CATERPILLAR®

Service Repair Manual

Models

345B II EXCAVATOR

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	138-7574	Link Bracket	2
B	1P-2420	Transmission Repair Stand	1
C	5P-5197	Retaining Ring Pliers As	1
	1U-8759	Tip Set	1
D	1P-0510	Driver Gp	1

Start By:

A. Remove the swing drive. Refer to Disassembly and Assembly, "Swing Drive - 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, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

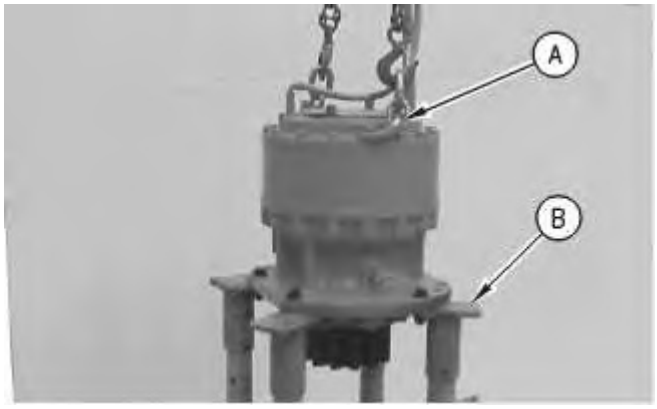

Illustration 1 g00724836

1. Attach Tooling (A) and a suitable lifting device to the swing drive.
2. Position the swing drive on Tooling (B). The weight of the swing drive is approximately 268 kg (570 lb).
3. Open the drain valve, and drain the oil from the swing drive into a suitable container for storage or disposal. The capacity of the swing drive is approximately 11 L (2.9 US gal). If necessary, remove the drain valve from the swing drive housing.

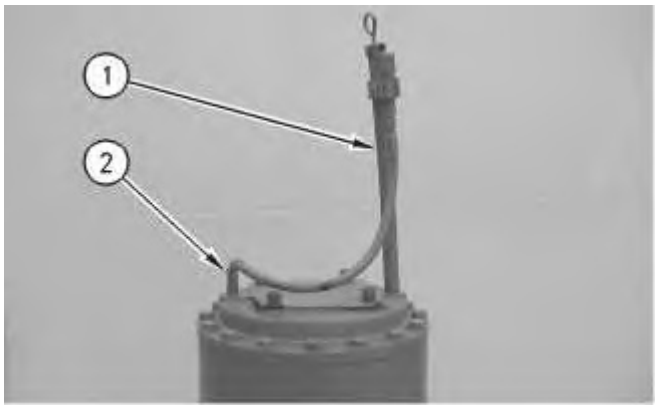

Illustration 2 g00724832

4. Remove oil level gauge (Dipstick) (1), the filler breather cap assembly, and hose assembly (2) from the swing drive.

Illustration 3 g00724843

5. Remove fitting (3) from cover (5) .
6. Remove bolts (4) and the washers from cover (5) .

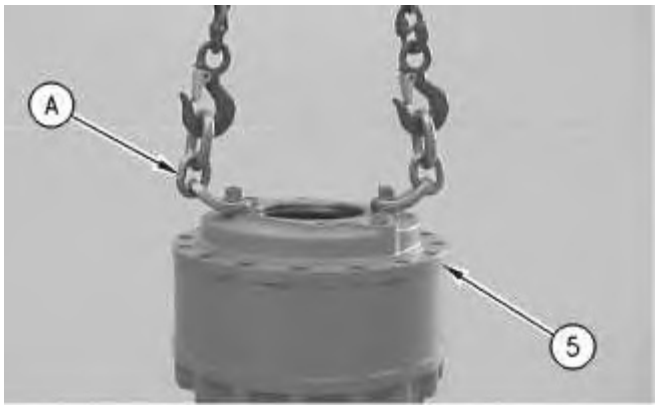

Illustration 4 g00724840

7. Attach Tooling (A) and a suitable lifting device to cover (5). Remove cover (5) .

Illustration 5 g00724854

8. Remove sun gear (6) from the carrier assembly (7) .

Illustration 6 g00724856

9. Remove spacer (8) from carrier assembly (7) .

10. Remove carrier assembly (7) from the swing drive.

11. Disassemble carrier assembly (7), as follows:

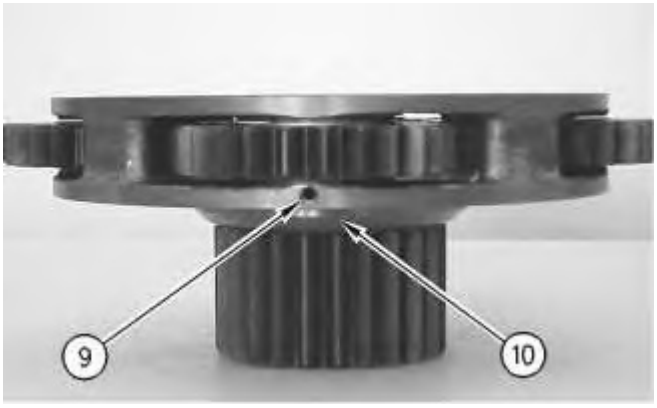

Illustration 7 g00724860

a. Use a hammer and a punch in order to drive spring pin (9) into planetary shaft (10) .

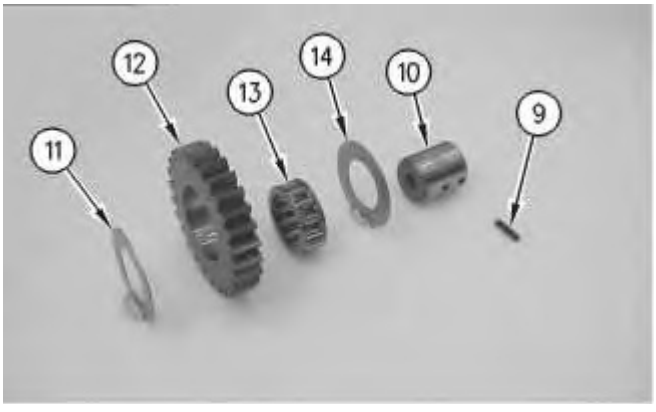

Illustration 8 g00724862

b. Remove planetary shaft (10), thrust washers (11) and (14), and planetary gear (12) from the carrier.

c. Remove bearing (13) from planetary gear (12) .

d. Use a hammer and a punch in order to remove spring pin (9) from the planetary shaft (10) .

e. Repeat Steps 11.a through 11.d in order to remove the remaining planetary gears from the carrier.

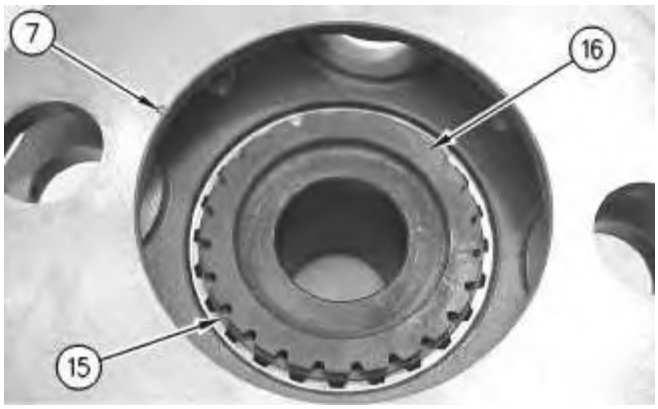

Illustration 9 g00724866

12. Use a screwdriver in order to remove the upper retaining ring (15) from sun gear (16) .
13. Remove carrier (7) from sun gear (17) .

Illustration 10 g00725145

14. Remove retaining ring (17) from the sun gear.

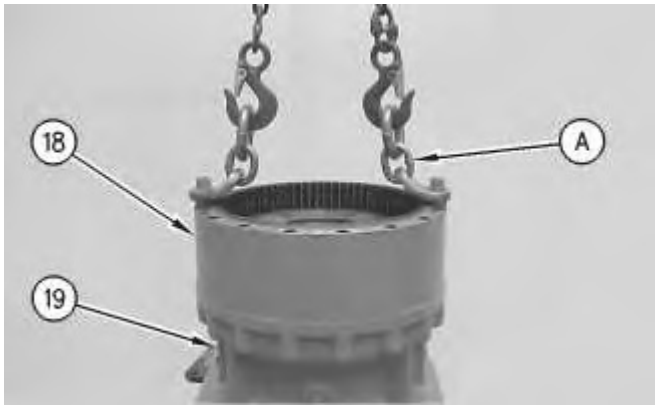

Illustration 11 g00725166

15. Attach Tooling (A) and a suitable lifting device to ring gear (18) .

16. Remove ring gear (18) from the swing drive housing (19). The weight of ring gear (18) is approximately 36 kg (80 lb).

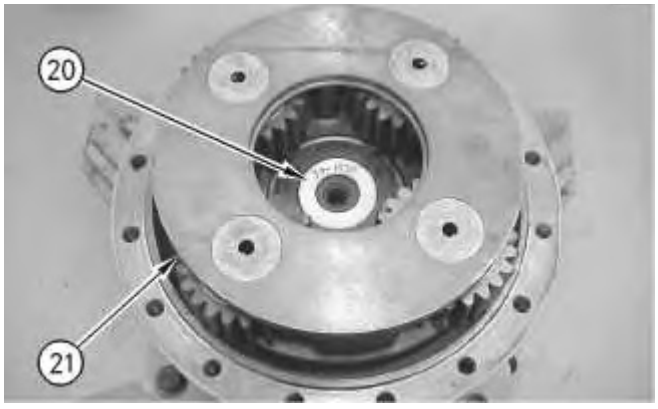

Illustration 12 g00725186

17. Remove spacer (20) from carrier assembly (21) .

Illustration 13 g00725194

18. Use two screwdrivers in order to remove retaining ring (22) .

Illustration 14 g00725203

19. Use two people to remove carrier assembly (21). The weight of carrier assembly (21) is approximately 40 kg (88 lb).

20. Disassemble carrier assembly (21), as follows:

Illustration 15 g00725252

a. Use a hammer and a punch to drive spring pin (23) into planetary shaft (24) .

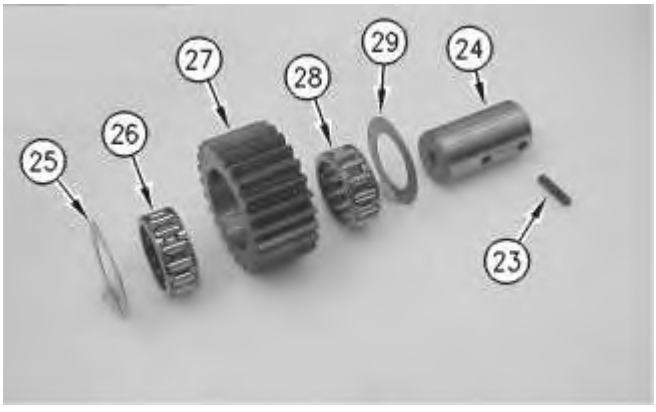

Illustration 16 g00725260

b. Remove planetary shaft (24), thrust washers (25) and (29), and planetary gear (27) from the carrier.

c. Remove bearings (26) and (28) from planetary gear (27) .

d. Use a hammer and a punch to remove spring pin (23) from planetary shaft (24) .

e. Repeat Steps 20.a through 20.d in order to remove the remaining planetary gears from the carrier.

Illustration 17 g00725270

21. Use Tooling (C) to remove retaining ring (30) .

Illustration 18 g00725274

22. Place swing drive housing (19) sideways. The weight of swing drive housing (19) is approximately 73 kg (160 lb). Remove bolts (32) and the washers from bearing cage (31) .

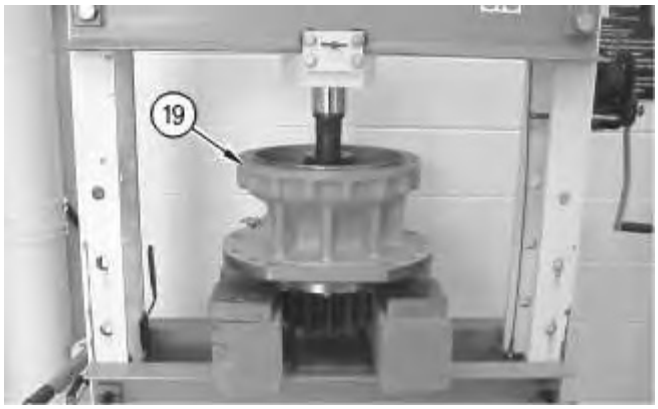

Illustration 19 g00725297

23. Put swing drive housing (19) in a press. The combined weight of the swing drive housing (19), the pinion shaft, and the bearing cage is approximately 152 kg (335 lb).

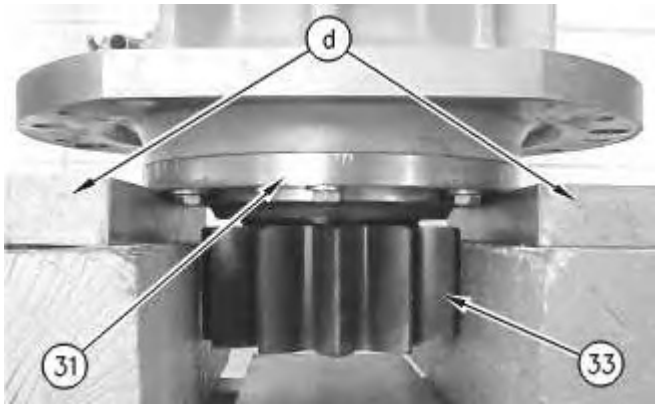

Illustration 20 g00725301

24. Place steel supports (d) under the face of bearing cage (31), as shown.

25. Place a wood block directly under the pinion shaft (33). This will prevent the pinion shaft from falling, while the shaft is pressed out of the swing drive housing.

    Note: Use care when components are pushed from the swing drive housing. Avoid injury to personnel. Also, avoid damage to components.

26. Push pinion shaft (33) from the swing drive housing. The weight of pinion shaft (33) is approximately 41 kg (90 lb).

27. Remove the swing drive housing and the pinion shaft from the press.

Illustration 21 g00725386

28. Place swing drive housing (19) sideways. The weight of swing drive housing (19) is approximately 73 kg (160 lb).

29. Remove remaining bolts (32), the washers, and bearing cage (31) from swing drive housing (19) .

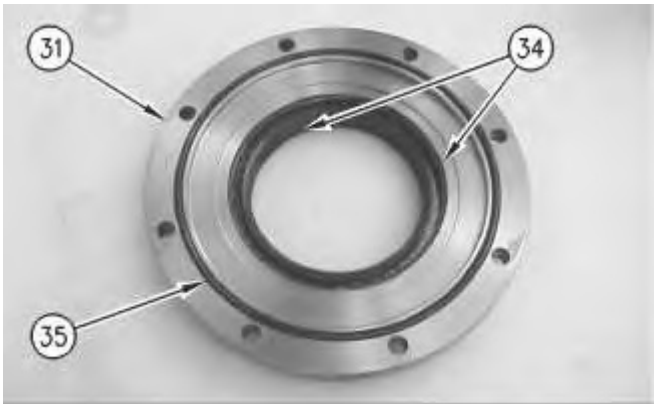

Illustration 22 g00725388

30. Remove lip seals (34) and O-ring seal (35) from bearing cage (31) .

Illustration 23 g00725300

31. Remove bearing cone (36) from the smaller bearing.

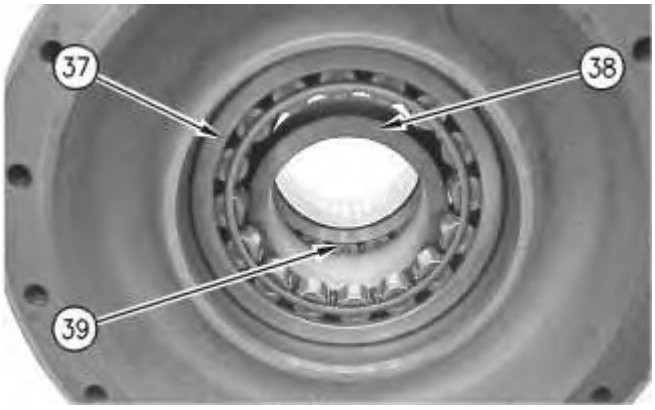

Illustration 24 g00725383

32. Use the following procedure to remove bearing assembly (37), spacer (38), and bearing assembly (39) .

Illustration 25 g00725391

a. Place the bearings and the swing drive housing under a press.

b. Use Tooling (D) and spacer (38) in order to remove bearing assembly (39) from the swing drive housing.

Note: Use care when components are pushed from the swing drive housing. Avoid injury to personnel. Also, avoid damage to components.

Note: Bearing assembly (39) will be damaged upon the removal.

Illustration 26 g00725394

c. Remove bearing assembly (37) from the swing drive housing (19) .

Note: Push on the outer race in order to prevent damage to bearing assembly (37) .

Product: EXCAVATOR
Model: 345B II EXCAVATOR FEE
Configuration: 345B Series II Excavator FEE00001-UP (MACHINE) POWERED BY 3176C Engine

Disassembly and Assembly
345B, 345B Series II and W345B Series II Excavators Machine Systems
Media Number -SENR1934-11 **Publication Date -01/01/2012** **Date Updated -12/01/2012**

i02830548

Swing Drive - Assemble

SMCS - 5459-016

S/N - AGS1-UP

S/N - AKX1-UP

S/N - ALB1-UP

S/N - ALD1-UP

S/N - AMD1-UP

S/N - AMJ1-UP

S/N - AMN1-UP

S/N - ANJ1-UP

S/N - APB1-UP

S/N - AYR1-UP

S/N - CCC1-UP

S/N - CDY1-UP

S/N - DCW1-UP

S/N - DET1-UP

S/N - FEE1-UP

Assembly Procedure

Table 1

Required Tools			
Tool	**Part Number**	**Part Description**	**Qty**
A	138-7574	Link Bracket	2
B	1P-2420	Transmission Repair Stand	1
C	5P-5197	Retaining ring pliers	1
	1U-8759	Tip Set	1
D	1P-0510	Drive Group	1
E	1U-6396	O-Ring Assembly Compound	1
F	5P-3931	Anti-Seize Compound	1
G	5P-0960	Molybdenum Grease	1
H	9S-3263	Thread Lock Compound	1
J	1U-8846	Gasket Sealant	1

Note: Cleanliness is an important factor. Before assembly, all parts should be thoroughly cleaned 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. All disassembly and all assembly procedures must be performed on a clean work surface and in a clean hydraulic area. Keep cleaned parts covered and protected at all times.

Note: O-rings, gaskets, and seals should always be replaced. A used O-ring may not have the same sealing properties as a new O-ring. Use Tooling (E) during the assembly procedure.

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.

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1. Make sure that all parts of the swing drive are thoroughly clean and free of dirt and debris prior to assembly.

Illustration 1 g00725394

2. Apply Tooling (F) on the outside diameter of bearing (37) and the inside diameter of swing drive housing (19) .
3. Lower the temperature of bearing (37) . Install bearing (37) in the swing drive housing.

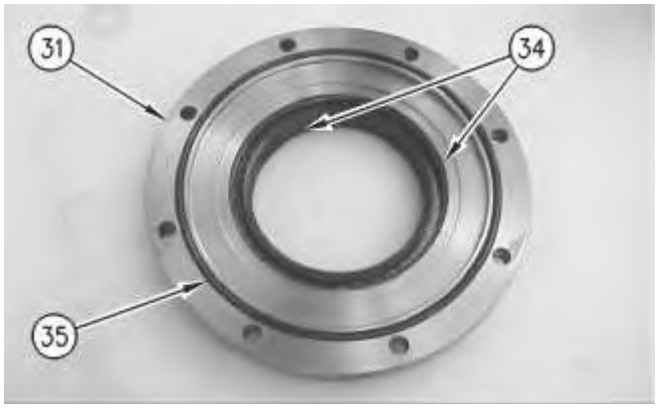

Illustration 2 g00725388

4. Install O-ring seal (35) into bearing cage (31) .
5. Install the two lip seals (34) in bearing cage (31) .
6. Apply Tooling (G) on the lip of each seal.

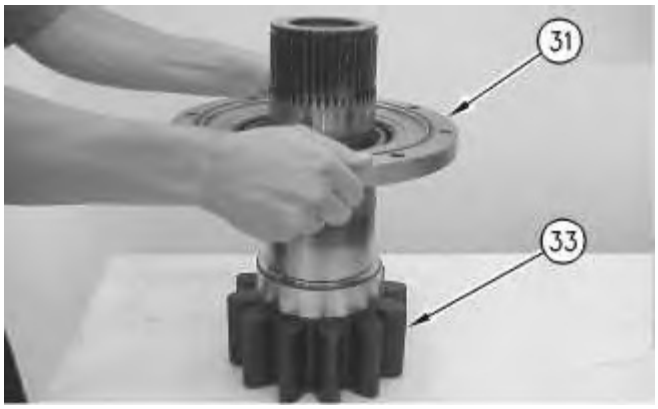

Illustration 3 g00725547

7. Carefully install cage (31) over pinion shaft (33) .

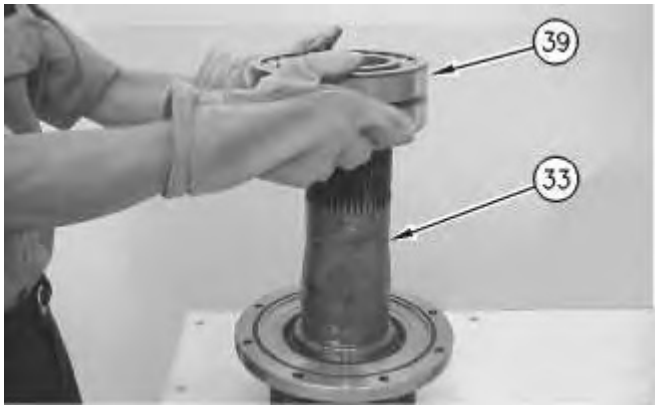

Illustration 4 g00725554

8. Heat bearing (39) to a temperature of 135 °C (275 °F) and install bearing (39) on the pinion shaft (33) .

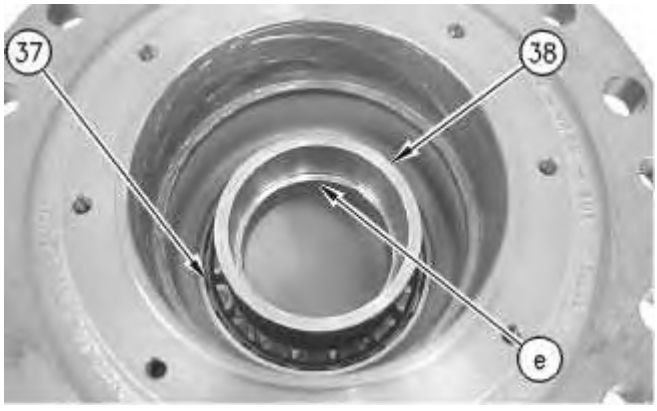

Illustration 5 g00725572

9. Install spacer (38) on top of bearing (37) , as shown.

   Note: Lip (e) for spacer (38) must face opposite bearing (37) , as shown.

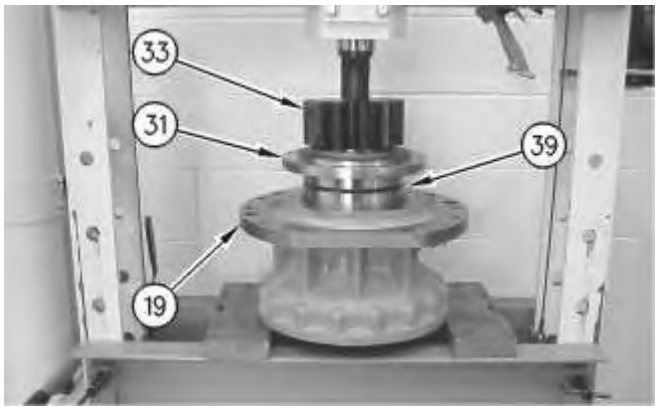

Illustration 6 g00725575

10. Put swing drive housing (19) in the press.

11. Apply Tooling (F) on the outside diameter of bearing (39) and the inside diameter of the swing drive housing.

12. Install pinion shaft (33) , bearing cage (31) , bearing assembly (39) , through spacer (38) and bearing (37) .

    Note: It may be necessary to reposition the press so that bearing assembly (39) is installed evenly into the swing drive housing.

    Note: Align bearing cage (31) with the swing drive housing during installation of the pinion shaft. Temporarily install two bolts that will hold bearing cage (31) to the swing drive housing.

Illustration 7 g00725595

13. Remove the swing drive from the press and place the swing drive sideways. The combined weight of the swing drive housing, the pinion shaft, and the bearing cage is 152 kg (335 lb).

14. Remove the temporary bolts that are holding the bearing cage in position.

15. Apply Tooling (H) on the threads of bolts (32) that hold bearing cage (31) to swing drive housing (19) .

16. Tighten bolts (32) to a torque of 100 ± 20 N·m (75 ± 15 lb ft).

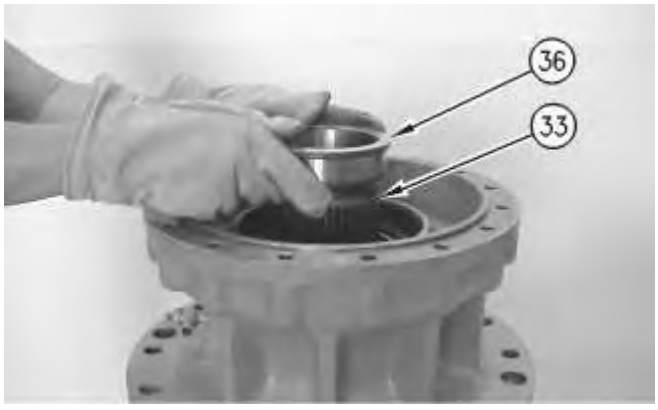

Illustration 8 g00725607

17. Heat bearing cone (36) to a temperature of 135 °C (275 °F). Install bearing cone (36) on the pinion shaft (33) .

    Note: Make sure that the shaft is centered in the swing drive housing, before you install bearing cone (36) .

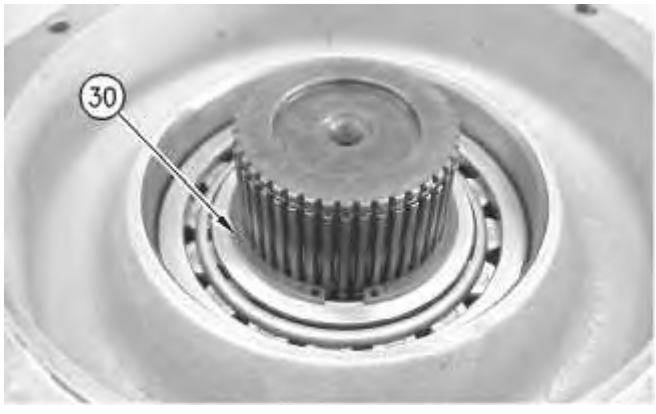

Illustration 9 g00725270

18. Use Tooling (C) to install retaining ring (30) .

19. Assemble the carrier assembly (21) , as follows:

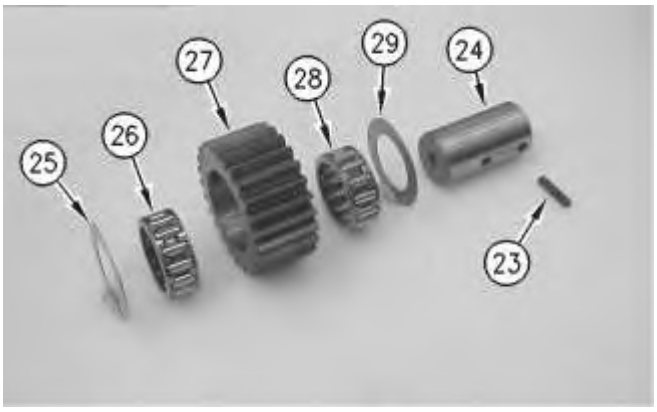

Illustration 10 g00725260

a. Apply clean SAE 30W oil on bearing (26) and bearing (28) . Install bearings (26) and (28) into planetary gear (27) .

b. Install thrust washer (25) on one side of planetary gear (27) .

c. Install thrust washer (29) on the opposite side of planetary gear (27) .

d. Use a deburring tool in order to remove the metal burr from the openings in the carrier.

e. Install planetary gear (27) and the thrust washers in the carrier assembly (21) .

Illustration 11 g00725252

f. Install planetary shaft (24) through the gear assembly into the carrier assembly. Make sure that the spring pin hole in the planetary shaft is in alignment with the spring pin hole in the carrier.

Illustration 12 g00703700

g. Drive spring pin (23) into shaft (24) . Orient the split in spring pin (23) vertically to the carrier. Align the split in the spring pin to the top or to the bottom. Make a stake mark on each side of the spring pin hole in the carrier. Each stake mark should be approximately 2.25 ± 0.75 mm (0.09 ± 0.03 inch) from the outside diameter of the spring pin hole.

h. Repeat Steps 19.a through 19.g in order to install the remaining planetary gears (27) in the carrier.

Illustration 13 g00725203

20. Use two people and install carrier assembly (21) into the housing. The weight of carrier assembly (21) is approximately 40 kg (88 lb).

Illustration 14 g00725194

21. Install retaining ring (22) .

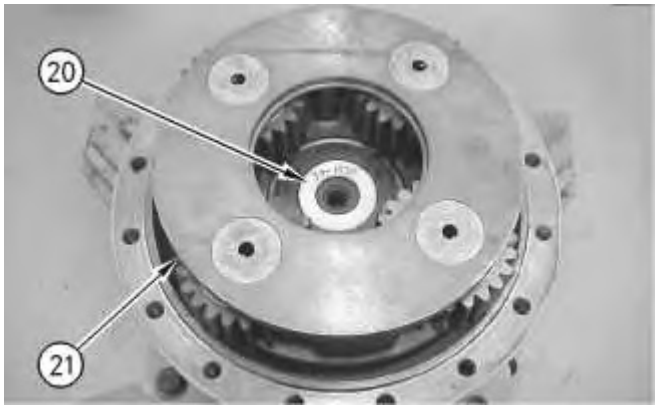

Illustration 15 g00725186

22. Install spacer (20) into carrier assembly (21) .

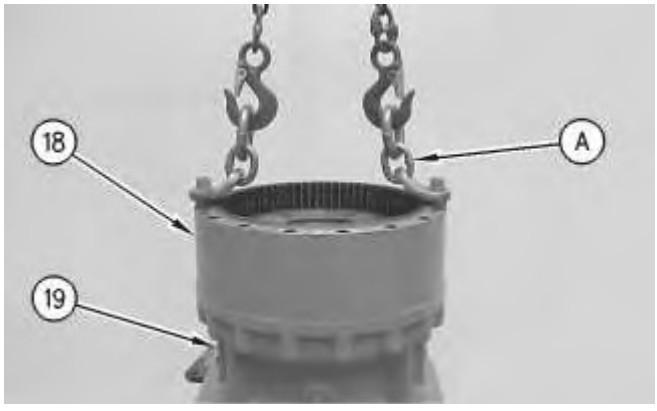

Illustration 16 g00725166

23. Make sure that the mating surfaces of the ring gear (18) and the swing drive housing (19) are thoroughly clean.

24. Apply Tooling (J) to the face of swing drive housing (19) and the face of ring gear (18) .

25. Install Tooling (A) onto ring gear (18) . Weight of the ring gear is approximately 36 kg (80 lb).

26. Install ring gear (18) onto the swing drive housing (19) .

Illustration 17 g00725145

27. Install retaining ring (17) into the sun gear.

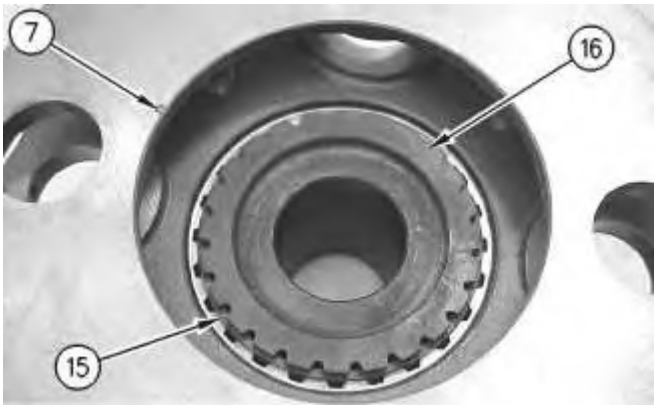

Illustration 18 g00724866

28. Install carrier (7) into the sun gear. Install retaining ring (15) into sun gear (16) .

29. Assemble carrier assembly (7) , as follows:

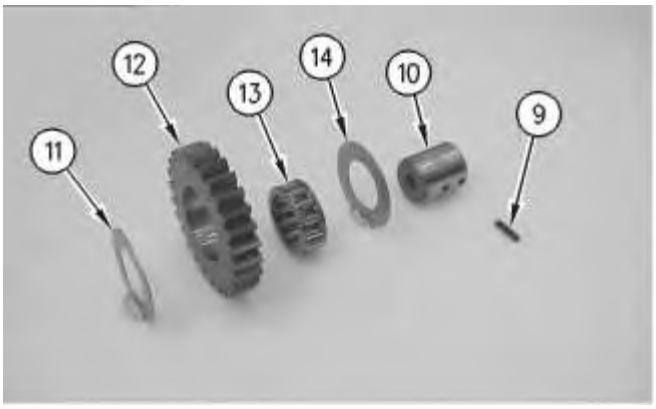

Illustration 19 g00724862

a. Apply clean SAE 30W oil on bearing (13) . Install bearing (13) in planetary gear (12) .

b. Install a thrust washer (11) on one side of planetary gear (12) .

c. Install a thrust washer (14) on the opposite side of planetary gear (12) .

d. Use a deburring tool in order to remove the metal burr from the openings in the carrier.

e. Install planetary gear (12) and the thrust washers in the carrier assembly (7) .

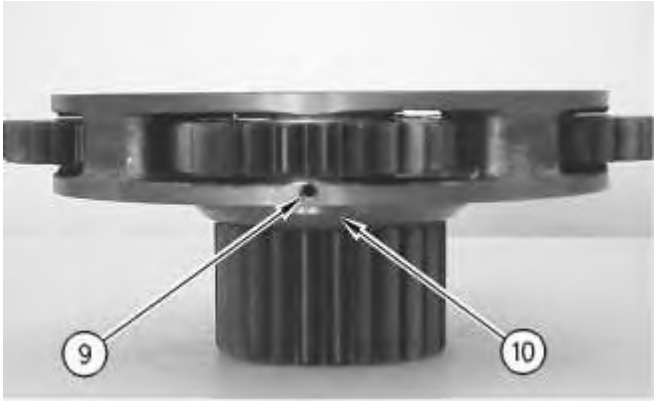

Illustration 20 g00724860

f. Install planetary shaft (10) through the gear assembly into the carrier assembly. Make sure that the spring pin hole in the planetary shaft is in alignment with the spring pin hole in the carrier.

Illustration 21 g00703700

g. Drive spring pin (9) into shaft (10) . Orient the split in spring pin (9) vertically to the carrier. Align the split in the spring pin to the top or to the bottom. Make a stake mark on each side of the spring pin hole in the carrier. Each stake mark should be approximately 2.25 ± 0.75 mm (0.09 ± 0.03 inch) from the outside diameter of the spring pin hole.

h. Repeat Steps 29.a through 29.g for the remaining gear assemblies.

Illustration 22 g00724856

30. Install carrier assembly (7) in the ring gear.

31. Install spacer (8) into carrier assembly (7) .

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to download the complete manual.

Thank you so much for reading

Illustration 23 g00724854

32. Install sun gear (6) into carrier assembly (7) .

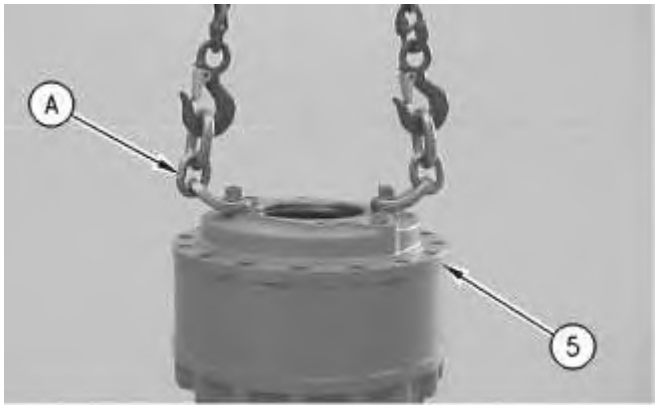

Illustration 24 g00724840

33. Make sure that the mating surfaces of the ring gear and cover (5) are thoroughly clean.
34. Apply Tooling (J) on the flange surface of the ring gear and cover (5) .
35. Fasten Tooling (A) and a suitable lifting device to cover (5) . Put the cover in the original position on the ring gear. Make sure that the cover is seated properly.