

Document Title: <b>Feed pump, checking feed pressure</b>	Function Group: <b>233</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/2 0</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## Feed pump, checking feed pressure

Op nbr 233-004

[11666052 Pressure gauge](#)

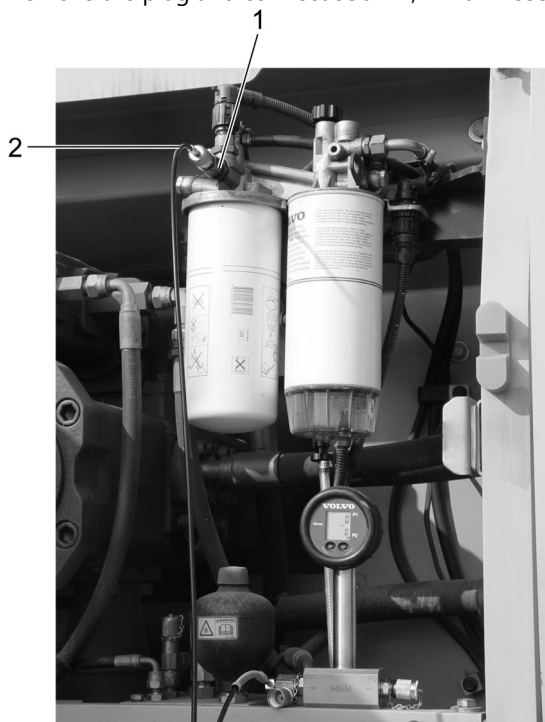
[14290266 Hose](#)

[9993720 Nipple](#)

[14341364 Adapter](#)

936442 Measuring nipple

1. Remove the plug and connect 936442, 14462 Hose and 11666052 Pressure gauge to the fuel filter housing.



V1048721

**Figure 1**

1. 936442
2. 14290266

2. Make sure that the control lockout lever is in locked position. Start the engine and check the feed pressure.

**NOTE!**

Feed pressure is 45 ~ 50 psi (low idle rpm) and 70 ~ 75 psi (high idle rpm) respectively.

**NOTE!**

In case low feed pressure is suspected, check the feed pressure with loaded engine. Keep in mind that the pressure gauge reading may be delayed.

**In case pressure is too high:**

If the pressure is too high, the overflow valve has to be checked.

**In case pressure is too low:**

If the feed pressure is low, the cause may be clogged suction line, defective feed pump, clogged fuel filter, defective overflow valve, or the pump sucks air on the suction side.

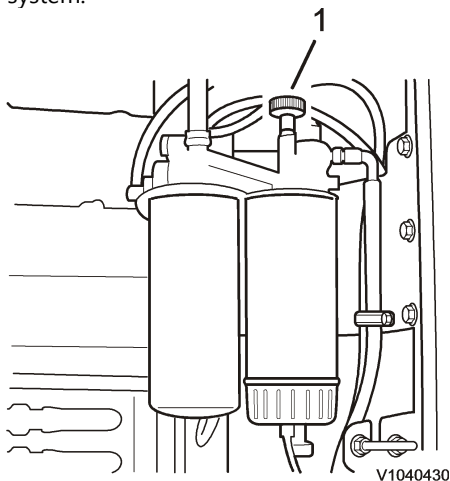
3. Restore the machine to operating condition.

Document Title: <b>Fuel system, bleeding</b>	Function Group: <b>233</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/20</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## 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. 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. Then bleed the fuel system.



**Figure 1**

1. Priming pump on filter head.

**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.

Document Title: <b>Feed pump, replacing</b>	Function Group: <b>233</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/20</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

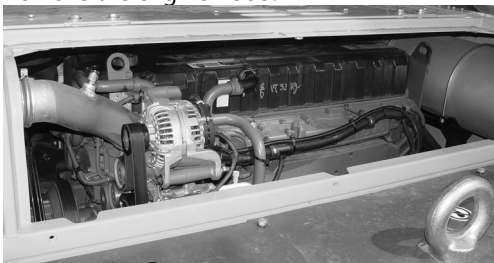
## Feed pump, replacing

Op nbr 233-002

### Feed pump, removing

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

1. Place the machine in the service position B. See [091 Service positions](#)
2. Remove the engine hood.



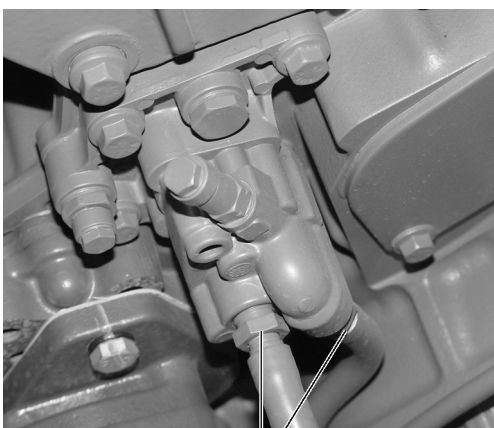
V1044003

**Figure 1**  
**Removal, engine hood**

3. Disconnect hose fittings (1, 2) on the feed pump.

**NOTE!**

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



V1044004

**Figure 2**  
**Removal, hose fitting**

4. Remove the feed pump.



V1044005

**Figure 3**  
**Removal, feed pump**

### **Feed pump, installing**

5. Change gaskets.
6. Install a feed pump with a new one.
7. Install the fuel hoses on the feed pump.

**NOTE!**

O-rings disassembled should be replaced with new ones.

8. Bleed the fuel system.
9. Start the engine and check for leaks.
10. Install the cover.

Document Title: <b>Fuel filters, replacing</b>	Function Group: <b>233</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/20</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

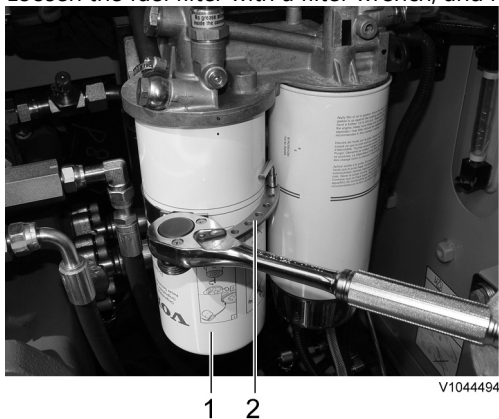
## Fuel filters, replacing

Op nbr 233-014

[9996672 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, and remove.



**Figure 1**  
**Removal, filter**

1. Fuel filter
  2. Filter wrench (Tool part no.: 9996672)
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](#)

Document Title: <b>Fuel filter extra, replacing</b>	Function Group: <b>233</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/20</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## Fuel filter extra, replacing

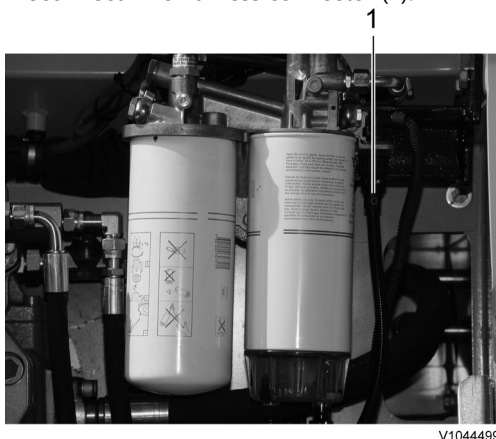
Op nbr 233-015

[11666167 Disassembly tool](#)

[9996672 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.

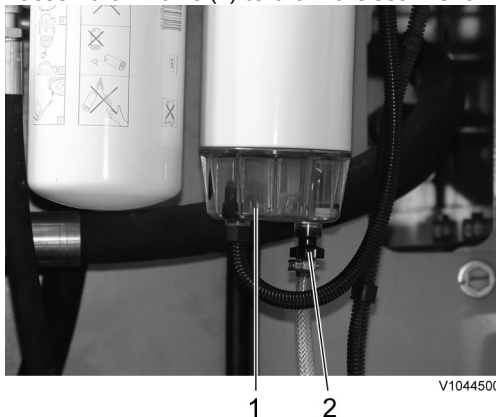
1. Place the machine in the service position B. See [091 Service positions](#)
2. Disconnect wire harness connector (1).



V1044499

**Figure 1**  
**Disconnect, wire harness connector**

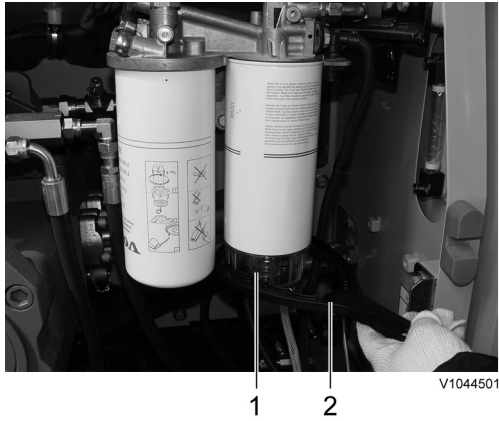
3. Loosen drain valve (2) to drain the sediment from water separator bowl (1).



V1044500

**Figure 2**  
**Draining, fuel**

4. Loosen the fuel separator bowl with a filter wrench, and remove.



**Figure 3**  
**Removal, fuel separator bowl**

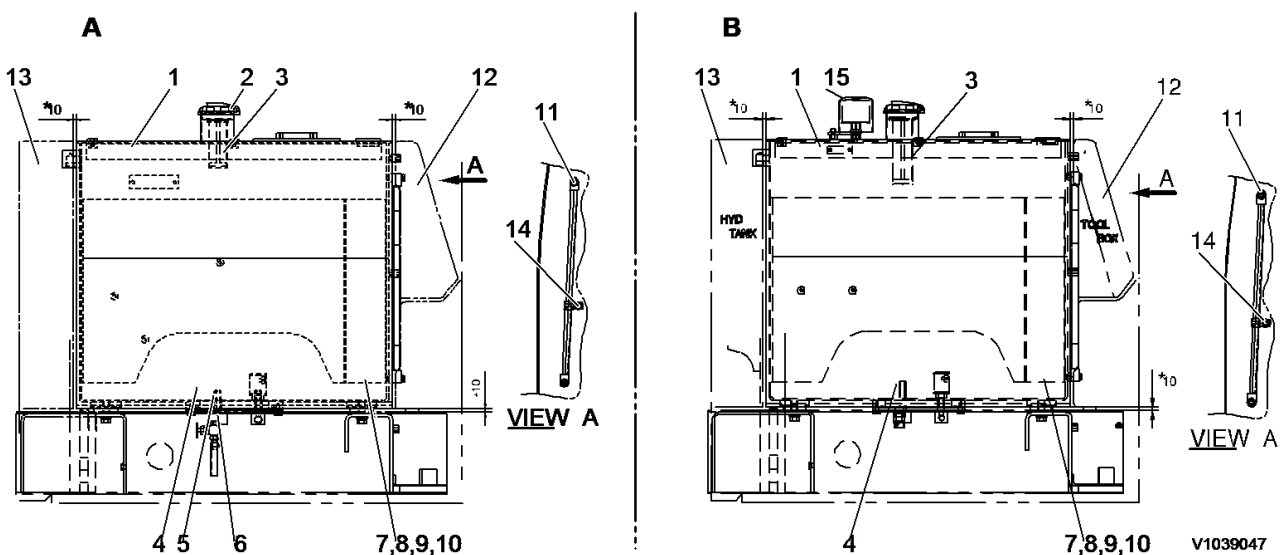
1. Water separator bowl
  2. Filter wrench (Tool part no.: 11666167)
5. Loosen the fuel separator filter with a filter wrench, and remove.
  6. Clean the sealing surface of the filter head.
  7. Lightly oil the rubber seal of the new filter, or moisten with diesel fuel.
  8. Screw on the filter by hand until the seal makes contact, then tighten another half turn. (Tool part no.: 9996672)
  9. Screw on the filter bowl by hand until the seal makes contact, then tighten another half turn. (Tool part no.: 11666167)
  10. Perform the air bleeding operation. See [233 Fuel system, bleeding](#)



Document Title: <b>Fuel tank, description</b>	Function Group: <b>234</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/2 0</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## Fuel tank, description

Model	Type	Machine serial number
EC330B	A	10001 ~ 10429
	B	10430 ~
		80001 ~
EC360B	A	10001 ~ 11249
	B	11250 ~
		80001 ~



**Figure 1**  
**Structure, fuel tank**

1	Fuel tank	6	Hose	11	Level gauge
2	Cap	7	Screw	12	Tool box
3	Screen filter	8	Plain washer	13	Hydraulic tank
4	Drain valve	9	Spring washer	14	Screw
5	Clamp	10	Shim	15	Air breather

- When mounting the tank, adjust the height by use of shim (10).
- Maintain the clearance (" \* " marked) within 10 mm (0.4 inch)

### Tightening torque

Item no.	Unit			Remarks	
	N m	kgf m	lbf ft		
4	15.7 ~ 18.6	1.6 ~ 1.9	11.6 ~ 13.7	Drain valve	Type A
	44.1 ± 4.9	4.5 ± 0.5	32.5 ± 3.6	Drain valve	Type B

5	5.9	0.6	4.3	Clamp	
7	511.9 ±51	52.2 ±5.2	377 ±38	Apply loctite #277	
11	14.7 ±2	1.5 ±0.2	10.8 ±1.4	Level gauge	
14	63.7 ±6.8	6.5 ±0.7	46.9 ±5.1	Screw	
15	104.9 ±9.8	10.7 ±1	77.3 ±7.2	Connect	Type B
	1.4 ~ 1.6	0.14 ~ 0.16	1.0 ~ 1.2	Filter	
	63.7 ±6.9	6.5 ±0.7	46.9 ±5.1	Screw	

Document Title: <b>Fuel filler pump, description</b>	Function Group: <b>234</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/20</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## Fuel filler pump, description

- The pump outlet is plumbed directly to the fuel tank to reduce the risk of introducing contamination.
- The master switch must be in the ON position to operate the fuel filling pump.

### NOTE!

The filter at the end of fuel filling pump inlet hose is a strainer, and will not filter impurities from the fuel. When filling use CLEAN fuel only!

### NOTE!

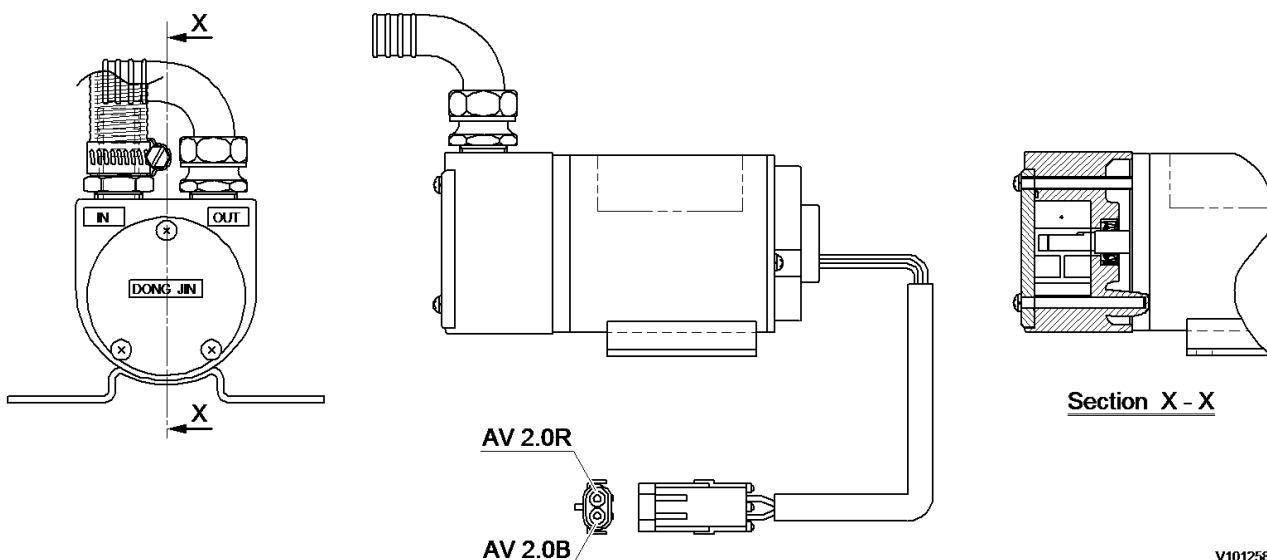
Do not operate the fuel filling pump without fuel or for extended periods of time.

### NOTE!

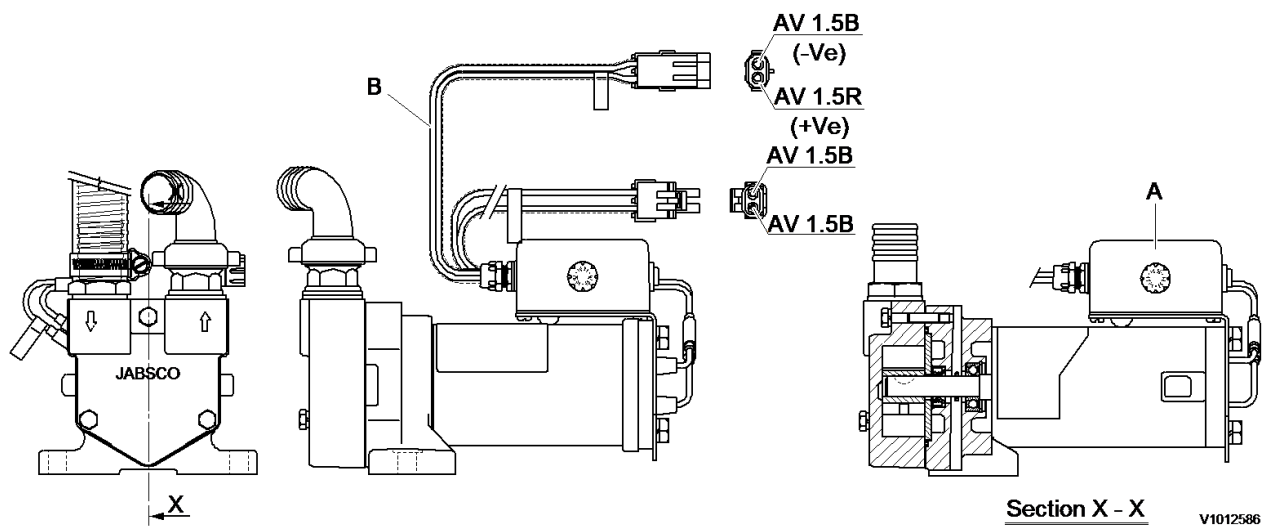
Drain the fuel from the suction hose before putting it in the storage compartment.

### NOTE!

In case the pump has been disassembled, assemble the pump so the that the sharp portion of the vane faces the counterclockwise direction.



**Figure 1**  
**Structure, fuel filling pump (35 liter)**



**Figure 2**  
**Structure, fuel filling pump (50 liter/minute + auto shut-off)**

- A. Auto shut-off controller
- B. PVC Tube

Document Title: <b>Fuel lines, description</b>	Function Group: <b>235</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/2 0</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

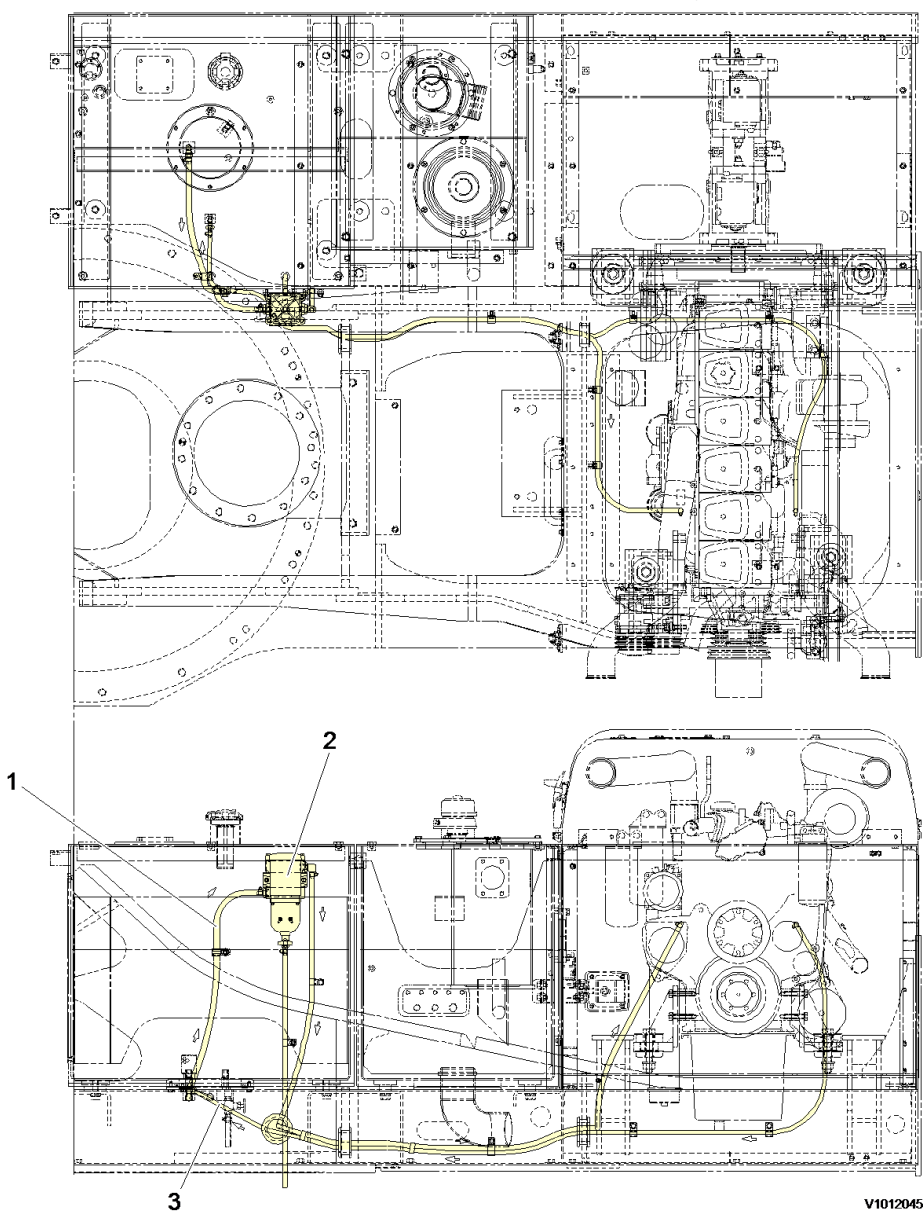
## Fuel lines, description

The fuel level sensor is installed in the fuel tank.

When the fuel level gauge indicates EMPTY, there is still approximately 80 Liter (21.1 gal) remaining.

### Fuel flow

Tank → Water separator → Fuel feed pump → Fuel filter → Fuel injection pump → Nozzle → Tank



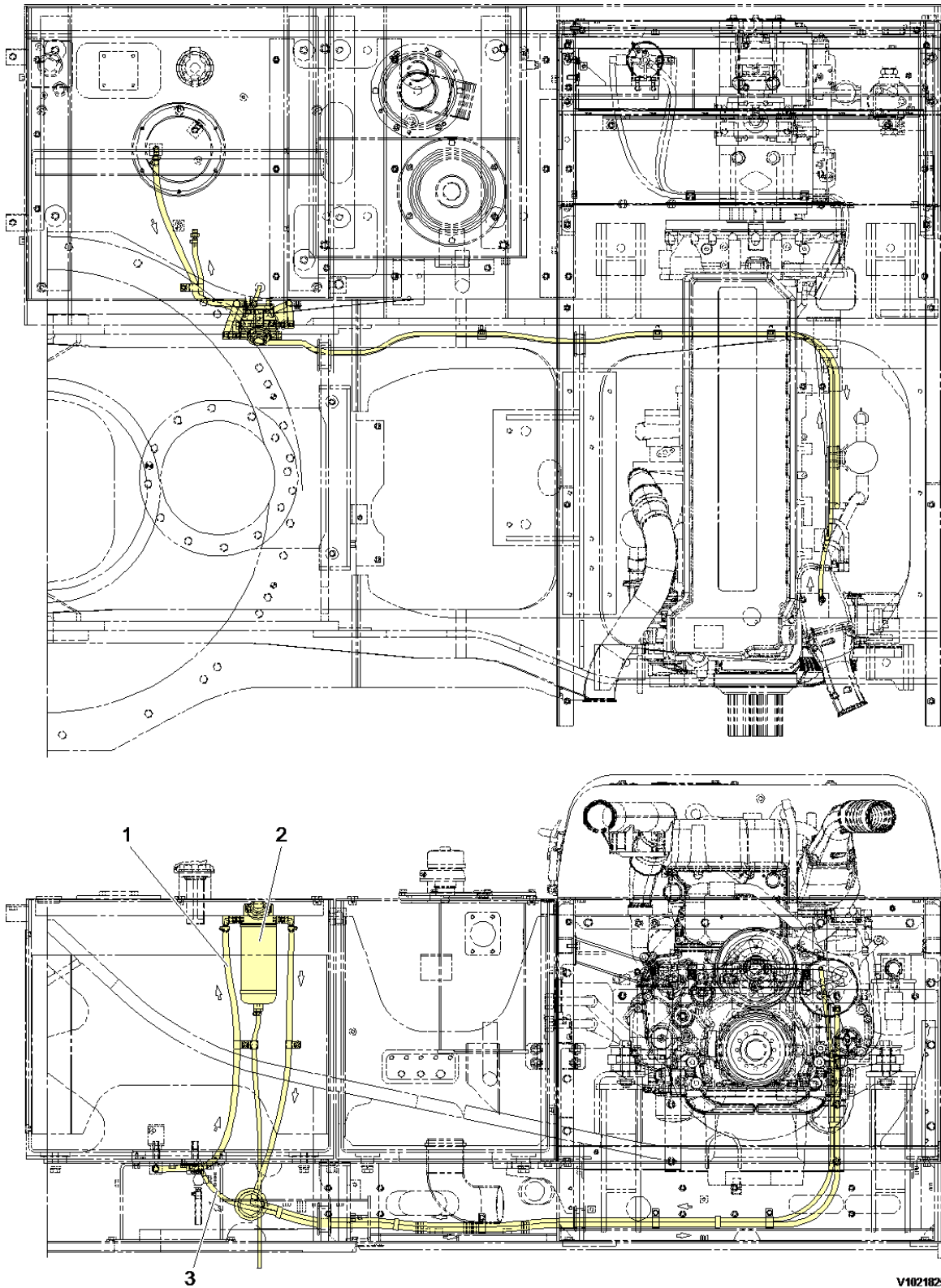
V1012045

**Figure 1**

**Fuel line (Machine serial no.: EC330B: 10001 ~ 10235, EC360B: 10001 ~ 10828)**

1. Suction hose
2. Water separator

### 3. Return hose



**Figure 2**

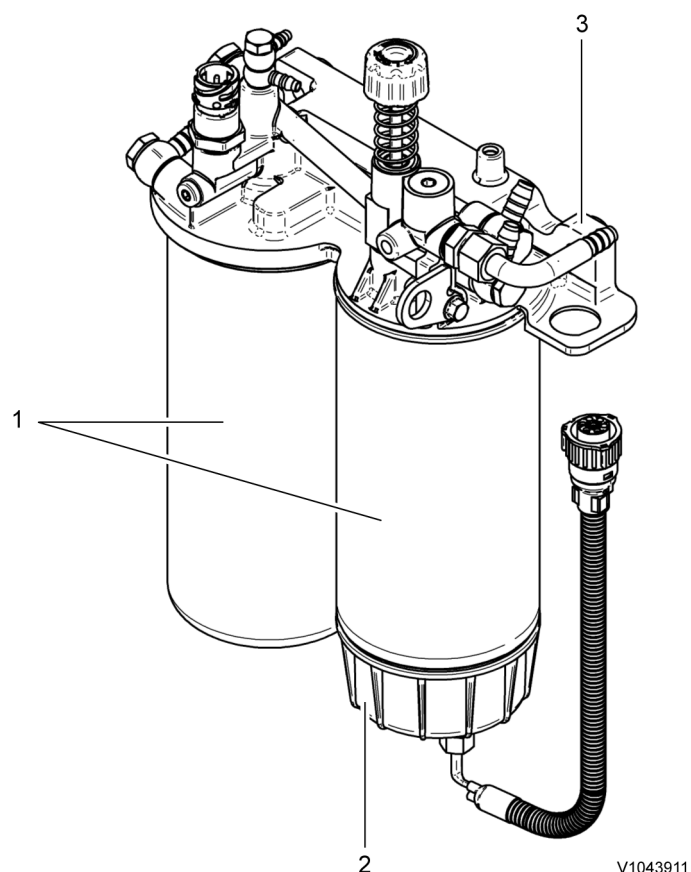
**Fuel line (Machine serial no.: EC330B: 10236 ~ , 80001 ~ , EC360B: 10829 ~ , 80001 ~ )**

1. Suction hose
2. Water separator
3. Return hose

Document Title: <b>Water separator heater, description</b>	Function Group: <b>235</b>	Information Type: <b>Service Information</b>	Date: <b>2014/7/2 0</b>
Profile: <b>EXC, EC360B LC [GB]</b>			

## Water separator heater, description

In the winter season the engine may misfire due to the frozen fuel. The fuel can be heated up by the coil in the water separator.



**Figure 1**  
**Water separator heater (optional equipment)**

1. Fuel filter
2. Heated bowl
3. Fuel filter housing

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