

Product: WHEEL LOADER

Model: 928F WHEEL LOADER 2XL

Configuration: 928F WHEEL LOADER 2XL01300-UP (MACHINE) POWERED BY 3116 ENGINE

Disassembly and Assembly 928F WHEEL LOADER POWER TRAIN

Media Number -SEN5995-02

Publication Date -01/10/2003

Date Updated -26/10/2004

SEN59950012

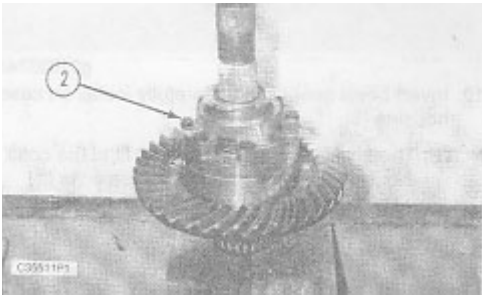
Differential (NoSPIN)

SMCS - 3265-015; 3265-016

Disassemble Differential (NoSPIN)

Start By:

- a. Remove differentials and pinion assemblies.



Typical Example

1. Put alignment marks on the differential case halves.

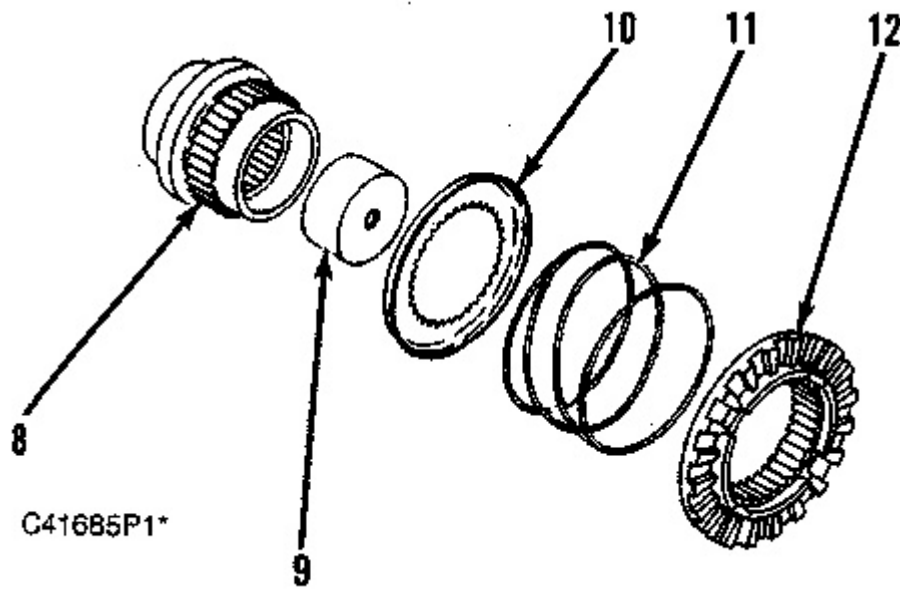


WARNING

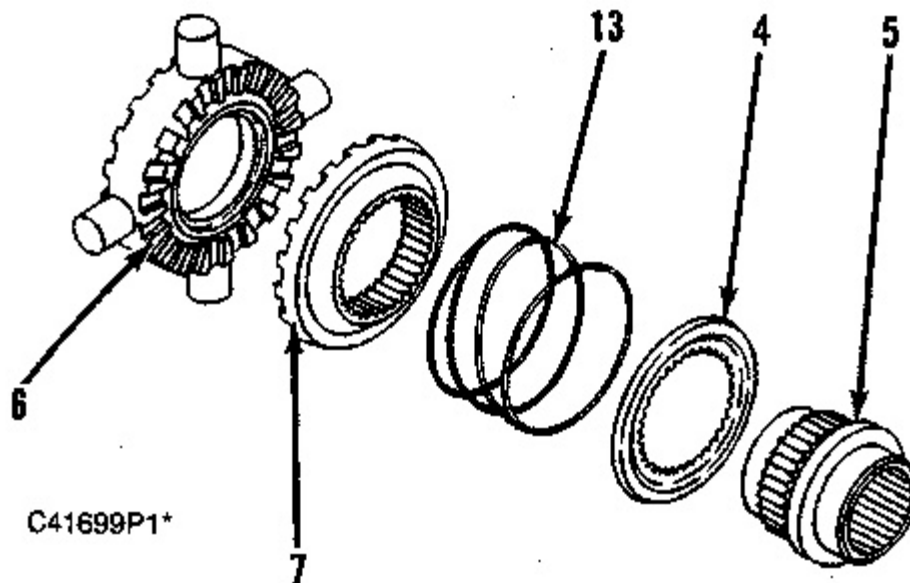
There is spring force against the differential case half. When bolts (2) are removed, the spring force will be released. To prevent possible personal injury, removal of the case half should be performed in a press in order to retain the case half.

2. Put the differential in a press, and remove bolts (2). Slowly release the spring compression.

3. Remove the differential case half.

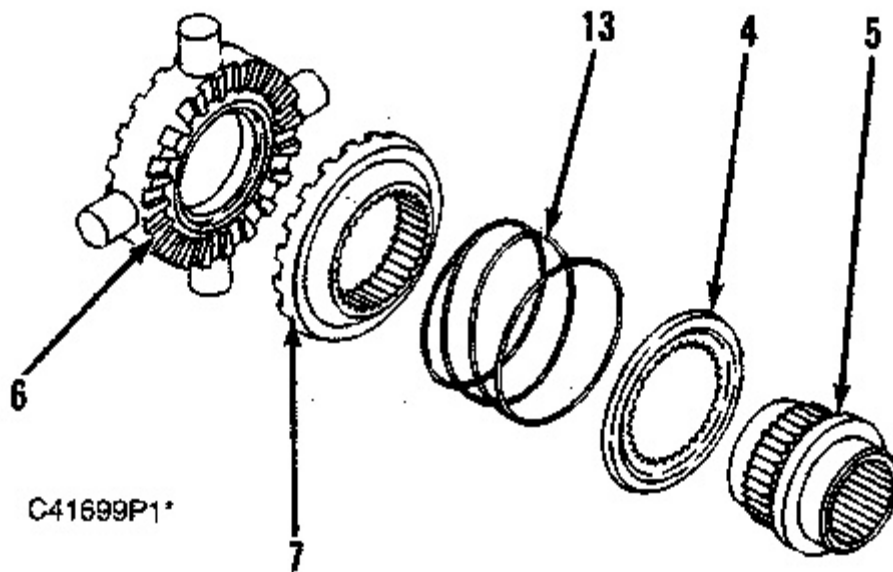


4. Remove side gear (8), spacer block (9), retainer (10), spring (11) and hold out ring and clutch assembly (12).



5. Remove spider cam assembly (6), hold out ring and clutch assembly (7), spring (13), retainer (4), and side gear (5).

Assemble Differential (NoSPIN)

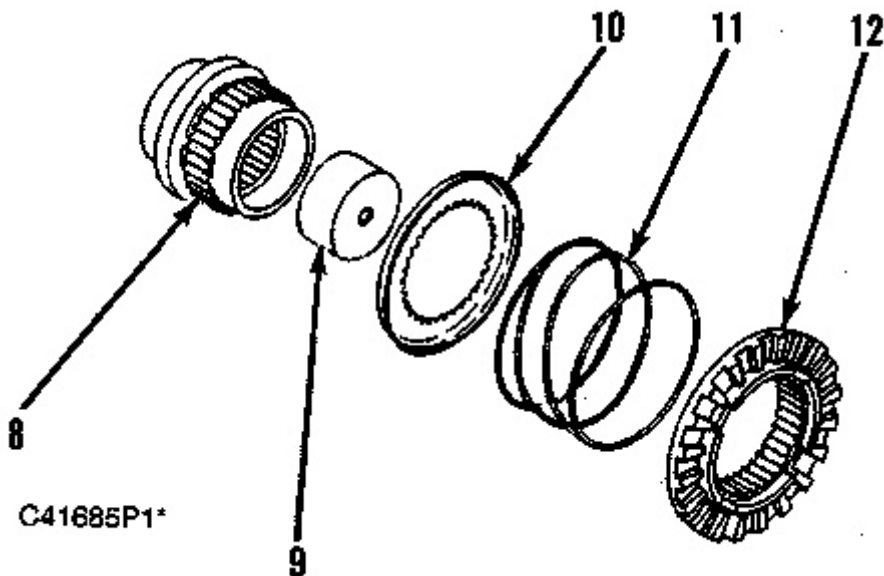


! WARNING

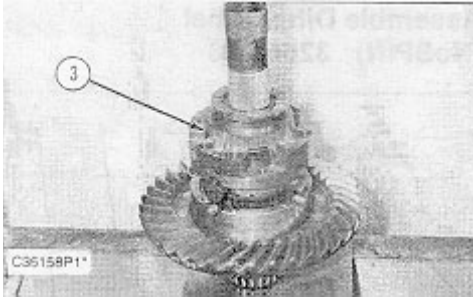
Personal injury can result from being struck by parts propelled by a released spring force. Make sure to wear all necessary protective equipment.

Follow the recommended procedure and use all recommended tooling to release the spring force.

1. Put one of the case halves in a press.
2. Install side gear (5), retainer (4), spring (13), holdout ring and clutch assembly (7) and spider cam assembly (6).

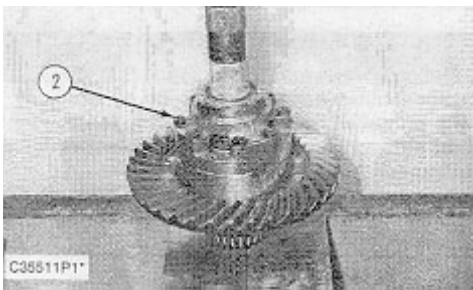


3. Install holdout ring and clutch assembly (12), spring (11), retainer (10), spacer block (9) and side gear (8).



Typical Example

4. Install case half (3). Use press to compress the springs in the differential.



Typical Example

NOTICE

A new differential group or a new case assembly will be equipped with four bolts and washers that are used for shipping, assembly and storage purposes only. Remove and discard these four bolts and washers after the bevel gear has been installed. These four bolts and washers should not be used for final assembly.

5. Install bolts (2) that hold the differential case halves together.

End By:

a. install the differential and pinion assemblies

Product: WHEEL LOADER

Model: 928F WHEEL LOADER 2XL

Configuration: 928F WHEEL LOADER 2XL01300-UP (MACHINE) POWERED BY 3116 ENGINE

Disassembly and Assembly 928F WHEEL LOADER POWER TRAIN

Media Number -SEN5995-02

Publication Date -01/10/2003

Date Updated -26/10/2004

SEN59950013

Engine & Transmission

SMCS - 1012-029; 1013-010; 3001-029; 3153-016; 3153-015

Remove & Install Engine & Transmission

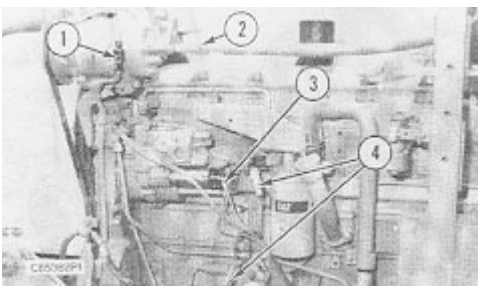
Tools Needed		A	B
FT-1439	Lifting Beam	1	
5P-9736	Link Bracket		1

Start By:

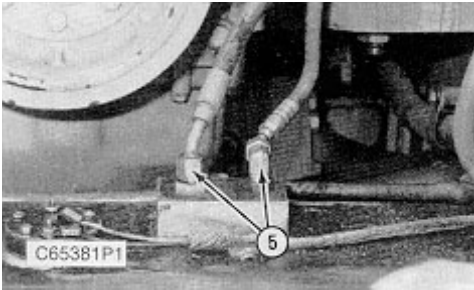
- a. Remove radiator and guard.
- b. Remove hydraulic tank**.
- c. Remove cab**.
- d. Remove steering cylinders**.
- e. Remove drive shaft group*.

*Refer to the Power Train Disassembly & Assembly module for this information.

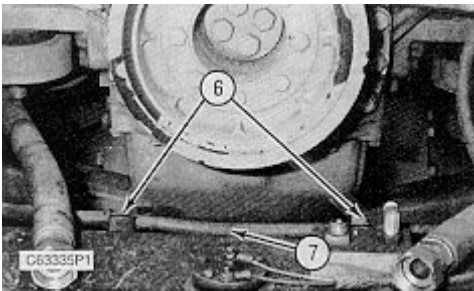
NOTE: Identify and mark all lines, hoses and electrical wiring before removing or disconnecting for purposes of reassembly.



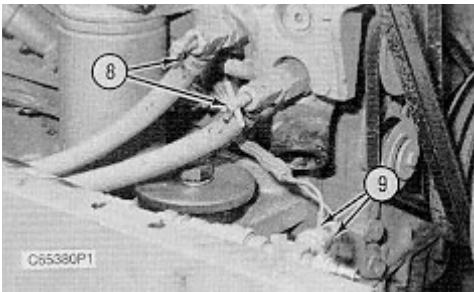
1. Remove condenser line (2).
2. Disconnect plug connect (1).
3. Disconnect wire (3) on the solenoid.
4. Disconnect two quick connects (4).



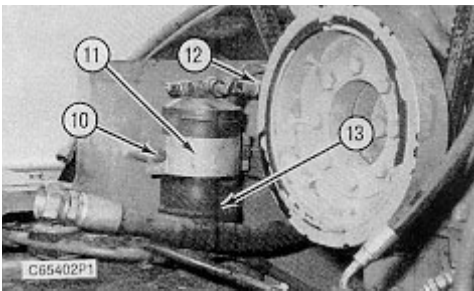
5. Remove two fuel lines (5).



6. Remove two bolts, washers and clips (6) and reposition cable (7).

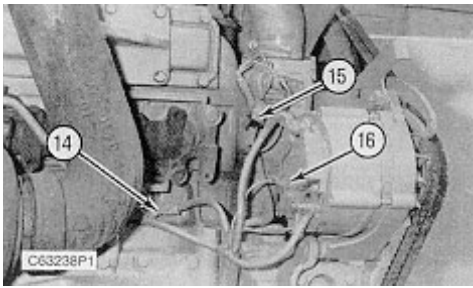


7. Loosen two clamps (8) and remove the heater lines.
8. Disconnect two spade connectors (9).



9. Remove two bolts and washers (10) and bracket (11).

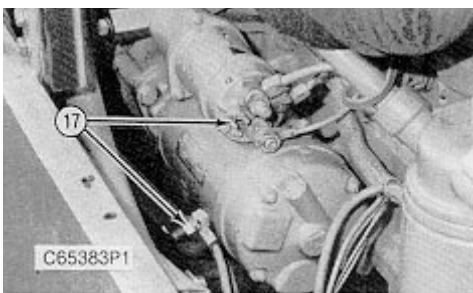
10. Disconnect quick connect (12) and remove air dryer (13).



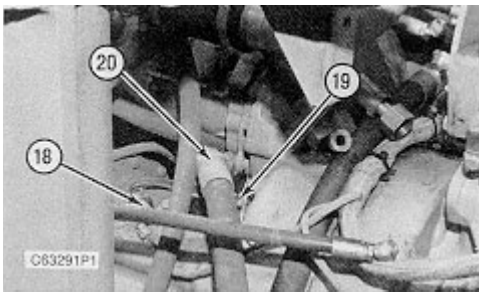
11. Disconnect two ground wires (14).

12. Disconnect quick connect (15).

13. Disconnect all wires (16) from the alternator.

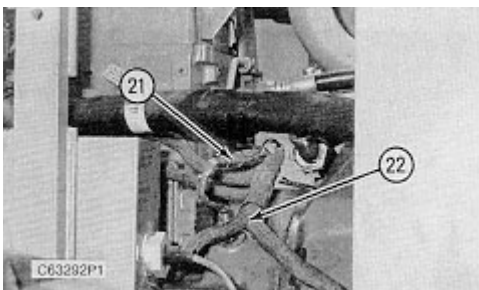


14. Disconnect all wires (17) from the starter and solenoid.



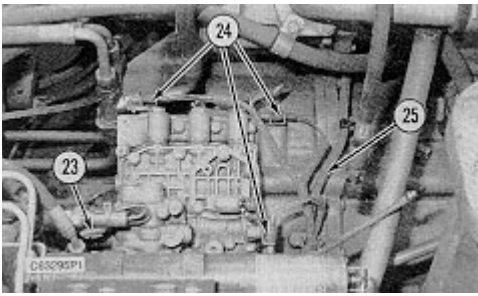
15. Disconnect plug connector (18) and spade connector (19).

16. Remove hydraulic line (20).



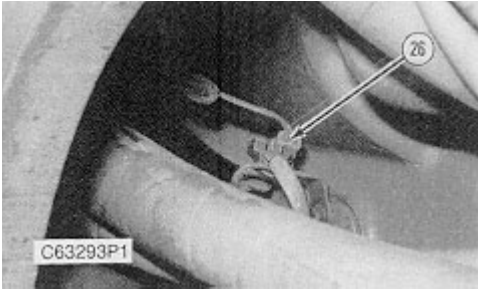
17. Disconnect quick connect (21).

18. Reposition wiring harness (22).

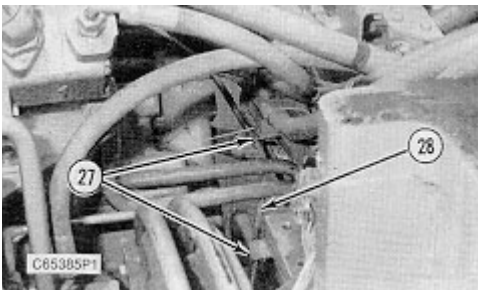


19. Disconnect quick connect (23).

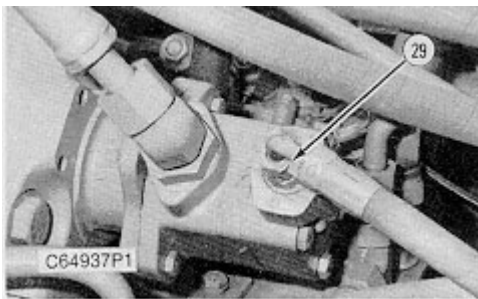
20. Disconnect six plugs (24) and reposition wire harness (25).



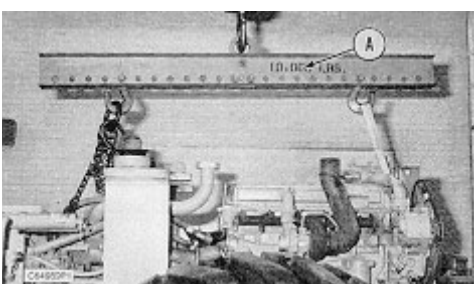
21. Disconnect quick connect (26) on lower right side of transmission.



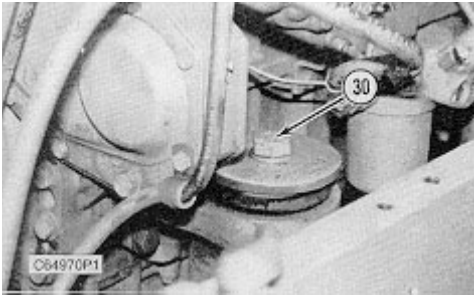
22. Remove two bolts, washers and clips (27) holding parking brake (28) to the frame assembly.



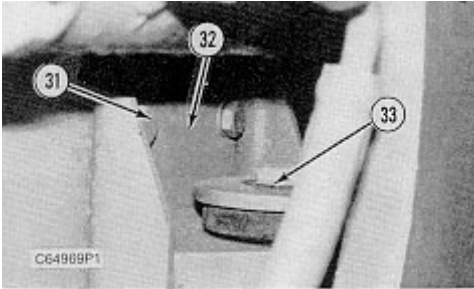
23. Remove hydraulic line (29).



24. Attach tool (A) to engine and transmission and a suitable lifting device.

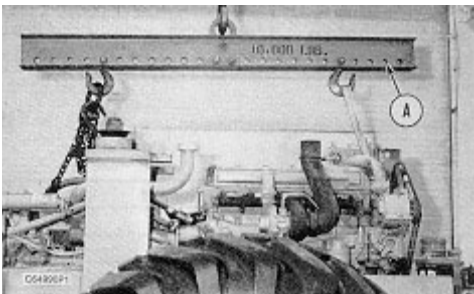


25. Remove two mounting bolts and washers (30) holding the engine to the frame.



26. Remove eight bolts and washers (31) from brackets (32).

27. Remove two mounting bolts and washers (33) from two brackets (32).



28. Remove the engine and transmission as shown. The weight of the engine and transmission is **1362 kg (3000 lb)**.

NOTE: Install in the reverse order.

End By:

- a. install drive shaft*
- b. install steering valve and diverter valve*
- c. install steering cylinders**
- d. install radiator and guard
- e. install hydraulic tank**
- f. install cab**

*Refer to the Power Train Disassembly & Assembly module for this information.

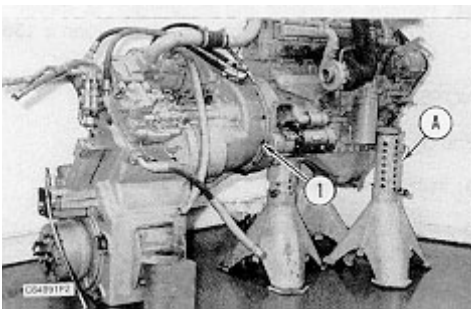
**Refer to the Machine Systems Disassembly & Assembly module for this information.

Separate & Connect Engine From Transmission

Start By:

- a. remove engine & transmission

Tools Needed		A
8S-7640	Stand	3
8S-7615	Pin	3
8S-7611	Tube	3
8S-8048	Saddle	1



1. Support transmission and engine using tooling (A) and wood blocks as shown.
2. Disconnect all wire clips and connectors.
3. Attach suitable lifting device to the transmission, remove bolts and washers (1) and separate transmission from engine.

NOTE: Connect engine & transmission in the reverse order.

End By:

- a. install engine & transmission

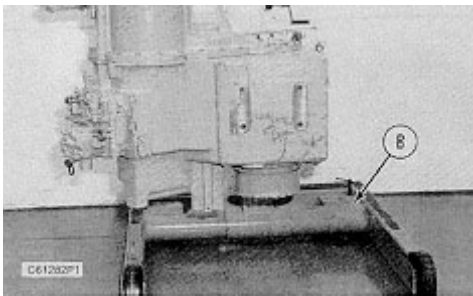
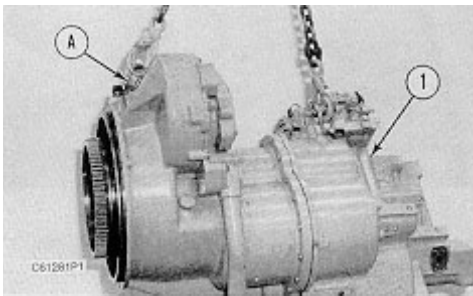
Separation & Connection of Torque Converter From Transmission

Tools Needed		A	B	C
5P9736	Link Bracket	2		
	OTC Rollover Stand		1	
6V2156	Link Bracket			3

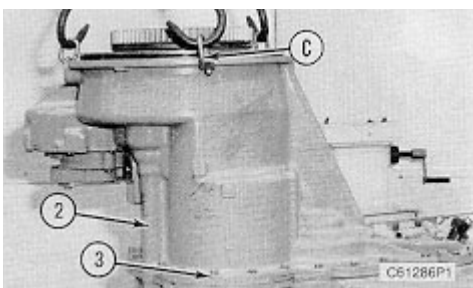
Start By:

a. remove transmission

1. Thoroughly clean the outside of the transmission prior to disassembly.
2. Drain the transmission fluid into a suitable container.
3. Mark all parts and components for assembly purposes.



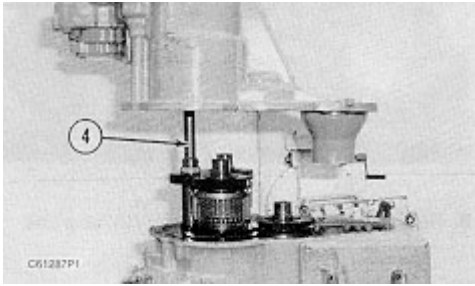
4. Install tool (A), chains and a suitable lifting device to transmission (1) as shown. The weight of the transmission is **700 kg (1545 lb)**.
5. Move the transmission to a clean safe work area and install on Tool (B) as shown.



6. Install tooling (C), chains and a suitable lifting device to transmission cover (2) as shown.

NOTE: Use a bubble level to get the cover as level as possible.

7. Remove twenty seven bolts (3).



8. Slowly and carefully lift the transmission cover straight up far enough to clear input shaft (4). The weight of the transmission cover is **200 kg (440 lb)**.

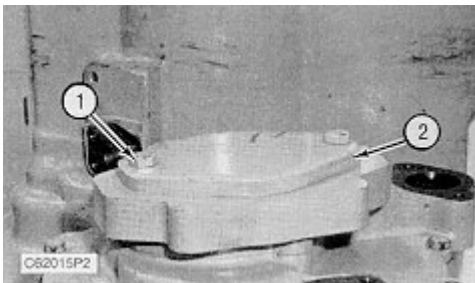
NOTE: Install in the reverse order.

NOTE: Use **6V6640 Gasket Maker** on mating surfaces of the torque converter and the transmission.

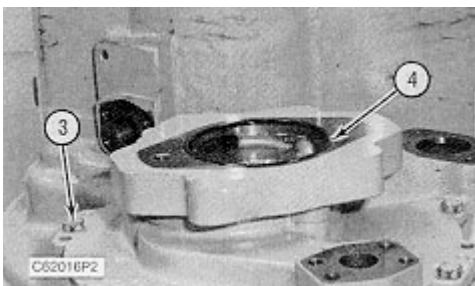
9. Tighten twenty seven bolts (3) to the torque of **55 ± 10 N·m (40 ± 7 lb ft)**.

Disassemble Transmission Pump

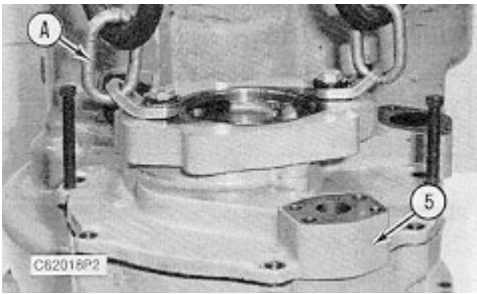
Tools Needed		A	B
6V-2156	Link Bracket	2	
1P-1863	Pliers		1



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

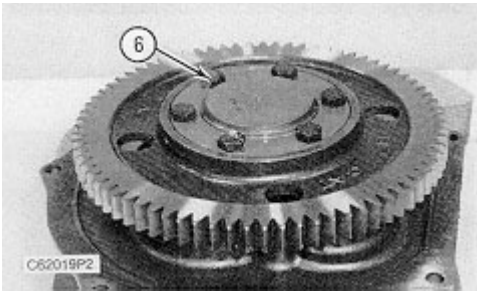


2. Remove seven bolts (3). Check O-ring seal (4) for damage or wear and replace if necessary.

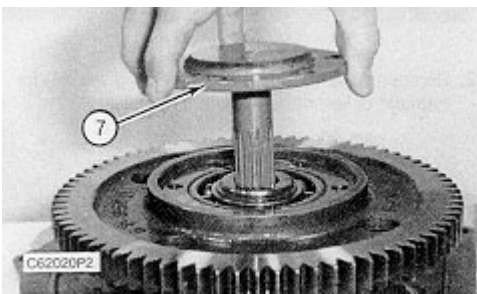


3. Install two forcing screws as shown.

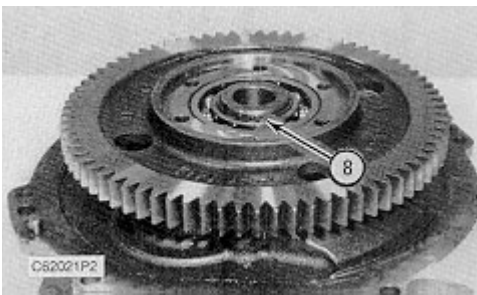
4. Use tool (A), chains and a suitable lifting device to remove gear pump group (5).



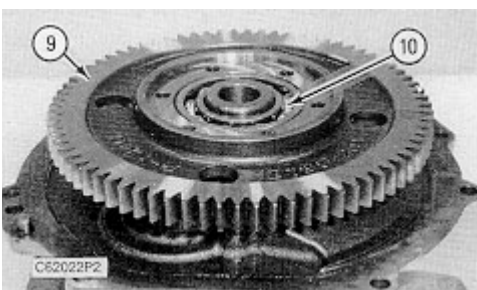
5. Remove six bolts (6).



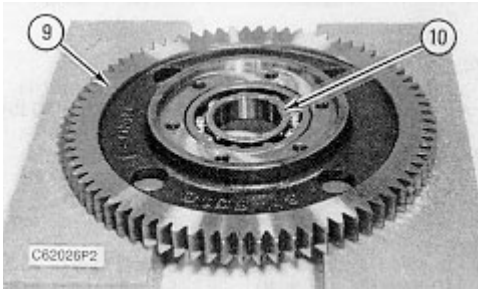
6. Remove shaft (7).



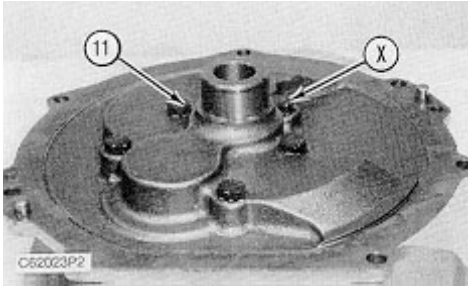
7. Use tool (B) to remove retaining ring (8).



8. Remove gear (9) and ball bearing (10) as a unit.

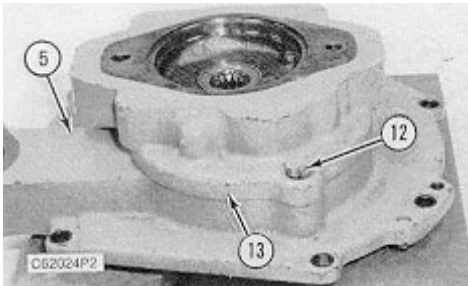


9. Use a suitable press to remove ball bearing (10) from gear (9).



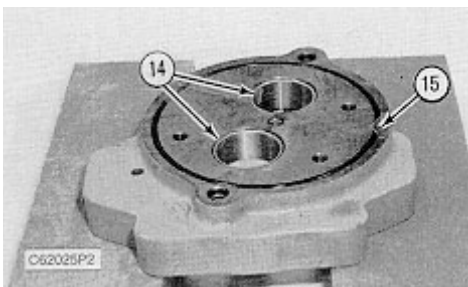
10. Remove five bolts (11).

NOTE: Only one of these bolts marked (X) has a washer.



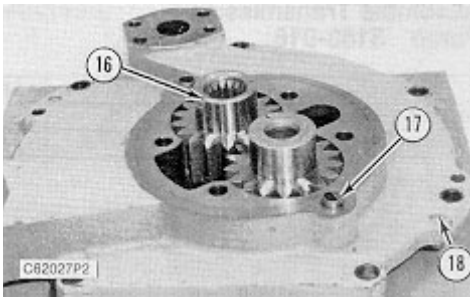
11. Turn gear pump group (5) over and remove one bolt (12).

12. Separate pump cover assembly (13) from gear pump group (5).



13. If necessary, remove two bushings (14).

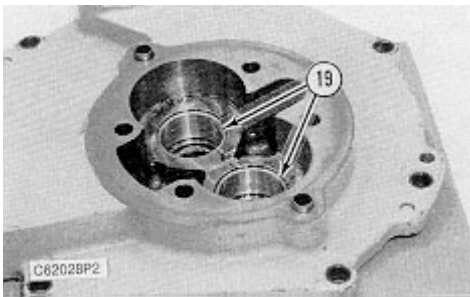
14. Check O-ring seal (15) for damage or wear and replace if necessary.



15. Remove two oil pump gears (16). Mark these gears and their location for assembly purposes.

16. Check the condition of the two dowels (17) and replace if necessary.

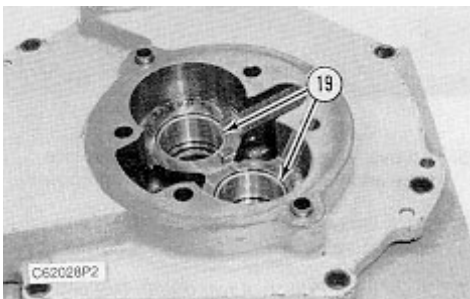
17. Check the condition of the two dowels (18) and replace if necessary.



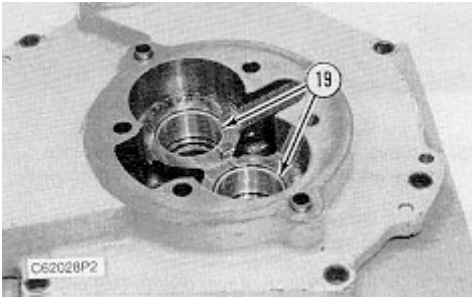
18. If necessary, remove two bushings (19).

Assemble Transmission Pump

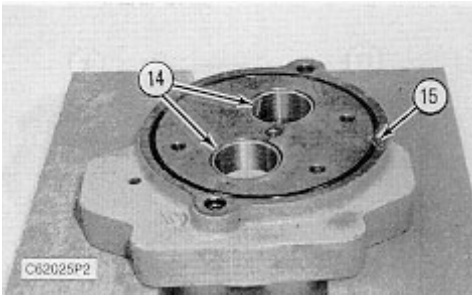
Tools Needed		A	B
6V-2156	Link Bracket	2	
1P-1863	Pliers		1



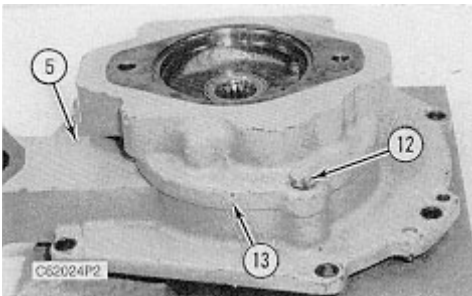
1. If removed, install two bushings (19).



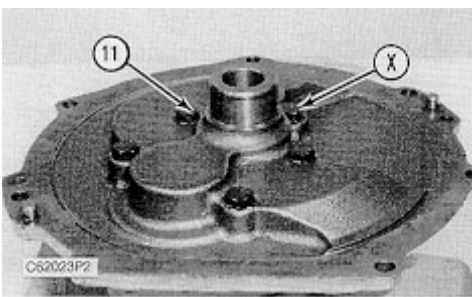
2. Install two oil pump gears (16).
3. Check the condition of two dowels (17) and replace if necessary.
4. Check the condition of two dowels (18) and replace if necessary.



5. If removed, install two bushings (14).
6. Check O-ring seal (15) for damage or wear and replace if necessary.

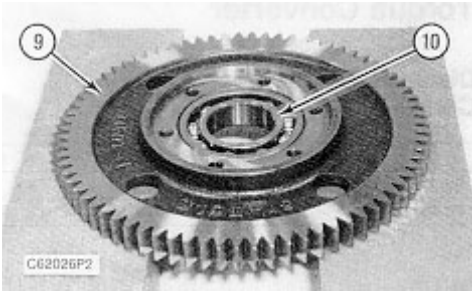


7. Turn gear pump group (5) over and install one bolt (12).
8. Connect pump cover assembly (13) to gear pump group (5).

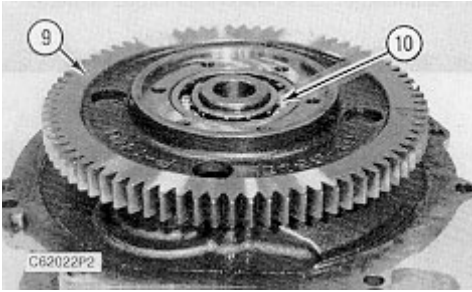


9. Install five bolts (11).

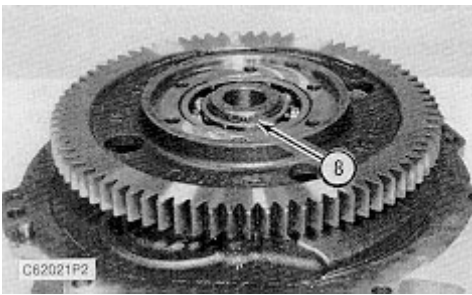
NOTE: Only one of these bolts marked (X) has a washer.



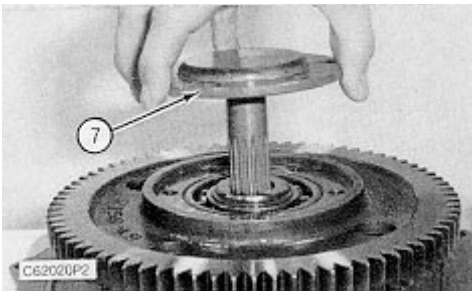
10. Heat bearing (10) to 135°C (275°F) and install in gear (9).



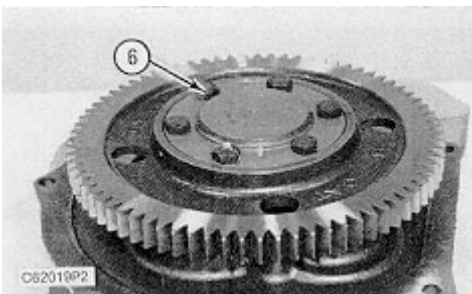
11. Install gear (9) and bearing (10) as a unit.



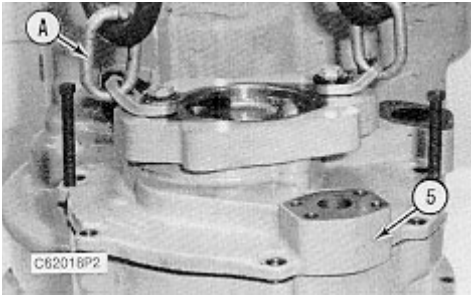
12. Use tool (B) to install retaining ring (186).



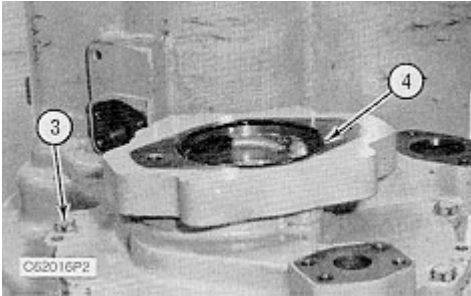
13. Install shaft (7).



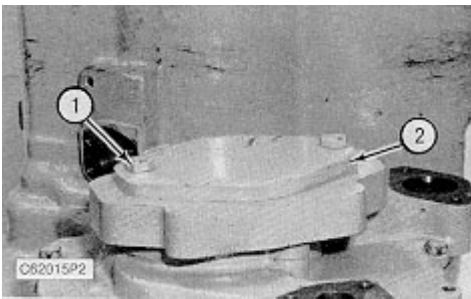
14. Install six bolts (6).



15. Use tool (A), chains and a suitable lifting device to install gear pump group (5).



16. Install seven bolts (3). Check O-ring seal (4) for damage or wear and replace if necessary.



17. Install two bolts (1) and cover (2).

Product: WHEEL LOADER

Model: 928F WHEEL LOADER 2XL

Configuration: 928F WHEEL LOADER 2XL01300-UP (MACHINE) POWERED BY 3116 ENGINE

Disassembly and Assembly 928F WHEEL LOADER POWER TRAIN

Media Number -SEN5995-02

Publication Date -01/10/2003

Date Updated -26/10/2004

SEN59950014

Torque Converter

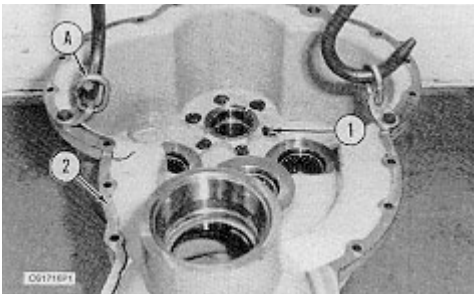
SMCS - 3101-015; 3101-016

Disassemble Torque Converter

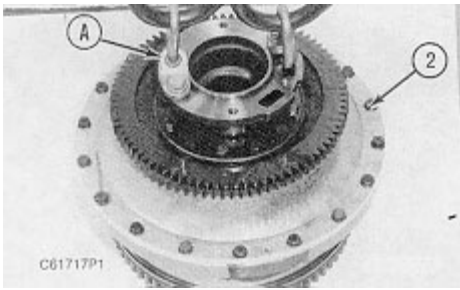
Tools Needed		A	B
6V-2156	Link Bracket	4	
2P-8312	Pliers		1

Start By:

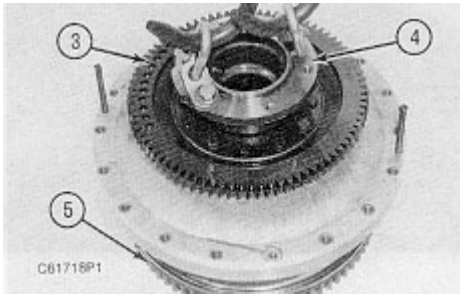
- a. remove engine, transmission and torque converter
- b. separation of engine from transmission and torque converter
- c. separation of transmission from torque converter



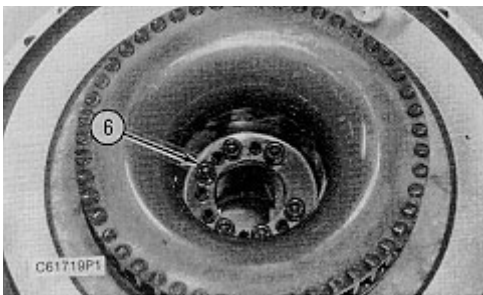
1. Install tool (A) as shown.
2. Remove six bolts (1).
3. Lift transmission cover (2) straight up and off the torque converter. The weight of the transmission cover is **150 kg (330 lb)**.



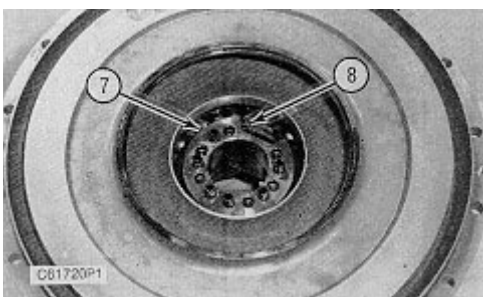
4. Install tool (A) as shown.
5. Remove eighteen bolts (2) and washers.



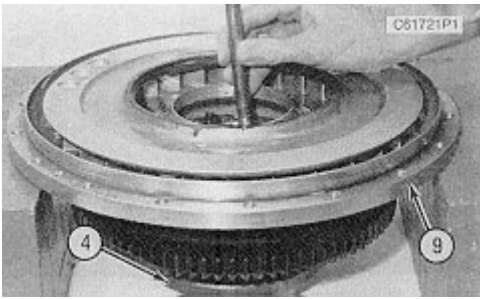
6. Install two forcing screws as shown.
7. Separate drive gear (3) and stator carrier (4) from rotating housing (5).



8. Remove six socket head bolts (6).

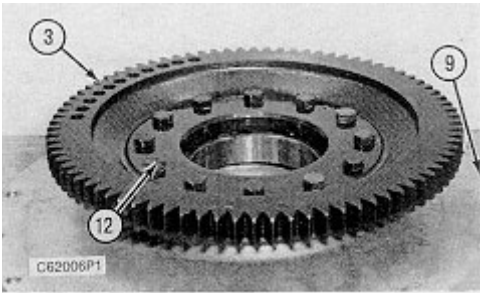


9. Remove two clamp plates (7).
10. Use tool (B) to remove retaining ring (8).



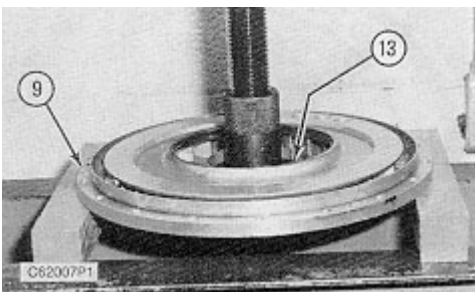
11. Carefully tap stator carrier (4) from converter impeller (9).

12. Check seal ring (11) for damage or wear and replace if necessary.

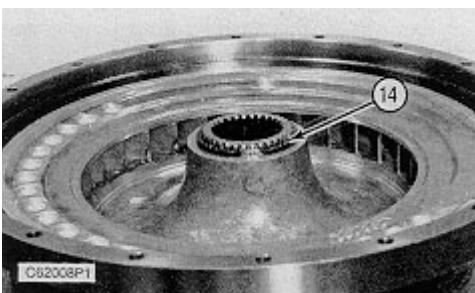


13. Remove twelve bolts (12).

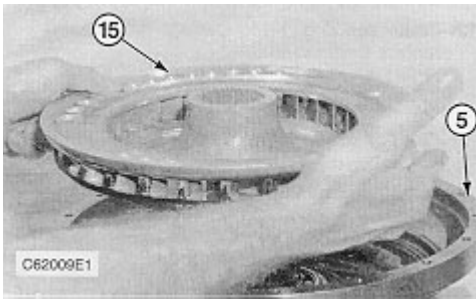
14. Remove drive gear (3) from converter impeller (9).



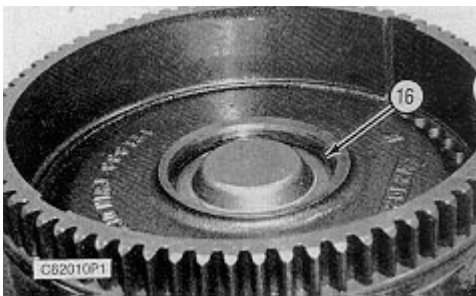
15. Use a suitable press to remove ball bearing (13) from converter impeller (9).



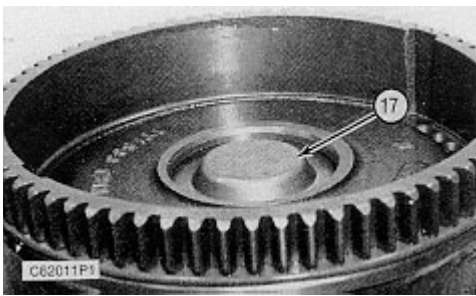
16. Use tool (B) to remove retaining ring (14).



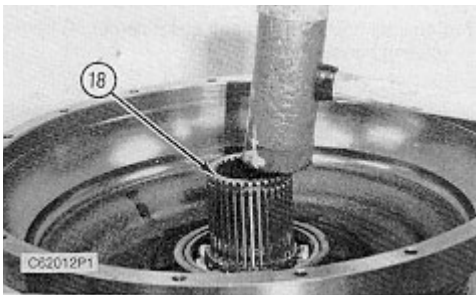
17. Lift converter turbine (15) from rotating housing (5).



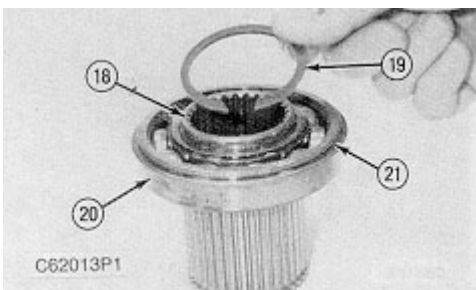
18. Remove rear bearing lock (16).



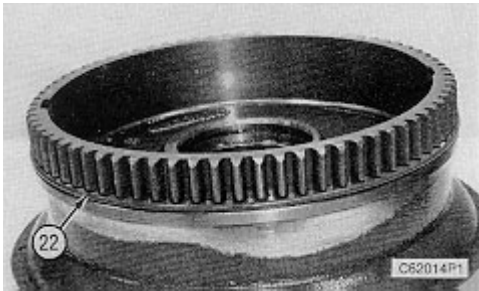
19. Remove end cover (17).



20. Turn the rotating housing over and use a soft hammer to tap splined hub and ball bearing (18) out of the housing.



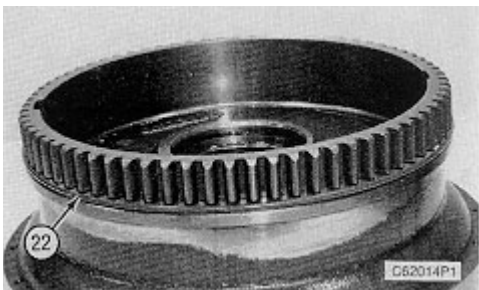
21. Use tool (B) to remove snap ring (19) from splined hub (18).
22. If necessary, remove ball bearing (20) from splined hub (18).
23. Check the condition of locating ring (21) on the outside diameter of ball bearing (20) and replace if necessary.



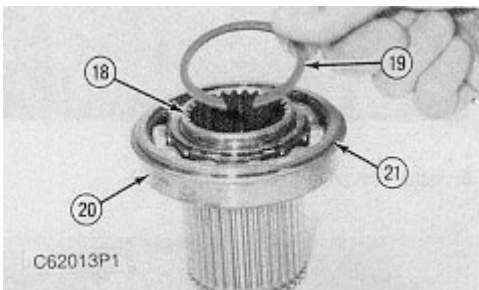
24. Check oil dam or "D" ring (22) for damage or wear and replace if necessary.

Assemble Torque Converter

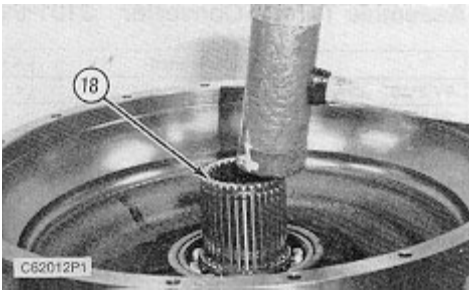
Tools Needed		A	B
6V-2156	Link Bracket	4	
2P-8312	Pliers		1



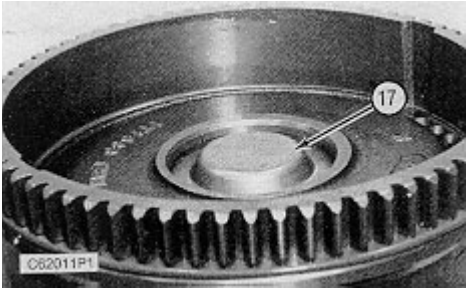
1. Check oil dam or "D" ring (22) for damage or wear and replace if necessary.



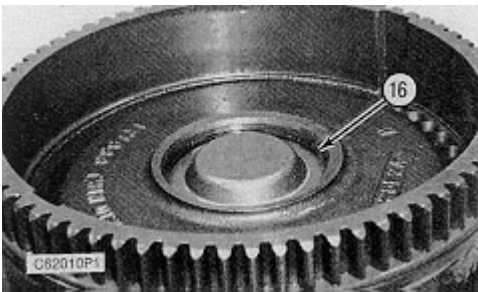
2. Use tool (B) to install snap ring (19) to splined hub (18).
3. If removed, install bearing (20) to splined hub (18).
4. Check the condition of locating ring (21) on the outside diameter of bearing (20) and replace if necessary.



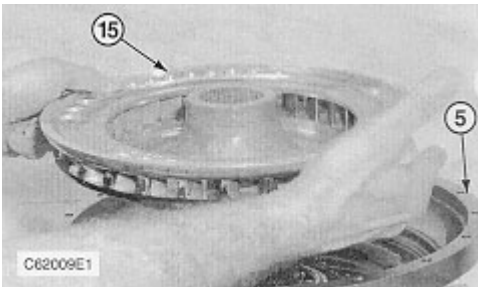
5. Turn the rotating housing over and assemble splined hub and bearing (18) to the housing.



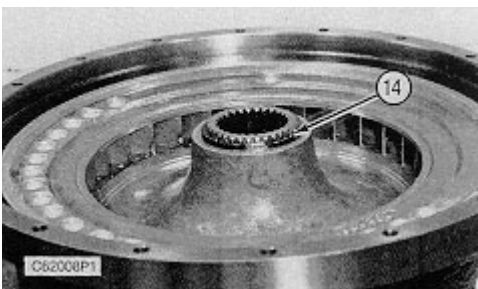
6. Install end cover (17).



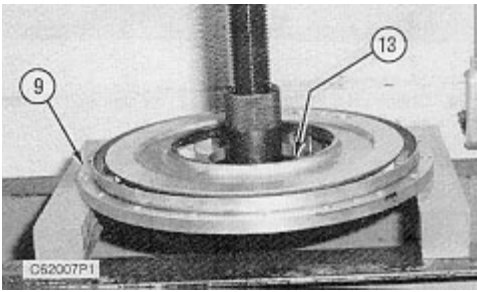
7. Install rear bearing lock (16).



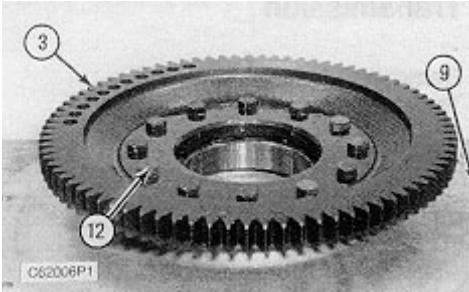
8. Assemble converter turbine (15) to rotating housing (5).



9. Use tool (B) to install retaining ring (14).

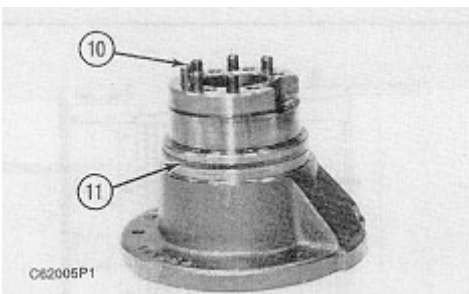


10. Heat bearing (13) to **135°C (275°F)** and assemble to impeller (9).



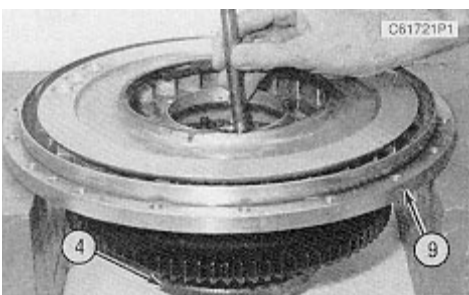
11. Install drive gear (3) to impeller (9).

12. Install twelve bolts (12) and tighten to the torque of **30 ± 5 N·m (22 ± 4 lb ft)**.

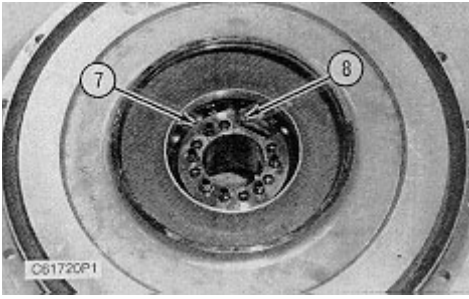


13. Check seal ring (11) for damage or wear and replace if necessary.

14. If removed, install six spring pins (10).

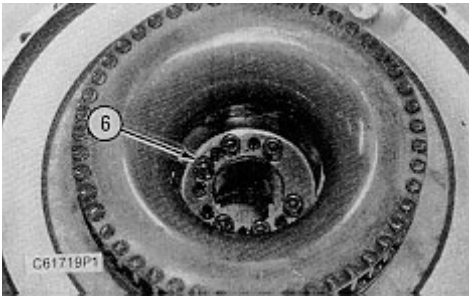


15. Carefully install stator carrier (4) to impeller (9).

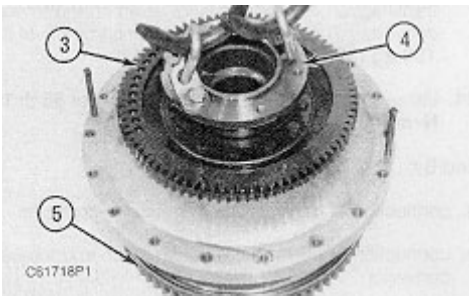


16. Install two clamp plates (7).

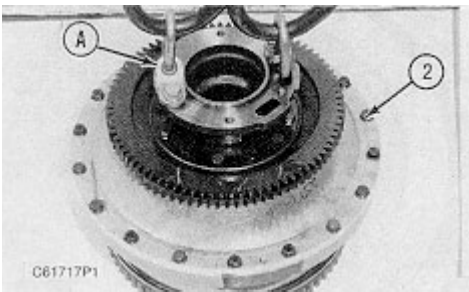
17. Use tool (B) to install retaining ring (8).



18. Install six socket head bolts (6) and tighten to the torque of $30 \pm 5 \text{ N}\cdot\text{m}$ ($22 \pm 4 \text{ lb ft}$).



19. Assemble drive gear (3) and stator carrier (4) to rotating housing (5).



20. Install tool (A) as shown.

21. Install eighteen bolts (2) and the washers and tighten to a torque of $30 \pm 5 \text{ N}\cdot\text{m}$ ($22 \pm 4 \text{ lb ft}$).

Thank you so much for reading.
Please click the “Buy Now!”
button below to download the
complete manual.



After you pay.

You can download the most
perfect and complete manual in
the world immediately.

Our support email:

ebooklibonline@outlook.com