



Service Repair Manual

Models

385C L MH EXCAVATOR

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Product: EXCAVATOR

Model: 385C L MH EXCAVATOR WAW

Configuration: 385C Material Handler WAW00001-UP (MACHINE) POWERED BY C-18 Engine

Disassembly and Assembly C15 and C18 Engines for Caterpillar Built Machines

Media Number -REN8261-28

Publication Date -01/08/2015

Date Updated -28/08/2018

i02536739

Fuel Priming Pump - Remove and Install

SMCS - 1258-010

Removal Procedure

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.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

-
1. Turn the fuel supply to the "OFF" position.
-

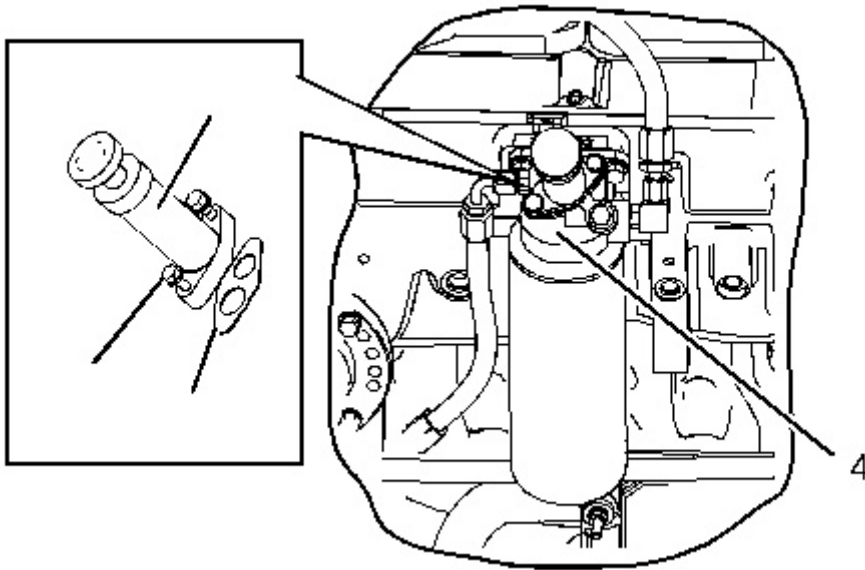


Illustration 1

g01049296

2. Remove bolts (2). Remove fuel priming pump assembly (1) from fuel filter base (4).
3. Remove gasket (3) from the fuel priming pump assembly and the fuel filter base.

Installation Procedure

NOTICE

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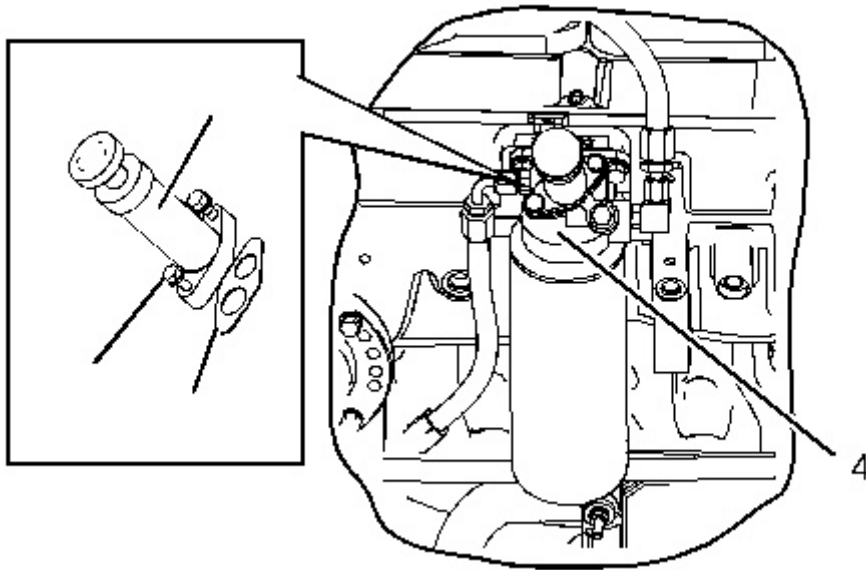


Illustration 2

g01049296

1. Position gasket (3) on fuel filter base (4).
2. Position fuel priming pump assembly (1) on the fuel filter base and install bolts (2).
3. Turn the fuel supply to the “ON” position.
4. Remove the air from the system. Refer to Testing and Adjusting, "Fuel System - Prime".

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Media Number -REN8261-28

Publication Date -01/08/2015

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i02213801

Fuel Filter Base - Remove

SMCS - 1262-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	185-3630	Strap Wrench	1

NOTICE

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Dispose of all fluids according to local regulations and mandates.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Turn the fuel supply to the “OFF” position.
-

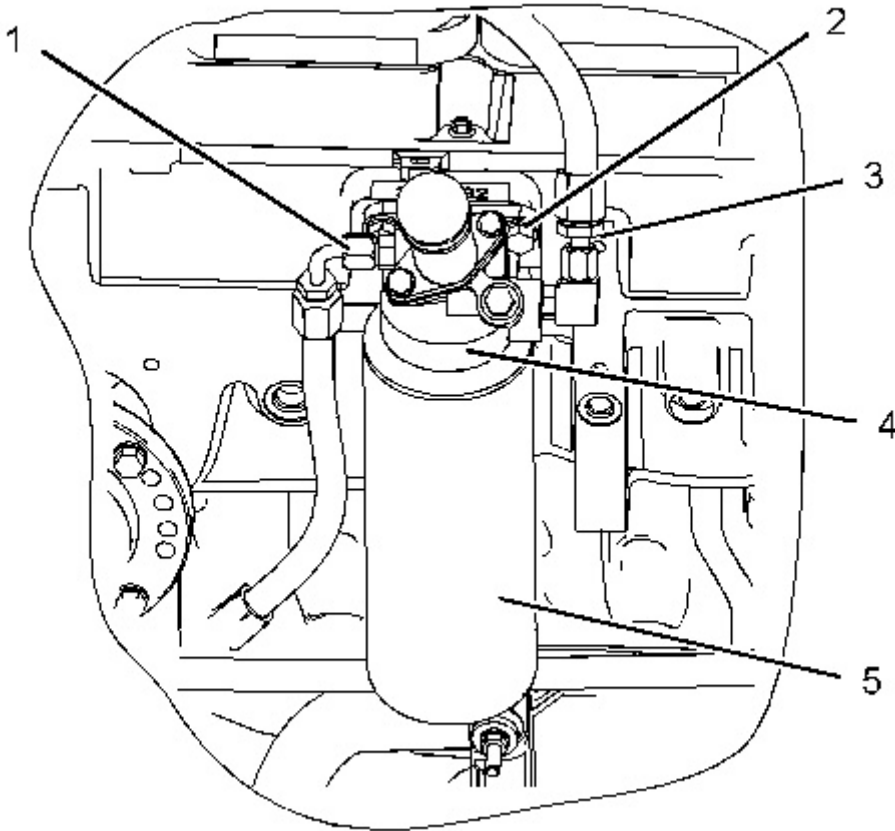


Illustration 1

g01041315

2. Disconnect hose assembly (1) and hose assembly (3) from fuel filter base (4).
3. Use Tooling (A) to remove fuel filter (5) from fuel filter base (4).
4. Remove bolts (2). Remove fuel filter base (4).

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Media Number -REN8261-28

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Date Updated -28/08/2018

i02208021

Fuel Filter Base - Install

SMCS - 1262-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

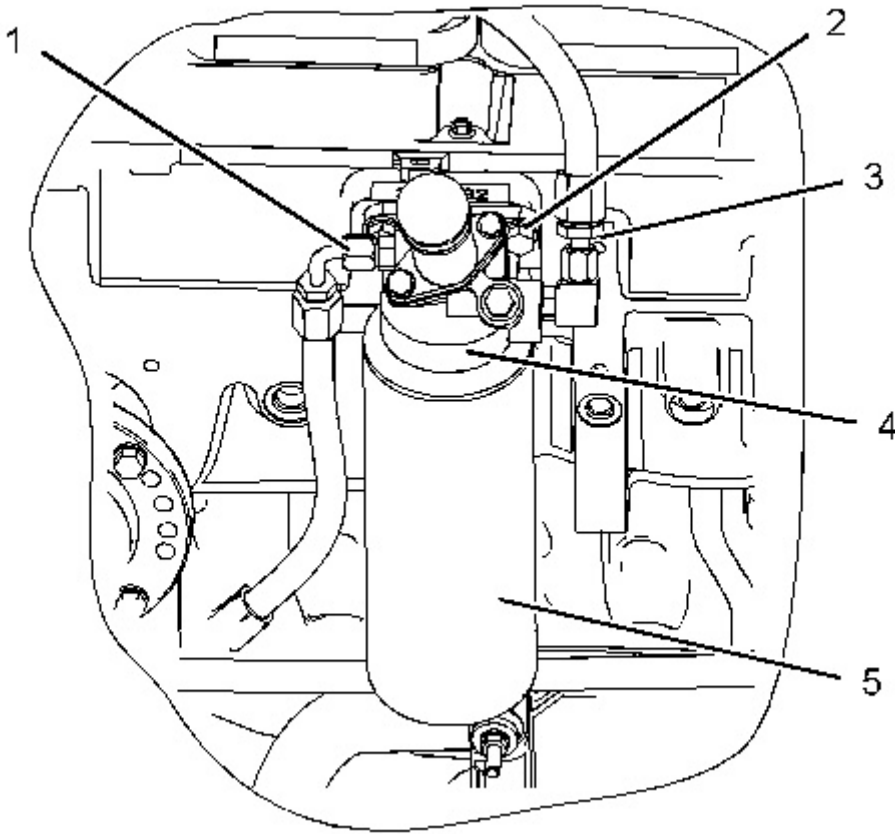


Illustration 1

g01041315

1. Position fuel filter base (4) on the engine.
2. Install bolts (2).
3. Install fuel filter (5) on the fuel filter base.
4. Connect hose assembly (1) and hose assembly (3) to the fuel filter base.
5. Turn the fuel supply to the “ON” position.

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i02208032

Fuel Transfer Pump - Remove

SMCS - 1256-011

Removal Procedure

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.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

-
1. Turn the fuel supply to the "OFF" position.
-

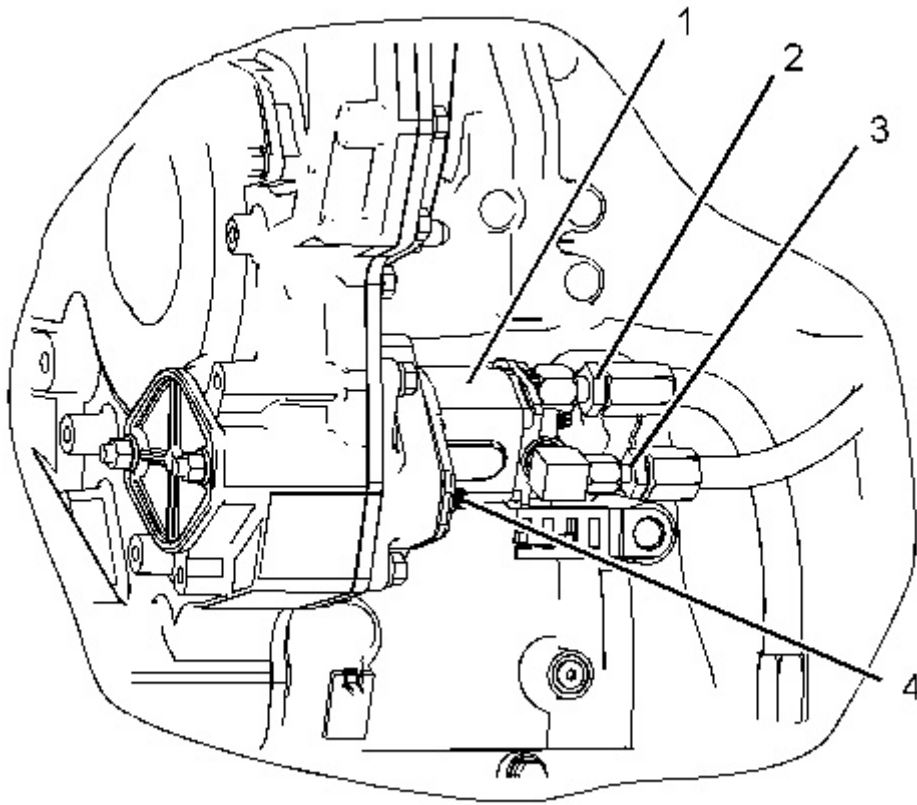


Illustration 1

g01114864

2. Disconnect hose assembly (2) and hose assembly (3) from the fuel transfer pump.
3. Remove bolts (4).
4. Remove fuel transfer pump (1) and the O-ring seal from the adapter.

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i02208052

Fuel Transfer Pump - Install

SMCS - 1256-012

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

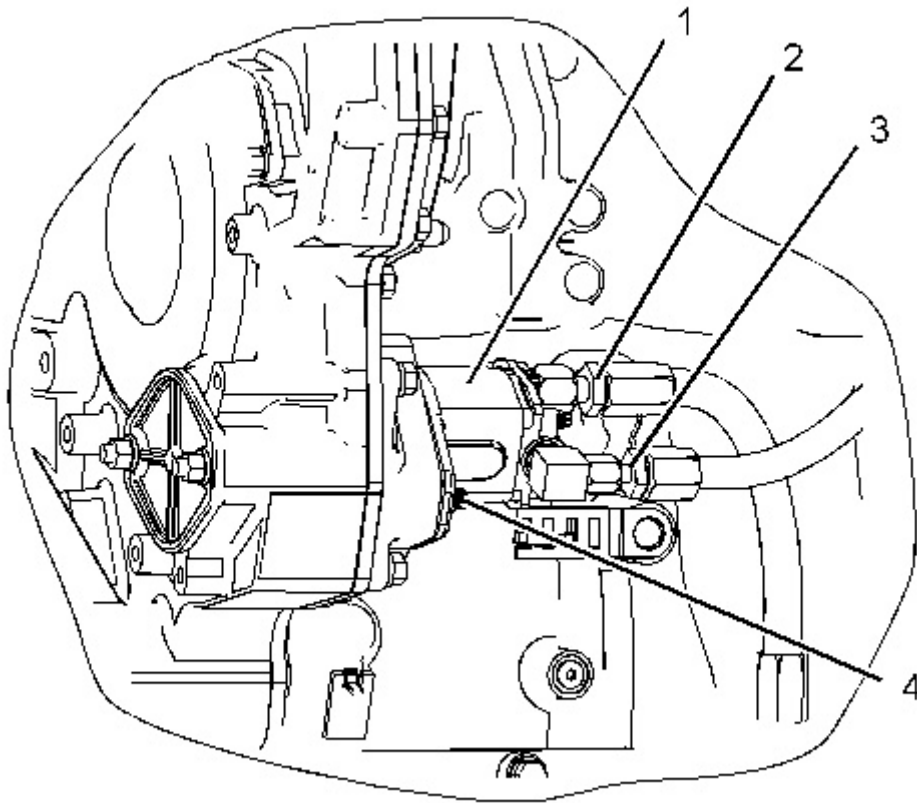


Illustration 1

g01114864

1. Install the O-ring seal on fuel transfer pump (1). Lubricate the O-ring seal with clean engine oil.
2. Position fuel transfer pump (1) in the adapter. Install bolts (4).
3. Connect hose assembly (2) and hose assembly (3) to the fuel transfer pump.
4. Turn the fuel supply to the “ON” position.

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i04164632

Electronic Unit Injector - Remove

SMCS - 1290-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	5F-4764	Pry Bar	1

Start By:

- A. Remove the rocker arms and the rocker arm shaft. Refer to Disassembly and Assembly, "Rocker Arm and Shaft - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

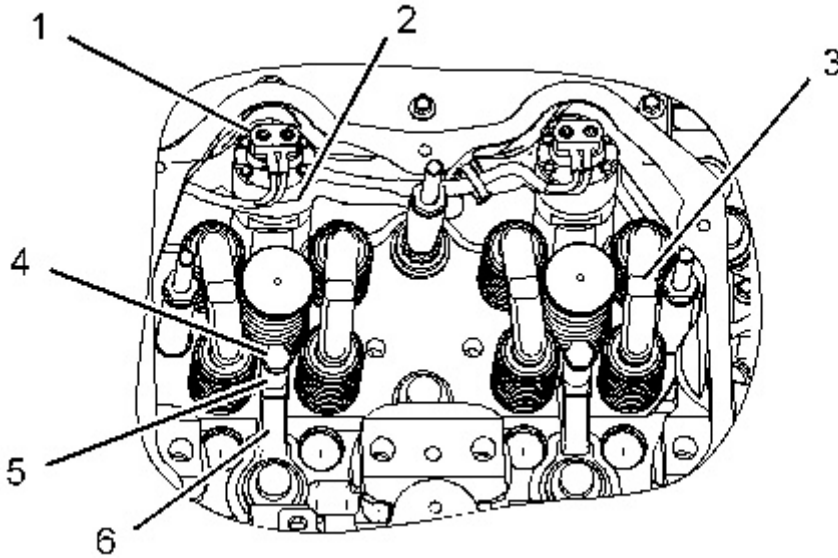


Illustration 1

g01114892

1. Disconnect harness assembly (1) .
2. Remove bridge assemblies (3) .

NOTICE

Do not reuse the injector hold down bolts. New injector hold down bolts must be used.

NOTICE

If the injector hold down bolt is loose during the removal procedure, inspect the injector bore for wear and debris. Replace the clamp and spacer.

3. Remove bolt (4) , spacer (5) , and clamp (6) . Discard bolt (4) .
 4. Place an identification mark on electronic unit injectors (2) for installation purposes. Each electronic unit injector must be reinstalled in the original location in the cylinder head.
-

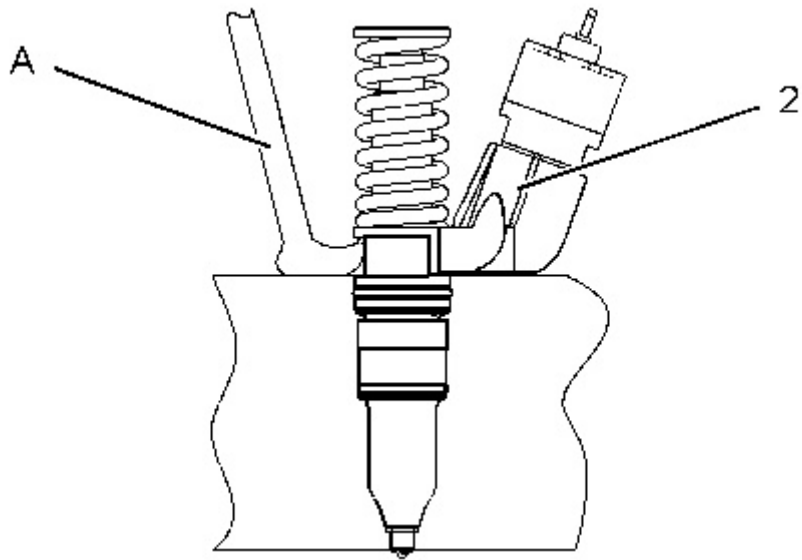


Illustration 2

g01073439

5. Use Tooling (A) to pry beneath the base and free electronic unit injector (2) .
6. Remove electronic unit injector (2) from the cylinder head.

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i07372365

Electronic Unit Injector - Install

SMCS - 1290-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
B	8T-2998	Lubricant	1
C	1U-5718	Vacuum Pump	1
	169-7372	Fluid Sampling Bottle	1
	4C-4057	Tube 7.9 mm (0.31 inch) OD	1
D	4C-5552	Large Bore Brush	1
E	4C-6774	Vacuum Gun Kit	1
F	8T-7765	Surface Reconditioning Pad	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Use Tooling (C) to remove the fuel and oil from the cylinder. Evacuate as much fuel and oil as possible from the cylinder before installing the electronic unit injector. Several evacuations may be necessary.
2. Use Tooling (D) to clean the carbon deposit from the inside the electronic unit injector sleeve. Tooling (E) is available to clean loose material from the bore of the electronic unit injector sleeve and the cylinder.
3. Use Tooling (F) to clean the carbon from the seat area that is inside the electronic unit injector sleeve.
4. Install the O-ring seals on the electronic unit injector. Lubricate the top two O-ring seals with a 50/50 mixture of clean engine oil and Tooling (B).

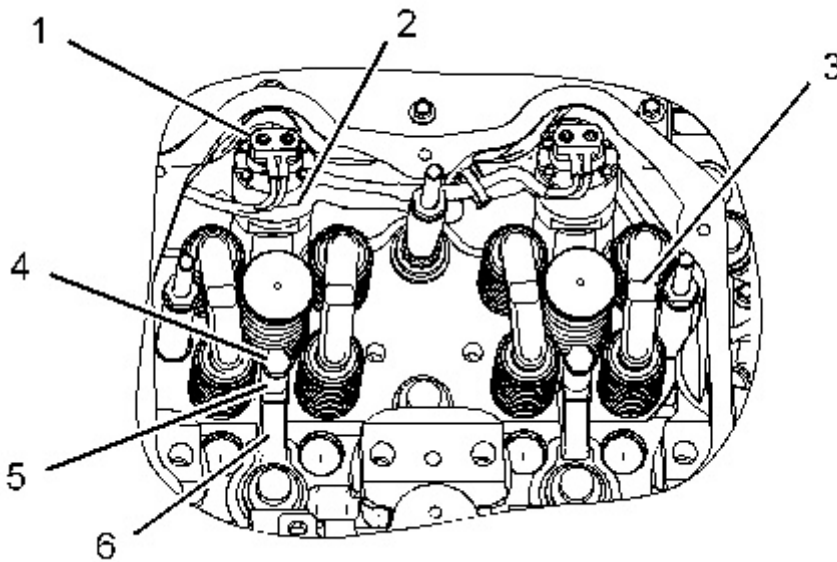


Illustration 1

g01114892

NOTICE

When an electronic unit injector is replaced, the new electronic injector code must be programmed into the engine's personality module software by using the calibration menu on the Electronic Service Tool. If the new electronic injector code is not entered, the characteristics of the previous electronic unit injector is assumed.

If it is not possible to immediately reprogram the electronic injector code into the personality module software, the engine will not be severely harmed. The new electronic injector code should be reprogrammed as quickly as possible in order to optimize engine performance.

5. Install electronic unit injector (2) into the original location in the cylinder head.

6. Install spacer (5), clamp (6), and bolt (4). Tighten the bolt to a torque of $55 \pm 10 \text{ N}\cdot\text{m}$ ($41 \pm 7 \text{ lb ft}$).

7. Install bridge assemblies (3) in the respective locations.

Note: Be sure that the larger hole on the bridge assembly is installed towards the rocker.

8. Connect harness assembly (1) on electronic unit injector (2). Tighten the nuts to a torque of $2.5 \pm 0.25 \text{ N}\cdot\text{m}$ ($22 \pm 2 \text{ lb in}$).

End By:

a. Install the rocker arms and the rocker arm shaft. Refer to Disassembly and Assembly, "Rocker Arm and Shaft - Install".

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i06729616

Electronic Unit Injector Sleeve - Remove

SMCS - 1713-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-6891	Injector Tool Group	1

Start By:

- a. Remove the electronic unit injectors. Refer to Disassembly and Assembly, "Electronic Unit Injector - Remove".

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Drain the coolant from the cooling system into a suitable container for storage or disposal. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change".
-

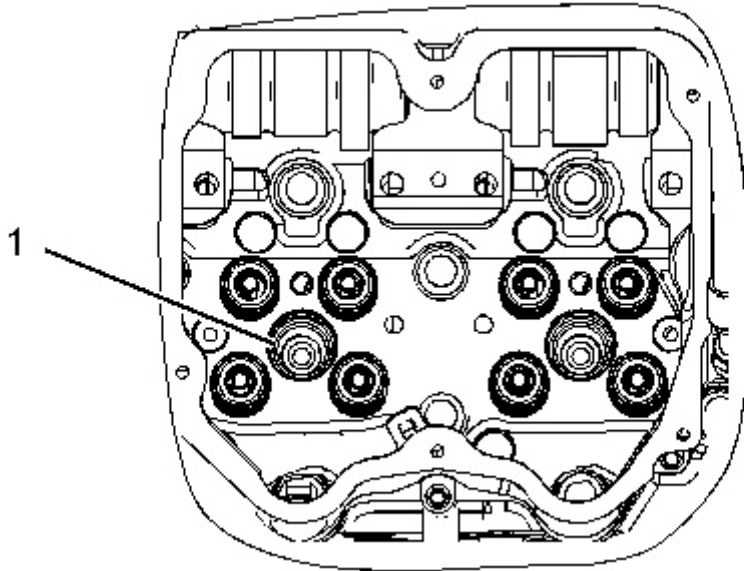


Illustration 1

g01043124

2. Install Tooling (A) in electronic unit injector sleeve (1).
3. Tighten the nut on Tooling (A) until the electronic unit injector sleeve is pulled free of the cylinder head.

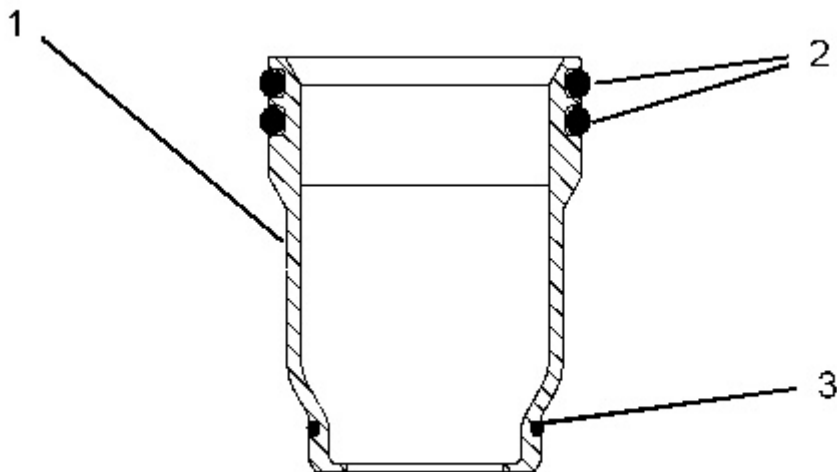


Illustration 2

g01073635

4. Remove O-ring seals (2) and O-ring seal (3) from electronic unit injector sleeve (1).

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i06745960

Electronic Unit Injector Sleeve - Install

SMCS - 1713-012

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	9U-6891	Injector Tool Group	1
B	9U-6862	Tapered Brush	1
	9U-6863	Small Bore Brush	1
	9U-7244	End Brush	1
	9U-7237	Brush Extension	1
	4C-5552	Large Bore Brush	1
C		Loctite 620 Retaining Compound	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Use Tooling (B) to clean the bore in the cylinder head for the electronic unit injector sleeve.
-

NOTICE

Ensure that the electronic unit injector sleeve and the cylinder head bore are completely free of oil, dirt, and sealant debris.

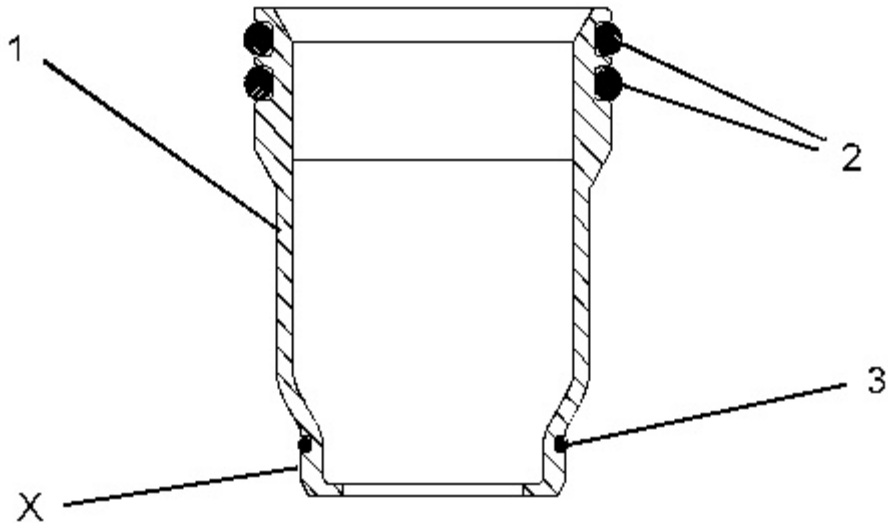


Illustration 1

g01043165

2. Install new O-ring seals (2) and O-ring seal (3) on electronic unit injector sleeve (1).
3. Apply Tooling (C) to the contact surface of electronic unit injector sleeve (1) on the surface that is Marked "X".

Note: Do not apply Tooling (C) to the cylinder head surfaces. Apply Tooling (C) on the electronic unit injector sleeve only.

4. Lubricate O-ring seals (2) with clean engine oil.
-

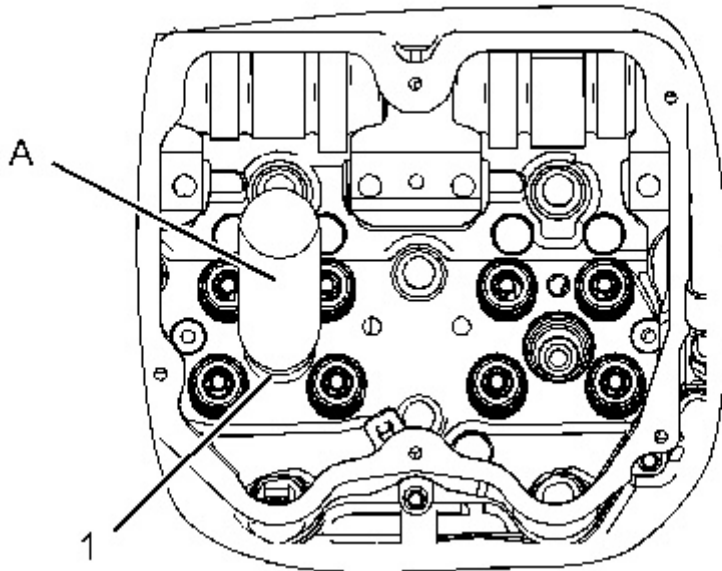


Illustration 2

g01099549

5. Install electronic unit injector sleeve (1) on Tooling (A). Position the electronic unit injector sleeve in the cylinder head. Use care not to damage the O-ring seals on the electronic unit injector sleeve. Use Tooling (A) and a hammer to install the electronic unit injector sleeve in the cylinder head.

NOTICE

Ensure that the electronic unit injector sleeve is properly seated in the cylinder head. The Tooling will "RING" when the electronic unit injector sleeve is fully seated in the bore of the cylinder head.

6. Remove Tooling (A). Remove excess Tooling (C).
7. Fill the cooling system with coolant. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change".

End By:

- a. Install the electronic unit injectors. Refer to Disassembly and Assembly, "Electronic Unit Injector - Install".

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i02208257

Turbocharger - Remove

SMCS - 1052-011

Removal Procedure

NOTICE

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NOTICE

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-
1. Drain the cooling system. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change".
-

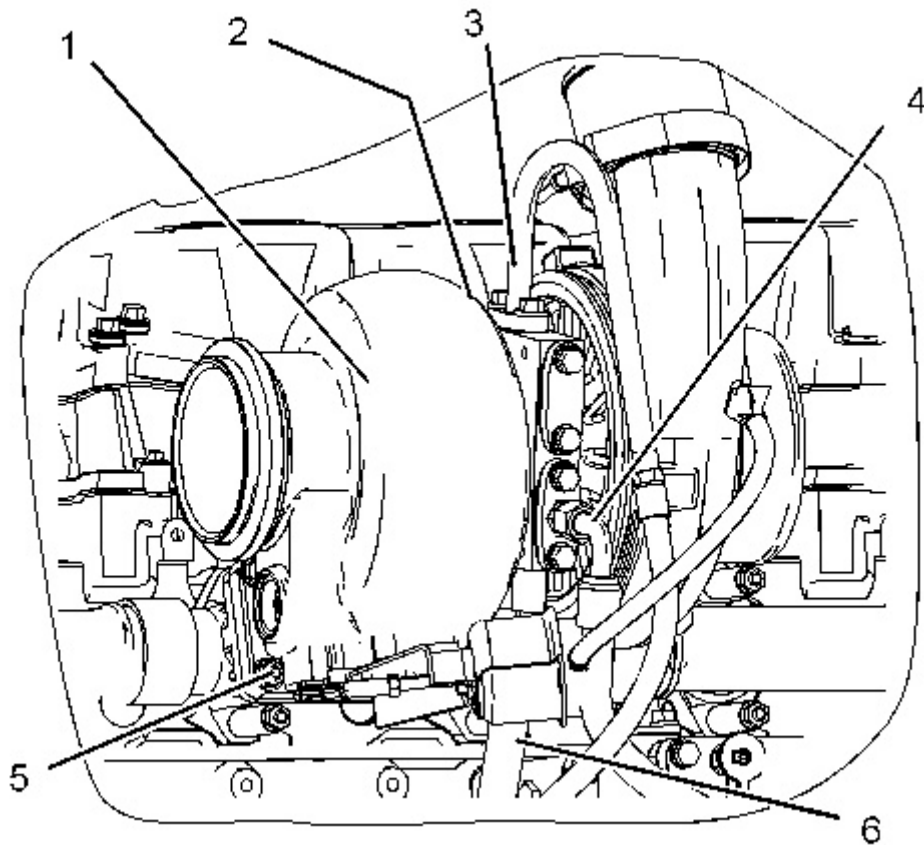


Illustration 1

g01043209

2. Disconnect tube assembly (3) and tube assembly (6).
3. Disconnect tube assembly (2) and tube assembly (4).
4. Attach a suitable lifting device to turbocharger (1). The weight of the turbocharger is approximately 34 kg (75 lb).
5. Remove locknuts (5). Remove turbocharger (1) and the gasket from the exhaust manifold.



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i04391596

Turbocharger - Disassemble

SMCS - 1052-015

Disassembly Procedure

Start By:

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

NOTICE

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