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|---|-------------------------------|---|---------------------------|
| Document Title: Fuel pump, inspection | Function Group: 233 | Information Type: Service Information | Date: 2014/4/13 |
| Profile: EXC, EC290B NLC [GB] | | | |

Fuel pump, inspection

Op nbr 233-010

NOTE! Take care of fuel spills by using collection containers.

1. Place the machine in the service position B. See [091 Service positions](#)
2. Open the engine hood.
3. Turn belt tensioner (2) clockwise using a socket handle (1/2"), and remove alternator belt (1) from alternator (3) and the tensioner pulley.

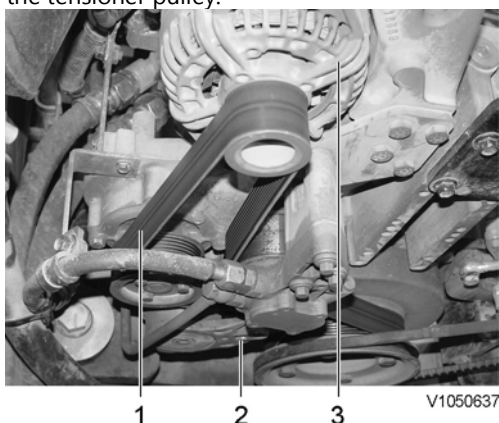


Figure 1

1. Alternator belt
2. Belt tensioner (socket handle installation position)
3. Alternator

NOTE!

The belt adjuster tension is very strong. Therefore pay attention to prevent injury after removing belt.

4. Remove hose (1), pipe (2), screws (4) and fuel feed pump (3).

NOTE!

Cover the ends of the hoses to prevent contamination from entering the fuel system.

NOTE!

Pay attention not to drop any fuel on the belt when removing the fuel feed pump.

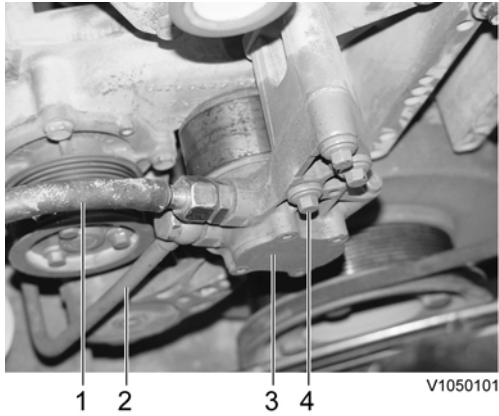


Figure 2

1. Hose
2. Pipe
3. Fuel feed pump
4. Mounting screw

5. Dismantle the feed pump and check the feed pump drive for damage. If damaged, change the feed pump.

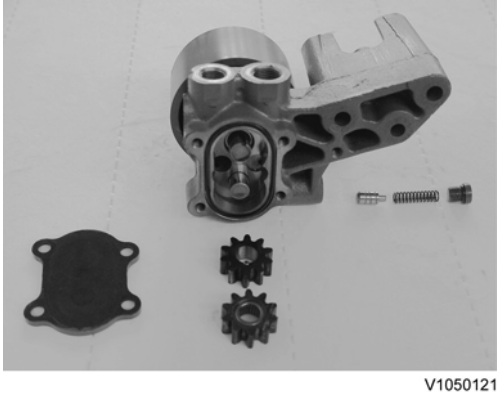


Figure 3

6. If undamaged, clean all parts very thoroughly and assemble the pump.
7. Install the feed pump.
8. Install the alternator belt.
9. Install the fuel hose and pipe on the feed pump.
NOTE!
Copper washers disassembled should be replaced with new ones.
10. Perform the air bleeding operation. See [233 Fuel system, bleeding](#)
11. Start the engine and check for leaks.
12. Following any action, check the feed pressure.
13. Close the engine hood.

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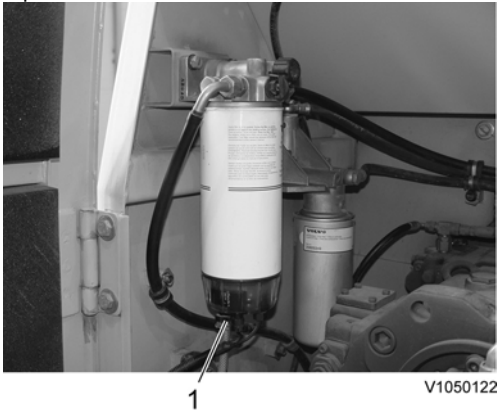
Fuel filter, checking

Op nbr 233-020

1. Check that the fuel is not contaminated in the bowl under the primary filter. Perform this check to ensure that the primary filter is not clogged.
In case of impurities, the filter is probably clogged. Replace the primary filter and clean the water collection bowl.
In winter, check if the water in the water collection bowl has frozen. Any ice will cause a clog.
In case of suspected impurities in the tank, clean the tank.

Draining water collection bowl

2. Open valve (1) on the water collection bowl and collect waste fuel in a suitable container.



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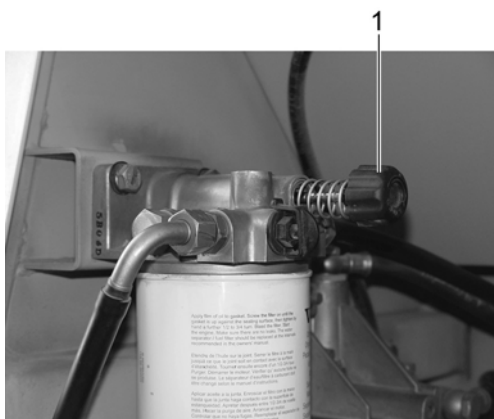
Figure 1

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|---|-------------------------------|---|---------------------------|
| Document Title: Fuel system, bleeding | Function Group: 233 | Information Type: Service Information | Date: 2014/4/13 |
| Profile: EXC, EC290B NLC [GB] | | | |

Fuel system, bleeding

Op nbr 233-001

1. Place the machine in the service position B. See [091 Service positions](#)
2. Turn off the main electric power with the battery disconnect switch.



3. V1050099

Figure 1

1. Priming pump on filter head

Turn the priming pump counterclockwise to unlock the plunger. Pump approximately 200 to 300 strokes until a heavy resistance can be felt. Push the plunger down and turn clockwise to lock into position.

NOTE!

Air bleeding may not be performed using the starter motor.

4. Turn on the electric power, start the engine and let it idle at low idle speed for a few minutes. If the engine is difficult to start, bleed again with the priming pump.

NOTE!

The priming pump must not be used when the engine is running.

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|---|-------------------------------|---|---------------------------|
| Document Title: Fuel filters, replacing | Function Group: 233 | Information Type: Service Information | Date: 2014/4/13 |
| Profile: EXC, EC290B NLC [GB] | | | |

Fuel filters, replacing

Op nbr 233-014

[9996671 Oil filter wrench](#)

A reduction in engine power can be caused by a clogged fuel filter. If the filter becomes clogged quickly, check fuel for contamination and clean fuel tank if necessary.

1. Place the machine in the service position B. See [091 Service positions](#)
2. Loosen the fuel filter with a filter wrench (Tool part no.: 9996671), and remove.



V1049823

Figure 1
Removal, filter

3. Clean the sealing surface of the filter head.
4. Lightly oil the rubber seal of the new filter, or moisten with diesel fuel.
5. Screw on the filter by hand until the seal makes contact, then tighten another half turn.
6. Perform the air bleeding operation. See [233 Fuel system, bleeding](#)

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|--|-------------------------------|---|---------------------------|
| Document Title: Fuel filter extra, replacing | Function Group: 233 | Information Type: Service Information | Date: 2014/4/13 |
| Profile: EXC, EC290B NLC [GB] | | | |

Fuel filter extra, replacing

Op nbr 233-015

[11666167 Disassembly tool](#)

[9996671 Oil filter wrench](#)

A reduction in engine power can be caused by a clogged fuel filter. If the filter becomes clogged quickly, check fuel for contamination and clean fuel tank if necessary.

1. Place the machine in the service position B. See [091 Service positions](#)
2. Turn priming pump (B) counterclockwise to unlock the plunger.
Turn shut off valve (A) clockwise 90°.

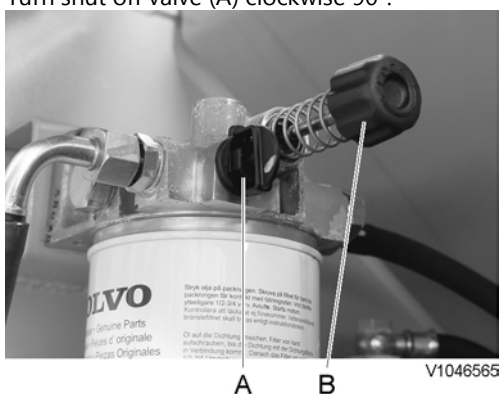


Figure 1

- A. Shut off valve
- B. Priming pump

3. Disconnect wire harness connector (1).

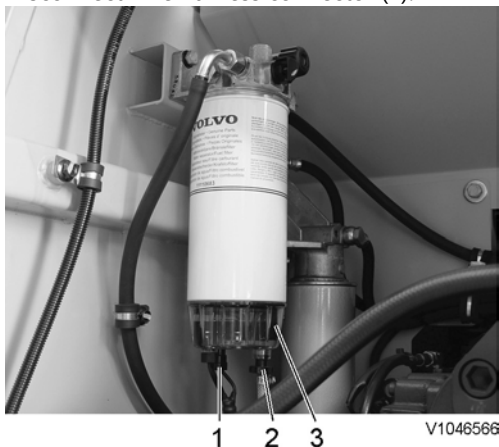


Figure 2

Disconnect, wire harness connector

4. Loosen drain valve (2) to drain the sediment from water separator bowl (3).
5. Loosen the fuel separator bowl with a filter wrench (Tool part no.: 11666167), and remove.
6. Loosen the fuel separator filter with a filter wrench, and remove.
7. Clean the sealing surface of the filter head.
8. Lightly oil the rubber seal of the new filter, or moisten with diesel fuel.
9. Screw on the filter by hand until the seal makes contact, then tighten another half turn. (Tool part no.: 9996671)
10. Screw on the filter bowl by hand until the seal makes contact, then tighten another half turn. (Tool part no.: 11666167)
11. Perform the air bleeding operation. See [233 Fuel system, bleeding](#)

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|--|-------------------------------|---|---------------------------|
| Document Title: Fuel tank, description | Function Group: 234 | Information Type: Service Information | Date: 2014/4/13 |
| Profile: EXC, EC290B NLC [GB] | | | |

Fuel tank, description

| Model | Type | Machine serial number |
|--------|--------|-----------------------|
| EC290B | Type A | 10001 ~ 12570 |
| | Type B | 12571 ~ , 80001 ~ |

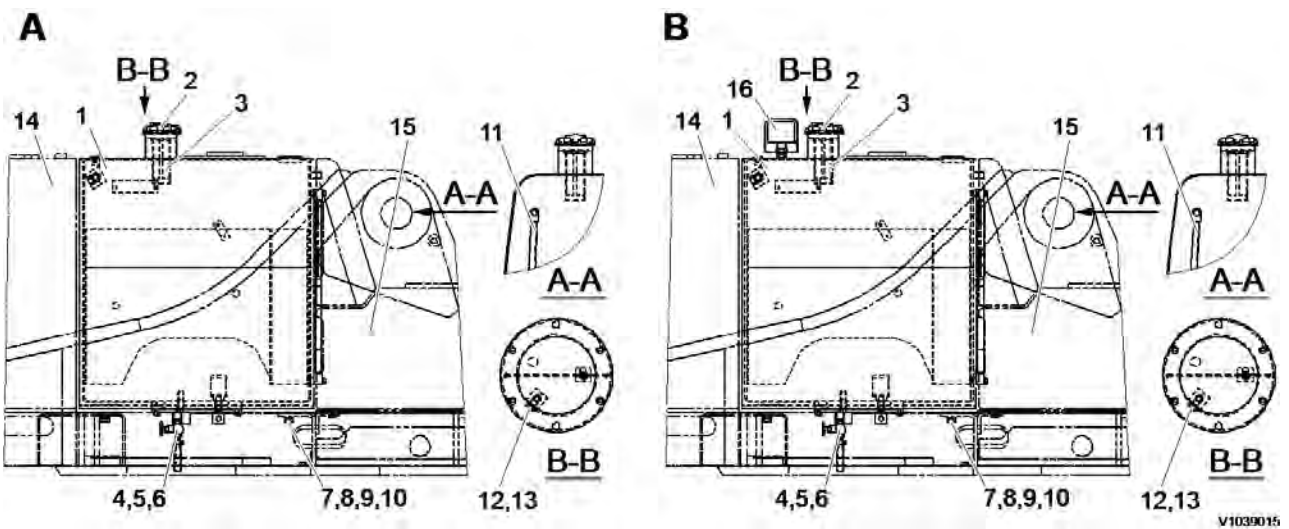


Figure 1
Structure, fuel tank

| | | | |
|---|---------------|----|------------------------|
| 1 | Fuel tank | 9 | Spring washer |
| 2 | Cap | 10 | Shim |
| 3 | Screen filter | 11 | Level gauge |
| 4 | Drain cock | 12 | Copper gasket |
| 5 | Clamp | 13 | Plug |
| 6 | Hose | 14 | Hydraulic oil tank |
| 7 | Screw | 15 | Tool box |
| 8 | Plain washer | 16 | Fuel tank air breather |

NOTE!

Apply loctite #277 on screws (7).

NOTE!

When mounting the tank, adjust the height by shim (10).

Tightening torque

- Drain cock valve (4) : 1.6 ~ 1.9 kgf·m (11.6 ~ 13.7 lbf·ft)
- Drain valve clamp (5) : 0.6 kgf·m (4.3 lbf·ft)
- Screw (7) : 52.2 ± 5.2 kgf·m (377 ± 38 lbf·ft)
- Level gauge (11) : 1.5 ± 0.2 kgf·m (10.8 ± 1.4 lbf·ft)
- Flange screw (16), (2EA) : 6.5 ± 0.7 kgf·m (46 ± 5 lbf·ft)

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Fuel tank, replacing

Op nbr 234-010

1. Release pressure in fuel tank (1). Open fuel feed cover (2) and drain fuel. (Prepare container for collecting fuel.)

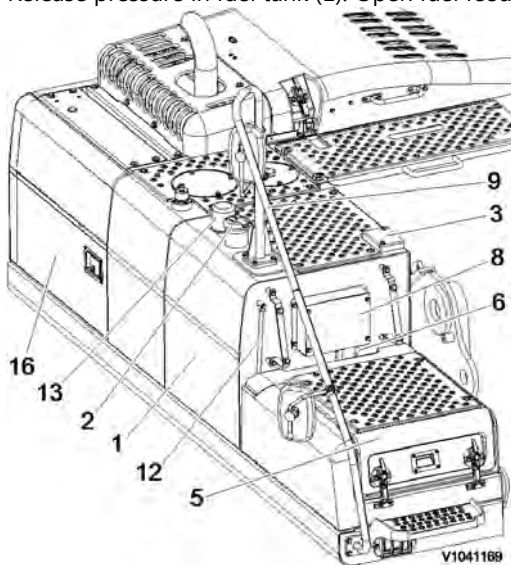


Figure 1
Fuel tank

Torque (12): 14.7 ± 1.9 N m (1.5 ± 0.2 kgf m) (10.8 ± 37.5 lbf ft)

Torque (13): 63.7 ± 6.8 N m (6.5 ± 0.7 kgf m) (46.9 ± 5.0 lbf ft)

2. Disconnect fuel sense harness (3, 3-1) and fuel feed pump hose (4).
3. Open toolbox (5) and disconnect wire clamp (6) mounted on fuel tank.
4. Remove cover (7) and disassemble distribution box (8) on fuel tank.
5. Remove guard rail (9).
6. Remove under cover of fuel tank.
7. Disconnect fuel hose (10), and remove fixing screw (11) of fuel tank.

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