

Product: COMPACTOR

Model: CB-22B COMPACTOR 419

Configuration: CB22B Compactor 41900001-UP (MACHINE)

## **Disassembly and Assembly**

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

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02736050

## **Fuel Injection Lines - Remove and Install**

SMCS - 1252-010

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

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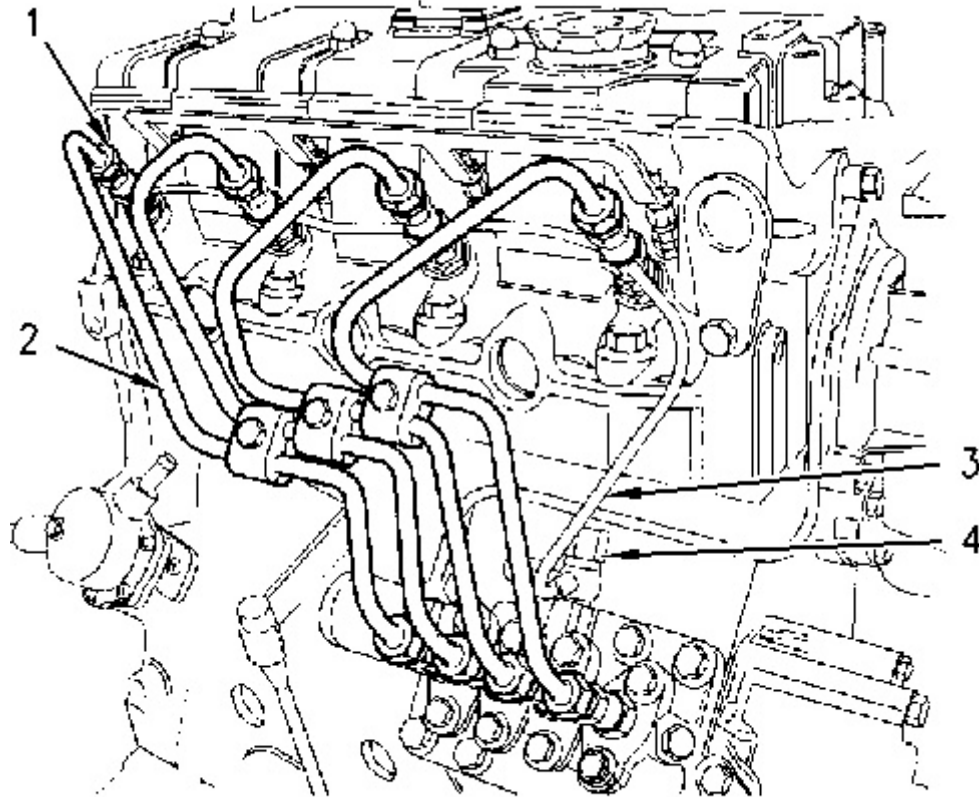
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#### **NOTICE**

**Do not let the tops of fuel nozzles turn when the fuel line nuts are loosened or tightened.**

**The nozzles will be damaged if the top of the nozzle turns in the body.**

**The engine will be damaged if a defective fuel injection nozzle is used because the shape of fuel (spray pattern) that comes out of the nozzles will not be correct.**



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Illustration 1  
Typical example

g00818680

1. Disconnect the union nuts (1) for the fuel injection lines (2) from the fuel injection nozzles.
2. Disconnect the union nuts (1) for the fuel injection lines (2) from the fuel injection pump.
3. Remove the fuel injection lines (2) from the engine as a unit.

**Note:** Place identification marks on all tube assemblies for installation. Plug all tube assemblies in order to prevent contamination.

4. Install suitable plastic plugs to the outlet connections of the fuel injection pump.
5. Disconnect the union nut from the banjo piece.

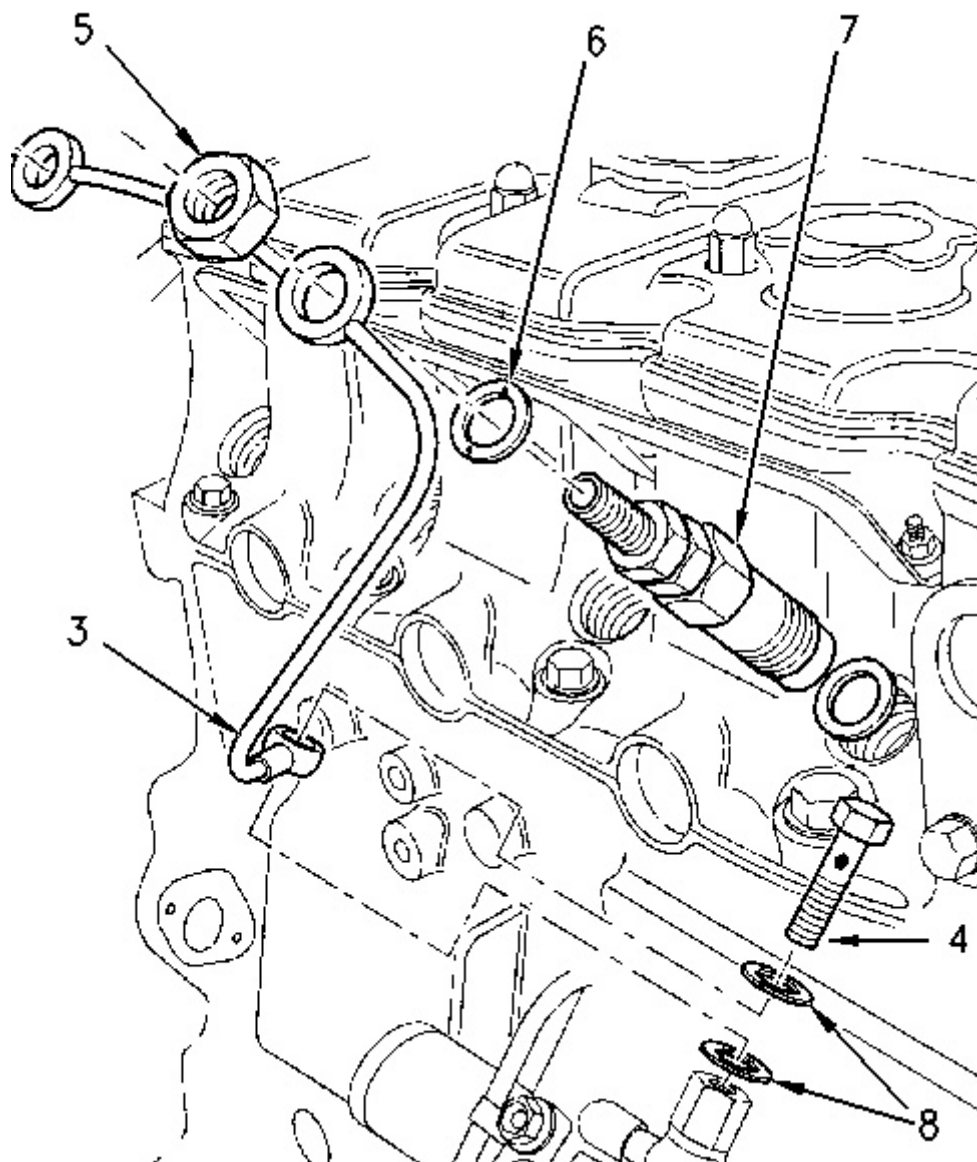


Illustration 2  
Typical example

g00824793

6. Remove the nut (5) from the fuel injection nozzles (7).
7. Remove the fuel return line (3) from the engine and remove washers (6) from the fuel injection nozzles (7). Discard the washers.
8. Install suitable plastic plugs to the fuel injection nozzles.

## Installation Procedure

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### NOTICE

**Keep all parts clean from contaminants.**

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

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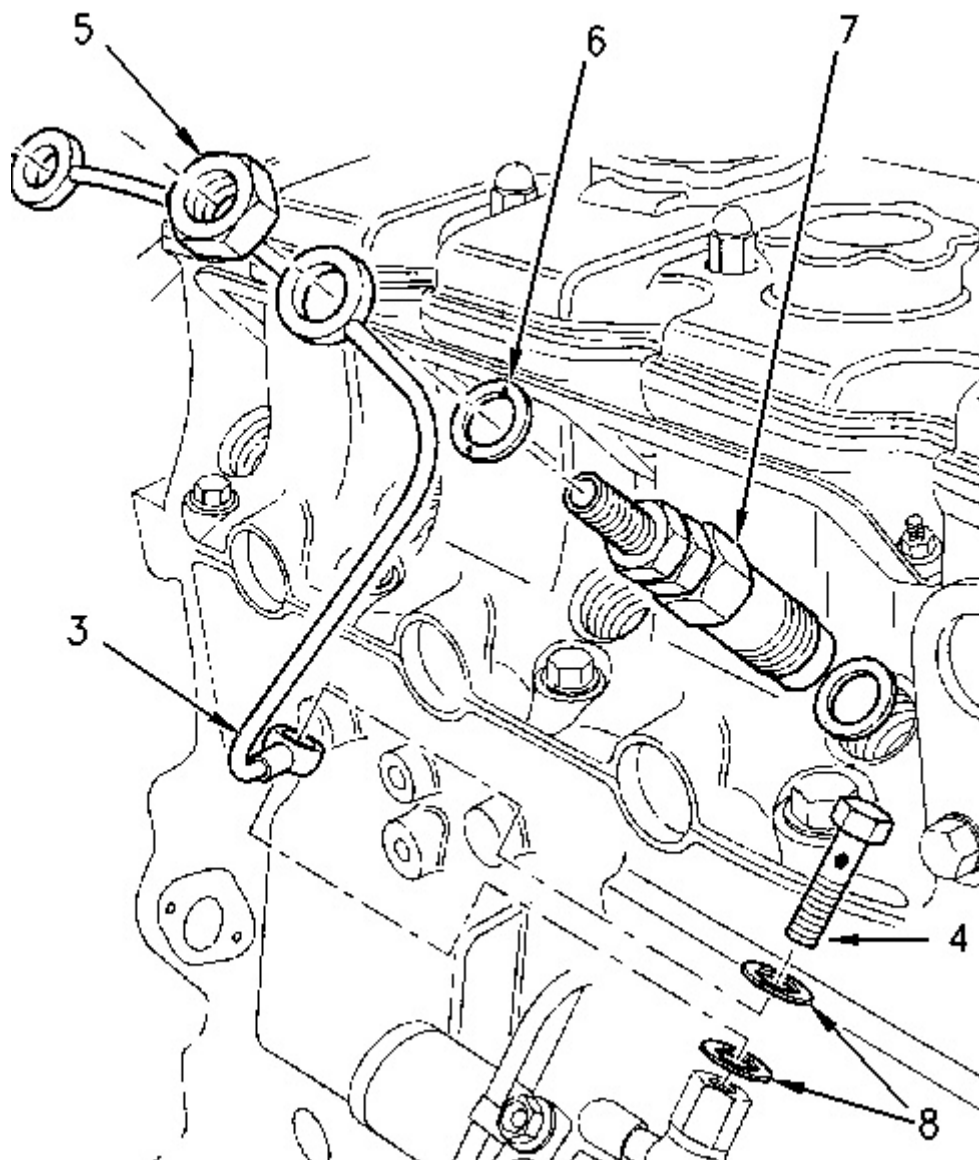
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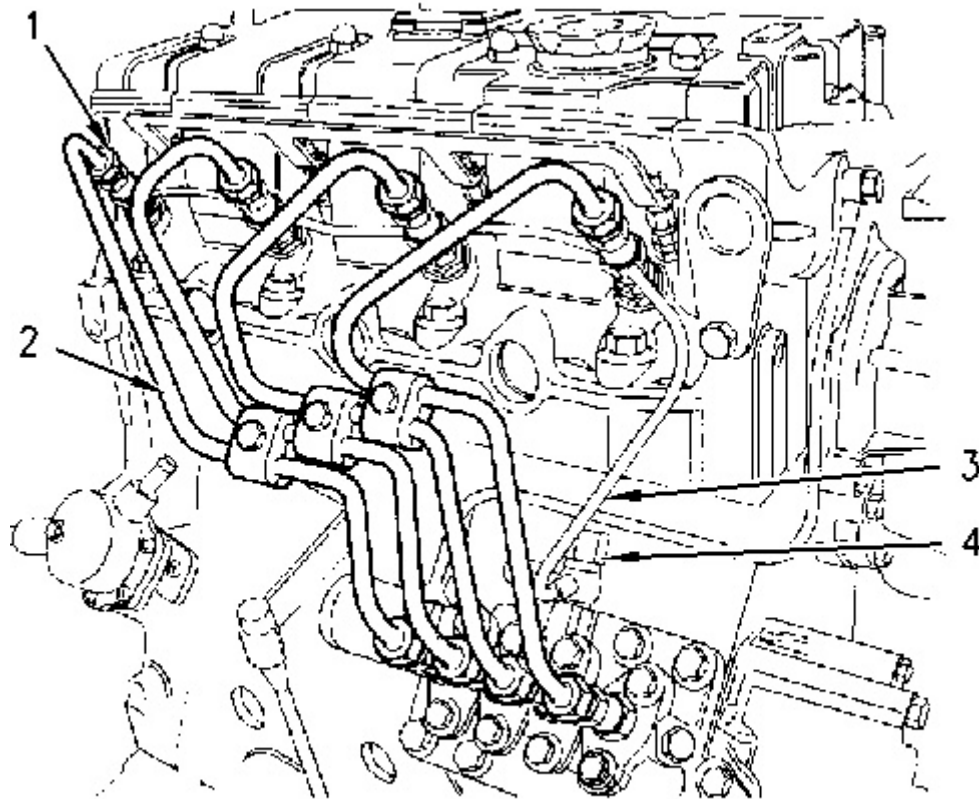


Typical example

1. Remove the plastic plugs from the fuel injection nozzles (7). Install new washers (6) to the fuel injection nozzles (7) and install the fuel return line (3) to the fuel injection nozzles.

**Note:** The washers (6) have two small holes.

2. Install the nuts (5) to the fuel injection nozzles (7).
3. Connect the fuel return hose to the banjo piece and tighten the union nut.
4. Tighten the nuts (5) to a torque of 27 N·m (20 lb ft).



Typical example

5. Remove the plastic plugs from the fuel injection lines (2) and remove the plastic plugs from the outlet connections of the fuel injection pump. Install the fuel injection lines to the engine as a unit.
6. Connect the fuel injection lines (2) to the fuel injection pump.
7. Connect the fuel injection lines (2) to the fuel injection nozzles (7).
8. Tighten the union nuts (1) to a torque of 23 N·m (17 lb ft).

9. Prime the fuel system. Refer to Systems Operation, Testing and Adjusting, "Fuel System - Prime" for more information.

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Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02736063

## **Fuel Injection Nozzles - Remove**

SMCS - 1254-011

### **Removal Procedure**

#### **Start By:**

- a. Remove the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".

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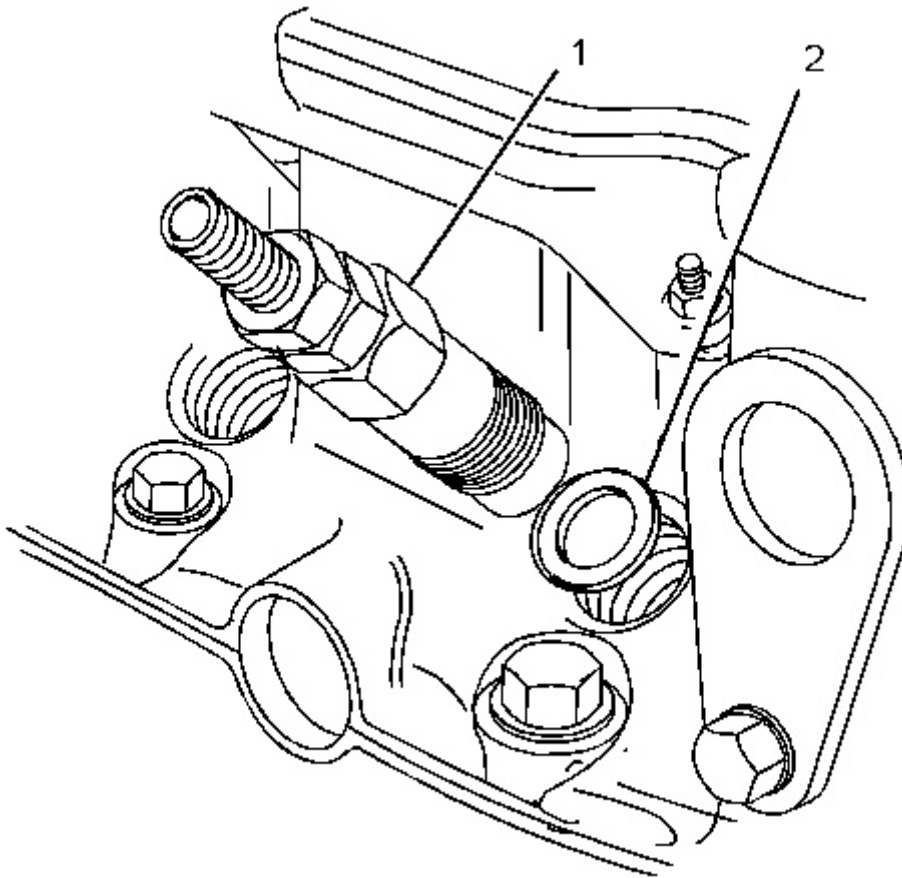
#### **NOTICE**

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

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Illustration 1  
Typical example

g01371922

1. Use a deep socket to remove the fuel injection nozzle (1) from the cylinder head.
  2. Remove the seat washers (2) from the cylinder head.  
Discard the old seat washers.
  3. Cap all openings or plug all openings immediately after disassembly.
-

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

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02736070

# Fuel Injection Nozzles - Install

SMCS - 1254-012

## Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	239-3312	Sealant	1

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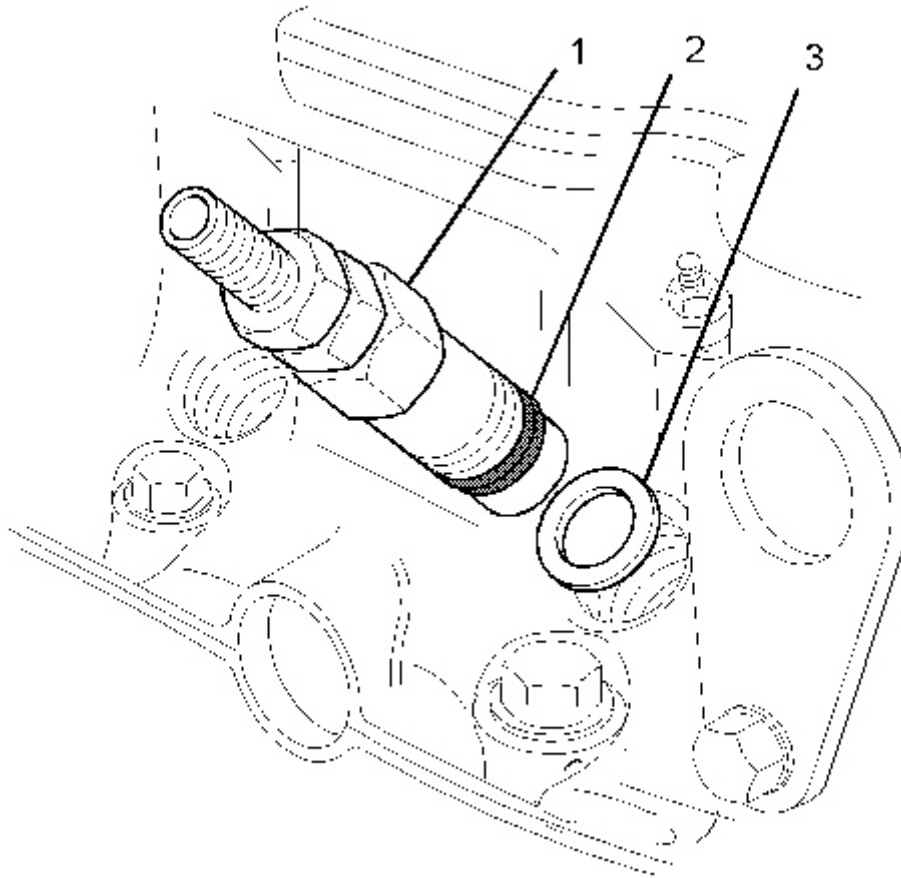
### NOTICE

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Illustration 1

g01113718

Typical example

1. Clean the bore for the fuel injection nozzle in the cylinder head. Ensure that no debris enters the cylinder. Clean the threads on the body of the fuel injection nozzle.
2. Install new seat washers (3) into the bore for the fuel injection nozzle in the cylinder head.
3. Apply a bead of **239-3312 Sealant** (2) to the first two threads of the fuel injection nozzle that engage into the cylinder head. The bead of sealant should have a diameter of 2 mm (0.08 inch) and a length of 6 mm (0.25 inch).

**Note:** Ensure that the sealant does not cover the body of the fuel injection nozzle below the threads.

4. Install the fuel injection nozzle (1) into the cylinder head. Use a deep socket to tighten the fuel injection nozzle to a torque of 64 N·m (47 lb ft).

**Note:** If a new fuel injection nozzle has been installed, do not make any adjustments to the engine controls. Refer to Systems Operation, Testing and Adjusting, "Engine Speed - Check" for more information.

**End By:**

- a. Install the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".
-

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## **Disassembly and Assembly C1.1, C1.5 and C2.2 Engines for Caterpillar Built Machines**

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02236483

# **Fuel Shutoff Solenoid - Remove and Install**

SMCS - 1259-010

## **Removal Procedure**

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### **NOTICE**

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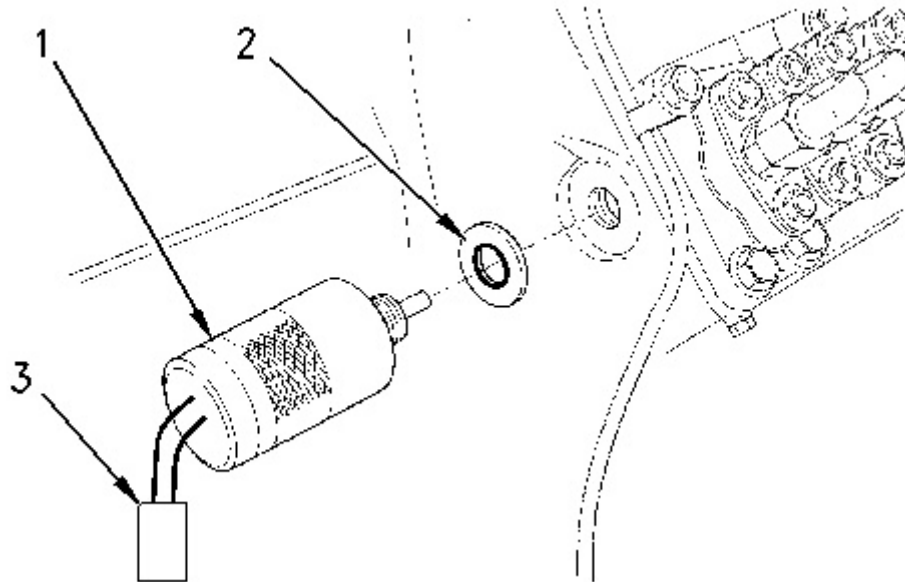


Illustration 1

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1. Disconnect electrical connections (3) to the fuel shutoff solenoid (1). Mark all connections for later installation.
2. Remove fuel shutoff solenoid (1) from the fuel injection pump housing by rotating the fuel shutoff solenoid in a counterclockwise direction.
3. Remove the O-ring (2) from fuel shutoff solenoid (1).

## Installation Procedure

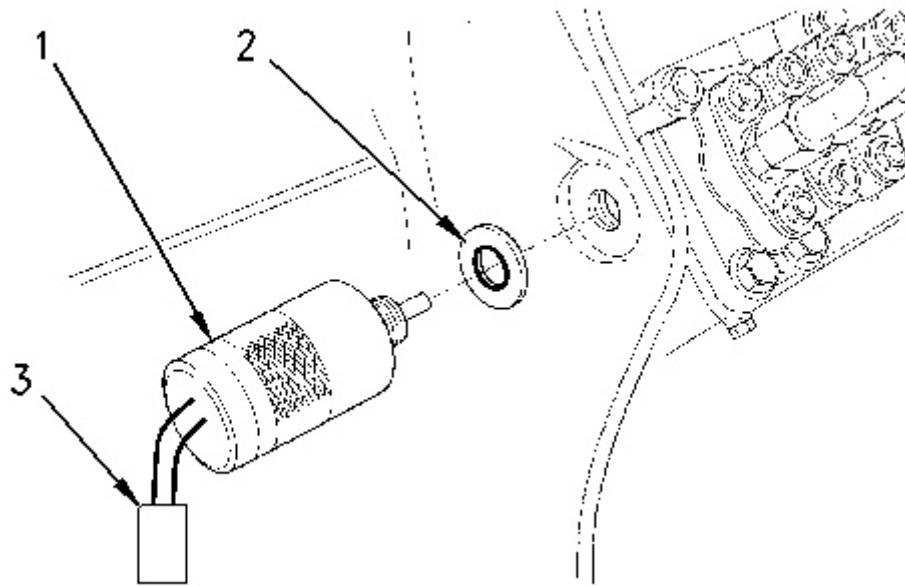
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Illustration 2

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1. Check the condition of O-ring seal (2). If the O-ring seal is worn or damaged use a new part for replacement.
  2. Install fuel shutoff solenoid (1) into the fuel injection pump housing by rotating the fuel shutoff solenoid in a clockwise direction. Tighten the fuel shutoff solenoid to a torque of 17 N·m (12 lb ft).
  3. Reconnect electrical connection (3) to fuel shutoff solenoid (1) before you operate the engine.
-

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i02736078

## **Fuel Injection Pump - Remove**

SMCS - 1251-011

### **Removal Procedure**

#### **Start By:**

- a. Remove the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".
- b. Remove the fuel shutoff solenoid. Refer to Disassembly and Assembly, "Fuel Shutoff Solenoid - Remove and Install".

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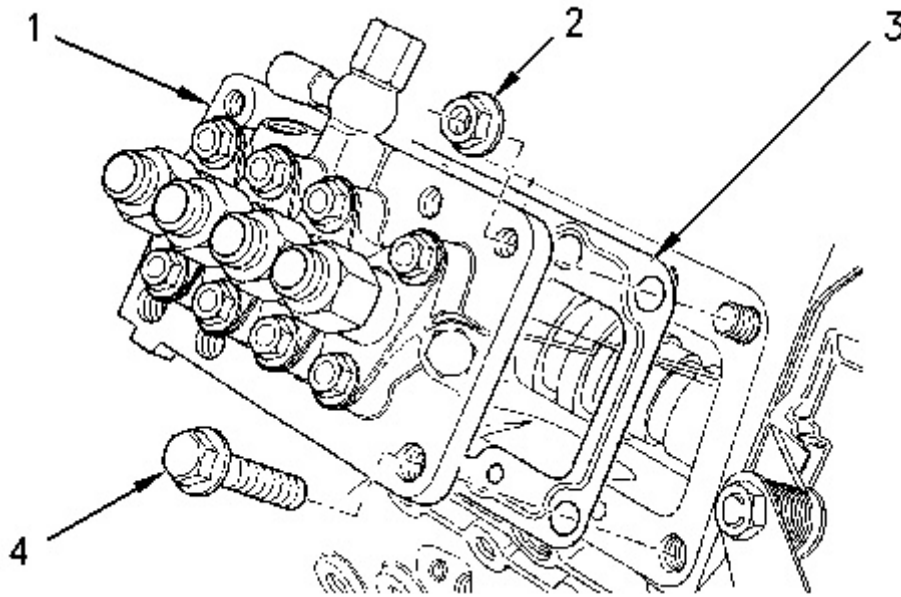


Illustration 1  
Typical example

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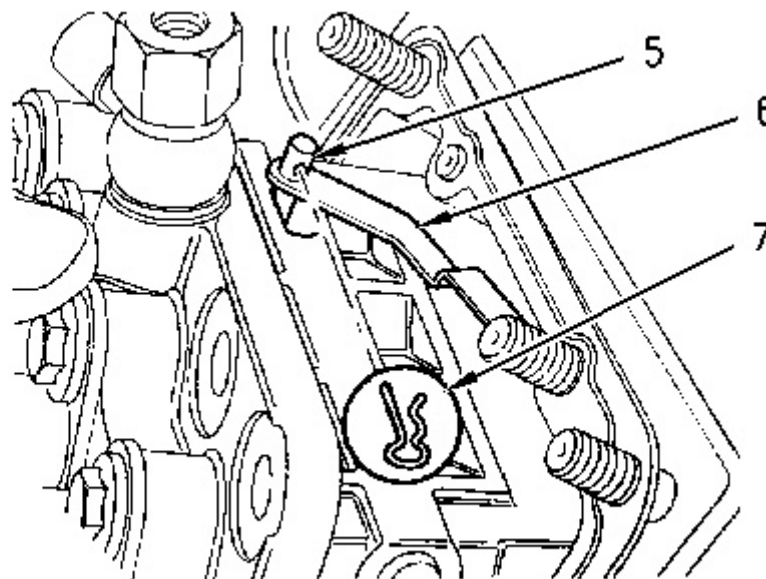


Illustration 2  
Typical example

g00825137

1. Remove the setscrews (4) and the nuts (2) that fasten the fuel injection pump to the cylinder block.

2. Carefully raise the fuel injection pump (1) from the cylinder block and remove the clip (7) that connects the link (6) to the fuel rack control (5).
3. Remove the fuel injection pump (1) from the cylinder block.
4. Remove the shims (3) from the mounting face of the cylinder block.

**Note:** Record the thickness of each shim and the number of shims for reassembly. The fuel injection timing is determined by the thickness of the shim pack that is between the fuel injection pump and the mounting face on the cylinder block. For more information on the fuel injection pump, refer to Specifications, "Fuel Injection Pump".

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Product: COMPACTOR

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## **Disassembly and Assembly C1.1, C1.5 and C2.2 Engines for Caterpillar Built Machines**

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02848636

# **Fuel Injection Pump - Install**

SMCS - 1251-012

## **Installation Procedure**

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### **NOTICE**

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1. Clean the mounting face of the fuel injection pump on the cylinder block. Clean the mating surface of the fuel injection pump.
-

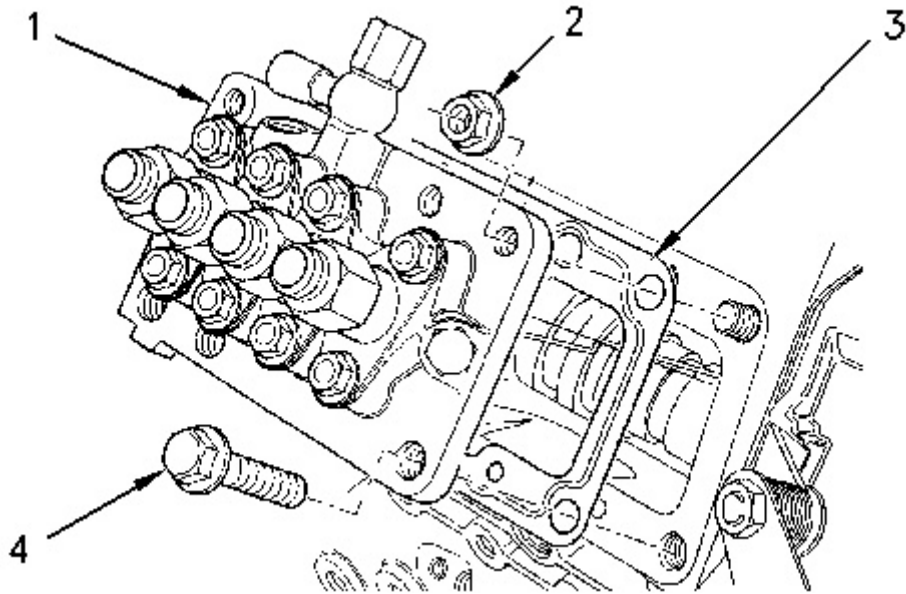


Illustration 1

g00825132

Typical example

2. Install the correct thickness and the correct number of shims (3) on the mounting face of the cylinder block. Refer to Specifications, "Fuel Injection Pump".

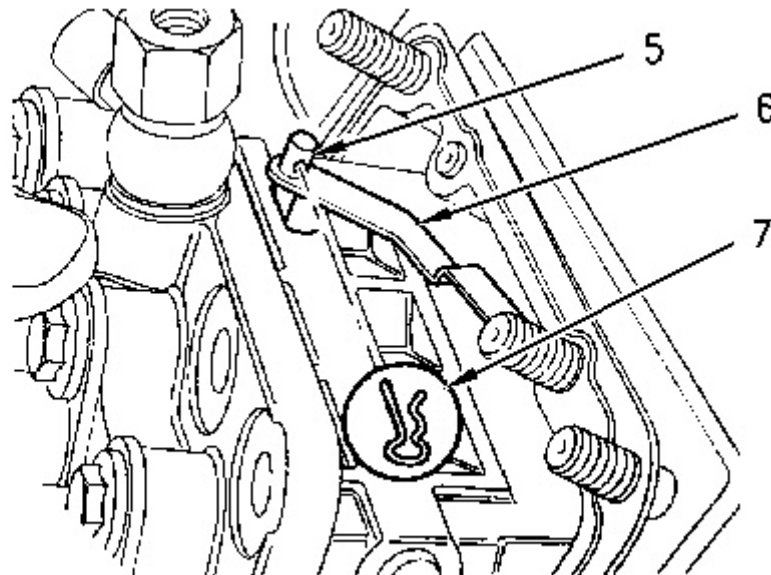


Illustration 2

g00825137

Typical example

3. Position the fuel injection pump (1) close to the mounting face of the cylinder block, and connect the link (6) and the fuel rack control (5) with the clip (7).
4. Put fuel injection pump (1) in position on the mounting face of the cylinder block.
5. Install the setscrews (4) and the nuts (2) that fasten the fuel injection pump to the cylinder block.



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For C1.1 engines, tighten the setscrews (4) and the nuts (2) to a torque of 6 N·m (53 lb in).

For C1.5 and C2.2 engines, tighten the setscrews (4) and the nuts (2) to a torque of 15 N·m (11 lb ft).

**End By:**

- a. Install the fuel shutoff solenoid. Refer to Disassembly and Assembly, "Fuel Shutoff Solenoid - Remove and Install".
  - b. Install the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".
-

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

Media Number -KENR8103-03

Publication Date -01/02/2015

Date Updated -09/06/2016

i02848639

# Exhaust Manifold - Remove and Install

SMCS - 1059-010

## Removal Procedure

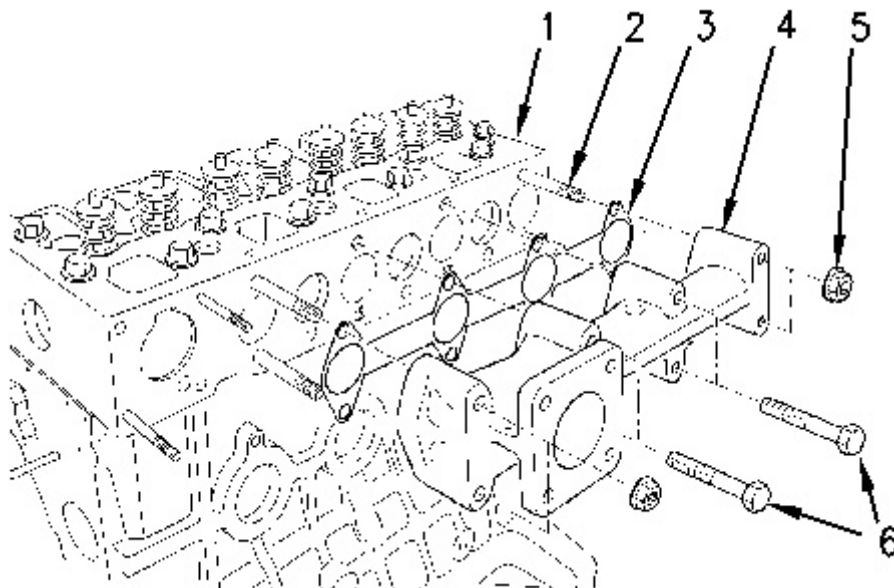
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