

Product: WHEEL LOADER

Model: 930G WHEEL LOADER TFW

Configuration: 930G Wheel Loader TFW00001-UP (MACHINE) POWERED BY 3056E Engine

Disassembly and Assembly 930G Wheel Loader Power Train

Media Number -REN8726-03

Publication Date -01/10/2017

Date Updated -09/10/2017

i05264316

Axle Housing - Assemble

SMCS - 3260-016

Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2420	Transmission Repair Stand	1
B	6V-2156	Link Bracket	3
C	4c-8502	Spanner Wrench As	1
D	1H-3107	Puller Group	1
G	1U-8697	Duo-Cone Seal Installer As	1
H	1U-8846	Gasket Sealant	

Note: Cleanliness is an important factor. Before assembly, thoroughly clean all parts in cleaning fluid. Allow the parts to air dry. Wiping cloths or rags should not be used to dry parts. Lint may be deposited on the parts which may cause later trouble. Inspect all parts. If any parts are worn or damaged, use new parts for replacement.

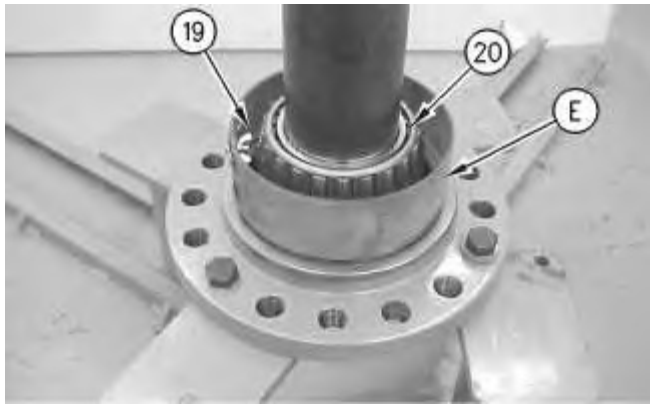


Illustration 1

g00671305

1. Use Tooling (G) in order to install seal (19). Refer to Disassembly and Assembly, "Duo-Cone Conventional Seals - Install" for the proper procedure.

Note: Lubricate the bearing with the lubricant that is being used.

2. Raise the temperature of bearing cone (20).
3. Install bearing cone (20).

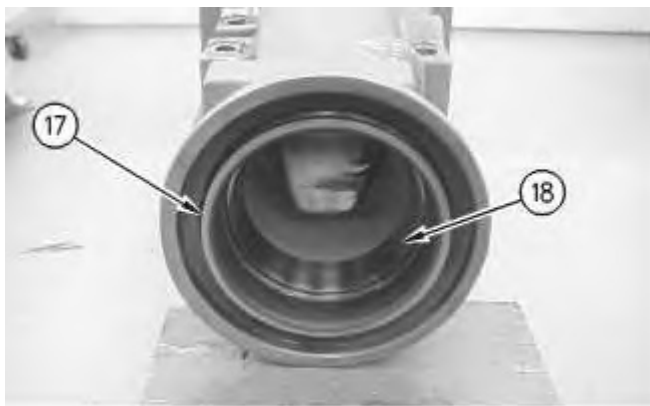


Illustration 2

g00671344

4. Lower the temperature of bearing cup (18).
5. Install bearing cup (18). Use Tooling (G) in order to install seal (17). Refer to Disassembly and Assembly, "Duo-Cone Conventional Seals - Install" for the proper procedure.



Illustration 3

g01132120

6. Lower the temperature of bearing cup (15).
7. Install bearing cup (15).
8. Lower the temperature of ring gear (16) and install ring gear (16). Install pins (14) andpeen the housing in order to retain pins (14).



Illustration 4

g00671536

9. Use a suitable lifting device and Tooling (B) in order to install axle housing (13) onto the axle shaft. The weight of axle housing (13) is approximately 88 kg (195 lb). Use Tooling (A) in order to support axle housing (13).
10. Raise the temperature of bearing cone (12).
11. Install bearing cone (12).
12. Lubricate bearing cone (12) with the lubricant that is being sealed.

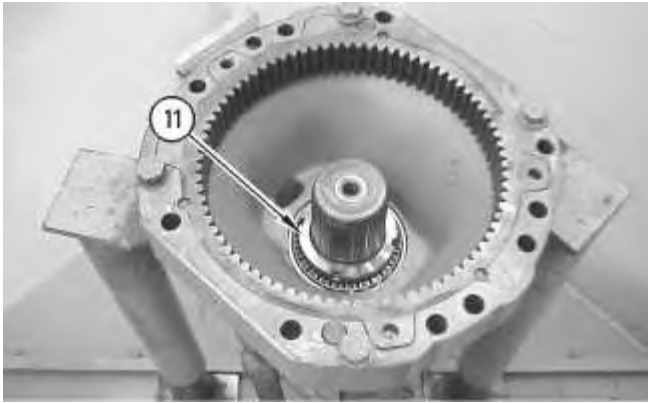


Illustration 5

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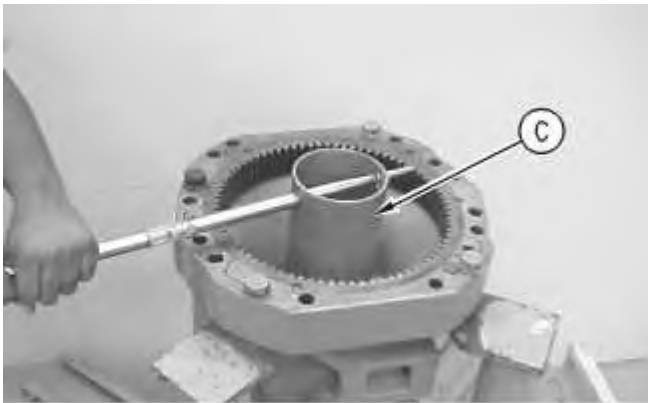


Illustration 6

g00670407

Note: Lubricate nut (11) with the lubricant that is being sealed.

13. Install nut (11). Use Tooling (C) in order to tighten nut (11). Leave slight bearing end play.



Illustration 7

g00671551

14. Use Tooling (A) in order to support the axle shaft. Install Tooling (D), as shown. Install a bolt in the center of Tooling (D). Use a torque wrench in order to rotate the axle housing and check the rolling torque (SD). This is the amount of seal drag.

15. Use Tooling (C) in order to tighten nut (11). Check the rolling torque (RT). This is the total rolling torque. Subtract the seal drag torque (SD) from the total rolling torque (RT). This is the rolling torque of the axle bearings. Tighten nut (11) until a rolling torque of the axle bearings is 4 N·m to 9 N·m (35 lb in to 80 lb in). The rolling torque for used axle bearings should be 2 N·m to 4.5 N·m (18 lb in to 40 lb in).

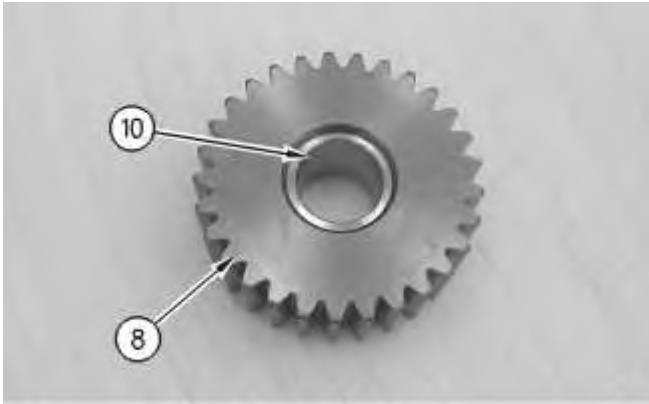


Illustration 8

g00670404

16. Install bearing (10) in gear (8).

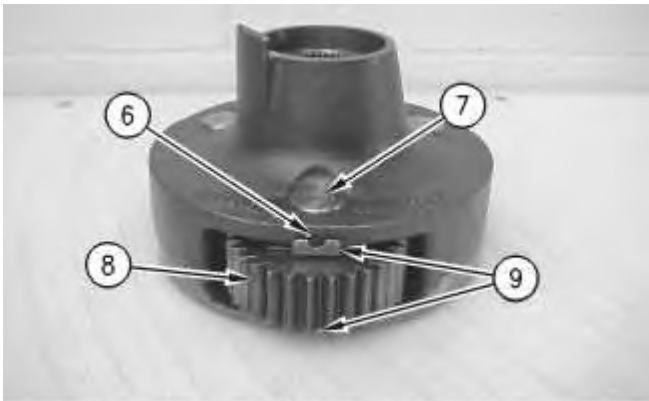


Illustration 9

g00671595

17. Install gear (8) and washers (9).
 18. Install shaft (7).
-

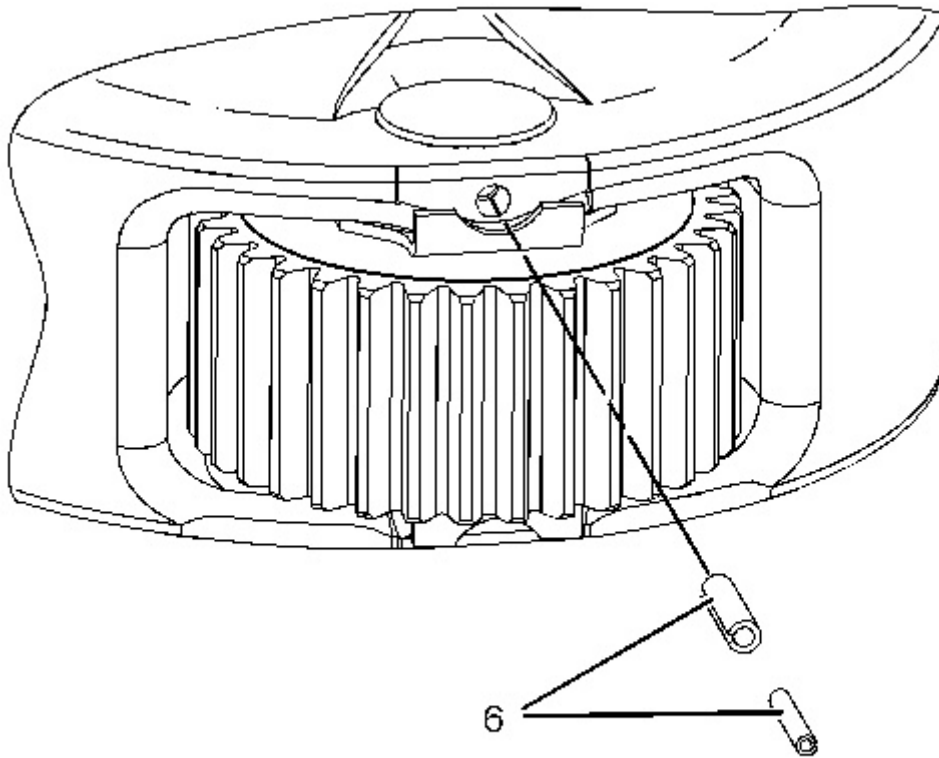


Illustration 10

g01131675

Note: The openings of pins (6) must be 180 degrees away from each other. The openings of pins (6) must be parallel to the carrier deck. Refer to illustration 10.

19. Install pins (6).
20. Deform pin holes slightly with a chisel.
21. Repeat Steps 16 through 19 for the remaining gear assemblies.

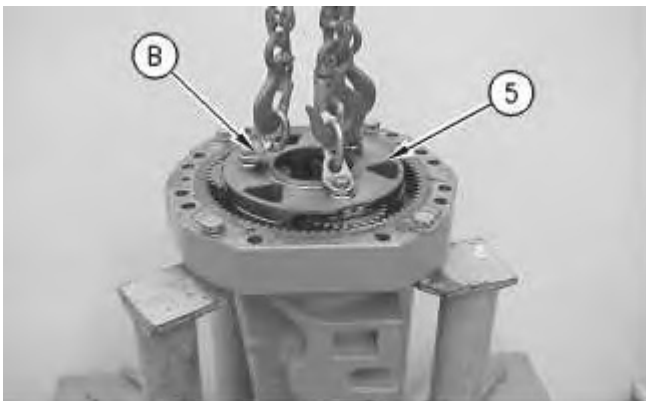


Illustration 11

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22. Use Tooling (B) and a suitable lifting device in order to install carrier assembly (5). The weight of carrier assembly (5) is approximately 28 kg (62 lb).

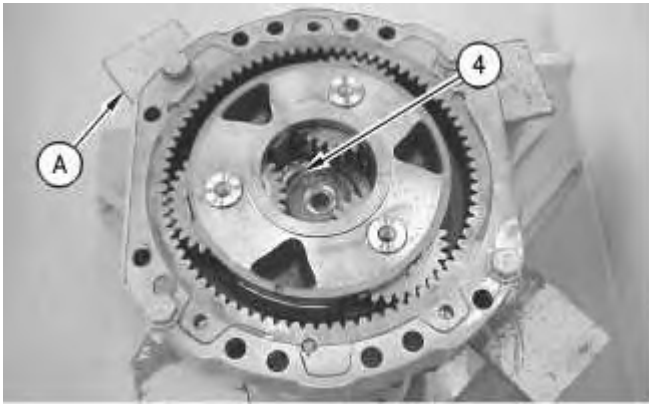


Illustration 12

g00670395

23. Install retaining ring (4).
24. Use a suitable lifting device in order to remove the axle housing from Tooling (A). The weight of the axle housing is approximately 147 kg (325 lb).

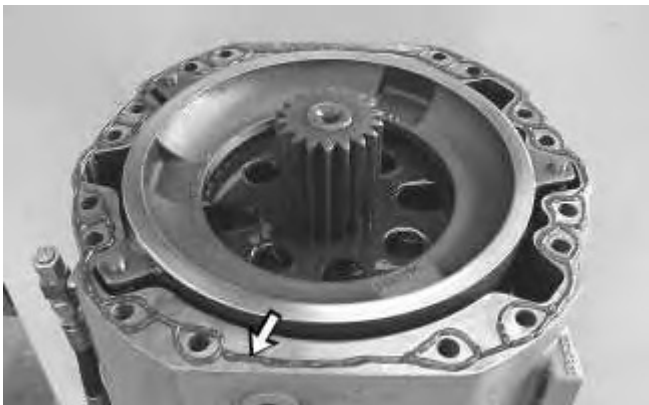
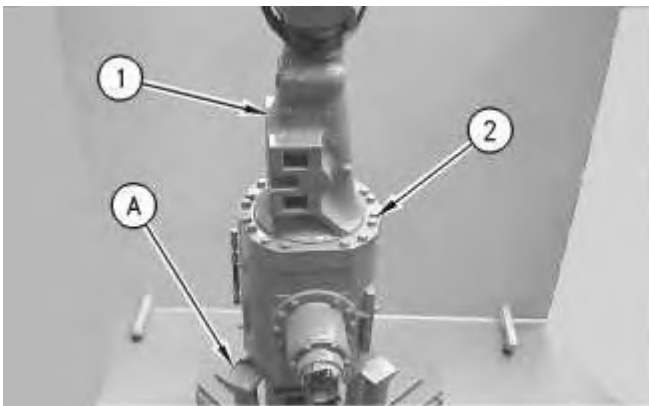


Illustration 13

g01132124

25. Clean the mating surfaces of the axle housing and apply a continuous bead of Tooling (H).



1

2

A

26. Use a suitable lifting device in order to install axle housing (1). The weight of axle housing assembly (1) is approximately 147 kg (325 lb). Install bolts (2).
27. Fill the axle housing with oil. Refer to Operation and Maintenance Manual, "Lubrication Viscosities and Refill Capacities".

End By:

- a. Install the axle trunnion (front and rear) on the oscillating axle housing. Refer to Disassembly and Assembly, "Axle Trunnion (Front and Rear) - Remove and Install".
 - b. Install the fixed axle housing. Refer to Disassembly and Assembly, "Fixed Axle Housing - Install".
-

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Media Number -REN8726-03

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Date Updated -09/10/2017

i02248047

Brake and Planetary - Remove and Install

SMCS - 4011-010; 4251-010; 4255-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-2420	Transmission Repair Stand	1

Start By:

- a. Remove the axle trunnions. Refer to Disassembly and Assembly, "Trunnion Support (Oscillating Axle, Front) - Remove and Install" and Disassembly and Assembly, "Trunnion Support (Oscillating Axle, Rear) - Remove and Install".
 - b. Remove the fixed axle. Refer to Disassembly and Assembly, "Fixed Axle (Front) - Remove".
-

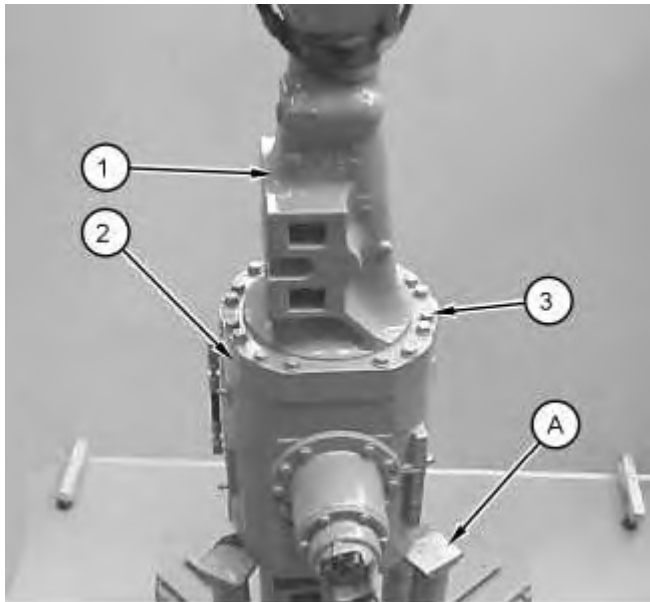


Illustration 1

g01131954

 **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.

1. Position axle housing assembly (1) and housing (2) as a unit onto Tooling (A). The weight of axle housing assembly (1) and housing (2) as a unit is approximately 590 kg (1300 lb).
2. Attach a suitable lifting device onto axle housing assembly (1). Remove bolts (3). Remove axle housing assembly (1). The weight of axle housing assembly (1) is approximately 159 kg (350 lb).

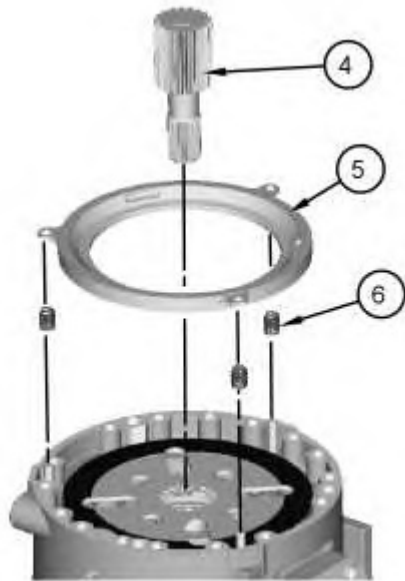


Illustration 2

g01131921

3. Remove gear (4), plate (5), and springs (6).

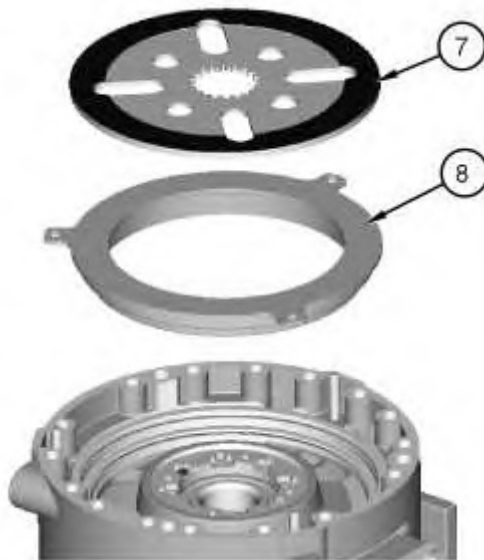


Illustration 3

g01131922

4. Remove disc (7) and piston (8).

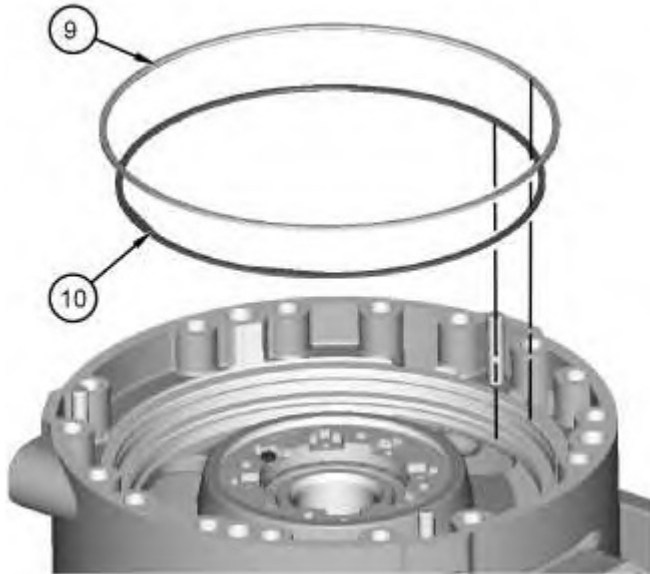


Illustration 4

g01131923

5. Remove seals (9) and (10).

Installation Procedure

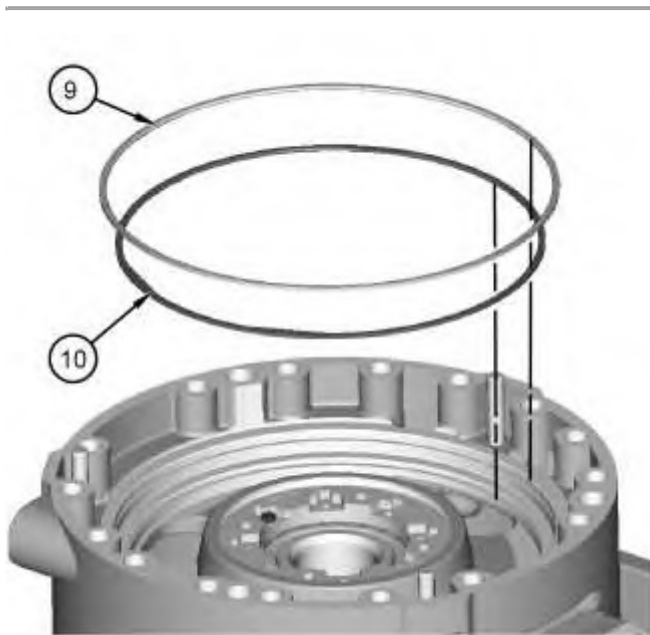


Illustration 5

g01131923

1. Lubricate seals (9) and (10) with the lubricant that is being sealed. Install seals (9) and (10).

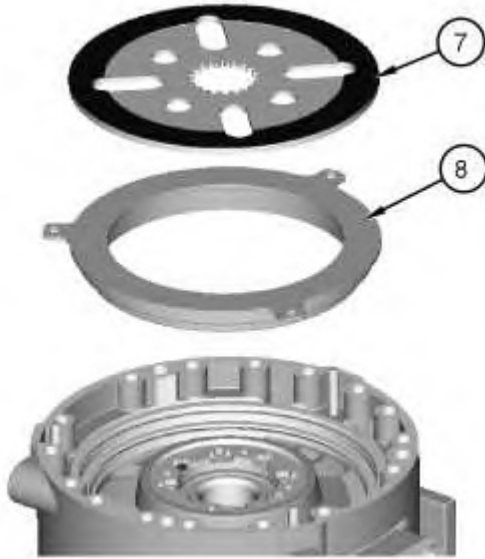


Illustration 6

g01131922

2. Install piston (8) and disc (7).
-

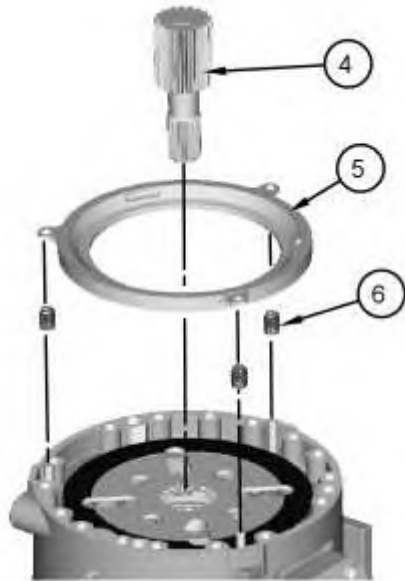


Illustration 7

g01131921

3. Install springs (6), plate (5), and gear (4).
-

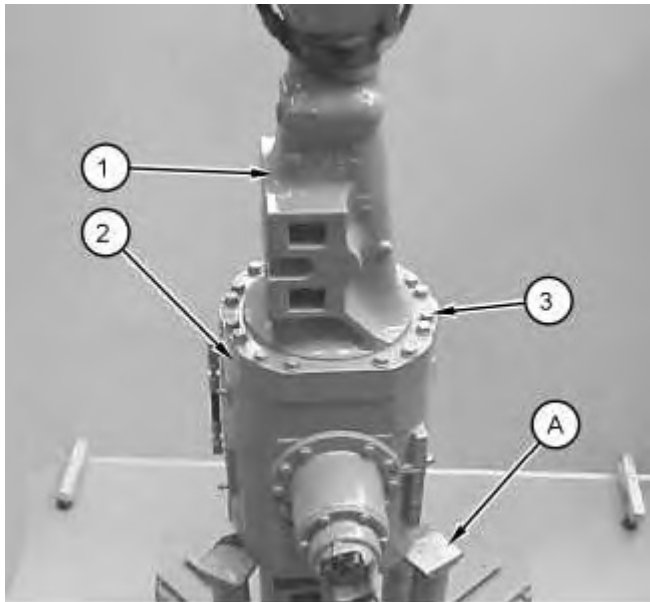


Illustration 8

g01131954

 **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.

4. Attach a suitable lifting device onto axle housing assembly (1). Position axle housing assembly (1) onto housing (2). The weight of axle housing assembly (1) is approximately 159 kg (350 lb).
5. Install bolts (3). Tighten bolts (3) to a torque of 300 ± 40 N·m (221 ± 30 lb ft).
6. Remove axle housing assembly (1) and housing (2) as a unit from Tooling (A). The weight of axle housing assembly (1) and housing (2) as a unit is approximately 590 kg (1300 lb).

End By:

- a. Install the fixed axle. Refer to Disassembly and Assembly, "Fixed Axle (Front) - Install".
- b. Install the axle trunnions. Refer to Disassembly and Assembly, "Trunnion Support (Oscillating Axle, Front) - Remove and Install" and Disassembly and Assembly, "Trunnion Support (Oscillating Axle, Rear) - Remove and Install".

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Date Updated -09/10/2017

i01740530

Differential and Bevel Gear - Remove

SMCS - 3256-011; 3258-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-6400	Puller Group	1
	0S-2389	Spacer	1

Start By:

- Remove the service brakes. Refer to Disassembly and Assembly, "Service Brakes - Remove and Install".

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.

WARNING

Hot oil and hot components can cause personal injury. Do not allow hot oil or hot components to contact skin.

At operating temperature, the engine coolant is hot and under pressure.

Steam can cause personal injury.

Check the coolant level only after the engine has been stopped and the cooling system pressure cap is cool enough to touch with your bare hand.

Remove the cooling system pressure cap slowly to relieve pressure.

Cooling system conditioner contains alkali. Avoid contact with the skin and eyes to prevent personal injury.

Note: Cleanliness is an important factor. Before the disassembly procedure, the exterior of the component should be thoroughly cleaned. This will help to prevent dirt from entering the internal mechanism.



Illustration 1

g00665873

Note: Plug all hose assemblies. This helps to keep contaminants from entering the system.

1. Remove hose assemblies (1).
-

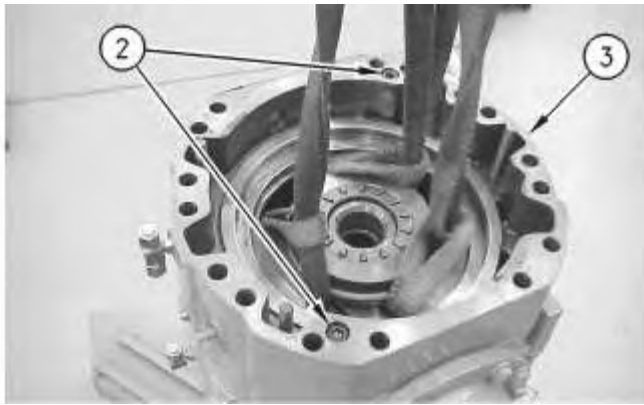


Illustration 2

g00665875

2. Use a suitable lifting device in order to support intermediate housing (3). Remove bolts (2). Remove intermediate housing (3). The weight of intermediate housing (3) is approximately 34 kg (75 lb).

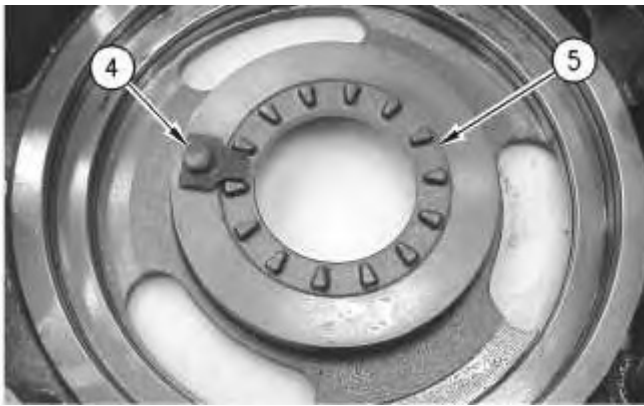


Illustration 3

g00665876

3. Remove the bolt and lock (4). Remove nut (5).



Illustration 4

g00665877

4. Remove bearing cone (6).

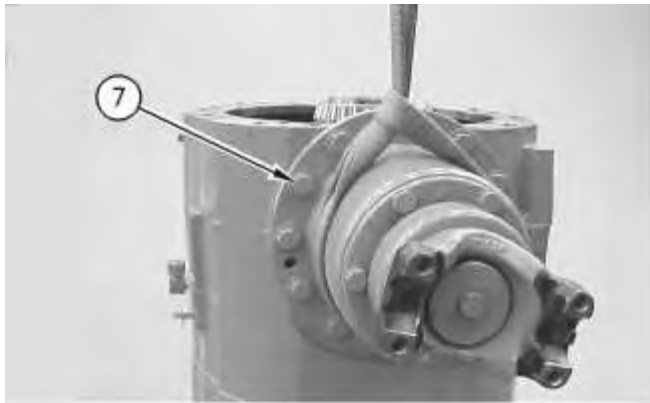


Illustration 5

g00665878

5. Use a suitable lifting device in order to support the pinion housing assembly. Remove bolts (7). The weight of pinion housing assembly is approximately 29 kg (65 lb).



Illustration 6

g00894847

6. Remove shims (8) and O-ring seal (9).

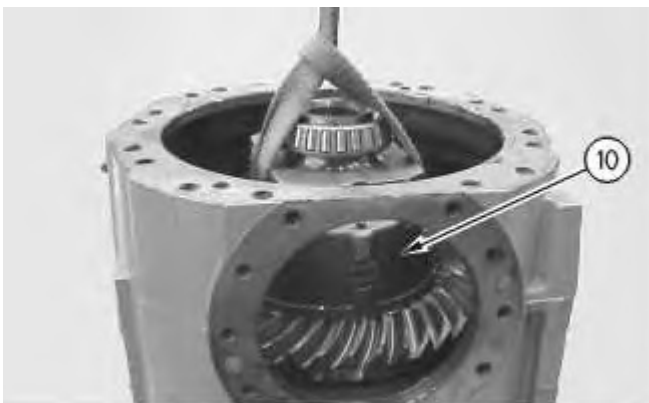


Illustration 7

g00893553

7. Use a suitable lifting device in order to remove differential assembly (10). The weight of differential assembly (10) is approximately 27 kg (60 lb).

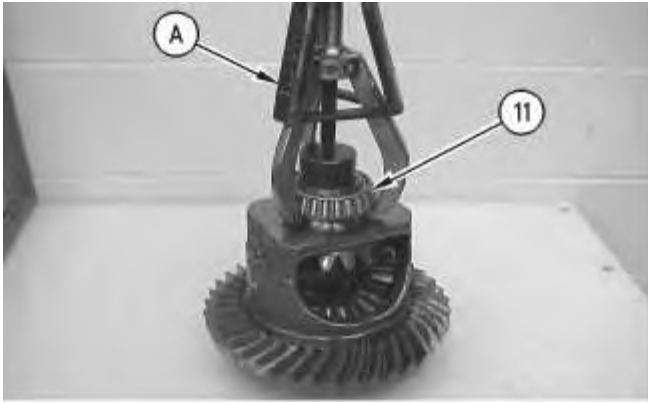


Illustration 8

g00893554

8. Use Tooling (A) in order to remove bearing cone (11).

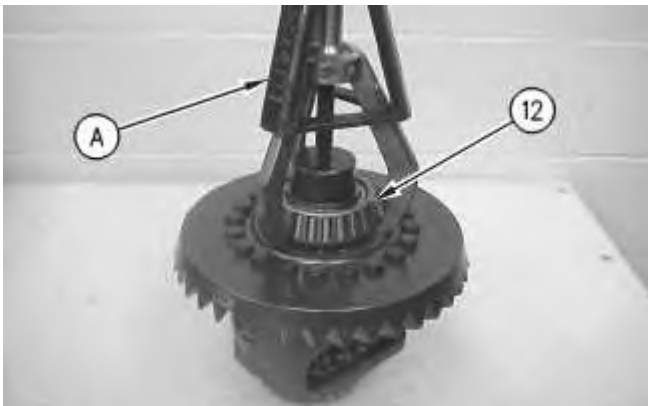


Illustration 9

g00893555

9. Use Tooling (A) in order to remove bearing cone (12).



Illustration 10

g00893556

10. Remove bolts (11) and gear (12).
-

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i01252992

Differential Pinion (Front) - Disassemble

SMCS - 3254-015-FR; 3269-015-FR

Disassembly Procedure

Start By:

- a. Remove the differential and bevel gear. Refer to Disassembly and Assembly, "Differential and Bevel Gear - Remove".

Note: Cleanliness is an important factor. Before the disassembly procedure, the exterior of the component should be thoroughly cleaned. This will help to prevent dirt from entering the internal mechanism.

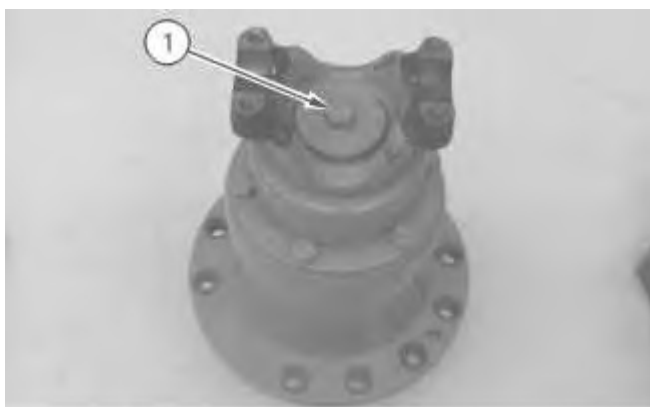


Illustration 1

g00667621

1. Remove the bolt and retainer (1).
-

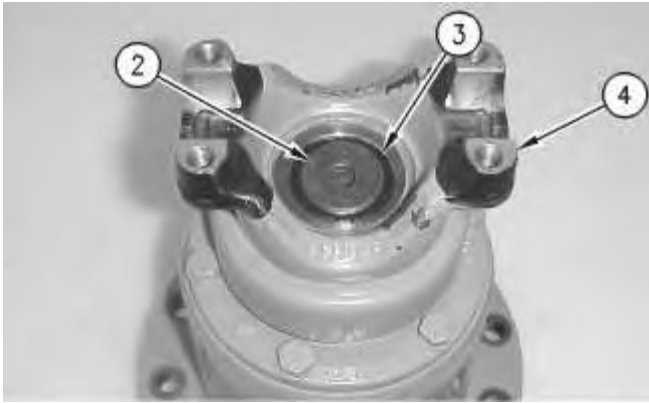


Illustration 2

g00667623

2. Remove shim pack (2), seal (3), and yoke assembly (4).



Illustration 3

g00667624

3. Remove six bolts (5) and retainer (6).

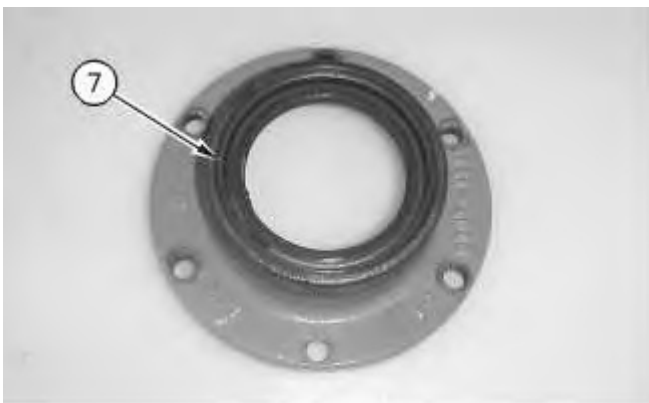


Illustration 4

g00667626

4. Remove seal (7).

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