



Service Repair Manual

Models

3054 Industrial Engine

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 **Product:** INDUSTRIAL ENGINE
Model: 3054 INDUSTRIAL ENGINE 5YS
Configuration: 3054 Industrial Engine 5YS00001-UP

Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

Media Number -SEN5547-04
Publication Date -01/02/2004
Date Updated -25/02/2004

i01091508

Fuel Injection Pump - Install

SMCS - 1251-012

S/N - 2PW1-UP

S/N - 3GW1-UP

S/N - 5YS1-UP

S/N - 7MS1-UP

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	150-3992	Timing Pin ⁽¹⁾	1
	150-3993	Timing Pin ⁽²⁾	1

⁽¹⁾ The timing pin is required in order to install Bosch fuel injection pumps.

⁽²⁾ The timing pin is required in order to install Lucas and Stanadyne fuel injection pumps.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

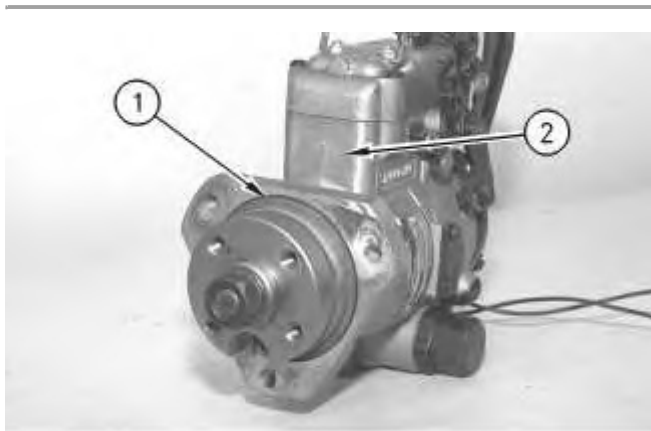


Illustration 1

g00567719

Typical example

1. Check the condition of O-ring seal (1) from fuel injection pump (2). If the seal is worn or damaged, use a new part for replacement.
2. Lightly lubricate O-ring seal (1) with clean engine oil. Install O-ring seal (1) on fuel injection pump (2) .

NOTICE

The number 1 cylinder must be at the top center position on the compression stroke before the fuel injection pump is installed. If the crankshaft needs to be rotated, the fuel injection pump must be mounted temporarily or the loose gear could cause damage to the front housing.

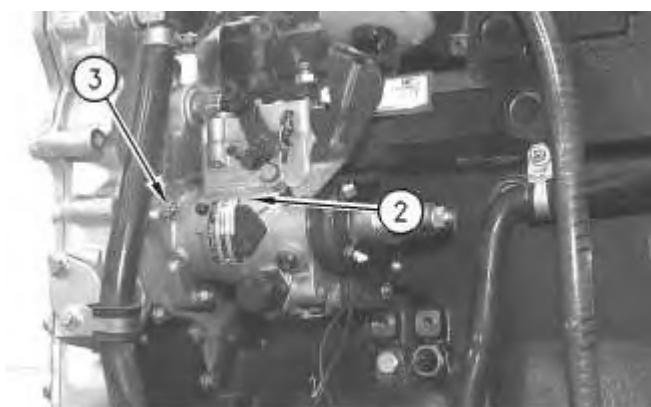


Illustration 2

g00567718

Typical example

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3. Put fuel injection pump (2) in position on the engine. Ensure that the timing gear is aligned with the hub of fuel injection pump (2). Install three nuts (3) and tighten the nuts to a torque of 28 N·m (21 lb ft).

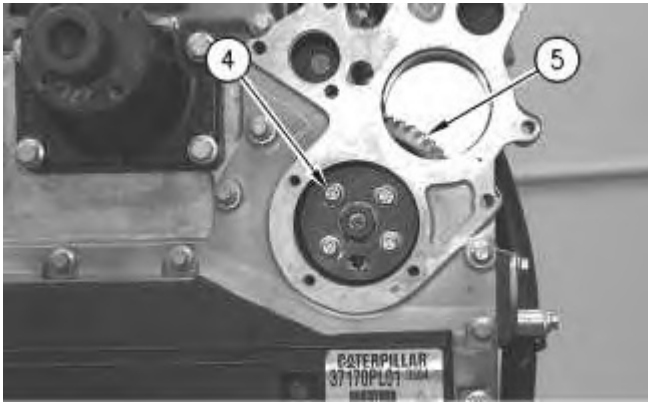


Illustration 3

g00567717

Typical example

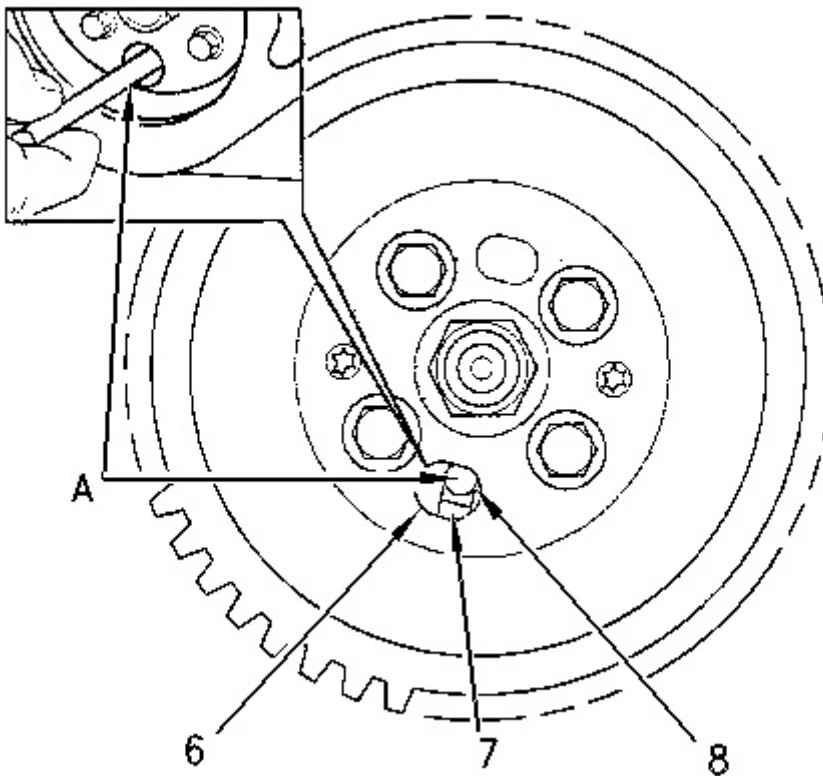


Illustration 4

g00567737

4. Position gear (5) on the shaft of the fuel injection pump.
5. Put the timing gear plate in position and install four bolts (4). Tighten the four bolts finger tight.

Note: The fuel injection pump gear will only fit in one position. Install the gear with the letters "C" and "M" facing away from the engine.

Note: The location of Tool (A) for Bosch fuel injection pumps will be located toward the top of the fuel injection pump. The location of Tool (A) for Lucas and Stanadyne fuel injection pumps will be located toward the bottom of the fuel injection pump.

6. Install Tool (A) through hole (6) in the timing gear and hole (7) in the hub. Push Tool (A) into position in hole (8) in the fuel injection pump body. If Tool (A) can be fully seated, the fuel injection pump timing is correct. No resistance should be felt when the timing pin is inserted into hole (8) of the fuel injection pump body.

NOTICE

The fuel injection pump may be supplied with the fuel injection pump shaft in the locked position. The drive shaft of the fuel injection pump must not be rotated without the spacer in position under the locking screw. Damage to the drive shaft of the fuel injection pump will result.

7. When the timing plate is installed, rotate gear (5) by hand in a counterclockwise direction in order to remove the backlash between gear (5) and the idler gear. Do not rotate the crankshaft or the fuel injection pump shaft. Tighten bolts (4) to a torque of 28 N·m (21 lb ft).
8. Remove Tool (A) from the fuel injection pump gear.

End By:

- a. Install the fuel injection lines. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install".
- b. Install the water pump. Refer to Disassembly and Assembly, "Water Pump - Install".

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Product: INDUSTRIAL ENGINE
Model: 3054 INDUSTRIAL ENGINE 5YS
Configuration: 3054 Industrial Engine 5YS00001-UP

Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

Media Number -SEN5547-04

Publication Date -01/02/2004

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i01092290

Precleaner - Remove and Install

SMCS - 1055-010

Removal Procedure



Illustration 1

g00572724

1. Loosen clamp (2) and slide clamp (2) off precleaner (1) .
2. Remove precleaner (1) from the muffler.

Installation Procedure



Illustration 2

g00572724

1. Install precleaner (1) on the muffler. Ensure that precleaner (1) is aligned properly.
2. Slide clamp (2) onto precleaner (1). Tighten clamp (2) .

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Configuration: 3054 Industrial Engine 5YS00001-UP

Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

Media Number -SEN5547-04

Publication Date -01/02/2004

Date Updated -25/02/2004

i01092640

Air Cleaner - Remove and Install

SMCS - 1051-010

Removal Procedure

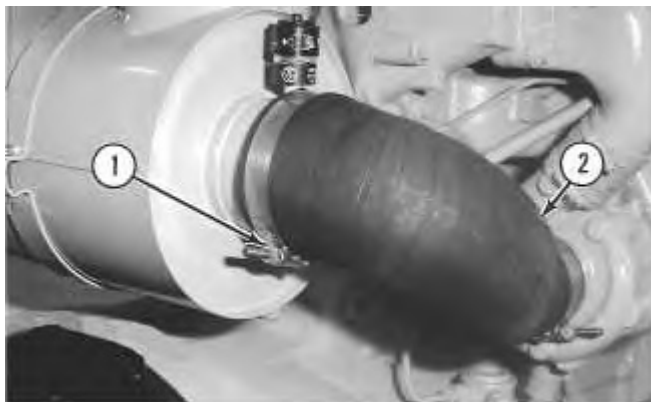


Illustration 1

g00573064

Typical example

1. Loosen clamp (1) .
2. Disconnect hose (2) .

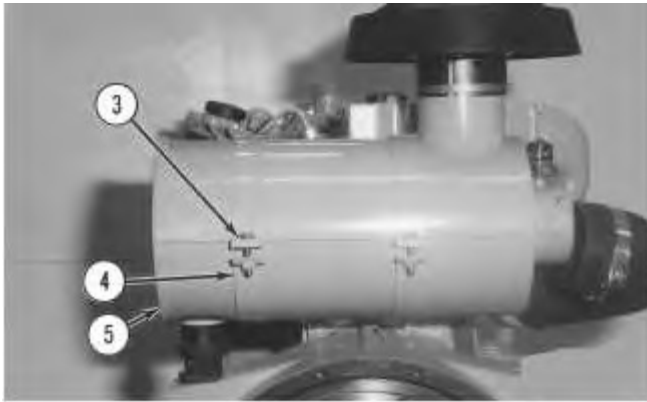


Illustration 2

g00573065

Typical example

3. Remove two bolts (3) and the nuts from the mounting strap.
4. Open two clamps (4) and remove air cleaner assembly (5) .

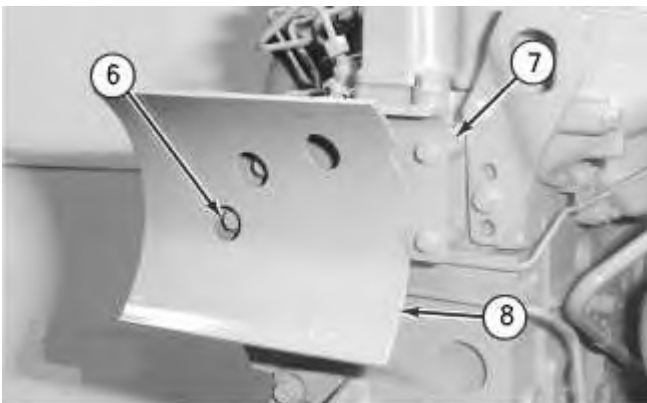


Illustration 3

g00573066

Typical example

5. Remove bolts (6) from support (8) .
6. Remove spacers (7) and support (8) for air cleaner assembly.

Installation Procedure

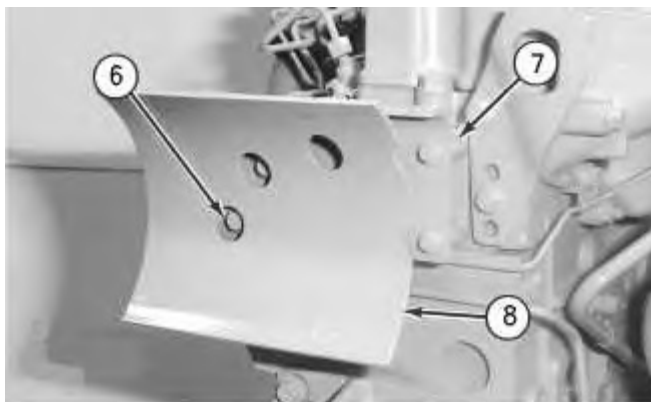


Illustration 4

g00573066

Typical example

1. Install support (8) for air cleaner assembly.
2. Install spacers (7) and bolts (6) on support (8) .

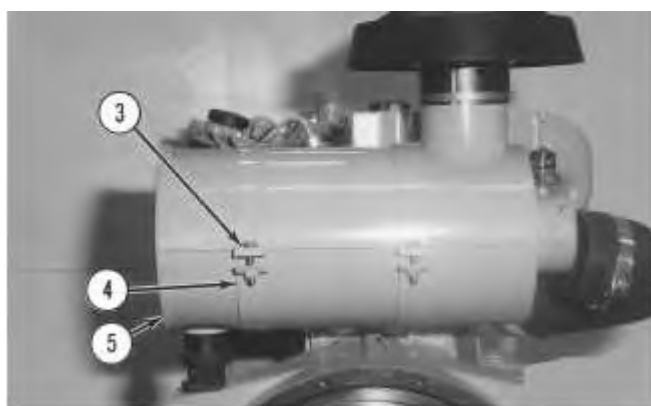


Illustration 5

g00573065

Typical example

3. Install air cleaner assembly (5) and close two clamps (4) .
 4. Install bolts (3) and the nuts on the mounting strap.
-

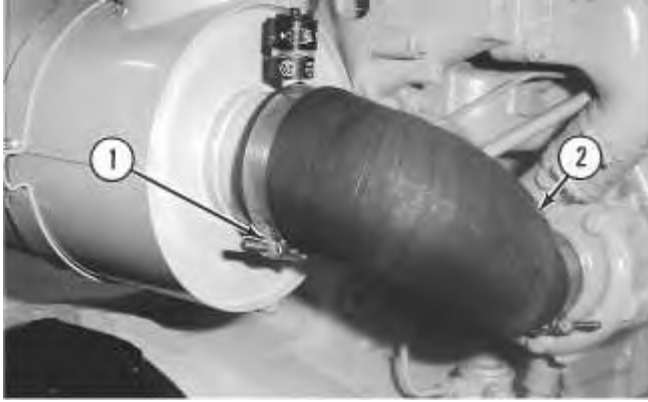


Illustration 6

g00573064

Typical example

5. Connect hose (2) to air cleaner assembly (5) .
6. Tighten clamp (1). Tighten the clamp to the following torque $25 \pm 7 \text{ N}\cdot\text{m}$ ($18 \pm 5 \text{ lb ft}$).

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Product: INDUSTRIAL ENGINE
Model: 3054 INDUSTRIAL ENGINE SYS
Configuration: 3054 Industrial Engine SYS00001-UP

Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

Media Number -SEN5547-04

Publication Date -01/02/2004

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i01051839

Turbocharger - Remove

SMCS - 1052-011

Removal Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

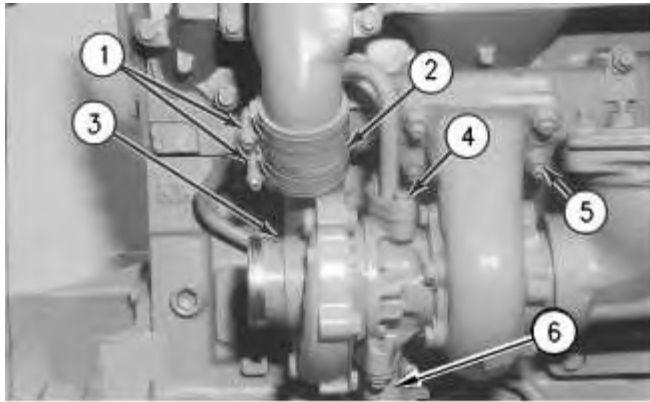


Illustration 1

g00545445

Typical example

1. Loosen two clamps (1) .
2. Slide hose (2) away from turbocharger (3) .
3. Remove two bolts (4) and the gasket.
4. Disconnect oil return line (6) from the cylinder block and remove the gasket.
5. Remove nuts (5) .

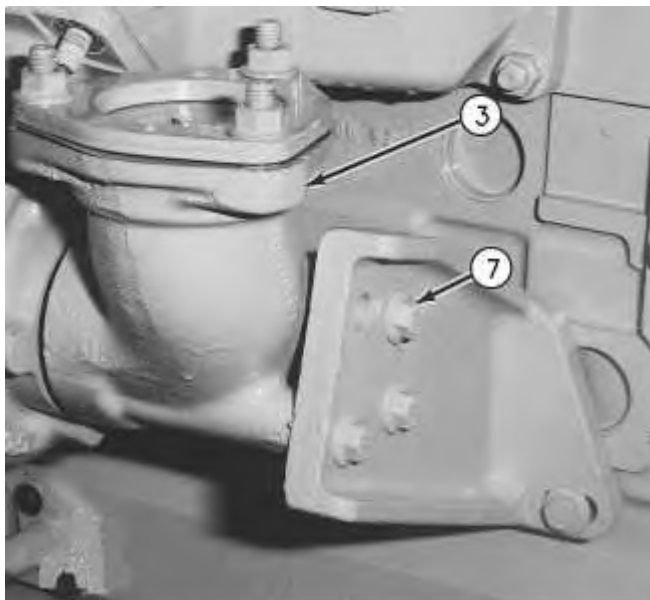


Illustration 2

g00545446

Typical example

6. Remove three bolts (7) .

7. Remove turbocharger (3) and the gaskets.

8. Plug all openings immediately.

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Product: INDUSTRIAL ENGINE
Model: 3054 INDUSTRIAL ENGINE SYS
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Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

Media Number -SEN5547-04

Publication Date -01/02/2004

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i01051906

Turbocharger - Disassemble

SMCS - 1052-015

Disassembly Procedure

Start By:

- A. Remove the turbocharger. Refer to Disassembly and Assembly, "Turbocharger - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

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, "Caterpillar Tools and Shop Products Guide" for tools and supplies suitable to collect and contain fluids on Caterpillar products.

Dispose of all fluids according to local regulations and mandates.

1. Place an index mark on all of the components for the assembly procedure.



Illustration 1

g00545460

Typical example

2. Remove elbow (1) and the O-ring seal.
3. Remove two bolts (2) .
4. Remove hose assembly (3) and the gasket.

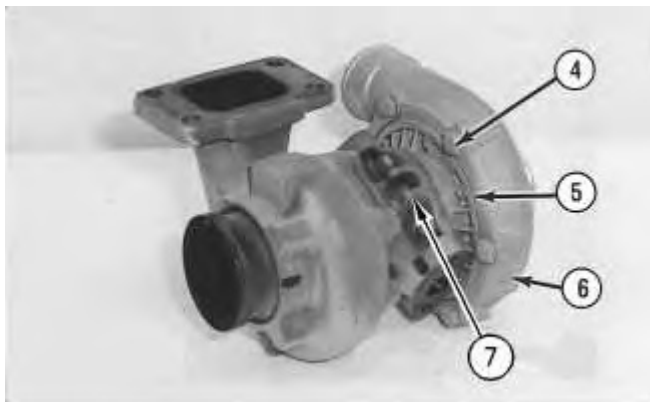


Illustration 2

g00545463

Typical example

5. Remove six bolts (4) .
6. Remove three clamps (5) .
7. Separate compressor housing (6) from cartridge (7) .

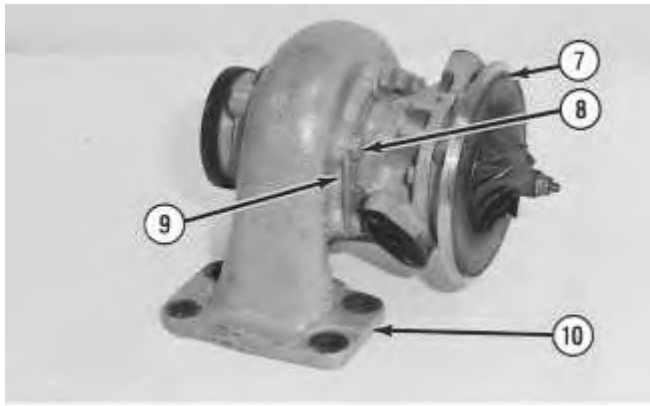


Illustration 3

g00545464

Typical example

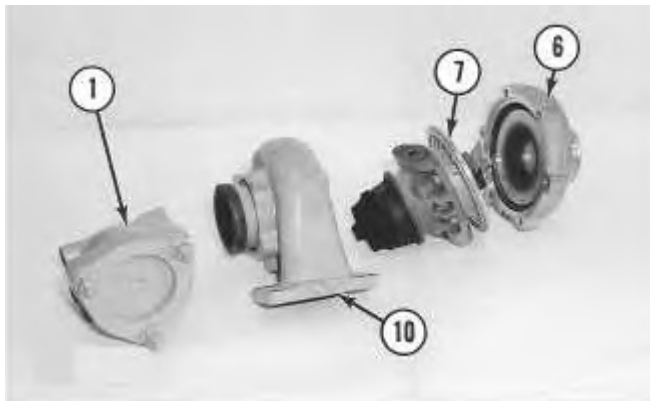


Illustration 4

g00545505

Typical example

8. Remove six bolts (8) .
9. Remove three clamps (9) .
10. Separate cartridge (7) from turbine housing (10) .

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Disassembly and Assembly 3054 and 3056 Industrial and Generator Set Engines

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i01051989

Turbocharger - Assemble

SMCS - 1052-016

Assembly Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Inspect the condition of the gaskets. Replace the gaskets, if necessary.

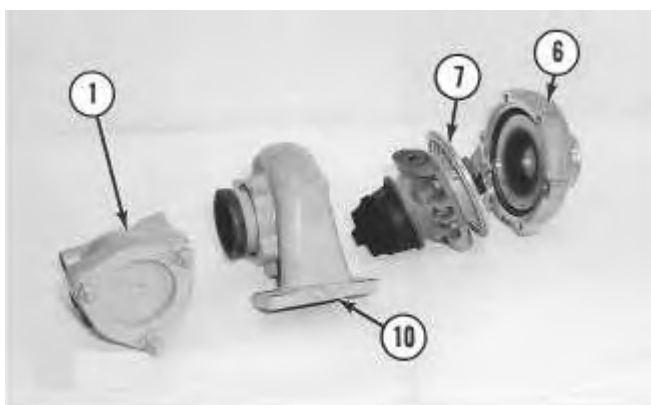


Illustration 1

g00545505

Typical example



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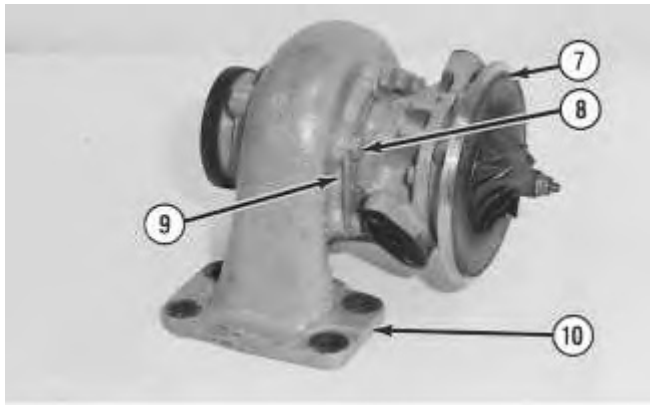


Illustration 2

g00545464

Typical example

2. Assemble cartridge (7) and turbine housing (10) .
3. Install three clamps (9) .
4. Apply **5P-3931** Anti-Seize Compound to six bolts (8). Tighten the bolts to a torque of 19 ± 1 N·m (14 ± 1 lb ft).

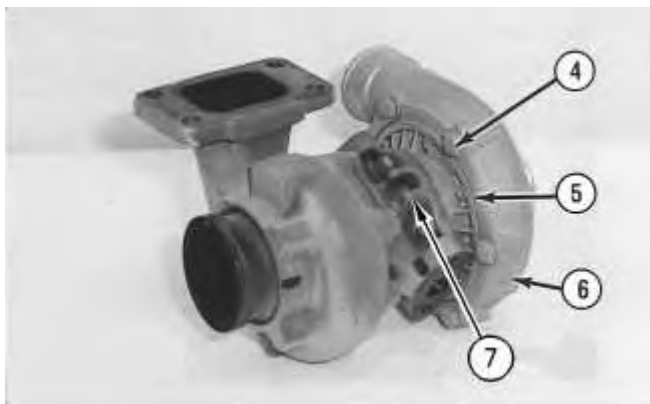


Illustration 3

g00545463

Typical example

5. Assemble compressor housing (6) and cartridge (7) .
6. Install three clamps (5) .
7. Apply **5P-3931** Anti-Seize Compound to six bolts (4). Tighten the bolts to a torque of 15 ± 4 N·m (11 ± 3 lb ft).

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