



# Service Repair Manual

## **Model**

287C MULTI TERRAIN LOADER

---

Previous Screen

Product: MULTI TERRAIN LOADER

Model: 287C MULTI TERRAIN LOADER MAS

Configuration: 287C Multi Terrain Loader MAS00001-UP (MACHINE) POWERED BY 3044C Engine

## Disassembly and Assembly

### 279C2 Compact Track Loader and 287C, 277C, 277C2 and 297C Multi Terrain Loaders Power Train

Media Number -KENR5197-07

Publication Date -01/06/2014

Date Updated -10/06/2014

i06660138

## Piston Pump (Hydrostatic) - Assemble

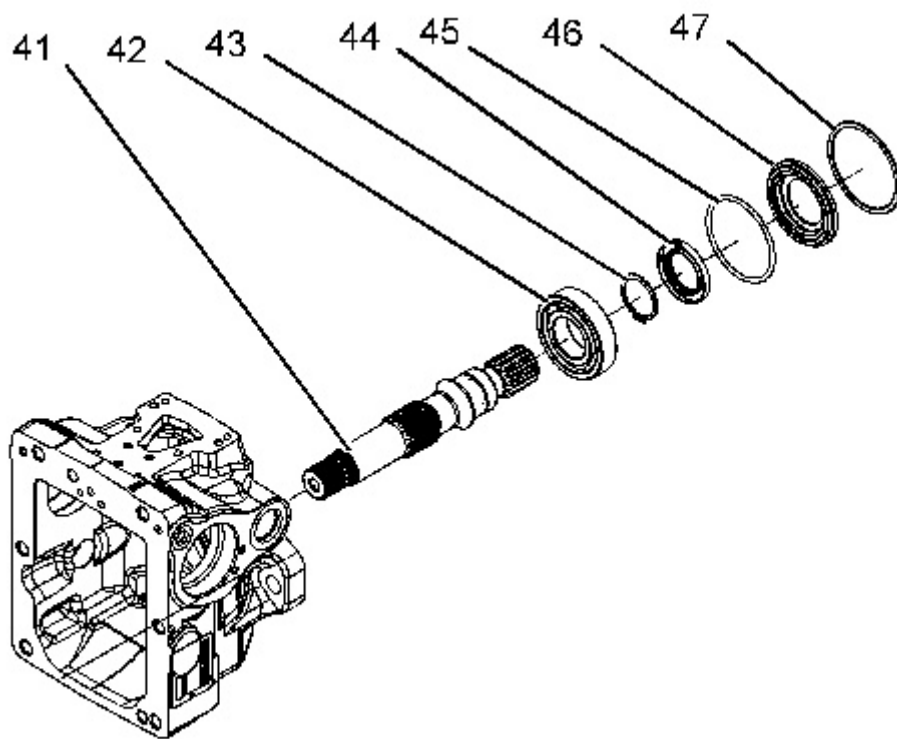
SMCS - 5070-016-H7

### Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
D	1P-1859	Retaining Ring Pliers	1
E	9S-3263	Thread Lock Compound	1

---

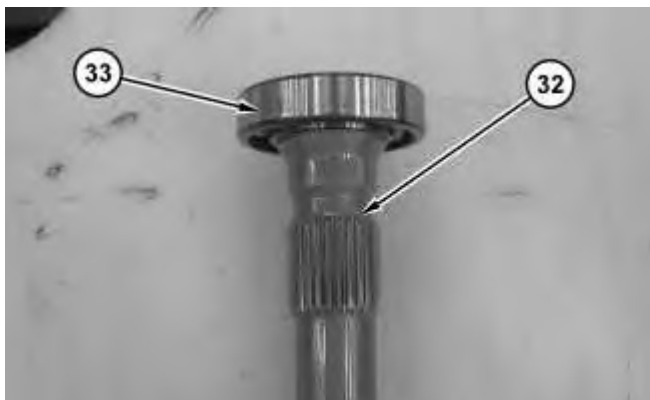


---

Illustration 1

g06063261

1. Raise the temperature of bearing (42).
2. Install bearing (42).
3. Use Tooling (D) to install retaining ring (43).
4. Install shaft assembly (40) and seal (44).
5. Install O-ring seal (45).
6. Install plate (46).
7. Install retaining ring (47).



**<https://www.ebooklibonline.com>**

Hello dear friend!

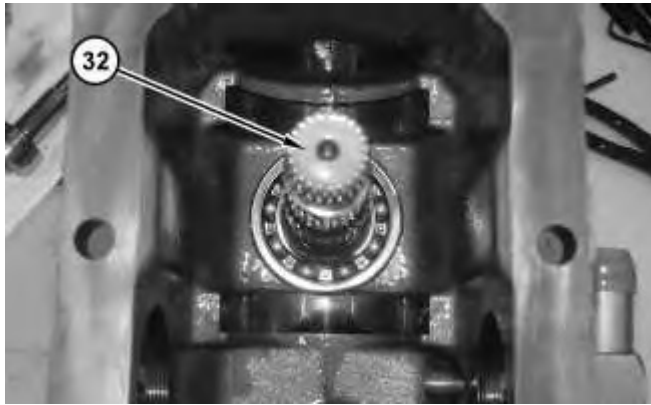
Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**

8. Raise the temperature of bearing (33).
9. Install bearing (33) onto shaft (32).



---

Illustration 3

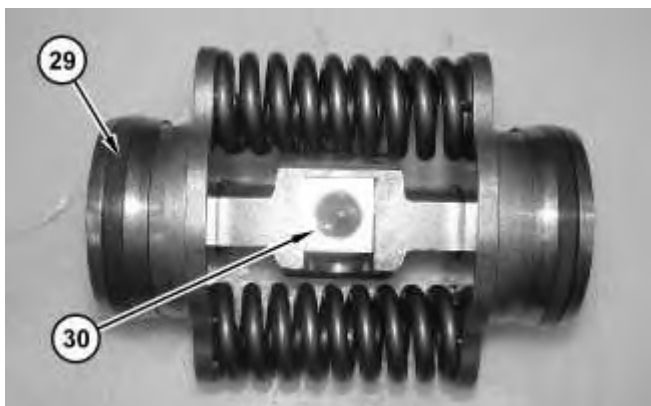
10. Install shaft (32).



---

Illustration 4

11. Install bearings (31) onto swashplate (28).



12. Install seals (29) and block (30).

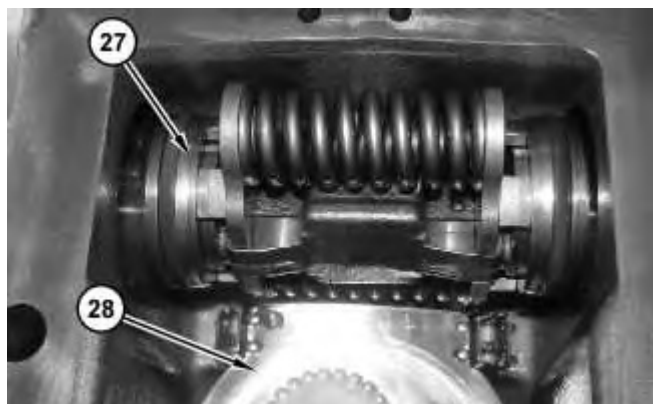


Illustration 6

13. Install piston assembly (27) and swashplate (28).



Illustration 7

14. Install O-ring seal (26).

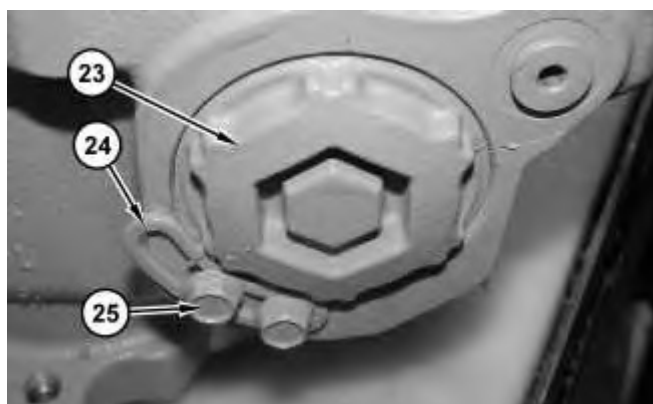


Illustration 8

15. Install set screw (23). Apply slight pressure to the piston assembly.
16. Repeat Step 15 for the opposite side.
17. Use a suitable measuring device to center the swashplate. Measure the distance that is from the machined face of the housing to both sides of the swashplate. Adjust setscrews (23) to achieve the same distance to the swashplate.
18. Install retainer (24), and bolts (25).

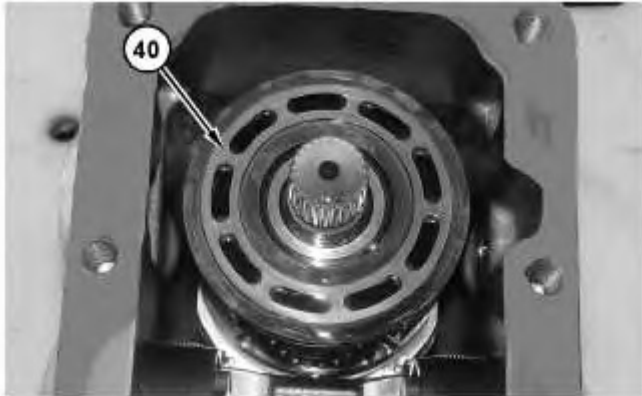


Illustration 9

g06063253

19. Install barrel assembly (40).

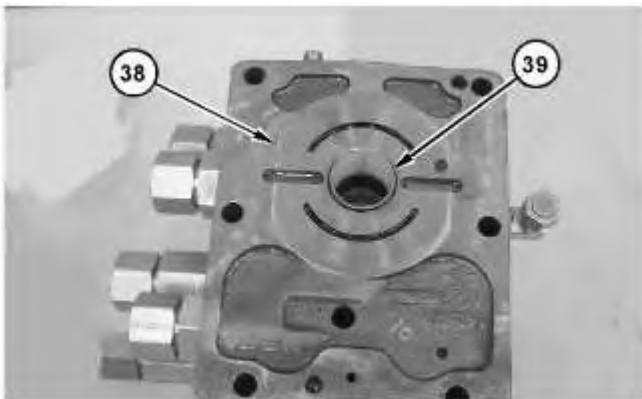


Illustration 10

g06063248



20. Install bearings (39).
21. Install port plate (36) and gasket (35).
22. Install head (38).
23. Install coupling (37).

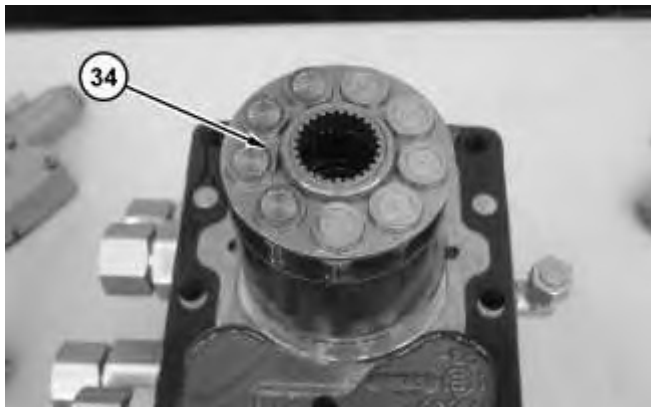


Illustration 12

24. Repeat Steps 16 through Steps 23 for barrel assembly (34).
25. Install barrel assembly (34).

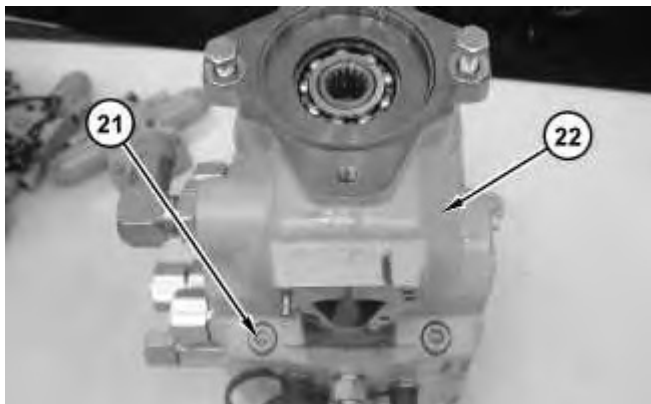


Illustration 13

26. Install housing (22) and bolts (21). Tighten bolts (21) to a torque of  $110 \pm 10$  N·m ( $81 \pm 7$  lb ft).
-

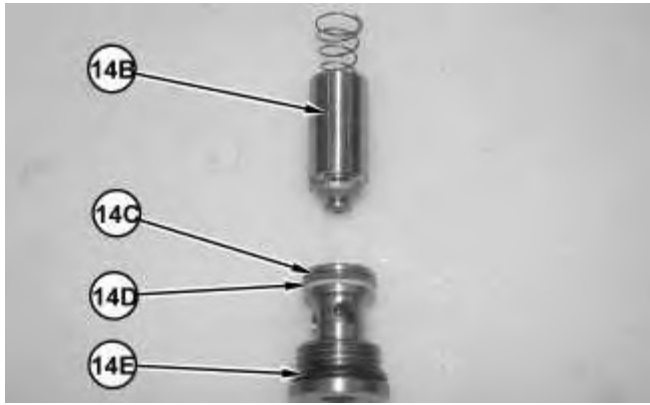


Illustration 14

g01377507

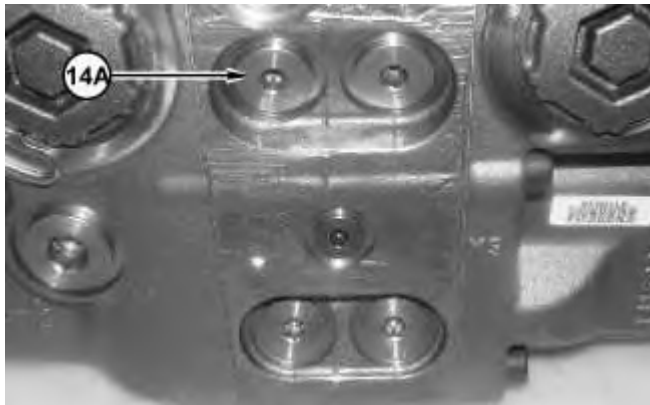


Illustration 15

g01377504

27. Install crossover relief valves (14B), backup ring (14D), O-ring seal (14C), O-ring seal (14E) and plugs (14A) into the head.

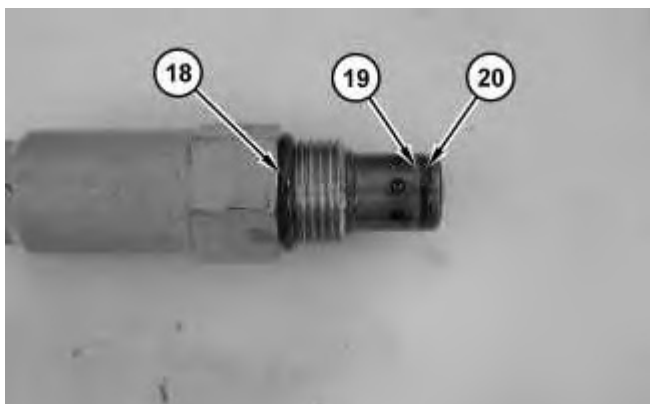


Illustration 16

g01325540

28. Install O-ring seal (20), backup ring (19), and O-ring seal (18).

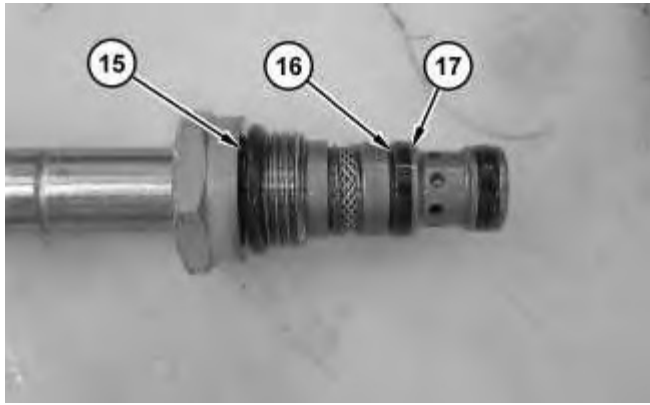


Illustration 17

g01325538

29. Install O-ring seals (17), backup rings (16), and O-ring seal (15).

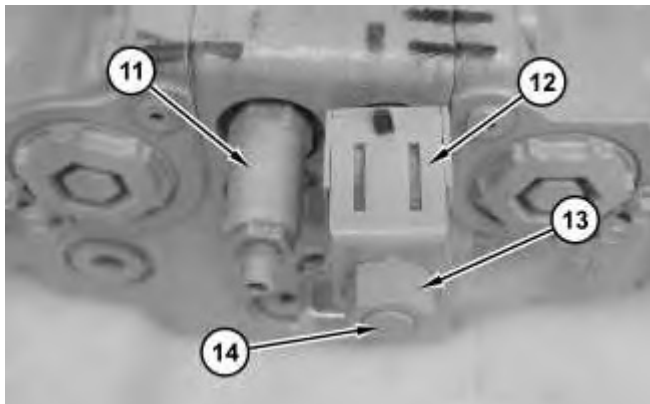


Illustration 18

g01325536

30. Install valve (11). Tighten valve (11) to a torque of  $44 \pm 3 \text{ N}\cdot\text{m}$  ( $32 \pm 2 \text{ lb ft}$ ).
31. Install cartridge (14), coil (12), and nut (13). Tighten nut (13) to a torque of  $80 \pm 10 \text{ N}\cdot\text{m}$  ( $59 \pm 7 \text{ lb ft}$ ).
32. Install the cross over relief valves and the plugs into the head. Tighten plugs (21) to a torque of  $110 \pm 10 \text{ N}\cdot\text{m}$  ( $81 \pm 7 \text{ lb ft}$ ).

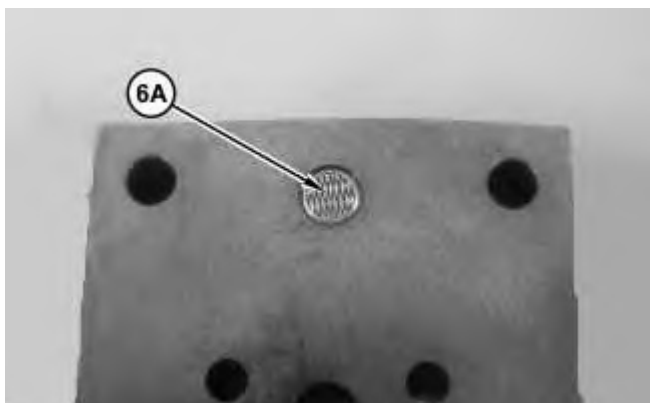


Illustration 19

g01377500

33. Install screen (6A).

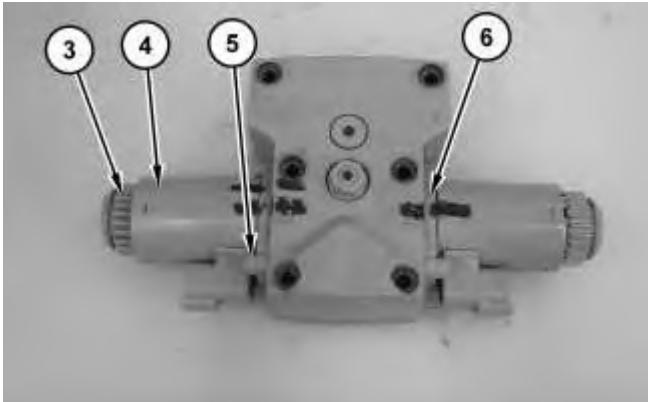


Illustration 20

g01325526

34. Install cartridge (6), bolts (5), coil (4), the O-ring seal, and nut (3). Tighten bolts (5) to a torque of  $5.5 \pm 0.1$  N·m ( $49 \pm 0.9$  lb in).

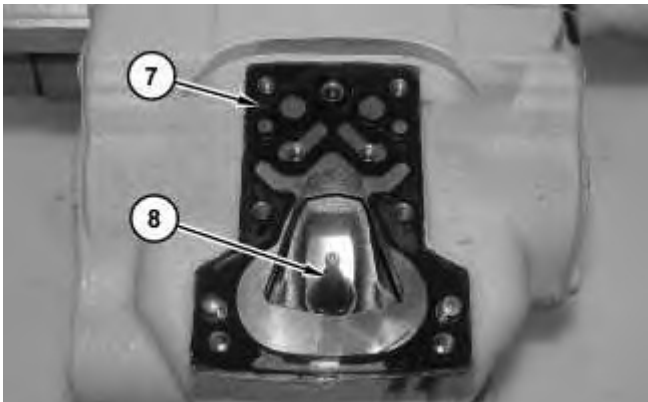
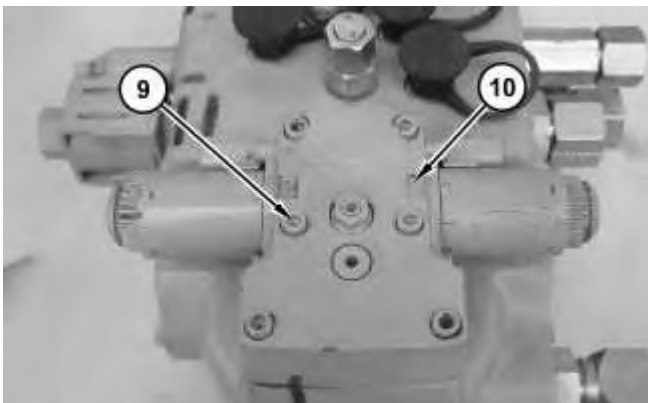


Illustration 21

g01325527

35. Install control arm (8) and gasket (7).

36. Apply Tooling (E) to control arm (8).



37. Install valve (10) and bolts (9). Tighten bolts (9) to a torque of  $13 \pm 1$  N·m ( $115 \pm 9$  lb in).

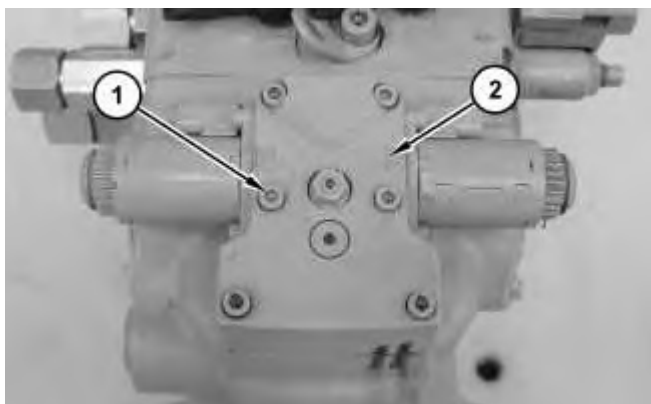


Illustration 23

38. Repeat Steps 34 through Steps 35 for valve (2).
39. Install bolts (1) and valve (2). Tighten bolts (1) to a torque of  $13 \pm 1$  N·m ( $115 \pm 9$  lb in).
40. Bench test the pump before installation into the machine.

**End By:**

- a. Install the pump. Refer to Disassembly and Assembly, "Piston Pump (Hydrostatic) - Install".

[Previous Screen](#)

Product: MULTI TERRAIN LOADER

Model: 287C MULTI TERRAIN LOADER MAS

Configuration: 287C Multi Terrain Loader MAS00001-UP (MACHINE) POWERED BY 3044C Engine

## Disassembly and Assembly

### 279C2 Compact Track Loader and 287C, 277C, 277C2 and 297C Multi Terrain Loaders Power Train

Media Number -KENR5197-07

Publication Date -01/06/2014

Date Updated -10/06/2014

i07466134

## Piston Pump (Hydrostatic) - Install

SMCS - 5070-012-H7

### Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	247-4296	Pump Removal Handle As	1
	FT-2999	Weight	2
	FT-2998	Lock Collar	2
	138-7575	Link Bracket	1
B	159-3327	Wrench Adapter <sup>(1)</sup>	1
	387-9124	Wrench Adapter <sup>(2)</sup>	1
C	1P-1857	Retaining Ring Pliers	1
D	9S-3263	Thread Lock Compound	1

<sup>(1)</sup> For use on 21mm head bolts.

<sup>(2)</sup> For use on 14mm head bolts.

**Note:** Cleanliness is an important factor. Before assembly, thoroughly clean all parts in cleaning fluid. Allow the parts to air dry. Do not use wiping cloths or rags to dry parts. Lint may be deposited on the parts which may cause trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement. Dirt and other contaminants can damage the precision component. Perform assembly procedures on a clean work surface. Keep components covered and protected at all times.

**Note:** Check the O-ring seals for wear or for damage. Replace the components, if necessary.

---

## 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<sup>®</sup> products.**

**Dispose of all fluids according to local regulations and mandates.**

---

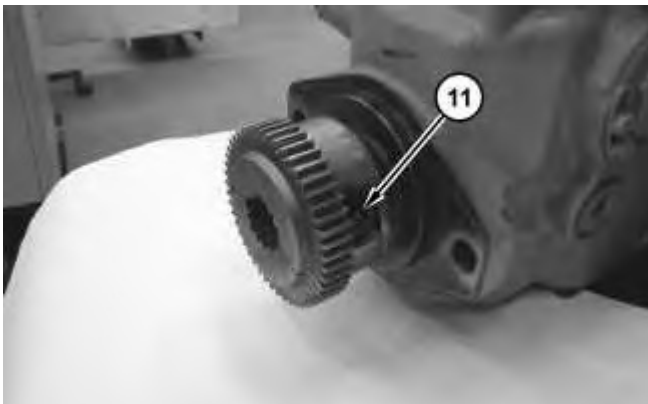


Illustration 1

g01342687

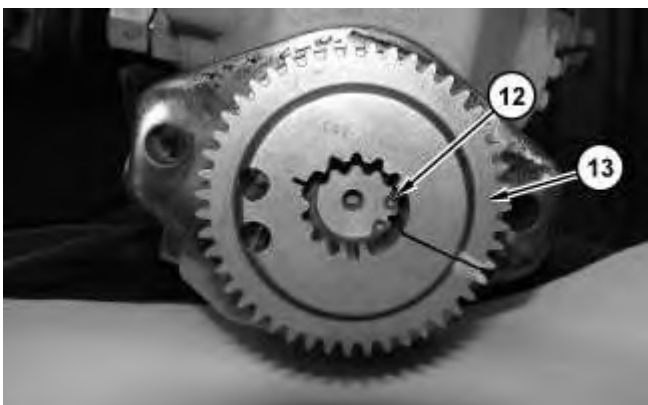


Illustration 2

g01342689

1. Install coupling (13). Use Tooling (C) to install retaining ring (12). Apply Tooling (D) to the threads of bolt (11). Install bolts (11). Tighten bolts (11) to a torque of  $102 \pm 5 \text{ N}\cdot\text{m}$  ( $75 \pm 4 \text{ lb ft}$ ).

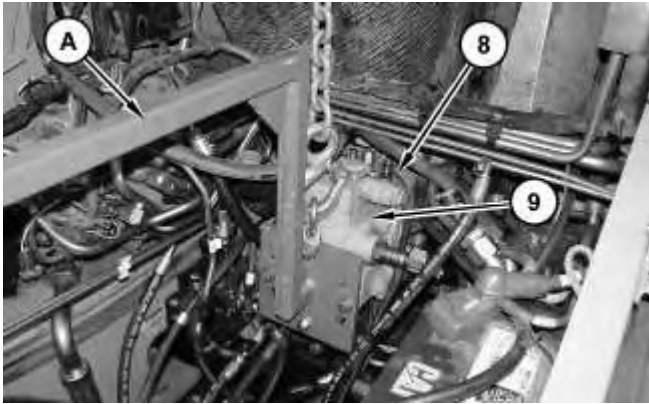


Illustration 3

g01342634

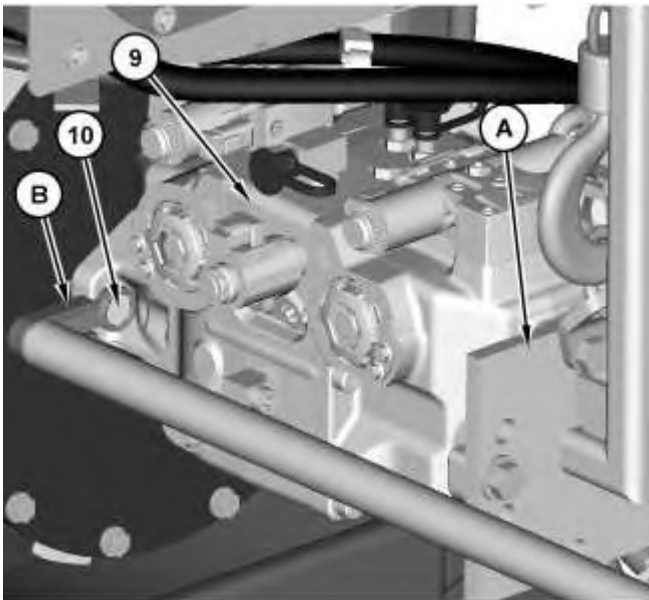


Illustration 4

g01342641

2. Attach Tooling (A) and a suitable lifting device to piston pump (9). The weight of piston pump (9) is approximately 73 kg (160 lb). Use Tooling (A) and the suitable lifting device to position piston pump (9) to the machine.

**Note:** Ensure that the splines are properly aligned with the engine.

3. Use Tooling (B) to install bolts (10) to piston pump (9).
  4. Connect harness assemblies (8).
-

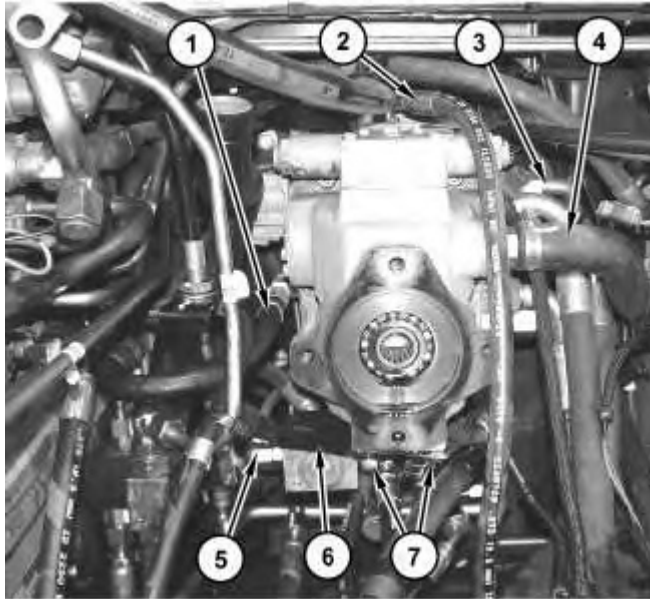


Illustration 5

g01342576

5. Position plate assembly (6) and install bolts (7).
6. Connect tube assembly (5).
7. Connect hose assembly (1).
8. Connect hose assemblies (3).
9. Connect hose (4).
10. Connect hose assembly (2).

**End By:**

- a. Install the high flow piston pump. Refer to Disassembly and Assembly, "Piston Pump - Install".
- b. Install the hydraulic tank. Refer to Disassembly and Assembly, "Hydraulic Tank - Install".

[Previous Screen](#)

Product: MULTI TERRAIN LOADER

Model: 287C MULTI TERRAIN LOADER MAS

Configuration: 287C Multi Terrain Loader MAS00001-UP (MACHINE) POWERED BY 3044C Engine

## Disassembly and Assembly

### 279C2 Compact Track Loader and 287C, 277C, 277C2 and 297C Multi Terrain Loaders Power Train

Media Number -KENR5197-07

Publication Date -01/06/2014

Date Updated -10/06/2014

i02662132

## Piston Motor (Hydrostatic) - Remove

SMCS - 4351-011

S/N - GCP1-UP

S/N - JWF1-UP

S/N - MAS1-UP

S/N - MET1-UP

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	1
B	140-7742	Sleeve	2

### Start By:

- a. Relieve the hydraulic system pressure. Refer to Disassembly and Assembly, "System Pressure - Release".
- b. Remove the track. Refer to Disassembly and Assembly, "Track (Rubber) - Remove and Install".
- c. Remove the track drive. Refer to Disassembly and Assembly, "Track Drive - Remove".

**Note:** Put identification marks on all hoses, on all hose assemblies, and on all harness assemblies for installation purposes. Plug all hose assemblies. This helps to prevent fluid loss, and this helps to keep contaminants from entering the system.

---

## 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, "Caterpillar Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Caterpillar products.**

**Dispose of all fluids according to local regulations and mandates.**

---

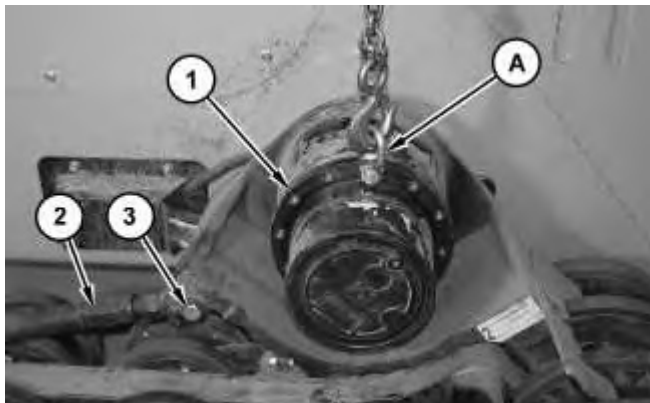
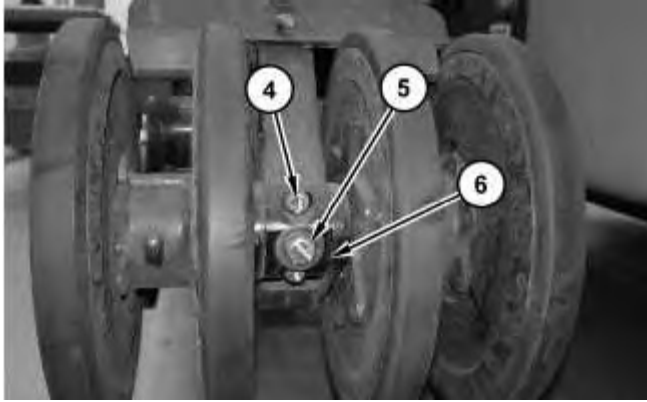


Illustration 1

g01337540

1. Attach Tooling (A) to track drive assembly (1). The weight of track drive assembly (1) is approximately 118 kg (260 lb).
  2. Remove bolt (3) and position track tensioner (2) out of the way.
-

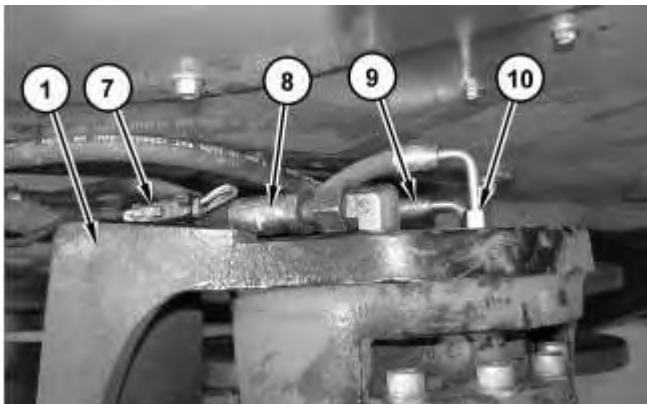


---

Illustration 2

g01337558

3. Remove bolts (4) and bolt (5). Remove retainer (6).

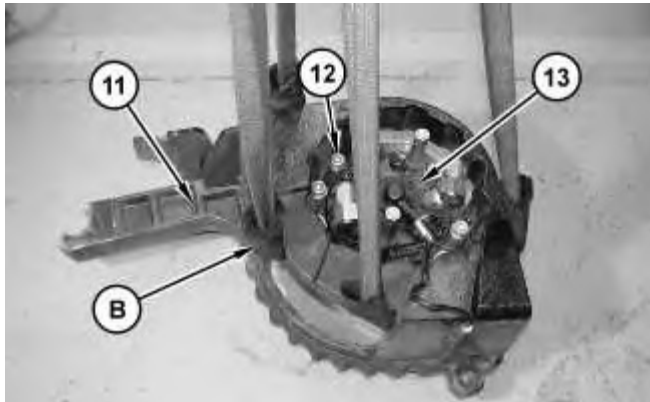


---

Illustration 3

g01337566

4. Disconnect harness assembly (7).
  5. Disconnect hose assemblies (8).
  6. Disconnect hose assemblies (9).
  7. Disconnect hose assemblies (10).
  8. Use Tooling (A) and the suitable lifting device in order to remove track drive assembly (1) from the machine.
-



---

Illustration 4

g01337587

**Note:** Note the orientation of motor support (11) to piston motor (13) for assembly purposes.

9. Attach Tooling (B) and a suitable lifting device to motor support (11). The weight of motor support (11) is approximately 54 kg (120 lb).
10. Remove bolts (12).
11. Use the suitable lifting device and Tooling (B) in order to remove motor support (11) from piston motor (13).

[Previous Screen](#)

Product: MULTI TERRAIN LOADER

Model: 287C MULTI TERRAIN LOADER MAS

Configuration: 287C Multi Terrain Loader MAS00001-UP (MACHINE) POWERED BY 3044C Engine

## Disassembly and Assembly

### 279C2 Compact Track Loader and 287C, 277C, 277C2 and 297C Multi Terrain Loaders Power Train

Media Number -KENR5197-07

Publication Date -01/06/2014

Date Updated -10/06/2014

i04281771

## Piston Motor (Hydrostatic) - Disassemble

SMCS - 4351-015

S/N - GCP1-UP

S/N - JWF1-UP

S/N - MAS1-UP

S/N - MET1-UP

## Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-1861	Retaining Ring Pliers	1
B	136-1452	Retaining Ring Pliers As	1
	1P-0074	Slide Hammer Puller Gp	1
C	5F-7340	Adapter	1
	5F-7342	Adapter	1
D	1P-1859	Retaining Ring Pliers	1
E	5P-5197	Retaining Ring Pliers As	1
F	FT-3081	Adapter Plate	1
G	127-8458	Final Drive Bench AR	1

H	308-5676	Spanner Wrench Assembly	1
J	1H-3110	Bearing Puller Gp	1
K	5F-7343	Bearing Puller Gp	1

**Start By:**

- a. Remove the piston motor.



Illustration 1

g01344079

1. Remove bolts (1) and cover (2).



Illustration 2

g01344080

2. Remove O-ring seal (3).
-

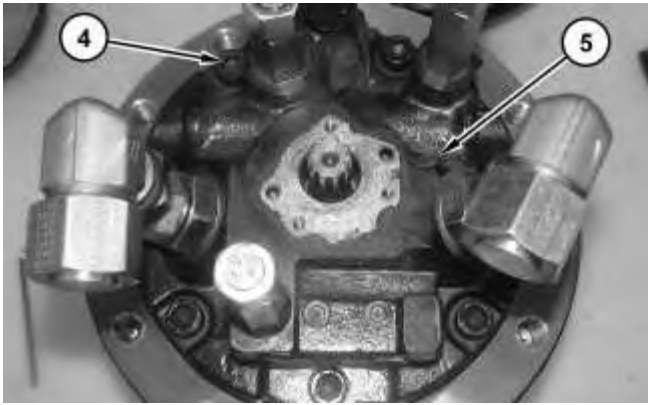


Illustration 3

g01345109

**! 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.**

- 
3. Remove bolts (4) and head (5).



Illustration 4

g01345111

- 
4. Remove O-ring seals (6), port plate (7), and bearing (8).
-

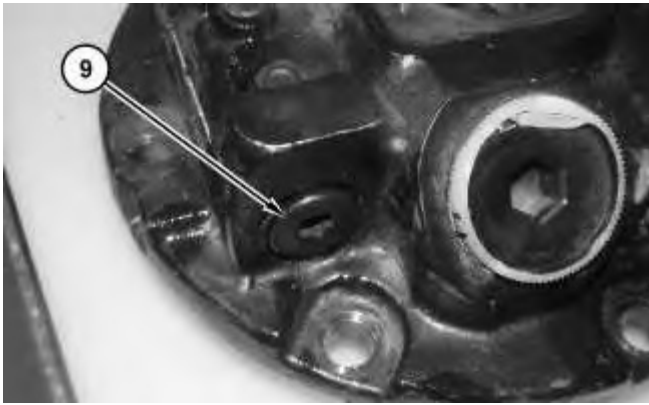


Illustration 5

g01345112

 **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.**

- 
5. Remove plug (9).

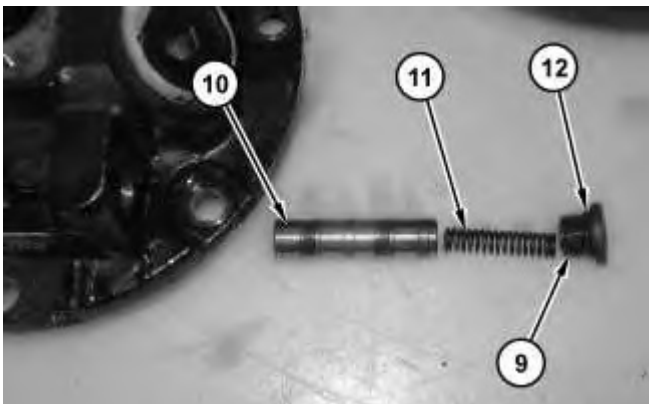


Illustration 6

g01345113

6. Remove O-ring seal (12) from plug (9).
7. Remove spring (11) and piston (10).
8. Repeat Step 6 for the opposite side.
-



**Suggest:**

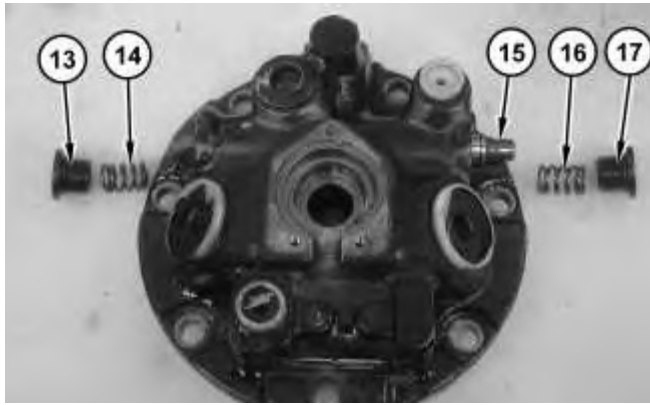
**If the above button click is invalid.**

**Please download this document**

**first, and then click the above link**

**to download the complete manual.**

**Thank you so much for reading**



---

Illustration 7

g01345114

 **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.**

---

9. Remove plug (13), the O-ring seal, and spring (14).
  10. Remove plug (17), the O-ring seal, spring (16), and spool (15).
-

**<https://www.ebooklibonline.com>**

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

**<https://www.ebooklibonline.com>**