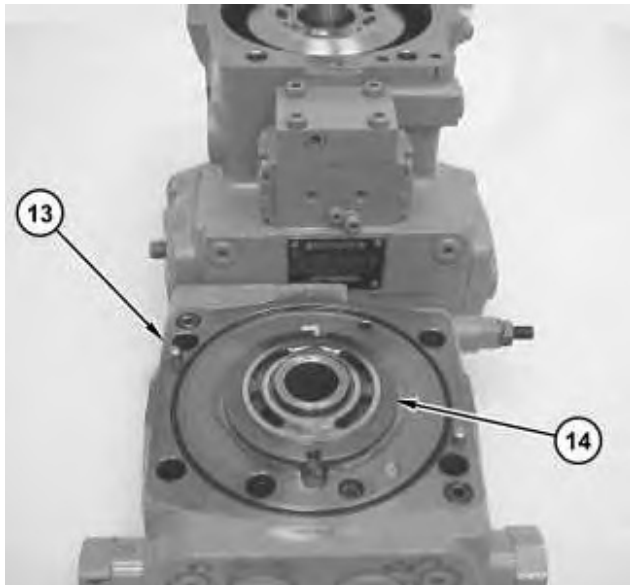


Illustration 18

g02886056

8. Mark the alignment of port plate (14) for reassembly purposes.

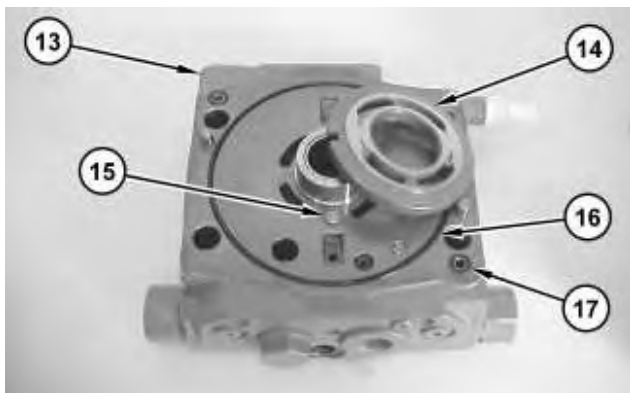


Illustration 19

g02886057

9. Remove port plate (14) .
10. Remove pin (15) which locates the port plate from head assembly (13) .
11. Remove O-ring seals (16) and (17) from head assembly (13) .

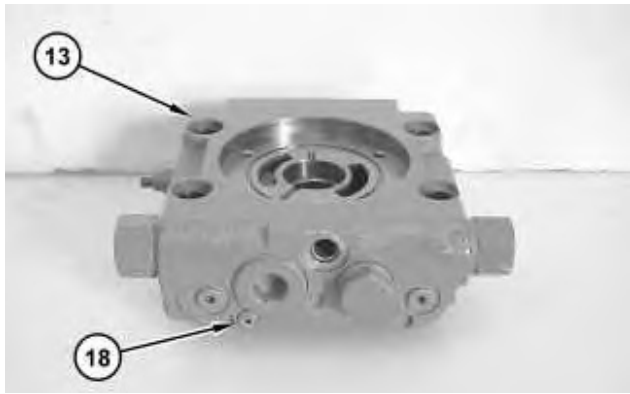


Illustration 20

g02886058

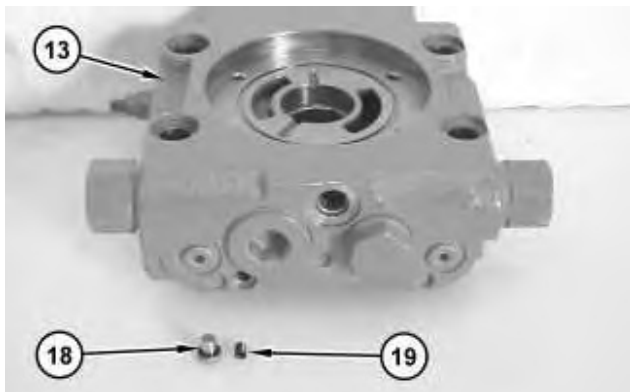


Illustration 21

g02886059

12. Remove plug (18) and orifice (19) from head assembly (13) .



Illustration 22

g02888047

 **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.

13. Remove valve assembly (20) from head assembly (13) .

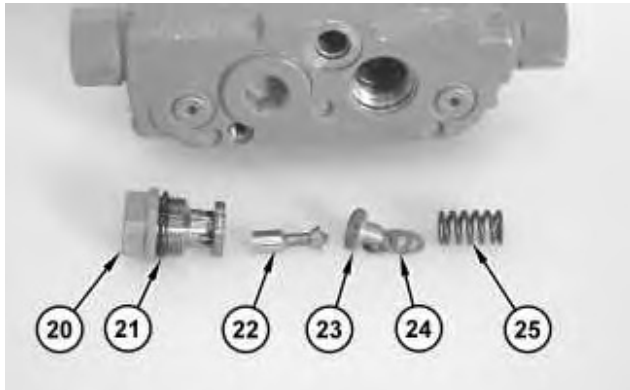


Illustration 23

g02888056

14. Remove O-ring seal (21) from valve assembly (20) .
15. Remove spool (22) , seat (23) , shims (24) , and spring (25) from head assembly (13) .

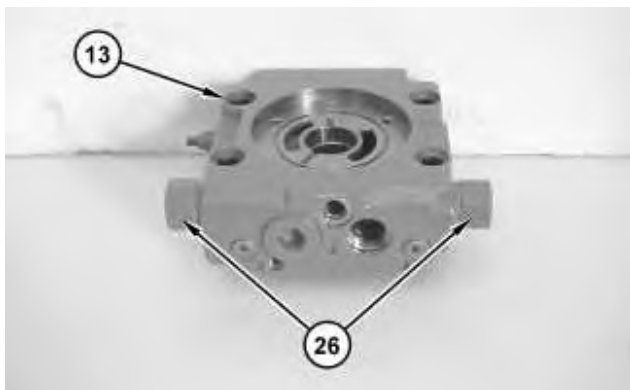


Illustration 24

g02888085

 **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.

16. Remove relief valves (26) from head assembly (13) . The relief valves are identical.

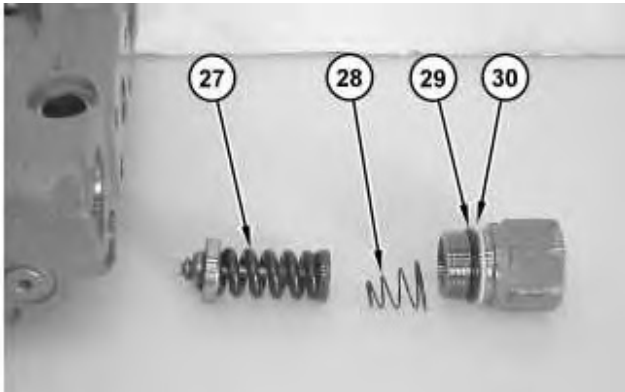


Illustration 25

g02888102

17. Remove backup ring (30) , O-ring seal (29) , spring (28) and seat (27) . Note the orientation of spring (28) and of the seat (27) for reassembly.

Note: DO NOT disassemble seat (27) . Damage will occur.



Illustration 26

g02888119

 **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.

18. Remove valve assembly (31) from head assembly (13) .

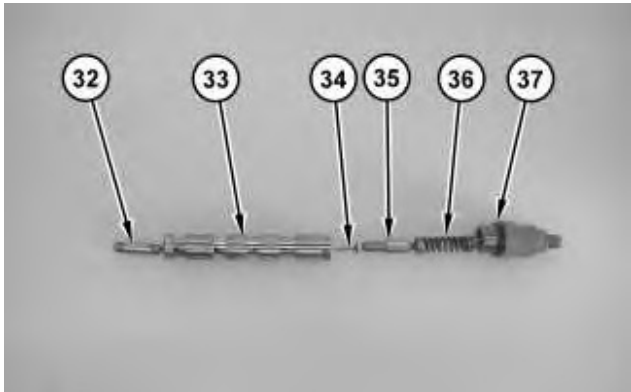


Illustration 27

g02888128

19. Remove O-ring seal (37) , spring and seats (36) , spool (35) , poppet (34) , spool (33) , and spool (32) from the inside of spool (33) .

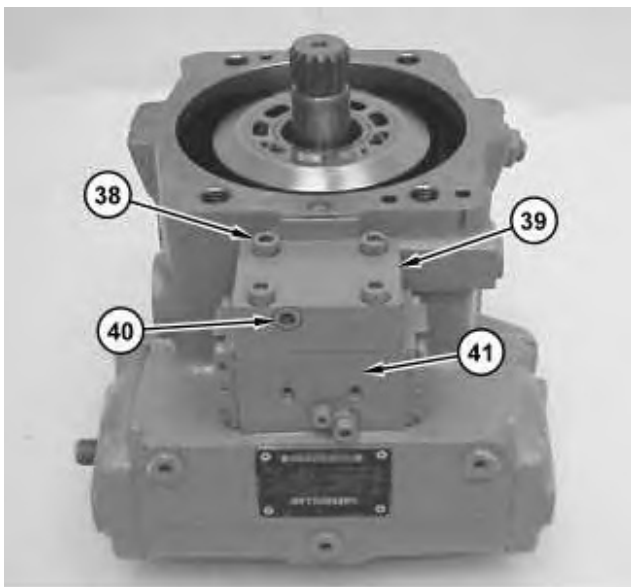


Illustration 28

g02888257

20. Remove bolts (38) and (40) . Remove cover (39) from valve assembly (41) .

21. Remove bolts (37) and (39) . Remove cover (38) from valve assembly (40) .

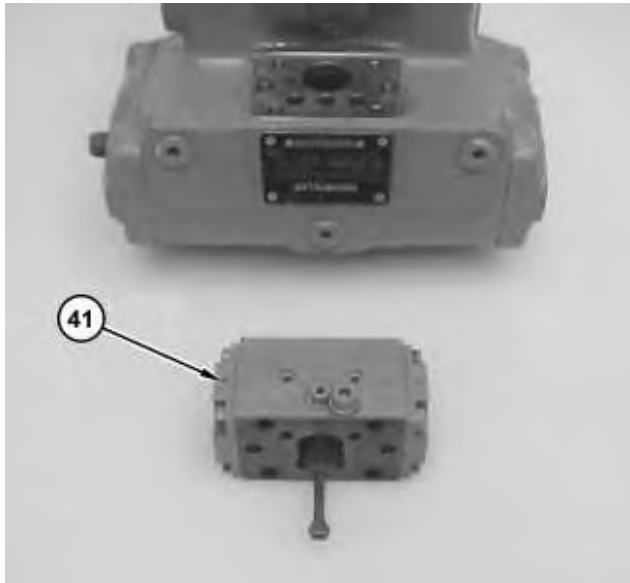


Illustration 29

g02888259

22. Remove valve assembly (41) .

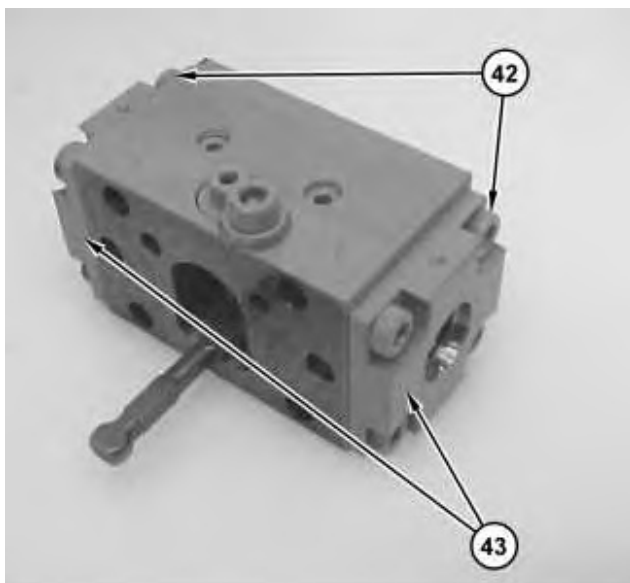


Illustration 30

g02888262

23. Remove bolts (42) and remove caps (43) from both ends of the valve assembly. Mark the orientation of caps (43) and the valve assembly for reassembly purposes.

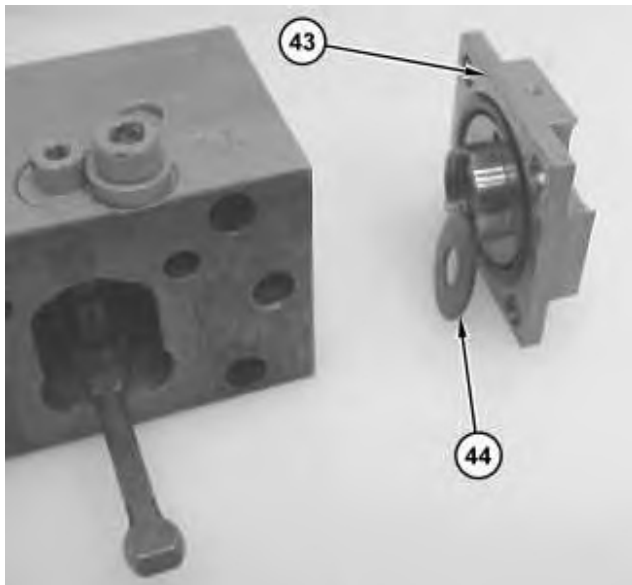


Illustration 31

g02888264

24. Remove caps (43) and washers (44) from both end of the valve assembly. Note the orientation of the washers for reassembly.

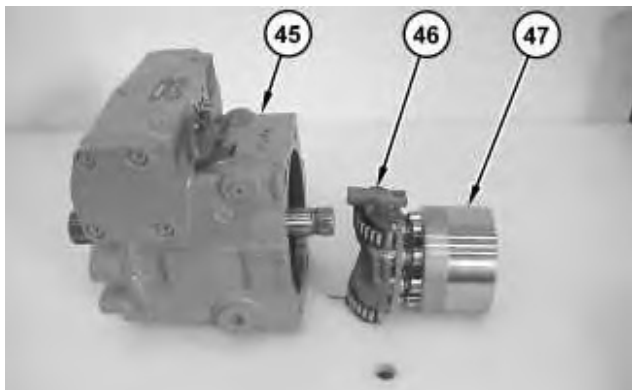


Illustration 32

g02888265

25. Move pump housing (45) to the horizontal position.
 26. Remove swashplate assembly (46) and the rotating assembly (47) as a unit from pump housing (45) .
 27. Separate swashplate assembly (46) from barrel assembly (47) .
-

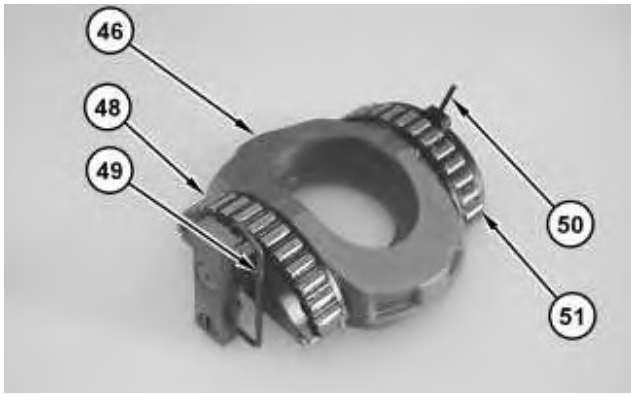


Illustration 33

g02888266

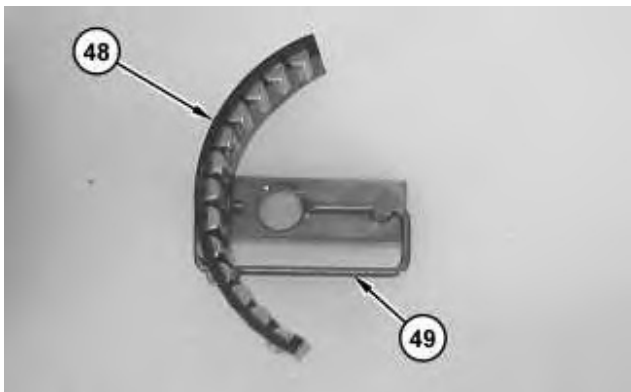
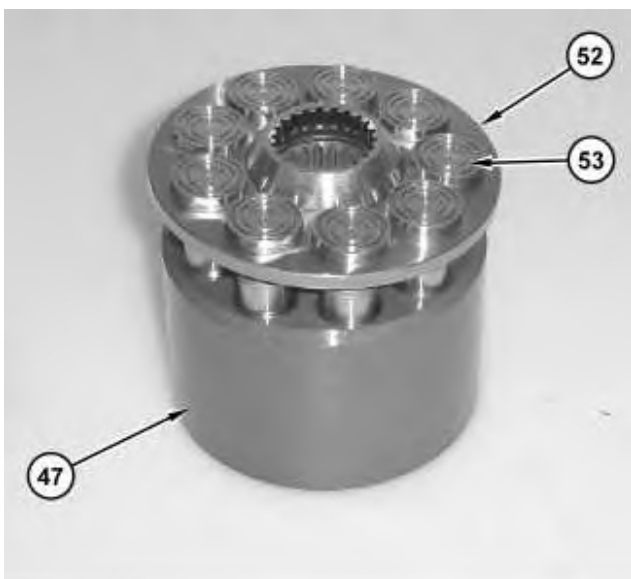


Illustration 34

g03328742

28. Remove pin assembly (49) and bearing (48) from one side of the swashplate assembly (46) .
29. Remove pin (50) and bearing (51) from the other side of the swashplate assembly.



30. Mark the locations of the pistons (53) in barrel assembly (47) . The pistons must be installed in the same locations during reassembly.
31. Remove plate (52) and pistons (53) from barrel assembly (47) .

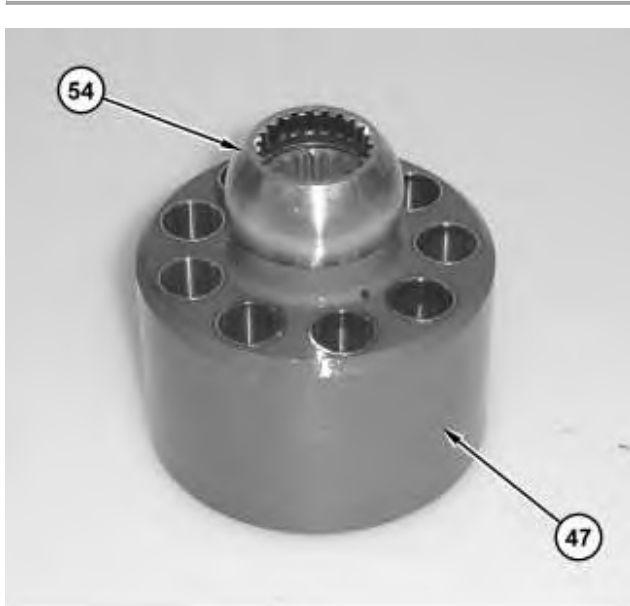


Illustration 36

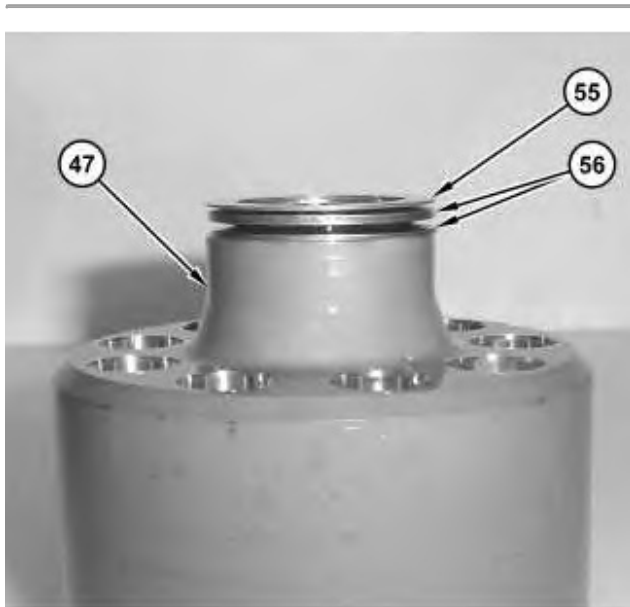


Illustration 37

32. Remove retainer (54) , shim (55) and springs (56) from barrel assembly (47) . Note the order of the springs and of the shims during removal. The springs and the shims must be placed in the same order during reassembly.

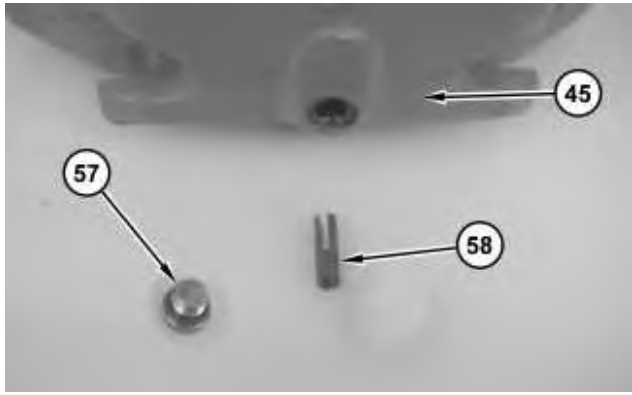


Illustration 38

g02890097

33. Remove plug (57) and pin (58) from pump housing (45) .

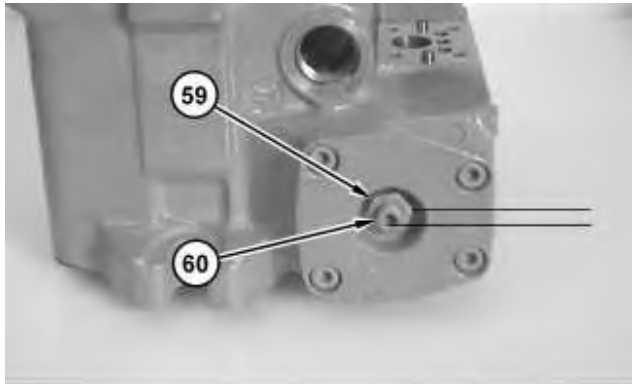


Illustration 39

g02888278

34. Measure the distance from the top of locking nut (59) to the top of allen head screw (60) .
Record this dimension for reference during reassembly.

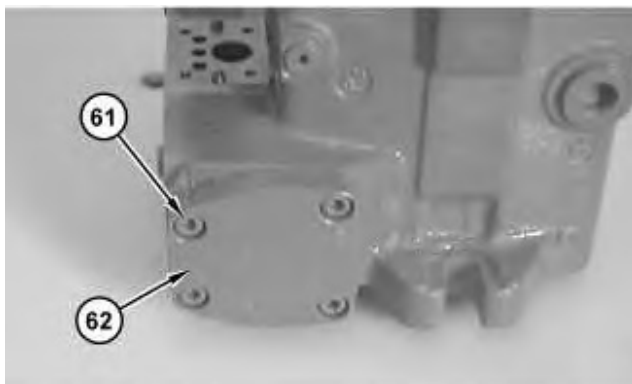


Illustration 40

g02888280

35. Remove bolts (61) . Remove cover (62) .

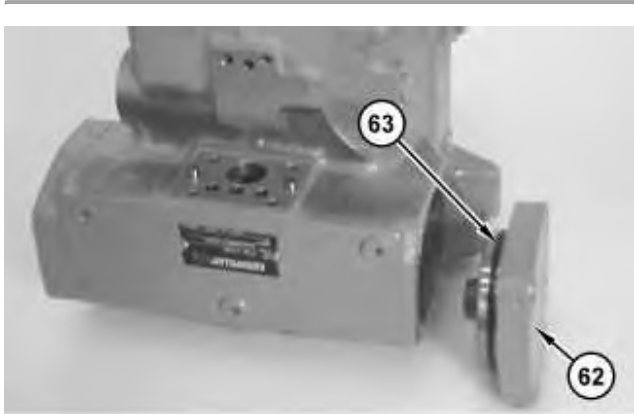


Illustration 41

g02888281

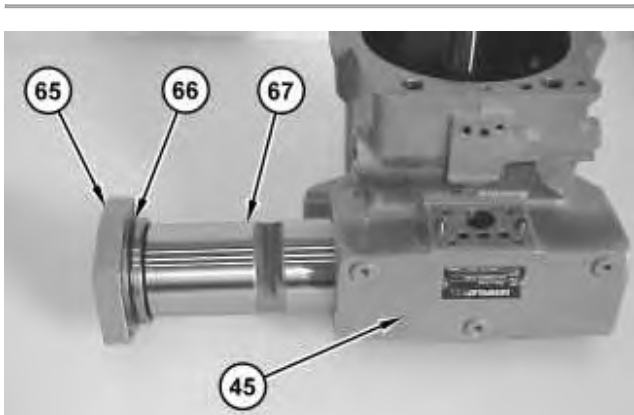
36. Remove O-ring seal (63) from cover (62) .



Illustration 42

g02888282

37. Remove bolts (64) from cover (65) .



38. Remove actuator (67) from pump housing (45) .
39. Separate cover (65) from actuator (67) .
40. Remove O-ring seal (66) from cover (65) .



Illustration 44

⚠ WARNING

Personal injury can result from parts and/or covers under spring pressure.

Spring force will be released when covers are removed.

Be prepared to hold spring loaded covers as the bolts are loosened.

41. Use a suitable press in order to remove retaining ring (68) .



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