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Product: TRUCK ENGINE
Model: C-12 TRUCK ENGINE 9SM03082
Configuration: C-12 Truck Engine 9SM00001-UP

Testing and Adjusting C-12 Truck Engine

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Fuel System - Prime

SMCS - 1258-548



Fuel leaked or spilled onto hot surfaces or electrical components can cause a fire. To help prevent possible injury, turn the start switch off when changing fuel filters or water separator elements. Clean up fuel spills immediately.

NOTICE

Use a suitable container to catch any fuel that might spill. Clean up any spilled fuel immediately.

NOTICE

Do not allow dirt to enter the fuel system. Thoroughly clean the area around a fuel system component that will be disconnected. Fit a suitable cover over disconnected fuel system component.

If the fuel system runs out of fuel or if air is introduced into the fuel system, the system must be primed prior to starting the engine.

Before you begin this procedure, check that the following conditions are satisfied:

- Ensure that the fuel tanks are filled with clean diesel fuel.
- Turn the key switch to the OFF position.

Review the following illustrations in order to locate the components for your application. Locate the air purge plug (1), fuel priming pump (2) (if equipped), and the ball valve assembly (3) (if equipped).

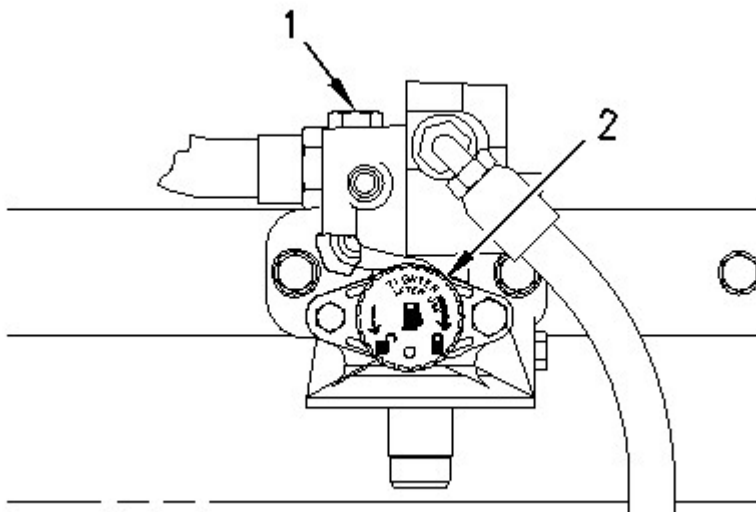


Illustration 1

g00995175

Fuel filter base that is mounted directly to the fuel supply manifold

Typical example

(1) Air purge plug

(2) Hand priming pump (if equipped)

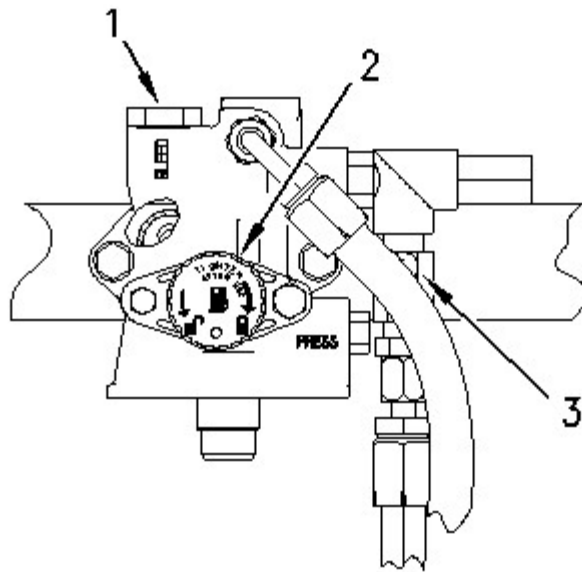


Illustration 2

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Fuel filter base that is mounted directly to the fuel supply manifold

Typical example

- (1) Air purge plug
- (2) Hand priming pump (if equipped)
- (3) Ball valve assembly (if equipped)

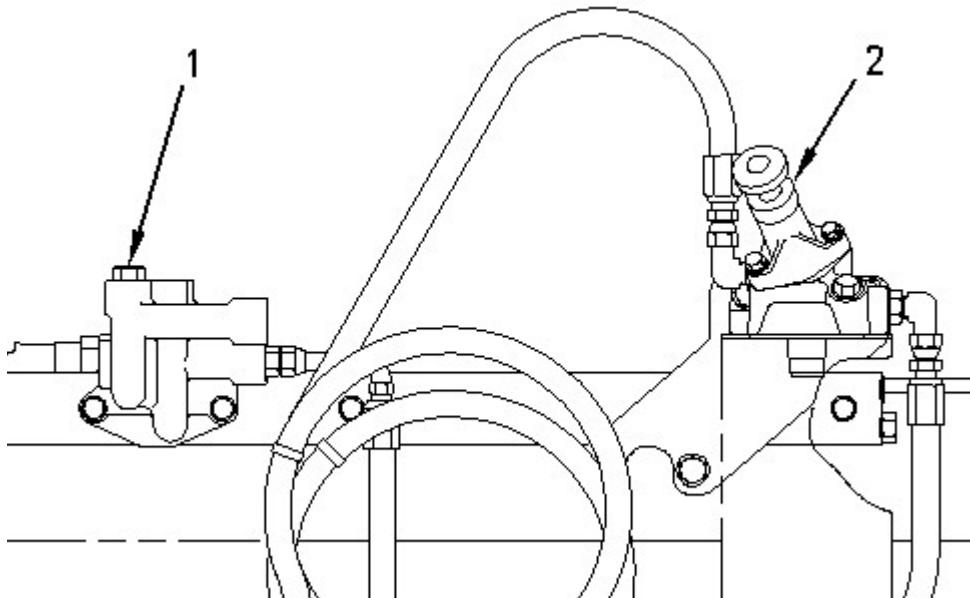


Illustration 3

g00995241

Fuel filter base that is mounted remotely

Typical example

- (1) Air purge plug
- (2) Hand priming pump (if equipped)

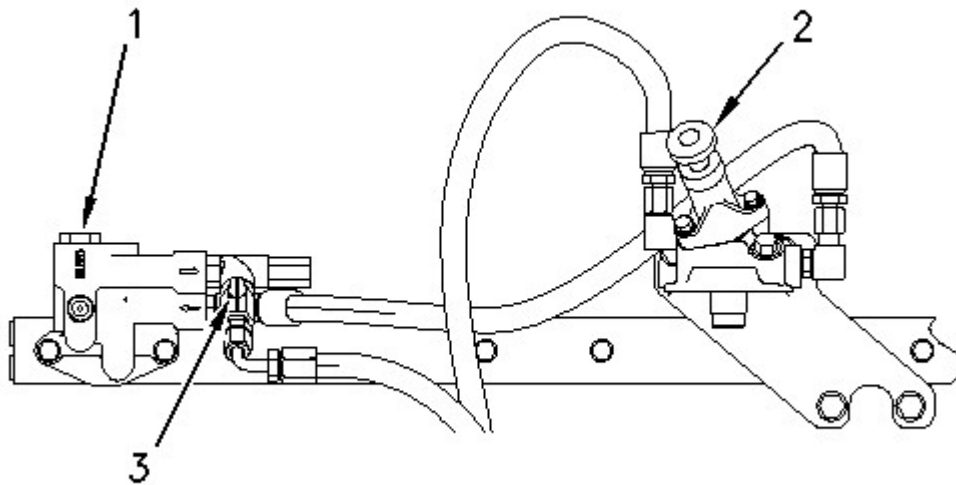


Illustration 4

g00995289

Fuel filter base that is mounted remotely

Typical example

- (1) Air purge plug
- (2) Hand priming pump (if equipped)
- (3) Ball valve assembly (if equipped)

Either of the following procedures may be followed in order to prime the fuel system.

Hand Priming the Fuel System

1. Open air purge plug (1) for three full turns. Do not remove this plug.

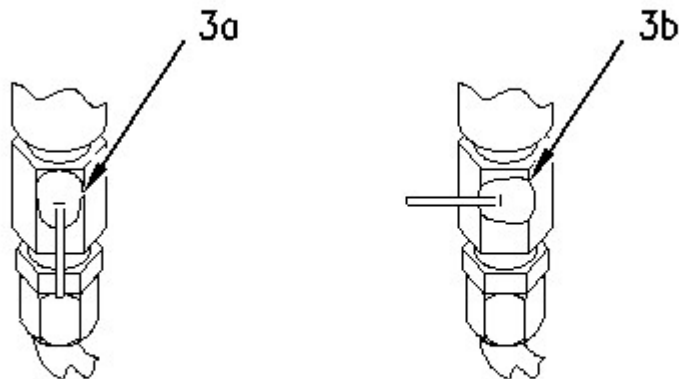


Illustration 5

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Ball valve assembly

(3a) The valve is in the open position for normal engine operation.

(3b) The valve is in the closed position in order to prime the fuel system.

2. If the fuel system is equipped with a ball valve assembly (3), close the valve (3b).
3. Operate the hand priming pump. While you operate the hand priming pump, observe the air purge plug for the presence of fuel.
 - a. When a small drop of fuel appears at the threads of the air purge plug, close and tighten the plug.

Note: Failure to tighten all fittings could result in serious fuel leaks.
 - b. Clean any residual fuel from the engine components.
4. Continue to operate the fuel priming pump until a strong resistance is felt.
5. Secure the hand priming pump.
6. Attempt to start the engine.

NOTICE

Do not crank the engine continuously for more than 30 seconds. Allow the starting motor to cool for two minutes before cranking the engine again.

- a. Crank the engine for 30 seconds. Allow the starter motor to cool for 2 minutes after each 30 second interval.
- b. Repeat Step 6a until the engine starts and runs. If the engine runs rough, continue to operate the engine at low idle until the engine runs smoothly.
- c. If the fuel system is equipped with a ball valve assembly that has been closed, allow the engine to operate for 30 seconds and then open the valve (3a).

Note: If the ball valve is left in the closed position for extended periods of time, damage to the fuel injectors may occur.

If the engine will not start, further priming is necessary. If the engine starts but the engine continues to misfire or smoke, further priming is necessary.

Priming Procedure by Engine Cranking

1. Open air purge plug (1) for three full turns. Do not remove this plug.
2. If the fuel system is equipped with a ball valve assembly (3), close the valve (3b).

Note: Use a suitable container to catch the fuel while you crank the engine.

NOTICE

Do not crank the engine continuously for more than 30 seconds. Allow the starting motor to cool for two minutes before cranking the engine again.

3. Use engine cranking to prime the fuel system.
 - a. Crank the engine for 30 seconds. Allow the starter motor to cool for 2 minutes after each 30 second interval.

Note: After four or five intervals, most of the air should be purged from the system.
 - b. While you crank the engine, observe air purge plug (1). When a small drop of fuel appears at the threads of the air purge plug, close and tighten the plug.

Note: Failure to tighten all fittings could result in serious fuel leaks.
 - c. Clean any residual fuel from the engine components.
 - d. Repeat Step 3a until the engine starts and runs. If the engine runs rough, continue to operate the engine at low idle until the engine runs smoothly.
4. If the fuel system is equipped with a ball valve assembly that has been closed, allow the engine to operate for 30 seconds and then open the valve (3a).

Note: If the ball valve is left in the closed position for extended periods of time, damage to the fuel injectors may occur.

5. Once the engine runs smoothly, stop the engine. Turn the key switch to the OFF position.

If the engine will not start, further priming is necessary. If the engine starts but the engine continues to misfire or smoke, further priming is necessary.
