VOLVO
Construction Equipment

Service Information

Document Title:	Function Group:	Information Type:	Date:
Engine, removing	**210**	**Service Information**	**2015/3/9 0**
Profile: **EXC, EC140D LM [GB]**			

Engine, removing

Op nbr 210-070

WARNING

Risk of burns - stop the diesel engine and allow it to cool down before starting any work.

WARNING

Removal of residual pressure from the circuit must be done prior to any maintenance.

NOTE!
Cable ties and clamps that secure hoses and electrical wiring must be removed and then replaced when installing components.

NOTE!
Disconnected hoses, lines and connections must be plugged. Oil that drains from hoses, lines and connections should be collected in a container.

1. Place the machine in the service position B. See 091 Service positions
2. Turn off the battery disconnect switch.
3. Drain the coolant in a collection container. See 261 Coolant, changing.
4. Remove the muffler (DPF) hood and the engine hood using a lifting device.

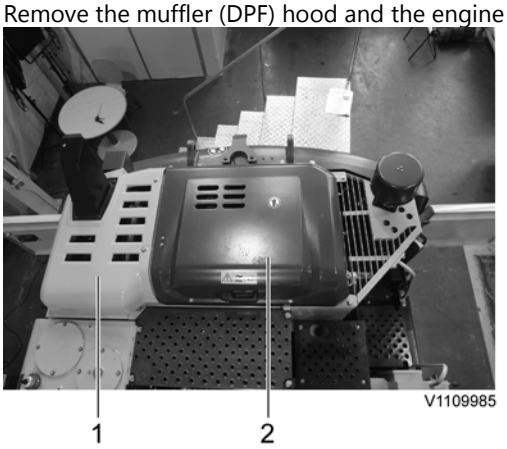


Figure 1

1. Muffler (DPF) hood
2. Engine hood

5. Remove the counterweight, see 716 Counterweight, removing.
6. Remove the screws on the bracket of the CAC (Charge air cooler) line.

Figure 2

1. Screw

7. Remove the screws on the bracket of the air inlet line.

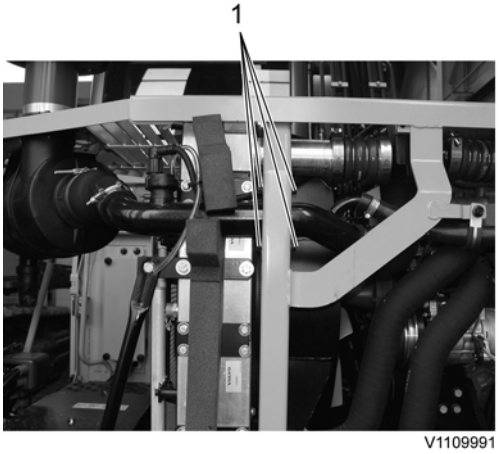


Figure 3

1. Screw

8. Remove the screws on the cowl frame.

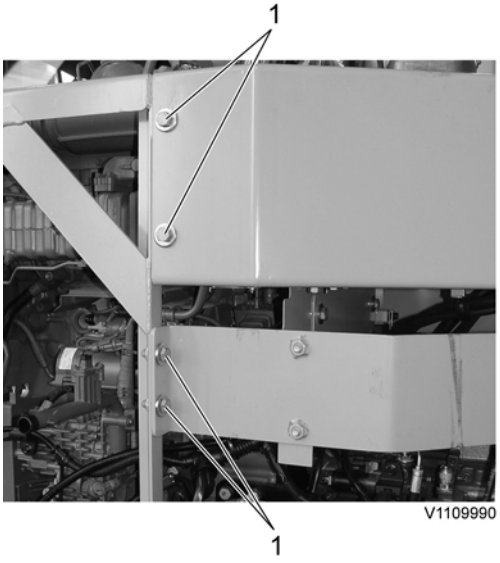


Figure 4

1. Screw

9. Remove the clamp and the air pump hose.
   Remove the mounting screws and the rear cowl frame.

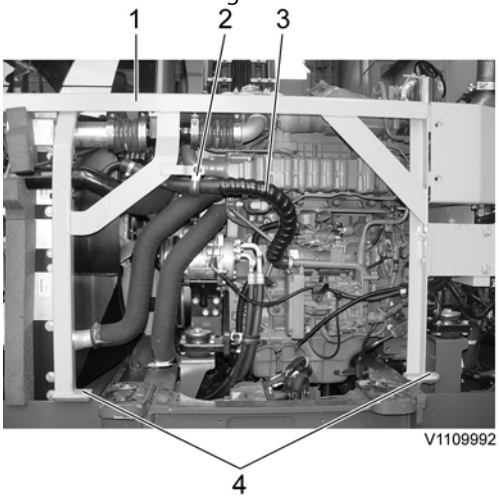


Figure 5

1. Cowl frame
2. Clamp
3. Air pump hose
4. Mounting screw

10. Remove the clamps and the charge air cooler hoses.

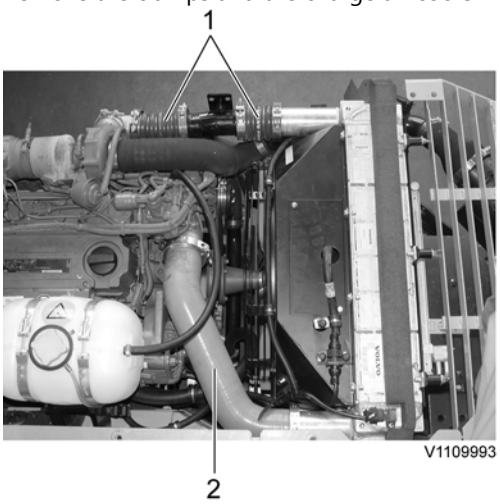


Figure 6

1. Charge air cooler hose (Outlet)
2. Charge air cooler hose (Inlet)

11. Remove the clamps and the air inlet hose.

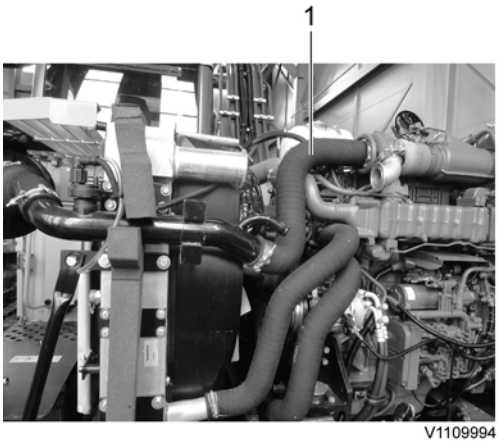


Figure 7

1. Air inlet hose

12. Remove the clamps and disconnect the radiator hoses.

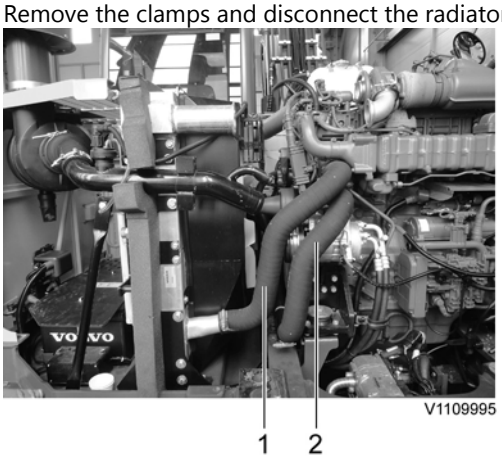


Figure 8

1. Radiator hose (Outlet)
2. Radiator hose (Inlet)

13. Disconnect the starter motor wire harness.

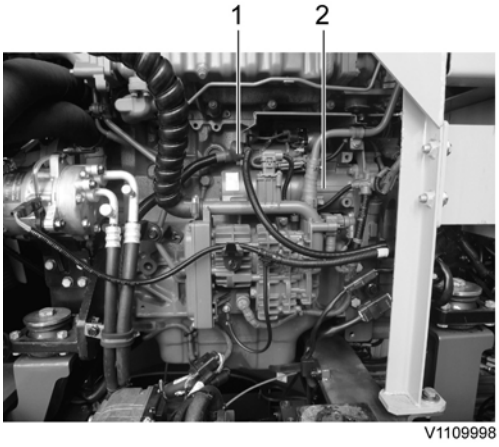


Figure 9

1. Wire harness

2. Starter motor

14. Remove the air conditioner compressor belt.
Disconnect the wire harness connector, remove the compressor and lay it down on the frame.

WARNING

Do not disconnect or loosen connections for the air conditioning unit (AC). Risk of gas leakage.

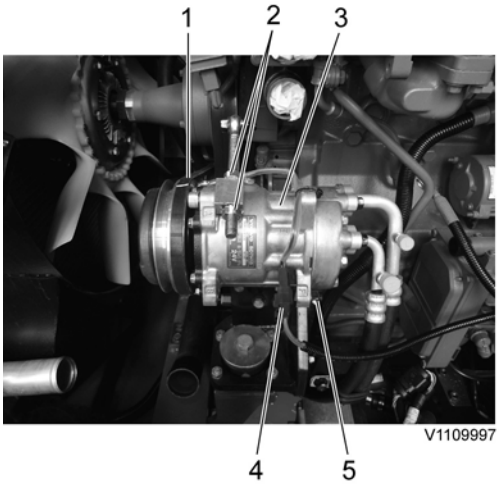


Figure 10

1. Air conditioner compressor belt
2. Nut
3. Air conditioner compressor
4. Wire harness connector
5. Mounting screw

15. Remove the screws and lay down the cooling fan inside the radiator shroud safely.

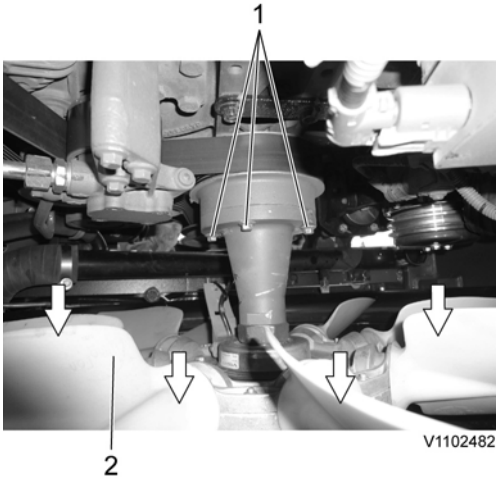


Figure 11

1. Screw
2. Cooling fan

16. Disconnect the hose and remove the clamps on the expansion tank

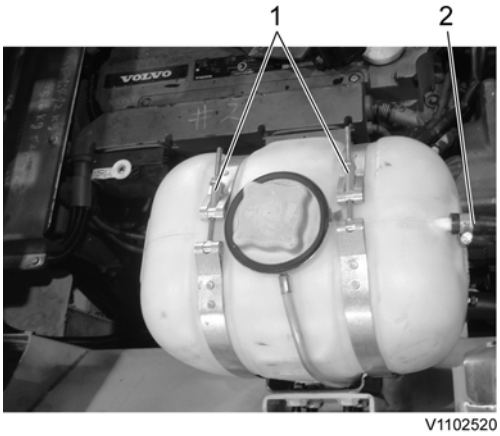


Figure 12

1. Clamp
2. Hose

17. Disconnect wire harness connector and the hoses.
    Remove the expansion tank

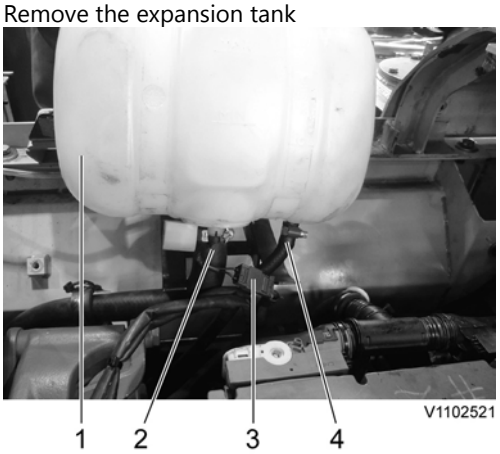


Figure 13

1. Expansion tank
2. Hose
3. Wire harness connector
4. Hose

18. Remove the clamp and disconnect the exhaust pipe.

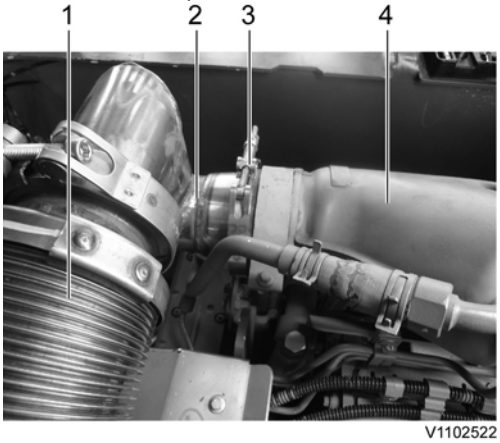


Figure 14

1. Exhaust flexible tube
2. Exhaust pipe
3. Clamp
4. Burner

19. Remove the main pump. See 913 Hydraulic pump, replacing

20. Remove the cover plate between the Engine room and the MCV.

21. Disconnect the junction box connector.

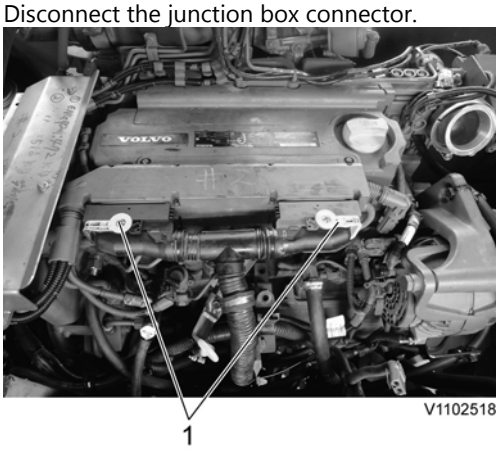


Figure 15

1. Junction box connector

22. Disconnect the wire harness connectors. (총 3군데?)

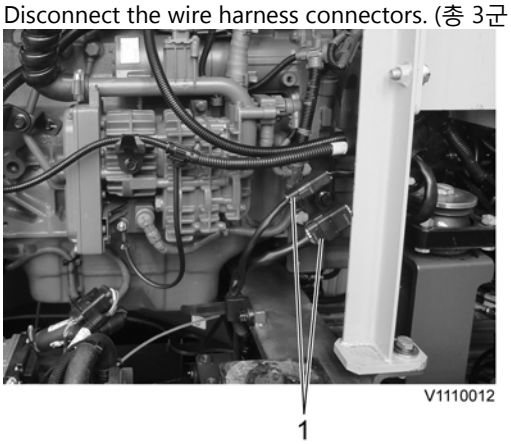


Figure 16

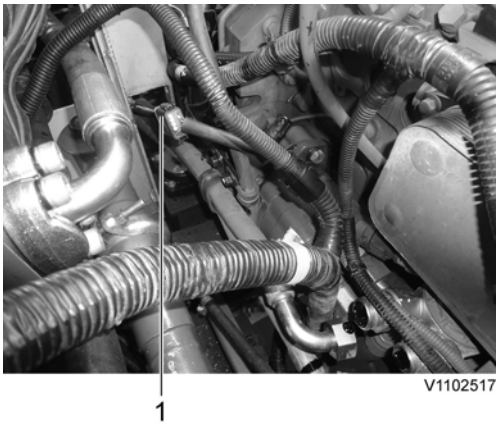


Figure 17

1. Connector

23. Disconnect the engine block heater wire-harness and the cab heater hose.

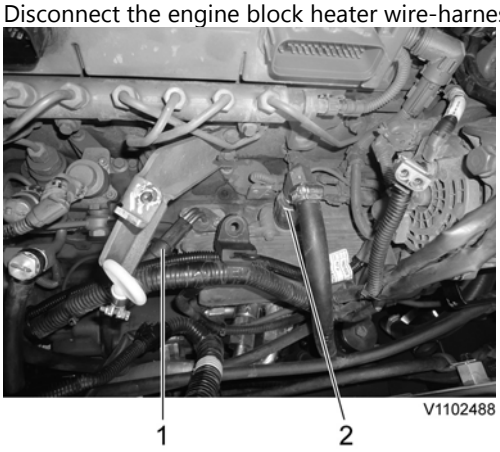


Figure 18

1. Engine block heater wire-harness (optional)
2. Cab heater hose (supply)

24. Disconnect the fuel line hoses (4 pcs).
NOTE!
Ports must be plugged after disassembling hoses.

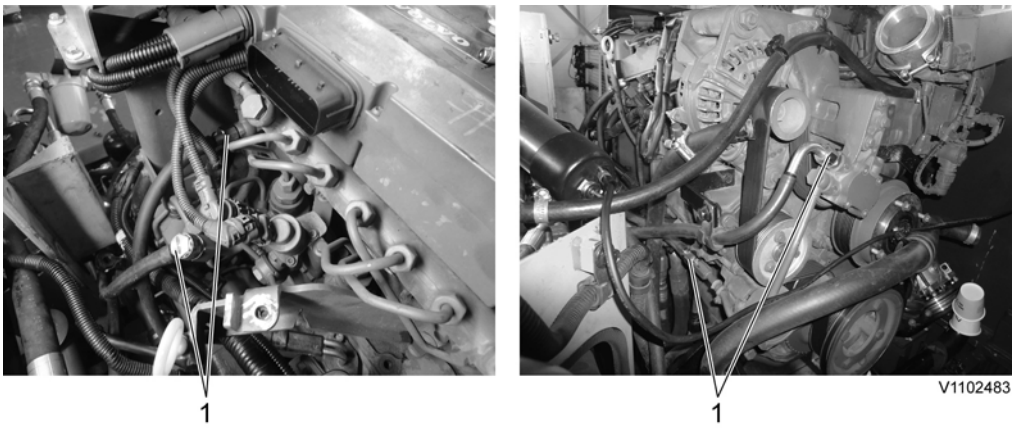


Figure 19

1. Fuel hose

25. Disconnect the engine oil remote hoses.

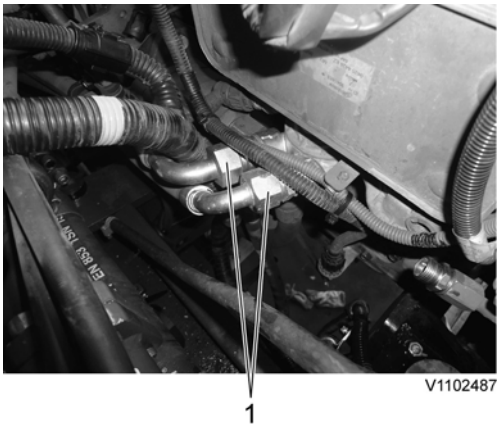


Figure 20

1. Engine oil remote hose

26. Remove the four mounting screws.

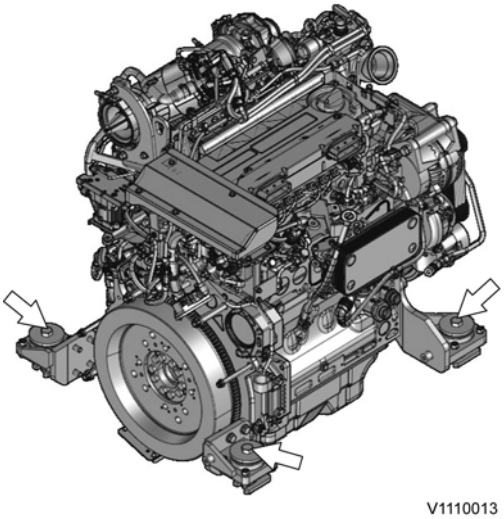


Figure 21

27. Lift the engine just a little using a lifting device, and after confirming safety around, lift it up and out slowly to the work stand.

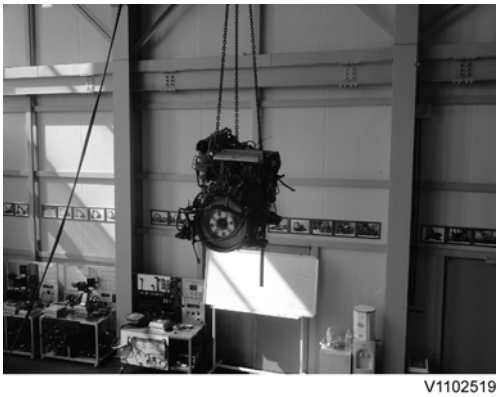


Figure 22

Document Title: **Crankcase ventilation, description**	Function Group: **212**	Information Type: **Service Information**	Date: **2015/3/9 0**
Profile: **EXC, EC140D LM [GB]**			

Crankcase ventilation, description

Since some of the combustion pressure enters the crankcase after passing by the pistons and piston rings (blow-by), the crankcase must be ventilated.

The purpose of the crankcase ventilation is to balance the pressure in the crankcase in order to avoid damage to engine components and to prevent oil mist formation and oil leakage into the ambient air.

The crankcase ventilation consists of a housing containing a filter, with connections to the oil sump and ventilation piping.

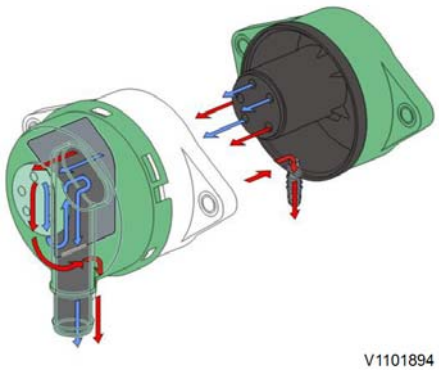


Figure 1
Crankcase ventilation housing

Air containing oil particles comes from the crankcase via the cylinder head into the crankcase ventilator. The air (blue arrows) passes through the filter, while oil particles (red arrows) are caught and led back to the oil sump via a return pipe.

Supplementary information

- 200 Engine, description
- 200 Component locations

Document Title: **Valves, adjusting**	Function Group: **214**	Information Type: **Service Information**	Date: **2015/3/9 0**
Profile: **EXC, EC140D LM [GB]**			

Valves, adjusting

Op nbr 214-012

885812 Timing tool
9998681 Rotation tool

WARNING

Risk of burns - stop the diesel engine and allow it to cool down before starting any work.

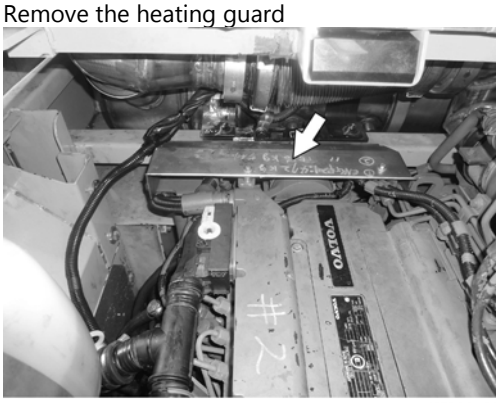
NOTICE

Never adjust the valves with the engine running as the valves may strike the piston and cause serious damage.

NOTICE

Always cover open air connections with a plastic bag and rubber bands. Gravel, dust and other particles in these connections may result in engine failure!

1. Place the machine in service position B. See 091 Service positions
2. Open the engine hood.
3. Remove the heating guard



V1102523

Figure 1

4. Remove the screws and put aside the crankcase ventilation duct from the engine.

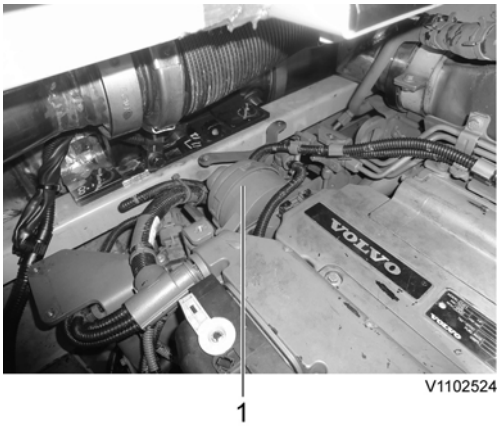


Figure 2

1. Crankcase ventilation duct

5. Disconnect the wire-harness connectors

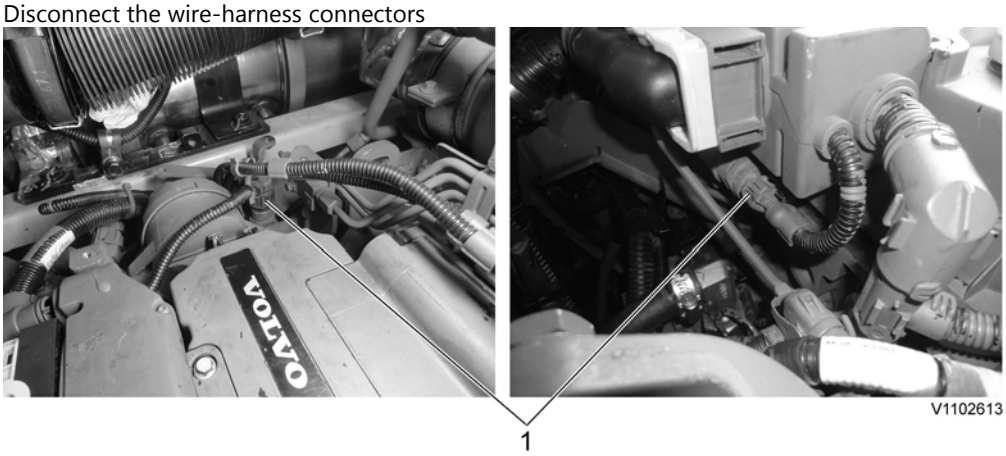


Figure 3

1. Connector

6. Disconnect the junction box connector and pull apart the cover plates

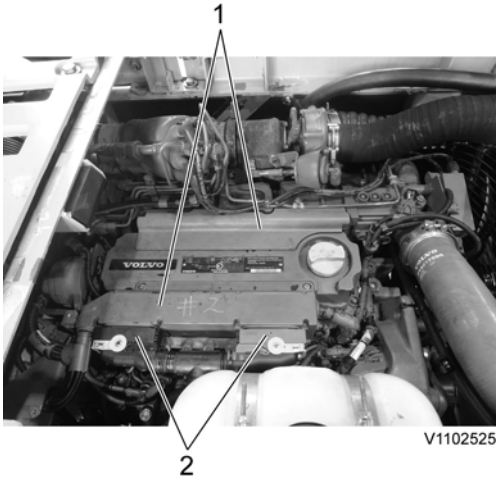


Figure 4

1. Cover plate
2. Junction box connector

7. Disconnect the connector.

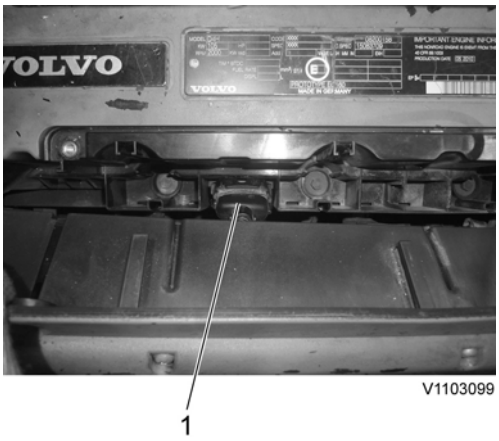


Figure 5

1. Connector

NOTICE

Clean round the valve cover, intercooler and turbo to avoid oil residue and the like from getting into the engine while work is in progress.

8. Remove the valve cover.

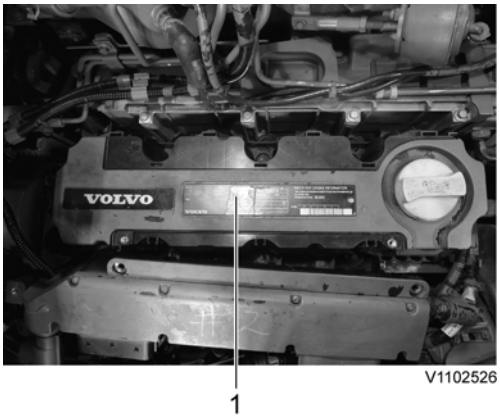


Figure 6

1. Valve cover

9. Open the side door on the right side of the machine.
10. Remove screws and put away the cover between the engine room and the pump room.

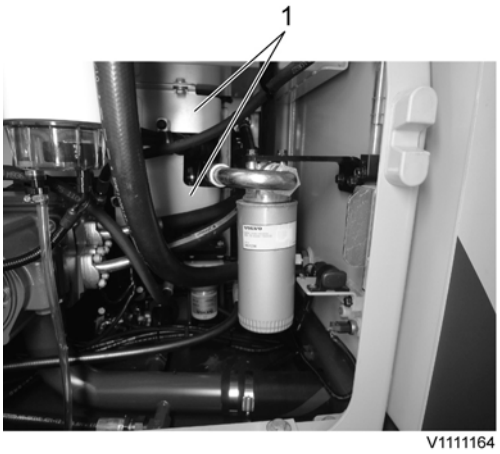


Figure 7

1. Cover plate

11. Remove the gear cover.

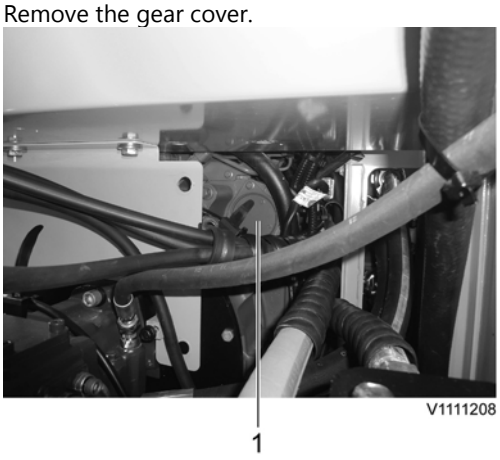


Figure 8

1. Gear cover

12. Install the engine rotating tool.
    NOTE!
    The teeth of the rotation tool must mesh fully with the teeth of the flywheel gear.

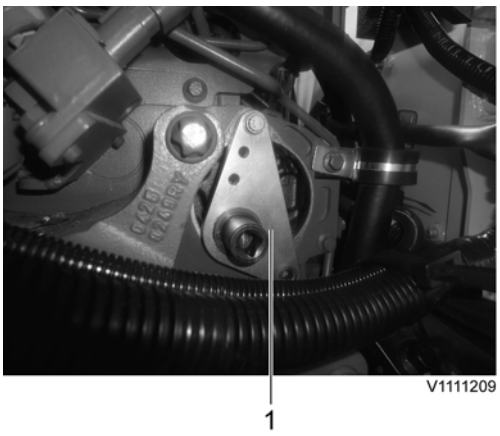


Figure 9

Our support email:

ebooklibonline@outlook.com