

Product: COMPACTOR

Model: CB-34B COMPACTOR 3B4

Configuration: CB34B Compactor 3B400001-UP (MACHINE) POWERED BY C2.2 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

i07360664

## Fuel Injection Pump - Remove and Install

SMCS - 1251-010

### Removal Procedure

#### Start By:

- a. Remove the fuel shutoff solenoid. Refer to Disassembly and Assembly, "Fuel Shutoff Solenoid - Remove and Install".

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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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#### NOTICE

**Keep all parts clean from contaminants.**

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

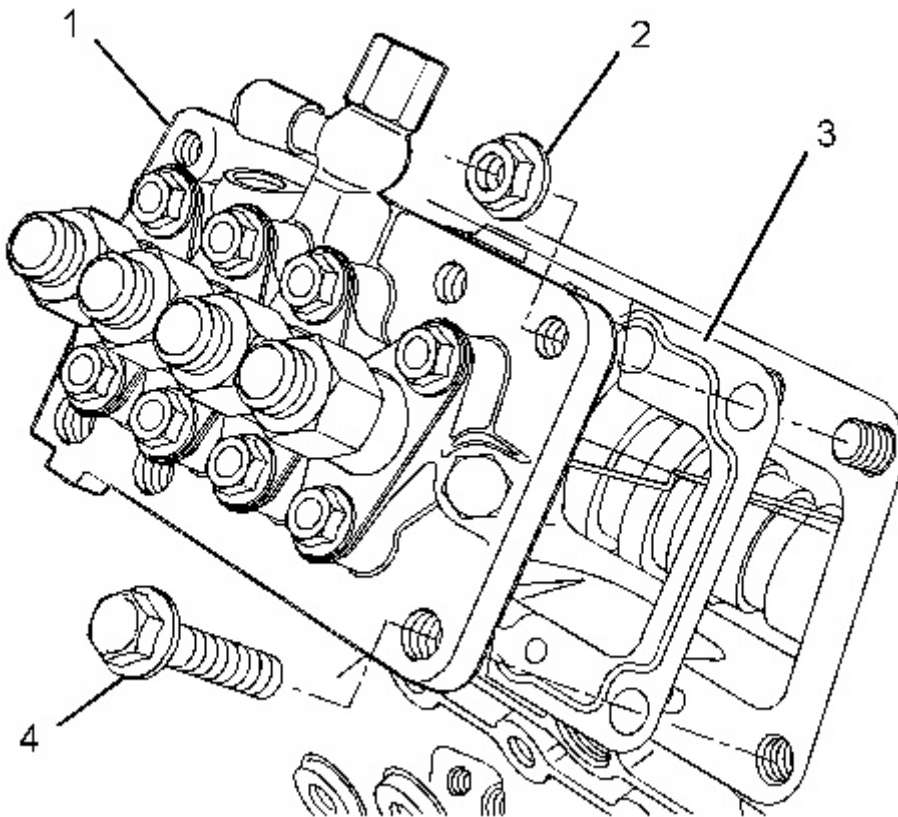
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**Note:** The removal procedure is similar for the three cylinder and the four cylinder engines. The Illustrations show a four cylinder engine.

1. Remove the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install" for more information.

The C1.1 engine has a flexible fuel return hose.

For engines with a flexible fuel return hose, disconnect the fuel hose from the inlet connection of the fuel injection pump.



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Illustration 1  
Typical example

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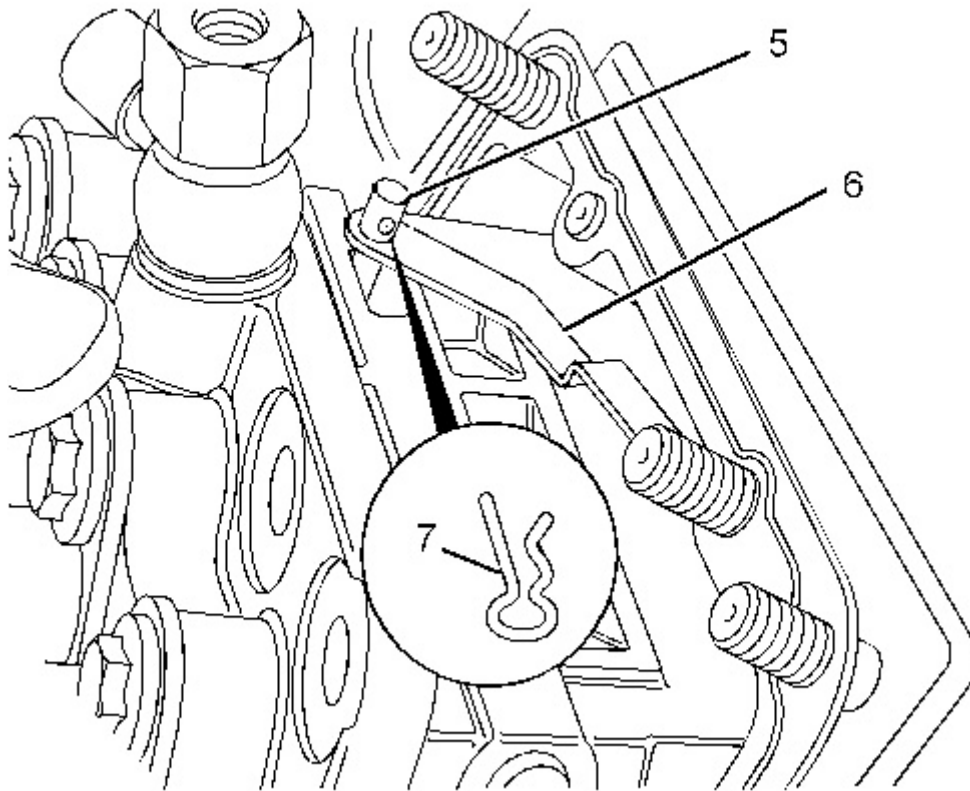


Illustration 2  
Typical example

g01327006

2. Gradually loosen bolts (4) and nuts (2) that fasten the fuel injection pump to the cylinder block.
3. Carefully raise fuel injection pump (1) from the cylinder block and remove clip (7) that connects link (6) to fuel rack control (5).
4. Remove fuel injection pump (1) from the cylinder block.
5. Remove 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. Refer to Systems Operation, Testing and Adjusting, "Fuel Injection Timing - Check" for more information.

## Installation Procedure

### NOTICE

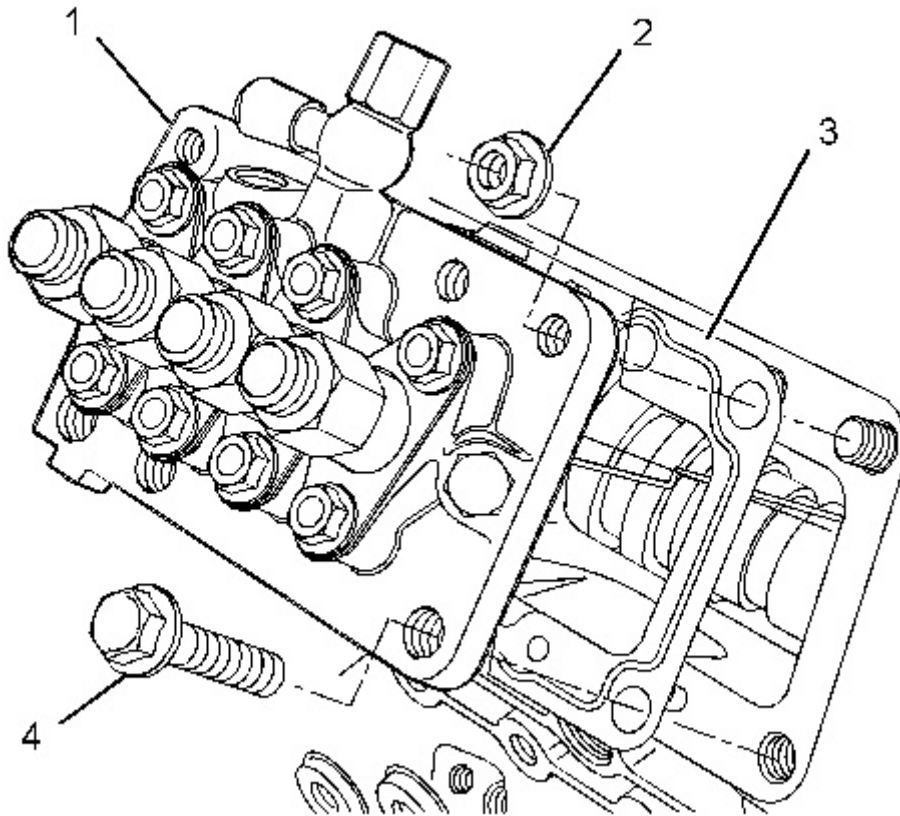
**Keep all parts clean from contaminants.**

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

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**Note:** The installation procedure is similar for the three cylinder and the four cylinder engines. The Illustrations show a four cylinder engine.

1. Clean the mating surfaces of the cylinder block and the fuel injection pump.
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Illustration 3  
Typical example

g01327005

2. Install the correct thickness and the correct number of shims (3) on the mounting face of the cylinder block. Refer to Systems Operation, Testing and Adjusting, "Fuel Injection Timing - Check" for more information.
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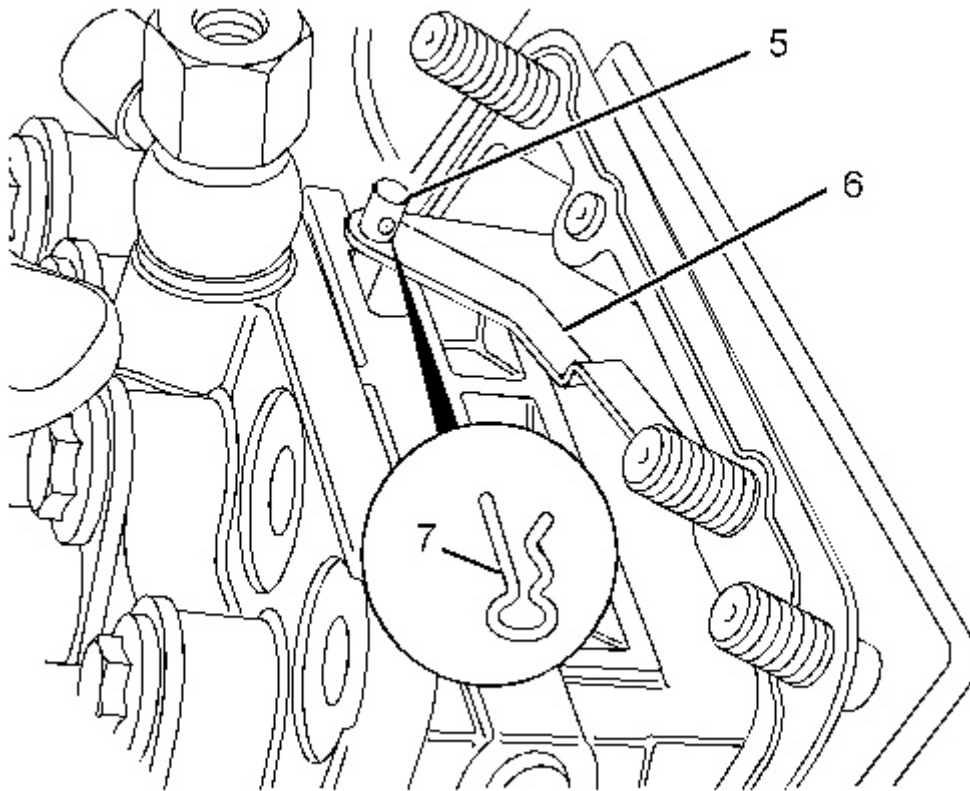


Illustration 4

g01327006

Typical example

3. Position fuel injection pump (1) close to the mounting face of the cylinder block, and connect link (6) and fuel rack control (5) with clip (7).
4. Align fuel injection pump (1) with the studs on the cylinder block. Install the fuel injection pump to the cylinder block.
5. Install bolts (4) and nuts (2). Ensure that the tube clip for the engine oil line is secured by the appropriate fastener.

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

For C1.5 and C2.2 engines, evenly tighten bolts (4) and nuts (2) to a torque of 15 N·m (133 lb in).

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

The C1.1 engine has a flexible fuel return hose.

For engines with a flexible fuel return hose, connect the fuel hose to the inlet connection of the fuel injection pump.

**End By:**

- a. Install the fuel shutoff solenoid. Refer to Disassembly and Assembly, "Fuel Shutoff Solenoid - Remove and Install".
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## **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

i06719926

# **Fuel Injector - Remove and Install**

SMCS - 1290-010

## **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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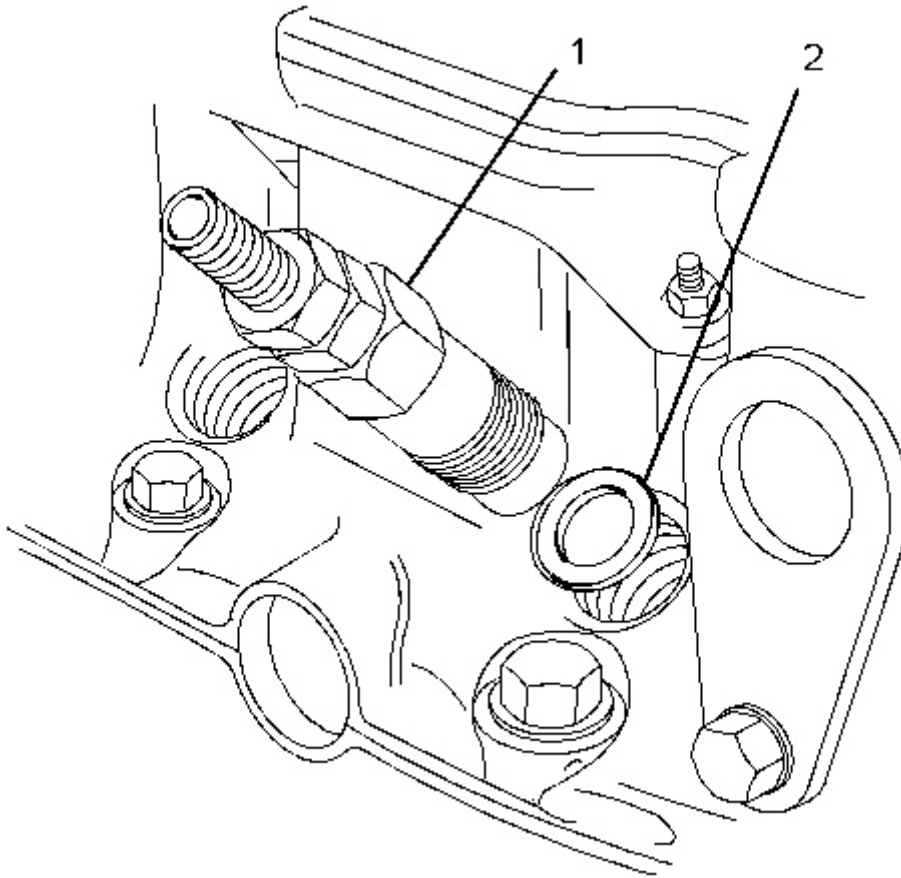
### **NOTICE**

**Keep all parts clean from contaminants.**

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

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Illustration 1  
Typical example

g01320610

1. Use a deep socket to remove fuel injector (1) from the cylinder head.
2. Remove seat washer (2) from the cylinder head.
3. Cap all openings or plug all openings immediately.

## Installation Procedure

Table 1

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

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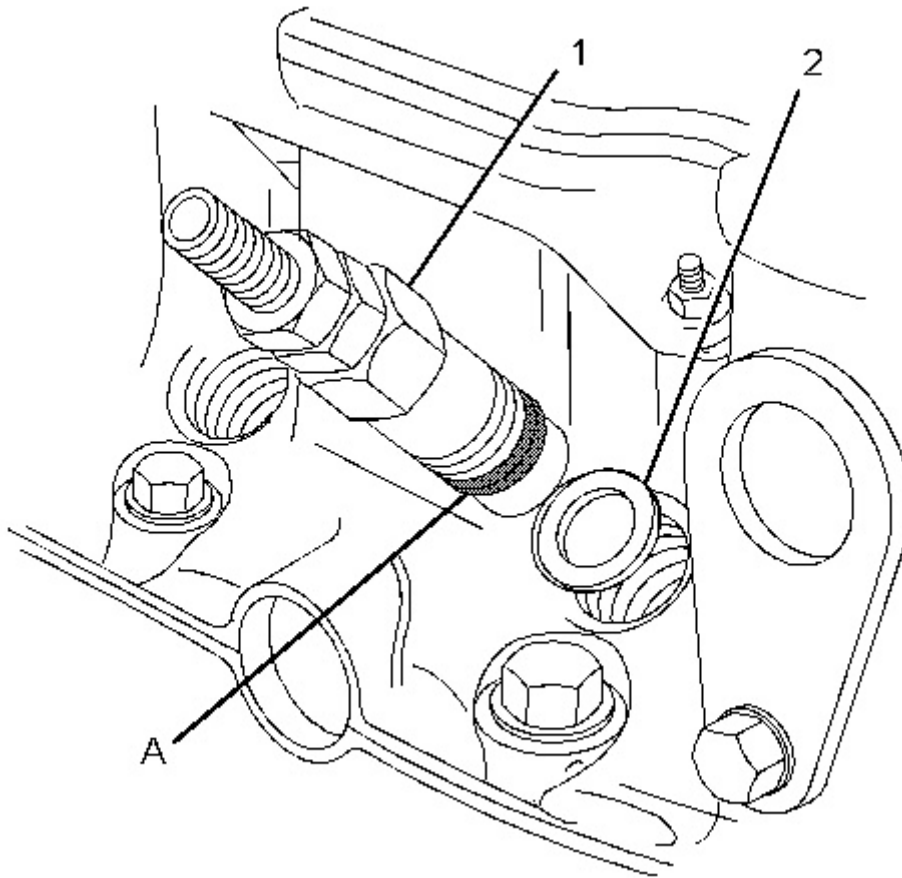
### NOTICE

**Keep all parts clean from contaminants.**

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

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Illustration 2

g01304054

Typical example

1. Clean the bore for the fuel injector in the cylinder head. Ensure that no debris enters the cylinder. Clean the threads on the body of the fuel injector.
2. Install new seat washer (2) into the bore for the fuel injector in the cylinder head.
3. Apply a bead of Tooling (A) to the first two threads of the fuel injector that engage into the cylinder head. The bead should have a diameter of 2 mm (0.08 inch) and a length of 6 mm (0.25 inch).

**Note:** Ensure that Tooling (A) does not cover the body of the fuel injector below the threads.

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

**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 -KENR6948-06

Publication Date -01/06/2015

Date Updated -02/08/2018

i02602655

# **Turbocharger - Remove and Install**

SMCS - 1052-010

## **Removal procedure**

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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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### **NOTICE**

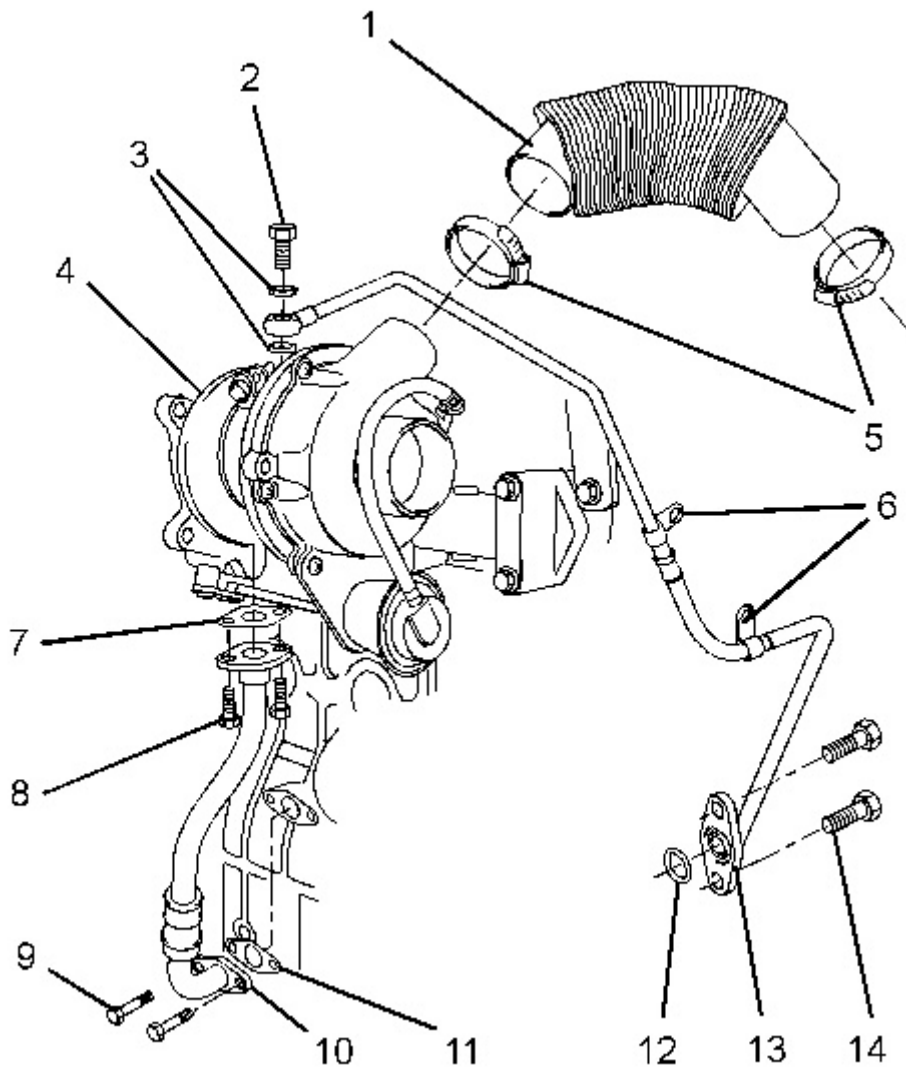
**Keep all parts clean from contaminants.**

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

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**Note:** Plug and cap all open ports and tube assemblies.

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Illustration 1

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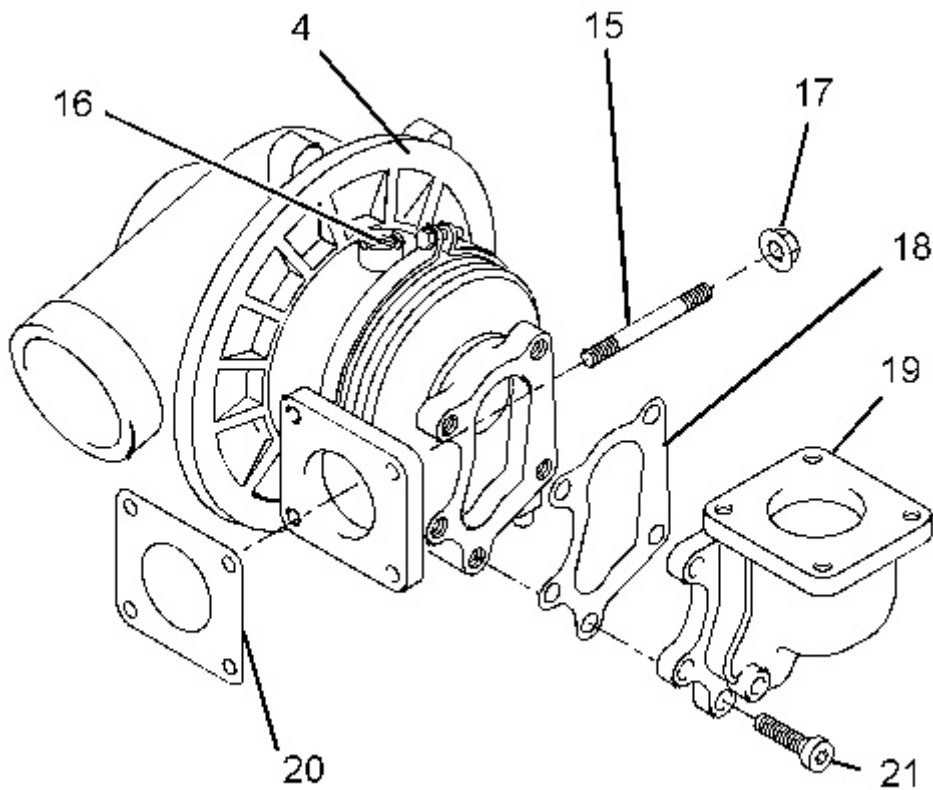


Illustration 2

g01304528

1. Loosen hose clamps (5) and remove air inlet hose (1).
2. Remove allen head screws (21) and remove exhaust elbow (19) from turbocharger (4). Remove gasket (18) from the turbocharger.
3. Remove banjo bolt (2) and washers (3). Remove the fasteners and the spacers (not shown) for tube clips (6). Remove bolts (14) and remove tube assembly (13) from the cylinder block. Remove O-ring seal (12).
4. Remove bolts (8) and disconnect tube assembly (10) from the turbocharger. Remove joint (7).  
If necessary, remove bolts (9) and remove tube assembly (10) from the cylinder block. Remove joint (11).
5. Remove nuts (17) and remove turbocharger (4) from the exhaust manifold. Remove gasket (20) from the exhaust manifold. If necessary, remove studs (15) from the exhaust manifold.

**Note:** Do not use the actuator rod of the wastegate to lift the turbocharger.

## Installation procedure

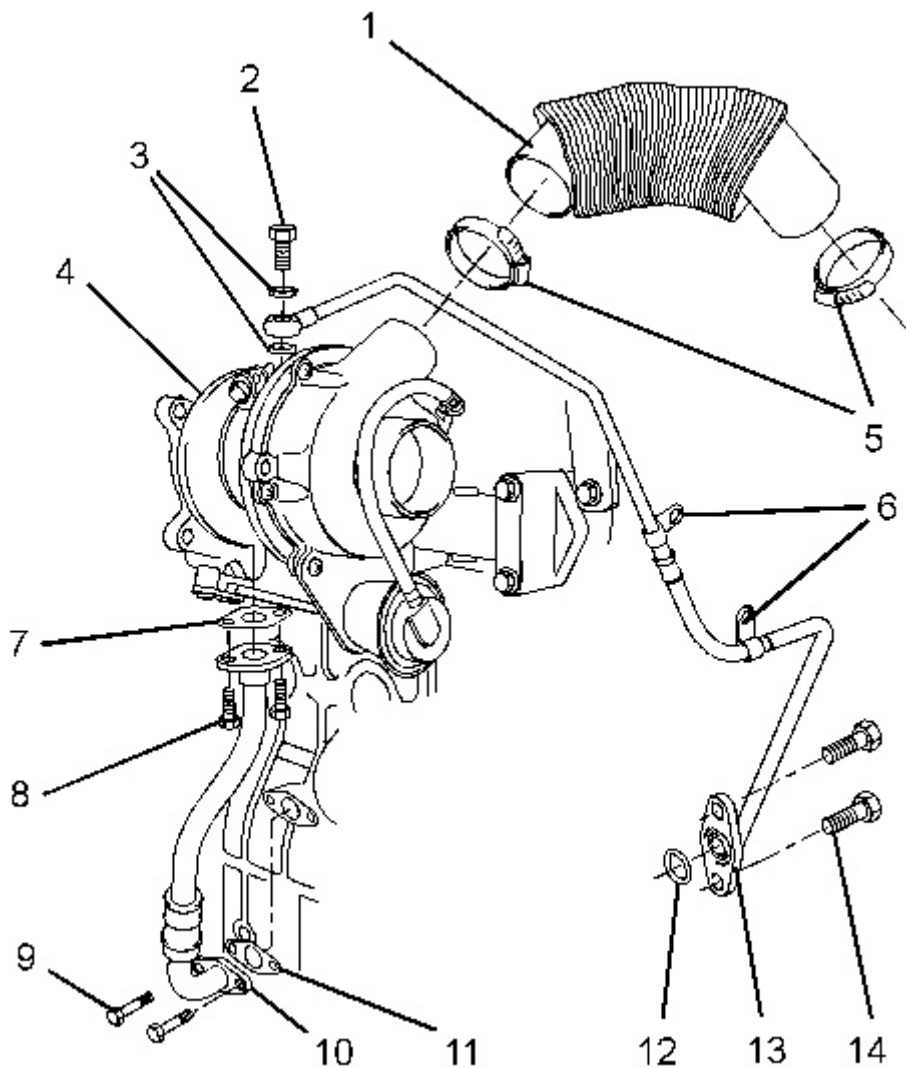
**NOTICE**

**Keep all parts clean from contaminants.**

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

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1. Ensure that the turbocharger is clean and free from damage. Inspect the turbocharger for wear. If the turbocharger is worn, the complete turbocharger must be replaced.
  2. Test the actuator for correct operation. Refer to Systems Operation, Testing and Adjusting, "Wastegate - Test" for more information. If the actuator is damaged or the actuator does not operate within the specified limits, the complete turbocharger must be replaced.
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Illustration 3

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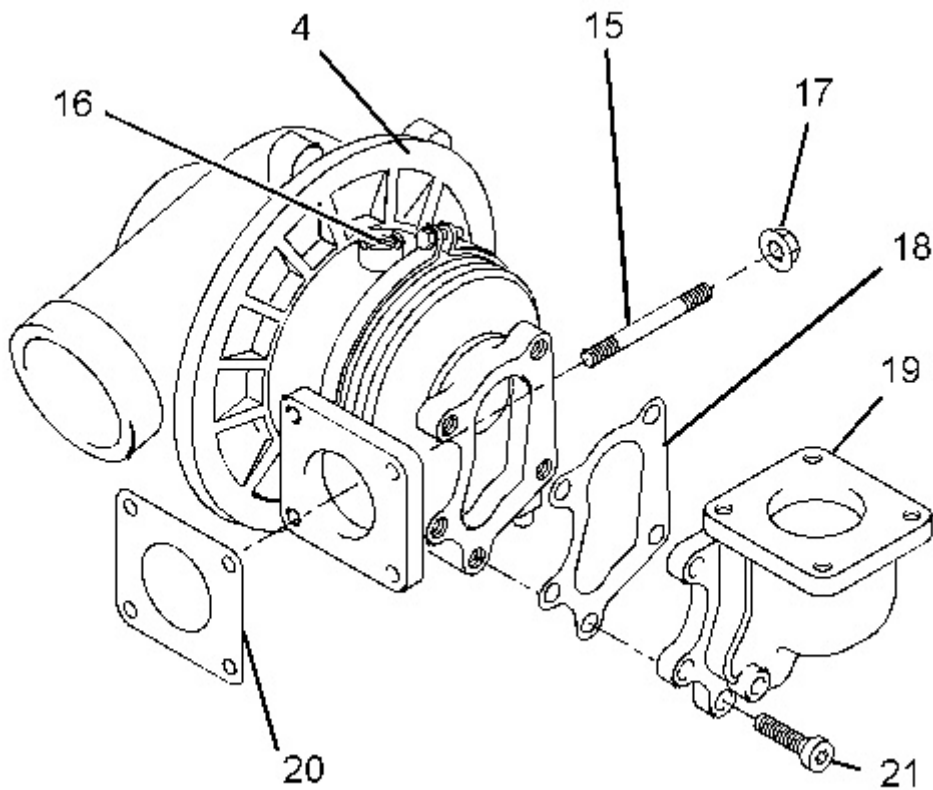


Illustration 4

g01304528

3. Clean the mating surfaces of the exhaust manifold. If necessary, install studs (15) to the exhaust manifold. Tighten the studs to a torque of 18 N·m (13 lb ft). Install a new gasket (20) over the studs.

4. Position turbocharger (4) onto the exhaust manifold. Install nuts (17) and tighten to a torque of 25 N·m (18 lb ft).

**Note:** Do not use the actuator rod of the wastegate to lift the turbocharger .

5. Ensure that tube assemblies (10) and (13) are clean and free from damage. If necessary, replace the tube assemblies.

6. If necessary, position a new joint (11) and tube assembly (10) onto the cylinder block. Install bolts (9). Tighten the bolts finger tight.

Position a new joint (7) on tube assembly (10). Align tube assembly (10) to the bottom of the turbocharger. Install bolts (8). Tighten the bolts finger tight.

Tighten bolts (8) and (9) to a torque of 10 N·m (89 lb in).

7. Lubricate the bearings of turbocharger (4) with clean engine oil through oil inlet port (16). Rotate the shaft of the turbocharger in order to distribute the lubricant.

8. Install a new O-ring seal (12) to tube assembly (13). Position tube assembly (13) against the cylinder block. Install bolts (14). Tighten the bolts to a torque of 10 N·m (89 lb in).

9. Install new washers (3) and banjo bolt (2) to tube assembly (13). Position tube assembly (13) onto turbocharger (4). Tighten the banjo bolt finger tight.
10. If necessary, install the spacer and install the fasteners (not shown) to tube clips (6). Torque the fasteners to 10 N·m (89 lb in).
11. Tighten banjo bolt (2) to a torque of 18 N·m (13 lb ft).

**Note:** Ensure that the tube assembly does not come into contact with any other components.

12. Clean the mating surfaces of exhaust elbow (19). Position a new gasket (18) and exhaust elbow (19) on turbocharger (4). Install allen head screws (21). Tighten the bolts to a torque of 32 N·m (24 lb ft).
  13. Ensure that inlet hose (1) is clean and free from defects or restrictions. Loosely install hose clamps (5) to air inlet hose (1). Install the air inlet hose to the connection of the inlet manifold (not shown) and to the turbocharger. Tighten the hose clamps.
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## **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

i07360106

## **Exhaust Manifold - Remove and Install**

SMCS - 1059-010

### **Removal Procedure**

#### **Start By:**

- a. If the engine is equipped with a turbocharger, remove the turbocharger. Refer to Disassembly and Assembly, "Turbocharger - Remove and Install".

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#### **NOTICE**

**Keep all parts clean from contaminants.**

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

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**Note:** The three cylinder and the four cylinder engines have different exhaust manifolds. The removal procedure is similar for all models.

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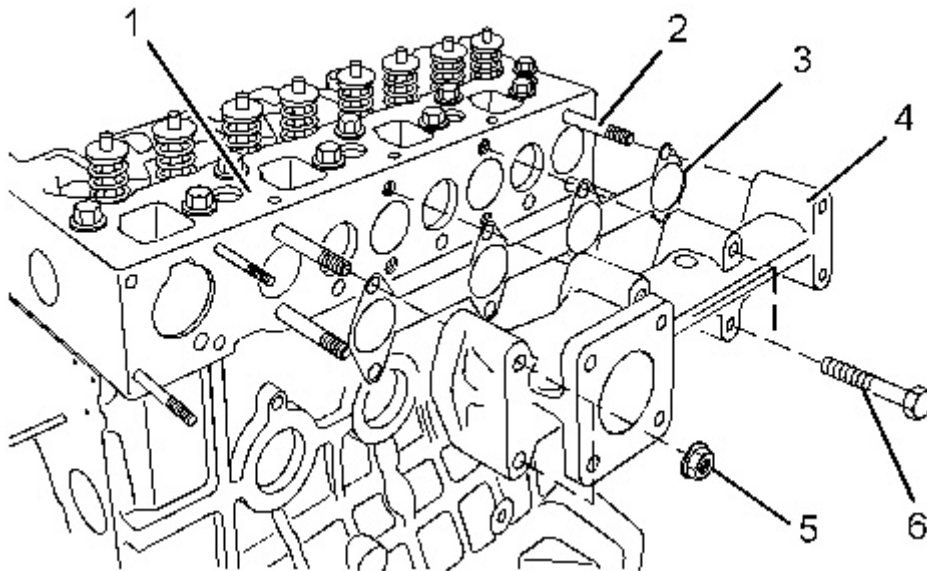


Illustration 1

g01326567

Typical example

1. Loosen nuts (5) and bolts (6).

**Note:** To prevent distortion of the exhaust manifold, loosen the outer fasteners first.

2. Remove nuts (5) and bolts (6).

**Note:** Identify bolts of different lengths so that the bolts can be installed in the correct positions.

3. Remove exhaust manifold (4) from cylinder head (1). Note the orientation of the exhaust manifold for installation.
4. Remove gasket (3) from cylinder head (1).
5. If necessary, remove exhaust manifold studs (2) from cylinder head (1).

## 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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**Note:** The three cylinder and the four cylinder engines have different exhaust manifolds. The installation procedure is similar for all models.

1. Ensure that the mating surfaces of the cylinder head and the exhaust manifold are clean and free from damage.
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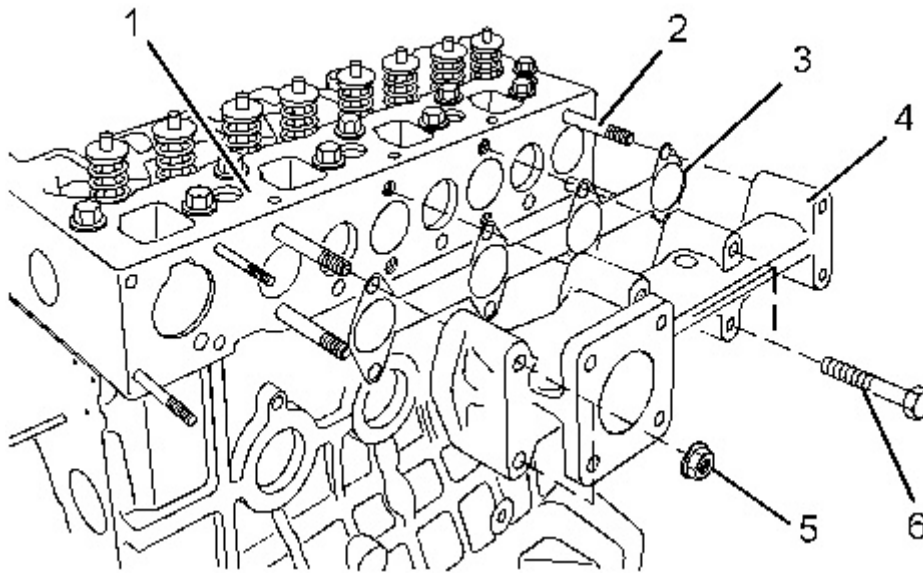


Illustration 2

g01326567

Typical example

2. If necessary, install exhaust manifold studs (2) to cylinder head (1).
3. Install a new exhaust manifold gasket (3) to cylinder head (1).
4. Align exhaust manifold (4) with studs (2) and install the exhaust manifold to cylinder head (1).

**Note:** Ensure that the exhaust manifold is installed in the correct orientation.

5. Install nuts (5) and bolts (6) finger tight.

**Note:** Ensure that bolts of different lengths are installed in the correct positions.

6. For the C1.1 and C1.5 engines, tighten nuts (5) and bolts (6) to a torque of 10 N·m (89 lb in).

For the C2.2 engine, tighten nuts (5) and bolts (6) to a torque of 25 N·m (18 lb ft).

**Note:** Tighten the inner bolts first.

### End By:

- a. If the engine is equipped with a turbocharger, install the turbocharger. Refer to Disassembly and Assembly, "Turbocharger - Remove and Install".
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