

Product: TRACK-TYPE TRACTOR

Model: D3C III TRACK-TYPE TRACTOR 4KS

Configuration: D3C & D3C LGP, XL Series III Hystat Tractors 4KS00001-UP (MACHINE) POWERED BY 3046 Engine

Disassembly and Assembly

D3C, D4C AND D5C SERIES III HYSTAT TRACK-TYPE TRACTOR POWER

Media Number -SEN1251-03

Publication Date -01/11/2004

Date Updated -08/04/2013

SEN12510004

Final Drives

SMCS - 4050-011; 4050-012; 4050-015; 4050-016

Remove Final Drives

Tools Needed	A
8T-3207 Lift Bracket	1

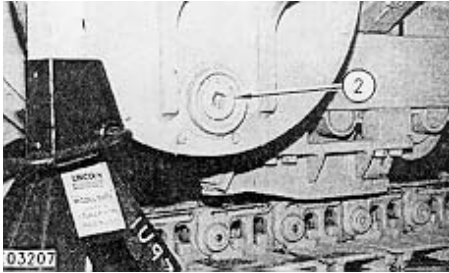
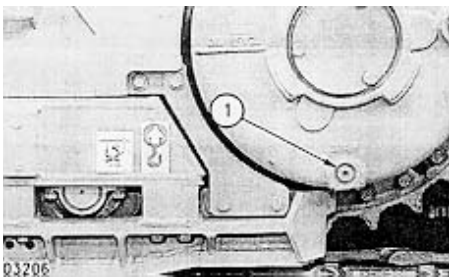
Start By:

- a. separation of tracks
- b. remove batteries

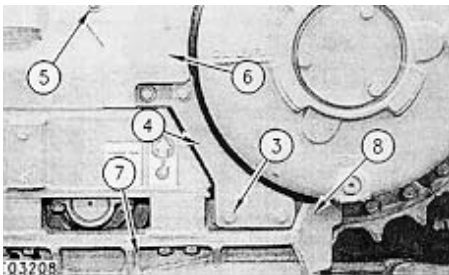
Tools Needed	A
1U-5230 Hand Pump	1
8F-0024 Hose Assembly	1
8T-8902 Tee	1
5P-3501 Adapter	1
6V-9828 Cap Assembly	1

Fluid Spillage Containment

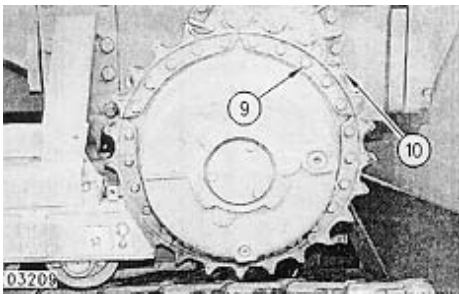
Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the machine. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids. Refer to "Tools And Shop Products Guide," NENG2500 for tools and supplies suitable to collect and contain fluids in Caterpillar machines. Dispose fluids according to local regulations and mandates.



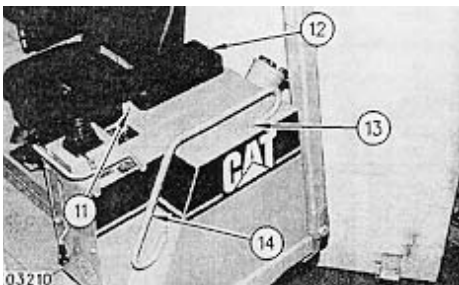
1. Remove plugs (1) and (2) and drain the fluid from the final drive. The capacity of the final drive is **20.5 L (5.5 gal U.S.)**. Install plugs (1) and (2) in the final drive.



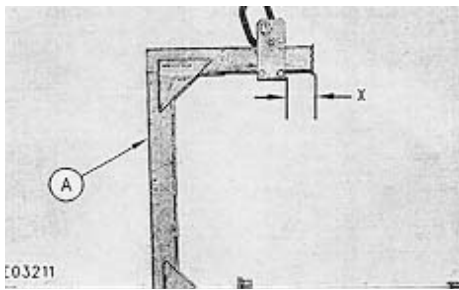
2. Remove three bolts (3), washers and guard (4). Remove three bolts (5), washers and guard (6). Remove four bolts (7), washers and guard (8).



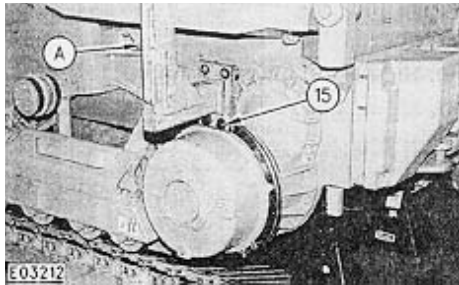
3. Remove twenty-five bolts (9) and five sprocket segments (10).



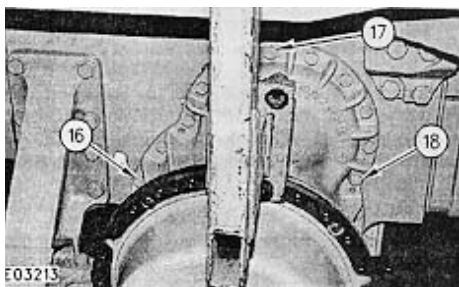
4. Remove two bolts (11) and cushion assembly (12). Remove two bolts (13) and handhold (14).



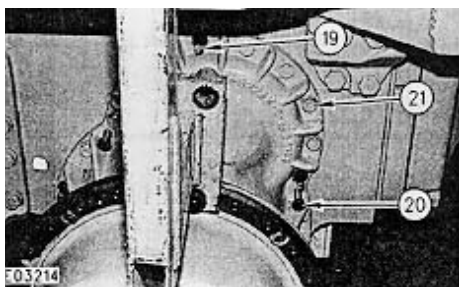
5. Adjust the bracket on Tooling (A) until dimension (X) is **225 mm (9 in)**.



6. Attach Tooling (A) to a hoist and to the final drive assembly using two 1/21/4 - **20 X 2** bolts (15) and washers.

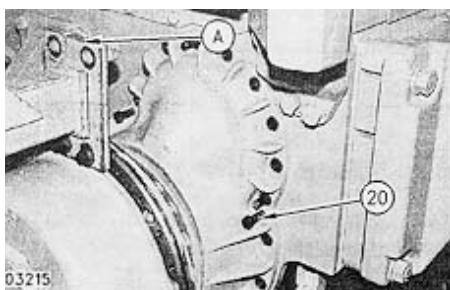


7. Remove three bolts (16), (17) and (18).

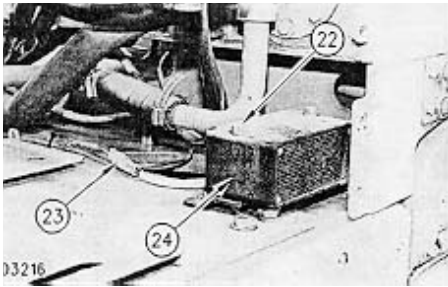


8. Install three **M16 X 7.5 cm** studs (19) and two **M16 X 50 mm** pusher bolts (20).

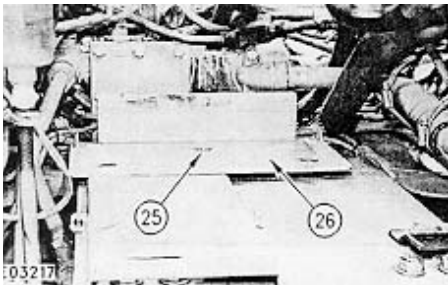
9. Remove eighteen bolts (21).



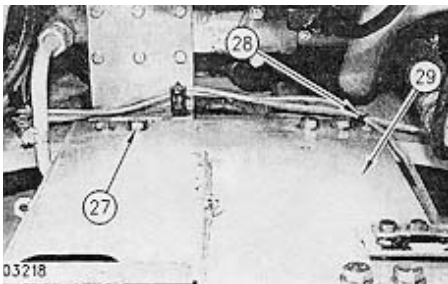
10. Turn pusher bolts (20) and remove the final drive assembly. The final drive assembly weight is **322 Kg (710 lb)**.



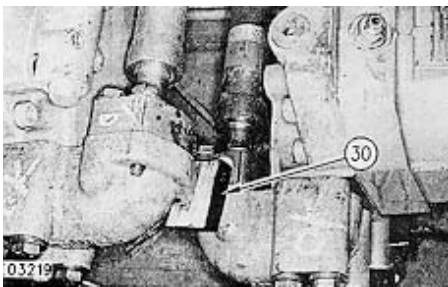
11. Remove two bolts (22) and washers. Disconnect wire connector (23) and remove back up alarm assembly (24).



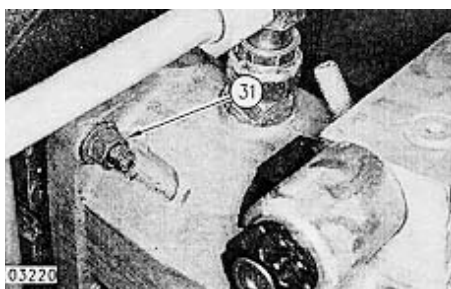
12. Remove three bolts (25), washers and plate (26).



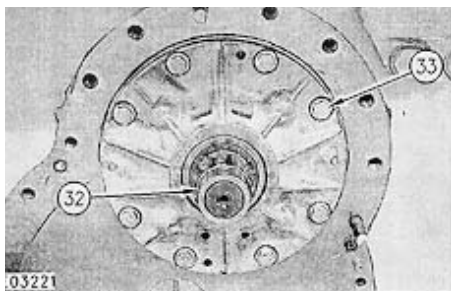
13. Cut strap (28) and remove eight bolts (27), washers and plate (29).



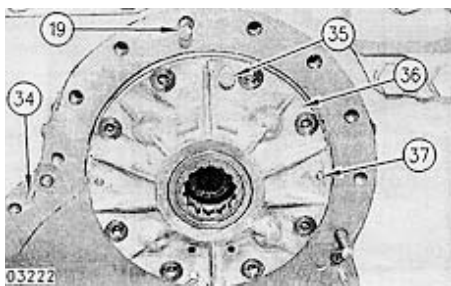
14. Install wood block (30) between the two drive motors as shown.



15. Remove four nuts (31) and washers.



16. Remove gear assembly (32), eight bolts (33) and washers.



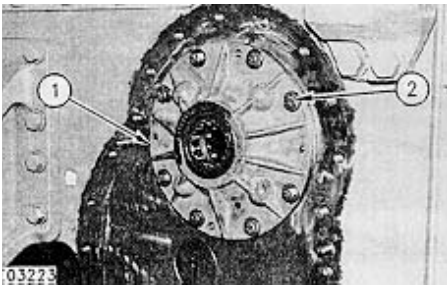
17. Install two **M12 X 40 mm** pusher bolts (35) and remove cage assembly (36). If necessary remove and replace two dowels (34) and two dowels (37).

Install Final Drive

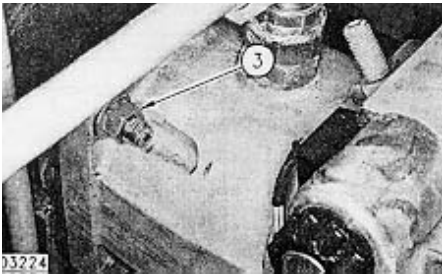
Tools Needed		A
8T-3207	Lift Bracket	1

Fluid Spillage Containment

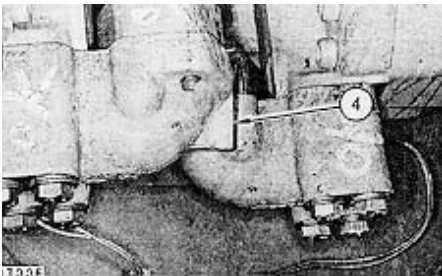
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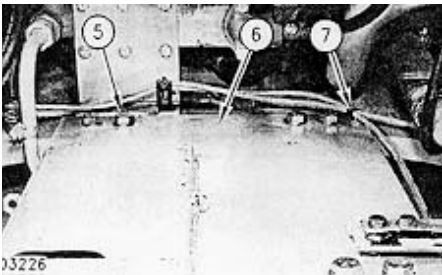
1. Install cage assembly (1), eight bolts (2) and washers. Apply **4C-9502 Sealant** to the threads of bolts (2).



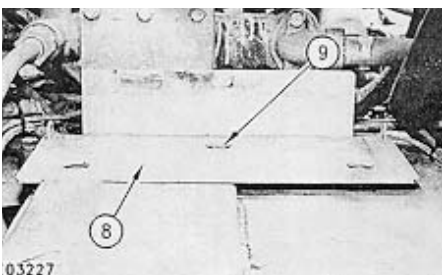
2. Install four nuts (3) and washers.



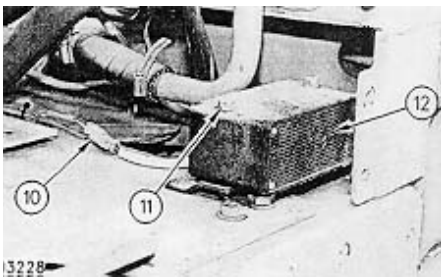
3. Remove wood block (4).



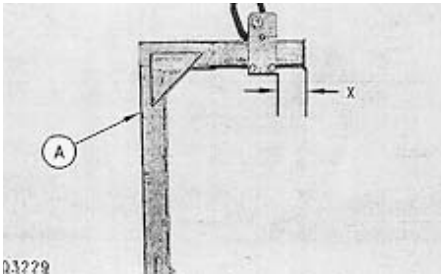
4. Install plate (6), eight bolts (5), washers and strap (7).



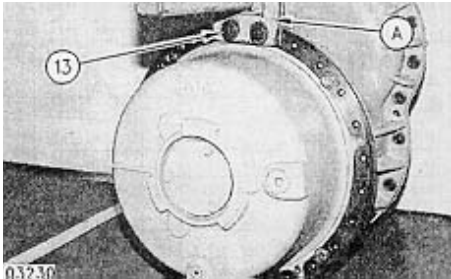
5. Install plate (8), three bolts (9) and washers.



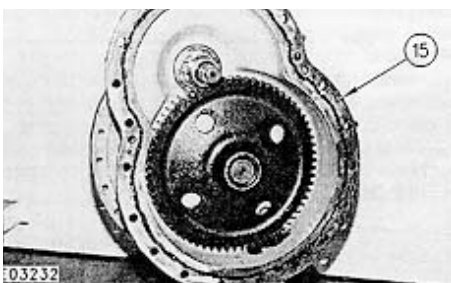
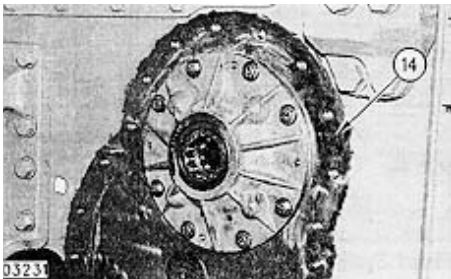
6. Install back up alarm assembly (12), two bolts (11) and washers. Connect wire connector (10).



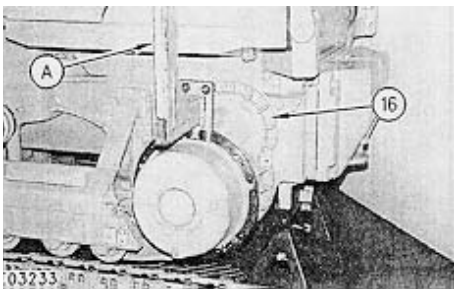
7. Adjust the bracket on Tooling (A) until dimension (X) is **225 mm (9 in)**.



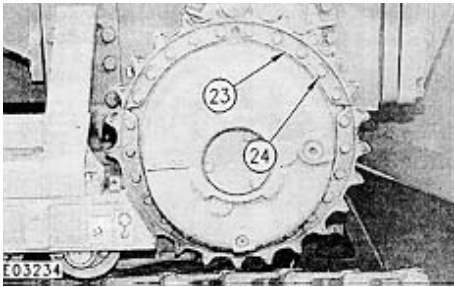
8. Attach Tooling (A) to a hoist and to the final drive assembly using two 1/21/4 - **20 X 2** bolts (13) and washers.



9. Clean surfaces (14) and (15). Apply a 3-4 mm wide bead of **6V-6640 sealant** to the final drive assembly as shown.

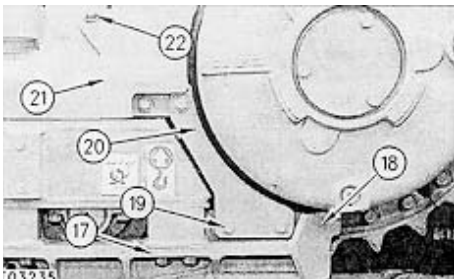


10. Install the final drive assembly on the machine. Install twenty-one bolts (16) and washers. Remove Tooling (A).

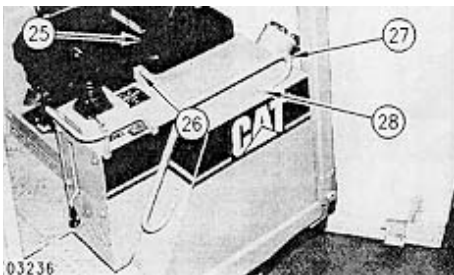


11. Install five sprocket segments (23) and twenty-five bolts (24) on the final drive assembly. Tighten bolts (24) to a torque of **120 ± 20 N*m (88 ± 15 lb ft)**.

NOTE: For D5C Track-Type Tractor, tighten bolts (24) to a torque of **240 ± 40 N*m (177 ± 30 lb ft)**.



12. Install guard (18), four bolts (17) and washers. Install cover (21), three bolts (22) and washers. Install cover (20), three bolts (19) and washers.



13. Install handhold (27) and two bolts (28). Install cushion assembly (25) and two bolts (26).

14. Fill the final drive with oil to the correct level. The capacity of the final drive is **20.5 L (5.5 gal U.S.)**.

NOTE: Refer to the topic "Lubricant Viscosities & Refill Capacities" in the D3, D4 and D5 Track-Type Tractor Operation & Maintenance Manual SEBU7077 for the correct filling procedure.

End By:

- a. install batteries
- b. connection of tracks

Disassemble Final Drive

Tools Needed		A	B	C	D	E	F
1P-0510	Drive Group	1					
8H-0663	Bearing Puller		1				
1P-2321	Jaw Puller			1			
5P-7311	Bearing Puller				1		
1P-7461	Leg				2		
1P-0074	Slide Hammer Puller				1		
138-7575	Link Bracket					3	
1P-2420	Transmission Repair Stand						1

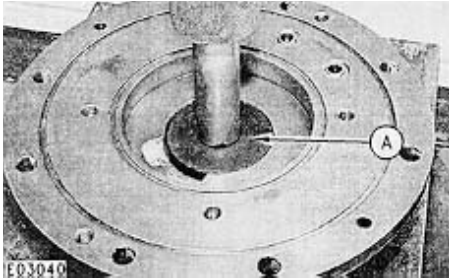
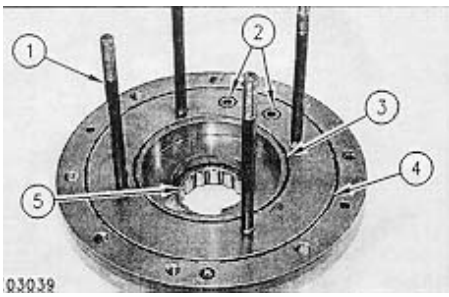
Tools Needed		G	H	J	K
8B-7559	Adapter	2			
8B-7548	Push-Puller Tool Gp	1			
150-1782	Crossblock	1			
1P-0520	Drive Group		1		
1H-3112	Bearing Puller			1	
1P-0074	Slide Hammer Puller			1	
1P-2322	Jaw Puller				1

Start By:

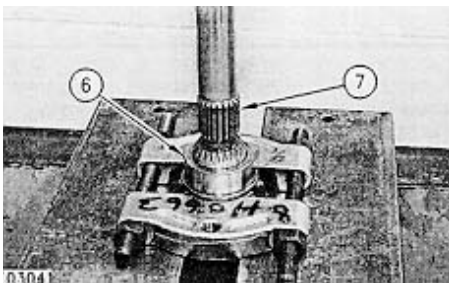
- a. remove final drive

Fluid Spillage Containment

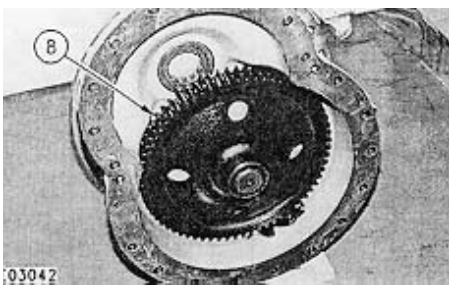
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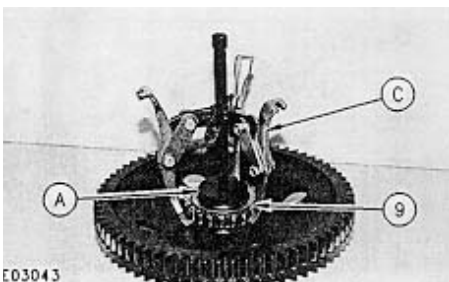
1. Remove four studs (1), two O-ring seals (2), O-ring seal (3) and O-ring seal (4) from the cage.
2. Using a press and Tooling (A), remove bearing (5) from the cage.



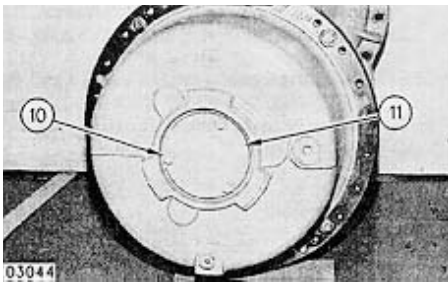
3. Using a press and Tooling (B), remove bearing (6) from gear (7).
4. Repeat Step 3 for the opposite side of gear (7).



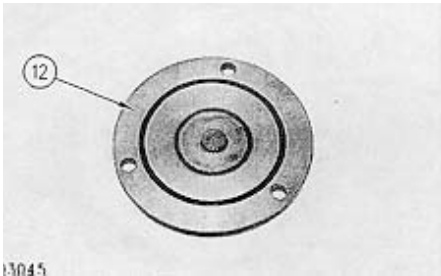
5. Remove gear assembly (8) from the final drive assembly.



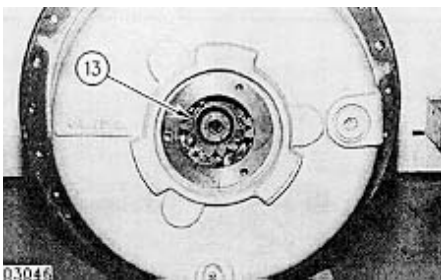
6. Using Tooling (A) and (C), remove bearing (9) from the gear.



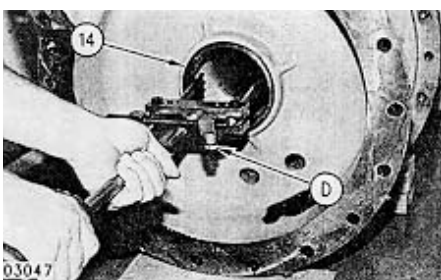
7. Remove three bolts (10), washers and cover (11).



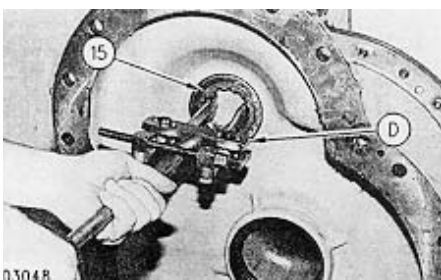
8. Remove O-ring seal (12).



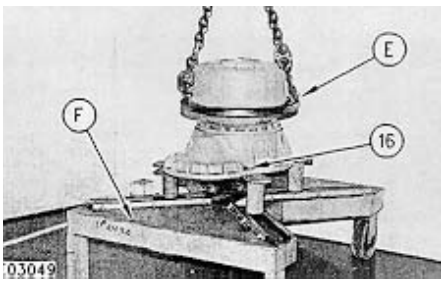
9. Remove shaft (13) by pushing the shaft from the opposite side.



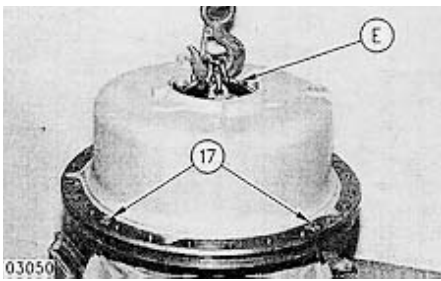
10. Using Tooling (D), remove race (14).



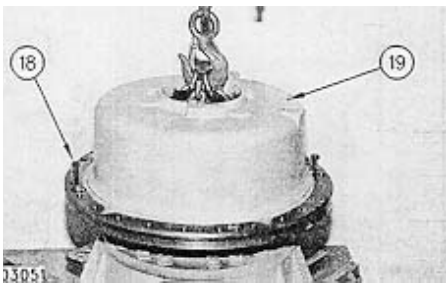
11. Using Tooling (D), remove bearing (15).



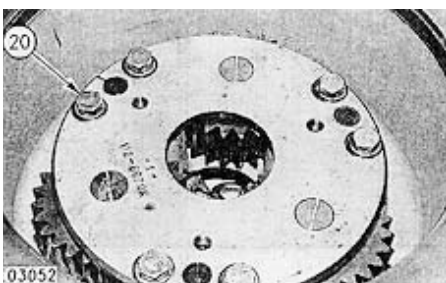
12. Using a suitable lifting device and Tooling (E), position the final drive assembly on Tooling (F). Install four **M16 X 60 mm**bolts (16), washers and nuts. Remove Tooling (E).



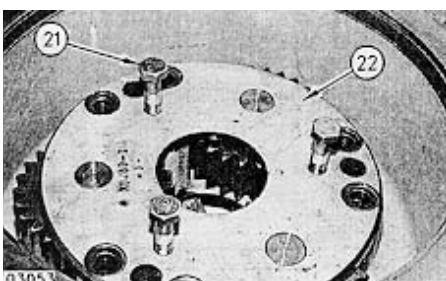
13. Install Tooling (E) as shown using three **M10 X 35 mm**bolts and washers. Attach a suitable lifting device and remove four bolts (17).



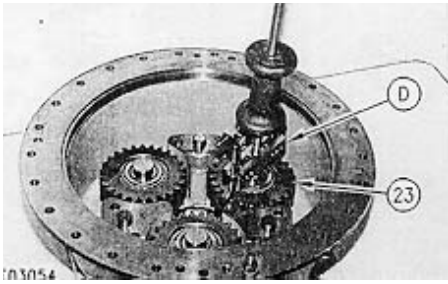
14. Install two **M12 X 175 mm**pusher bolts (18) and remove carrier assembly (19). The weight of the carrier assembly is **75 Kg (165 lb)**.



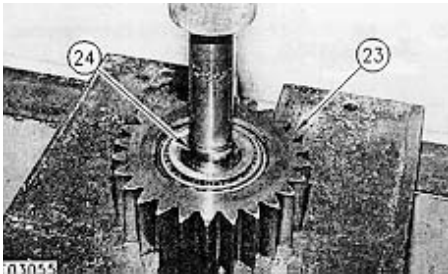
15. Remove six bolts (20) and washers from the carrier assembly.



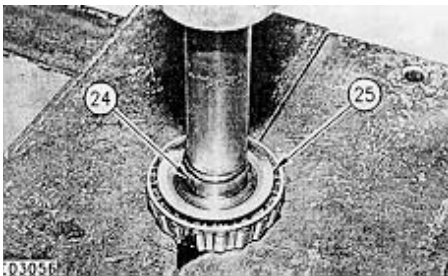
16. Install three **M16 X 60 mm** pusher bolts (21) and remove plate (22).



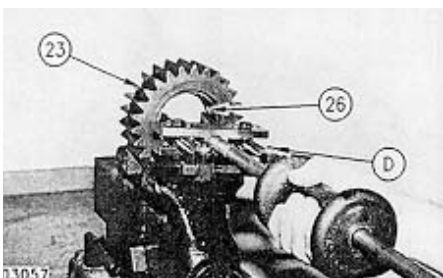
17. Using Tooling (D), remove gear assembly (23).



18. Using a suitable press, remove shaft assembly (24) from gear assembly (23).



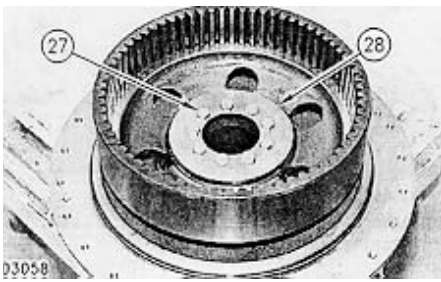
19. Using a suitable press, removes shaft (24) from bearing (25).



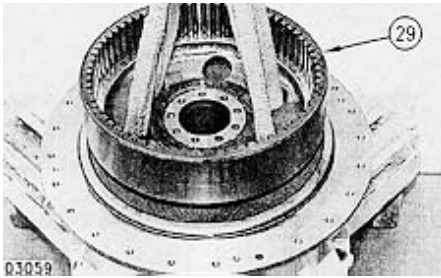
20. Using Tooling (D), remove cup (26) from gear (23).

21. Repeat Step 20 for the opposite side of gear (23).

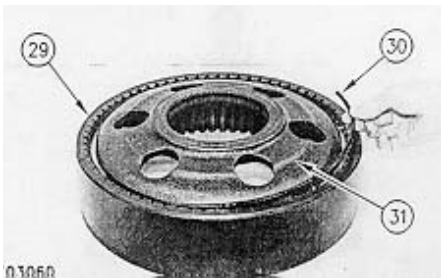
22. Repeat Steps 17 thru 21 for the remaining two gear assemblies.



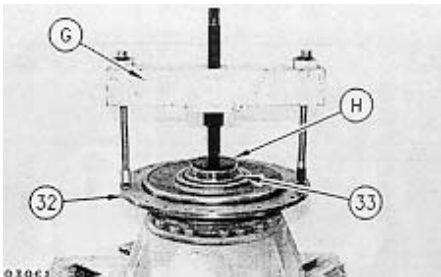
23. Remove nine bolts (27) and retainer (28) from the final drive assembly.



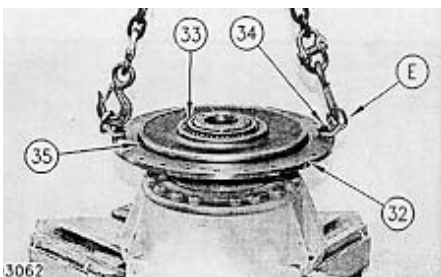
24. Using a suitable lifting device, remove gear assembly (29). The weight of the gear assembly is **27 Kg (60 lb)**.



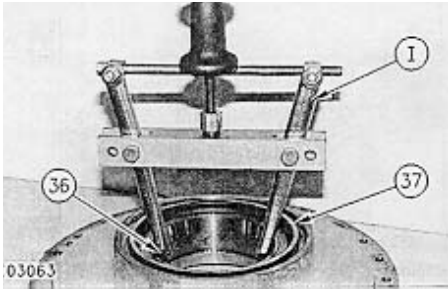
25. Remove ring (30) and hub (31) from gear (30).



26. Install Tooling (G) and (H) as shown. Pull hub assembly (32) and bearing (33) from its seat.



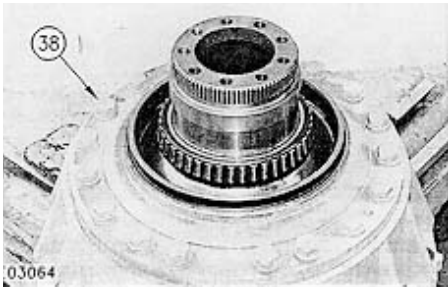
27. Remove bearing (33) and O-ring seal (35). Install Tooling (E) and two **1/2 X 1-1/2**bolts (34), and washers. Using a suitable lifting device, remove hub assembly (32). The weight of the hub assembly is **64 Kg (140 lb)**.Remove Tooling (E).



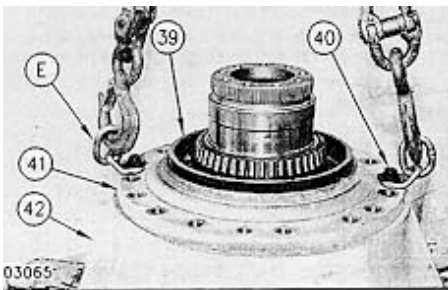
28. Using Tooling (J), remove cup (36).

29. Remove Duo-Cone seal (37).

30. Repeat Step 28 for the opposite side.

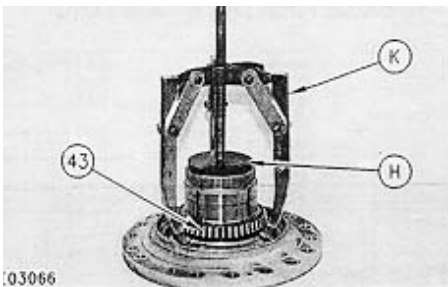


31. Remove eighteen bolts (38) and washers.



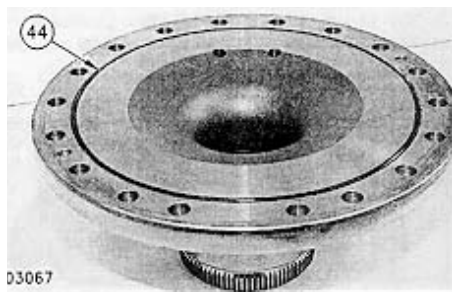
32. Remove Duo-Cone seal (39).

33. Install Tooling (E) as shown using two **M12 X 40 mm**bolts (40). Attach a suitable lifting device and remove spindle assembly (41) from case (42). The weight of the spindle assembly is **43 Kg (95 lb)**.Remove Tooling (E).



34. Using Tooling (H) and (K), remove bearing cone (34).

NOTE: Removal may cause damage to the cone.



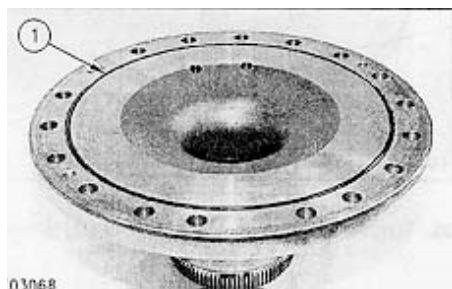
35. Turn the spindle over and remove O-ring seal (44).

Assemble Front Drive

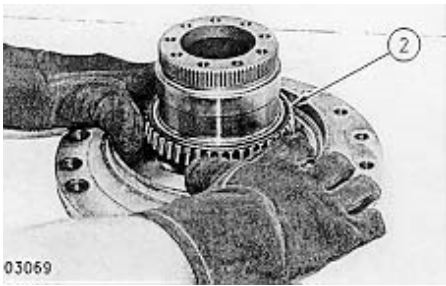
Tools Needed	A	B	C	D	E
1U-6437 Seal Installer	1				
138-7575 Link Bracket		3			
1P-0765 Seal Guide			1		
1P-0510 Driver Group				1	
1P-2420 Repair Stand					1

Fluid Spillage Containment

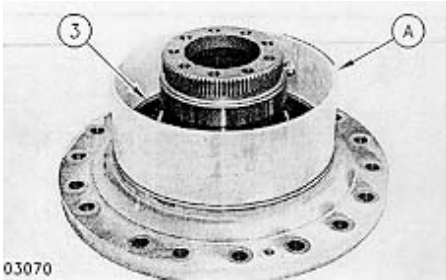
Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the machine. Be prepared to collect the fluid with suitable containers before opening any compartment or disassembling any component containing fluids. Refer to "Tools And Shop Products Guide," NENG2500 for tools and supplies suitable to collect and contain fluids in Caterpillar machines. Dispose fluids according to local regulations and mandates.



1. Install O-ring seal (1) on the spindle.

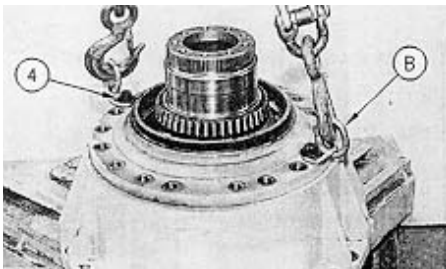


2. Heat bearing cone (2) to **120° C (248° F)**. Use temperature resistant gloves to install bearing cone (2) on the spindle as shown. Make sure the bearing cone is properly seated.

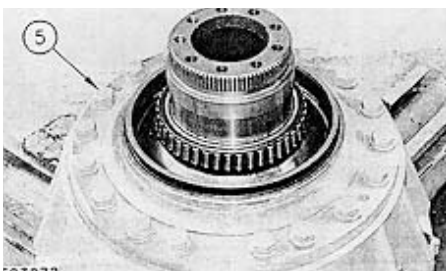


NOTE: Refer to "Assembly And Installation Of Conventional Duo-Cone Seals" in this module.

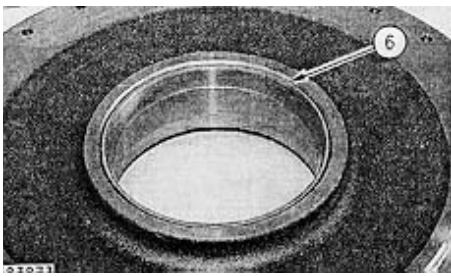
3. Using Tooling (A), install Duo-Cone seal (3) in the spindle. Make sure the rubber torics and all surfaces contacting them are clean and dry at assembly. The seal ring must be assembled square with bore and rubber toric must not be bulged or twisted.



4. Install Tooling (B) as shown using two **M12 X 40 mm** bolts (4) and washers. Attach a suitable lifting device and position the spindle assembly on the case. The weight of the spindle assembly is **43 Kg (95 lb)**. Remove Tooling (B).

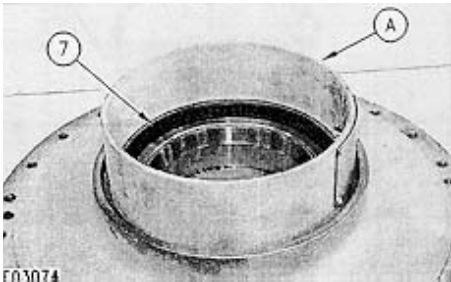


5. Install eighteen bolts (5) and washers.



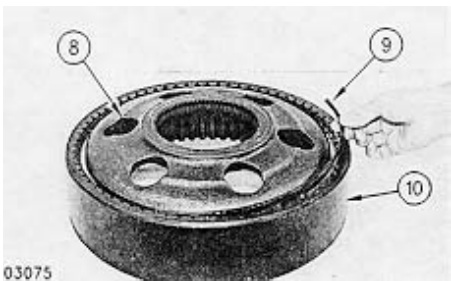
6. Lower the temperature of cup (6) and install the cup in the hub.

7. Repeat Step 6 for the opposite side.

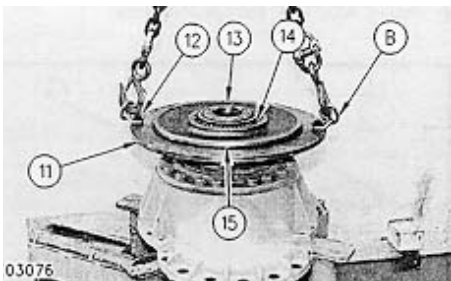


NOTE: Refer to "Assembly And Installation Of Conventional Duo-Cone Seals" in this module.

8. Using Tooling (A), install Duo-Cone seal in the hub assembly. Make sure the rubber torics and all surfaces contacting them are clean and dry at assembly. The seal ring must be assembled square with the bore and rubber toric must not be bulged or twisted.



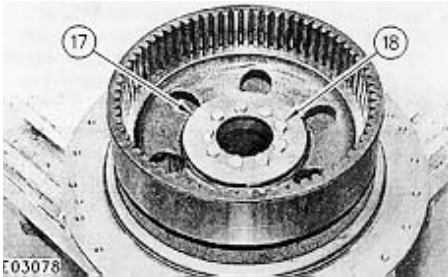
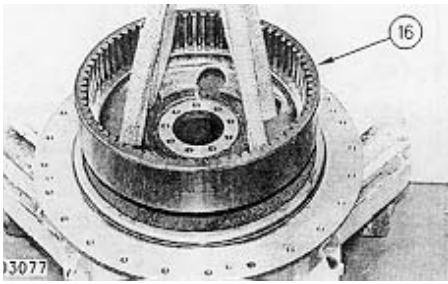
9. Install hub (8) and ring (9) in gear (10).



10. Install Tooling (B) on hub assembly (11) as shown using two $\frac{1}{2}$ X 1-1/2 bolts (12) and washers. Attach a suitable lifting device and position the hub assembly on spindle (13). The weight of the hub assembly is **64 Kg (140 lb)**. Remove Tooling (B) and install O-ring seal (15).

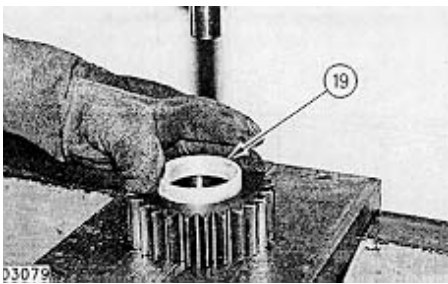
11. Heat bearing cone (14) to **120° C (248° F)**. Use temperature resistant gloves to install bearing cone (2) on the spindle as shown.

NOTE: While the bearing cone is still hot, proceed to Steps 12 and 13.



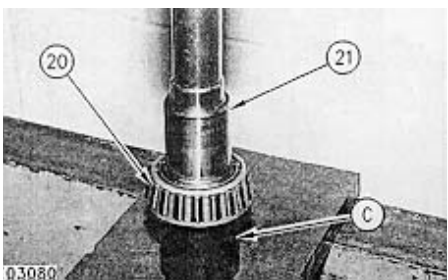
12. Install gear assembly (16) on the spindle

13. Install retainer (17) and nine bolts (18). Tighten the nine bolts (18) to a torque of **$120 \pm 20 \text{ N}\cdot\text{m}$ ($88 \pm 15 \text{ lb ft}$)**.

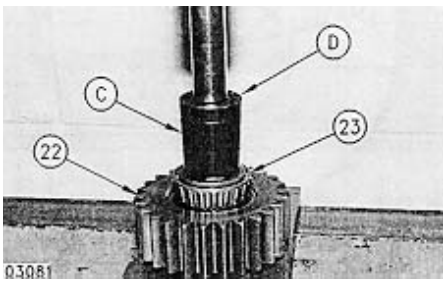


14. Lower the temperature of cup (19) and use temperature resistant gloves to install cup (19) in the gear as shown.

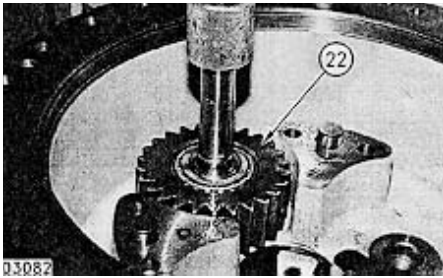
15. Repeat Step 14 for the opposite side.



16. Heat bearing cone (20) to **120° C (248° F)**. Place bearing cone (20) as shown on Tooling (C). Using a press, install shaft (21) until it is seated against Tooling (C).

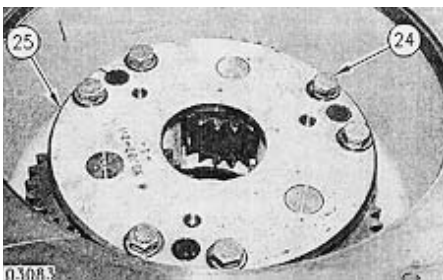


17. Place gear assembly (22) on the shaft assembly. Heat bearing cone (23) to **120° C (248° F)**. Using Tooling (C) and (D) and a press, install bearing cone (23).

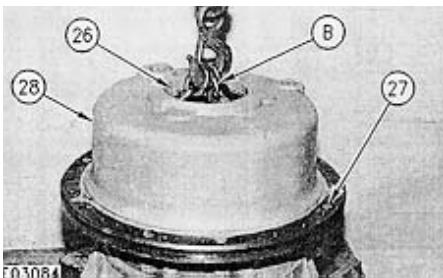


18. Using a suitable press, install gear assembly (22) in the carrier assembly.

19. Repeat Steps 14 thru 18 for the remaining two gear assemblies.

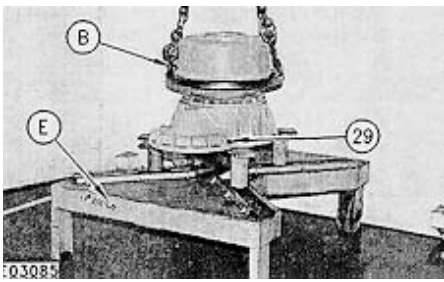


20. Install plate (25), six bolts (24) and washers. Tighten the bolts to a torque of **300 ± 70 N*m (221 ± 51 lb ft)**.

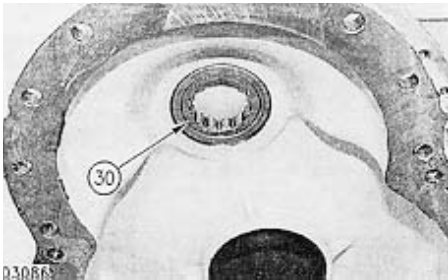


21. Install Tooling (B) as shown using three **M10 X 35 mm** bolts (26) and washers. Attach a suitable lifting device and position carrier assembly (29) on the hub assembly. The weight of the carrier assembly is **75 Kg (165 lb)**.

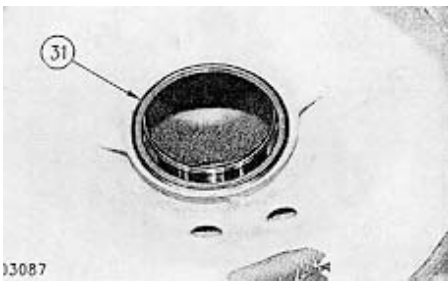
22. Install four bolts (27) and remove Tooling (B).



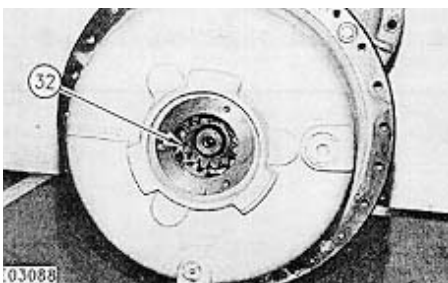
23. Install Tooling (B) as shown using two 1/21/2 X 1-bolts and washers. Remove four bolts (29), washers and nuts. Remove the final drive assembly from Tooling (E). Remove Tooling (B).



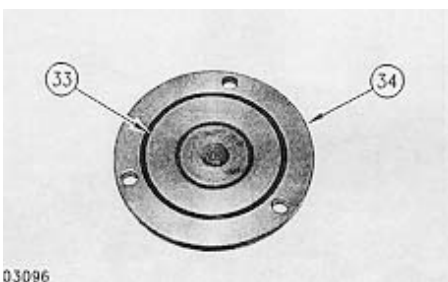
24. Lower the temperature of bearing cup (30) and install in the final drive assembly. Make sure the bearing is properly seated.



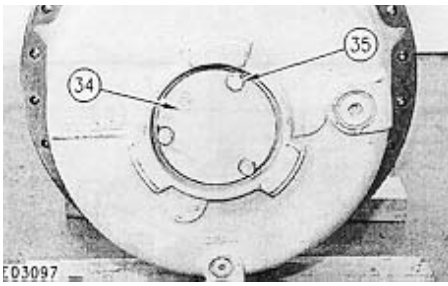
25. Lower the temperature of bearing race (31) and install in the final drive assembly. Make sure the bearing is properly seated.



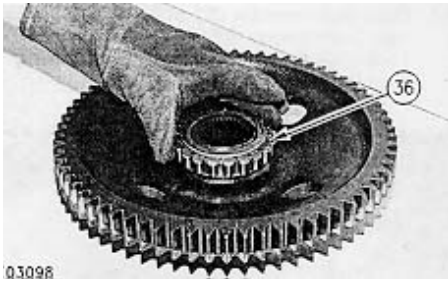
26. Install shaft (32) in the final drive assembly.



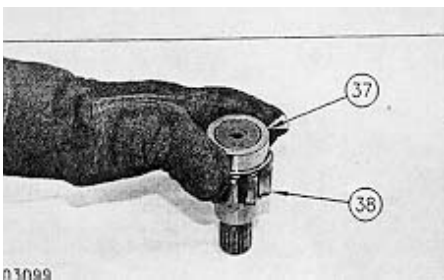
27. Install O-ring seal (33) on cover (34).



28. Install cover (34), three bolts (35) and washers.

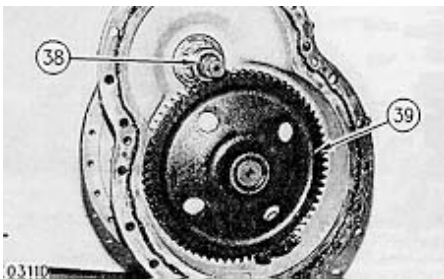


29. Heat bearing (36) to **120° C (248° F)**. Using temperature resistant gloves, install bearing (36) on the gear.



30. Heat bearing (37) to **120° C (248° F)**. Use temperature resistant gloves to install bearing (37) on the gear (38) as shown. Make sure the bearing is properly seated.

31. Repeat Step 30 for the opposite side.



32. Install gear assemblies (38) and (39) in the final drive assembly.

NOTE: Do not apply sealant at this time.

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