

Disassembly and Assembly

1506A-E88TA, 1506C-E88TA and 1506D-E88TA Industrial Engines

LG (Engine)
PK9 (Engine)



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Disassembly and Assembly Section

i05986296

Fuel Priming Pump - Remove and Install

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.

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.

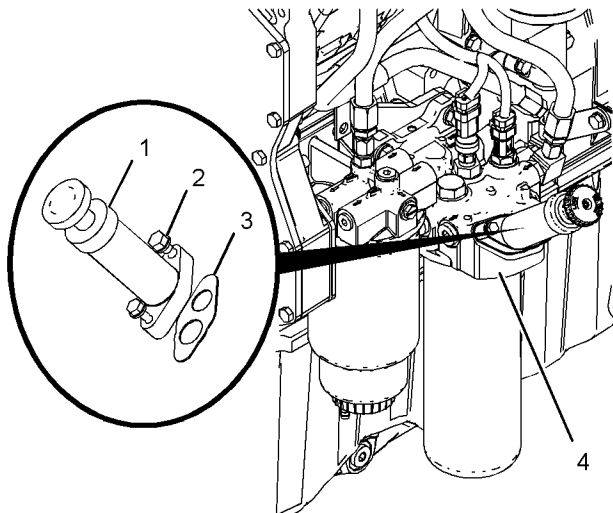


Illustration 1

g03778539

Typical example

2. Remove bolts (2). Remove fuel priming pump (1) from fuel filter base (4).

3. Remove gasket (3).

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

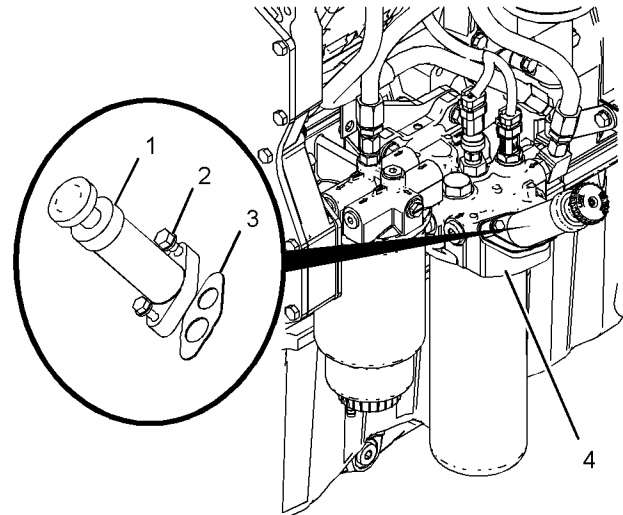


Illustration 2

g03778539

Typical example

1. Position a new gasket (3) on fuel filter base (4).

Note: Ensure correct orientation of the joint.

2. Position fuel priming pump (1) on fuel filter base (4) and install bolts (2). Tighten the bolt to a torque of 12 N·m (105 lb in). Tighten the bolt to a torque of 28 N·m (248 lb in).

3. Turn the fuel supply to the ON position.

- Remove the air from the fuel system. Refer to Operation and Maintenance Manual, "Fuel System - Prime" for the correct procedure.

i05986293

Fuel Filter Base - Remove

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.

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.

- Turn the fuel supply to the "OFF" position.
- Place a suitable container below the fuel filter base in order to catch any fuel that might be spilled.

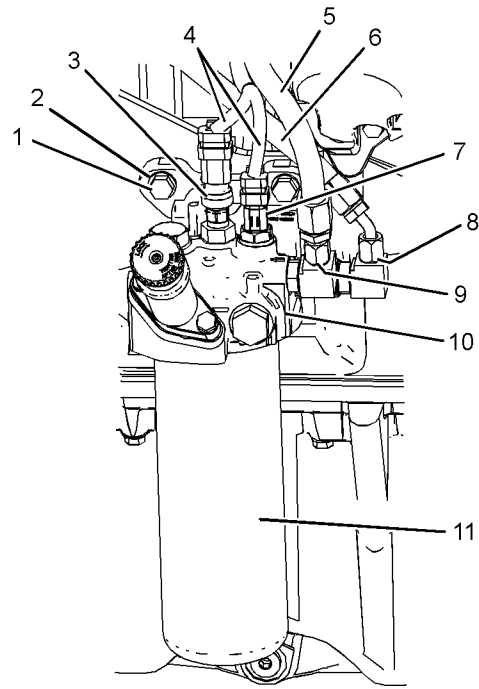


Illustration 3

g03778700

Typical example

- Disconnect harness assembly (4) from fuel pressure sensor (3) and fuel temperature sensor (7).
- Disconnect hose assembly (5) and hose assembly (6). Remove O-ring seal (7) (not shown) and O-ring seal (9) (not shown). Plug the open hose assemblies and open port on the connections secondary fuel filter base (10).
- Use a suitable tool in order to remove secondary fuel filter (11). Remove the O-ring seal. Refer to Operation and Maintenance Manual, "Fuel System Secondary Filter - Replace" for more information.
- Remove bolts (1) and washers (2). Support the fuel filter base (10) as the bolts are removed. Remove fuel filter base (10).

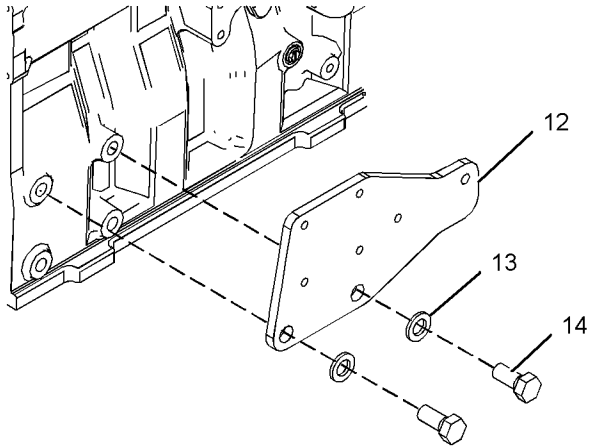


Illustration 4

g03780793

Typical example

7. If necessary, follow Step 7.a through Step 7.b in order to remove bracket (12) from the cylinder block.
 - a. If necessary, remove the assembly of primary fuel filter. Refer to Disassembly and Assembly, "Water Separator and Fuel Filter (Primary) - Remove and Install" for the correct procedure.
 - b. Remove bolts (14) and washers (13). Remove bracket (12) from the cylinder block.

i06539447

Fuel Filter Base - Remove (Option 2)

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.

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.
2. Place a suitable container below the fuel filter base to catch any fuel that might be spilled.

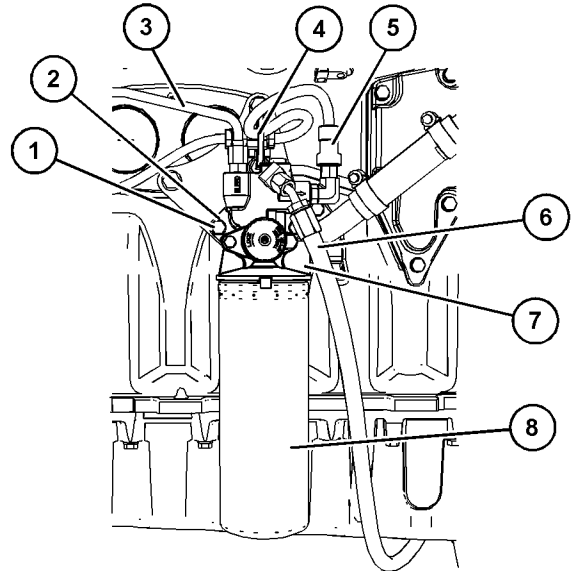


Illustration 5

g06013383

Typical example

3. Cut cable strap (4). Disconnect fuel pressure sensor (5) from the engine harness.
4. Disconnect tube assembly (3) and hose assembly (6). Plug the open hose assemblies and open port on the connections secondary fuel filter base (7).
5. Use a suitable tool to remove secondary fuel filter (8). Remove the O-ring seal. Refer to Operation and Maintenance Manual, "Fuel System Secondary Filter - Replace" for more information.
6. Remove bolts (1) and washers (2). Support the fuel filter base (7) as the bolts are removed. Remove fuel filter base (7).

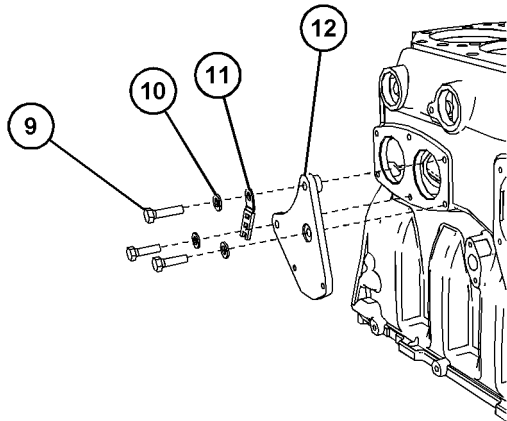


Illustration 6

g06013549

Typical example

7. If necessary, follow Step 7.a through Step 7.b to remove bracket (12) from the cylinder block.
 - a. If necessary, remove the assembly of primary fuel filter. Refer to Disassembly and Assembly, "Water Separator and Fuel Filter (Primary) - Remove and Install" for the correct procedure.
 - b. Remove bolts (9) and washers (13). Remove bracket (11) and bracket (12) from the cylinder block.

i05986291

Fuel Filter Base - Disassemble

Disassembly Procedure

Start By:

- a. **Remove the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove" for the correct procedure.**

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

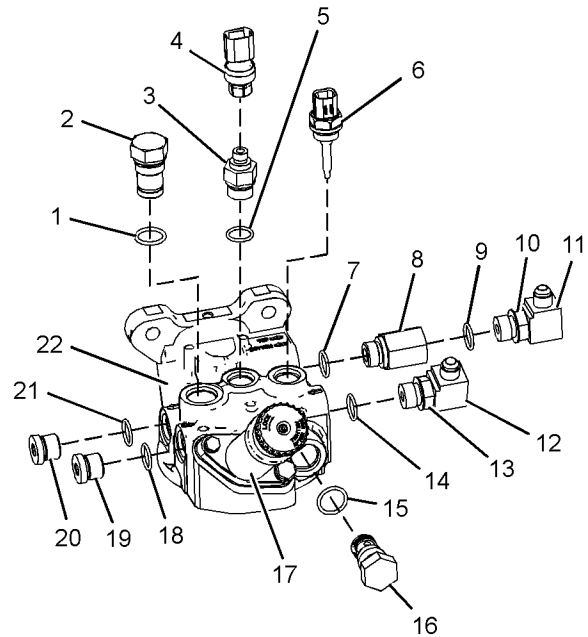


Illustration 7

g03779438

Typical example

1. Remove fuel priming pump (17) from fuel filter base assembly (22). Refer to Disassembly and Assembly, "Fuel Priming Pump - Remove and Install" for the correct procedure.
2. Remove fuel temperature sensor (6) from fuel filter base assembly (22). Refer to Disassembly and Assembly, "Fuel Temperature Sensor - Remove and Install" for the correct procedure.
3. Remove fuel pressure sensor (4) from fuel filter base assembly (22). Refer to Disassembly and Assembly, "Fuel Pressure Sensor - Remove and Install" for the correct procedure.
4. Remove adapter (3) from fuel filter base assembly (22). Remove the O-ring seal (5) from the adapter.
5. Remove fuel check valve (2) from fuel filter base assembly (22). Remove the O-ring seal (1) from the fuel check valve.
6. Remove fuel check valve (16) from fuel filter base assembly (22). Remove the O-ring seal (15) from the fuel check valve.
7. Make temporary marks on elbow connection (11) for installation purposes. Loosen locking nut (10) and remove elbow connection from adapter (8). Remove O-ring seal (9) from the elbow connection.

8. Remove adapter (8) from fuel filter base assembly (22). Remove the O-ring seal (7) from the adaptor.
9. Make temporary marks on elbow connection (12) for installation purposes. Loosen locking nut (13) and remove elbow connection from fuel filter base assembly (22). Remove O-ring seal (14) from the elbow connection.
10. Remove plug (19), and plug (20) from fuel filter base assembly (22). Remove the O-ring seal (18) and O-ring seal (21) from the plugs.

i06541703

Fuel Filter Base - Disassemble (Option 2)

Disassembly Procedure

Start By:

- a. Remove the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove (Option 2)" for the correct procedure.

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

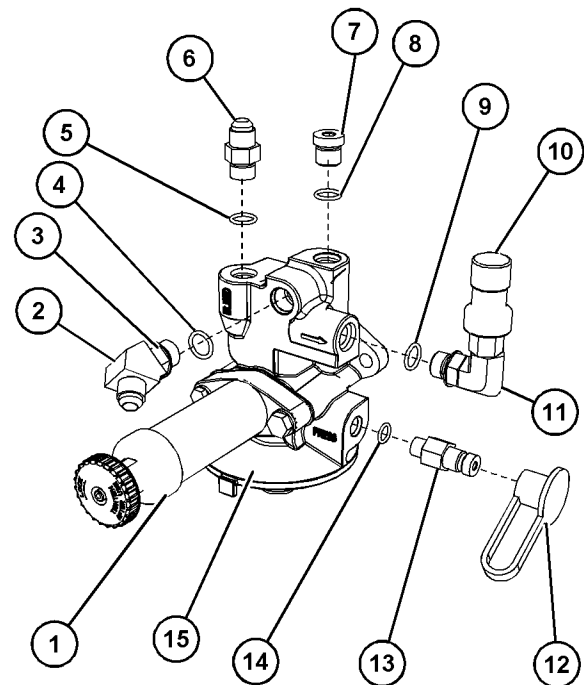


Illustration 8

g06015010

Typical example

1. Remove fuel priming pump (1) from fuel filter base assembly (15). Refer to Disassembly and Assembly, "Fuel Priming Pump - Remove and Install" for the correct procedure.
2. Remove fuel pressure sensor (10) from elbow connection (11). Refer to Disassembly and Assembly, "Fuel Pressure Sensor - Remove and Install" for the correct procedure.
3. Remove adapter (6) from fuel filter base assembly (15). Remove the O-ring seal (5) from the adapter.
4. Remove fuel check valve (13) from fuel filter base assembly (15). Remove O-ring seal (14) and cap (12) from the fuel check valve.
5. Make temporary marks on elbow connection (2) for installation purposes. Loosen locking nut (3) and remove elbow connection from fuel filter base assembly (15). Remove O-ring seal (4) from the elbow connection.
6. Make temporary marks on elbow connection (11) for installation purposes. Remove elbow connection from fuel filter base assembly (15). Remove O-ring seal (9) from the elbow connection.

7. Remove plug (7) from fuel filter base assembly (15). Remove the O-ring seal (8) from the plug.

i05986289

Fuel Filter Base - Assemble

Assembly Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that the all components of the filter base are clean and free from damage. If necessary, replace any component that is worn or damaged

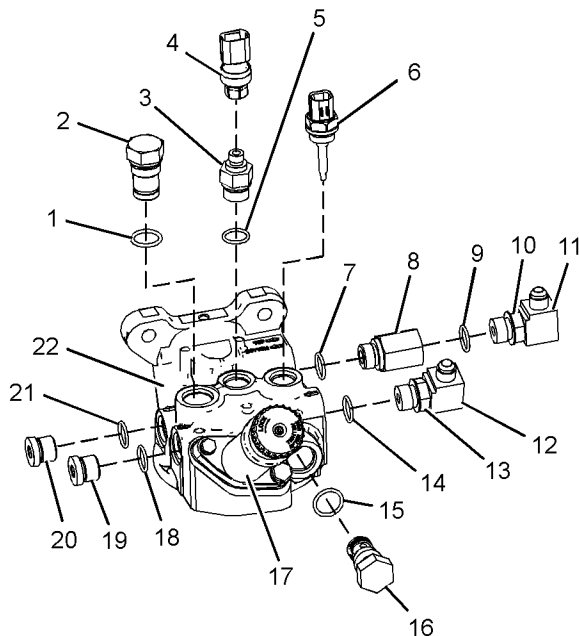


Illustration 9

g03779438

Typical example

2. Install a new O-ring seal (18), and a new O-ring seal (21) to plug (19), and plug (20). Install the plugs into fuel filter base assembly (22). Tighten plugs to a torque of 40 N·m (30 lb ft).

3. Install a new O-ring seal (14) to elbow connection (12). Install the elbow connection into fuel filter base assembly (22). Align the elbow connection with the temporary marks. Tighten locking nut (13) to a torque of 50 N·m (37 lb ft). Ensure that the elbow connection remains align after the locking nut is tightened.
4. Install a new O-ring seal (7) to adapter (8). Install the adapter into fuel filter base assembly (22). Tighten the adapter to a torque of 50 N·m (37 lb ft).
5. Install a new O-ring seal (9) to elbow connection (11). Install the elbow connection to adapter (8). Align the elbow connection with the temporary marks. Tighten locking nut (10) to a torque of 50 N·m (37 lb ft). Ensure that the elbow connection remains align after the locking nut is tightened.
6. Install a new O-ring seal (15) to fuel check valve (16). Install the fuel check valve into fuel filter base assembly (22). Tighten the fuel check valve to a torque of 65 N·m (48 lb ft).
7. Install a new O-ring seal (1) to fuel check valve (2). Install the fuel check valve into fuel filter base assembly (22). Tighten the fuel check valve to a torque of 65 N·m (48 lb ft).
8. Install a new O-ring seal (5) to adapter (8). Install the adapter into fuel filter base assembly (22). Tighten the adapter to a torque of 50 N·m (37 lb ft).
9. Install fuel pressure sensor (4) to adapter (8). Refer to Disassembly and Assembly, "Fuel Pressure Sensor - Remove and Install" for the correct procedure.
10. Install fuel temperature sensor (6) to fuel filter base assembly (22). Refer to Disassembly and Assembly, "Fuel Temperature Sensor - Remove and Install" for the correct procedure.
11. Install fuel priming pump (17) to fuel filter base assembly (22). Refer to Disassembly and Assembly, "Fuel Priming Pump - Remove and Install" for the correct procedure.

End By:

- a. Install the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Install" for the correct procedure.

i06541719

Fuel Filter Base - Assemble (Option 2)

Assembly Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that the all components of the filter base are clean and free from damage. If necessary, replace any component that is worn or damaged
-

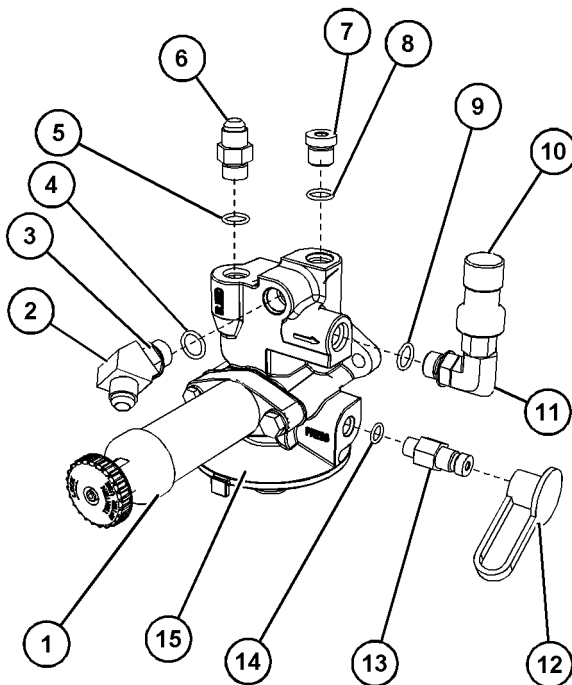


Illustration 10

g06015010

Typical example

2. Install a new O-ring seal (8) to plug (7). Install the plug into fuel filter base assembly (15). Tighten plugs to a torque of 40 N·m (30 lb ft).

3. Install a new O-ring seal (4) to elbow connection (3). Install the elbow connection into fuel filter base assembly (15). Align the elbow connection with the temporary marks. Tighten locking nut (3) to a torque of 50 N·m (37 lb ft). Ensure that the elbow connection remains aligned after the locking nut is tightened.
4. Install a new O-ring seal (9) to elbow connection (11). Install the elbow connection to fuel filter base assembly (15). Align the elbow connection with the temporary marks. Tighten elbow connection (11) to a torque of 40 N·m (30 lb ft).
5. Install a new O-ring seal (14) to fuel check valve (13). Install the fuel check valve into fuel filter base assembly (15). Tighten the fuel check valve to a torque of 30 N·m (22 lb ft).
6. Install a new O-ring seal (5) to adapter (6). Install the adapter into fuel filter base assembly (15). Tighten the adapter to a torque of 40 N·m (30 lb ft).
7. Install fuel pressure sensor (10) to elbow connection (11). Refer to Disassembly and Assembly, "Fuel Pressure Sensor - Remove and Install" for the correct procedure.
8. Install fuel priming pump (1) to fuel filter base assembly (15). Refer to Disassembly and Assembly, "Fuel Priming Pump - Remove and Install" for the correct procedure.

End By:

- a. Install the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Install (Option 2)" for the correct procedure.

i05986292

Fuel Filter Base - Install Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that all components of the fuel filter base are free from wear or damage. If necessary, replace any component that is worn or damaged.

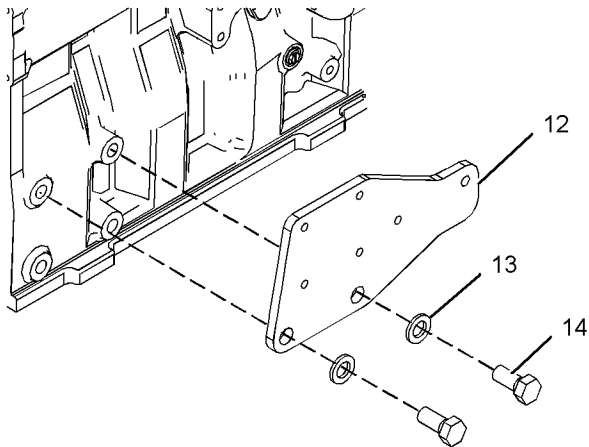


Illustration 11

g03780793

Typical example

2. If necessary, follow Step 2.a through Step 2.b in order to install bracket (12) to the cylinder block.
 - a. Position bracket (12) onto the cylinder block. Install washers (3) to bolts (14). Torque bolts to a torque of 240 N·m (177 lb ft).
 - b. If necessary, install the assembly of primary fuel filter. Refer to Disassembly and Assembly, "Water Separator and Fuel Filter (Primary) - Remove and Install" for the correct procedure.

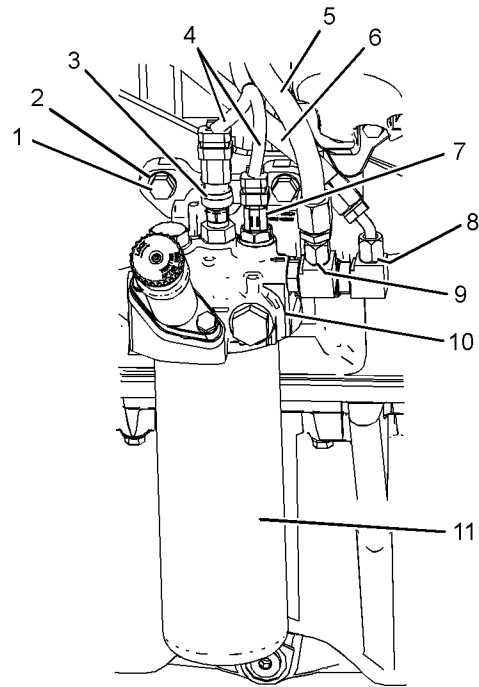


Illustration 12

g03778700

Typical example

3. Position fuel filter base (10) and install washers (2) and bolts (1). Tighten the bolts to a torque of 55 N·m (41 lb ft).
4. Install a new O-ring seal to secondary fuel filter (11). Install the secondary fuel filter. Refer to Operation and Maintenance Manual, "Fuel System Secondary Filter - Replace" for more information.
5. Install a new O-ring seal (8) (not shown) and a new O-ring seal (9) (not shown). Ensure that the O-ring seals are correctly located into the recess of the elbow connections
6. Connect hose assembly (5). Connect hose assembly (6). Securely tighten the hose assemblies to the elbow connections.
7. Connect harness assembly (4) to fuel pressure sensor (3) and fuel temperature sensor (7).
8. Turn the fuel supply to the ON position.

9. Remove the air from the fuel system. Refer to Operation and Maintenance Manual, "Fuel System - Prime" for the correct procedure.

i06541738

Fuel Filter Base - Install (Option 2)

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

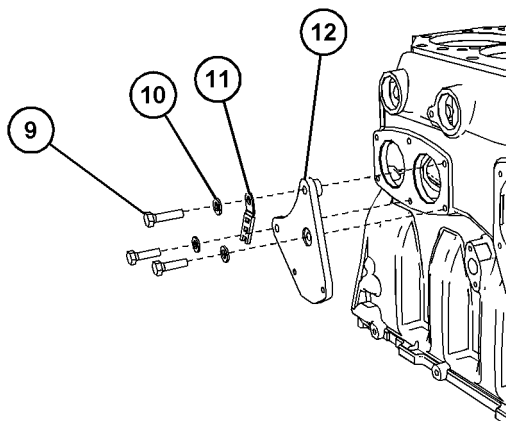


Illustration 13

g06013549

Typical example

1. Ensure that all components of the fuel filter base are free from wear or damage. If necessary, replace any component that is worn or damaged.
2. If necessary, follow Step 2.a through Step 2.b to install bracket (12) to the cylinder block.
 - a. Position bracket (12) onto the cylinder block. Install washers (10) to bolts (9). Install bracket (11) to one bolt (9). Torque bolts to a torque of 55 N·m (41 lb ft).
 - b. If necessary, install the assembly of primary fuel filter. Refer to Disassembly and Assembly, "Water Separator and Fuel Filter (Primary) - Remove and Install" for the correct procedure.

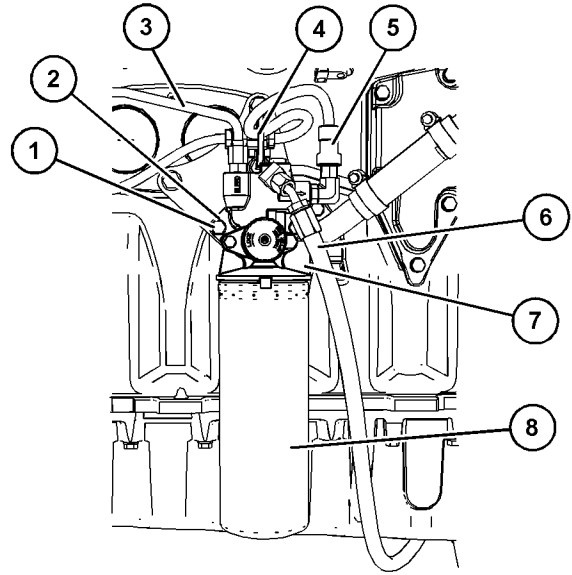


Illustration 14

g06013383

3. Position fuel filter base (7) and install washers (2) and bolts (1). Tighten the bolts to a torque of 28 N·m (21 lb ft).
4. Install a new O-ring seal to secondary fuel filter (8). Install the secondary fuel filter. Refer to Operation and Maintenance Manual, "Fuel System Secondary Filter - Replace" for more information.
5. Connect hose assembly (6). Securely tighten the hose assembly to the elbow connection.
6. Connect tube assembly (3). Securely tighten the tube assembly to the adaptor.
7. Connect the engine harness to fuel pressure sensor (5).
8. Secure fuel pressure sensor (5) to the bracket using a new cable strap (4).
9. Turn the fuel supply to the ON position.

10. Remove the air from the fuel system. Refer to Operation and Maintenance Manual, "Fuel System - Prime" for the correct procedure.

i05986494

Water Separator and Fuel Filter (Primary) - Remove and Install

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.

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 battery disconnect switch to the OFF position.
2. Turn the fuel supply to the OFF position.
3. Place a suitable container below the fuel filter base in order to catch any fuel that might be spilled.

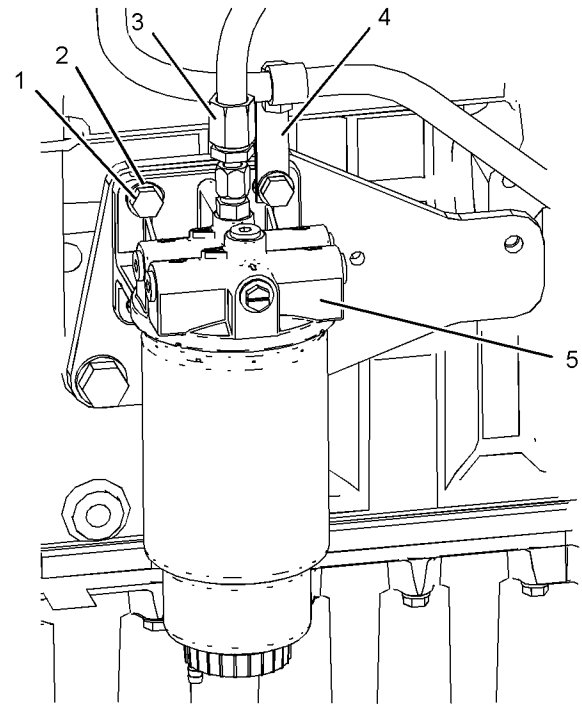


Illustration 15

g03780720

Typical example

4. Disconnect hose assembly (3) from the assembly of primary fuel filter (5).
5. Remove bolts (1) and washers (2). Position bracket (4) away from the assembly of primary fuel filter (5). Remove the assembly of primary fuel filter (5) from the mounting bracket.

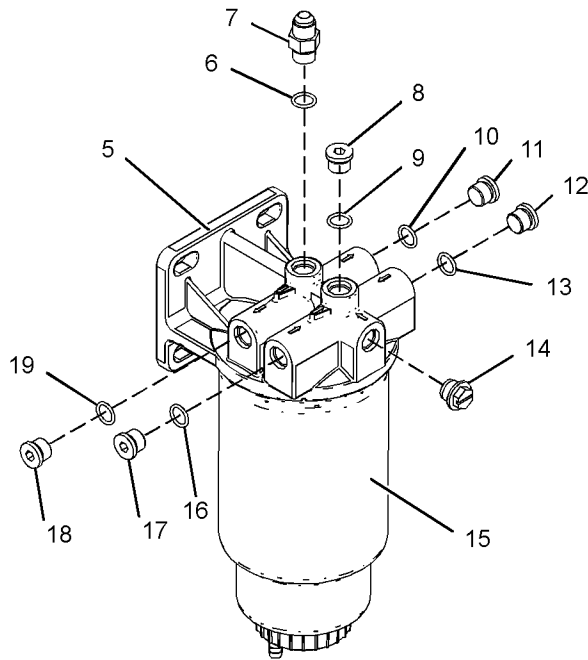


Illustration 16

g03780722

Typical example

6. If necessary, follow Step 6.a through Step 6.e in order to disassembly the assembly of primary fuel filter (5).
 - a. Remove adaptor (7) and remove O-ring seal (6).
 - b. Remove plug (7) and remove O-ring seal (9).
 - c. Remove plug (14).
 - d. Remove plug (11), plug (12), plug (17), and plug (18). Remove O-ring seal (10), O-ring seal (13), O-ring seal (16), and O-ring seal (19) from plugs.
 - e. Remove fuel filter canister (15). Refer to Operation and Maintenance Manual, "Fuel System Primary Filter (Water Separator) Element - Replace" for the correct procedure.

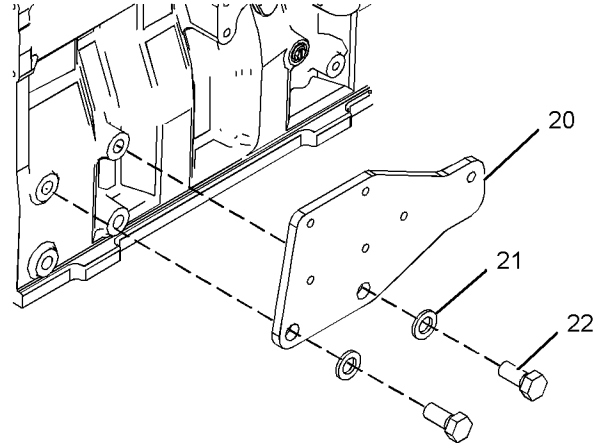


Illustration 17

g03780742

Typical example

7. If necessary, follow Step 7.a through Step 6.e in order to remove bracket (20) from the cylinder block.
 - a. If necessary, remove the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove" for the correct procedure.
 - b. Remove bolts (22) and washers (21). Remove bracket (20) from the cylinder block.

Installation Procedure

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Ensure that the fuel filter base is clean and free from damage. If necessary, replace the complete fuel filter base and filter assembly.

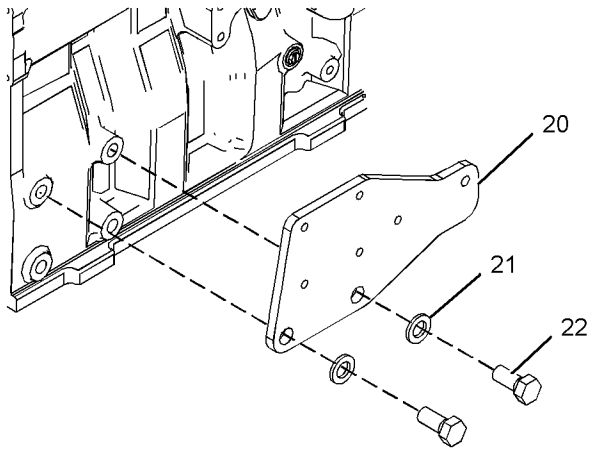


Illustration 18

g03780742

Typical example

2. If necessary, follow Step 2 through Step 4 in order to install bracket (20) from the cylinder block.
3. Position bracket (20) to the cylinder block. Install washers (21) to bolts (22). Install bolts (22) to bracket (20). Tighten bolts to a torque of 240 N·m (177 lb ft)
4. If necessary, install the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove" for the correct procedure.

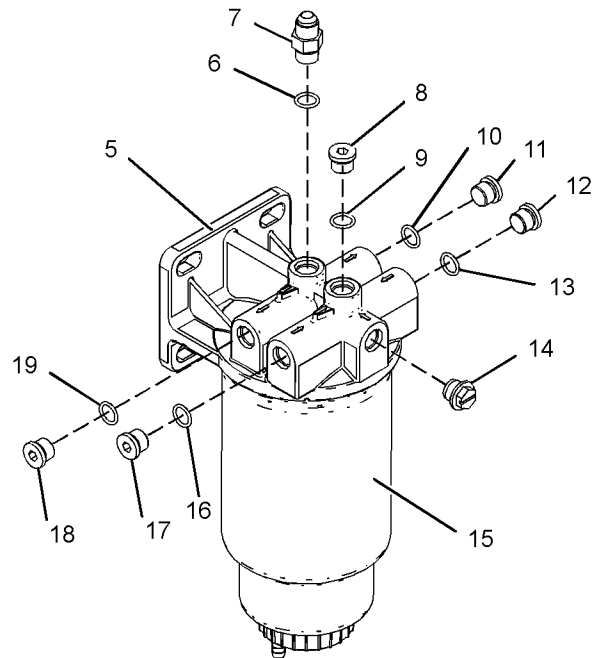


Illustration 19

g03780722

Typical example

5. If necessary, follow Step 5.a through Step 5.e in order to assembly primary fuel filter (1).
 - a. Install a new filter element (15). Refer to Operation and Maintenance Manual, "Fuel System Primary Filter (Water Separator) Element - Replace" for the correct procedure.
 - b. Install a new O-ring seal (6) to adaptor (7). Install adaptor (7) to the assembly of primary fuel filter (5). Tighten the adaptor to a torque of 30 N·m (266 lb in).
 - c. Install a new O-ring seal (9) to plug (8). Install plug (8) to the assembly of primary fuel filter (5). Tighten the plug to a torque of 22 N·m (195 lb in).
 - d. Install plug (14) to the assembly of primary fuel filter (5). Tighten the plug to a torque of 30 N·m (266 lb in).
 - e. Install a new O-ring seal (10) O-ring seal (13), O-ring seal (16), O-ring seal (19) to plug (11), plug (12), plug (17), and plug (18). Install plug (11), plug (12), plug (17), and plug (18) to assembly primary fuel filter (5). Tighten the plugs to a torque of 30 N·m (266 lb in).

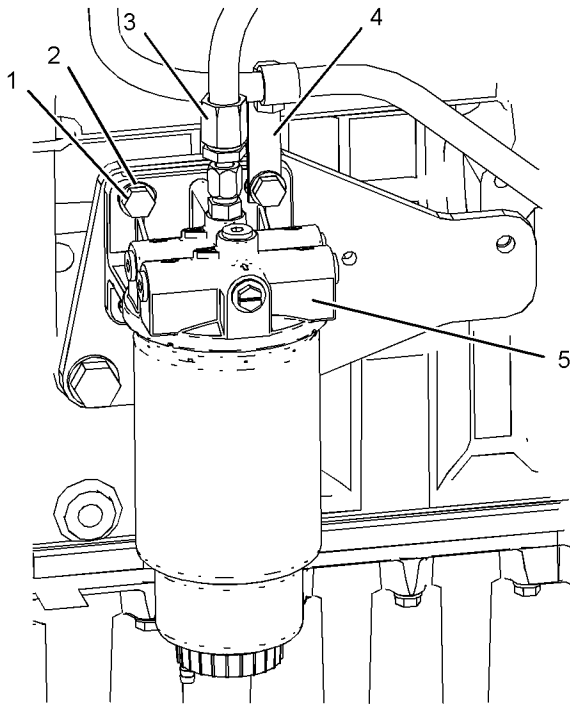


Illustration 20

g03780720

Typical example

6. Position the assembly of primary fuel filter (5) onto the mounting bracket. Position bracket (4) to the assembly of primary fuel filter (5).
7. Install washers (2) to bolts (1). Install bolts (1) to the assembly of primary fuel filter (5). Tighten the bolts to a torque of 55 N·m (41 lb ft).
8. Connect hose assembly (3) to the assembly of primary fuel filter (5).
9. Turn the fuel supply to the ON position.
10. Turn the battery disconnect switch to the ON position.

End By:

- a. Remove the air from the fuel system. Refer to **Operation and Maintenance Manual, “Fuel System - Prime”** for the correct procedure.

i05986707

Electronic Unit Injector - Remove

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	T401081	Fuel Injector Installer and Removal Tooling	2

Start By:

- a. Remove the valve mechanism cover. Refer to **Disassembly and Assembly, “Valve Mechanism Cover - Remove and Install”** for the correct 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.

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.

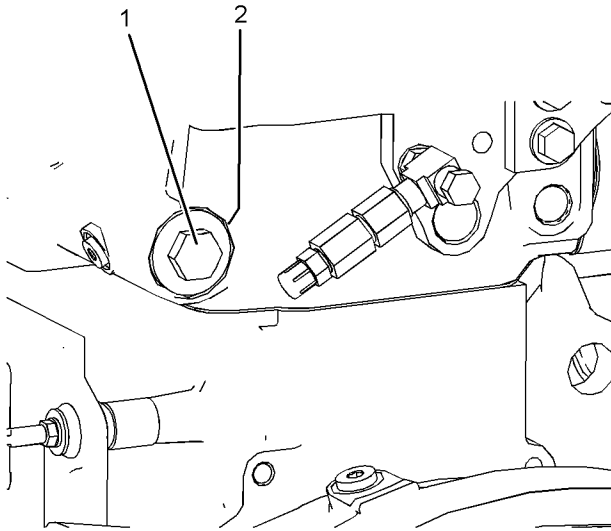


Illustration 21

g03775306

1. Remove plug (1) from the rear of the cylinder head. Remove O-ring seal (2) (not shown) from the plug. Allow the engine oil to drain from the cylinder head before the unit injector is removed.

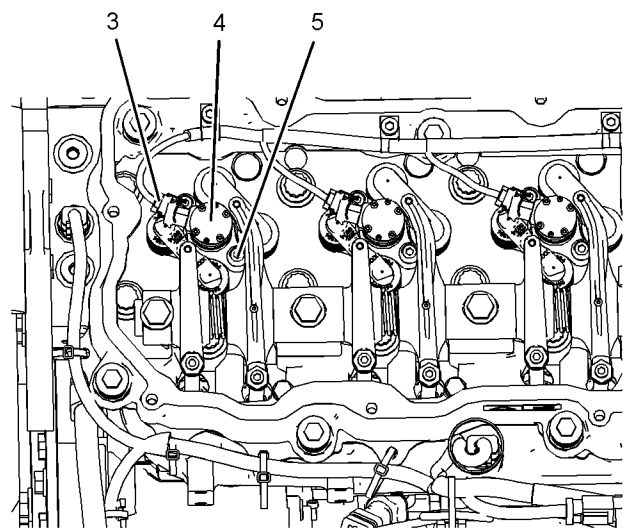


Illustration 22

g03774344

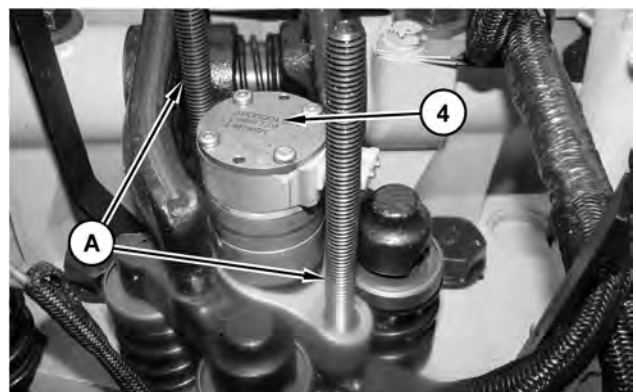


Illustration 23

g03774346

2. Use a suitable tool to disconnect harness assembly (3) from electronic unit injector (4).
3. Remove Allen head bolts (5) from electronic unit injector (4).
4. Install Tooling (A) to electronic unit injector (4).
5. Use Tooling (A) to remove electronic unit injector (4) from the cylinder head.

Note: Do not use a wire brush on the tip of the electronic unit injector. Damage to the unit injector will occur.

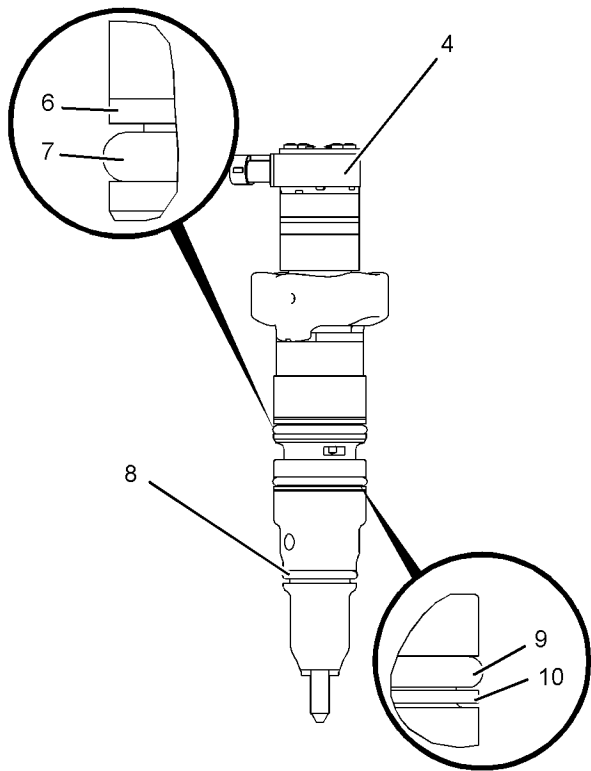


Illustration 24

g03774348

- 6. Remove O-ring seal (8) from electronic unit injector (4).
- 7. Remove O-ring seal (9) and backup ring (10) from electronic unit injector (2).
- 8. Remove O-ring seal (7) and backup ring (6) from unit injector (4).
- 9. If necessary, follow Step 2 through Step 8 in order to remove the remaining electronic unit injector (4).

i05986518

Electronic Unit Injector - Install

Installation Procedure

Table 2

Required Tools			
Tool	Part Number	Part Description	Qty
A	T401081	Fuel Injector Installer and Removal Tooling	2
E	T401079	Seal Protector	1

(continued)

(Table 2, contd)

F	T401080	Seal Installer	1
G	GE50028	Vacuum Pump	1
	GE50046	Bottle Assembly	1
	GE50030	Clear Plastic Tubing 7.92 mm (0.312 inch) OD	1
H	T401077	Reamer	1
J	T401078	Tube Brush	1
K	GE50023	Tapered Brush	1
L	-	Vacuum Gun Kit	1
M	-	Tap Wrench	1

NOTICE

Keep all parts clean from contaminants.

Contaminants may cause rapid wear and shortened component life.

1. Evacuate as much fuel and oil as possible from the cylinder head before installing the electronic unit injector. Several evacuations may be necessary. Use Tooling (G) to remove the fuel and oil from the cylinder head.

Note: Tooling (L) is available to clean loose material from the sleeve bore for electronic unit injector and the cylinder.

2. Inspect the electronic unit injector sleeve for damage and carbon deposits.
3. Clean the carbon from the sleeve for the electronic unit injector, the sleeve bore. Clean the carbon from the end of the electronic unit injector, if the electronic unit injector is being reused. Clean the carbon from the seat area that is inside of the cylinder head. A fine grade of Scotch Brite material is preferred. Use Tooling (H) to clean the bore of the electronic unit injector tip. Use the Surface Reconditioning Pad in order to clean the carbon in the cylinder head. Use Tooling (J) in order to remove the carbon from the surface of the sleeve.

Note: Using power tools in order to rotate the material should not be necessary. The carbon in the electronic unit injector sleeve is more removable than the carbon at locations that are exposed to higher temperatures.

The following procedure is the preferred method of cleaning the sleeve bore.

Place a 38 mm (1.5 inch) square piece of Scotch Brite material on the end of Tooling (K). Twist Tooling (K) with Tooling (M) against the lower surface of the electronic unit injector sleeve bore.

The surface should be cleaned until the surface is smooth and shiny. The entire sleeve bore should be cleaned in order to remove any loose carbon particles.

Note: Tooling (J) is available to clean loose material from the electronic unit injector sleeve bore and the cylinder.

4. When you install a new electronic unit injector, the E-Trim value must be programmed into the Electronic Control Module (ECM). The E-Trim value is a six digit alphanumeric code that is supplied with the data sheet that comes with the new electronic unit injector. Use the following menu to program the E-Trim value.

- ECM Summary Screen
- Service Menu
- Calibration
- Electronic Unit Injector Code Calibration

NOTICE

The correct procedures and tooling specifications must always be used. Failure to follow any of the procedures may result in damage, malfunction, or possible engine failure.

NOTICE

The O-ring seals and the backup rings must be installed in the correct orientation. Damaged seals will result in excessive oil consumption or excessive leakage under the valve cover. Use care to prevent nicks or damage to the seals.

Note: Do not hit or strike the electronic unit injector during installation. Do not use a wire brush to clean the tip of the electronic unit injector. Damage to the electronic unit injector will occur.

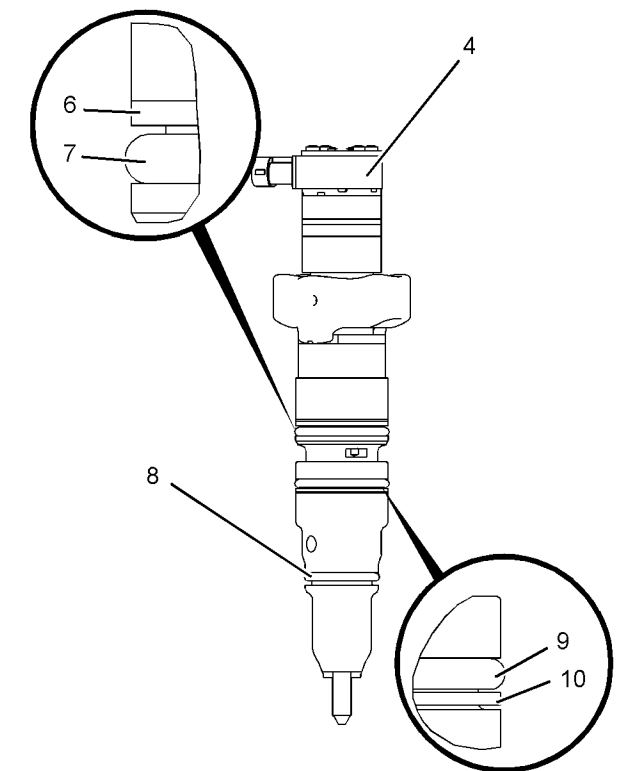


Illustration 25

g03774348

5. The correct installation of the electronic unit injector is important. Damage to the upper high-pressure seals can cause excessive oil leakage under the valve cover. The incorrect installation of the electronic unit injector may cause the engine not to start due to a low actuation pressure. Damage to the lower high-pressure seals may allow high-pressure oil to leak into the fuel supply passage. Damage to the lower high-pressure seals will result in excessive oil consumption.
6. Use Tooling (E) and Tooling (F) to install backup ring (6) to electronic unit injector (4).
7. Lubricate a new O-ring seal (7) with clean engine oil. Install the O-ring seal to electronic unit injector (4).
8. Use Tooling (E) and Tooling (F) to install backup ring (10) to unit injector (4).
9. Lubricate a new O-ring seal (9) with clean engine oil. Install the O-ring seal to electronic unit injector (4).
10. Lubricate a new O-ring seal (8) with clean engine oil. Install the O-ring seal to electronic unit injector (4).



Illustration 26

g03774936

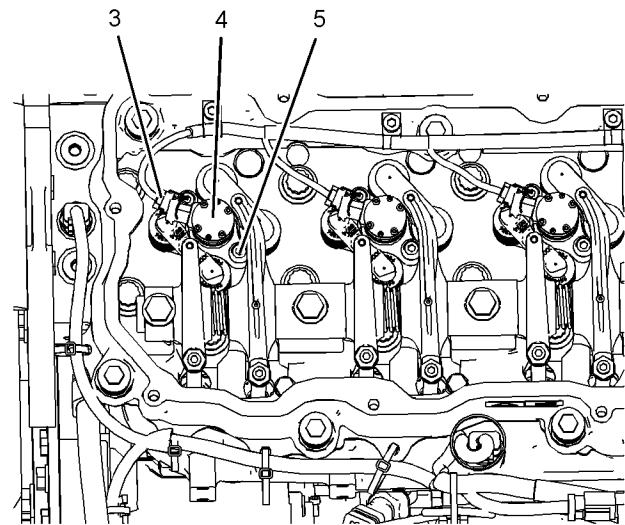


Illustration 27

g03774344

11. Lubricate the bore of the sleeve for electronic unit injector (4) with clean engine oil.
12. Position electronic unit injector (4) into sleeve for the electronic unit injector. Ensure that the electronic unit injector is correctly orientated.
13. Use Tooling (A) to install electronic unit injector (4) in the cylinder head.
14. Install Allen head bolt (5) on the exhaust side of the bracket. Tighten the exhaust side of Allen head bolt (5) until the bolt is seated. Tighten the inlet side of Allen head bolt (5) to a torque of 12 N·m (106 lb in).
15. Connect harness assembly (3) to electronic unit injector (4).

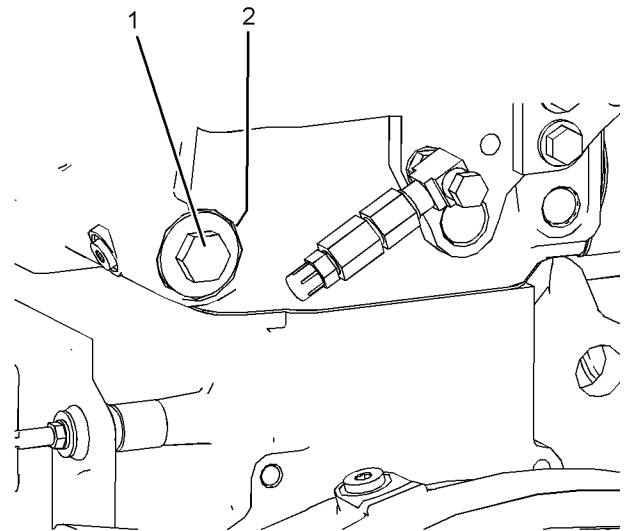


Illustration 28

g03775306

16. Install a new O-ring seal (2) (not shown) to plug (1). Install the plug (1) to the rear of the cylinder head. Tighten the plug to a torque of 400 N·m (295 lb ft).

End By:

- a. Install the valve mechanism cover. Refer to Disassembly and Assembly, "Valve Mechanism Cover - Remove and Install" for the correct procedure.

i05986716

Electronic Unit Injector Sleeve - Remove

Removal Procedure

Table 3

Required Tools			
Tool	Part Number	Part Description	Qty
A	T401082	Plug Tap	1
B	T401083	Guide Sleeve	1
C	T401084	Bridge Plate	1
	T401085	Puller Stud	1
	T401086	Full Nut	1
	T401087	Hard Washer	1
	T401088	Thrust Bearing	1
D	T401064	Rubber Stopper	1

Start By:

- a. Remove the unit injectors. Refer to Disassembly and Assembly, “Unit Injector - Remove” for the correct 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.

Dispose of all fluids according to local regulations and mandates.

1. Drain the coolant from the cooling system into a suitable container for storage or for disposal. Refer to Operation and Maintenance Manual, “Cooling System Coolant (ELC) - Change” for the correct procedure.

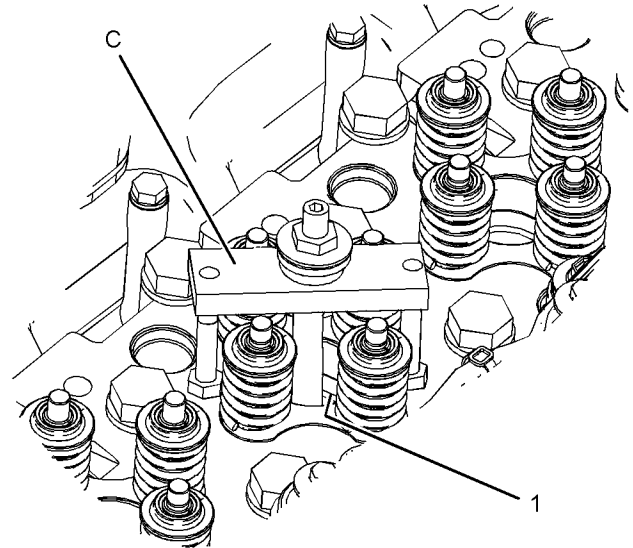


Illustration 29

g03775999

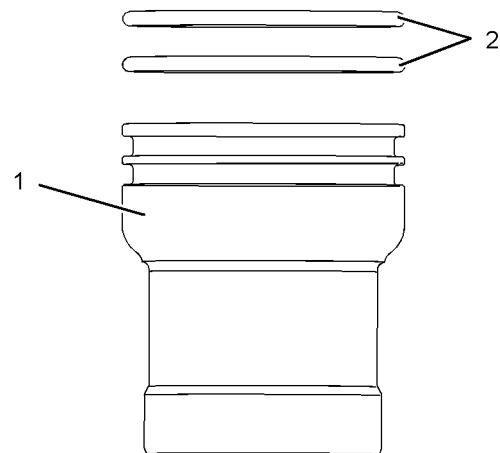


Illustration 30

g03776048

2. Position Tooling (D) at the bottom of electronic unit injector sleeve (1).
3. Coat Tooling (A) with clean grease. Use Tooling (A) and Tooling (B) to cut threads into electronic unit injector sleeve (1).
4. Install Tooling (C) in electronic unit injector sleeve (1).
5. Remove electronic unit injector sleeve (1) (not shown). Remove O-ring seals (2).



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