

Product: TRACK-TYPE TRACTOR

Model: D3G TRACK-TYPE TRACTOR JMH

Configuration: D3G XL & D3G LGP Track-Type Tractors JMH00001-UP (MACHINE) POWERED BY 3046 Engine

Disassembly and Assembly 3046 Engine For Caterpillar Built Machines

Media Number -SEN6458-05

Publication Date -01/04/2004

Date Updated -22/04/2004

i01646275

Flywheel Housing - Remove and Install

SMCS - 1157-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	135-7575	Link Bracket	1

Start By:

- A. Remove the electric starting motor. Refer to Disassembly and Assembly, "Electric Starting Motor- Remove and Install".
- B. Remove the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

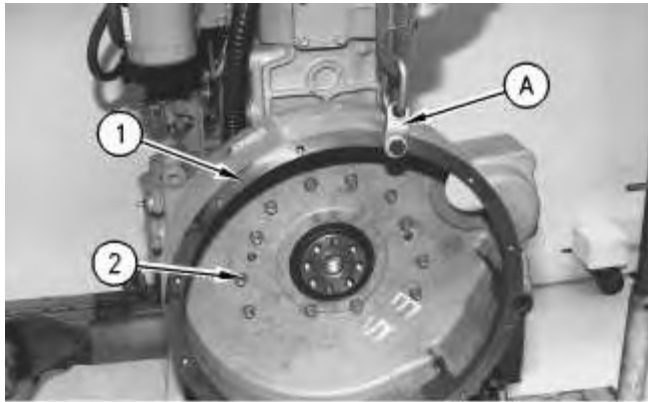


Illustration 1

g00528388

1. Install Tool (A), a strap, and a suitable lifting device onto flywheel housing (1) .
2. Remove twelve bolts (2) and the washers that secure flywheel housing (1) to the cylinder block.
3. Remove flywheel housing (1). The weight of the flywheel is 30 kg (66 lb).

Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7575	Link Bracket	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

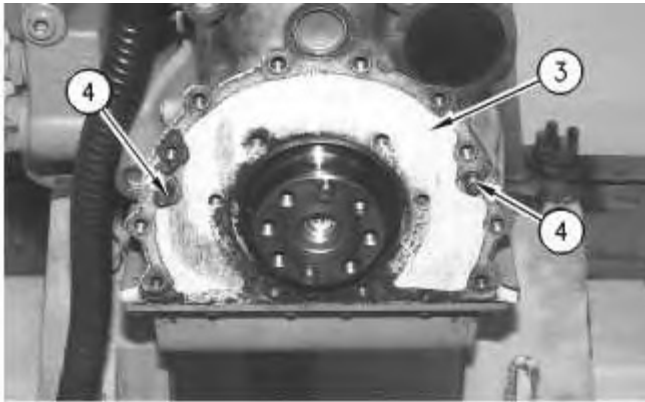


Illustration 2

g00528389

1. Check the condition of two dowels (4). If dowels (4) are damaged, use new parts for replacement.
2. Clean old gasket material (3) from the surfaces of the cylinder block and the flywheel housing that contact each other. Install a new gasket on the cylinder block (not shown).

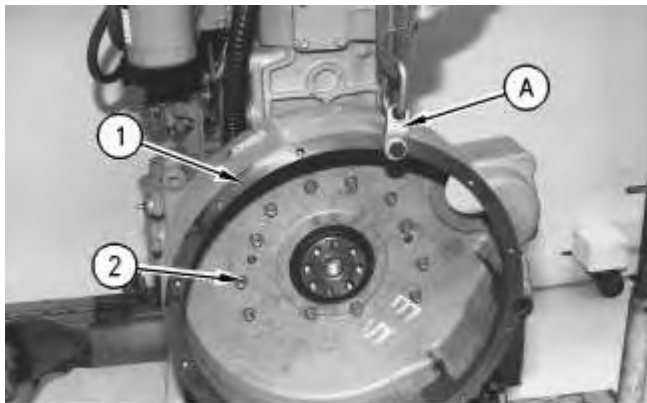


Illustration 3

g00528388

3. Install flywheel housing (1) .
4. Install the washers and twelve bolts (2) in order to secure flywheel housing (3) to the cylinder block.
5. Remove Tool (A) .

End By:

- a. Install the electric starting motor. Refer to Disassembly and Assembly, "Electric Starting Motor- Remove and Install".
- b. Install the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Install".

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i01646277

Vibration Damper and Pulley - Remove and Install

SMCS - 1205-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	6V-9120	Socket ⁽¹⁾	1 is
B	1P-2321	Combination Puller	1

⁽¹⁾ Tool (A) is a 46 mm socket.

Start By:

- A. Remove the V-belts. Refer to Disassembly and Assembly, "V-Belts - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

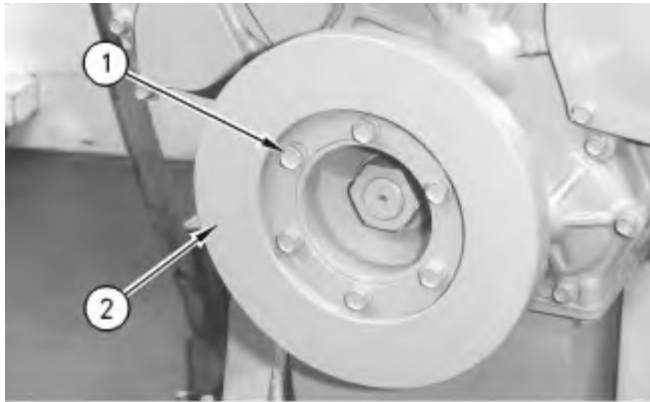


Illustration 1

g00528749

1. Remove six bolts (1) and the washers from vibration damper (2). Remove vibration damper (2) from crankshaft pulley (5) .

Note: Inspect the vibration damper for leaks and dents. If either condition exists, replace the vibration damper with a new part.

- 2.

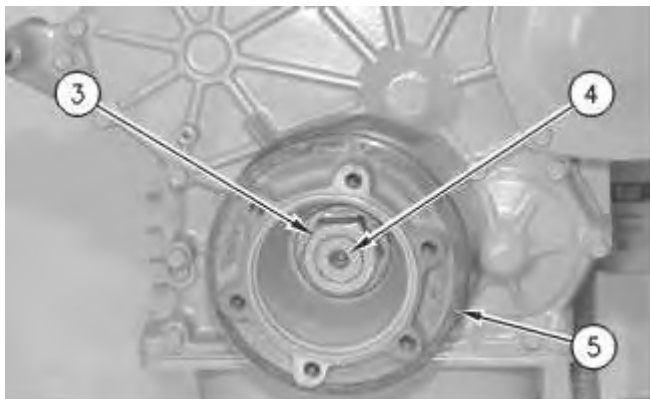


Illustration 2

g00559259

3. Use Tool (A) and remove nut (3) and the washer from the crankshaft.

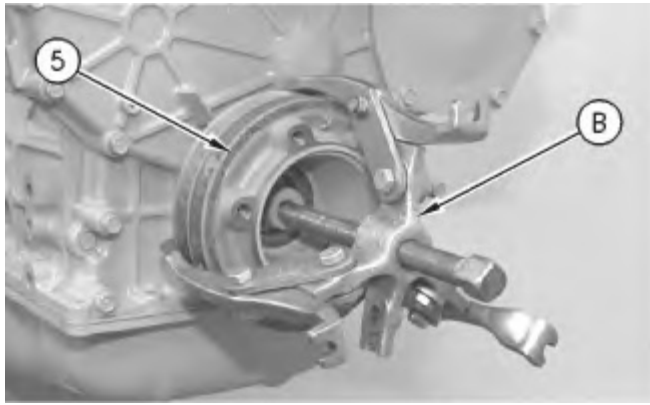


Illustration 3

g00559308

4. If necessary, use Tool (B) and remove crankshaft pulley (5) .

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

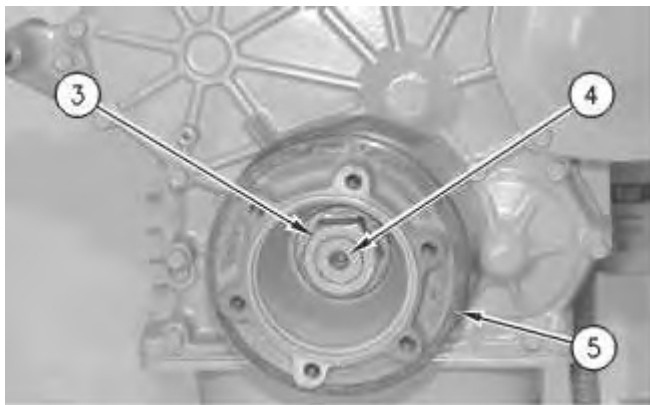


Illustration 4

g00559259

1. Install crankshaft pulley (5) with the washer and nut (3) onto crankshaft (4) .
 2. Use Tool (A) to tighten nut (3) to a torque of $490 \pm 10 \text{ N}\cdot\text{m}$ ($360 \pm 7 \text{ lb ft}$). Hit nut (3) with a hammer and torque the bolt again to $490 \pm 10 \text{ N}\cdot\text{m}$ ($360 \pm 7 \text{ lb ft}$).
-

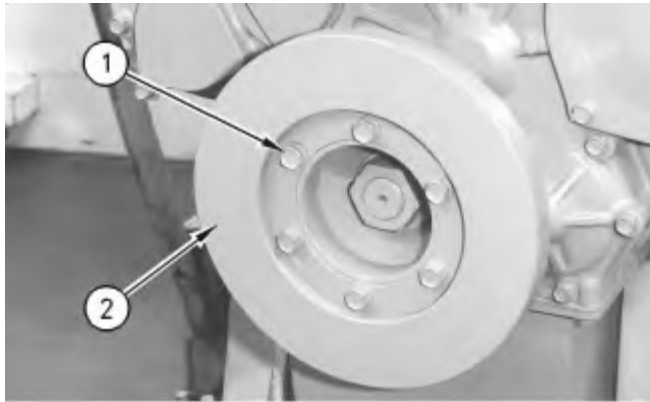


Illustration 5

g00528749

3. Use six bolts (1) and the washers in order to install vibration damper (2) on the crankshaft pulley.

End By: Install the V-belts. Refer to Disassembly and Assembly, "V-Belts - Install".

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i01027796

Crankshaft Front Seal - Remove

SMCS - 1160-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-7600	Slide Hammer Puller	1

Start By:

- A. Remove the vibration damper and the crankshaft pulley. Refer to Disassembly and Assembly, "Vibration Damper and Pulley - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

NOTICE

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 Special Publication, NENG2500, "Caterpillar Tools and Shop Products Guide", for tools and supplies suitable to collect and contain fluids in Caterpillar machines.

Dispose of all fluids according to local regulations and mandates.

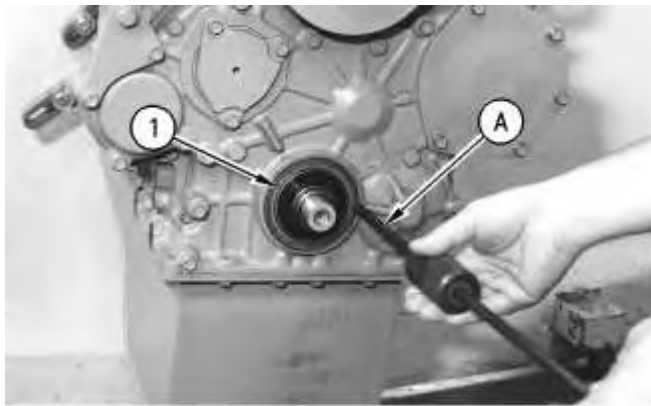


Illustration 1

g00529162

1. Drill three evenly spaced 3 mm (.12 inch) holes in crankshaft front seal (1) .
 2. Use Tool (A) and remove crankshaft front seal (1) .
-

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i01027827

Crankshaft Front Seal - Install

SMCS - 1160-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	4C-6376	Seal Installer Stud	1
	4C-6377	Seal Installer Washer	1
	4C-6378	Seal Installer Sleeve	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

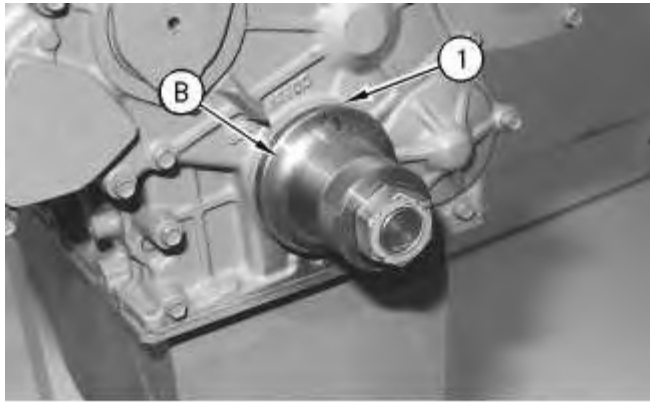


Illustration 1

g00529163

1. Clean the faces of all the mating parts. Apply a thin coat of clean engine oil to a new crankshaft front seal.
2. Install new crankshaft front seal (1) with Tool (A) .
3. Remove Tool (A) and check crankshaft front seal (1) for correct installation.
4. Apply clean engine oil to the face of the crankshaft pulley that will be in contact with the new crankshaft front seal.

End By: Install the vibration damper and the pulley. Refer to Disassembly and Assembly, "Vibration Damper and Pulley - Remove and Install".

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i01646292

Gear Group (Front) - Remove - Idler Gear Only

SMCS - 1206-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-6148	Idler Shaft Puller	1

Start By:

- A. Remove the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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.

Note: Before removal, ensure that the marks on the timing gears are in alignment. Align the fuel injection drive gear with the "33" mark with the "3" mark on the idler gear. Make an alignment of the "2" mark on the camshaft gear with the "22" mark on the idler gear. Align the "1" mark on the crankshaft gear with the "11" mark on the idler gear. The No. 1 cylinder is at the top center position when these marks are in alignment.

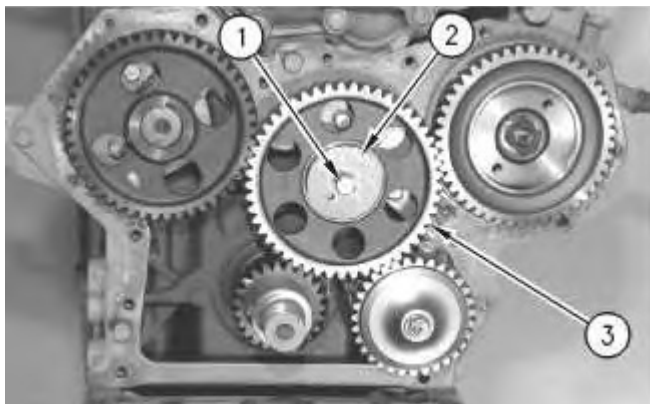


Illustration 1

g00559575



Illustration 2

g00559536

1. Remove idler gear bolt (1) and the washer from the idler gear shaft .
2. Remove thrust plate (2) .
3. Remove idler gear (3) .

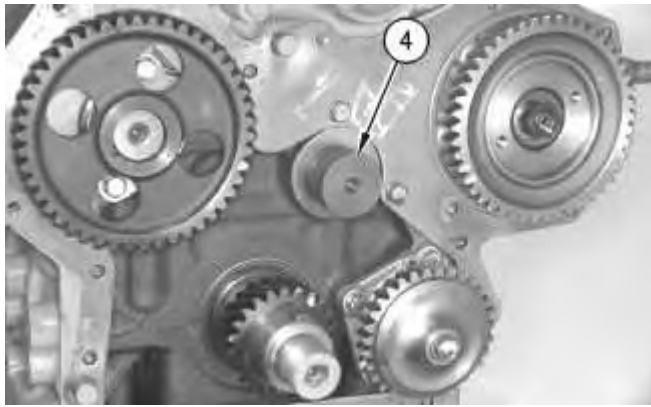


Illustration 3

g00559567

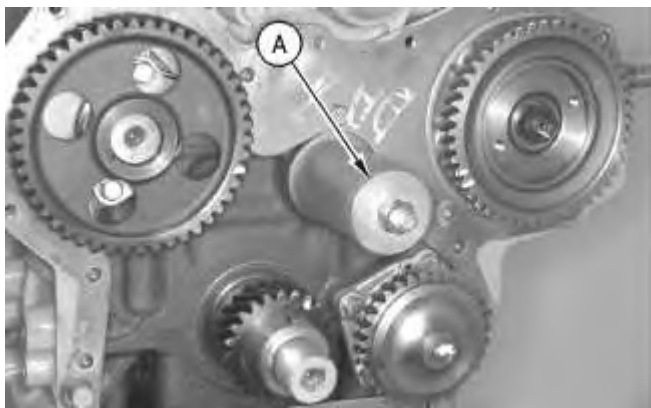


Illustration 4

g00559569

4. Use Tool (A) and remove idler shaft (4) from the cylinder block.

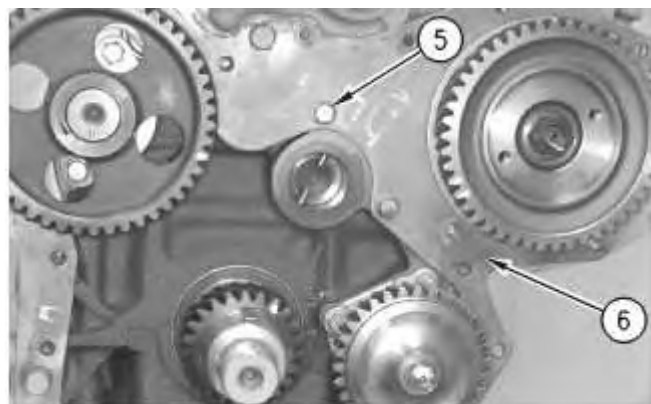


Illustration 5

g00559572

5. If necessary, remove five bolts (5) that hold front plate (6) to the cylinder block.

6. Remove front plate (6) and the gasket.

Note: See the following list for the removal of the other gears in the front gear group.

- In order to remove the camshaft gear, refer to Disassembly and Assembly, "Camshaft - Remove and Install".
 - In order to remove the fuel injection pump gear, refer to Disassembly and Assembly, "Fuel Injection Pump Housing and Governor - Remove".
 - In order to remove the gear to the engine oil pump, refer to Disassembly and Assembly, "Engine Oil Pump - Remove".
 - In order to remove the crankshaft front gear, refer to Disassembly and Assembly, "Crankshaft Gear - Remove and Install".
-

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i01045442

Gear Group (Front) - Install - Idler Gear Only

SMCS - 1206-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



Illustration 1

g00559572

1. Install a new gasket and front plate (6) .

Note: Ensure that all mating surfaces are clean and free of old gasket material.



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2. Install five bolts (5) that hold front plate (6) to the cylinder block. Tighten these bolts to a torque of 10 to 13 N·m (7 to 10 lb ft).

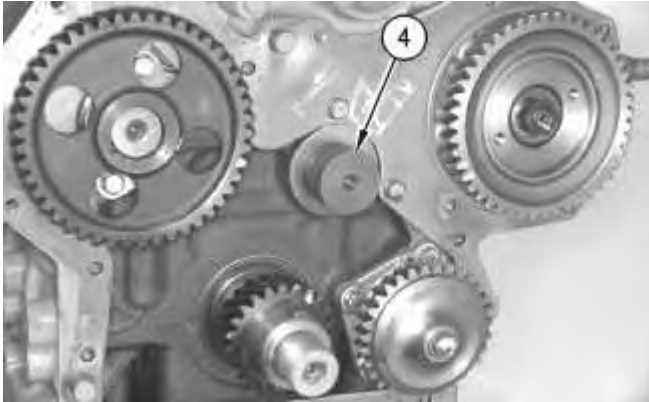


Illustration 2

g00559567

3. Install idler shaft (4) onto the cylinder block.

Note: If necessary, cool the idler shaft to 0 °C (32 °F) before installation.

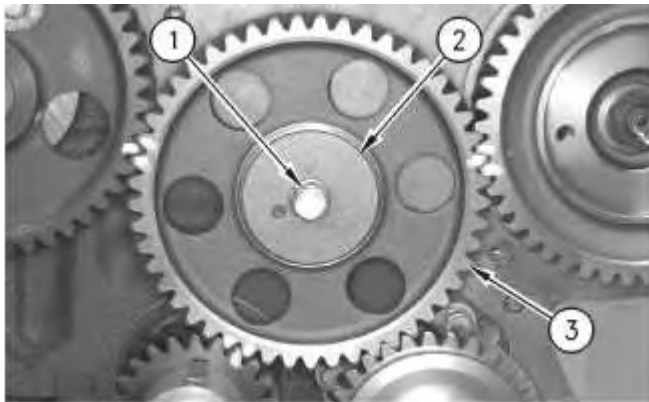


Illustration 3

g00559536

Note: Ensure that the marks on the timing gears are in alignment. Align the fuel injection drive gear with the "33" mark with the "3" mark on the idler gear. Make an alignment of the "2" mark on the camshaft gear with the "22" mark on the idler gear. Align the "1" mark on the crankshaft gear with the "11" mark on the idler gear. The No. 1 cylinder is at the top center position when these marks are in alignment.

4. Install idler gear (3) .
5. Install thrust plate (2) .
6. Install the washer and idler gear bolt (1) onto thrust plate (2). Tighten idler gear bolt (1) to a torque of 34 ± 5 N·m (25 ± 4 lb ft).

Note: For more information, refer to the Specifications Module, "Gear Group (Front)".

Note: See the following list for the installation of the other gears in the front gear group.

- In order to install the camshaft gear, refer to Disassembly and Assembly, "Camshaft - Remove and Install".
- In order to install the fuel injection pump gear, refer to Disassembly and Assembly, "Fuel Injection Pump Housing and Governor - Install".
- In order to install the gear from the engine oil pump, refer to Disassembly and Assembly, "Engine Oil Pump - Install".
- In order to install the crankshaft front gear, refer to Disassembly and Assembly, "Crankshaft Front Gear - Remove and Install".

End By: Install the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Install".

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