Product: TRACK-TYPE TRACTOR
Model: D3C III TRACK-TYPE TRACTOR 6SL
Configuration: D3C & D3C LGP,XL Series III Tractors Power Shift 6SL00001-UP (MACHINE) POWERED BY 3046 Engine

Disassembly and Assembly
D3C, D4C AND D5C SERIES II TRACTORS POWER TRAIN
Media Number -SENR5337-02 **Publication Date -01/08/2004** **Date Updated -15/02/2017**

SENR53370025

Transfer Gears (3F/3R Power Shift)

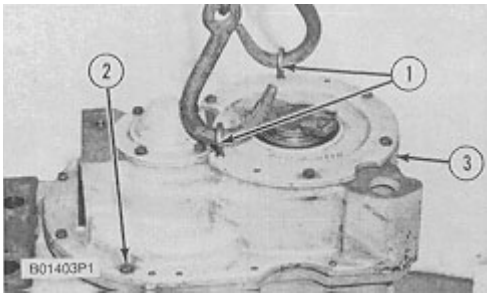
SMCS - 3159-010; 3159-017

Remove & Install Transfer Gears (3F/3R Power Shift)

Tools Needed		A
1P2420	Transmission Stand	1

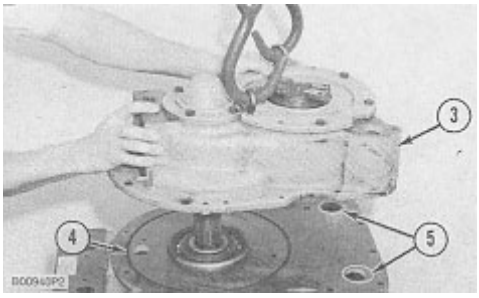
Start By:

a. separation of engine and transmission



1. Remove two bolts and install two 3/8 **" - 16 forged eyebolts** (1) as shown. Fasten a hoist.

2. Remove bolts (2) that hold the transfer gears to the transmission case. Remove transfer gears (3). The weight is **56 kg (125 lb).**



3. Remove O-ring seals (4) and (5) from the transmission case.

NOTE: The following steps are for the installation of the transfer gears.

4. Make sure O-ring seals (4) and (5) are in position on the transmission case.

5. Install two 3/8 **" - 16 forged eyebolts** as shown and fasten a hoist. Put transfer gears (3) in position on the transmission and install the bolts that hold the transfer gears to the transmission case.

End By:

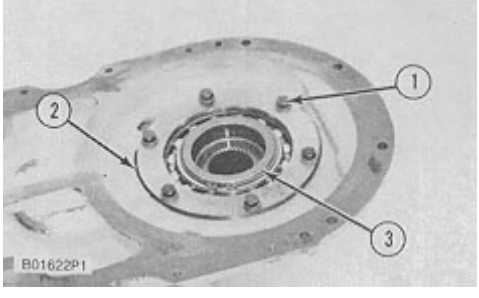
a. connection of engine and transmission

Disassemble & Assemble Transfer Gears (3F/3R Power Shift)

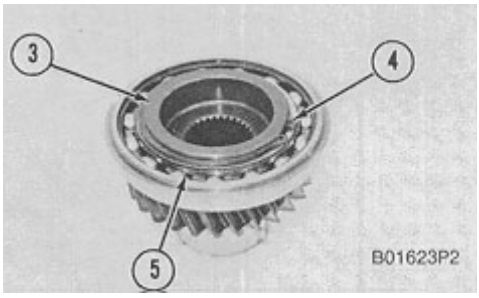
Tools Needed		A	B
1P520	Driver Group	1	
1P1863	Pliers		1

Start By:

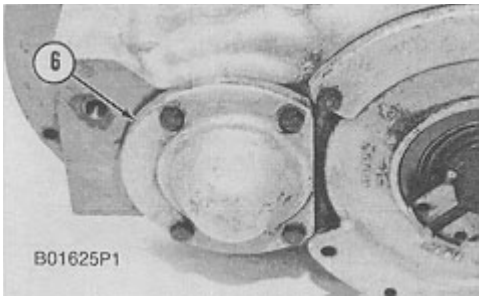
a. remove transfer gears



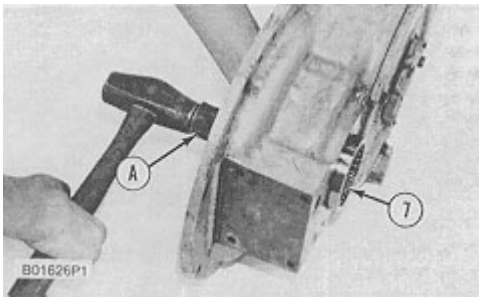
1. Remove bolts (1), plate (2), and gear (3) from the transfer gear case.



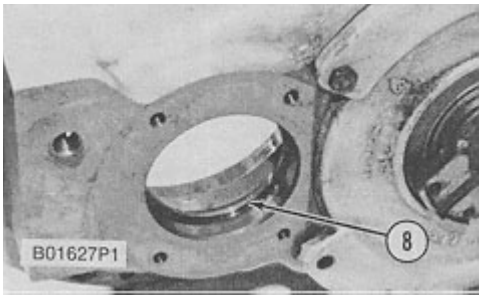
2. Remove snap ring (4) with tool (B). Removable bearing (5) from gear (3).



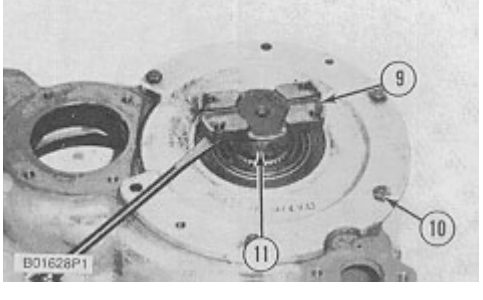
3. Remove cage (6) from the transfer gear case, and O-ring seal from cage.



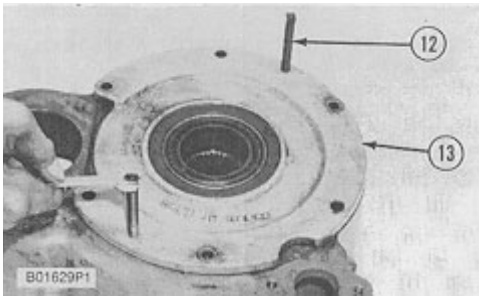
4. Remove bearing (7) from the transfer gear case with tooling (A).



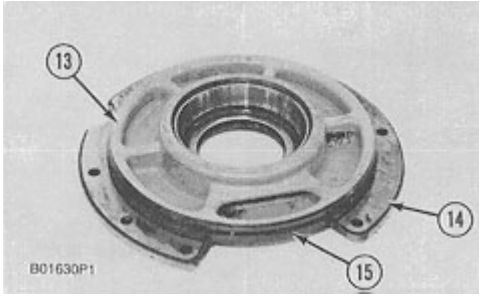
5. Remove retaining ring (8) from the transfer gear case.



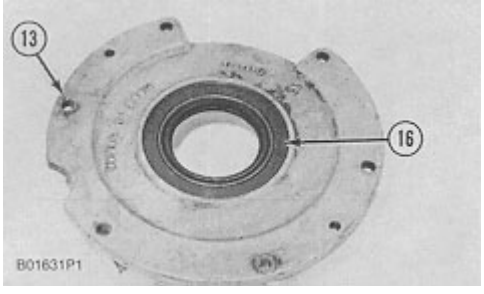
6. Remove yoke (9), O-ring seal (11) and bolts (10) that hold the bearing cage to the transfer gear case.



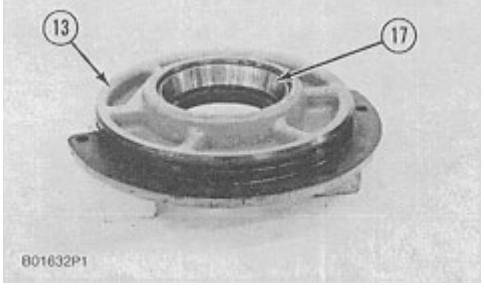
7. Install two 3/8 **" - 16 forcing screws** (12) in the bearing cage. Tighten the forcing screws evenly and remove bearing cage (13).



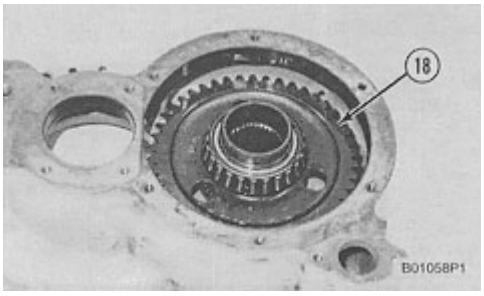
8. Remove shims (14) and O-ring seal (15) from bearing cage (13).



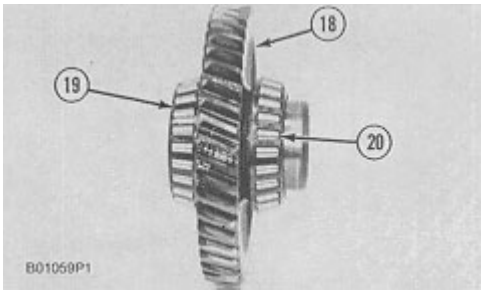
9. Remove lip-type seal (16) from bearing cage (13).



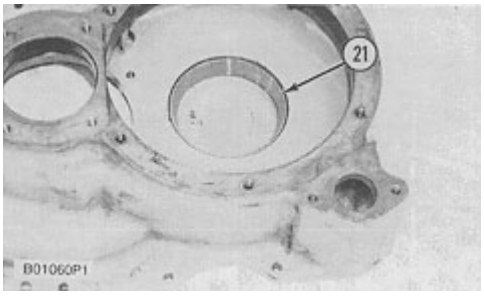
10. Remove bearing cup (17) from bearing cage (13).



11. Remove gear (18) from the transfer gear case.



12. Remove bearing cones (19) and (20) from gear (18).



13. Remove bearing cup (21) from the transfer gear case.

NOTE: The following steps are for the assembly of the transfer gears.

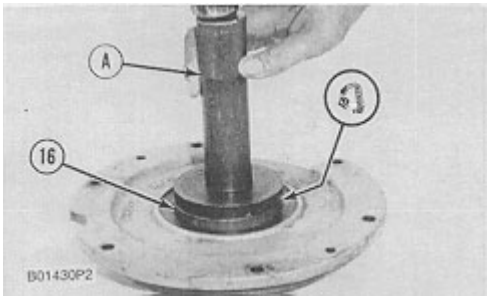
14. Inspect all parts for damage and make replacements if needed.

15. Lower the temperature of bearing cup (21). Install bearing cup in the transfer gear case.

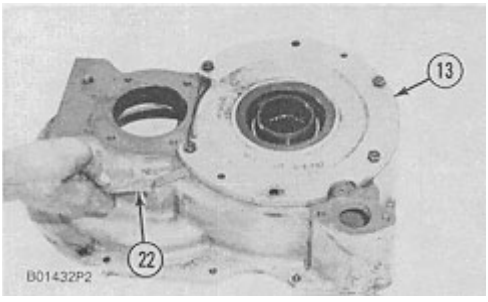
16. Heat bearing cones (19) and (20) to a maximum temperature of **135° C (275° F)**. Install bearing cones on gear (18).

17. Install gear (18) in the transfer gear case.

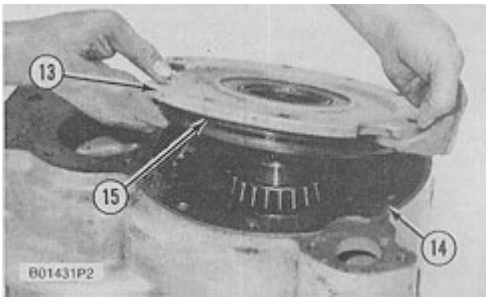
18. Lower the temperature of bearing cup (17). Install bearing cup in bearing cage (13).



19. Use tooling (A) and install lip-type seal (16) with the lip of the seal toward the inside of the transfer gear case. Put clean oil on the lip of the seal.

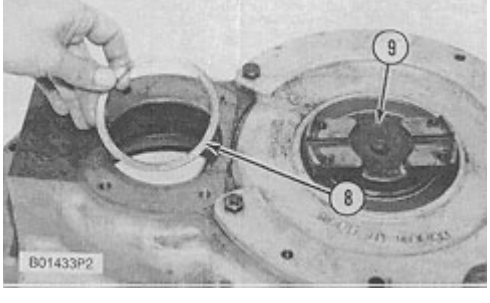


20. Put bearing cage (13) in position on the transfer gear case without the O-ring seal and shims. Install four bolts across from each other as shown. Turn the gear while the bolts are tightened to a torque of **1.1 N·m (10 lb in).** Measure the gap at the bolt location with feeler gauge (22).

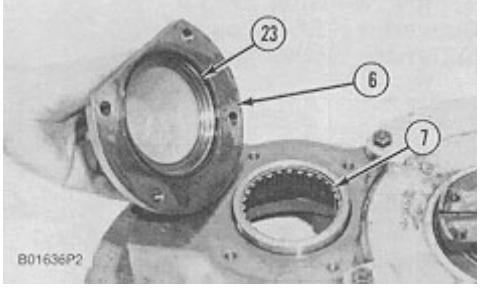


21. Install shims (14) that are the same thickness as the average gap measured plus 0.10 ± 0.05 mm (.004 ± .002 in).

22. Install O-ring seal (15) on the bearing cage. Put bearing cage (13) in position on the transfer gear case and install the bolts (10).



23. Install the O-ring seal, yoke (9) and retaining ring (8) in the transfer gear case.



24. Install bearing (7), O-ring seal (23) on cage and install cage (6).

25. Heat bearing (5) to a maximum temperature of **135° C (275° F)**. Install bearing on gear (3).

26. Install snap ring (4) with tool (B). Install gear (3) and bearing (5) in the transfer gear case.

27. Install plate (2) and bolts (1) to the transfer gear case.

End By:

a. install transfer gears

Product: TRACK-TYPE TRACTOR
Model: D3C III TRACK-TYPE TRACTOR 6SL
Configuration: D3C & D3C LGP,XL Series III Tractors Power Shift 6SL00001-UP (MACHINE) POWERED BY 3046 Engine

Disassembly and Assembly
D3C, D4C AND D5C SERIES II TRACTORS POWER TRAIN
Media Number -SENR5337-02 **Publication Date -01/08/2004** **Date Updated -15/02/2017**

SENR53370026

Torque Converter (3F/3R Power Shift)

SMCS - 3101-010; 3101-017

Remove & Install Torque Converter (3F/3R Power Shift)

Tools Needed		A
1P2420	Transmission Stand	1

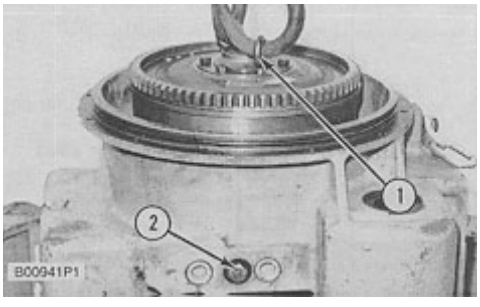
Start By:

a. remove transfer gears

b. remove transmission hydraulic control valves

c. remove transmission oil pump and pump drive

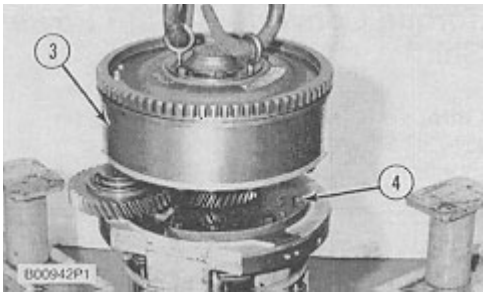
NOTE: If problems are experienced when removing or installing the planetary group and torque converter using the procedure described below, use the alternate method that follows this procedure.



1. Remove two bolts and install two 3/8 **" - 16 NC** forged eyebolts (1) in the torque converter. Fasten a hoist.

2. Remove bolt (2) from each side of the transmission case that holds the planetary group in place

3. Remove the torque converter and planetary group from the transmission case. The weight is **158 kg (350 lb).** Remove the transmission case from tool (A).



4. Put the planetary group and torque converter in place on tool (A).

5. Remove bolts (4) that hold torque converter to the planetary group. Remove torque converter (3). The weight is **36 kg (80 lb).**

NOTE: The following steps are for installation of the torque converter.

6. Fasten a hoist to eyebolts (1) and put torque converter (3) in position on the planetary group.

7. Install bolts (4) that hold the torque converter to the planetary group.

8. Remove the planetary group and torque converter from tool (A). Fasten a hoist and put the transmission case in place on tool (A). Fasten a hoist and put the planetary group and torque converter in position in transmission case.

9. Install bolt (2) on each side of the transmission case that holds the planetary group and torque converter in place. Tighten the bolts to a torque of **115 ± 7 N·m (85 ± 5 lb ft).**

10. Remove the eyebolts and install the two bolts.

End By:

a. install transmission oil pump and pump drive

b. install transmission hydraulic control valves

c. install transfer gears

Remove & Install Torque Converter (3F/3R Power Shift) (Alternate Method)

Tools Needed		A
1P2420	Transmission Stand	1

Start By:

a. remove transfer gears

b. remove transmission hydraulic control valves

c. remove transmission oil pump and pump drive

1. Make sure the planetary group and torque converter are positioned correctly in the transmission case. Install the bolt on each side of the transmission case that holds the planetary group and torque converter in transmission case.

2. Place the transmission on tooling (A) with the torque converter down.

3. Remove the bolt from each side of the transmission case that holds the planetary group in place.

NOTE: As the transmission case is being removed, it must be rotated to a position where the case does not interfere with the idler gear.

4. Fasten a hoist to the transmission case and remove the case from the planetary group and torque converter. The weight of the transmission case is **100 kg (220 lb).**

5. Fasten a hoist to the planetary group. Remove the eight bolts that fasten the planetary group to the torque converter and remove the planetary group. The weight of the planetary group is **122 kg (270 lb).**

NOTE: The following steps are for the installation of the torque converter.

6. Put the planetary group in position on the torque converter and install the eight bolts that fasten them together.

7. Place the assembled planetary group and torque converter on tooling (A) with the torque converter down.

NOTE: As the transmission case is being lowered over the planetary group and torque converter, the case must be rotated and possibly tilted so it does not interfere with the idler gear.

8. Fasten a hoist to transmission case and put the case in position on the planetary group and torque converter.

9. Install the bolt on each side of the transmission case that holds the planetary group and torque converter in the transmission case. Tighten the two bolts to a torque of **115 ± 7 N·m (85 ± 5 lb ft)**

End By:

a. install transmission oil pump and pump drive

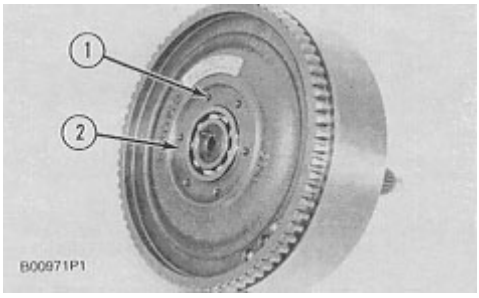
b. install transmission hydraulic control valves

c. install transfer gears

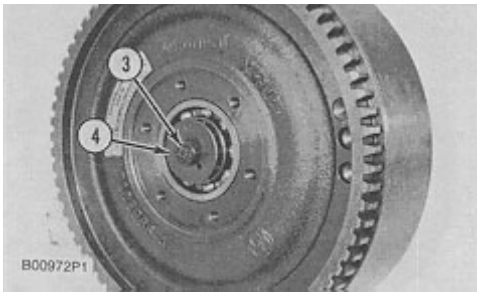
Disassemble & Assemble Torque Converter (3F/3R Power Shift)

Start By:

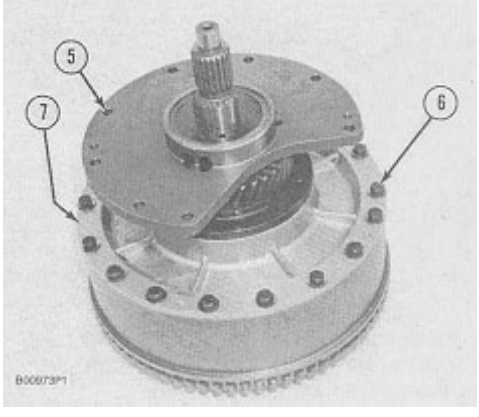
a. remove torque converter



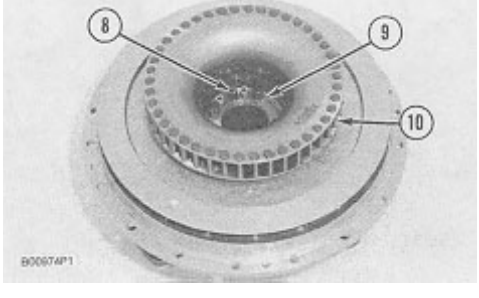
1. Remove bolts (1) and cover (2) from the torque converter housing.



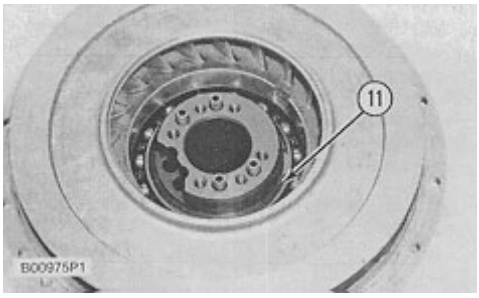
2. Remove bolt (3) and retainer (4) from the shaft.



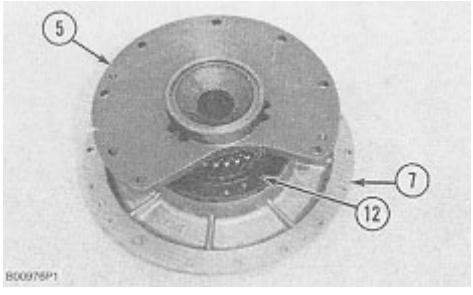
3. Remove bolts (6), impeller (7) and carrier (5) as a unit from the torque converter housing.



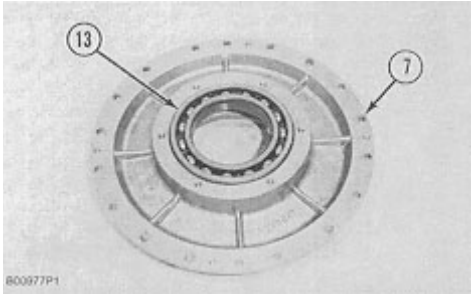
4. Remove six bolts (8) and plates (9) that hold the guide assembly (stator) to the carrier. Remove guide assembly (stator) (10).



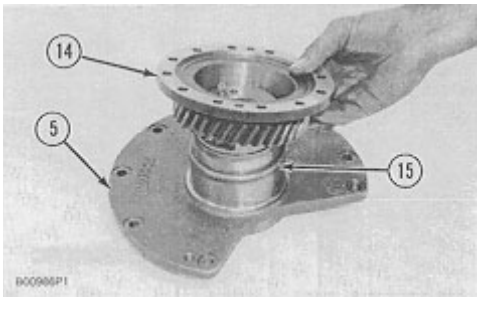
5. Remove retaining ring (11) from the carrier.



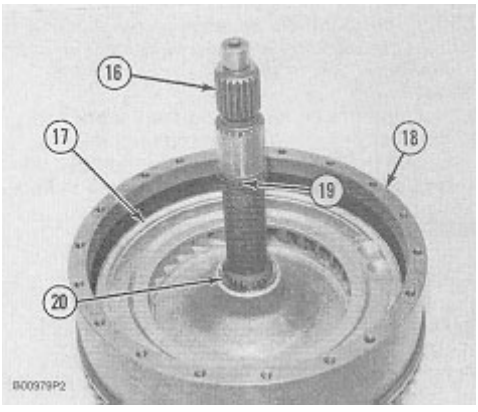
6. Turn the impeller and carrier over. Remove bolts (12) that hold carrier (5) to impeller (7). Remove carrier (5).



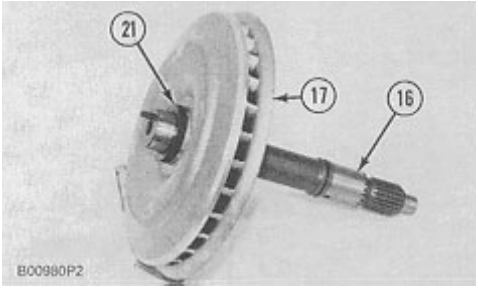
7. Remove bearing (13) from impeller (7).



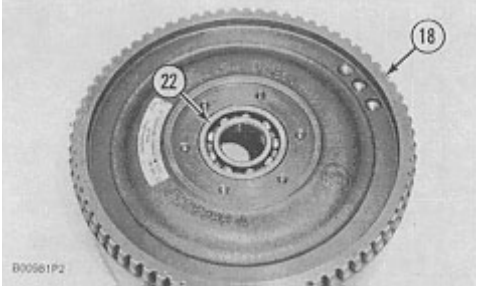
8. Remove gear (14) from carrier (5). Remove ring (15) from the carrier.



9. Remove shaft (16) and wheel (turbine) (17) from the torque converter housing (18). Remove seal ring (19) and retaining ring (20) from the shaft.



10. Remove spacer (21) and wheel (turbine) (17) from shaft (16).



11. Remove bearing (22) from torque converter housing (18).

NOTE: The following steps are for assembly of the torque converter.

NOTE: See the topic, Torque Converter Clearance Checks, before assembly of torque converter. These clearances must be correct for the torque converter to operate with efficiency.

12. Lower the temperature of bearing (22). Install bearing (22) in the torque converter housing.

13. Install retaining ring (20) on shaft (16) that puts the wheel (turbine) in the correct position on shaft (16).

14. Install wheel (turbine) (17) and spacer (21) on shaft (16).

15. Install shaft (16), wheel (turbine) (17) and spacer as a unit in torque converter housing (18). Install seal ring (19) on the shaft.

16. Install seal ring (15) and gear (14) on carrier (5).

17. Install bearing (13) in impeller (7).

18. Put carrier (5) and gear in position on impeller (7). Install bolts (12) that hold them together. Tighten the bolts to a torque of **27 ± 3 N·m (20 ± 2 lb ft)**.

NOTICE

Be careful not to let carrier (5) drop from the gear when the unit is turned over.

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19. Turn the carrier, gear and impeller over. Install retainer ring (11) that holds the carrier in place.

20. Put guide assembly (stator) (10) in position on the carrier.

21. Install plates (9) and bolts (8) that hold guide assembly (stator) (10) to the carrier. Tighten the bolts to a torque of **27 ± 3 N·m (20 ± 2 lb ft)**

22. Put impeller (7), carrier (5), gear and guide assembly (stator) in position on the torque converter housing as a unit. Install bolts (6) that hold the impeller to the torque converter housing. Tighten the bolts to a torque of **27 ± 3 N·m (20 ± 2 lb ft)**

23. Install retainer (4) and bolts (3) in the shaft. Tighten the bolt to a torque of **110 ± 5 N·m (80 ± 4 lb ft)**

24. Put cover (2) in position on the torque converter housing. Install all bolts except two **180 degrees apart** that hold the cover in place. The two bolt holes will be used to install eyebolts to install the torque converter.

End By:

a. install torque converter

Disassembly and Assembly
D3C, D4C AND D5C SERIES II TRACTORS POWER TRAIN
Media Number -SENR5337-02 **Publication Date -01/08/2004** **Date Updated -15/02/2017**

SENR53370027

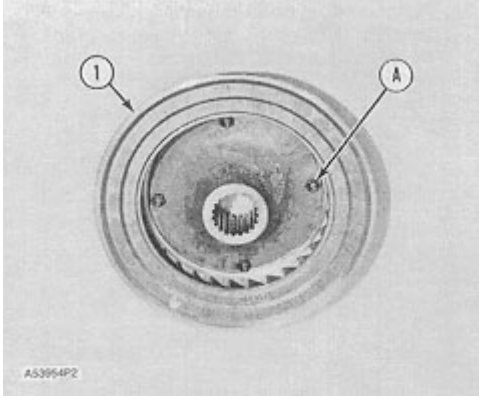
Torque Converter Clearance Checks (3F/3R Power Shift)

SMCS - 3101-010; 3101-017

Torque Converter Clearance Checks (3F/3R Power Shift)

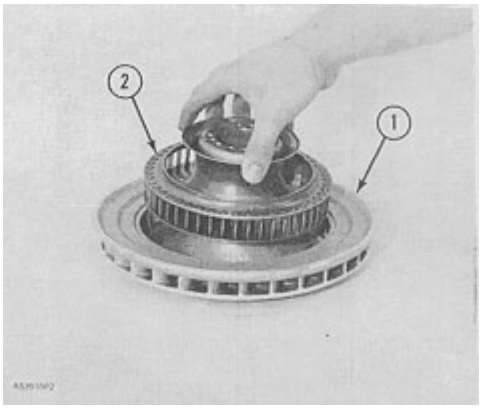
Tools Needed		A	B
5B9079	Nut	4	
8S2328	Dial Test Indicator Group		1

1. There must be a minimum radial (running) clearance between the wheel (turbine) and guide assembly (stator). Check the clearance between the wheel (turbine) and guide assembly (stator) as follows:



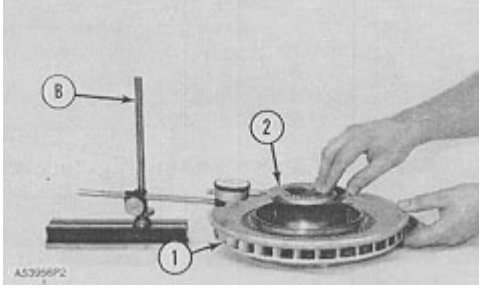
Typical Example

a. Put wheel (turbine) (1) on a smooth, flat surface. Install tooling (A) at four positions around the wheel (turbine) as shown.



Typical Example

b. Put guide assembly (stator) (2) in position in the wheel (turbine). Make sure the welded fins in the guide assembly (stator) are not in contact with tooling (A).

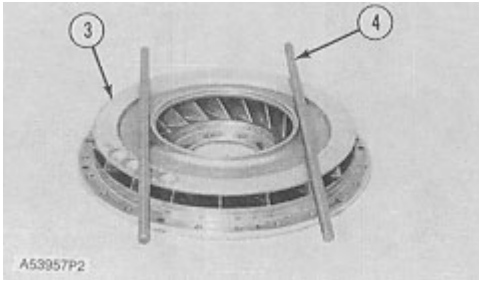


Typical Example

c. Put tooling (B) against the guide assembly (stator) as shown. Move the guide assembly (stator) toward tooling (B) until it makes contact with the inside diameter in the wheel (turbine). Adjust the dial indicator until it is on zero. Slide guide assembly (stator) (2) **180 degrees away** from tooling (B) until it makes contact with the other side of the wheel (turbine) (1). Make a record of the dimension measured.

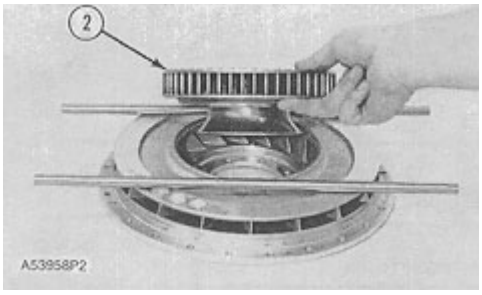
d. Make this check at several locations around the wheel (turbine). Make a record of each dimension measured. The largest dimension measured is used for the clearance between the wheel (turbine) and guide assembly (stator). The total clearance measured across the diameter must be **0.30 to 0.46 mm (.012 ± .018 in)** with a maximum permissible clearance of **0.76 mm (.030 in)**. The radial (running) clearance is half of the dimensions measured.

2. There must be a minimum radial (running) clearance between the guide assembly (stator) and impeller.



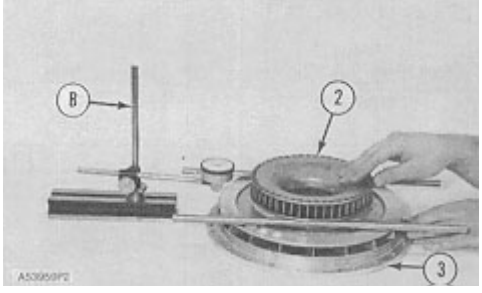
3. Check the clearance between the outside diameter of the inner flange for the guide assembly (stator) and the inside diameter of the impeller flange as follows:

a. Put impeller (3) on a flat surface as shown. Install two **12.7 mm (.5 in) diameter rods (4) 45.7 cm (18 in) long**, across the impeller as shown.



Typical Example

b. Put guide assembly (stator) (2) in position on the rods.



Typical Example

c. Put tooling (B) in position as shown. Slide the guide assembly (stator) toward tooling (B) until it makes contact with the inside diameter of the impeller. Adjust the dial indicator until it is on zero. Keep an even pressure on the guide assembly (stator) when it is moved. Move the guide assembly (stator) away from tooling (B) **180 degrees** until it makes contact with the other side of the impeller. Make a record of the dimension measured. Make this check at several locations around the impeller and guide assembly (stator). Make a record of each dimension measured.

NOTE: Turn the impeller around tool (B) and the guide assembly (stator) when different locations are measured.

d. The largest dimension measured is used for the clearance between the guide assembly (stator) and impeller. The total clearance measured across the diameters must be **0.30 to 0.46 mm (.012 ± .018 in)** with a maximum permissible clearance of **0.76 mm (.030 in).** The radial (running) clearance is one half of the dimensions measured.

Product: TRACK-TYPE TRACTOR
Model: D3C III TRACK-TYPE TRACTOR 6SL
Configuration: D3C & D3C LGP,XL Series III Tractors Power Shift 6SL00001-UP (MACHINE) POWERED BY 3046 Engine

Disassembly and Assembly
D3C, D4C AND D5C SERIES II TRACTORS POWER TRAIN
Media Number -SENR5337-02 **Publication Date -01/08/2004** **Date Updated -15/02/2017**

SENR53370028

Transmission

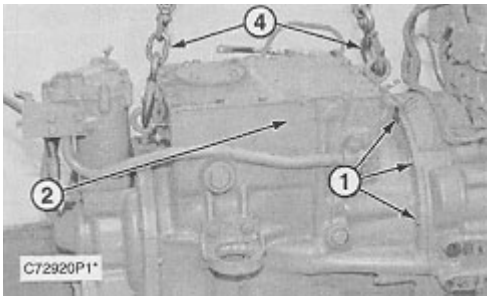
SMCS - 1001-010

Separation & Connection Of Engine And Transmission

Tools Needed	A
9S9101 Sling Assembly	1

Start By:

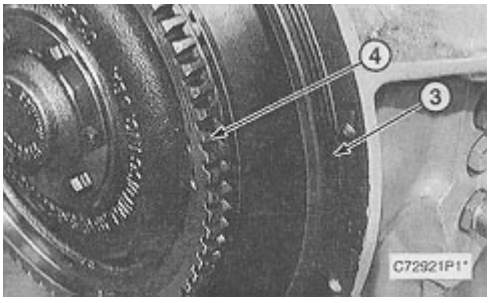
a. remove engine and transmission (see 3046 Engine Supplement SENR5343)

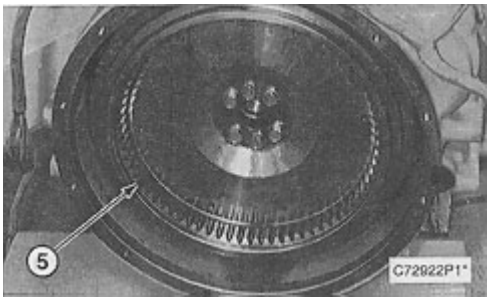


1. Attach tool (A) to transmission eyebolts as shown.

NOTE: Two eyebolts are attached to the transmission at assembly.

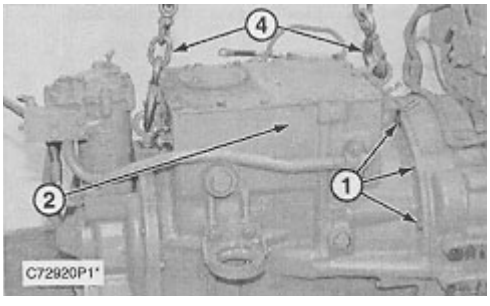
2. Remove twelve bolts and washers (1) that hold the transmission case (2) to the flywheel housing. Carefully remove the transmission case (2) from the flywheel housing. Weight of the transmission is **295 kg (650 lb).**





3. Remove O-ring seal (3) from the front of the transmission case (2). Check for wear or damage.

NOTE: For installation, make sure the teeth on torque converter engage the teeth on the flywheel properly. Insure that there is no damage to O-ring seal (3).



4. Install twelve bolts and washers (1) that secure transmission case (2) to the flywheel housing. Tighten bolts (1) to a torque of **28 ± 7 N*m (21 ± 5 lb ft).**

End By:

a. install engine and transmission (see 3046 Engine Supplement SENR5343)

Transmission Control Linkage

Start By:

a. remove cab (See D3C, D4C, D5C Machine Systems SENR5341)

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