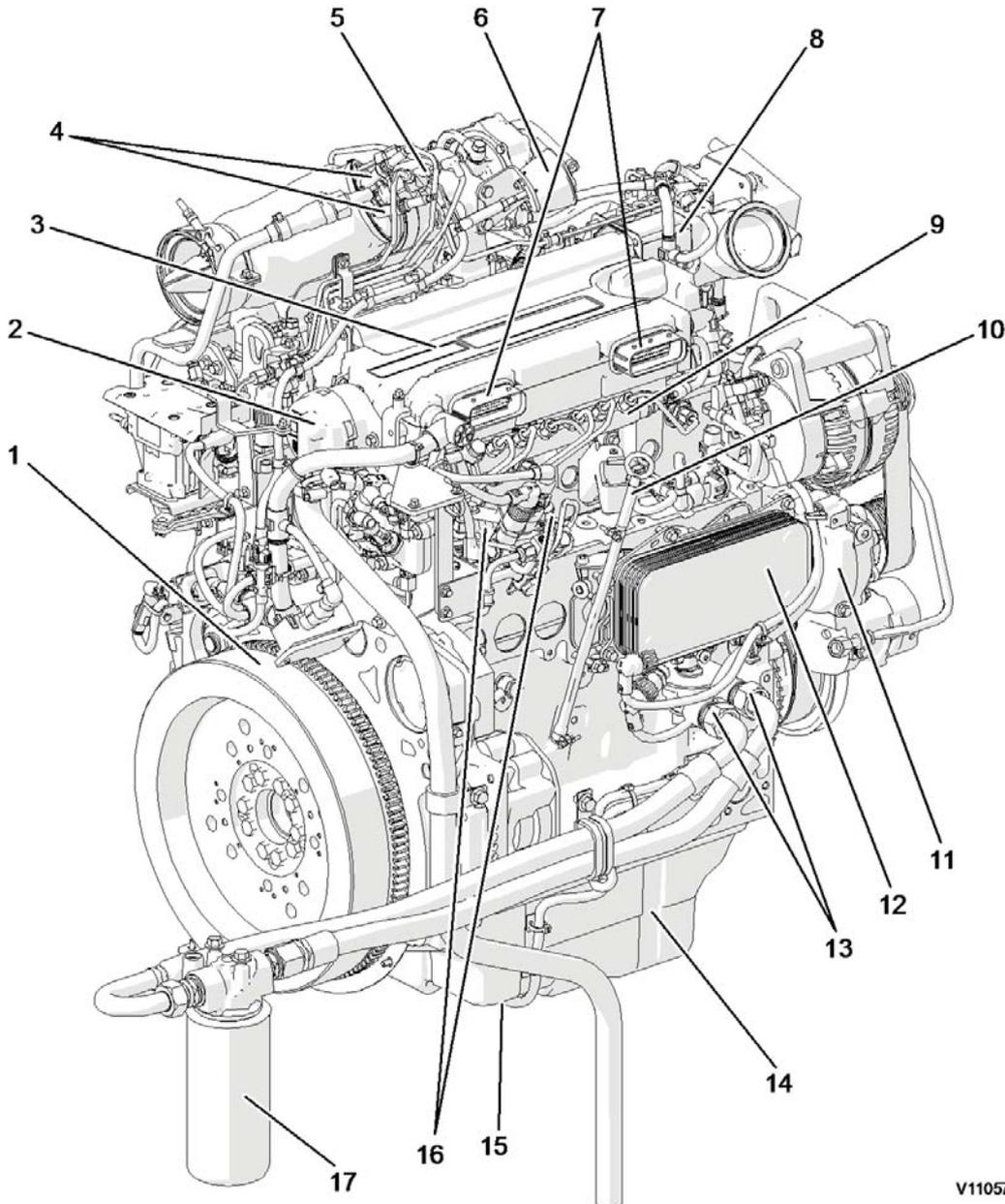


Document Title: Component locations	Function Group: 200	Information Type: Service Information	Date: 2015/2/26
Profile: EXC, EC180D L [GB]			

Component locations

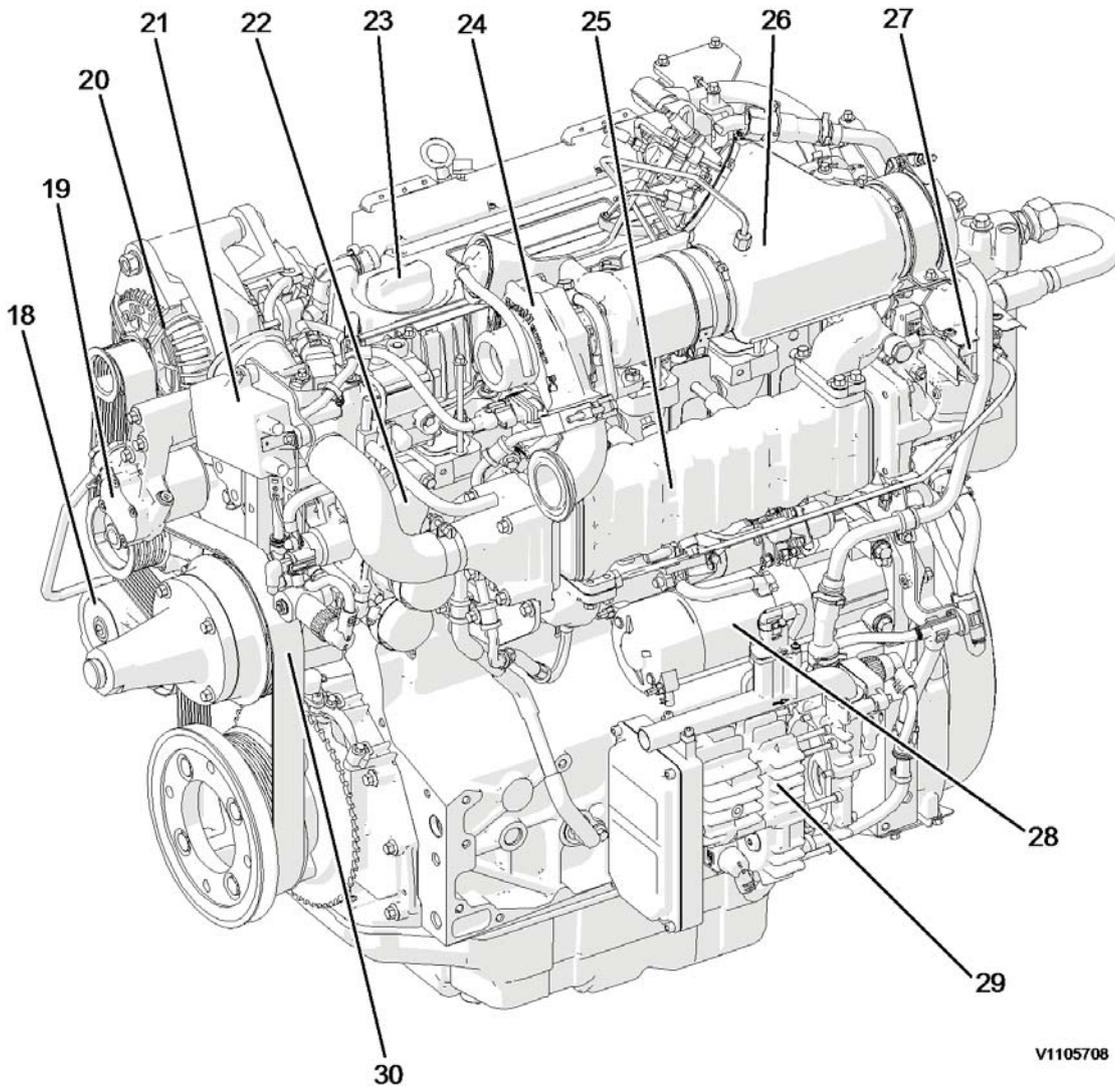


V1105707

Figure 1
Engine, front side

1	Flywheel	10	Engine oil dipstick gauge
2	Crankcase ventilation duct	11	Coolant pump
3	Valve cover	12	Engine oil cooler
4	Spark plug	13	Engine oil filter remote port
5	Glow plug	14	Oil pan

6	Turbocharger waste-gate	15	Engine oil level sensor
7	ECU connecting port	16	High pressure fuel pump
8	Pre-heating coil housing	17	Engine oil filter
9	Common rail		



V1105708

Figure 2
Engine, back side

18	Belt tensioner	25	EGR cooler
19	Fuel feed pump	26	Partial flow-burner
20	Alternator	27	EGR actuator
21	Spark plug control unit	28	Starter motor
22	Thermostat housing	29	Electric air pump
23	Engine oil filling port	30	Fan belt
24	Turbocharger		

Document Title: E-ECU, MID 128, changing non-programmed ECU	Function Group: 200	Information Type: Service Information	Date: 2015/2/26
Profile: EXC, EC180D L [GB]			

E-ECU, MID 128, changing non-programmed ECU

Op nbr 200-068

[VCADS Pro VCADS Pro Service Tool](#)

[88890180 Interface](#)

[88890027 Cable](#)

1. Park the machine in the service position A, see [091 Service positions](#).
2. Open the side doors on the left side of the machine.
3. Turn OFF the battery disconnect switch.



V1101296

Figure 1

4. Download software to VCADS Pro computer for target machine.
5. Connect the VCADS Pro computer to the machine, and perform the operation '28423-7 MID 128 control unit, programming'.
6. When VCADS Pro 'MID 128 ECU, programming' window appears, follow the instructions for replacing E-ECU.
7. Disconnect the wiring harness connectors from E-ECU and remove 2 screws fixing the clamps.

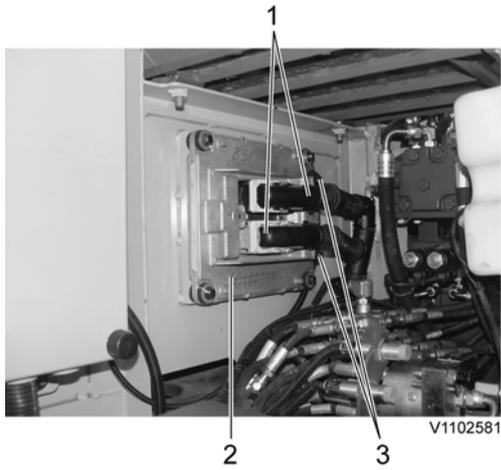


Figure 2

1. Connector
2. E-ECU
3. Screw

NOTE!

Pull up the locking device to disconnect the connector.

8. Remove 4 screws fixing the E-ECU.
9. Install new E-ECU, and tighten 4 screws.
10. Connect the wiring harness connectors to the E-ECU and tighten 2 screws fixing the clamps.
11. After replacing E-ECU, press OK button of VCADS Pro operation '28423-7 MID 128 control unit, programming'.
Now VCADS Pro starts the programming of software and parameters to the new E-ECU.
12. Close the side doors.

Document Title: E-ECU, MID 128, changing pre-programmed ECU	Function Group: 200	Information Type: Service Information	Date: 2015/2/26
Profile: EXC, EC180D L [GB]			

E-ECU, MID 128, changing pre-programmed ECU

Op nbr 200-070

[VCADS Pro VCADS Pro Service Tool](#)

[88890180 Interface](#)

[88890027 Cable](#)

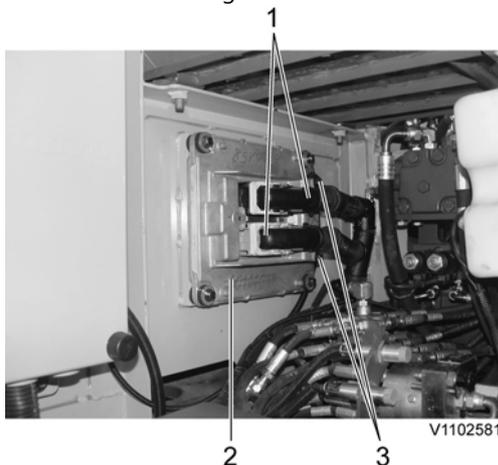
1. Park the machine in the service position A, see [091 Service positions](#).
2. Open the side doors on the left side of the machine.
3. Turn OFF the battery disconnect switch.



V1101296

Figure 1

4. Connect VCADS Pro computer to the machine, and perform the operation '17030-3 Parameter, programming'.
5. Use the function 'save all parameters to job card'.
6. Disconnect the wiring harness connectors from E-ECU and remove 2 screws fixing the clamps.



V1102581

Figure 2

1. Connector
2. E-ECU
3. Screw

NOTE!

Pull up the locking device to disconnect the connector.

7. Remove 4 screws fixing the E-ECU.
8. Install new E-ECU, and tighten 4 screws fixing the E-ECU.
9. Connect the wiring harness connectors to the E-ECU and tighten 2 screws fixing the clamps.
10. Connect VCADS Pro computer to the machine, and perform the operation 17030-3 Parameter, programming'. Now the customer parameters are changed according to the job card saved at step 2.
11. Close the side doors.

Document Title: Engine, removing	Function Group: 210	Information Type: Service Information	Date: 2015/2/26
Profile: EXC, EC180D L [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 radiator hood.

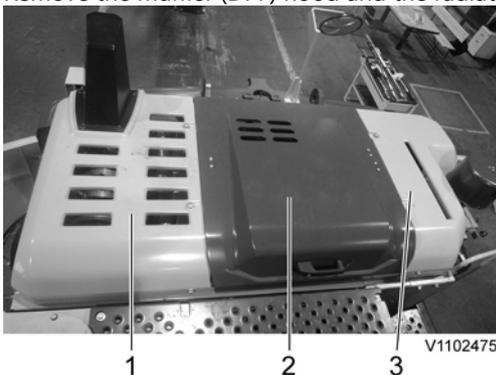


Figure 1

1. Muffler (DPF) hood
 2. Engine hood
 3. Radiator hood
5. Remove the engine room cowl frame with the engine hood using a lifting device.

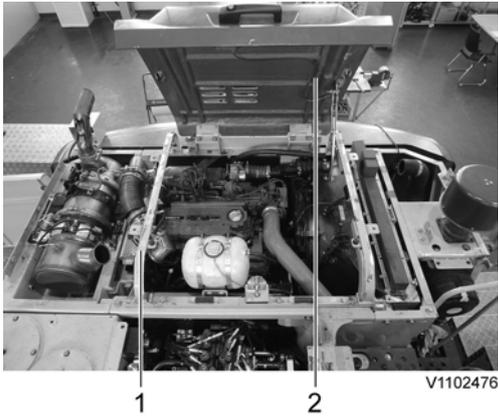


Figure 2

1. Engine room cowl frame
2. Engine hood

6. Remove the clamps, air inlet hose and disconnect the air pump hose.

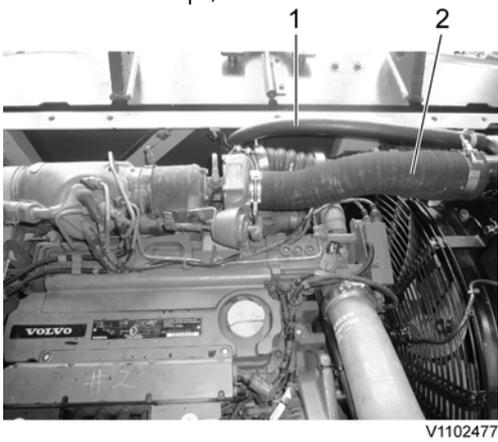


Figure 3

1. Air pump hose
2. Air inlet hose

7. Remove the clamps and the charge air cooler tubes.

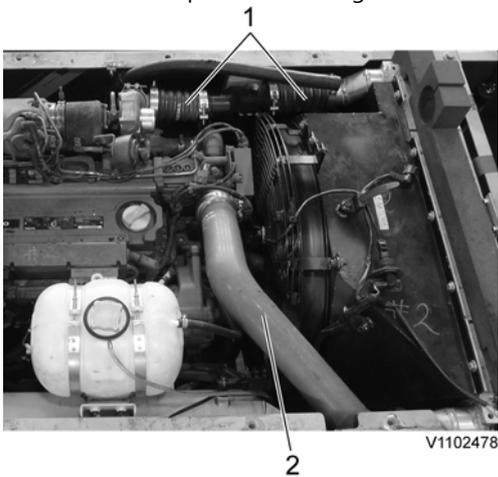


Figure 4

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

8. Remove the clamp and disconnect the exhaust pipe.

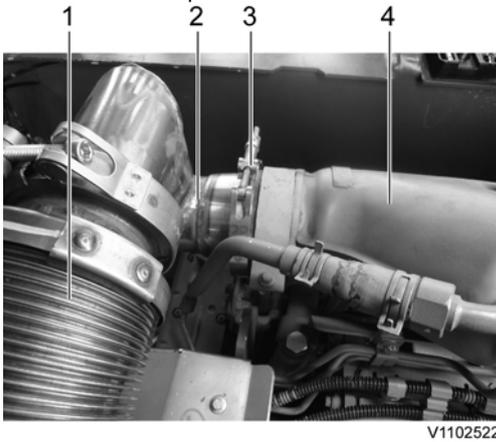


Figure 5

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

9. Remove the engine room under covers.

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

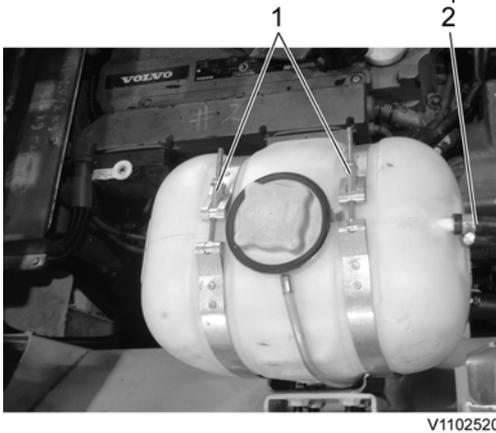


Figure 6

1. Clamp
2. Hose

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

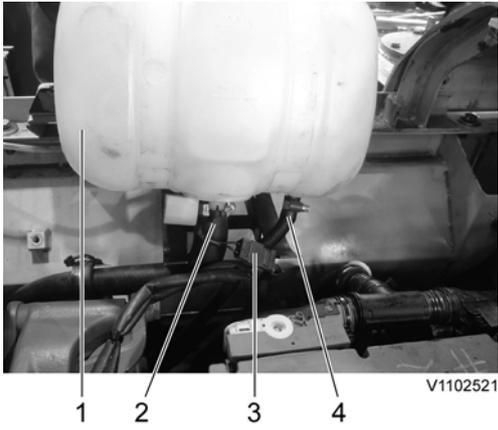


Figure 7

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

12. Remove the clamps and disconnect the radiator hoses.

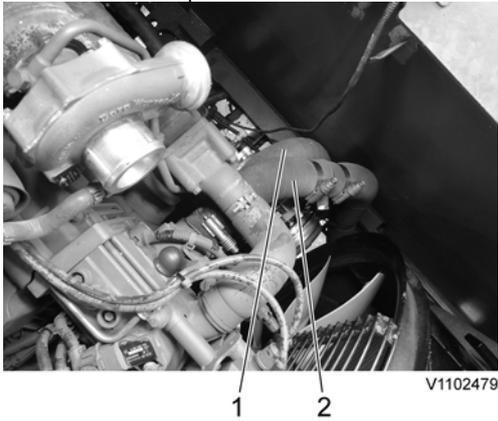


Figure 8

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

13. Remove the clamps and disconnect the connector.

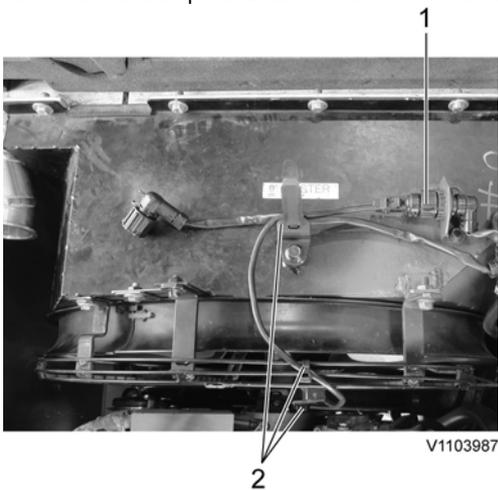


Figure 9

1. Connector
2. Clamp

14. Remove the cooling fan guard.

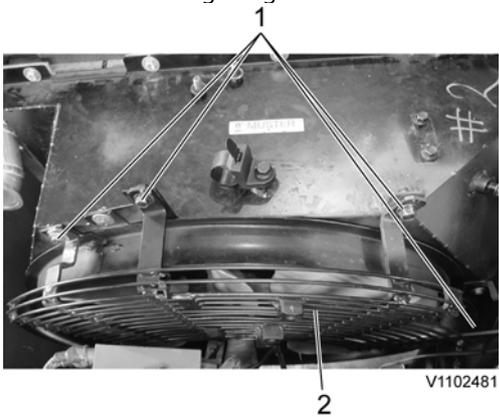


Figure 10

1. Screw
2. Cooling fan guard

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

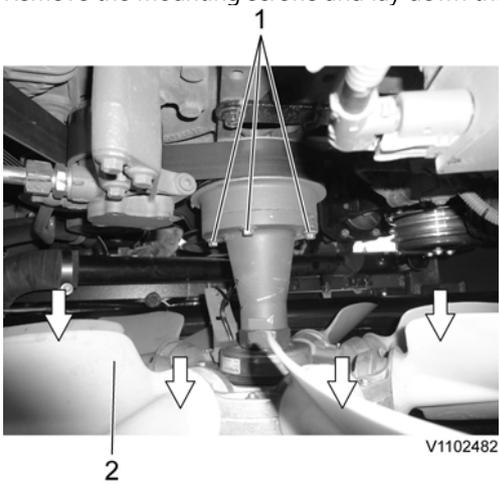
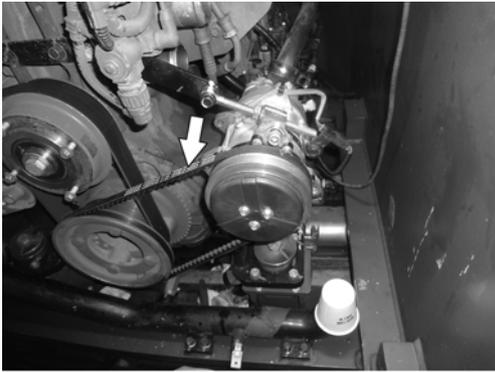


Figure 11

1. Screw
2. Cooling fan

16. Remove the main pump. See [913 Hydraulic pump, replacing](#)

17. Remove the air conditioner compressor belt.



V1102485

Figure 12

18. Disconnect the wire harness connector, remove the compressor and lay it down on the frame.



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



V1102486

Figure 13

1. Air conditioner compressor
2. Wire harness connector

19. Disconnect the engine oil remote hoses.



V1102487

Figure 14

1. Engine oil remote hose

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

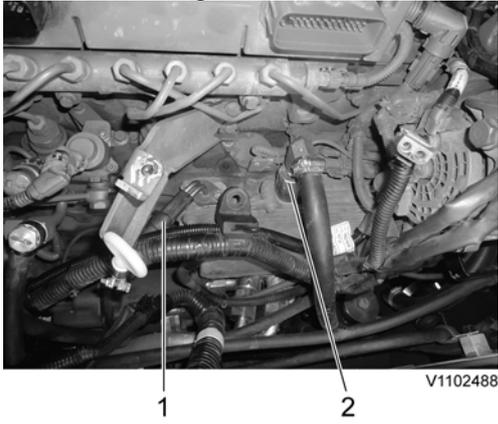


Figure 15

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

21. Disconnect the starter motor wire harness.

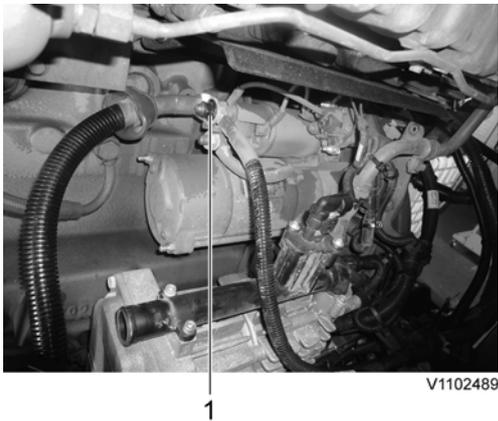


Figure 16

1. Starter motor wire harness

22. Disconnect the wire harness connectors.

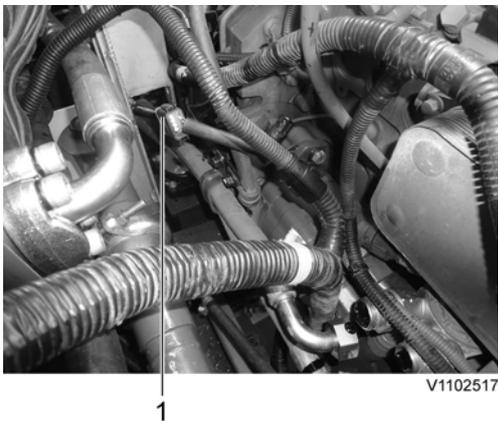


Figure 17

1. Connector

23. Disconnect the junction box connector.

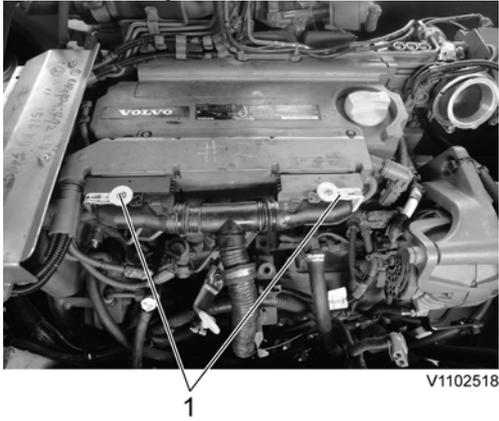


Figure 18

1. Junction box connector

24. Disconnect the fuel line hoses (4 pcs).

NOTE!

Ports must be plugged after disassembling hoses.

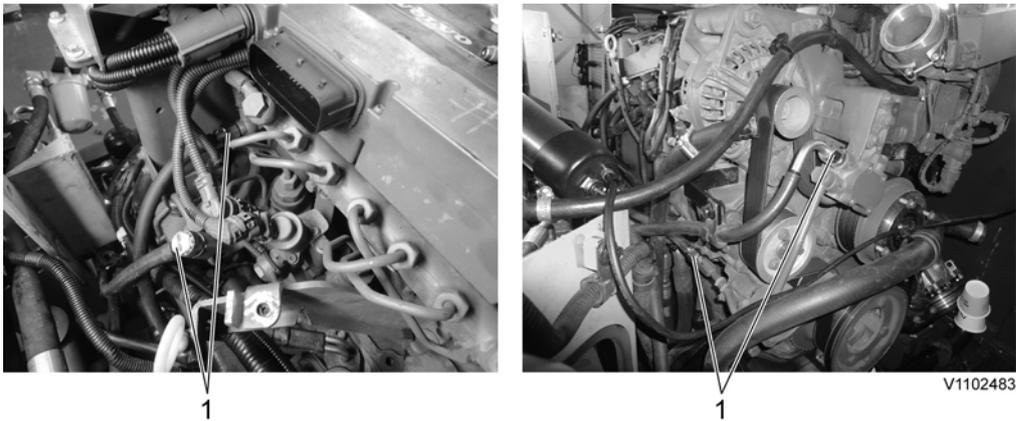


Figure 19

1. Fuel hose

25. Remove the four mounting screws.

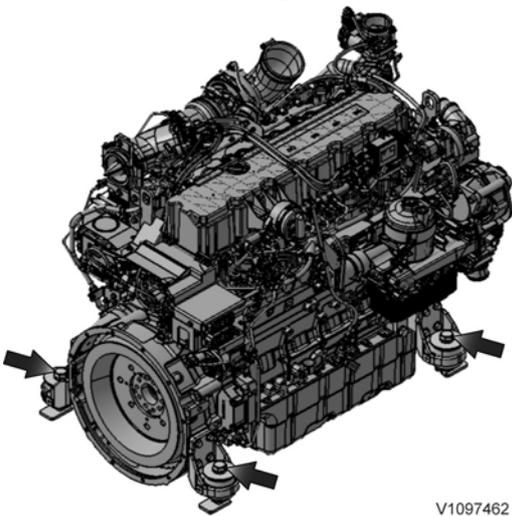


Figure 20

26. 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.



V1102519

Figure 21

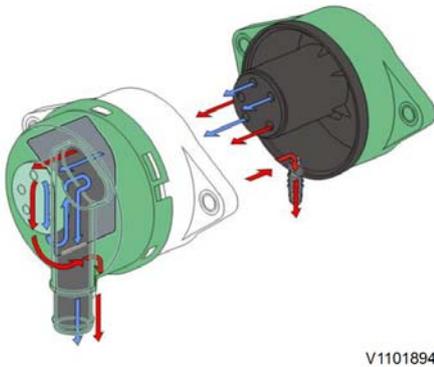
Document Title: Crankcase ventilation, description	Function Group: 212	Information Type: Service Information	Date: 2015/2/26
Profile: EXC, EC180D L [GB]			

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.



V1101894

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](#)

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