



Service Repair Manual

Model

226D SKID STEER LOADER

Previous Screen

Product: SKID STEER LOADER

Model: 226D SKID STEER LOADER HRD

Configuration: 226D Skid Steer Loader HRD00001-UP (MACHINE) POWERED BY C2.2 Engine

**Disassembly and Assembly
C2.2 Engines for Caterpillar Built Machines**

Media Number -UENR4528-01

Publication Date -01/09/2015

Date Updated -23/01/2018

i06123449

Fuel Injection Lines - Remove and Install

SMCS - 1252-010

Fuel Injection Lines Remove



Contact with high pressure fuel may cause fluid penetration and burn hazards. High pressure fuel spray may cause a fire hazard. Failure to follow these inspection, maintenance and service instructions may cause personal injury or death.

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	491-1265	Capping Kit	1

NOTICE

Ensure that all adjustments and repairs that are carried out to the fuel system are performed by authorized personnel that have the correct training.

Before beginning ANY work on the fuel system, refer to Operation and Maintenance Manual, "General Hazard Information and High Pressure Fuel Lines" for safety information.

Refer to System Operation, Testing and Adjusting, "Cleanliness of Fuel System Components" for detailed information on the standards of cleanliness that must be observed during ALL work on the fuel system.

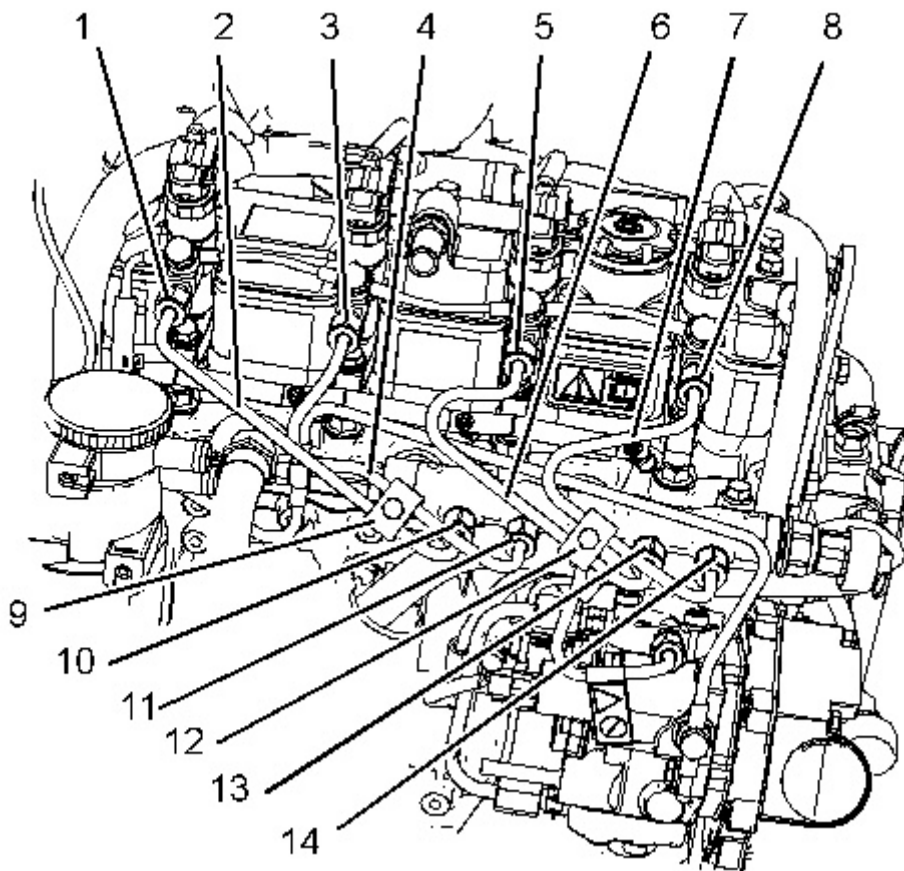
NOTICE

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.

Turn the fuel supply to the OFF position. Turn the battery disconnect switch to the OFF position.

If necessary, remove the breather hoses, refer to this Disassembly and Assembly, "Crankcase Breather - Remove and Install" for more information.



<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>

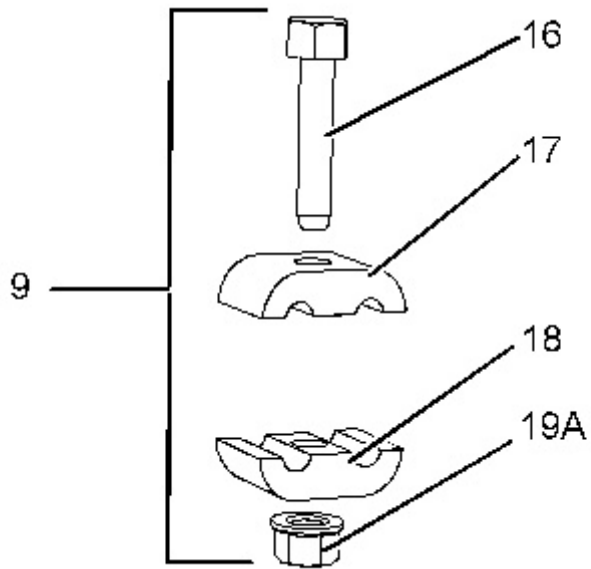


Illustration 2

g03816555

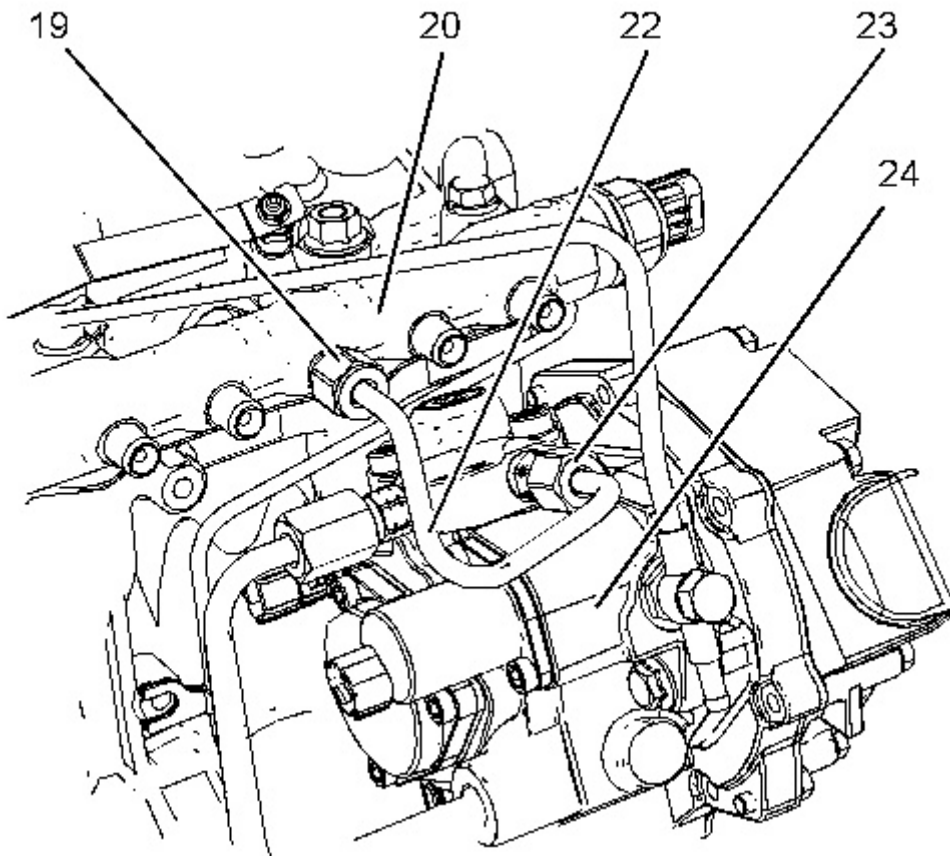


Illustration 3

g03816588

1. Remove clamp (9) and clamp (12).

2. Remove bolt (16) and nut (19A) from clamp assembly (9). Remove isolators (17) and (18). Remove bolt nut and isolators from clamp (12).
3. Disconnect nut (8) and nut (14). Remove fuel injection line (7). Install Tooling (A) to the fuel injector and the fuel manifold (20) as soon as the fuel injection line is removed.
4. Disconnect nut (5) and nut (13). Remove fuel injection line (6). Install Tooling (A) to the fuel injector and the fuel manifold (20) as soon as the fuel injection line is removed.
5. Disconnect nut (3) and nut (11). Remove fuel injection line (4). Install Tooling (A) to the fuel injector and the fuel manifold (20) as soon as the fuel injection line is removed.
6. Disconnect nut (1) and nut (10). Remove fuel injection line (2). Install Tooling (A) to the fuel injector and the fuel manifold (20) as soon as the fuel injection line is removed.
7. **Discard all fuel injection lines**
8. Disconnect nut (19) and nut (23). Remove fuel injection line (22) from manifold (20) and pump (24). Install Tooling (A) to the fuel pump and fuel manifold (20) as soon as the fuel injection line is removed. **Discard the fuel injection line.**

Fuel Injection Lines Install

NOTICE

All plugs and caps must be remain in position until the component is about to be installed

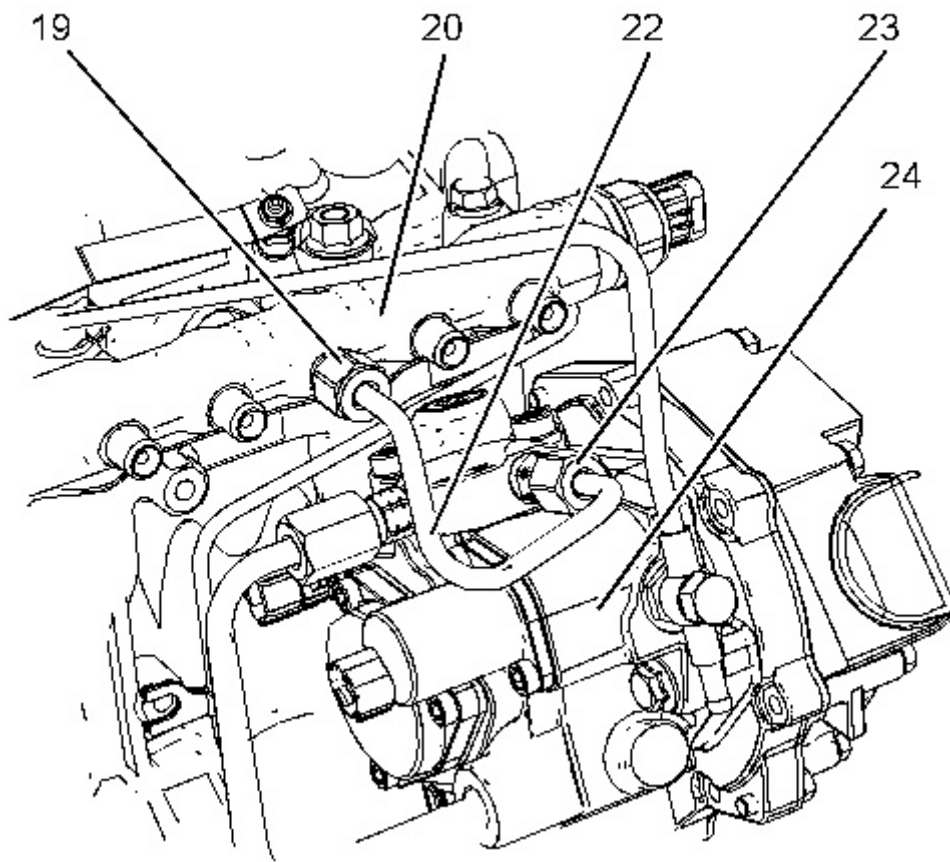


Illustration 4

g03816588

1. Position fuel injection line (22) onto fuel rail (20) and pump (24). Tighten nut (19) and nut (23) to a torque of 22.5 N·m (199 lb in).
-

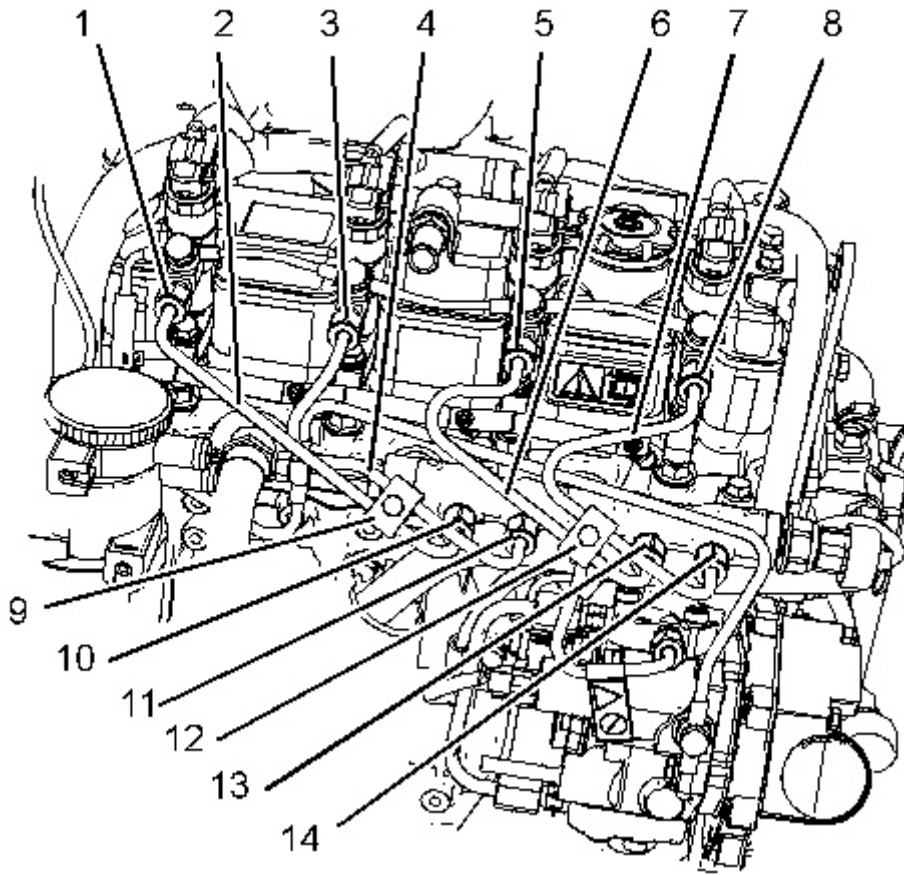


Illustration 5

g03816505

2. Position fuel injection line (2) onto fuel rail (20) and fuel injector. Loosely install fuel injection line. Position fuel injection line (4) onto fuel rail (20) and fuel injector. Loosely install fuel injection line.

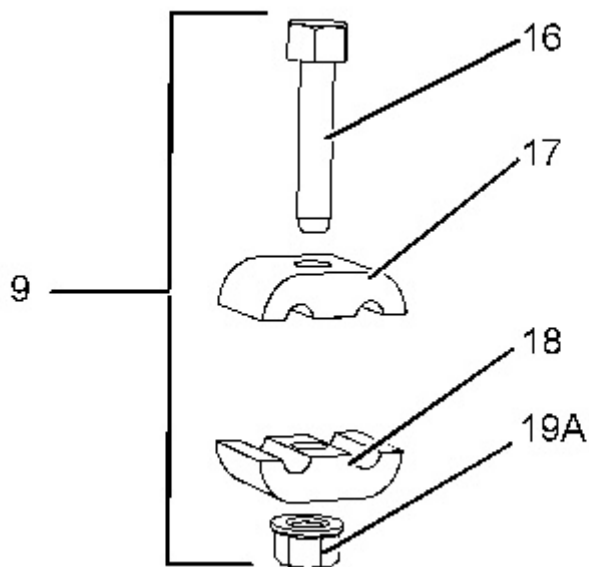


Illustration 6

g03816555

3. Position isolator (18) and isolator (17) onto fuel injection lines (2) and (4). Install nut (19A) and bolt (16). Tighten nut and bolt to a torque of 10 N·m (89 lb in).
4. Tighten nut (1) and nut (10) to a torque of 22.5 N·m (199 lb in). Tighten nut (3) and nut (11) to a torque of 22.5 N·m (199 lb in)
5. Position fuel injection line (6) onto fuel rail (20) and fuel injector. Loosely install fuel injection line. Position fuel injection line (7) onto fuel rail (20) and fuel injector. Loosely install fuel injection line.
6. Align isolator (18) and isolator (17) onto fuel injection lines (6) and (7). Install nut (19) and bolt (16). Tighten nut and bolt to a torque of 10 N·m (89 lb in).
7. Tighten nut (5) and nut (13) to a torque of 22.5 N·m (199 lb in). Tighten nut (8) and nut (14) to a torque of 22.5 N·m (199 lb in)
8. Turn the fuel supply to the ON position and turn the battery disconnect switch to the ON position. If necessary, install breather hoses refer to this Disassembly and Assembly, "Crankcase Breather - Remove and Install" for more information.
9. Remove the air from the fuel system. Refer to Operation and Maintenance Manual, "Fuel System Prime" for more information.

[Previous Screen](#)

Product: SKID STEER LOADER

Model: 226D SKID STEER LOADER HRD

Configuration: 226D Skid Steer Loader HRD00001-UP (MACHINE) POWERED BY C2.2 Engine

Disassembly and Assembly

C2.2 Engines for Caterpillar Built Machines

Media Number -UENR4528-01

Publication Date -01/09/2015

Date Updated -23/01/2018

i06841173

Exhaust Cooler (NRS) - Remove and Install - 4 Cylinder Engines

SMCS - 1087; 108C-010

Removal Procedure

Start By:

- a. 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" for the correct procedure.
- b. Disconnect the air induction hose from the turbocharger. Refer to Disassembly and assembly, "Turbocharger - Remove" for the correct procedure.

**WARNING**

Sulfuric Acid Burn Hazard may cause serious personal injury or death.

The exhaust gas cooler may contain a small amount of sulfuric acid. The use of fuel with sulfur levels greater than 15 ppm may increase the amount of sulfuric acid formed. The sulfuric acid may spill from the cooler during service of the engine. The sulfuric acid will burn the eyes, skin and clothing on contact. Always wear the appropriate personal protective equipment (PPE) that is noted on a material safety data sheet (MSDS) for sulfuric acid. Always follow the directions for first aid that are noted on a material safety data sheet (MSDS) for sulfuric acid.

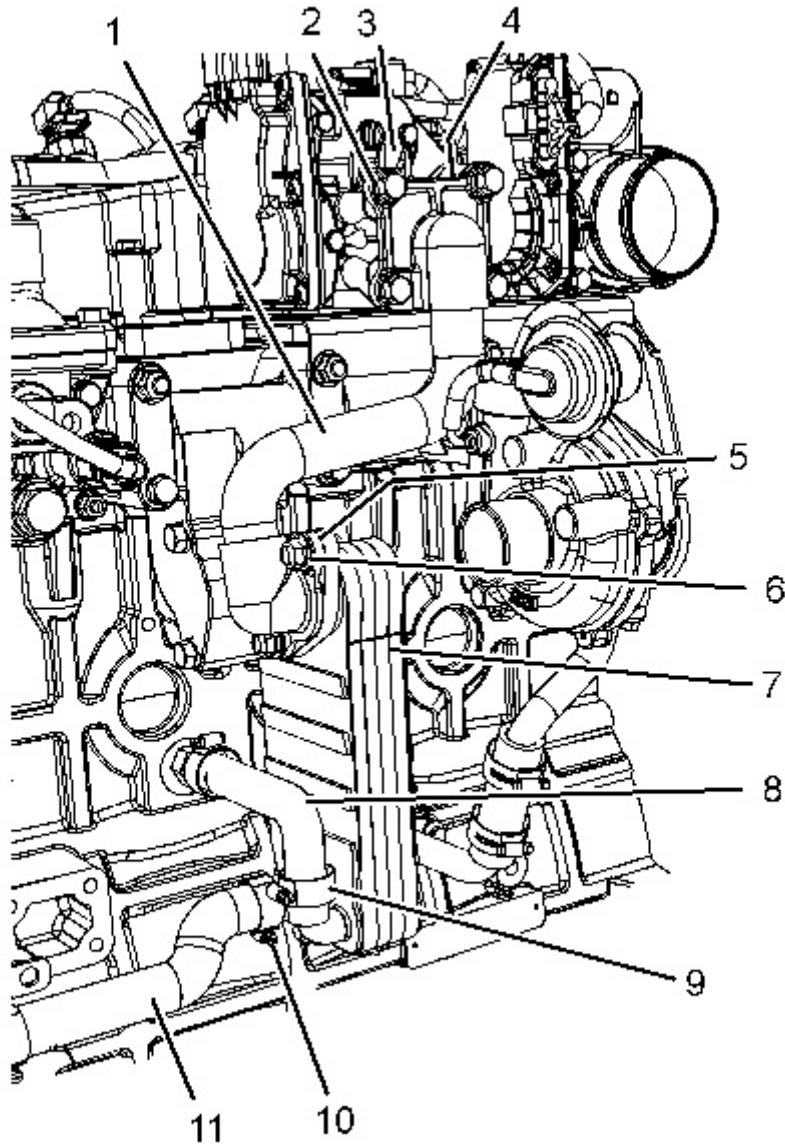


Illustration 1

g03815985

Alternator removed for clarity

1. Loosen hose clamp (10) on hose assembly (11). Disconnect hose assembly (11) from exhaust cooler (NRS) (7).
 2. Loosen hose clamp (9) on hose assembly (8). Disconnect hose assembly (8) from exhaust cooler (NRS) (7).
 3. Remove bolts (2) and nuts (6) from tube assembly (1).
 4. Remove tube assembly (1) from exhaust cooler (NRS) (7) and exhaust gas recirculation (EGR) valve assembly (3).
 5. Remove gasket (4) (not shown) and gasket (5) (not shown).
-

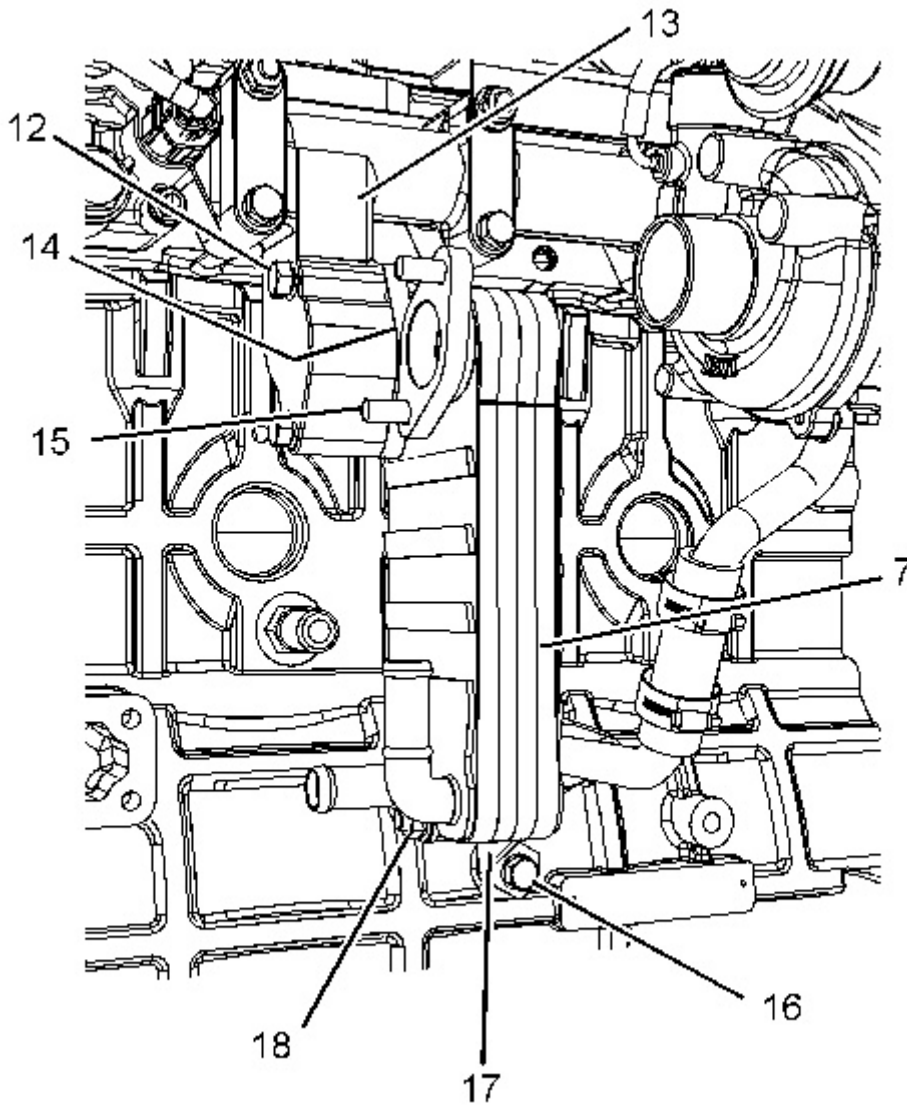


Illustration 2

g03816340

Typical example

6. Remove bolts (12) from exhaust cooler (NRS) assembly (7).
7. Remove gasket (14) (not shown) from between exhaust manifold (13) and exhaust cooler (NRS) assembly (7).
8. Remove nut (18) from bracket (17). Support exhaust cooler (NRS) assembly (7) as the bolt is removed.
9. Remove exhaust cooler (NRS) assembly (7).
10. If necessary, remove studs (15) from exhaust cooler (NRS) assembly (7).
11. Plug and cap all open ports on exhaust cooler (NRS) assembly (7).
12. If necessary, remove bolt (16) and remove bracket (17).

Installation Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	4C-5598	Anti-Seize Compound	1

1. Check all components for wear and damage. If necessary, replace any components that are worn or damaged.

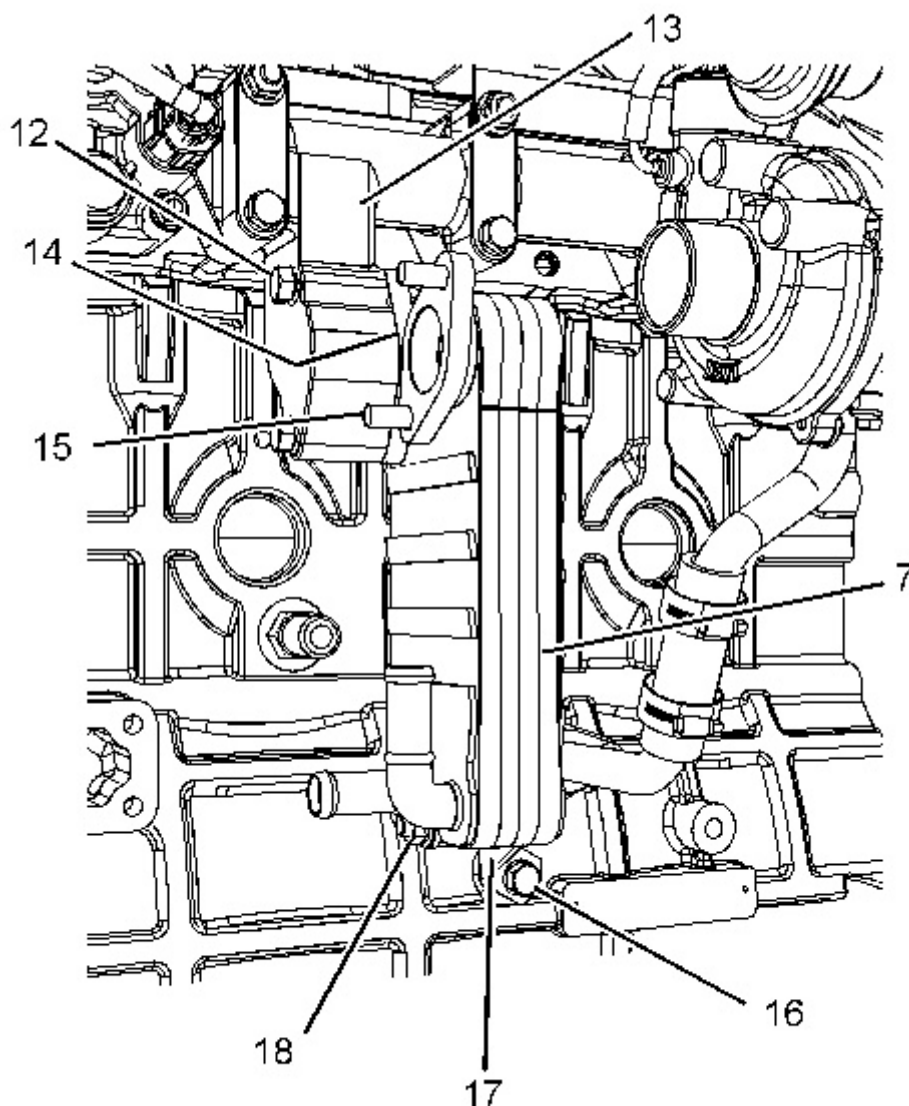


Illustration 3

g03816340

Typical example

2. Ensure that the exhaust cooler (NRS) assembly is free from restriction and external damage. Ensure that the exhaust cooler (NRS) assembly and tube assemblies are free from wear and

damage. Refer to Systems Operation Testing and Adjusting, "Exhaust Cooler (NRS) - Test" for the correct inspection procedure.

Note: Cleaning of the internal core of the exhaust cooler (NRS) should not be carried out.

3. Clean the gasket surfaces of exhaust cooler (NRS) assembly (7) and exhaust manifold (13).
 4. If necessary, install studs (15) to exhaust cooler (NRS) assembly (7).
 5. If necessary, position bracket (17) onto exhaust cooler (NRS) assembly (7). Ensure that the bracket is correctly orientated.
 6. Loosely install nut and bolt (18).
 7. Remove plug and cap from all open ports of exhaust cooler (NRS) assembly (7)
 8. Position exhaust cooler (NRS) assembly (7) onto the cylinder block.
 9. Install bolt (16) to bracket (17). Support exhaust cooler (NRS) assembly (7) as bolt (16) is installed.
 10. Position a new gasket (14) (not shown) between exhaust manifold (13) and exhaust cooler (NRS) assembly (7).
 11. Apply Tooling (A) to the threads of bolts (12). Install bolts (12) to exhaust cooler (NRS) assembly (7) hand tight.
 12. Tighten bolts (12) to a torque of 25 N·m (221 lb in).
 13. Tighten bolt (16) to a torque of 25 N·m (221 lb in).
 14. Tighten locking nut (18) to a torque of 25 N·m (221 lb in). Ensure that bracket (17) is not strained as the nut is tightened.
-

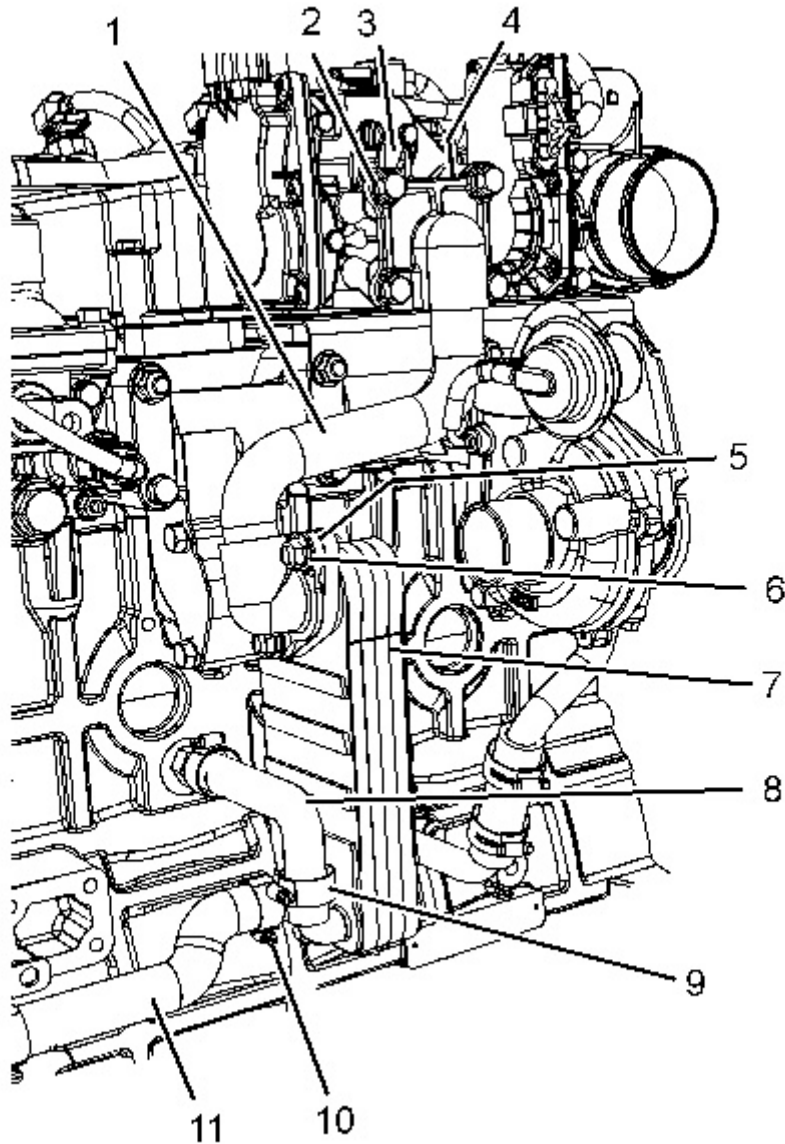


Illustration 4

g03815985

Typical example

15. Connect hose assembly (11) to exhaust cooler (NRS) (7). Tighten hose clamp (10) securely.
16. Connect hose assembly (8) to exhaust cooler (NRS) (7). Tighten hose clamp (9) securely.
17. Clean the gasket surfaces of tube assembly (1) and exhaust gas recirculation (EGR) valve assembly (3).
18. Apply Tooling (A) to the threads of bolts (2).
19. Position a new gasket (3) (not shown) and a new gasket (5) (not shown) onto tube assembly (1).
20. Position tube assembly (1) onto exhaust cooler (NRS) (7) and exhaust gas recirculation (EGR) valve assembly (3).
21. Apply Tooling (A) to the threads of studs (15).

22. Install bolts (2) and nuts (6) to tube assembly (1). Hand tighten the bolts and nuts.
23. Tighten bolts (2) and nuts (6) to a torque of 25 N·m (221 lb in). Ensure that tube assembly (1) is not strained as the bolts are tightened.

End By:

- a. Fill the cooling system with coolant. Refer to Operation and Maintenance Manual, "Cooling System Coolant - Change" for the correct procedure.
- b. Connect the air induction hose to the turbocharger. Refer to Disassembly and assembly, "Turbocharger - Install" for the correct procedure.

[Previous Screen](#)

Product: SKID STEER LOADER

Model: 226D SKID STEER LOADER HRD

Configuration: 226D Skid Steer Loader HRD00001-UP (MACHINE) POWERED BY C2.2 Engine

Disassembly and Assembly

C2.2 Engines for Caterpillar Built Machines

Media Number -UENR4528-01

Publication Date -01/09/2015

Date Updated -23/01/2018

i06841159

Fuel Manifold (Rail) - Remove and Install

SMCS - 1702-010

Removal Procedure

Start By:

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



Contact with high pressure fuel may cause fluid penetration and burn hazards. High pressure fuel spray may cause a fire hazard. Failure to follow these inspection, maintenance and service instructions may cause personal injury or death.

NOTICE

Ensure that all adjustments and repairs that are carried out to the fuel system are performed by authorised personnel that have the correct training.

Before beginning ANY work on the fuel system, refer to Operation and Maintenance Manual, "General Hazard Information and High Pressure Fuel Lines" for safety information.

Refer to Systems Operation, Testing and Adjusting Manual, "Cleanliness of Fuel System Components" for detailed information on

the standards of cleanliness that must be observed during ALL work on the fuel system.

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.

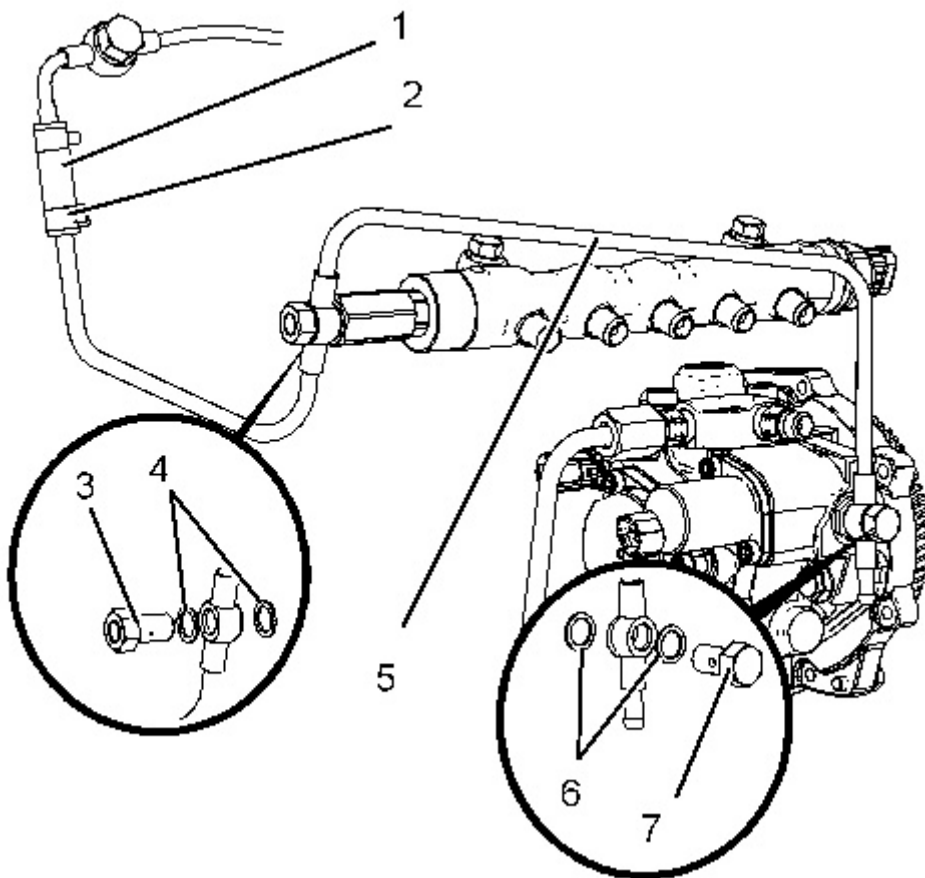


Illustration 1

g03817937

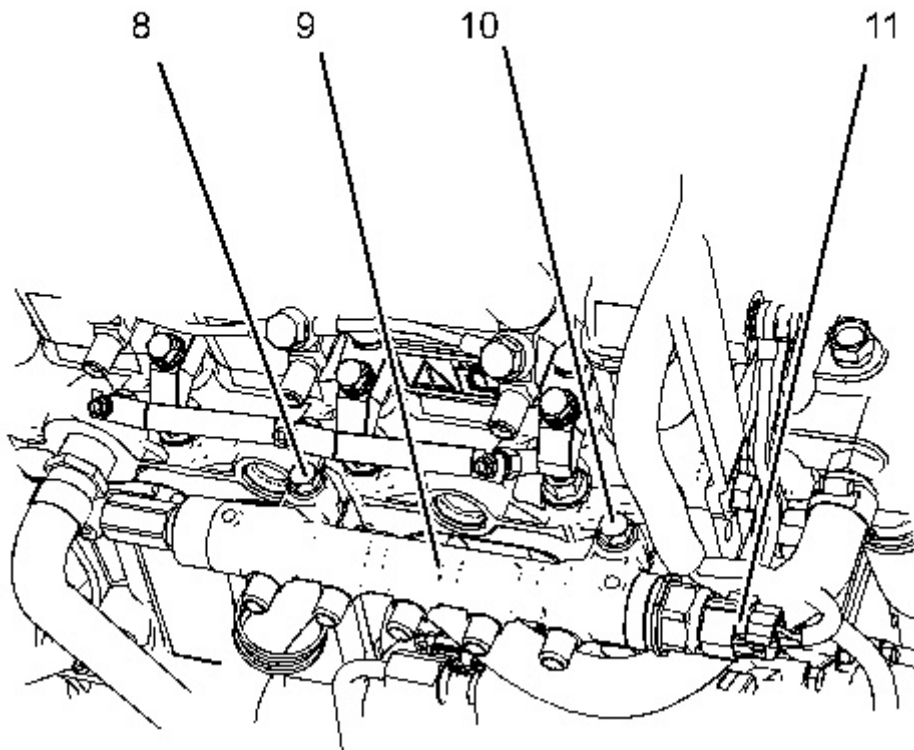


Illustration 2

g03817946

1. Ensure that all open ports are plugged or capped.
2. Open clip (2) and move clip up on hose (1).
3. Remove banjo bolt (3) and seal washers (4). Remove banjo bolt (7) and sealing washers (6).
4. Remove pipe (5) from hose (1) and remove pipe (5) from engine.
5. Disconnect harness (11) from fuel rail (9).
6. Remove bolt (8) and bolt (10). Remove fuel rail (9) from engine. Discard all old sealing washers.

Install Procedure

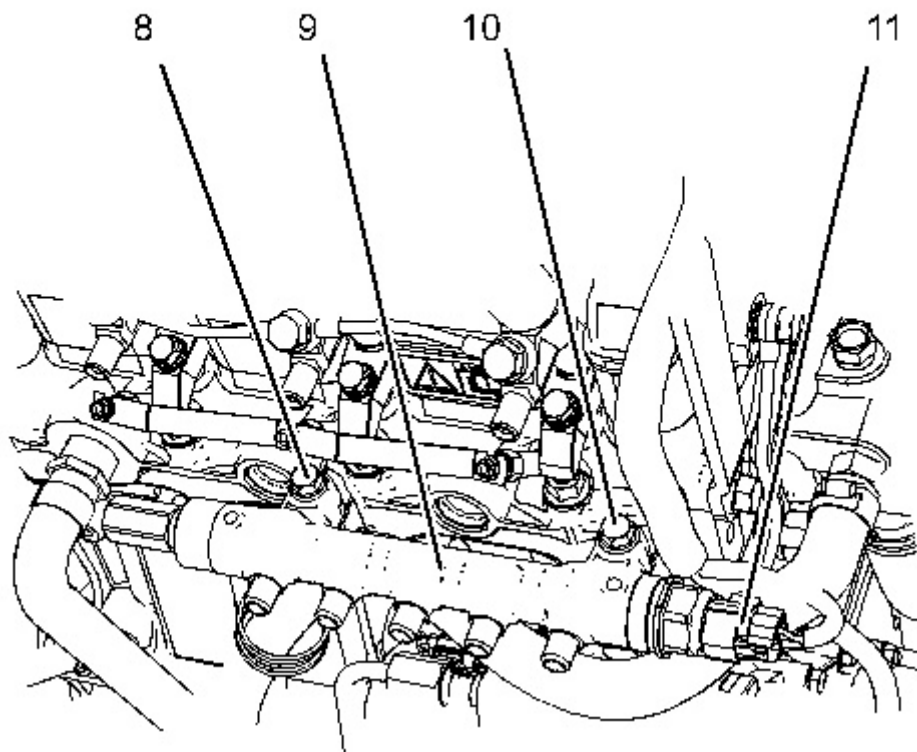


Illustration 3

g03817946

1. Position fuel rail (9) on engine.
 2. Loosely install bolt (8) and bolt (10). Connect harness assembly (11) to the fuel manifold pressure sensor.
-

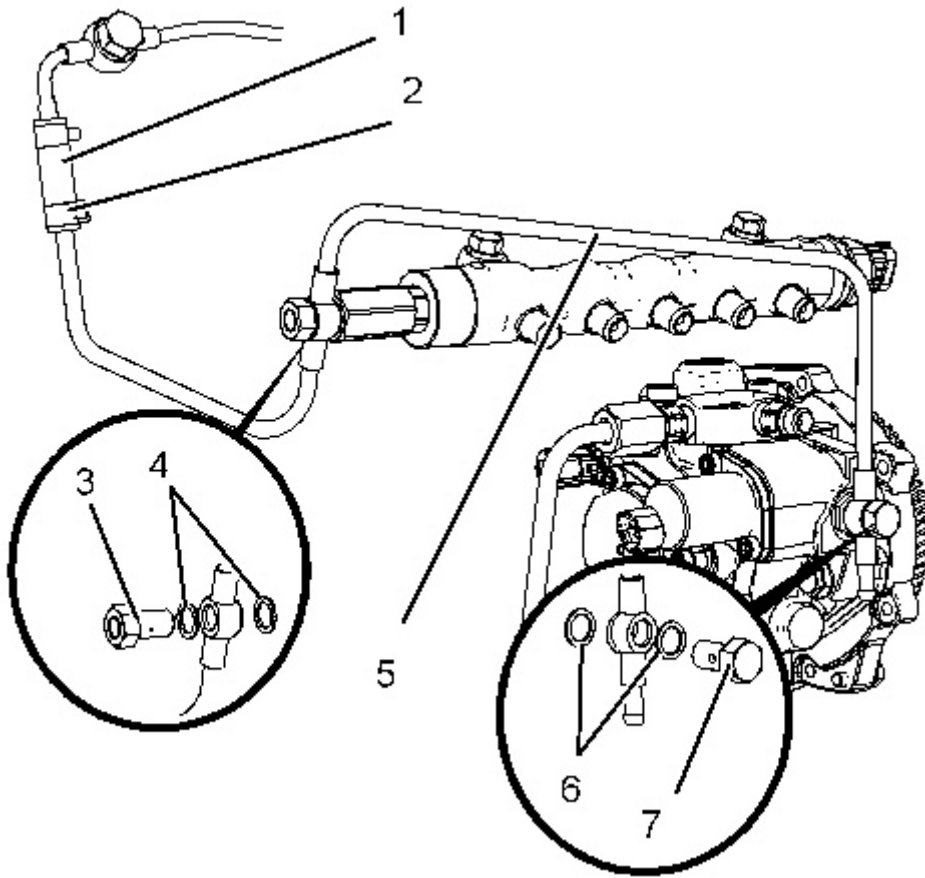


Illustration 4

g03817937

3. Install pipe (5) into hose (1). Position pipe (5) onto the engine.
 4. Install banjo (3) and new washers (4). Install banjo (7) and new washers (6).
 5. Open clip (2) and position on hose (1). Tighten banjo bolts (3) and (7) to a torque of 13 N·m (115 lb in).
-

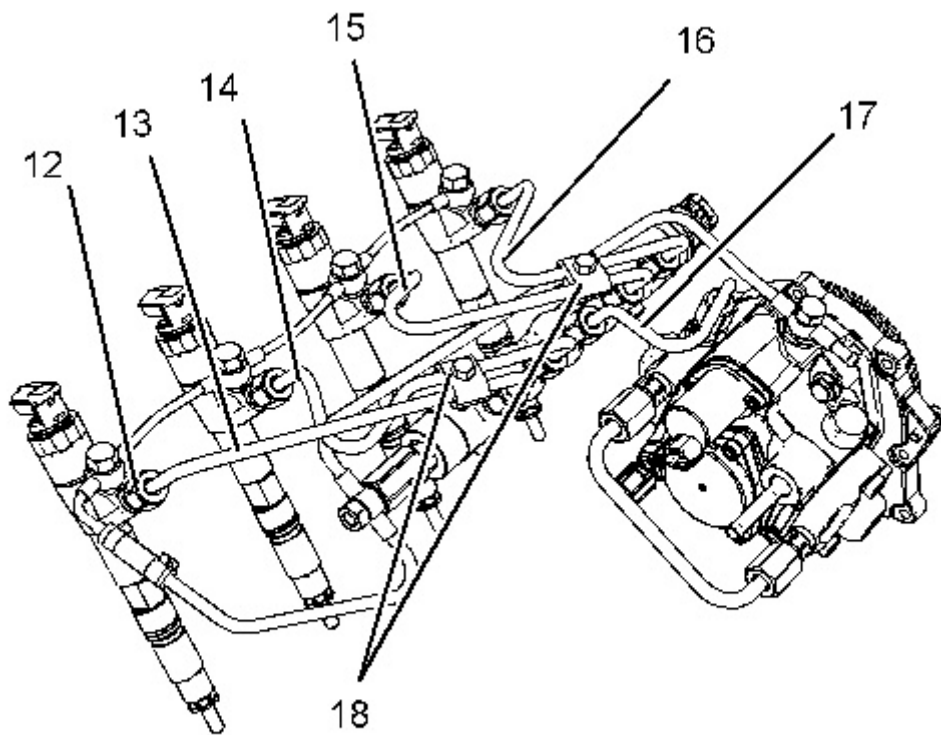
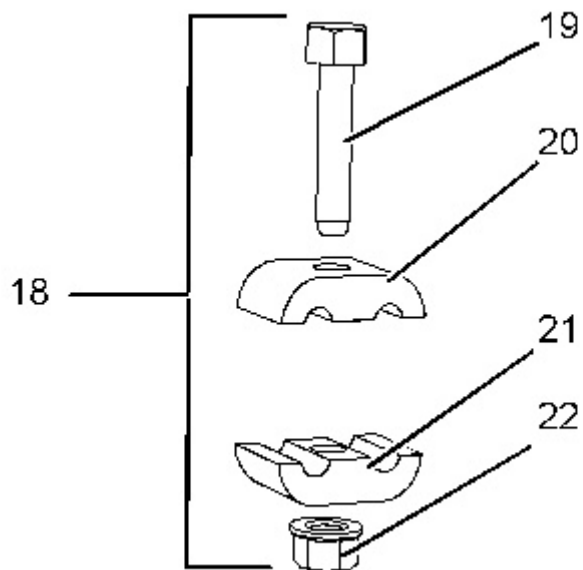


Illustration 5

g03818073

Note: Loosely install the fuel injection lines

6. Loosely install fuel lines (17), (16), (15), (14), and fuel line (13).
7. Loosely install clamps (18).
8. Tighten bolt (8) and bolt (10) to a torque of 26 N·m (230 lb in).



9. Ensure that isolator (20) and (21) are positioned correctly. Tighten nut (22) and bolt (19) to a torque of 10 N·m (89 lb in).
10. Tighten all fuel line connections (12) to a torque of 23 N·m (204 lb in).
11. Prime the fuel system, refer to Operation and Maintenance Manual, "Fuel System - Prime" for more information.

Previous Screen

Product: SKID STEER LOADER

Model: 226D SKID STEER LOADER HRD

Configuration: 226D Skid Steer Loader HRD00001-UP (MACHINE) POWERED BY C2.2 Engine

Disassembly and Assembly
C2.2 Engines for Caterpillar Built Machines

Media Number -UENR4528-01

Publication Date -01/09/2015

Date Updated -23/01/2018

i06127456

Fuel Injection Pump - Remove

SMCS - 1251-011

Removal Procedure

Table 1

Required Tools			
Tool	Part Number	Part Description	Qty
A	491-1265	Capping Kit	1

Start By:

- a. Remove the high-pressure fuel line from the fuel injection pump. Refer to Disassembly and Assembly, "Fuel Injection Lines - Remove and Install" for the correct procedure.
- b. Remove the fuel filter base. Refer to Disassembly and Assembly, "Fuel Filter Base - Remove and Install" for the correct procedure.



Contact with high pressure fuel may cause fluid penetration and burn hazards. High pressure fuel spray may cause a fire hazard. Failure to follow these inspection, maintenance and service instructions may cause personal injury or death.

NOTICE

Ensure that all adjustments and repairs that are carried out to the fuel system are performed by authorised personnel that have the correct training.

Before beginning ANY work on the fuel system, refer to Operation and Maintenance Manual, "General Hazard Information and High Pressure Fuel Lines" for safety information.

Refer to Systems Operation, Testing and Adjusting Manual, "Cleanliness of Fuel System Components" for detailed information on the standards of cleanliness that must be observed during ALL work on the fuel system.

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.

Turn the fuel supply to the OFF position. Turn the battery disconnect switch to the OFF position.



Suggest:

If the above button click is invalid.

Please download this document

first, and then click the above link

to download the complete manual.

Thank you so much for reading

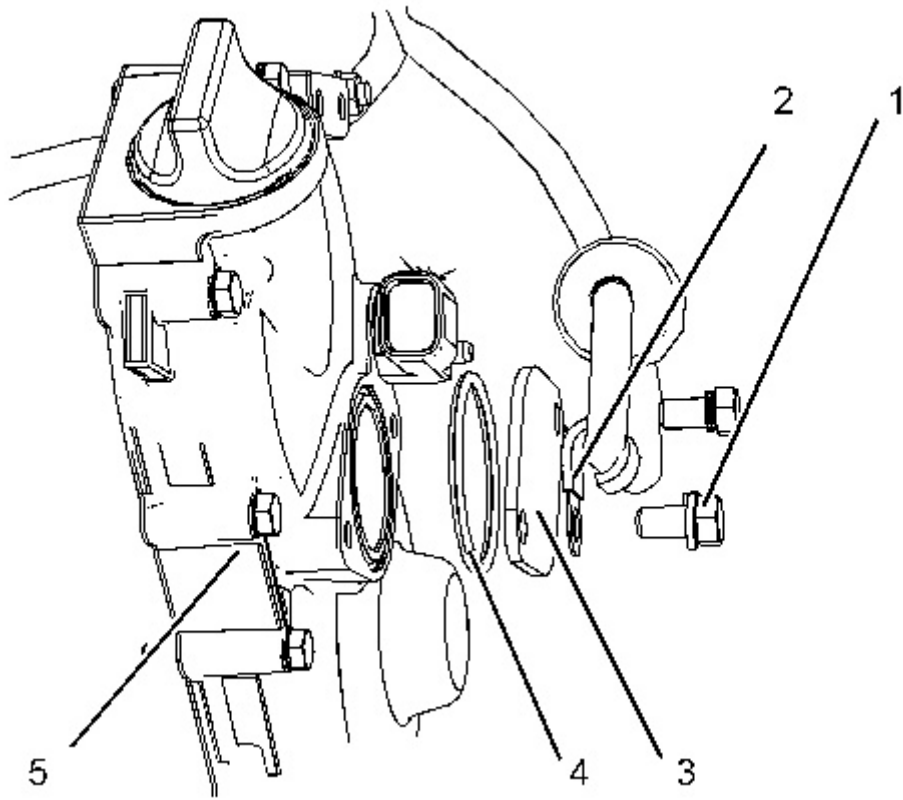


Illustration 1

g03819043

<https://www.ebooklibonline.com>

Hello dear friend!

Thank you very much for reading.

Enter the link into your browser.

The full manual is available for immediate download.

<https://www.ebooklibonline.com>