

Product: TRACK-TYPE TRACTOR

Model: D3G TRACK-TYPE TRACTOR BYR

Configuration: D3G XL & D3G LGP Track-Type Tractors BYR00001-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

i01646268

Flywheel - Remove

SMCS - 1156-011

Removal Procedure

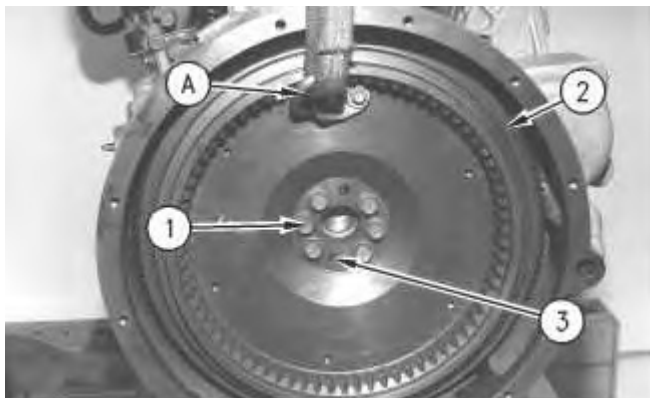
Table 1

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.



1. Install Tool (A), a strap, and a suitable lifting device onto flywheel (2) .
2. Remove six bolts (1) that secure flywheel (2) from the crankshaft.
3. Remove flywheel (2). The weight of the flywheel is 50 kg (110 lb).

Note: Dowel pin hole (3) is slightly offset in order to ensure correct installation.

4. Check the condition of the dowels (not shown). If the dowels are damaged, use new parts for replacement.



Illustration 2

5. Check the condition of the ring gear (4). Replace the ring gear with a new part if the gear is worn or damaged.
6. Place flywheel (2) and ring gear (4) on a suitable support.

Note: Identify the orientation of the ring gear on the flywheel for the correct positioning when the new ring gear is installed.

7. Use a hammer and a punch in order to remove ring gear (4) from the flywheel.
-

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i01646270

Flywheel - Install

SMCS - 1156-012

Installation Procedure

Table 1

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.



Always wear protective gloves when handling parts that have been heated.

1. Use an oven and heat ring gear (2) to a maximum temperature of 150 °C (302 °F). Install the ring gear.



Illustration 1

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2. Position the ring gear (4) on flywheel (2) .

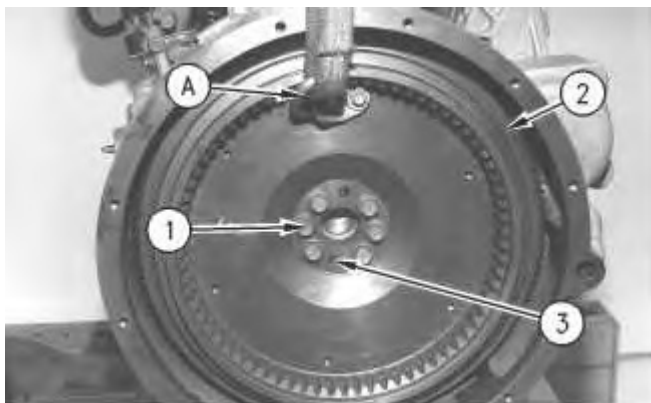


Illustration 2

g00527024

3. Check the condition of the dowels (not shown). If the dowels are damaged, use new parts for replacement.
 4. Install Tool (A), a strap, and a suitable lifting device onto flywheel (2) .
 5. Install flywheel (2). The weight of the flywheel is 50 kg (110 lb).
Note: Dowel pin hole (3) is slightly offset in order to ensure correct installation.
 6. Install six bolts (1) in order to secure flywheel (2) onto the crankshaft. Tighten the bolts to a torque of $83 \pm 5 \text{ N}\cdot\text{m}$ ($61 \pm 4 \text{ lb ft}$).
 7. Remove Tool (A) .
 8. Check the flywheel runout. Refer to Testing and Adjusting, "Flywheel - Inspect" for more information on flywheel runout.
-

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i05485410

Crankshaft Rear Seal - Remove

SMCS - 1161-011

Removal Procedure

Table 1

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

Start By:

- A. Remove the flywheel.

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, "Dealer Service Tool Catalog" for tools and supplies suitable to collect and contain fluids on Cat products.

Dispose of all fluids according to local regulations and mandates.

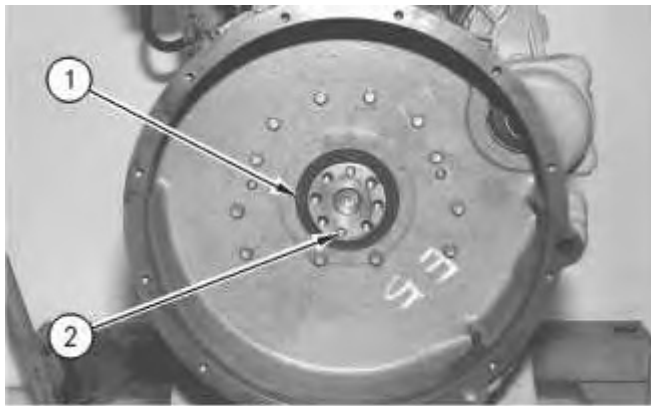


Illustration 1

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1. Drill three evenly spaced 3 mm (.12 inch) holes in crankshaft rear seal (1) .
 2. Use Tool (A) in order to remove the crankshaft rear seal.
-

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i05485391

Crankshaft Rear Seal - Install

SMCS - 1161-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	438-3244	Oil Seal Installer	1
B	438-3245	Seal Adapter	1
C	6V-3303	Bolt	1
D	4B-5275	Washer	1
E	9U-6172	Bolt	2

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Clean the faces of all the mating parts. Apply a thin coat of clean engine oil to a new crankshaft rear seal.
-

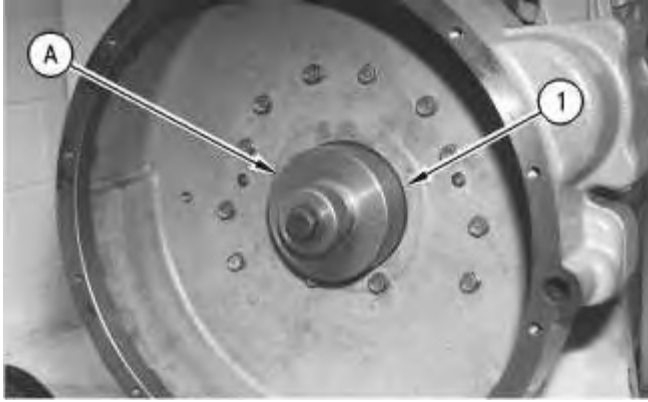


Illustration 1

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2. Position Tooling (B) onto the crankshaft and install Tooling (E) .

Note: Be sure that Tooling (B) is correctly aligned with the crankshaft.

3. Put new crankshaft rear seal (1) in Tooling (A) .
4. Install Tooling (C) , Tooling (D) , and Tooling (A) on Tooling (B) .
5. Push crankshaft rear seal (1) onto the crankshaft until Tooling (A) bottoms out.
6. Remove the tooling from the crankshaft. Check the crankshaft rear seal for correct installation.

End By: Install the flywheel.

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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.

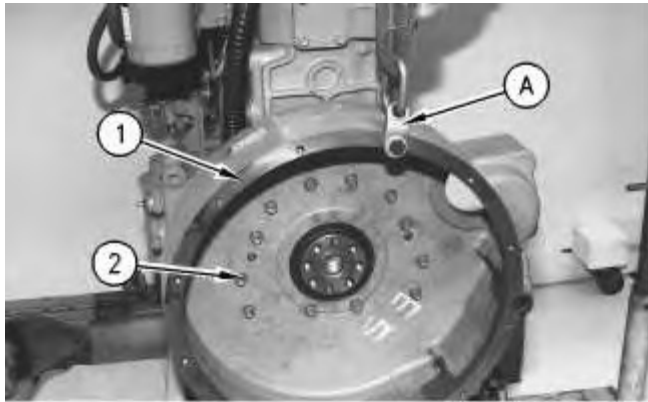


Illustration 1

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.

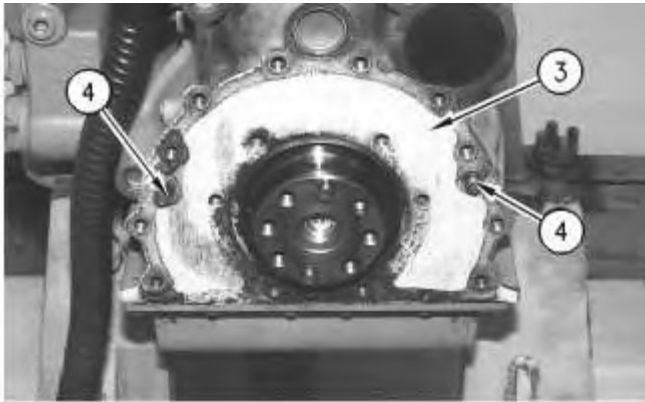


Illustration 2

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).

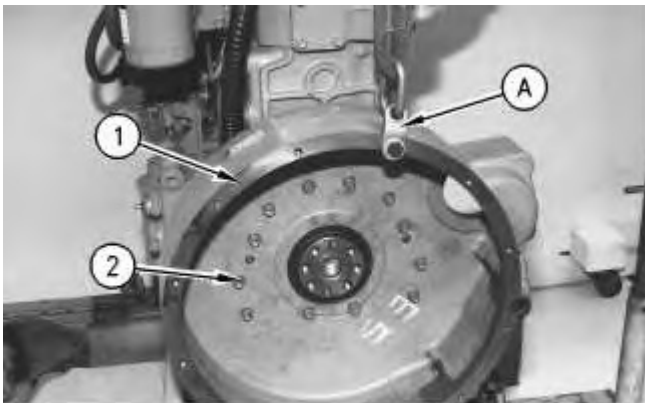


Illustration 3

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.

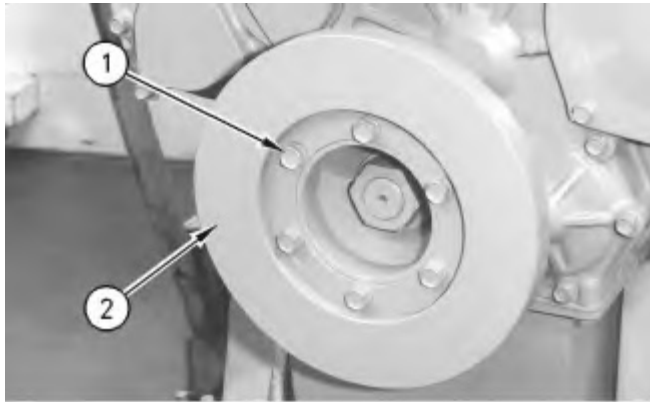


Illustration 1

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.

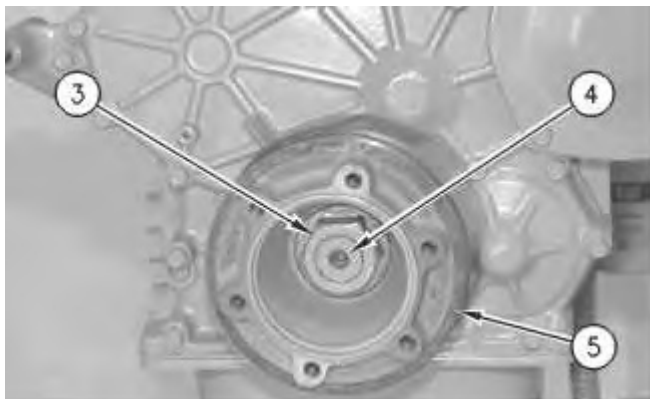


Illustration 2

g00559259

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

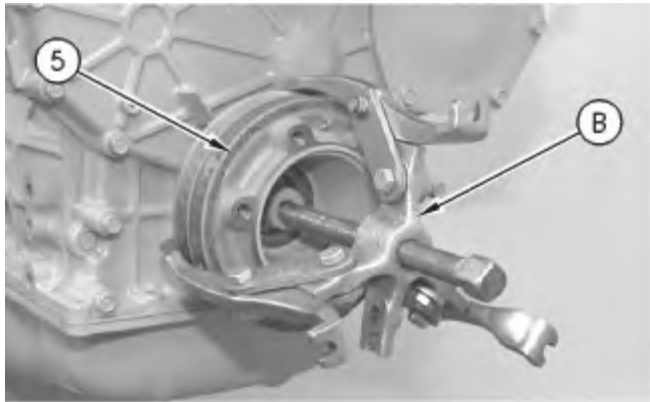


Illustration 3

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.

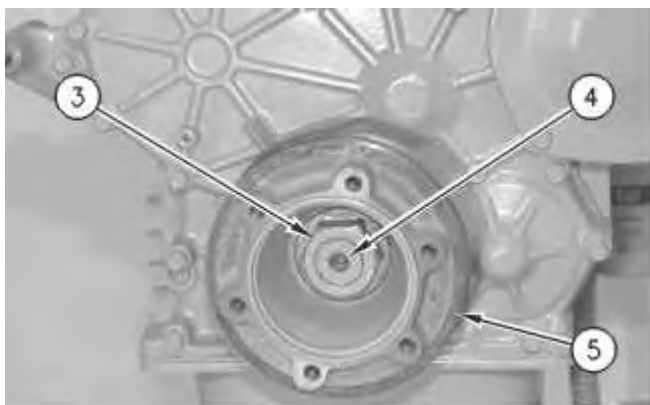


Illustration 4

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 $490 \pm 10 \text{ N}\cdot\text{m}$ ($360 \pm 7 \text{ lb ft}$).
-

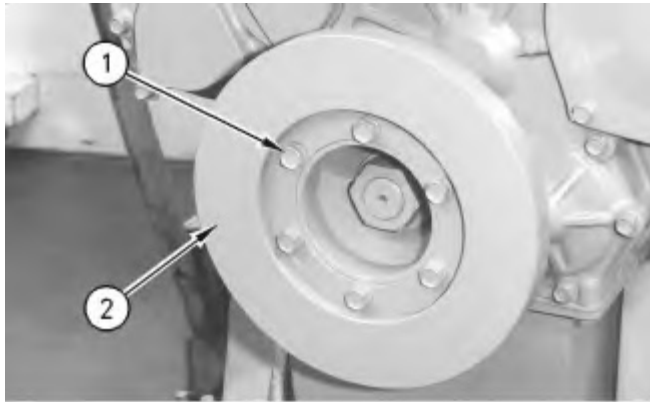


Illustration 5

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.

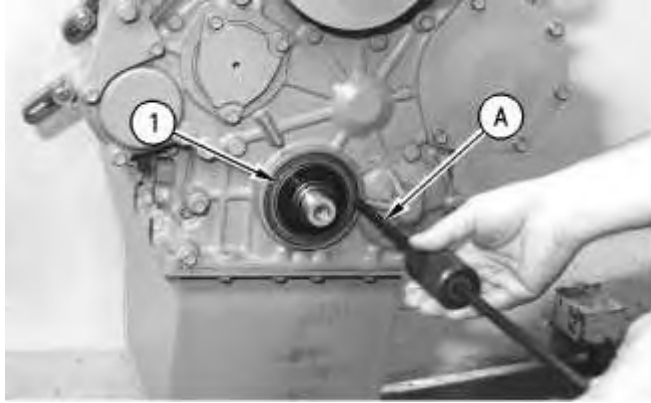


Illustration 1

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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