

Product: SKID STEER LOADER

Model: 242B SKID STEER LOADER BXM

Configuration: 216B 226B 232B 242B Skid Steer Loader BXM00001-04224 (MACHINE) POWERED BY 3024C Engine

Disassembly and Assembly

C1.1, C1.5 and C2.2 Engines for Caterpillar Built Machines

Media Number -KENR6948-06

Publication Date -01/06/2015

Date Updated -02/08/2018

i02602665

Flywheel Housing - Remove and Install - Engines with Flywheel Housing and Back Plate

SMCS - 1157-010

Removal Procedure

Start By:

- a. Remove the flywheel. Refer to Disassembly and Assembly, "Flywheel - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Support the engine.
 2. Install a suitable lifting device to the flywheel housing. Support the weight of the housing. The weight of the flywheel housing is approximately 30 kg (66 lb).
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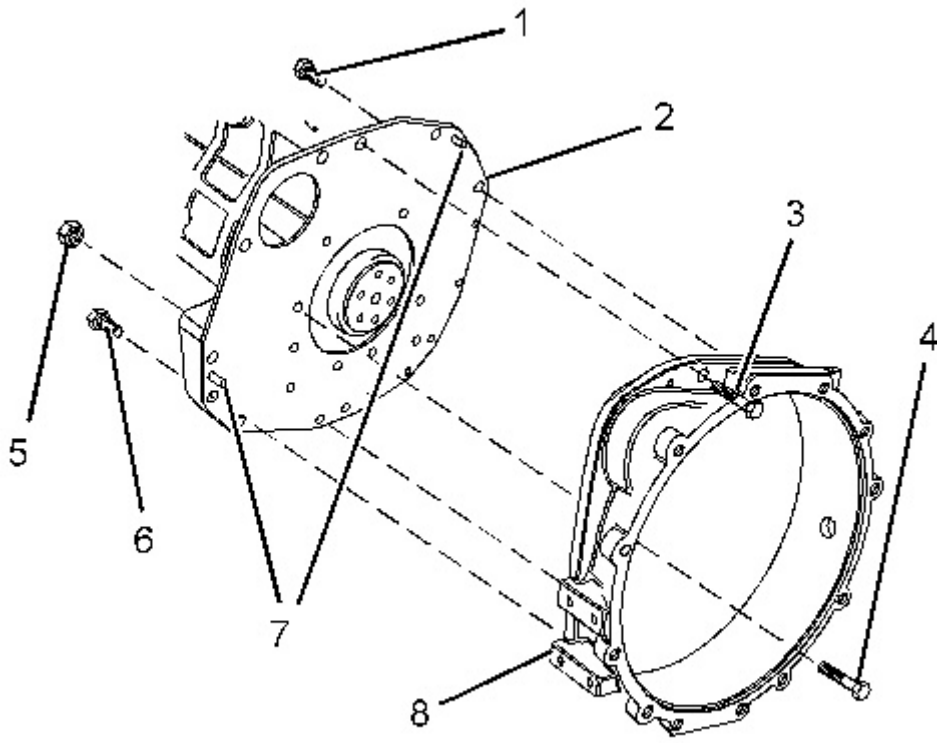


Illustration 1

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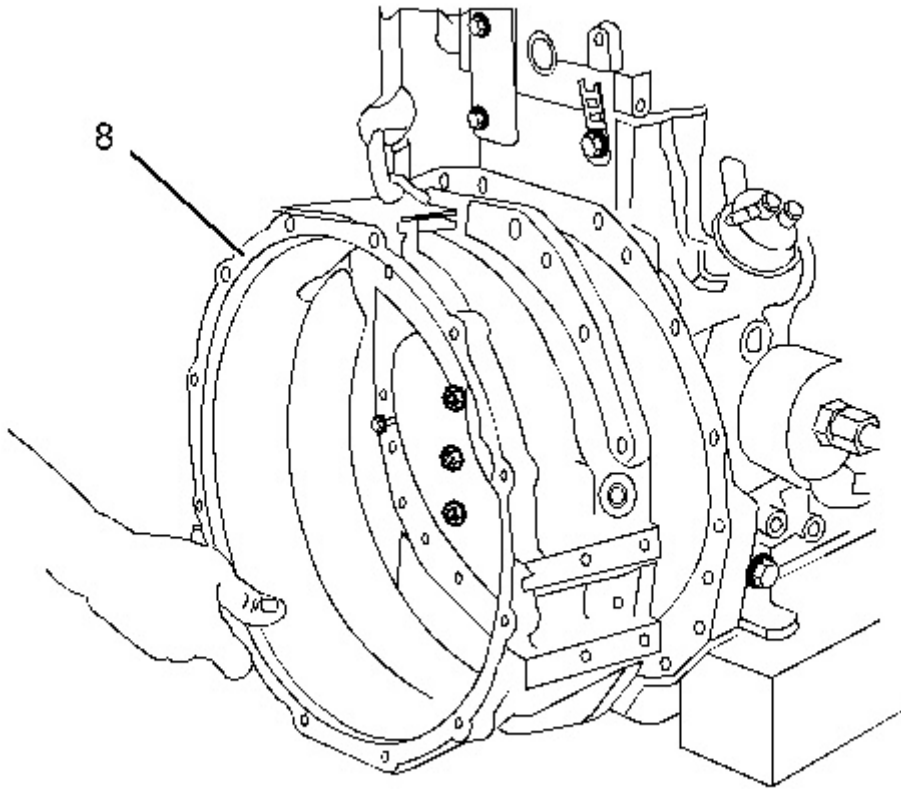


Illustration 2
Typical example

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3. Remove bolts (3) and (4) that fasten flywheel housing (8) to the cylinder block.
4. Remove bolts (6) on each side of the cylinder block. These bolts fasten flywheel housing (8) to the cylinder block.
5. Remove bolts (1) that fasten back plate (2) to flywheel housing (8).
6. Remove nuts (5) and the bolts (not shown) that fasten back plate (2) to flywheel housing (8).
7. Carefully remove flywheel housing (8) from back plate (2) and dowels (7). Use a suitable lifting device to remove the flywheel housing.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that the mating surfaces of back plate (2) and flywheel housing (8) are clean and free from damage. Inspect the crankshaft rear seal (not shown) for leaks. If necessary, replace the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove and Install" for the correct procedure. Inspect dowels (7) for damage. If the dowels are damaged, use new parts for replacement.
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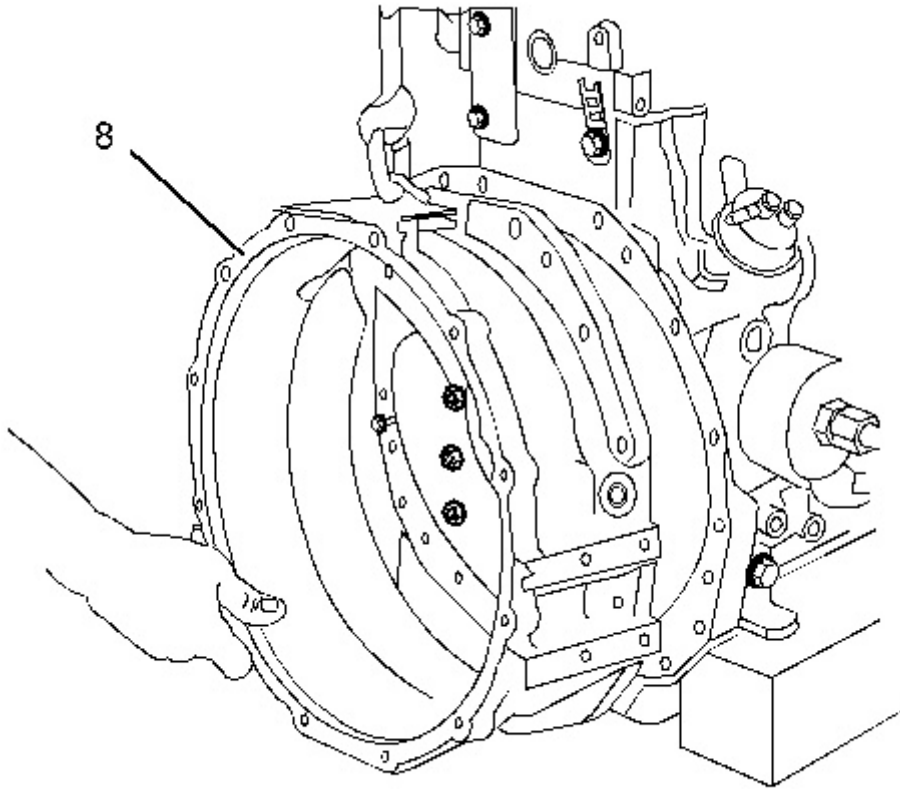


Illustration 3

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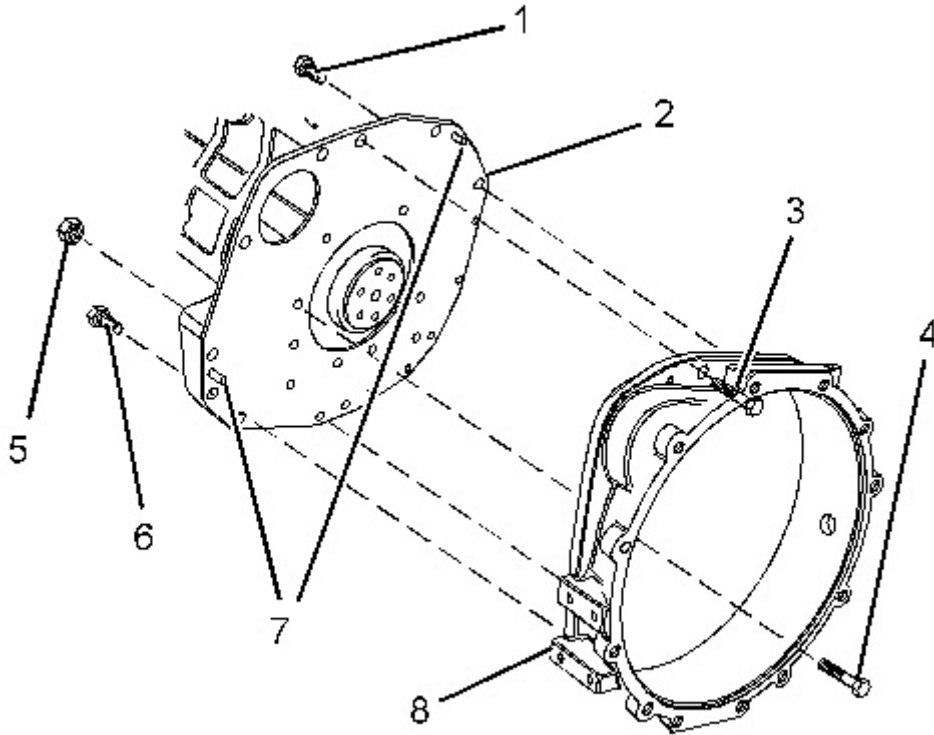


Illustration 4
Typical example

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2. Use a suitable lifting device to align flywheel housing (8) to dowels (7). The weight of the flywheel housing is approximately 30 kg (66 lb). Install the flywheel housing to the back plate.
3. Install nuts (5) and the bolts (not shown) that fasten back plate (2) to flywheel housing (8).
4. Install bolts (1) that fasten back plate (2) to flywheel housing (8).
5. Install bolts (6) on each side of the cylinder block. These bolts fasten flywheel housing (8) to the cylinder block.
6. Remove the lifting device from the flywheel housing.
7. Install bolts (3) and (4) that fasten flywheel housing (8) to the cylinder block.
8. Tighten the fasteners to a torque of 25 N·m (19 lb ft).

End By:

- a. Install the flywheel. Refer to Disassembly and Assembly, "Flywheel - Install".
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i06721519

Flywheel Housing - Remove and Install

SMCS - 1157-010

Removal Procedure

Start By:

- a. Remove the flywheel. Refer to Disassembly and Assembly, "Flywheel - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

Note: The three cylinder and the four cylinder engines have different flywheel housings. The removal procedure is similar for all models.

1. Support the engine.
 2. Install a suitable lifting device to the flywheel housing. Support the weight of the housing. The weight of the flywheel housing is approximately 30 kg (66 lb).
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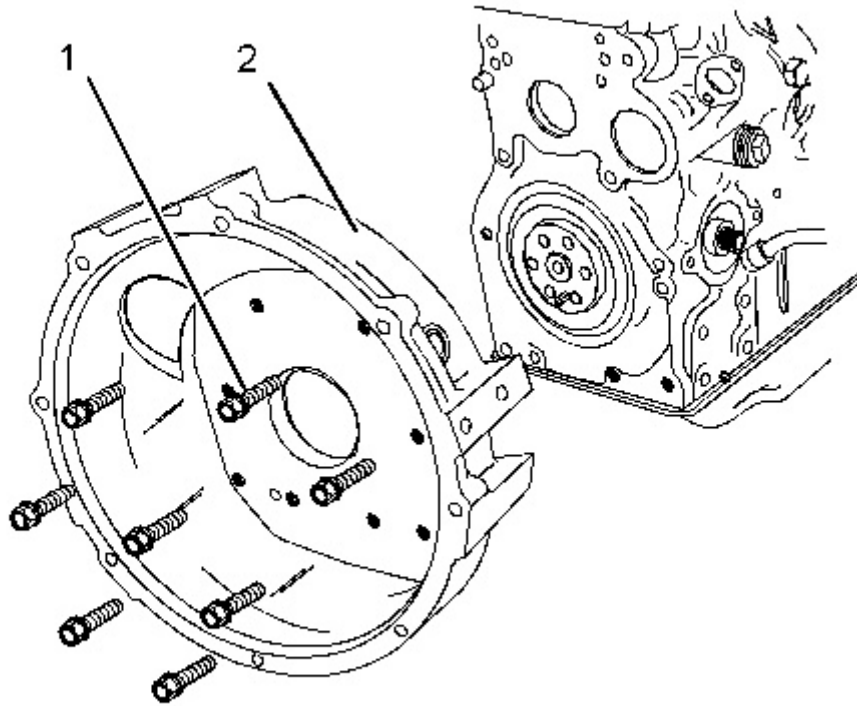


Illustration 1
Typical example

g01305734

3. Remove bolts (1) that fasten flywheel housing (2) to the cylinder block.
4. Use the lifting device to remove flywheel housing (2) from the engine.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

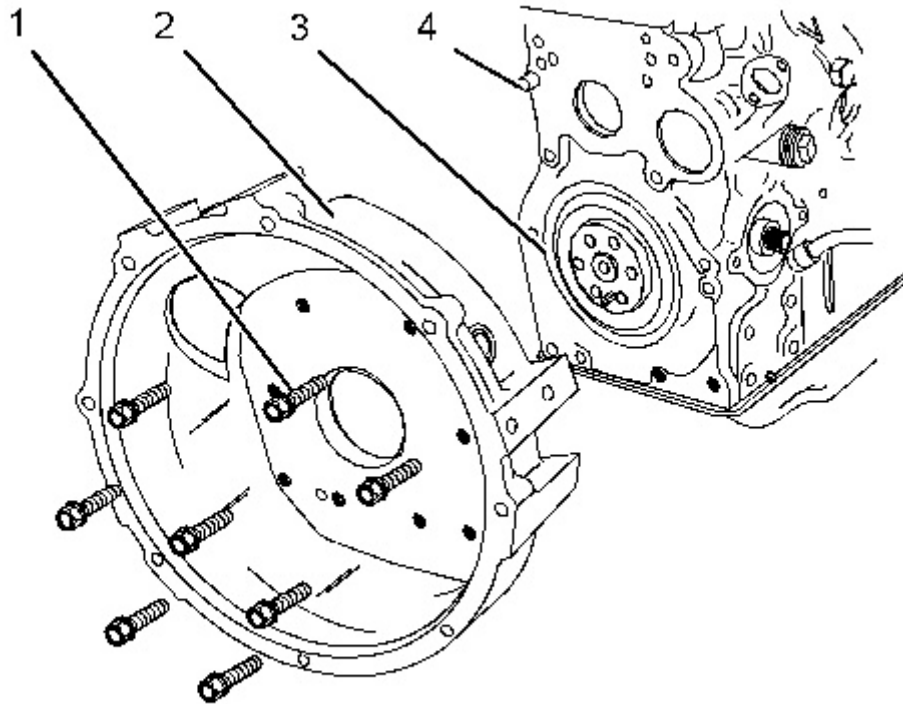


Illustration 2

g01326595

Typical example

1. Ensure the mating surfaces of flywheel housing (2) are clean and free from damage. Inspect the crankshaft rear seal (3) for leaks. If necessary, replace the crankshaft rear seal. Refer to Disassembly and Assembly, "Crankshaft Rear Seal - Remove and Install" for the correct procedure. Inspect dowels (4) for damage. If the dowels are damaged, use new parts for replacement.
2. Use a suitable lifting device to align flywheel housing (2) to dowels (5) and install the flywheel housing. The weight of the flywheel housing is approximately 30 kg (66 lb).
3. Install bolts (1). Tighten the bolts to a torque of 25 N·m (19 lb ft).
4. Remove the lifting device from the flywheel housing.

End By:

- a. Install the flywheel. Refer to Disassembly and Assembly, "Flywheel - Install".
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i07360646

Crankshaft Pulley - Remove and Install

SMCS - 1205-010

Removal Procedure

Start By:

- a. Remove the V-belt. Refer to Disassembly and Assembly, "V Belts Remove and Install" for more information.

Table 1

Required Tools			
Tool	Part Number	Description	Qty
A	8S-2264	Puller Group	1
	-	Bolt	3

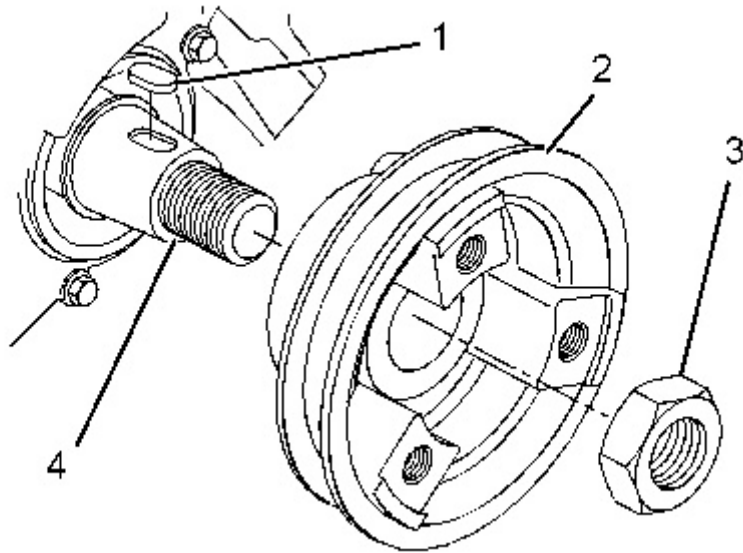


Illustration 1
Typical example

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1. Loosen nut (3).

Note: Leave the nut fully engaged with the thread on the crankshaft.

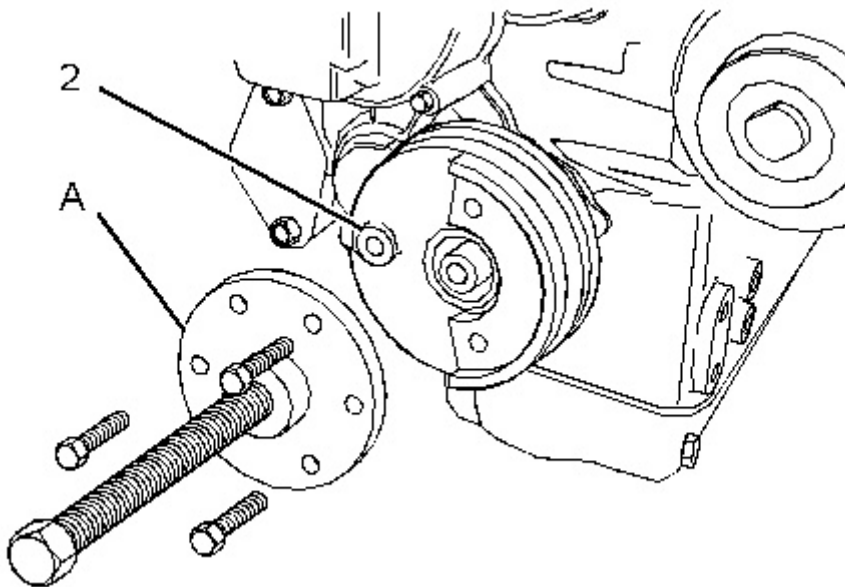


Illustration 2

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2. Install Tooling (A) to crankshaft pulley (2). Use Tooling (A) to remove crankshaft pulley (2) from crankshaft (4). Remove Tooling (A).
3. Remove nut (3).
4. Remove pulley (2) from crankshaft (4).

5. Remove woodruff key (1) from crankshaft (4).

Installation Procedure

1. Ensure that the following components are clean and free from damage: the taper of the crankshaft, the woodruff key, and the bore of the crankshaft pulley. Replace any components that are damaged. Ensure that the taper of the crankshaft and the bore of the crankshaft pulley are clean and dry before assembly.
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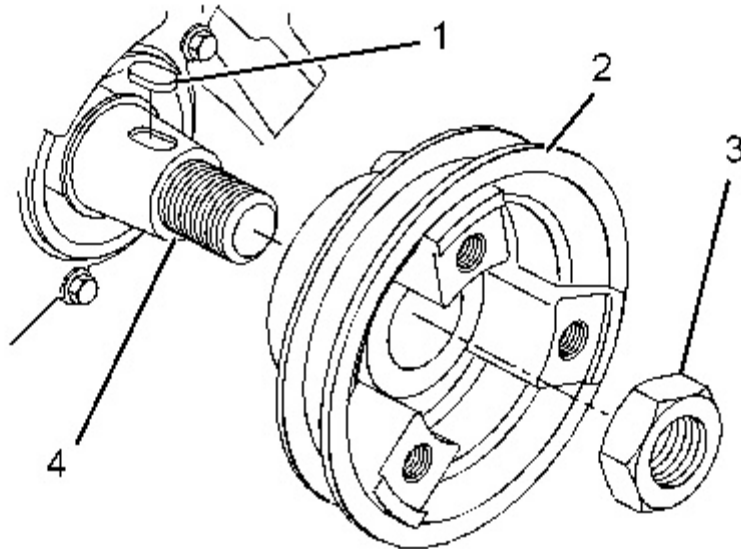


Illustration 3
Typical example

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2. Install woodruff key (1) to crankshaft (4).
3. Install crankshaft pulley (2) to crankshaft (4).
4. Lubricate nut (3) with clean engine oil and install the nut.

For the C1.1 engine, tighten nut (3) to a torque of 123 N·m (91 lb ft).

For C1.5 and C2.2 engines, tighten nut (3) to a torque of 304 N·m (224 lb ft).

End By:

- a. Install the V-belt to the engine. Refer to Disassembly and Assembly, "V Belts Remove and Install".
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i02602690

Crankshaft Front Seal - Remove and Install

SMCS - 1160-010

Removal Procedure

Table 1

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

Start By:

- Remove the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Remove and Install".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

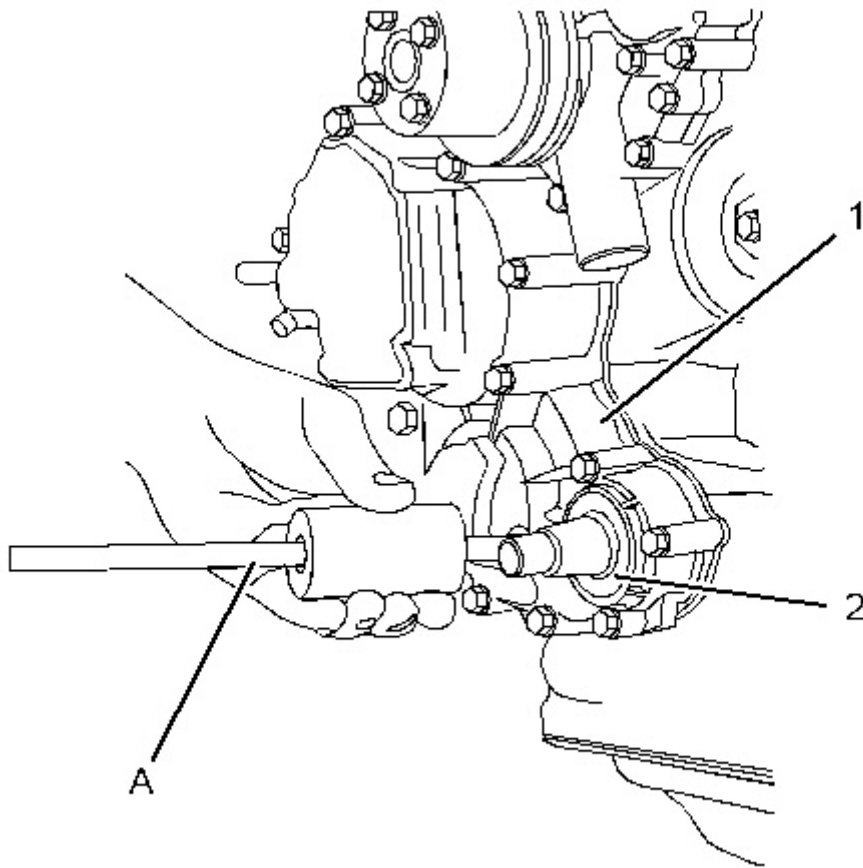


Illustration 1
Typical example

g01310976

1. Use a 4 mm (0.158 inch) drill in order to make three holes in crankshaft front seal (2).

NOTICE

Ensure that the main lip is used in order to remove the crankshaft front seal. Do not damage the edge of the housing for the crankshaft front seal.

Note: Do not damage the crankshaft during the removal process of the crankshaft front seal.

2. Use Tooling (A) to carefully remove crankshaft front seal (2). Alternate the position of Tooling (A) from one hole to another hole. This will allow you to evenly remove the crankshaft front seal from front housing (1).

Alternative Removal Procedure

Start By:

- a. Remove the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Remove and Install".
- b. 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.

Note: This is an alternative procedure to remove the crankshaft front oil seal. This procedure may be used if the front housing has been removed from the engine.

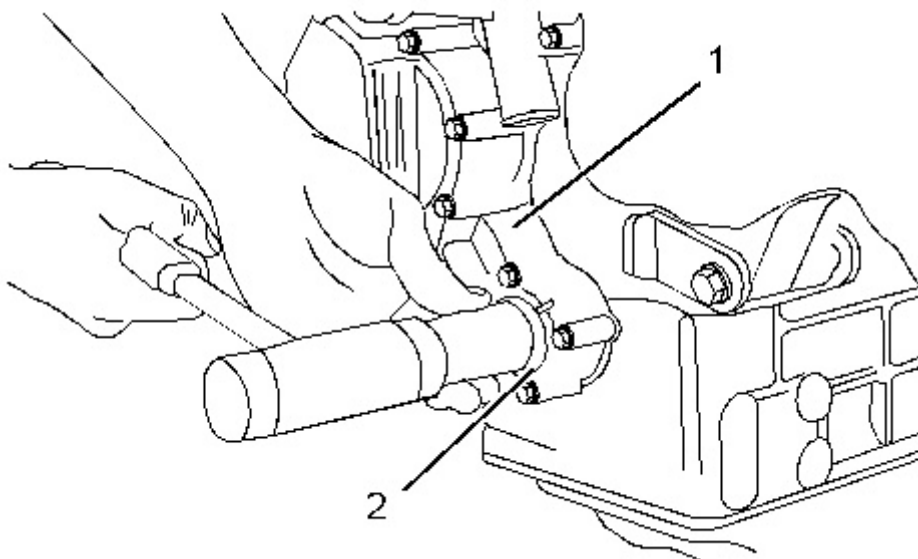
1. Use a suitable mandrel and a press in order to remove the oil seal from the front cover. Ensure that the front cover is supported in order to prevent damage to the cover while the oil seal is being removed.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.



Typical example

1. Ensure that the bore in front housing (1) and the nose of the crankshaft are clean and free from damage.
2. Lubricate the lip of a new crankshaft front seal (2) with clean engine oil.
3. Position crankshaft front seal (2) in the bore of front housing (1).

NOTICE

Ensure that the lip of the crankshaft front seal that is spring loaded is facing toward the inside of the front housing and that it is square with the bore of the housing for the crankshaft front seal.

4. Use a suitable tool to install crankshaft front seal (2) to front housing (1).

End By:

- a. Install the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Remove and Install".
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