

Product: COMPACT WHEEL LOADER

Model: 914K COMPACT WHEEL LOADER CD2

Configuration: 914K Compact Wheel Loader CD200001-UP (MACHINE) POWERED BY C3.8 Engine

Disassembly and Assembly C3.8 Engines for Caterpillar Built Machines

Media Number -UENR0129-08

Publication Date -01/09/2015

Date Updated -19/05/2016

i04664019

Crankshaft Rear Seal - Remove and Install

SMCS - 1161-010

Removal Procedure

Start By:

- a. Remove the flywheel.

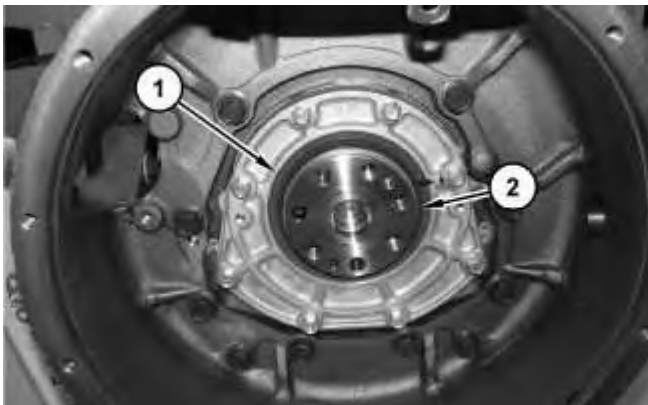


Illustration 1

g02797554

1. Drill three holes in lip seal (1). Use a suitable slide hammer to remove lip seal (1).
2. Remove ring seal (2).

Installation Procedure

Table 1

Required Tools			

Tool	Part Number	Part Description	Qty
A	393-2571	Driver	1

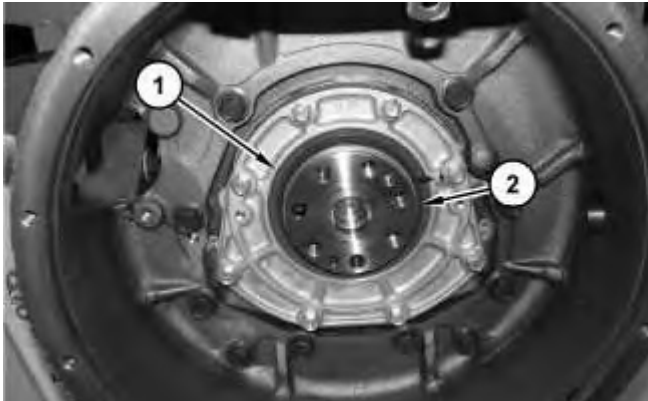


Illustration 2

g02797554

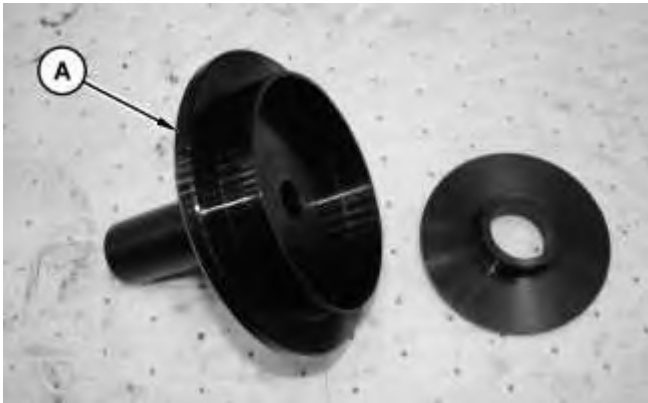


Illustration 3

g02870418

1. Use Tooling (A) to install ring seal (2).
2. Use Tooling (A) to install lip seal (1).

End By:

- a. Install the flywheel.
-

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i04839813

Crankshaft Rear Seal Carrier - Remove and Install

SMCS - 1161-010-C3

Removal Procedure

1. Refer to Specifications, "Crankshaft".

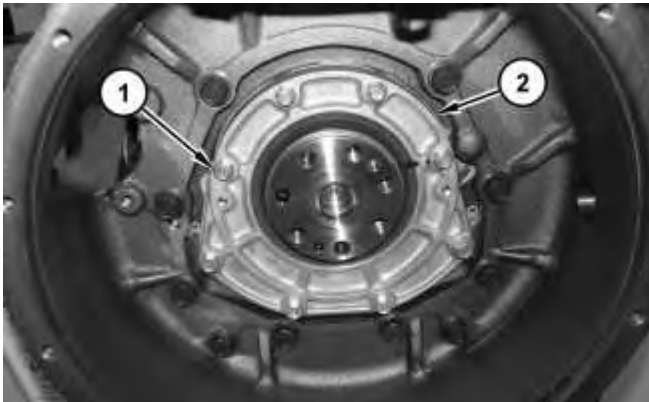


Illustration 1

g02869998

2. Remove bolts (1). Use two of bolts (1) to remove bearing case cover (2) .
-

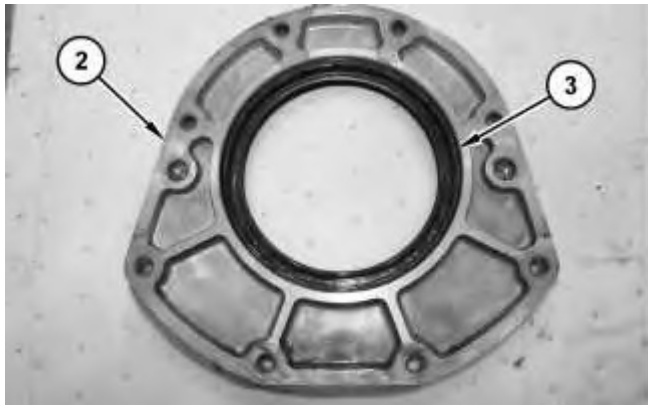


Illustration 2

g02870025

3. Remove lip seal (3) from bearing case cover (2) .

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	393-2571	Seal Installer	1
B	-	Three Bond 1217H	-

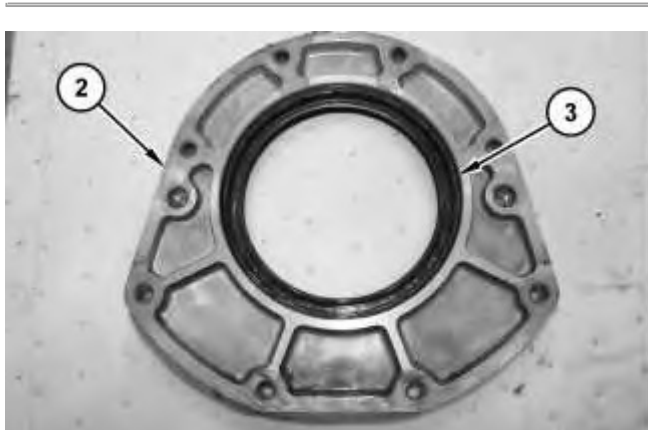


Illustration 3

g02870025

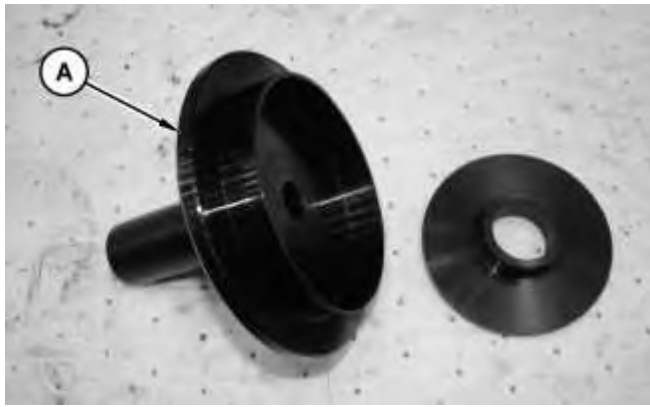


Illustration 4

g02870418

1. Use Tooling (A) to install lip seal (3) into bearing case cover (2) .

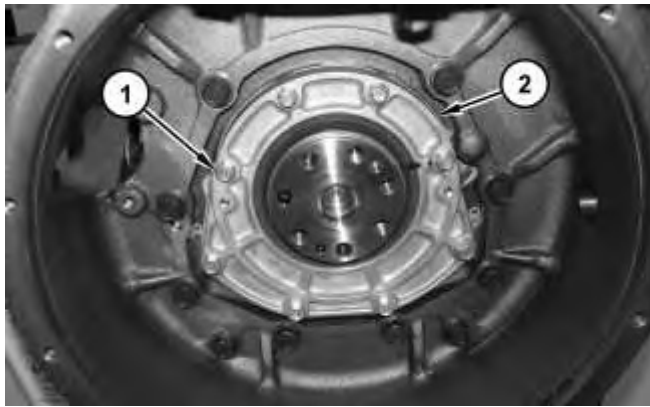


Illustration 5

g02869998

2. Apply Tooling (B) onto the mating surface of bearing case cover (2). Apply clean engine oil onto the lip seal. Install bearing case cover (2) .
 3. Install bolts (1). Tighten bolts (1) to a torque of $25.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($18.8 \pm 1.1 \text{ lb ft}$).
-

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i06272842

Flywheel Housing - Remove and Install

SMCS - 1157-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	439-3938	Link Bracket	2
B	-	Three Bond1217H	1

Start By:

- a. Remove the bearing case cover.

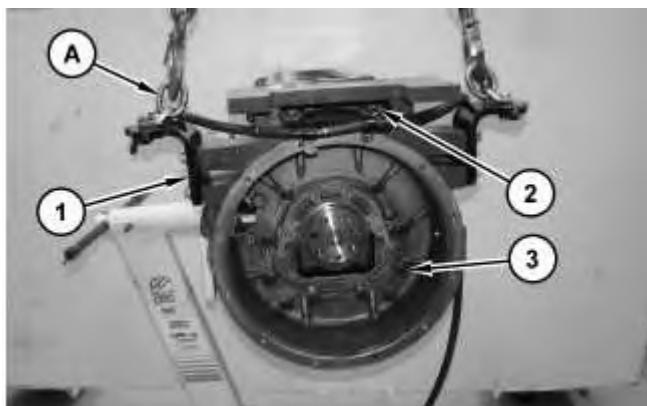


Illustration 1

g02797548

1. Attach Tooling (A) and a suitable lifting device onto flywheel housing (1). The weight of flywheel housing (1) is approximately 45 kg (100 lb).
2. Remove bolts (2) and bolts (3). Remove flywheel housing (1).

Installation Procedure

1. Install flywheel housing (1) in the reverse order of removal.
 - a. Apply Tooling (B) onto the mating surface of flywheel housing (1).
 - b. For the SSL, MTL, and CTL models that end in D2 models (BL2, MD2, BL7, HP2, FD2, DX2, DX9, and BY4), tighten bolts (3) and bolts (2) to a torque of $103 \pm 14 \text{ N}\cdot\text{m}$ ($76 \pm 10 \text{ lb ft}$).
 - c. For all other models, tighten bolts (3) and bolts (2) to a torque of $78 \pm 12 \text{ N}\cdot\text{m}$ ($56 \pm 9 \text{ lb ft}$).
 - d. Refer to Systems Operation, Testing and Adjusting, "Flywheel Housing - Inspect".
-

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i04664013

Crankshaft Pulley - Remove and Install

SMCS - 1205-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	393-2572	Flywheel Stopper	1

Start By:

- a. Remove the belt.
1. Install Tooling (A) onto the flywheel.

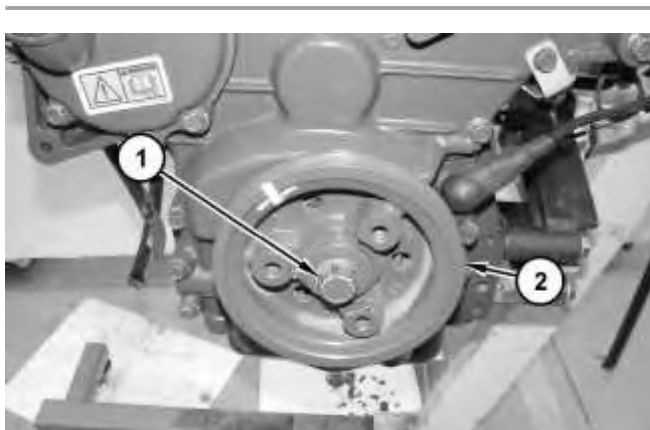


Illustration 1

g02860756

2. Remove bolt (1) to remove pulley (2).

Installation Procedure

1. Install pulley (2) in the reverse order of removal.
 - a. Apply clean engine oil onto bolt (1).
 - b. Tighten bolt (1) to a torque of 264.5 ± 9.5 N·m (195.1 ± 7.0 lb ft).
-

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i04664010

Crankshaft Front Seal - Remove and Install

SMCS - 1160-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1U-8145	Drill Bit (4.10 mm)	1
B	1U-7600	Slide Hammer Puller	1

Start By:

- a. Remove the crankshaft pulley.

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.



Illustration 1

g02860787

1. Use Tooling (A) to drill three evenly spaced holes in crankshaft front seal (1).
2. Use Tooling (B) to carefully remove crankshaft front seal (1). Alternate the position of Tooling (B) from one hole to another hole to allow the crankshaft front seal to be removed.

Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
C	393-2570	Seal Installer	1



Illustration 2

g02860787

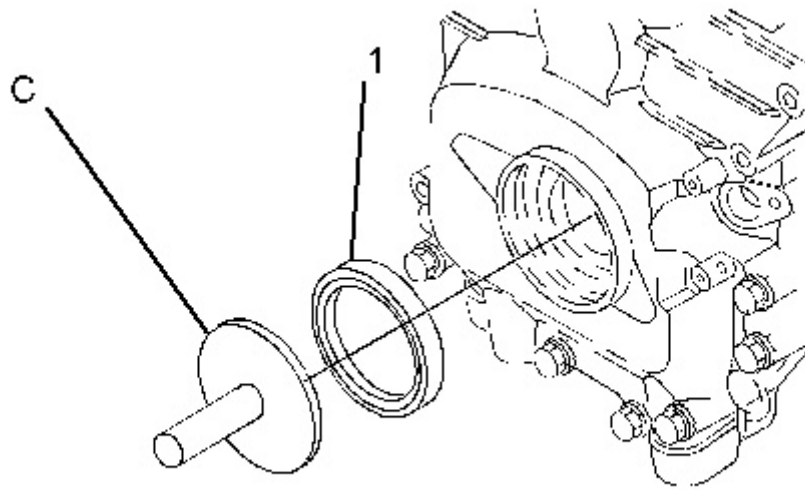


Illustration 3

g02866181

1. Lubricate the outside diameter of a new crankshaft front seal (1) with clean engine oil. Use Tooling (C) to install crankshaft front seal (1).
2. Apply clean engine oil to the lip of crankshaft front seal (1).

End By:

- a. Install the crankshaft pulley.
-

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i04801361

Idler Gear - Remove and Install

SMCS - 1206

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	393-2572	Flywheel Stopper	1
B	393-2573	Driver	1

Start By:

- a. Remove the front housing.
 1. Ensure that number four piston is at the top center position on the compression stroke. Refer to Systems Operation, Testing and Adjusting, "Finding Top Center Position for No. 4 Piston".
-

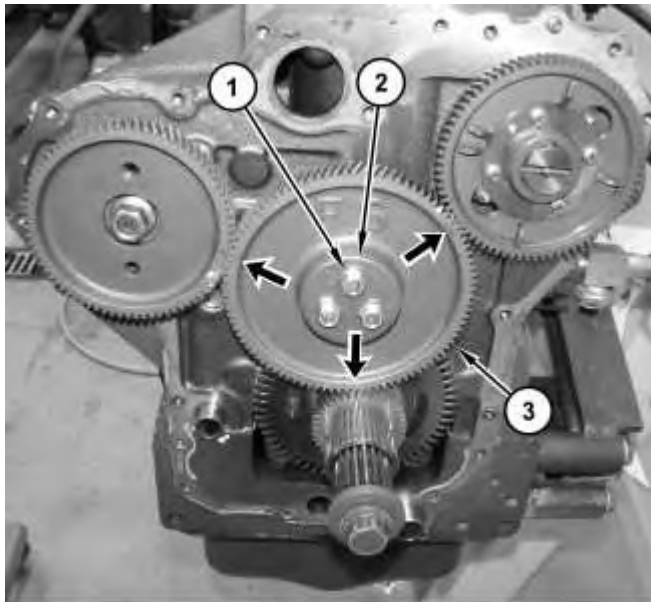


Illustration 1

g02871716

2. Ensure that timing marks on the gears are aligned.

Alternatively, make temporary timing marks on the gears in order to show alignment.

3. Install Tooling (A) onto the flywheel. Remove bolts (1) and plate (2).

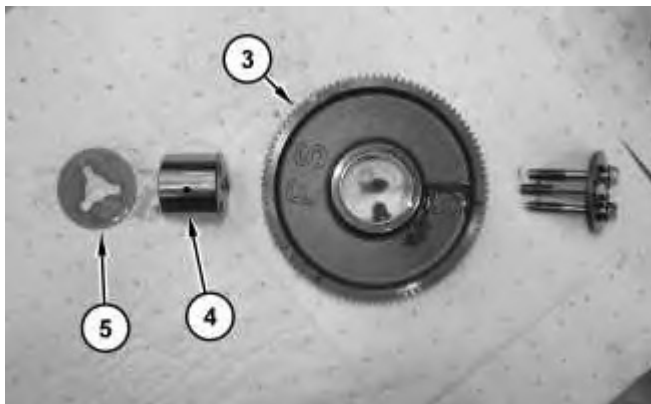


Illustration 2

g02872045

4. Remove idler gear (3), shaft (4), and plate (5).
-

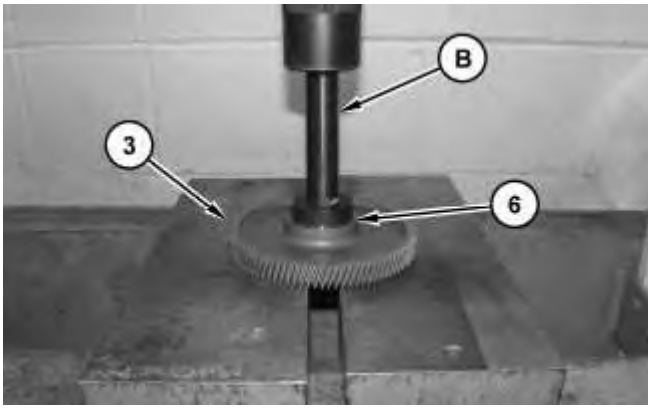


Illustration 3

g02920337

5. Use Tooling (B) to remove bushing (6) from idler gear (3).

Installation Procedure

1. Install idler gear (3) in the reverse order of removal.
 - a. Apply clean engine oil onto the bore of idler gear (3) and bushing (6).
 - b. Ensure that edge of bushing (6) is flush with the edge of the bore that is in idler gear (3).
 - c. Tighten bolts (1) to a torque of $25.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($18.8 \pm 1.1 \text{ lb ft}$).
-

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i06618977

Housing (Front) - Remove and Install

SMCS - 1151-010

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	393-2572	Flywheel Stopper	1
B	-	Three Bond 1217H	-

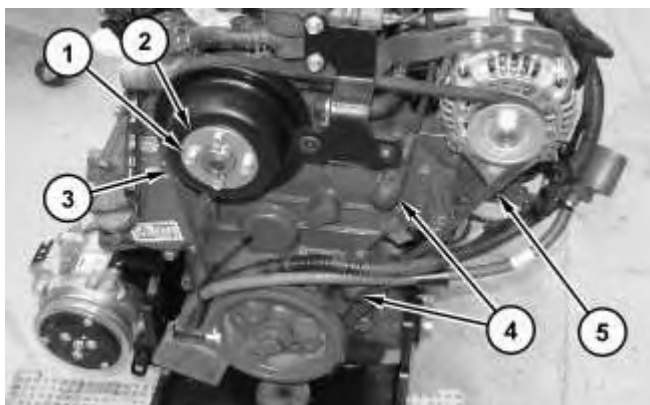


Illustration 1

g02865846

1. Remove bolts (1), retainer (2), and crankshaft pulley (3).
2. Disconnect speed sensors (4). Remove belt (5).

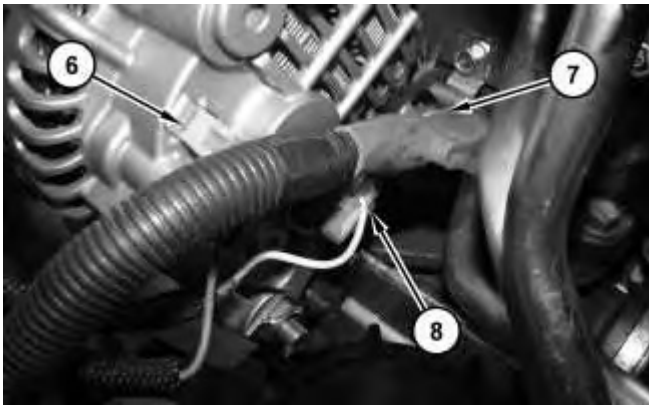


Illustration 2

g02865956

3. Disconnect wire assembly (6), cable assembly (7), and harness assembly (8).



Illustration 3

g02866018

4. Remove bolts (9) to remove alternator (10).



Illustration 4

g02866036

5. Remove bolts (11) to remove cover (12) and the gasket.
-

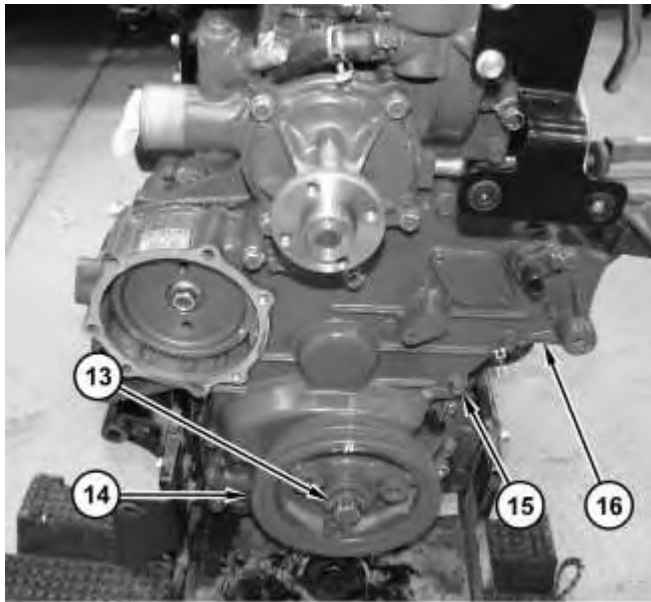


Illustration 5

g02866067

6. Install Tooling (A) onto the flywheel. Remove bolt (13) to remove crankshaft pulley (14).
7. Remove bolts (15) to remove front housing (16).

Installation Procedure

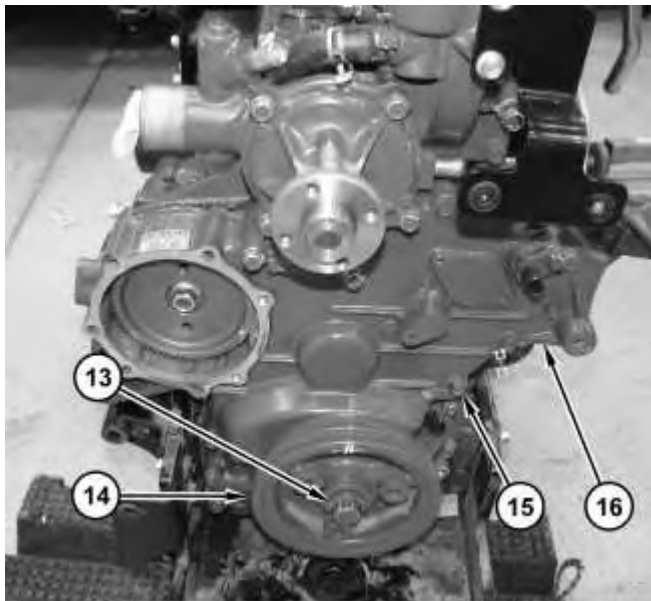


Illustration 6

g02866067

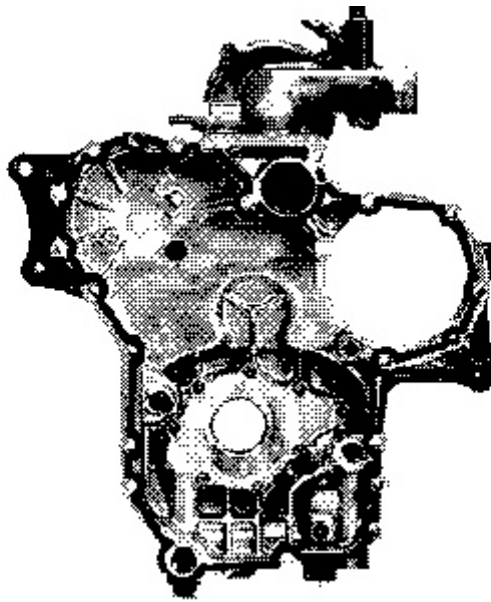


Illustration 7

g02891536

Note: If the front cover is replaced, check the air gap of the crankshaft position sensor.

1. Apply Tooling (B) onto the mating surface of front housing (16). Install front housing (16). Install bolts (15). Tighten bolts (15) to a torque of $25.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($18.8 \pm 1.1 \text{ lb ft}$).
 - a. For the SSL, MTL, and CTL models that end in D2 models (BL2, MD2, BL7, HP2, FD2, DX2, DX9, and BY4), tighten bolts (15) to a torque of $34.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($25 \pm 1 \text{ lb ft}$).
 - b. For all other models, tighten bolts (15) to a torque of $25.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($227 \pm 13 \text{ lb in}$).
2. Install Tooling (A) on the flywheel. Install crankshaft pulley (14). Apply clean engine oil onto bolt (13). Install bolt (13). Tighten bolt (13) to a torque of $264.5 \pm 9.5 \text{ N}\cdot\text{m}$ ($195.1 \pm 7.0 \text{ lb ft}$).



Illustration 8

g02866036

3. Install cover (12) and a new gasket. Install bolts (11). Tighten bolts (11) to a torque of $25.5 \pm 1.5 \text{ N}\cdot\text{m}$ ($18.8 \pm 1.1 \text{ lb ft}$).



Illustration 9

g02866018

4. Install alternator (10). Install bolts (9).

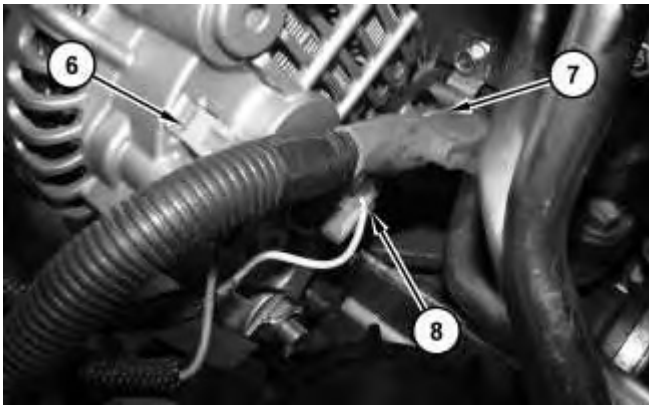


Illustration 10

g02865956

5. Connect harness assembly (8), cable assembly (7), and wire assembly (6).

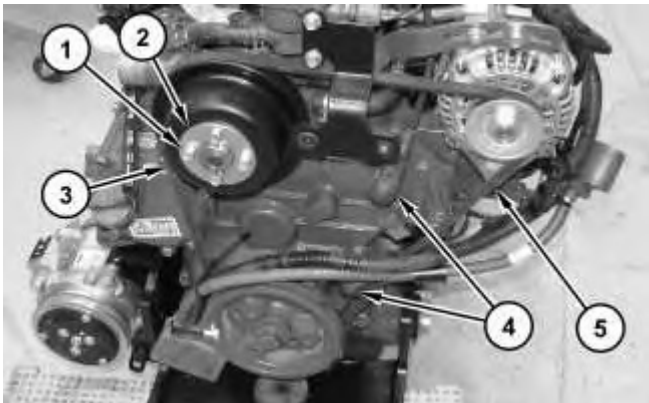


Illustration 11

g02865846

6. Install belt (5). Connect harness assemblies (4).
7. Install pulley (3), retainer (2), and bolts (1).

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