

Product: TRUCK

Model: 777D TRUCK AGC

Configuration: 777D Off-Highway Truck AGC00001-UP (MACHINE) POWERED BY 3508B Engine

## Disassembly and Assembly

### 3500 and 3500B High Displacement Engines for Caterpillar Built Machines

Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i02431993

## Engine Oil Filter Base - Install

SMCS - 1306-012

### Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	138-7573	Link Bracket	2
B	187-2718	Filter Wrench Assembly	1

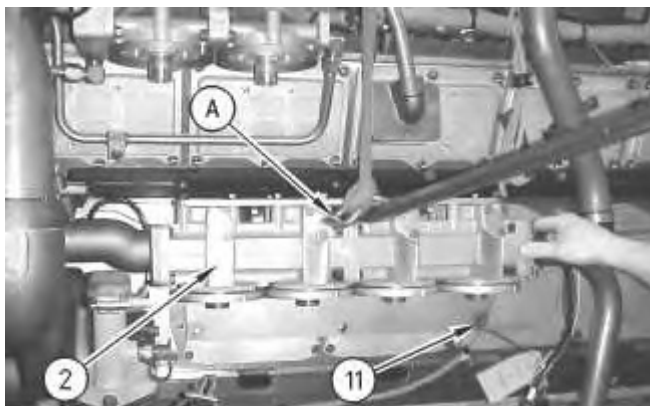


Illustration 1

g00891483

1. Use Tooling (A), a suitable lifting device, and a pry bar to position oil filter base (2). Install bolts (11). The weight of oil filter base (2) is approximately 55 kg (120 lb).



Illustration 2

g00891476

2. Install bolts (10).



Illustration 3

g00891470

3. Install oil filters (9) with Tooling (B). Install harness assembly (8) and connect harness assemblies (7).

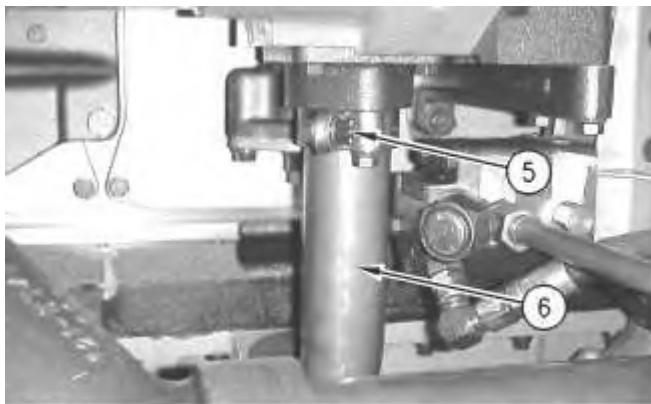


Illustration 4

g00891466

4. Position tube (6) in the oil filter base and tighten bolts (5).



Illustration 5

g00891255

5. Install bolts (3) in oil filter base (2). Install clamps (4).



Illustration 6

g00891250

6. Install fuel filters (1) with Tooling (B).
-

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### **3500 and 3500B High Displacement Engines for Caterpillar Built Machines**

Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i02047059

## **Engine Oil and Water Pump Drive - Remove**

SMCS - 1313-011

### **Removal Procedure**

#### **Start By:**

- a. Remove the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Remove".
- b. Remove the water pump. Refer to Disassembly and Assembly, "Water Pump - Remove".

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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.**

**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.**

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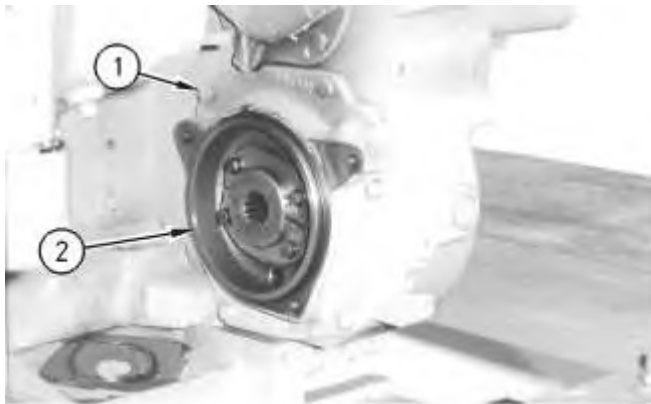


Illustration 1

g00921410

1. Remove bolts (1) and rear adapter assembly (2).

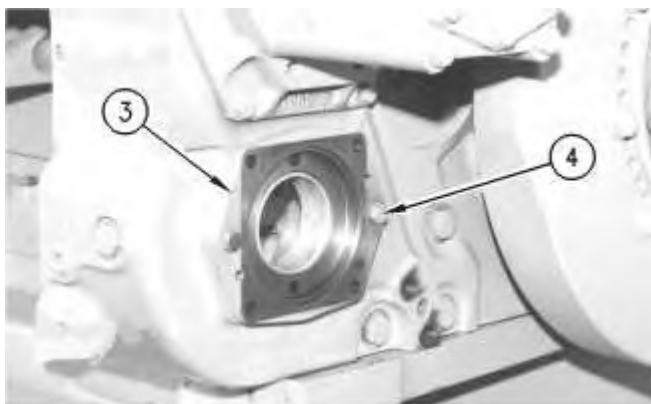


Illustration 2

g00921411

2. Remove bolts (4) and front adapter assembly (3).
-

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Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i02411968

## Engine Oil and Water Pump Drive - Disassemble

SMCS - 1313-015

### Disassembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-0520	Driver Group	1

#### Start By:

- a. Remove the engine oil and water pump drive. Refer to Disassembly and Assembly, "Engine Oil and Water Pump Drive - Remove".

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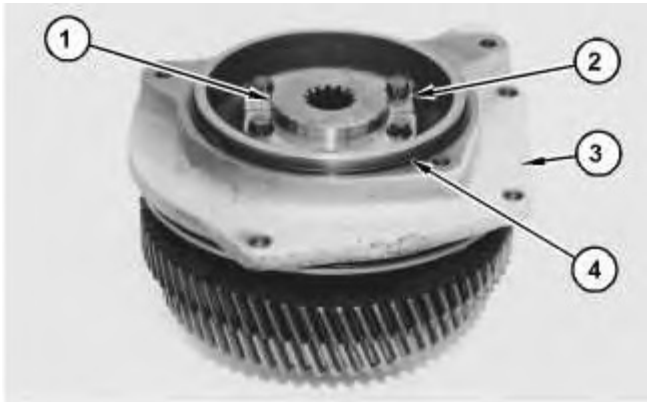


Illustration 1

g01052078

1. Remove O-ring seal (4).
2. Remove bolts and thrust washers (2). Remove rear adapter assembly (3) from shaft assembly (1).



Illustration 2

g00921559

3. Remove O-ring seals (6) and (7) from rear adapter assembly (3).
4. Use Tooling (A) and a suitable press to remove bearing (5).

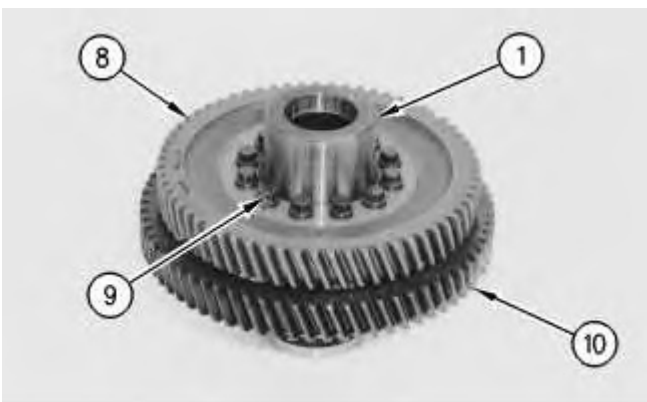


Illustration 3

g00921574

5. Remove bolts (9) from shaft assembly (1). Remove gears (8) and (10) from shaft assembly (1).

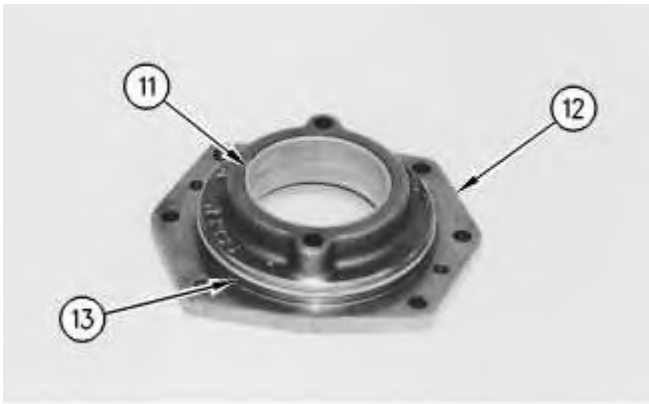


Illustration 4

g00921575

6. Remove O-ring seal (13) from front adapter assembly (12).
  7. Use Tooling (A) and a suitable press to remove bearing (11) from front adapter assembly (12).
-

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## Disassembly and Assembly

### 3500 and 3500B High Displacement Engines for Caterpillar Built Machines

Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i02411970

## Engine Oil and Water Pump Drive - Assemble

SMCS - 1313-016

### Assembly Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	1P-0520	Driver Group	1

**Note:** Check the O-ring seals for wear or damage. Replace the O-ring seals, if necessary.

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### NOTICE

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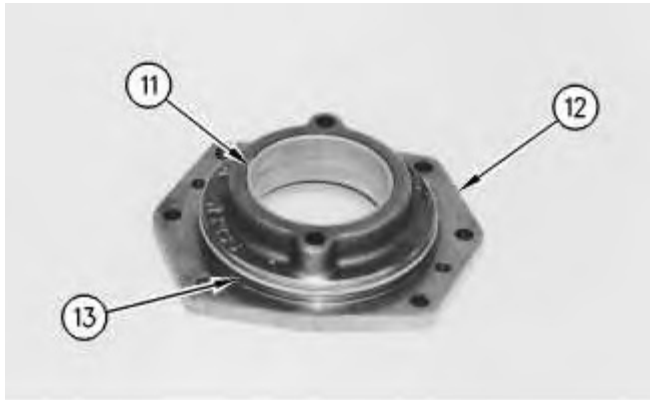


Illustration 1

g00921575

1. Lower the temperature of bearing (11). Use Tooling (A) and a suitable press to install bearing (11) in front adapter assembly (12). The bore in bearing (11) must be  $75.00 \pm 0.06$  mm ( $2.953 \pm 0.002$  inch) after installation.
2. Install O-ring seal (13).

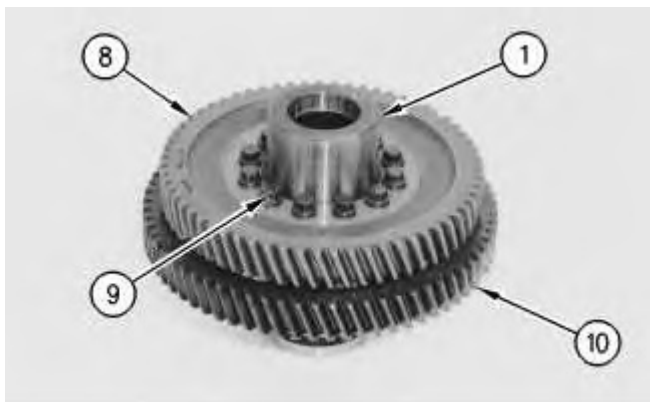


Illustration 2

g00921574

3. Install gears (8) and (10) on shaft assembly (1).
4. Install bolts (9).



Illustration 3

g00921559

5. Lower the temperature of bearing (5). Align the oil hole in bearing (5) with the oil hole that is in rear adapter assembly (3). Use Tooling (A) and a suitable press to install bearing (5).
6. Ensure that bearing (5) does not extend above the surface of rear adapter assembly (3). The bore in bearing (5) must be  $75.00 \pm 0.06$  mm ( $2.953 \pm 0.002$  inch) after installation.
7. Install O-ring seals (6) and (7) on rear adapter assembly (3).

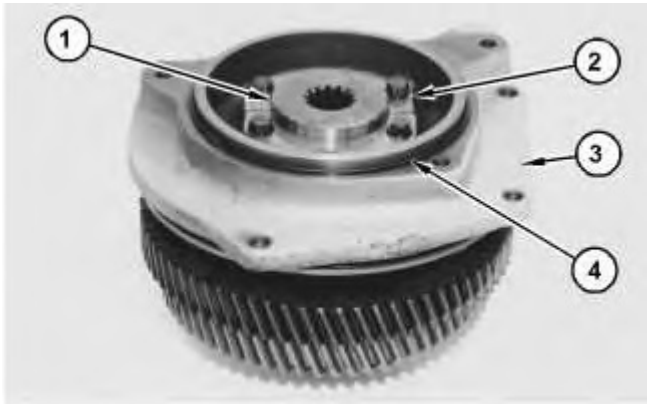


Illustration 4

g01052078

8. Install rear adapter assembly (3) on shaft assembly (1).
9. Install bolts and thrust washers (2).
10. Install O-ring seal (4) on rear adapter assembly (3).

**End By:**

- a. Install the engine oil and water pump drive. Refer to Disassembly and Assembly, "Engine Oil and Water Pump Drive - Install".
-

Product: TRUCK

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Configuration: 777D Off-Highway Truck AGC00001-UP (MACHINE) POWERED BY 3508B Engine

## Disassembly and Assembly

### 3500 and 3500B High Displacement Engines for Caterpillar Built Machines

Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i02047064

## Engine Oil and Water Pump Drive - Install

SMCS - 1313-012

### Installation Procedure

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#### NOTICE

**Keep all parts clean from contaminants.**

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

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1. Ensure that the O-ring seals are installed in the grooves of the adapter assemblies. Also apply clean engine oil to the seals.

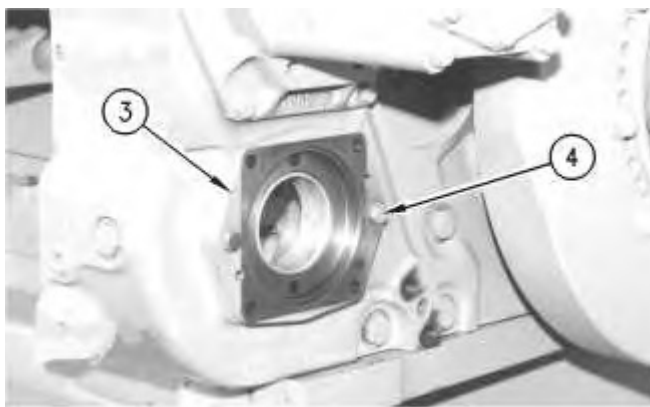


Illustration 1

g00921411

2. Install front adapter assembly (3) and bolts (4).
-



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Illustration 2

g00921410

3. Install rear adapter assembly (2) and bolts (1).

**End By:**

- a. Install the water pump. Refer to Disassembly and Assembly, "Water Pump - Install".
  - b. Install the engine oil pump. Refer to Disassembly and Assembly, "Engine Oil Pump - Install".
-

Product: TRUCK

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## **Disassembly and Assembly**

### **3500 and 3500B High Displacement Engines for Caterpillar Built Machines**

Media Number -SEN1126-33

Publication Date -01/07/2015

Date Updated -14/09/2018

i04995526

## **Engine Oil Pan - Remove**

SMCS - 1302-011

### **Removal Procedure**

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

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1. Drain the engine oil into a suitable container for storage or for disposal. Refer to the Operation and Maintenance Manual, "Capacities (Refill)" for the oil capacity.

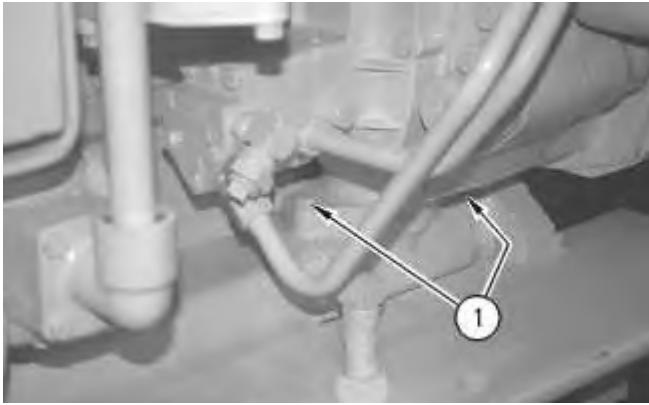


Illustration 1

g00921655

Typical Example

2. Remove bolts (1) that hold the connector for the oil pump to the oil pan.

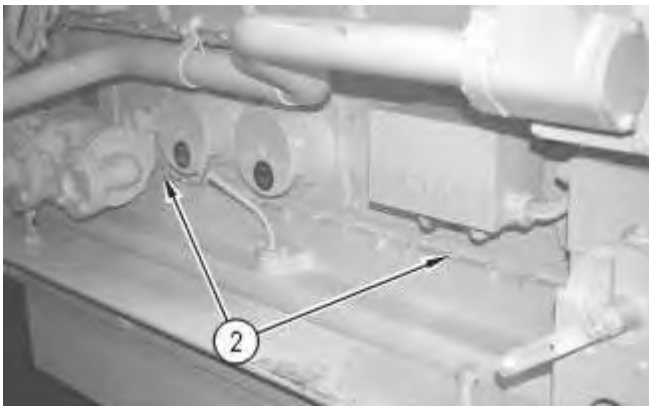


Illustration 2

g00921656

Typical Example

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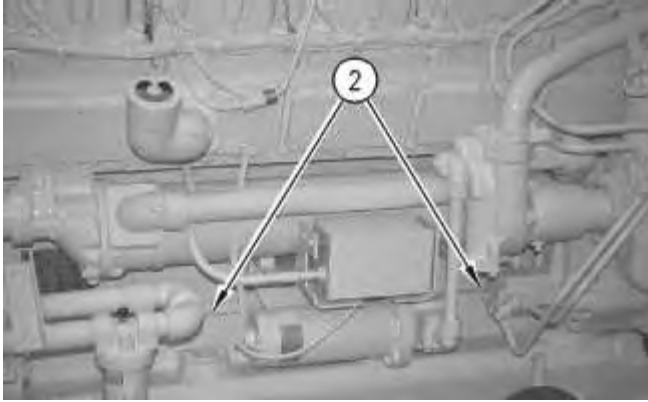


Illustration 3

g00604419

Typical Example

3. Remove bolts (2) that connect the oil pan to the engine.



**Improper lift rigging can allow unit to tumble causing injury and damage.**

**Note:** If improper equipment is used to lift the engine, injury and damage can occur. Use cables or chains that are properly rated for the weight. Use a spreader bar and attach the cables or chains according to the information that is on the lifting film for the engine.



Illustration 4

g00604420

Typical Example

4. Attach a suitable lifting device to the engine lifting eyes.

- The weight of the 3508 Engine is approximately 4445 kg (9800 lb). The weight of the oil pan is approximately 240 kg (530 lb).
- The weight of the 3512 Engine is approximately 5900 kg (13,000 lb). The weight of the oil pan is approximately 295 kg (650 lb).
- The weight of the 3516 Engine is approximately 7711 kg (17,000 lb). The weight of the oil pan is approximately 409 kg (900 lb).

5. Lift the engine from the oil pan.

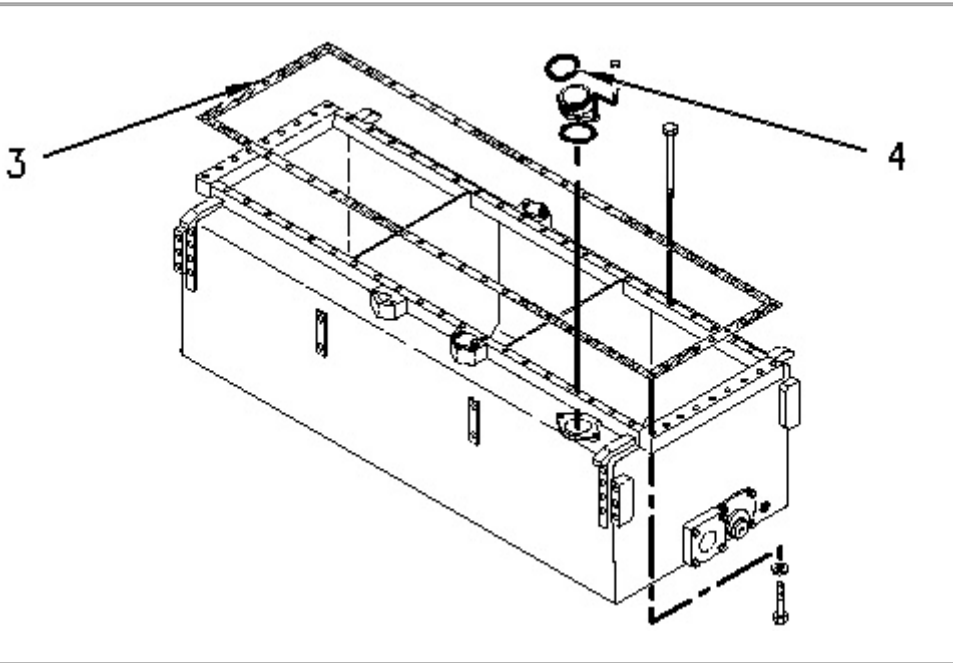


Illustration 5

g00604494

Typical Example

6. Remove gasket (3) and O-ring seal (4) .

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i02047084

## Engine Oil Pan - Disassemble

SMCS - 1302-015

### Disassembly Procedure

#### Start By:

- a. Remove the engine oil pan. Refer to Disassembly and Assembly, "Engine Oil Pan - Remove".

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#### NOTICE

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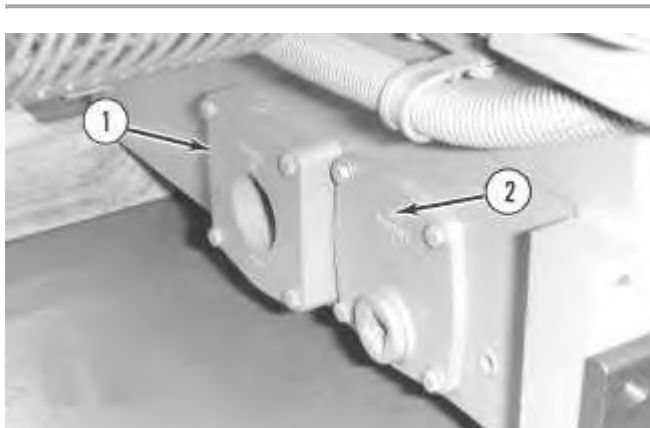


Illustration 1

g00590183



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1. Remove covers (1) and (2). Also remove the O-ring seals.

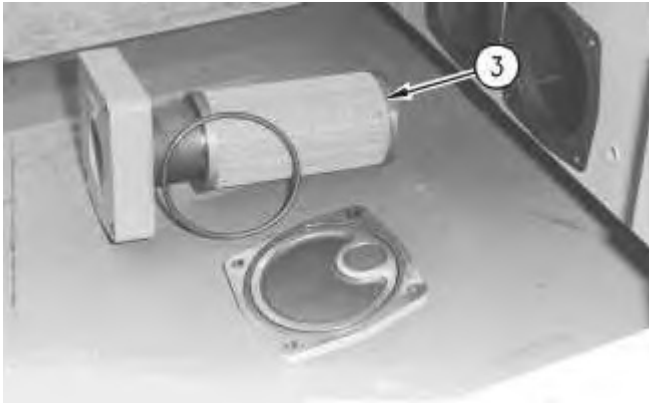


Illustration 2

g00921661

2. Remove screen assembly (3).

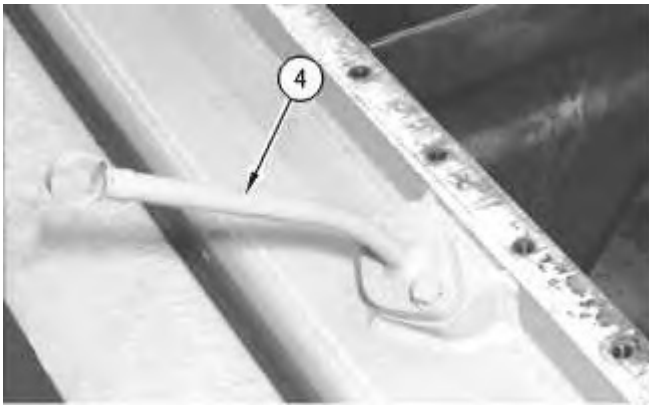


Illustration 3

g00921665

3. Remove the bolts and engine oil level gauge (4).

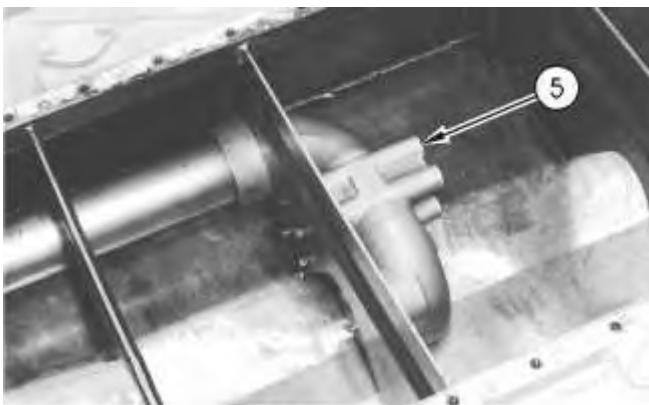


Illustration 4

g00921672

4. Remove the bolts that hold bell (5) on the engine oil pan. Remove bell (5) from the tube assembly.

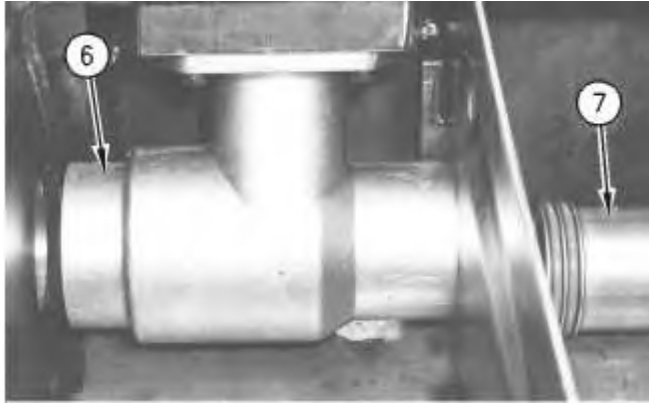


Illustration 5

g00921673

5. Pull tube assembly (7) from housing (6).
  6. Remove the bolts and housing (6).
  7. Remove tube assembly (7) and the O-ring seals.
-

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