

Product: VIBRATORY COMPACTOR

Model: CS-76B VIBRATORY COMPACTOR CB7

Configuration: CS76B, CS78B Vibratory Soil Compactor CB700001-UP (MACHINE) POWERED BY C4.4 Engine

## Disassembly and Assembly C4.4 Engines for Caterpillar Built Machines

Media Number -UENR4516-11

Publication Date -01/06/2015

Date Updated -29/10/2018

i05820294

# Housing (Front) - Install - Heavy Duty Housing (Front)

SMCS - 1151-012

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	6V-6640	Sealant	1
B	-	Guide Studs M8 by 80 mm	2
C	319-6486	Alignment Tool	1
	-	Bolts M10 by 50 mm	3
D	1U-6396	O-Ring Assembly Compound	1
E	7M-7456	Bearing Mount Compound	1

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### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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### NOTICE

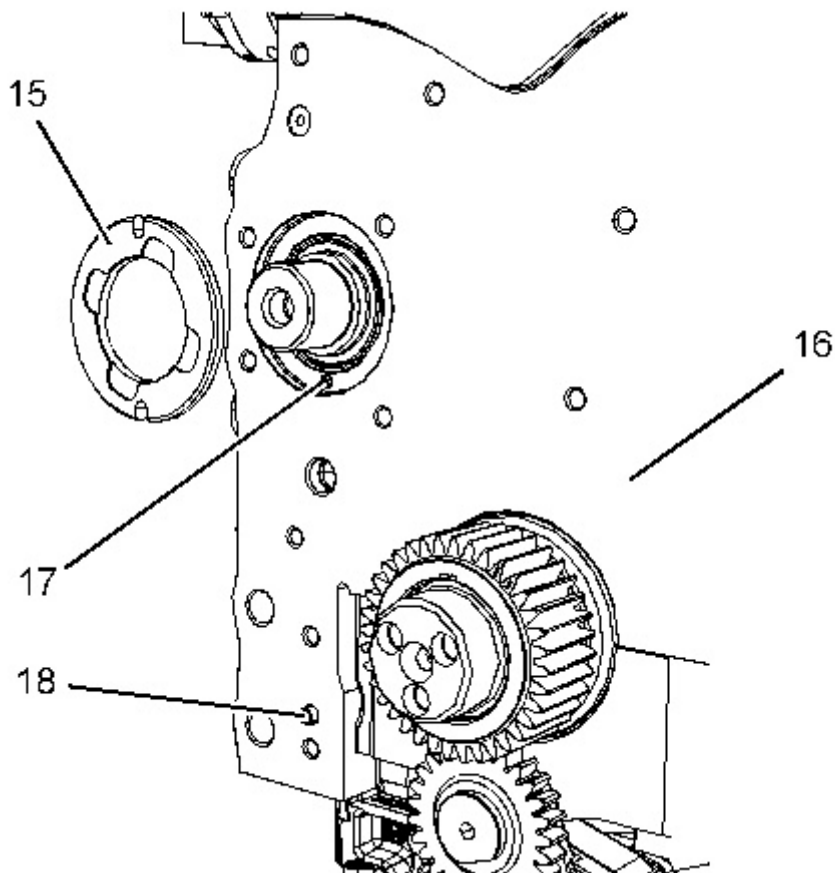
**Ensure that the wiring harness assembly is correctly routed and the cable straps are not over tightened. Over tightening of the cable straps will damage the wiring harness and the convoluting.**

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1. Ensure that the front housing is clean and free from damage. If necessary, replace the front housing.

If necessary, install blanking plugs to a new front housing. Use Tooling (A) in order to seal all D-plugs.

2. Clean all the gasket surfaces of the cylinder block.
- 

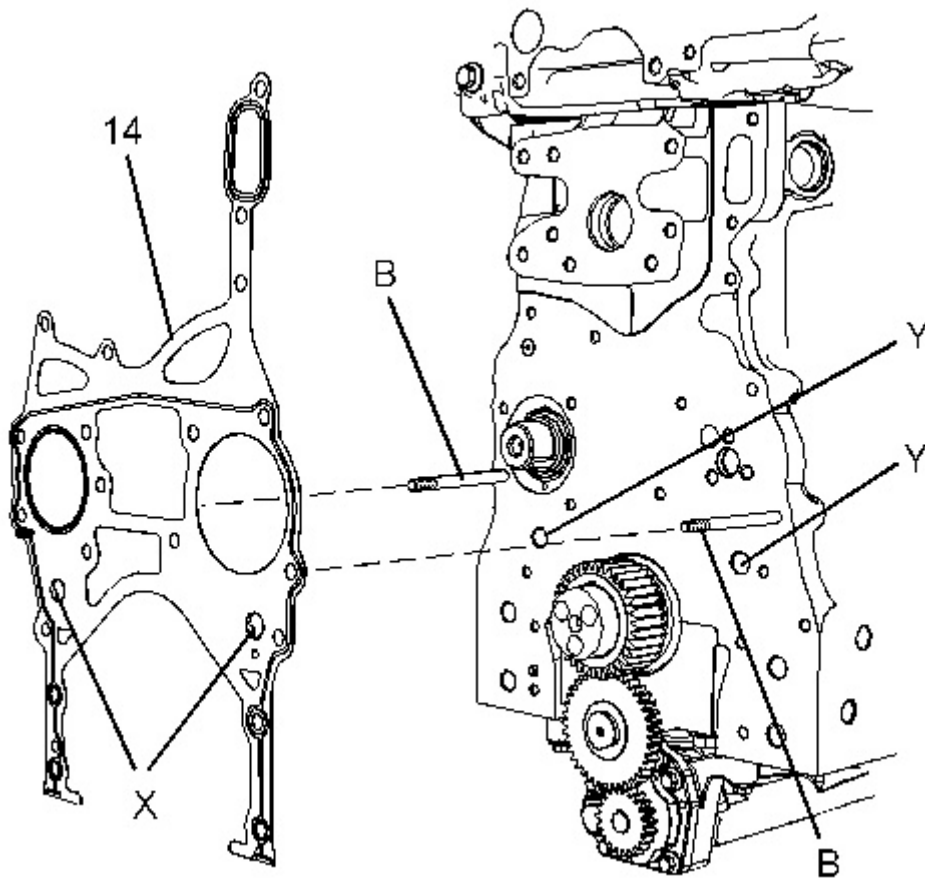


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Illustration 1

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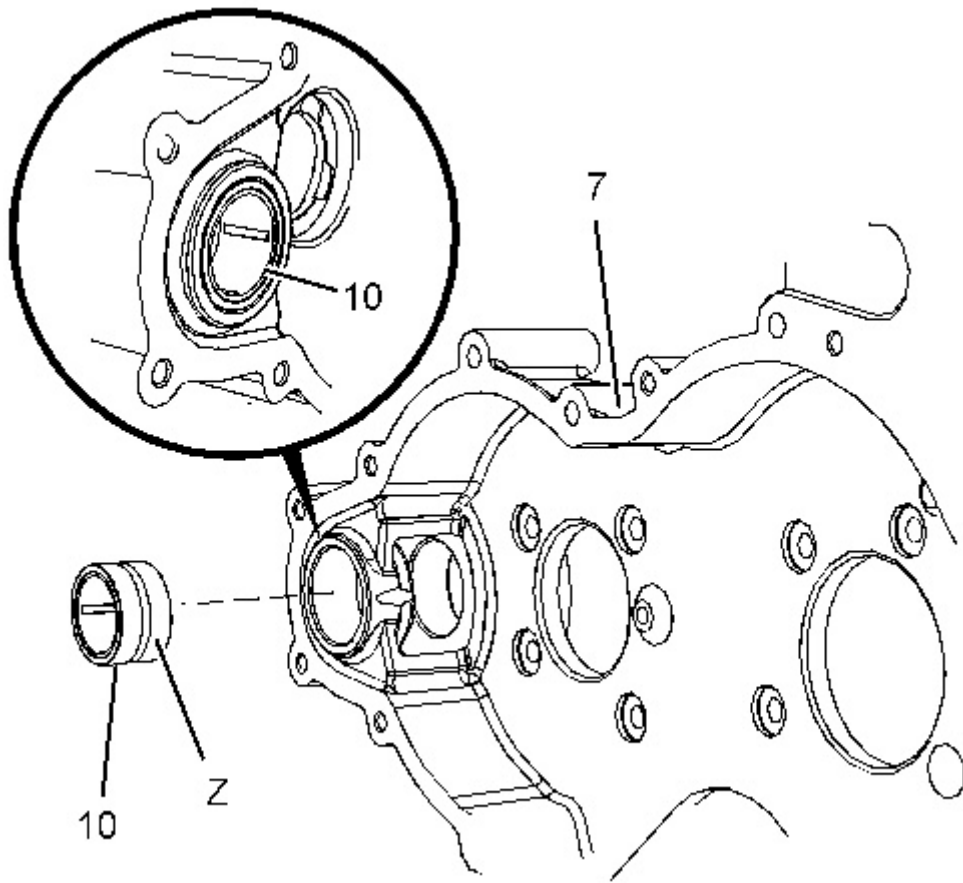
Illustration 2

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3. Inspect dowel (17) and dowel (18) for damage. If necessary, replace the dowels in the cylinder block.
4. Install thrust washer (15) into the recess in cylinder block (16). Refer to Disassembly and Assembly, "Camshaft - Install" for more information.
5. Install Tooling (B) to cylinder block (16). Refer to Illustration 2.
6. Align a new gasket (10) with Tooling (B). Install the gasket to (16) cylinder block.

**Note:** Ensure that two circular Tabs (X) on the gasket are engaged in two Holes (Y) in cylinder block (16). Ensure that dowel (18) in cylinder block (16) is engaged on the gasket.

7. Install Tooling (C) to cylinder block (16).
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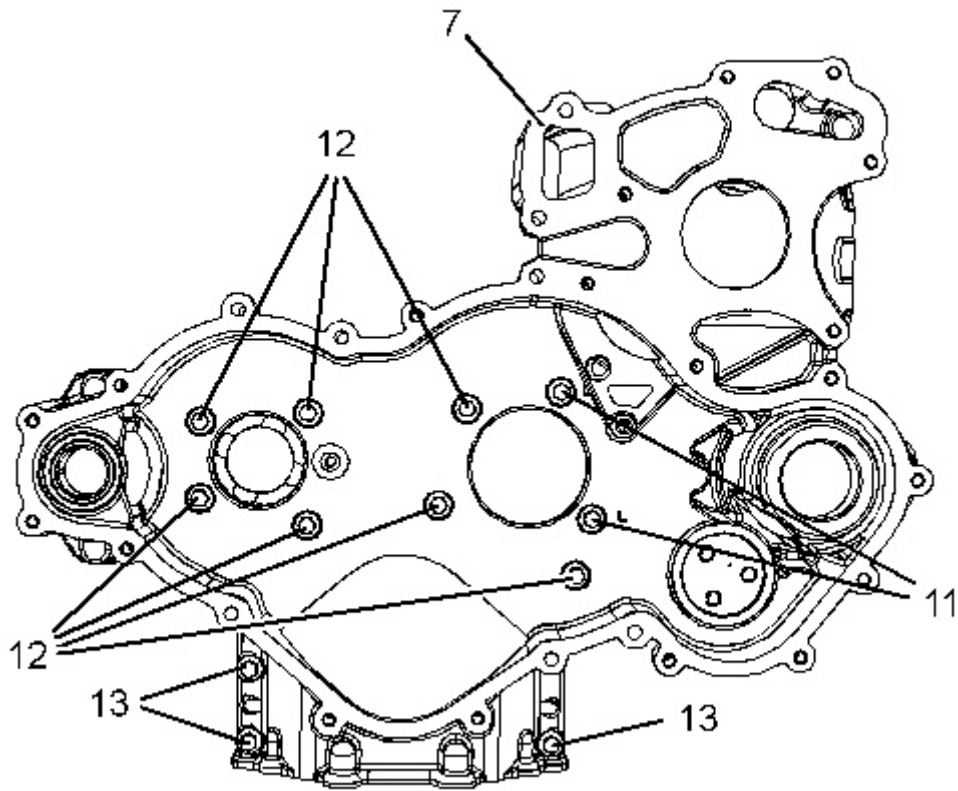


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Illustration 3

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8. If necessary, follow Step 8.a through Step 8.c in order to install bearing (10) to housing (7).
    - a. Apply a small continuous bead of Tooling (E) to outer Surface (Z) of bearing (10).
    - b. Place housing (7) onto a suitable support.
    - c. Use a suitable tool in order to press bearing (10) into housing (7) until the bearing is in the correct position within the housing. Remove any excess bearing mount compound.
  9. Install the front housing over Tooling (B) and Tooling (C) onto cylinder block (16).
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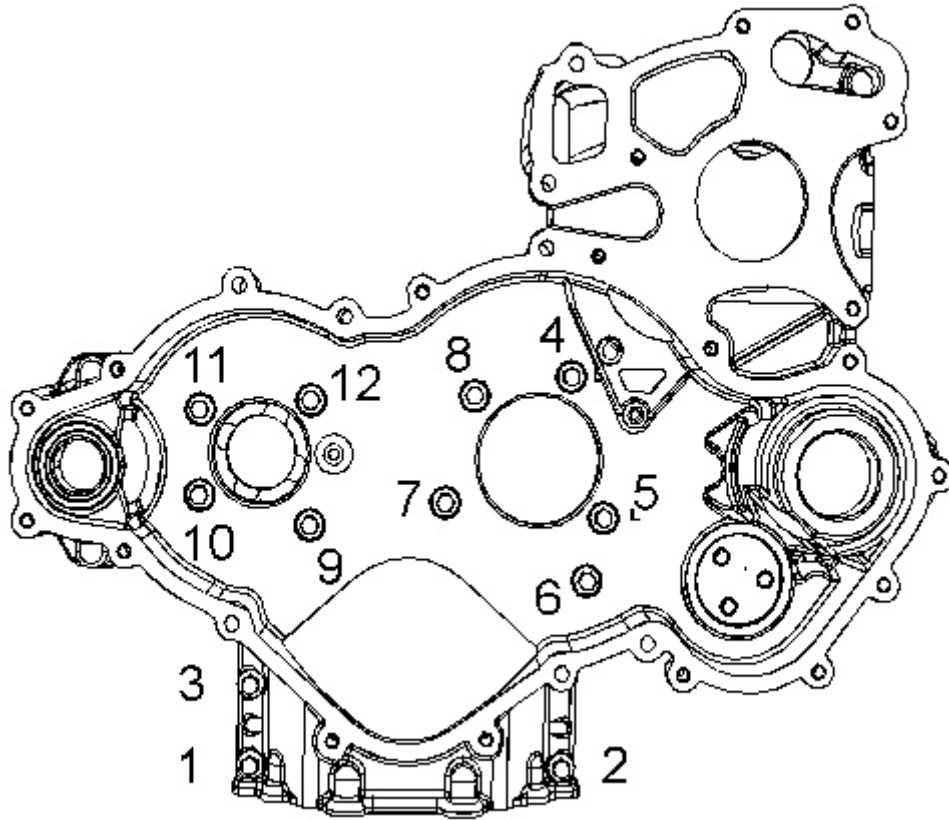


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Illustration 4

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- (11) M8 by 35 mm
  - (12) M8 by 20 mm
  - (13) M8 by 25 mm
-



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Illustration 5

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10. Install bolts (13) to front housing (7) finger tight.
  11. Remove Tooling (B).
  12. Loosely install bolts (11) and bolts (12). Refer to Illustration 4 for the correct position of the bolts.
  13. Tighten bolts (11), bolts (12) and bolts (13) in the sequence that is shown in Illustration 5 to a torque of 28 N·m (248 lb in).
  14. Remove Tooling (C) from the cylinder block.
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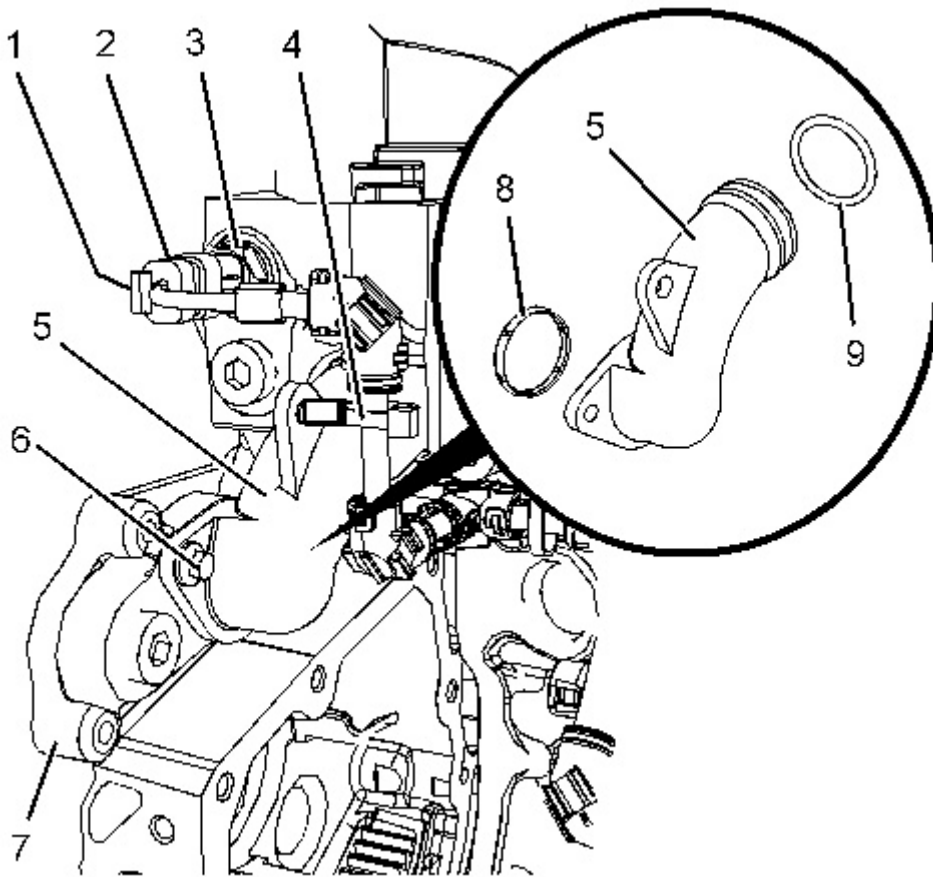


Illustration 6

g02490356

15. Install a new O-ring seal (8) and a new O-ring seal (9) to bypass tube (5). Use Tooling (D) in order to lubricate the O-ring seals.
16. Install bypass tube (5) to the cylinder head. Install bolts (6). Tighten the bolts to a torque of 9 N·m (80 lb in).
17. Connect harness assembly (2) to coolant temperature sensor (3).
18. Slide locking tab (1) (not shown) into the locked position.
19. Position harness assembly (2) onto bypass tube (5). Install a new cable strap (4).

**Note:** Ensure that the cable strap meets Original Equipment Manufactures (OEM) specification.

**End By:**

- a. Install the fuel injection pump. Refer to Disassembly and Assembly, "Fuel Injection Pump - Install" for the correct procedure.
- b. Install the timing gears. Refer to Disassembly and Assembly, "Gear Group (Front) - Install" for the correct procedure.
- c. If the engine has an accessory drive, install the accessory drive. Refer to Disassembly and Assembly, "Accessory Drive - Remove and Install" for the correct procedure.

- d. Install the engine oil pan . Refer to Disassembly and Assembly, "Engine Oil Pan - Install" for the correct procedure.
  - e. Install the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Install" for the correct procedure.
  - f. Install the water pump. Refer to Disassembly and Assembly, "Water Pump - Install" for the correct procedure.
  - g. Install the fan. Refer to Disassembly and Assembly, "Fan - Remove and Install" for the correct procedure.
  - h. Fill the cooling system with coolant. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Fill" for the correct procedure.
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Model: CS-76B VIBRATORY COMPACTOR CB7

Configuration: CS76B, CS78B Vibratory Soil Compactor CB700001-UP (MACHINE) POWERED BY C4.4 Engine

## Disassembly and Assembly C4.4 Engines for Caterpillar Built Machines

Media Number -UENR4516-11

Publication Date -01/06/2015

Date Updated -29/10/2018

i05820295

### Housing (Front) - Install

SMCS - 1151-012

### Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	6V-6640	Sealant	1
B	-	Guide Studs M8 by 80 mm	2
C	319-6486	Alignment Tool	1
	-	Bolts M10 by 50 mm	3
D	1U-6396	O-Ring Assembly Compound	1

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#### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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#### NOTICE

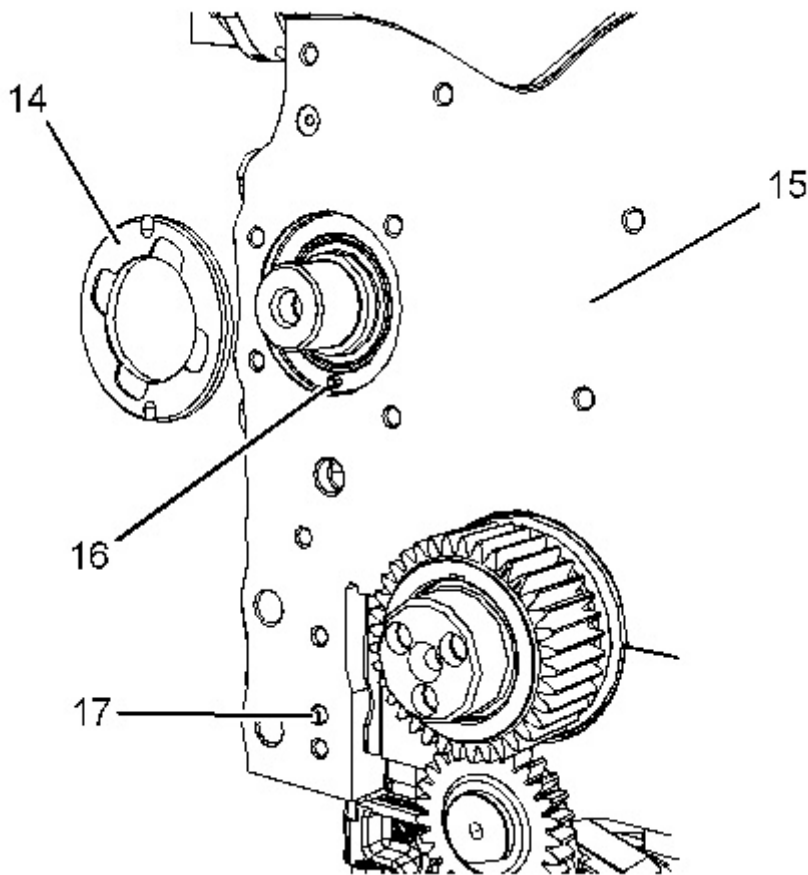
**Ensure that the wiring harness assembly is correctly routed and the cable straps are not over tightened. Over tightening of the cable straps will damage the wiring harness and the convoluting.**

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1. Ensure that the front housing is clean and free from damage. If necessary, replace the front housing.

If necessary, install blanking plugs to a new front housing. Use Tooling (A) in order to seal all D-plugs.

2. Clean all the gasket surfaces of the cylinder block.
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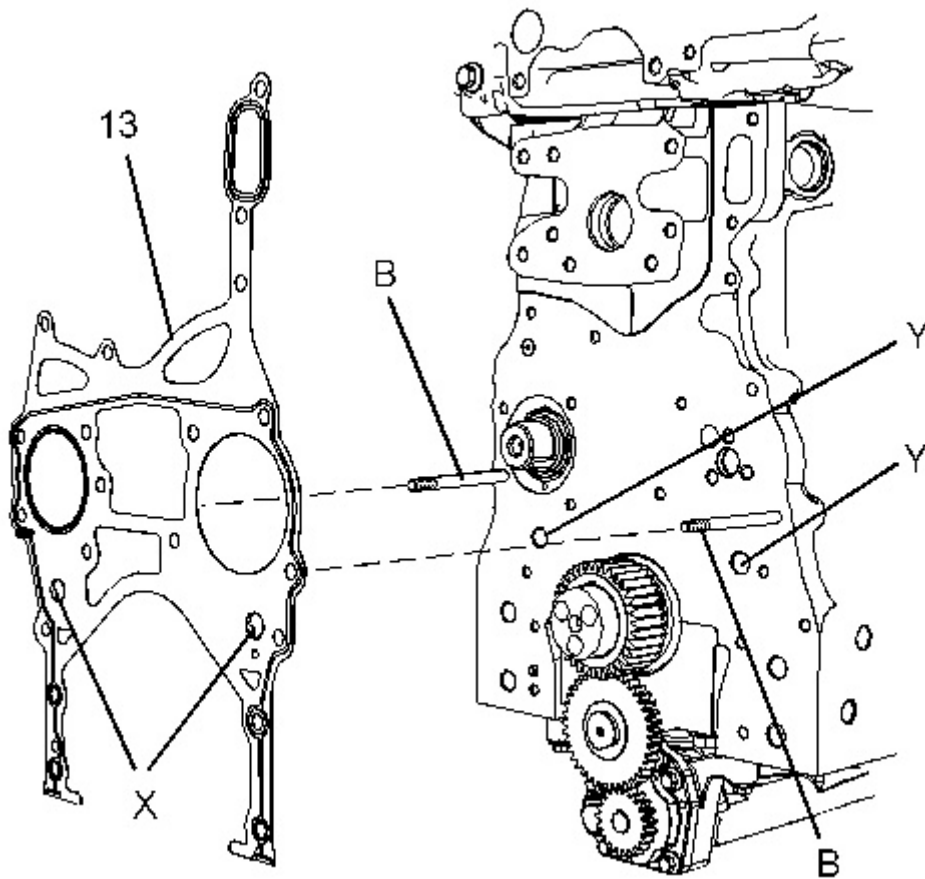


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Illustration 1

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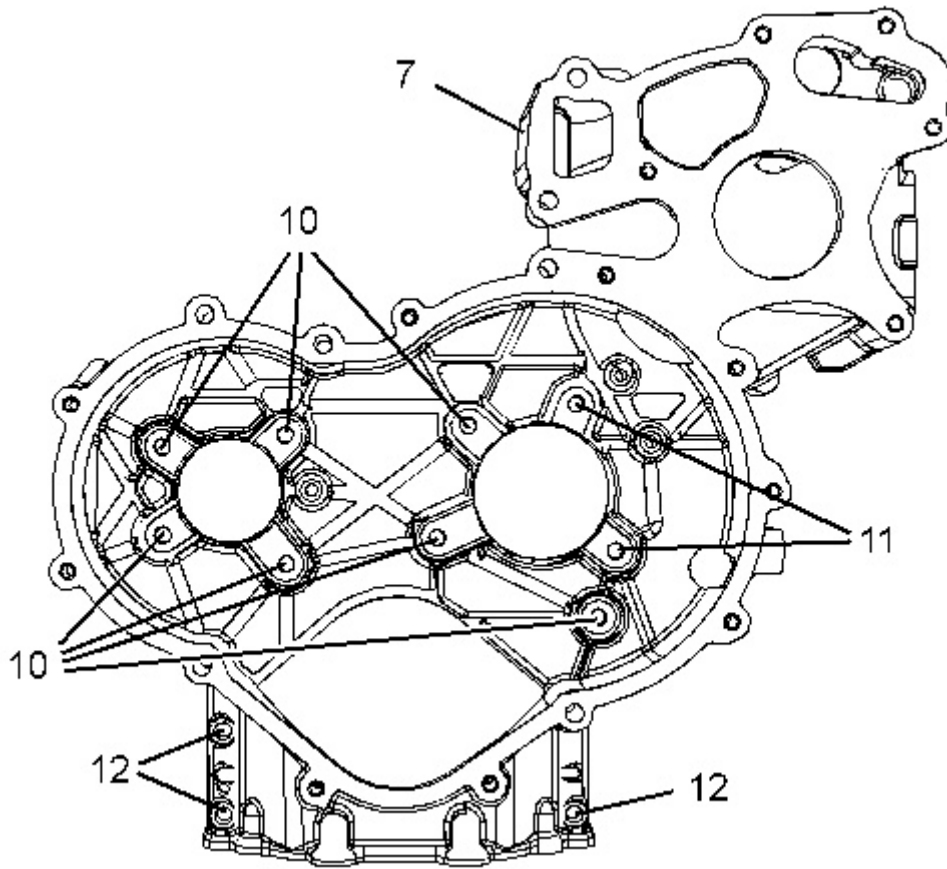
Illustration 2

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3. Inspect dowel (16) and dowel (17) for damage. If necessary, replace the dowels in cylinder block (15).
4. Install thrust washer (14) into the recess in cylinder block (15). Refer to Disassembly and Assembly, "Camshaft - Install" for more information.
5. Install Tooling (B) to cylinder block (15). Refer to Illustration 2.
6. Align a new gasket (13) with Tooling (B). Install the gasket to cylinder block (15).

**Note:** Ensure that two circular Tabs (X) on the gasket are engaged in two Holes (Y) in cylinder block (15). Ensure that dowel (17) in cylinder block (15) is engaged on the gasket.

7. Install Tooling (C) to cylinder block (15).
  8. Install the front housing over Tooling (B) and Tooling (C) onto cylinder block (15).
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Illustration 3

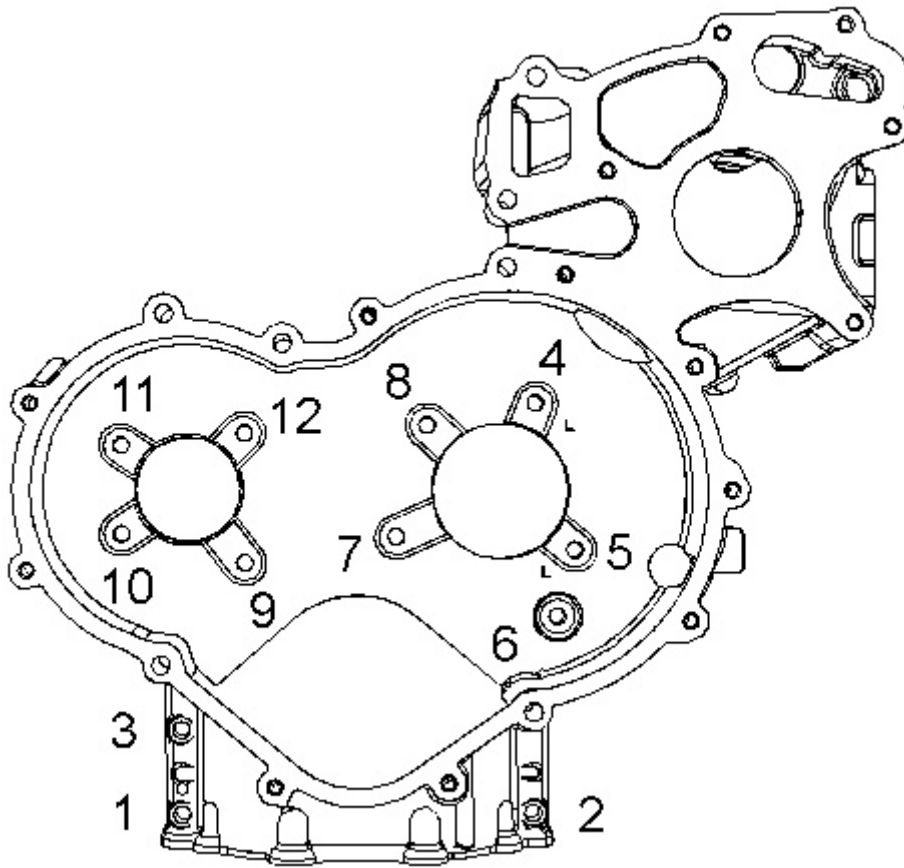
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(10) M8 by 20 mm

(11) M8 by 35 mm

(12) M8 by 25 mm

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Illustration 4

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9. Install bolts (12) to front housing (7) finger tight.
  10. Remove Tooling (B).
  11. Loosely install bolts (10) and bolts (11). Refer to Illustration 3 for the correct position of the bolts.
  12. Tighten bolts (10), bolts (11) and bolts (12) in the sequence that is shown in Illustration 4 to a torque of 28 N·m (248 lb in).
  13. Remove Tooling (C) from the cylinder block.
-

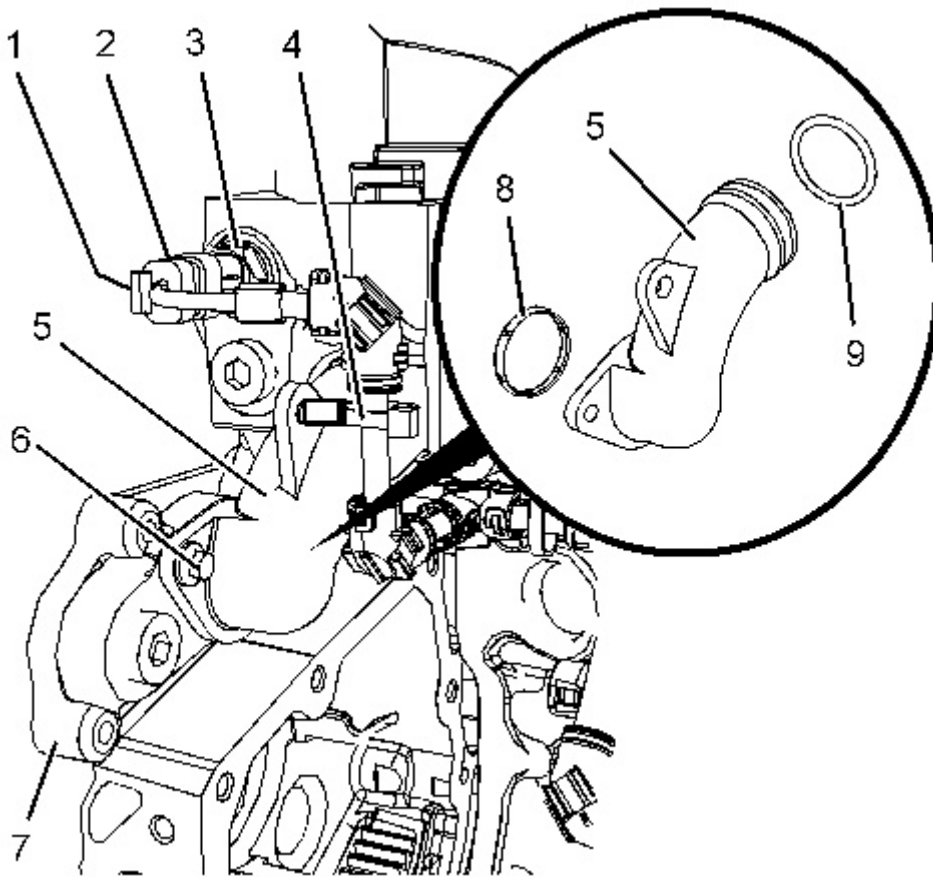


Illustration 5

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14. Install a new O-ring seal (8) and a new O-ring seal (9) to bypass tube (5). Use Tooling (D) in order to lubricate the O-ring seals.
15. Install bypass tube (5) to the cylinder head. Install bolts (6). Tighten the bolts to a torque of 9 N·m (80 lb in).
16. Connect harness assembly (2) to coolant temperature sensor (3).
17. Slide locking tab (1) (not shown) into the locked position.
18. Position harness assembly (2) onto bypass tube (5). Install a new cable strap (4).

**Note:** Ensure that the cable strap meets Original Equipment Manufactures (OEM) specification.

**End By:**

- a. Install the fuel injection pump. Refer to Disassembly and Assembly, "Fuel Injection Pump - Install" for the correct procedure.
- b. Install the timing gears. Refer to Disassembly and Assembly, "Gear Group (Front) - Install" for the correct procedure.
- c. If the engine has an accessory drive, install the accessory drive. Refer to Disassembly and Assembly, "Accessory Drive - Remove and Install" for the correct procedure.

- d. Install the engine oil pan plate. Refer to Disassembly and Assembly, "Engine Oil Pan Plate - Remove" for the correct procedure.
  - e. Install the crankshaft pulley. Refer to Disassembly and Assembly, "Crankshaft Pulley - Install" for the correct procedure.
  - f. Install the water pump. Refer to Disassembly and Assembly, "Water Pump - Install" for the correct procedure.
  - g. Install the fan. Refer to Disassembly and Assembly, "Fan - Remove and Install" for the correct procedure.
  - h. Fill the cooling system with coolant. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Fill" for the correct procedure.
-

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Model: CS-76B VIBRATORY COMPACTOR CB7

Configuration: CS76B, CS78B Vibratory Soil Compactor CB700001-UP (MACHINE) POWERED BY C4.4 Engine

## Disassembly and Assembly C4.4 Engines for Caterpillar Built Machines

Media Number -UENR4516-11

Publication Date -01/06/2015

Date Updated -29/10/2018

i05820296

# Accessory Drive - Remove and Install - Accessory Drive SAE "A"

SMCS - 1207-010

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	8H-0663	Bearing Puller	1
	5F-7345	Puller	1
	126-7183	Crossblock	1
	126-7177	Puller Leg	2

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### NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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### NOTICE

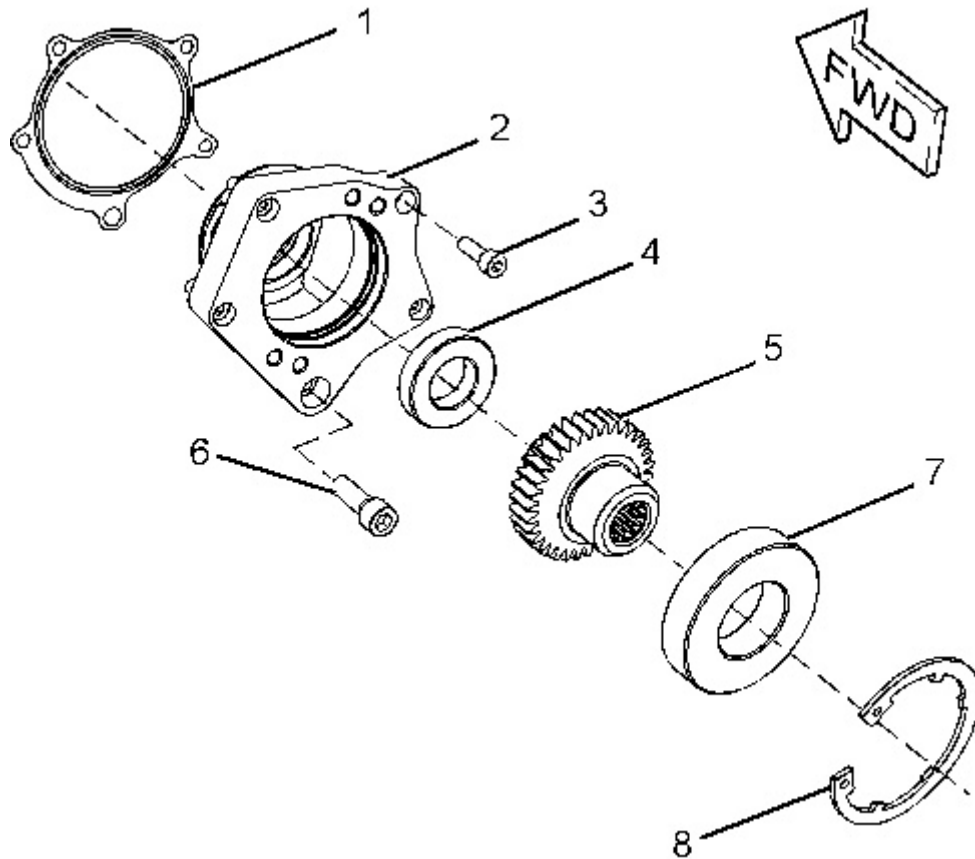
**Care must be taken to ensure that fluids are contained during performance of inspection, maintenance, testing, adjusting and repair of the product. Be prepared to collect the fluid with suitable containers**



**before opening any compartment or disassembling any component containing fluids.**

**Dispose of all fluids according to local regulations and mandates.**

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Illustration 1

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Typical example

1. Remove allen head screw (3) from accessory drive housing (2). Remove allen head screws (6) from accessory drive housing (2).
2. Remove accessory drive housing (2) from the front housing.
3. If necessary, follow Step 3.a through Step 3.c in order to disassemble the accessory drive.
  - a. Remove circlip (8) from accessory drive housing (2).
  - b. Place accessory drive housing (2) onto a suitable support. Press the assembly of gear (5) and bearing (7) and bearing (4) out of accessory drive housing (2). Use Tooling (A) in order to remove bearing (7) and bearing (4) from gear (5).
  - c. Remove gasket (1) from accessory drive housing (2).

# Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
B	7M-7456	Bearing Mount Compound	-
C	9S-3263	Thread Lock Compound	1

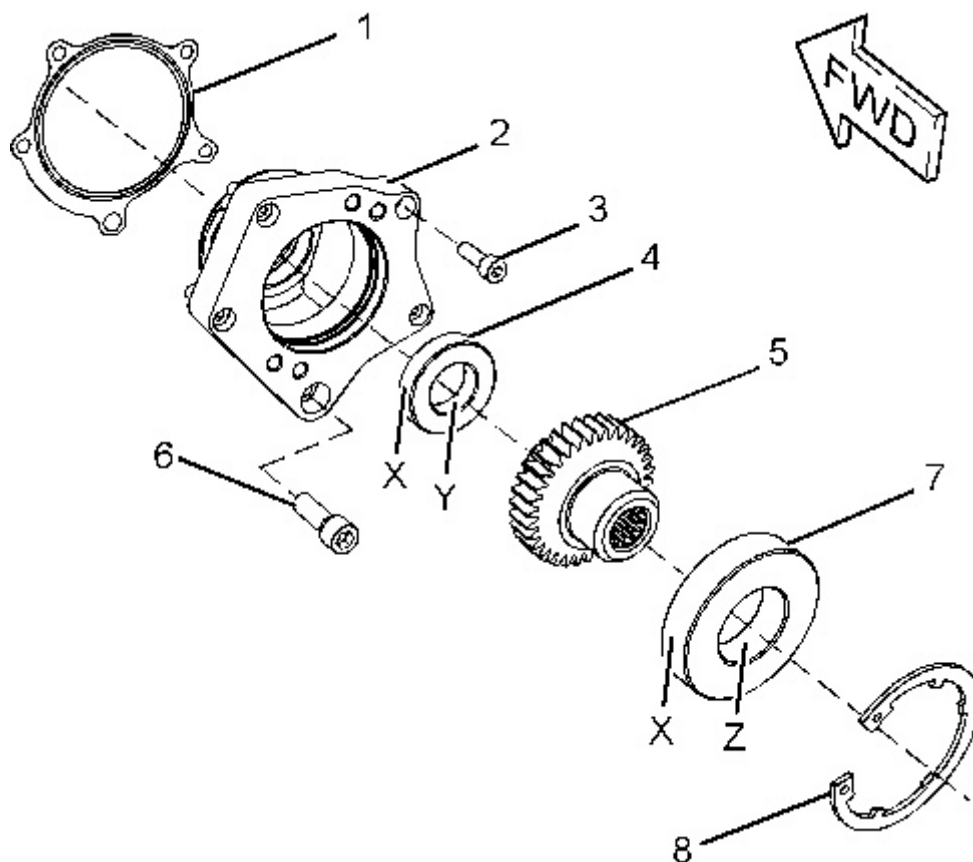
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## NOTICE

**Keep all parts clean from contaminants.**

**Contaminants may cause rapid wear and shortened component life.**

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Illustration 2  
Typical example

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1. If necessary, follow Step 1.a through Step 1.e in order to assemble the accessory drive.

- a. Inspect the condition of the teeth and the splines of gear (5) for wear and damage. Inspect bearing (7), bearing (4), and circlip (8). Inspect the front housing for wear and damage. Replace any components that are worn or damaged.
  - b. Apply a small continuous bead of Tooling (B) to inner Surface (Y) of bearing (4). Place the gear shaft on a suitable support. Press on the inner race of bearing (4) until bearing (4) is against the shoulder of gear (5). Remove any excess compound.
  - c. Apply a small continuous bead of Tooling (B) to inner Surface (Z) of bearing (7). Place the inner race of bearing (7) onto a suitable support. Press the shaft of gear (5) into bearing (7) until the shoulder of the gear is against the bearing. Remove any excess compound.
  - d. Apply a small continuous bead of Tooling (B) to the outer Surface (X) of bearing (7) and bearing (4). Place accessory drive housing (2) on a suitable support. Press the assembly of the gear into the accessory drive housing. Ensure that bearing (4) is against the front face of the recess in accessory drive housing (2). Remove any excess compound.
  - e. Install circlip (8) into the groove in accessory drive housing (2). Ensure that circlip (8) is correctly positioned in the groove.
2. Install gasket (1) to accessory drive housing (2).
  3. Inspect the bore in the front housing for damage. If necessary, replace the front housing. Refer to Disassembly and Assembly, "Housing (Front) - Remove" and Disassembly and Assembly, "Housing (Front) - Install" for the correct procedure.
  4. Lightly lubricate bearing (7), bearing (4), and gear (5) with clean engine lubricating oil. Install the assembly of the accessory drive to the front housing. Ensure that the flange on the accessory drive housing is flush with the front housing.
  5. Install new M8 allen head screws (3) to accessory drive housing (2). Tighten the allen head screws to a torque of 22 N·m (195 lb in).
  6. Install a new M12 allen head screw (6) to accessory drive housing (2). Tighten the allen head screw (6) to a torque of 78 N·m (58 lb ft).
  7. Ensure that there is tactile backlash between the idler gear and the accessory drive gear.
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Configuration: CS76B, CS78B Vibratory Soil Compactor CB700001-UP (MACHINE) POWERED BY C4.4 Engine

## Disassembly and Assembly C4.4 Engines for Caterpillar Built Machines

Media Number -UENR4516-11

Publication Date -01/06/2015

Date Updated -29/10/2018

i05820297

# Accessory Drive - Remove and Install - Accessory Drive SAE "B"

SMCS - 1207-010

## Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	8H-0663	Bearing Puller	1
	5F-7345	Puller	1
	126-7183	Crossblock	1
	126-7177	Puller Leg	2

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### NOTICE

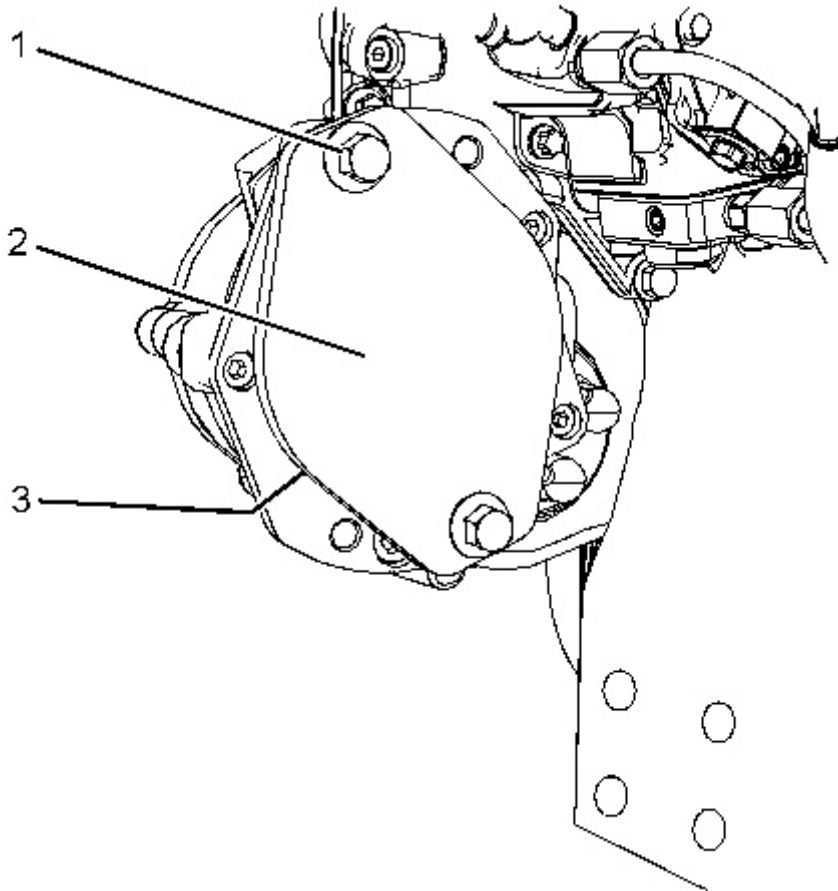
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**Dispose of all fluids according to local regulations and mandates.**

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1. If necessary, remove the OEM driven equipment from the auxiliary drive.
- 

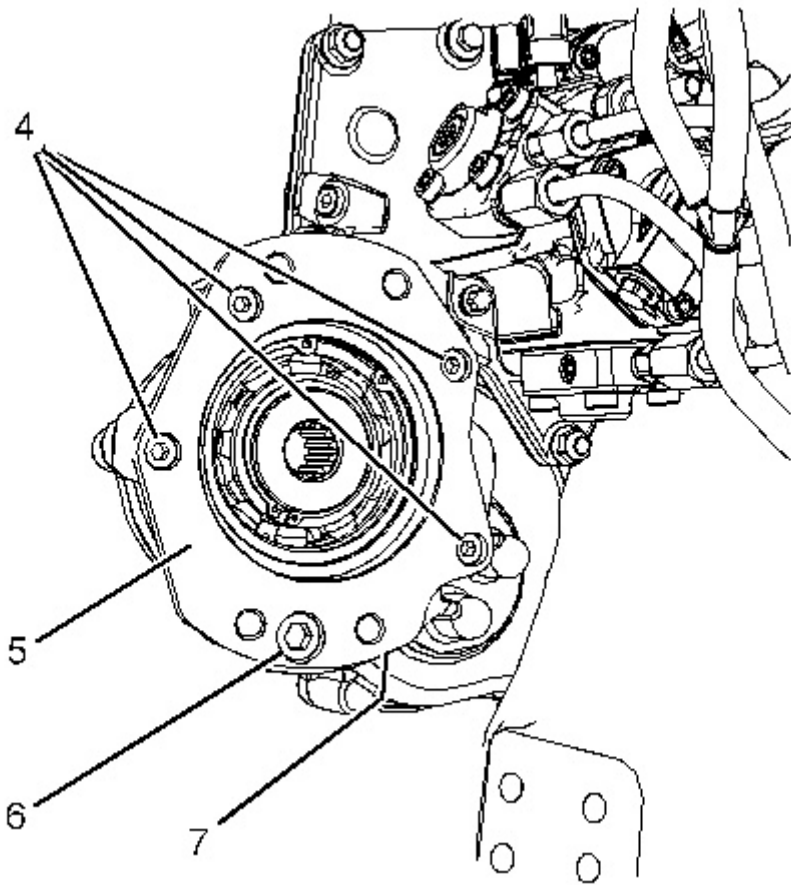


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Illustration 1

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Illustration 2

g02418257

2. If OEM driven equipment has not been installed to the auxiliary drive, remove bolts (1). Remove cover plate (2) and remove gasket (3) (not shown).
  3. Remove allen head screws (4) from accessory drive housing (5). Remove allen head screw (6) from accessory drive housing (5).
  4. Remove accessory drive housing (5) from the front housing.
  5. Remove gasket (7) from accessory drive housing (5).
-

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