

Product: TRACK-TYPE TRACTOR

Model: D6R XL TRACK-TYPE TRACTOR TTT

Configuration: D6R2 TRACK-TYPE TRACTOR STD, XL, LGP TTT00001-UP (MACHINE) POWERED BY C9 Engine

## Disassembly and Assembly D6R2 Track-Type Tractor Power Train

Media Number -UENR4108-02

Publication Date -01/09/2015

Date Updated -08/09/2015

i05979009

# Final Drive - Disassemble

SMCS - 4050-015

## Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	439-3938	Link Bracket As.	3
	1A-2029	Bolt	1
B	1P-0510	Driver Group	1
C	FT-1934	Beam	1
	6V-3160	Double Acting Cylinder	1
	9U-6600	Hand Hydraulic Pump	1
	1D-4621	Bolt	4
D	439-3939	Link Bracket As	2
	2A-1538	Bolt	2

### Start By:

- A. Remove the final drives.



**WARNING**

**When you are using hydraulic cylinders and puller studs, always ensure that the rated capacity of the puller stud meets or exceeds the rated capacity of the hydraulic cylinder. If the puller stud does not meet or exceed the rated capacity of the hydraulic cylinder, a sudden failure of the puller stud could occur. The sudden failure of the puller stud could result in personal injury or death.**

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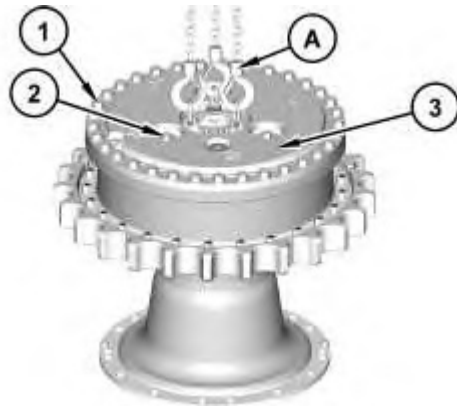
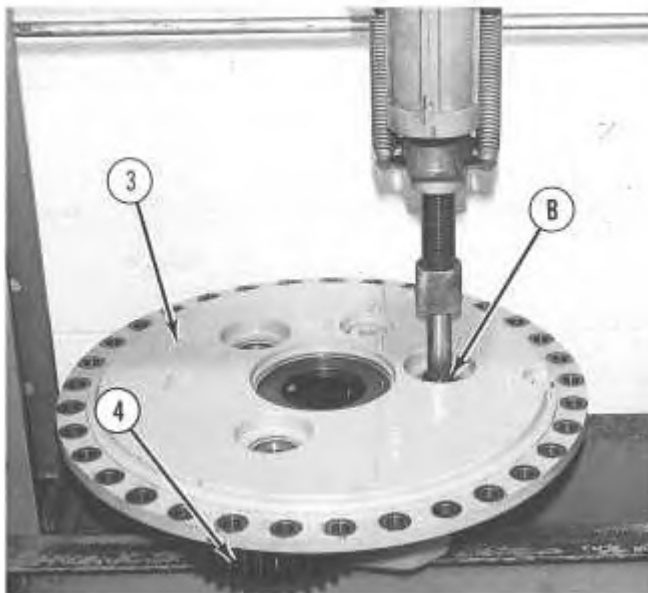


Illustration 1

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1. Attach Tooling (A) and a suitable lifting device to planetary carrier (3) .
2. Remove bolts (1). Remove planetary carrier (3) and the two O-ring seals from the hub. The weight of planetary carrier (3) is approximately 137 kg (302 lb).
3. Remove retainers (2) .



- Place support under planetary carrier (3) in order to prevent damage. Use Tooling (B) and a suitable press to remove the planetary gear shafts.
- Remove planetary gears (4) from planetary carrier (3) .

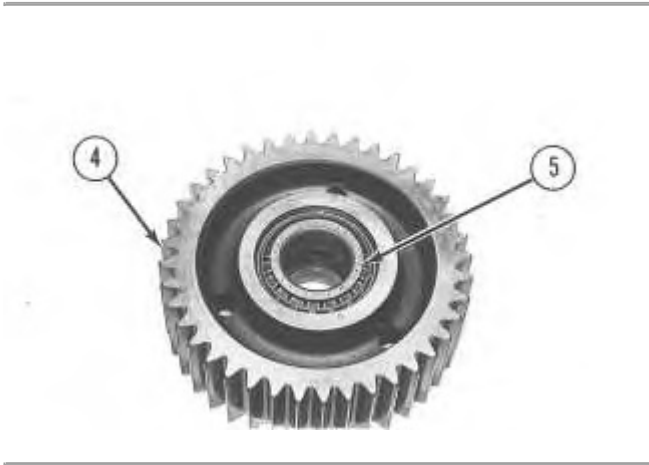


Illustration 3

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- Remove bearing cones (5) from gears (4) .
- Remove the bearing cups from each side of the gears.

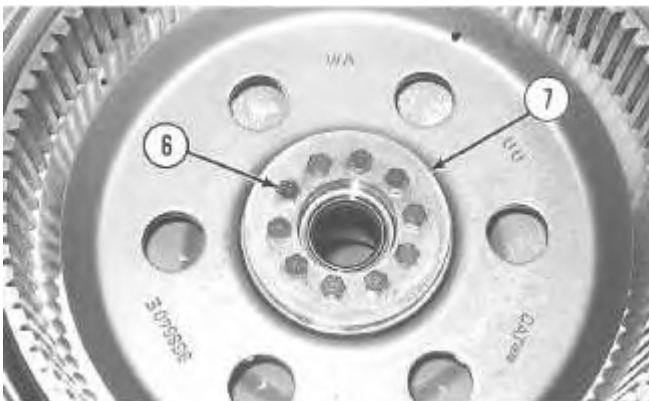
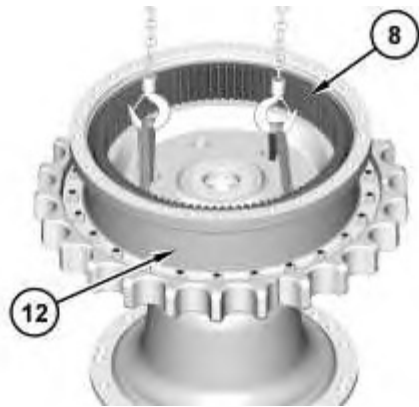


Illustration 4

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Illustration 5

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8. Remove bolts (6) and retainer (7) .
9. Attach a suitable lifting device to hub (12) and ring gear (8). The weight of hub (12) and ring gear (8) is approximately 68 kg (150 lb). Remove hub (12) and ring gear (8) .

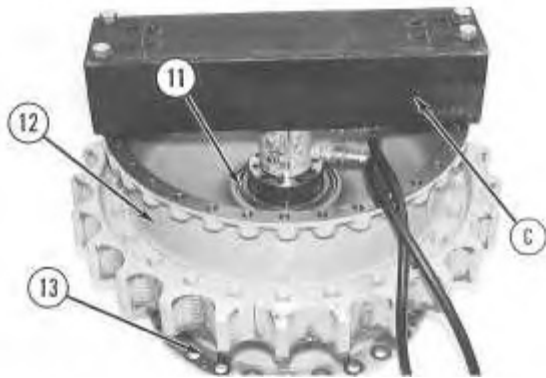


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Illustration 6

g01195915

10. Turn over hub (9) and ring gear (8). Remove retaining ring (10). Attach a suitable lifting device to hub (9). The weight of hub (9) is approximately 37 kg (82 lb). The weight of ring gear (8) is approximately 32 kg (71 lb). Remove hub (9) .
-



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Illustration 7

g00841095

11. Install Tooling (C) on hub (12).

**Note:** Do not lift hub (12) too high. Do not allow hub (12) to contact the fitting on the hydraulic cylinder.

12. Use Tooling (C) to loosen hub (12) from spindle (13). Remove Tooling (C) .
13. Remove bearing cone (11) .



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Illustration 8

g01195917

14. Attach Tooling (D) and a suitable lifting device to hub (12). Remove hub (12) from spindle (13). The weight of hub (12) is approximately 180 kg (397 lb).
-

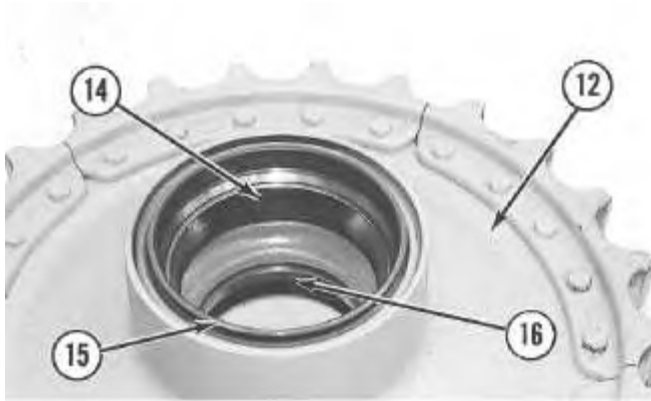


Illustration 9

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15. Turn over hub (12). Remove Duo-Cone seal kit (15). Use a suitable hammer and a suitable punch to remove bearing cup (16) .
16. Turn over hub (12). Remove bearing cup (14) from the hub.

**Note:** If the Duo-Cone seal will be reused, mark the seal kits for installation purposes.

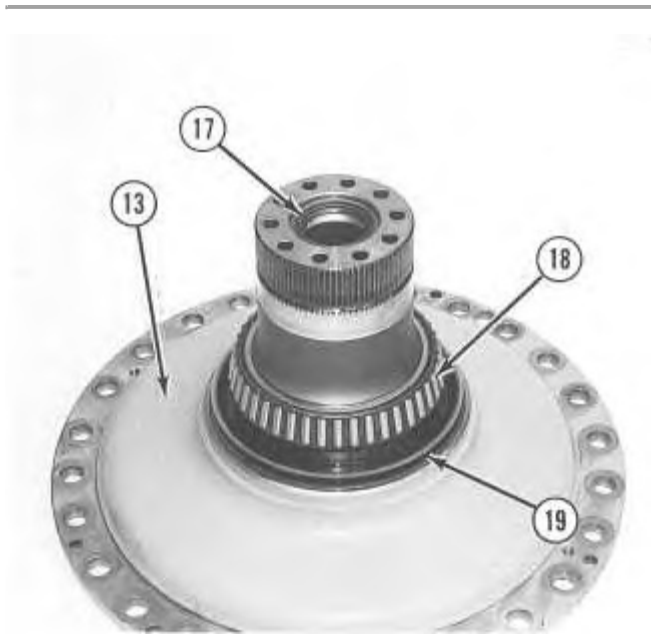


Illustration 10

g00841101

- Note:** Bearing cone (18) may be damaged if the bearing cone is removed from spindle (13) .
17. Remove Duo-Cone seal (19) from spindle (13) .
  18. If necessary, remove bearing cone (18) from the spindle.
  19. Remove lip seal (17) from spindle (13) .

# Disassembly and Assembly

## D6R2 Track-Type Tractor Power Train

Media Number -UENR4108-02

Publication Date -01/09/2015

Date Updated -08/09/2015

i06268547

## Final Drive - Assemble

SMCS - 4050-016

## Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	439-3938	Link Bracket As.	3
	1A-2029	Bolt	3
B	1P-0510	Driver Group	1
D	439-3939	Link Bracket As.	2
	2A-1538	Bolt	2
E	1U-6437	Duo-Cone Seal Installer As	1

1. Apply clean oil to all the parts during assembly.
-

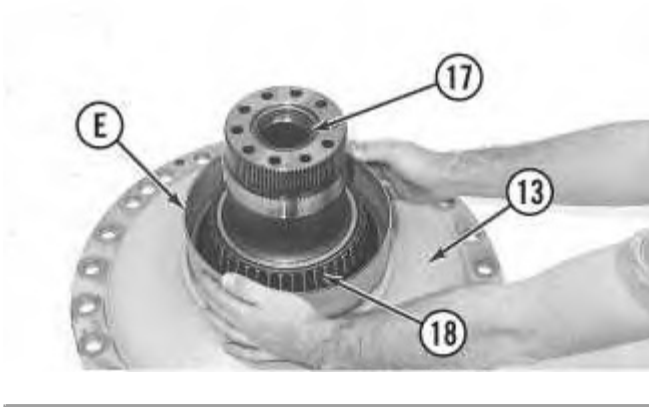


Illustration 1

g00841209

2. Use Tooling (B) to install lip seal (17) in spindle (13) to a minimum depth of 9.65 mm (0.400 inch). Do not apply excessive force to lip seal (17) during installation in order to avoid damaging the seal. Put clean oil on the lip of the seal.
3. Raise the temperature of bearing cone (18) to a maximum temperature of 135 °C (275 °F). Install bearing cone (18) on spindle (13) .

**Note:** Before the installation of the Duo-Cone seal, refer to Disassembly and Assembly, "Duo-Cone Conventional Seals - Install" for the correct procedure.

4. Use Tooling (E) to install the Duo-Cone seal on spindle (13) .

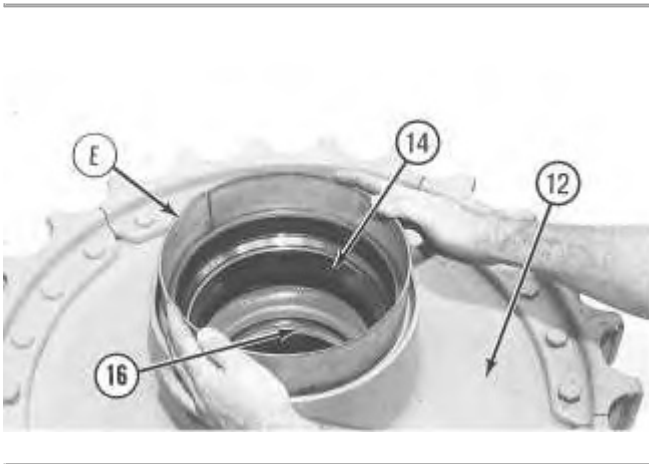


Illustration 2

g00841210

5. Lower the temperature of bearing cups (14) and (16). Install bearing cups (14) and (16) in hub (12) .
6. Use Tooling (E) to install the Duo-Cone seal in hub (12) .



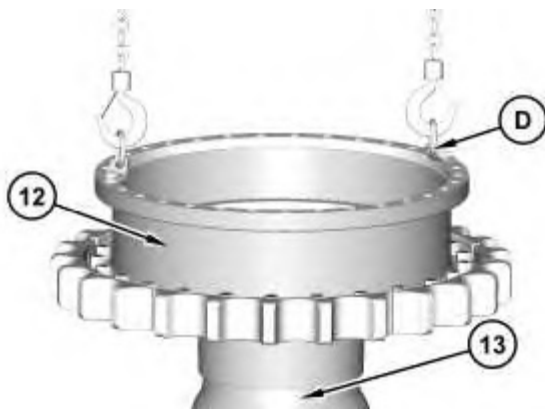


Illustration 3

g01195917

7. Attach Tooling (D) to hub (12). Attach a suitable lifting device to Tooling (D). Carefully position hub (12) on spindle (13) .



Illustration 4

g00841212

8. Raise the temperature of bearing cone (11). Install bearing cone (11) on spindle (13).



Illustration 5

g03879977

9. Using two people, install hub (9) onto spindle (13). Place five washers onto hub (9) next to but not touching spindle (13) .
10. Install retainer (7) and bolts (6). While hub (12) is slowly rotated, tighten bolts (6) evenly to a torque of  $135 \pm 15 \text{ N}\cdot\text{m}$  ( $100 \pm 11 \text{ lb ft}$ ).
11. Remove bolts (6), remove retainer (7), remove the washers, and use two people to remove hub (9) .



Illustration 6

g01195915

12. Attach a suitable lifting device to hub (9) and position hub (9) in ring gear (8). Install retaining ring (10) .

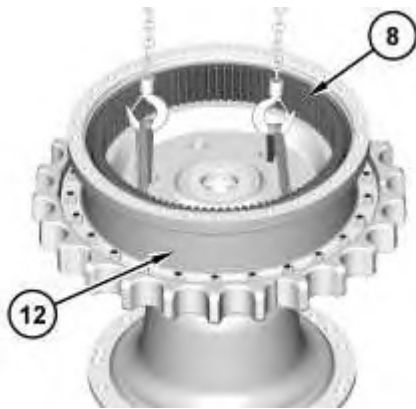
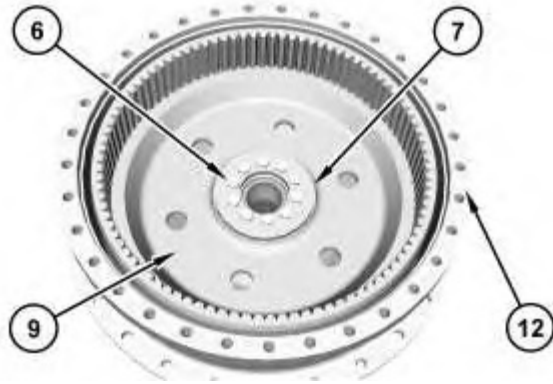


Illustration 7

g01195913

13. Turn over hub (9) and ring gear (8). Attach a suitable lifting device to hub (9) and the ring gear (8) into position in hub (12).
-



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Illustration 8

g03879627

14. Install retainer (7) and bolts (6). While hub (12) is slowly rotated, tighten bolts (6) evenly to a torque of  $135 \pm 15 \text{ N}\cdot\text{m}$  ( $100 \pm 11 \text{ lb ft}$ ). After tightening bolts (6), there must be a gap of  $0.08 \pm 0.05 \text{ mm}$  ( $0.003 \pm 0.002 \text{ inch}$ ) between retainer (7) and hub (9). Also, retainer (7) must contact the end of spindle (13) (not shown). If the required gap cannot be reached or retainer (7) does not contact spindle (13) (not shown) then repeat Step 9 through Step 11.



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Illustration 9

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15. Lower the temperature of the bearing cups. Install the bearing cups in three planetary gears (4).
  16. Install bearing cones (5).
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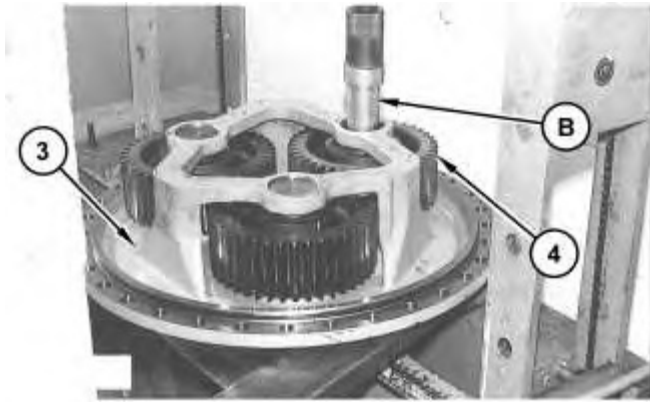


Illustration 10

g03745454

17. Position planetary carrier (3) in a suitable press. Position planetary gear (4) in planetary carrier (3) .

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### NOTICE

**The shaft must be correctly installed. If the shaft is incorrectly installed, the bearing preload will be incorrect. This will result in component damage.**

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18. Lower the temperature of the shafts. Use Tooling (B) and a suitable press to install the shafts in planetary carrier (3).

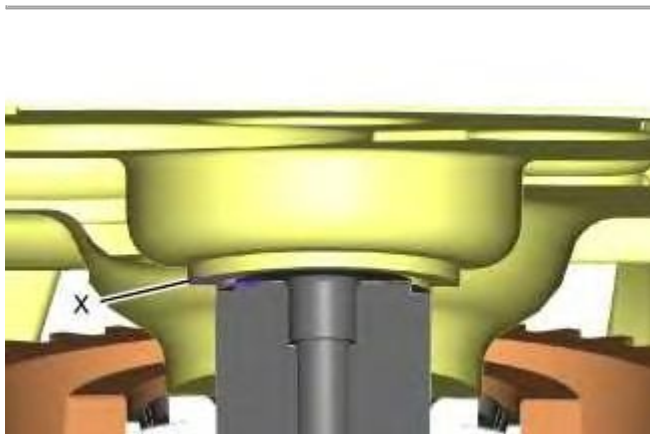


Illustration 11

g03881683

19. After the installation, measure distance (X) between planetary carrier (3) and the planetary shaft. The planetary shaft should extend  $0.08 \pm 0.05$  mm ( $0.003 \pm 0.002$  inch) past the surface of the carrier to provide the correct bearing preload. The gear must rotate by hand after installation. If the gear does not rotate, the problem must be corrected. Repeat this procedure for all three shafts. Repeat this procedure for all three shafts.

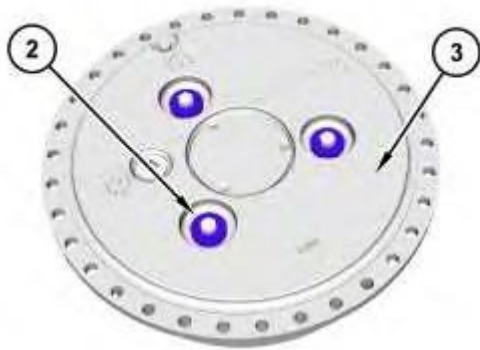


Illustration 12

g03881705

20. Install the O-ring seals and retainers (2). Tighten the bolts to a torque of  $240 \pm 40 \text{ N}\cdot\text{m}$  ( $177 \pm 30 \text{ lb ft}$ ). The gears must rotate by hand after installation. If the gear does not rotate, the problem can be corrected by driving retainers (2) toward planetary carrier (3) .

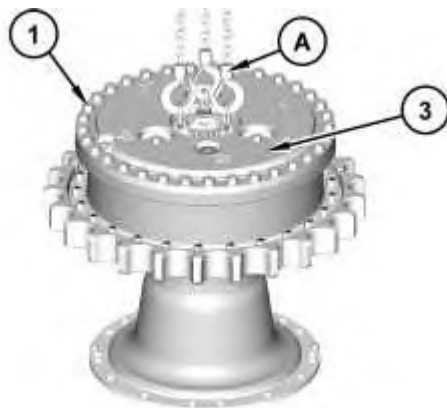


Illustration 13

g03881724

21. Attach Tooling (A) and a suitable lifting device. Install the two O-ring seals onto planetary carrier (3). Align the drain hole in the planetary carrier with the drain hole in the hub.
22. Position the planetary carrier in the hub.
23. Install bolts (1) that hold planetary carrier (3) to the hub. Tighten bolts (1) to a torque of  $430 \pm 60 \text{ N}\cdot\text{m}$  ( $317 \pm 44 \text{ lb ft}$ ). Remove Tooling (A) .

**End By:** Install the final drives.

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Product: TRACK-TYPE TRACTOR

Model: D6R XL TRACK-TYPE TRACTOR TTT

Configuration: D6R2 TRACK-TYPE TRACTOR STD, XL, LGP TTT00001-UP (MACHINE) POWERED BY C9 Engine

## Disassembly and Assembly D6R2 Track-Type Tractor Power Train

Media Number -UENR4108-02

Publication Date -01/09/2015

Date Updated -08/09/2015

i05979633

# Final Drive, Steering Differential, and Brake (Left Side) - Remove and Install

SMCS - 4050-010-LT; 4132-010-LT

## Removal Procedure

Table 1

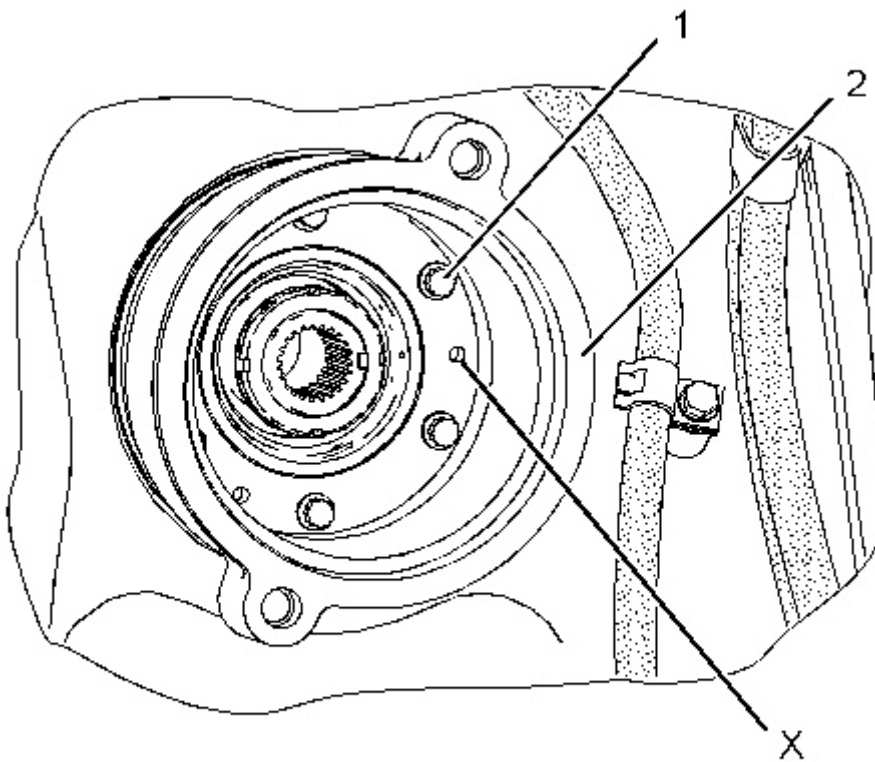
Required Tools			
Tool	Part Number	Description	Qty
A	FT-1952	Axle Removal Tool	1
	1U-7432	Adapter Assembly	1
B	8T-3207	Lifting Bracket	1
	5P-8622	Shackle	1
	1D-4615	Bolt	2
	1B-4331	Nut	2
	5P-8248	Washer	4
C	1B-4331	Nut	1
	5P-8248	Washer	2
	439-3939	Link Bracket As.	1
	439-3940	Link Bracket As.	1
	386-6031	Lever Hoist	1
	1A-1460	Bolt	1
	5P-8245	Washer	1

	1A-8063	Bolt	1
D	5B-4274	Bolt	3

**Start By:**

- A. Separate the track.
- B. Remove the drive axles.
- C. Remove the steering motor.

1. Drain the oil from the final drive. Refer to Operation and Maintenance Manual, "Final Drive Oil - Change" for the proper draining and filling procedure.

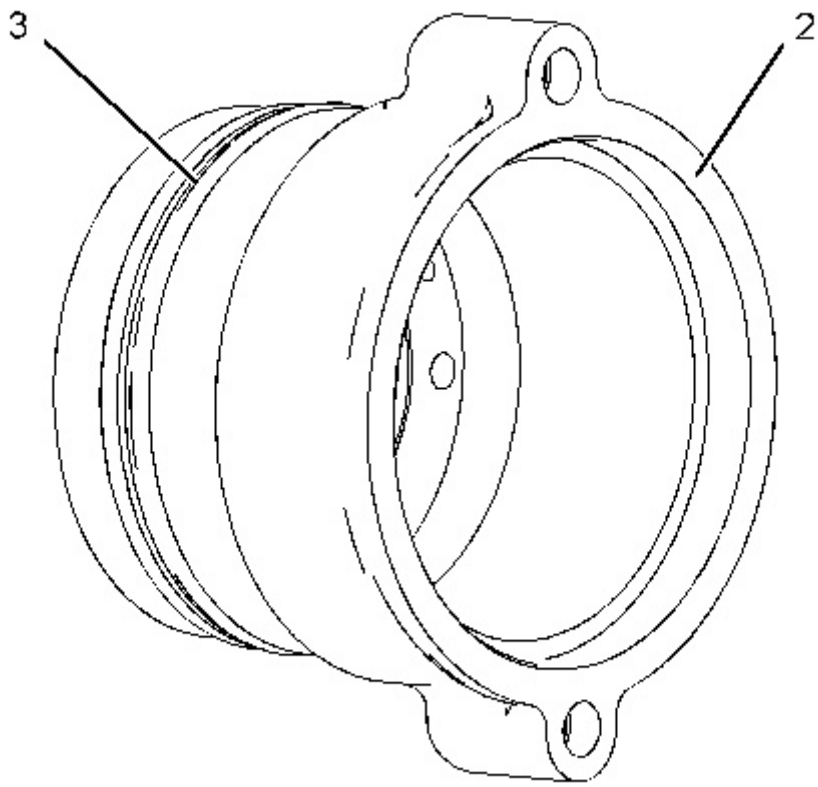


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Illustration 1

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2. Remove bolts (1) from adapter (2) .
  3. Install Tooling (D) in Holes (X). Remove adapter (2) .
-



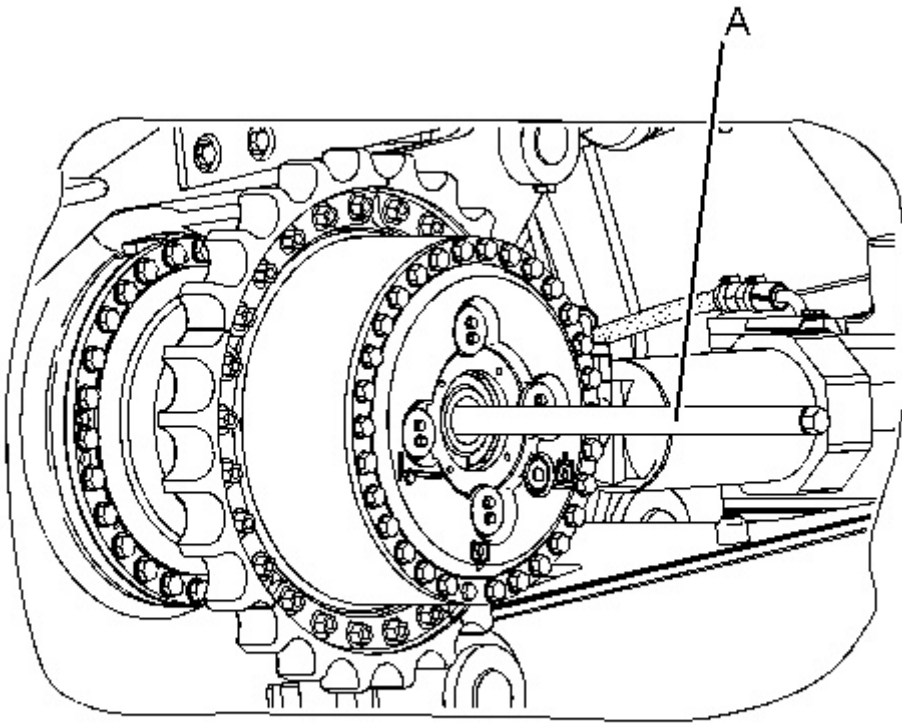
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Illustration 2

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4. Remove O-ring seal (3) from adapter (2) .
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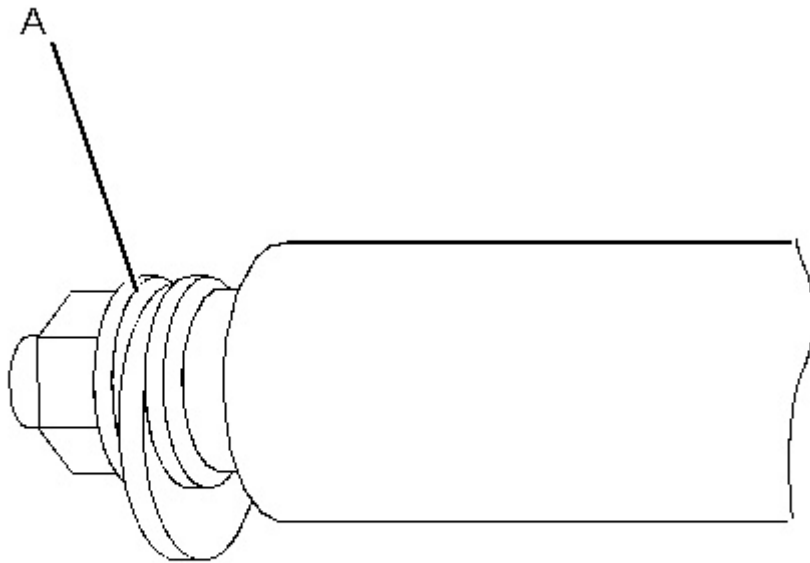


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Illustration 3

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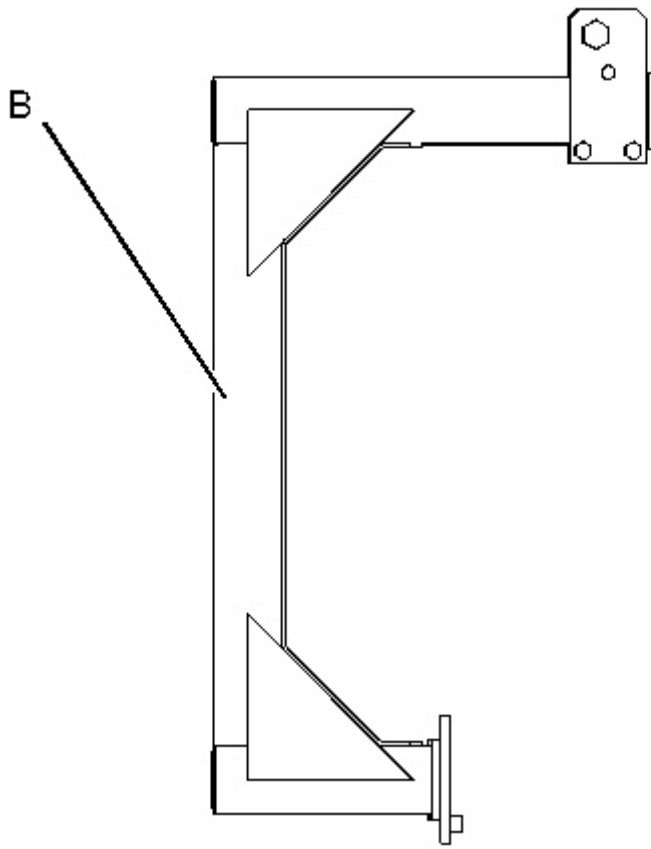


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Illustration 4

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5. Insert Tooling (A) 940 mm (37.0 inch) into the final drive housing. Use Tooling (A) to slide the sliding carrier off the bevel gear shaft.
  6. Rotate Tooling (A) by 180 degrees.
  7. Pull Tooling (A) until the sliding carrier stops.
  8. Rotate Tooling (A) by 180 degrees and remove Tooling (A) .
-

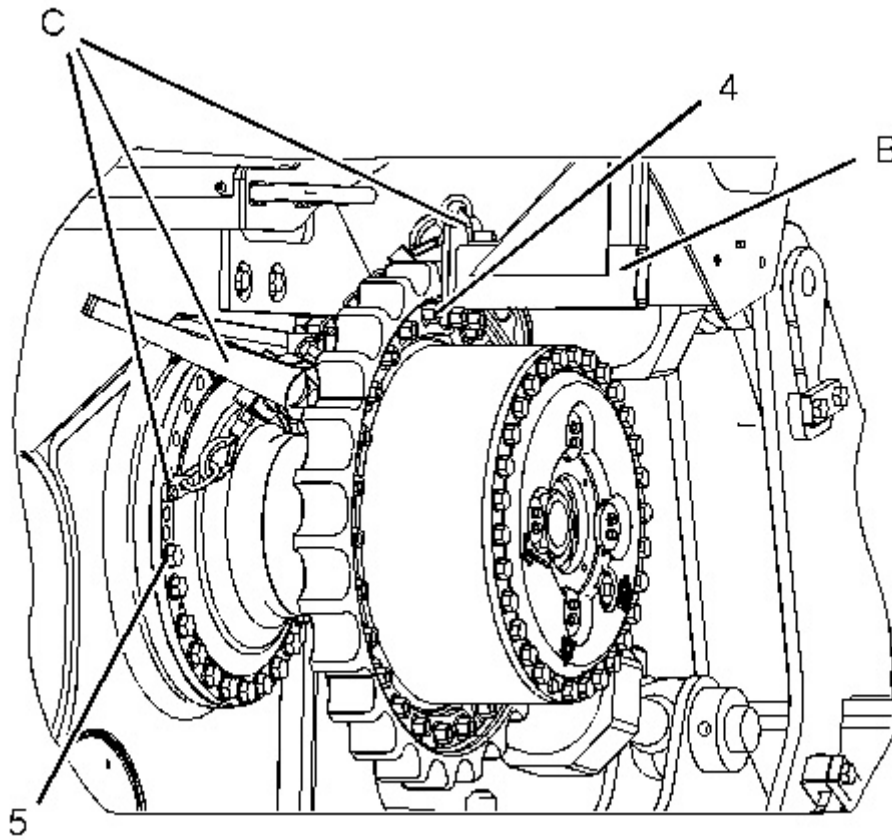


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Illustration 5

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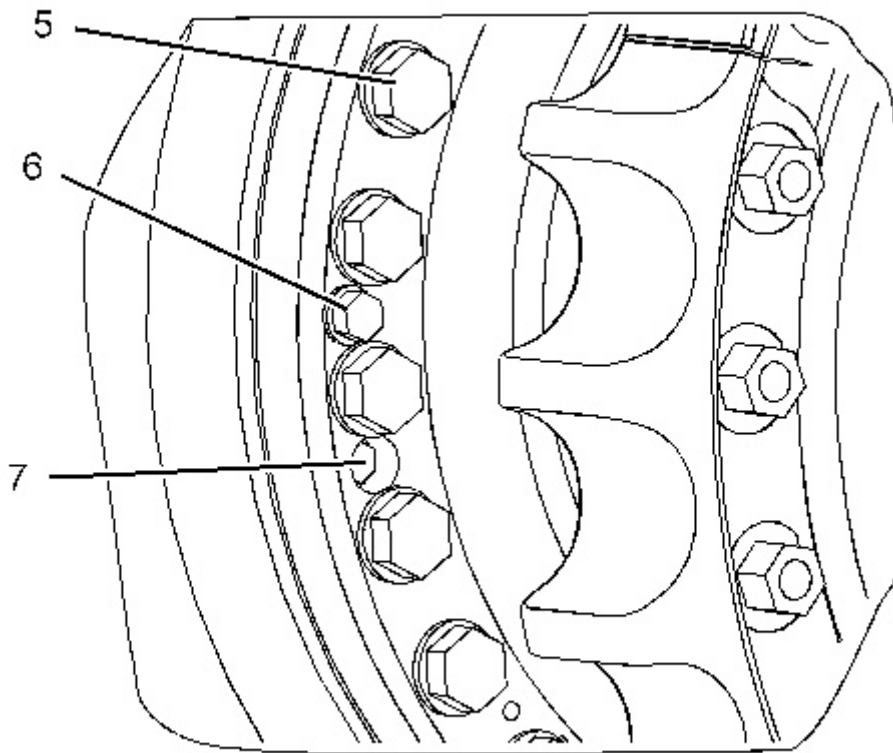


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Illustration 6

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9. Adjust Tooling (B) as shown in Illustration 5. Remove two bolts (4). Discard bolts (4). Install Tooling (B) and a suitable lifting device. The weight of the final drive, the differential, and the brake is approximately 730 kg (1610 lb).
  10. Remove seven bolts (5). Install Tooling (C) .
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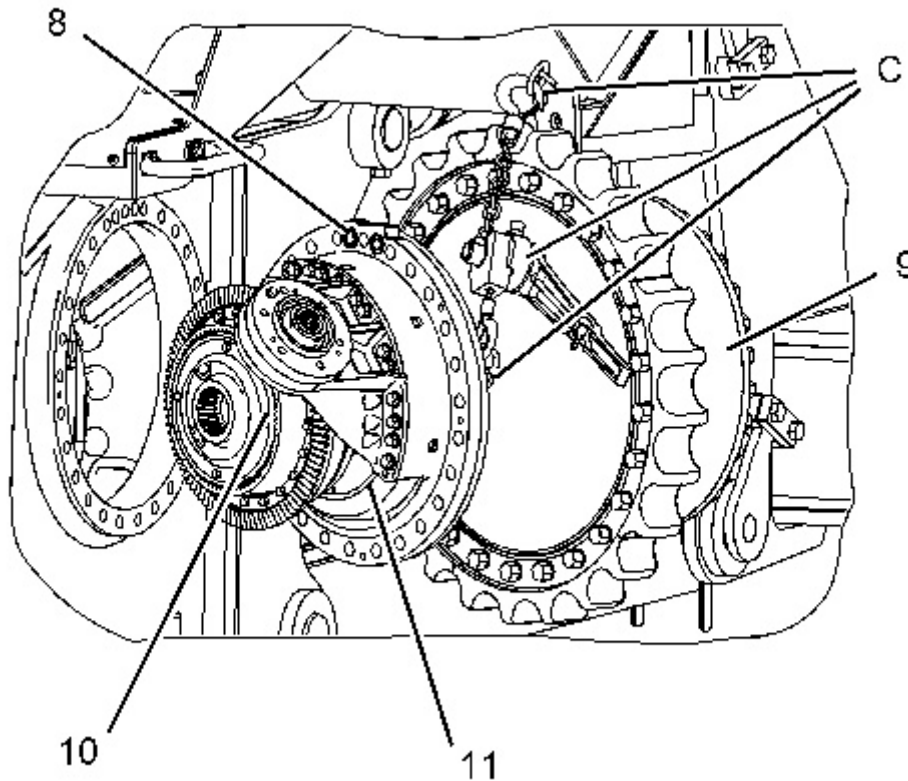
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Illustration 7

g01127323

11. Remove remaining bolts (5) and bolts (7). **Do not remove bolts (6) .**

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Illustration 8

g01127327

12. Pull outward on final drive (9), steering differential (10), and brake (11) by approximately 25 mm (1.0 inch). Final drive (9), steering differential (10), and brake (11) should move freely.
13. Use Tooling (C) in order to rotate final drive (9), steering differential (10), and brake (11) by 45 to 60 degrees counterclockwise.
14. Remove final drive (9), steering differential (10), and brake (11) .
15. Remove O-ring seals (8) .

## Installation Procedure

1. Install final drive (9), steering differential (10), and brake (11) in the reverse order of removal.
    - a. Tighten bolts (5) to a torque of  $800 \pm 90 \text{ N}\cdot\text{m}$  ( $590 \pm 66 \text{ lb ft}$ ).
    - b. Lubricate two new sprocket segment bolts (4) with SAE 30 oil. Install new sprocket segment bolts (4) .
    - c. Tighten bolts (4) to a torque of (4) to a torque of  $175 \pm 40 \text{ N}\cdot\text{m}$  ( $130 \pm 30 \text{ lb ft}$ ). Tighten bolts (4) for another 1/3 turn. The final torque for bolts (4) must be a minimum of  $380 \text{ N}\cdot\text{m}$  (280 lb ft).
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