

Document Title: Description D5D	Function Group: 200	Information Type: Service Information	Date: 2014/7/4 0
Profile: EXC, EW140B [GB]			

Description D5D

The D5D engine is a straight, four cylinder, direct-injection, four-stroke, diesel engine, with electronically controlled fuel injection EMR (Engine Management System).

The engine meets the emission requirements according to EURO2.

The engine number is stamped on the name plate and on the right side of the cylinder block.

Model and serial number must always be indicated when ordering spare parts.

Document Title: Precaution for replacing the engine	Function Group: 210	Information Type: Service Information	Date: 2014/7/4 0
Profile: EXC, EW140B [GB]			

Precaution for replacing the engine

The E-ECU contains an engine specific data set, and this is fixedly assigned to each engine. So in case of the engine replacement, the new E-ECU should be ordered together with the new engine, and should be programmed with the correct data set.

Document Title: Engine, removing	Function Group: 210	Information Type: Service Information	Date: 2014/7/4 0
Profile: EXC, EW140B [GB]			

Engine, removing

Op nbr 210-01

14360000 Vacuum pump

Lifting links, min. 1000 kg

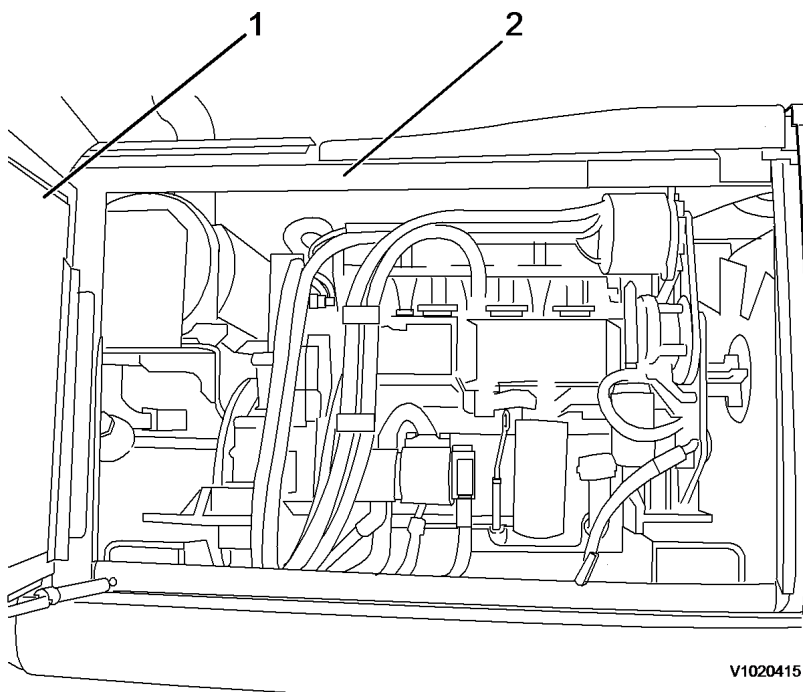


WARNING

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

Plug and mark all hoses and connections when disconnecting.

1. To facilitate the work, remove the counterweight, see [716 Counterweight, removing](#).
2. Remove the covers under the engine.
Remove the covers over the engine.



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3. _____

Figure 1
Frame

1. Cover
2. Frame

Detach the outer frame and lift away the frame together with the cover.

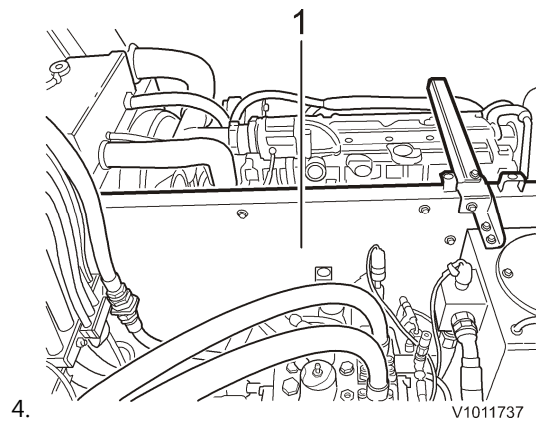


Figure 2
Engine/hydraulic compartment

1. Intermediate wall

Remove the intermediate wall.

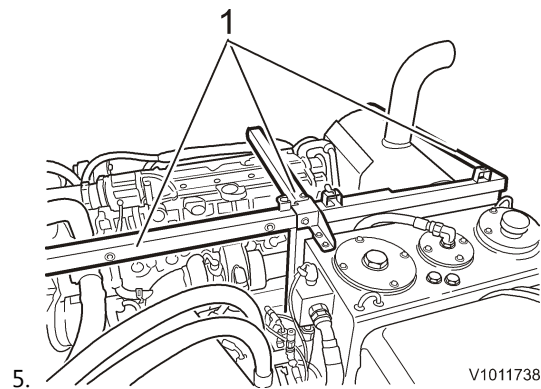


Figure 3
Engine/hydraulic compartment

1. Frame

Remove the remaining framework.

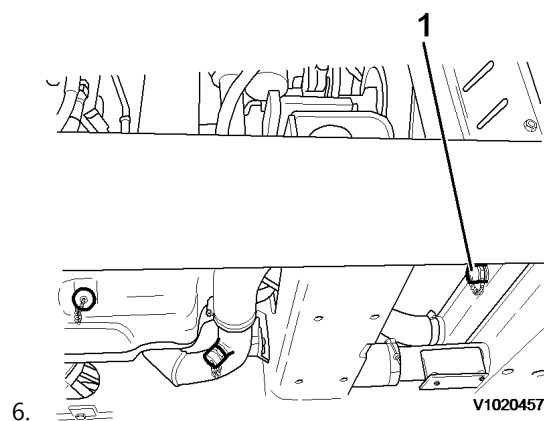
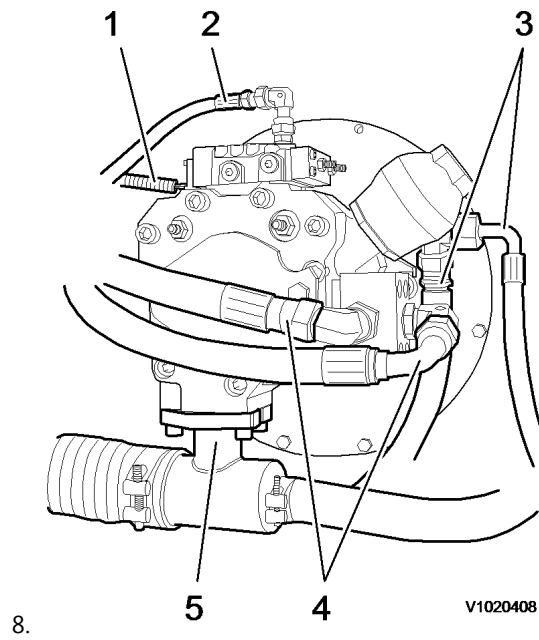


Figure 4
Draining coolant

1. Drain valve

Drain the coolant into a clean vessel by connecting the drain hose to the drain valve on the radiator.

7. Connect the vacuum pump, see [900 Vacuum pump, connection](#).



8.

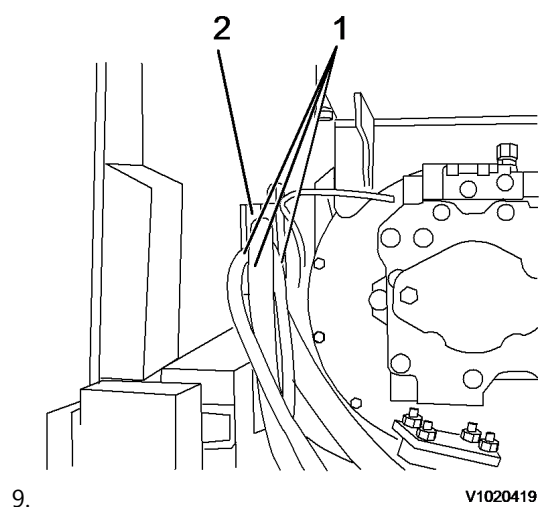
Figure 5
Working pump

1. Connector
2. LS-hose
3. Leak-off oil hoses
4. Pressure hoses
5. Suction line

Disconnect the suction line at the connection on the working pump.
Disconnect leak-off oil hoses, pressure hoses and the LS-hose from the working pump.
Detach the connector from the working pump.

NOTE!

Mark and plug the suction line and other hoses with metal plugs to maintain pressure, as the vacuum pump will be disconnected further on in the instructions.



9.

Figure 6
Working pump

1. Hydraulic hoses
2. Attachment

Detach the hoses from the attachment.

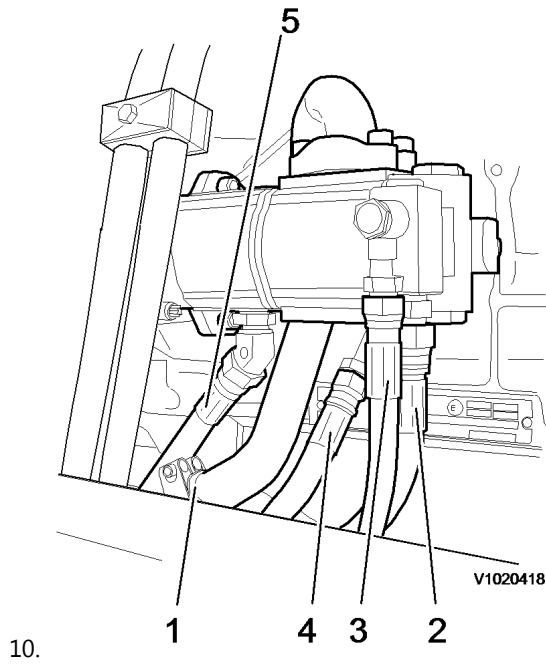


Figure 7
Servo/steering pump

1. Suction line
2. Tank line
3. Servo pressure hose
4. Hose to fan motor, hydraulic oil cooler
5. Hose to brake valve

Disconnect the suction line at the joint between pipe and hose and disconnect the other hoses from the servo/steering pump.

NOTE!

Mark and plug and the hoses with metal plugs to maintain pressure, as the vacuum pump will be disconnected further on in the instructions.

11. Turn off the vacuum pump and turn off the battery disconnect switch.

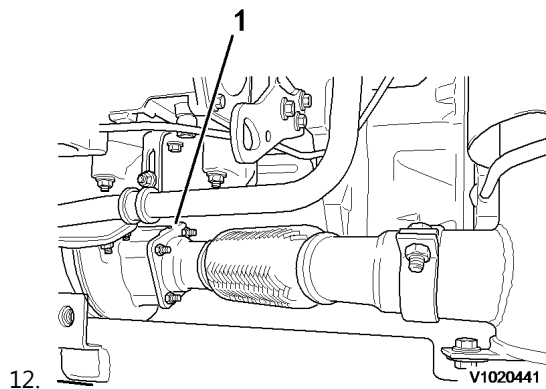
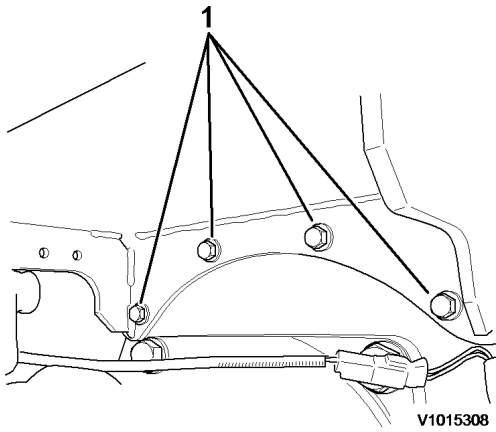


Figure 8
Exhaust pipe

1. Joint between turbocharger and exhaust pipe

Detach the turbocharger from the exhaust pipe.



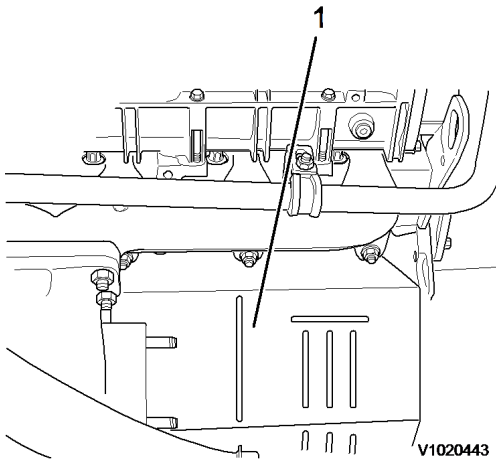
13.

Figure 9
Underside of silencer bracket

1. Attaching bolts

Secure the silencer and bracket with a strap.

Remove the attaching bolts for the silencer bracket and remove the silencer and bracket.

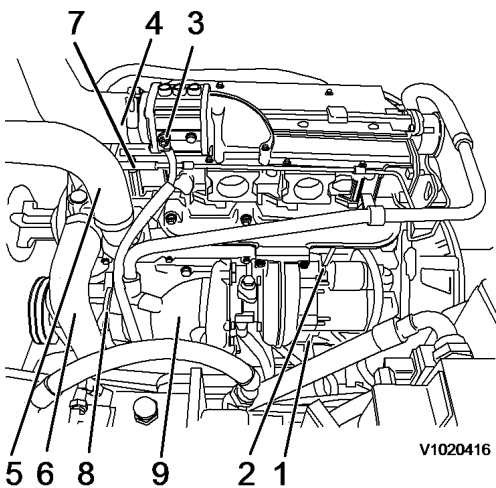


14.

Figure 10
Heat radiation shield over starter motor

1. Heat radiation shield

Remove the heat radiation shield over the starter motor.



15.

Figure 11
Engine

1	Ground cable	6	Lower cooling hose
2	Starter motor cable harness	7	Hose
3	Preheating cable harness	8	AC compressor
4	Upper intercooler hose	9	Induction hoses to turbocharger
5	Upper cooling hose		

Disconnect the ground cable from the engine.

Detach the starter motor cable harness from the engine.

Detach the preheating cable harness from the engine.

Disconnect the upper intercooler hose and the upper and lower cooling hoses from the engine.

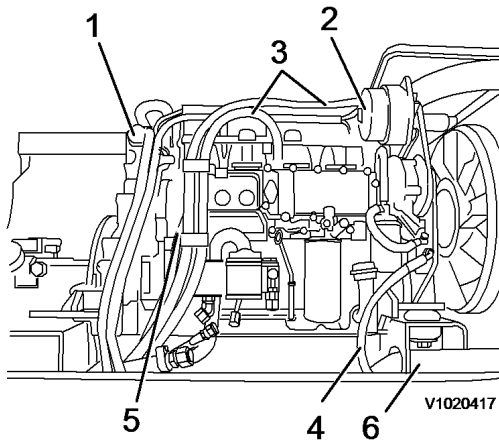
Disconnect the hose from the engine.

Disconnect the induction hoses from the turbocharger.

Detach the AC compressor from the bracket.

NOTE!

Do not disconnect the hoses from the AC compressor.



16.

Figure 12
Engine

1	EMR cable harness	4	Fuel hose, return
2	Alternator cable harness	5	Fuel hose, pump
3	Cooling hoses	6	Lower intercooler hose

Detach the EMR and alternator cable harnesses from the engine.

Disconnect the cooling hoses from the engine.

Disconnect the return fuel hose and the fuel hose to the fuel pump from the engine.

Detach the lower intercooler hose from the engine.

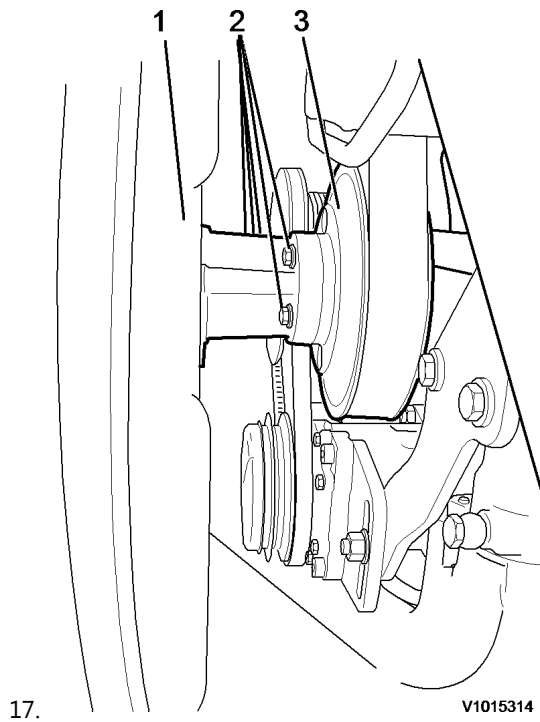


Figure 13
Cooling fan

1. Cooling fan
2. Attaching bolts
3. Belt pulley

Remove the attaching bolts between fan and belt pulley. Move the cooling fan forward toward the radiator.

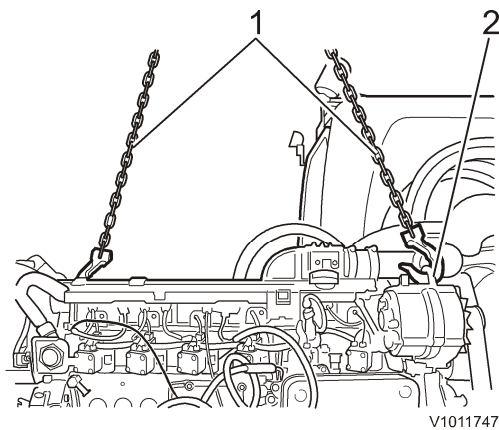


Figure 14
Lifting links on engine

1. Lifting links
2. Lifting lugs

Connect the lifting links to the two lifting lugs on the engine and to a lifting device.

19. Remove the bolted joints for the engine mountings.
20. Carefully lift the engine out of the machine.
21. Place the engine on stable supports.

Document Title: Engine, installing	Function Group: 210	Information Type: Service Information	Date: 2014/7/4 0
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Engine, installing

Op nbr 210-02

14360000 Vacuum pump

Lifting links, min. 1000 kg

1. Connect lifting links to the lifting lugs on the engine and carefully lift the engine into the machine.
2. Install the bolted joint for the engine mountings.
Tightening torque: 687 ± 68 Nm.

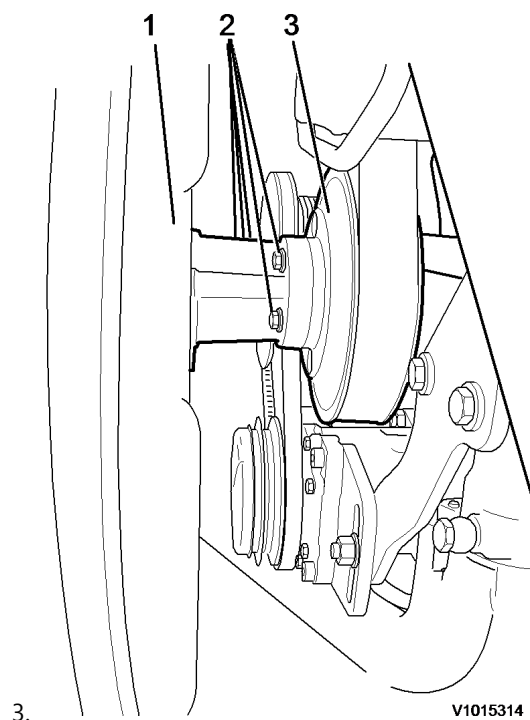
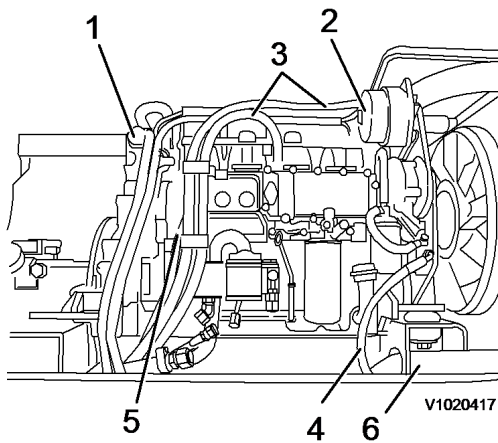


Figure 1
Cooling fan

1. Cooling fan
2. Attaching bolts
3. Belt pulley

Install the cooling fan. Apply locking fluid and install the attaching bolts between fan and belt pulley.



4.

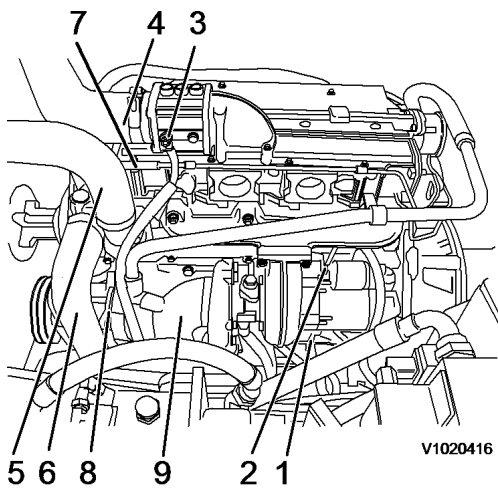
Figure 2
Engine

1	EMR cable harness	4	Fuel hose, return
2	Alternator cable harness	5	Fuel hose, pump
3	Cooling hoses	6	Lower intercooler hose

Connect the fuel hose to the fuel pump.

Connect the return fuel hose, the cooling hoses and the EMR cable harness to the engine.

Connect the alternator cable harness to the alternator.



5.

Figure 3
Engine

1	Ground cable	6	Lower cooling hose
2	Starter motor cable harness	7	Hose
3	Preheating cable harness	8	AC compressor
4	Upper intercooler hose	9	Induction hoses to turbocharger
5	Upper cooling hose		

Install the AC compressor on the bracket.

Connect the induction hoses to the turbocharger.

Connect the hose, the upper intercooler hose and the upper and lower cooling hoses to the engine.

Connect the ground cable, the starter motor and preheating cable harnesses.

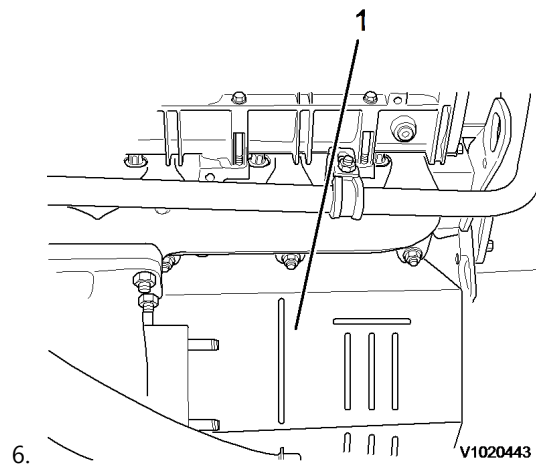


Figure 4
Heat radiation shield over starter motor

1. Heat radiation shield

Install the heat radiation shield over the starter motor.

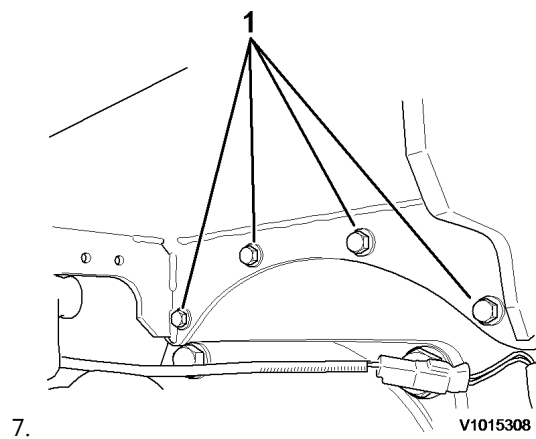


Figure 5
Underside of silencer bracket

1. Attaching bolts

Install the silencer together with bracket and install the attaching bolts for the silencer bracket.

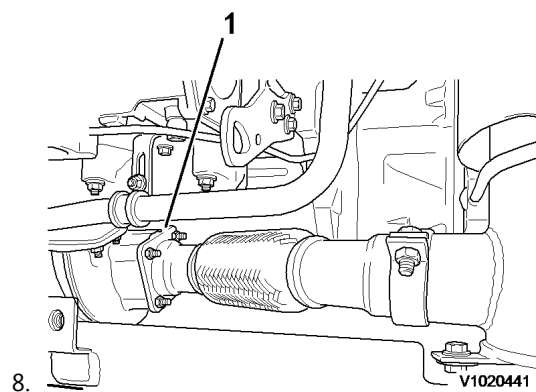
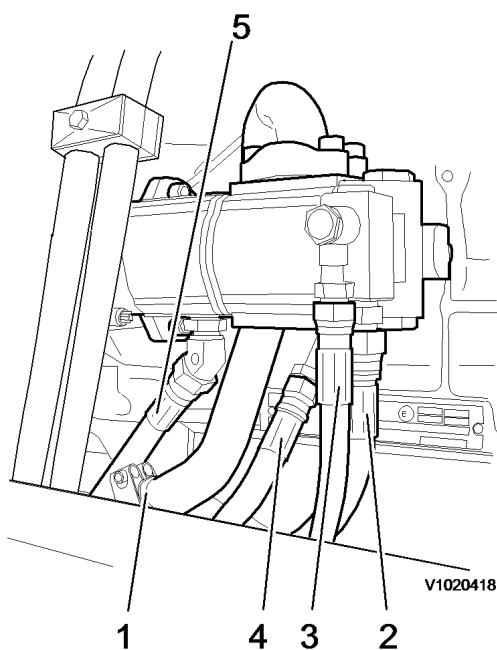


Figure 6
Exhaust pipe

1. Joint between turbocharger and exhaust pipe

Install the exhaust pipe on the turbocharger.

9. Switch on the battery disconnect switch and connect the vacuum pump, see [900 Vacuum pump, connection](#).

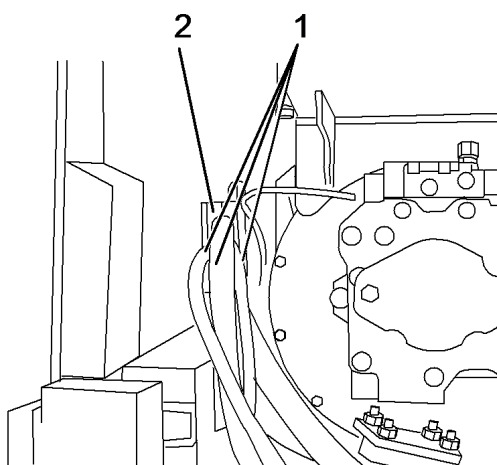


10.

Figure 7
Servo/steering pump

1. Suction line
2. Tank line
3. Servo pressure hose
4. Hose to fan motor, hydraulic oil cooler
5. Hose to brake valve

Connect the suction line and the other hoses to the servo/steering pump.

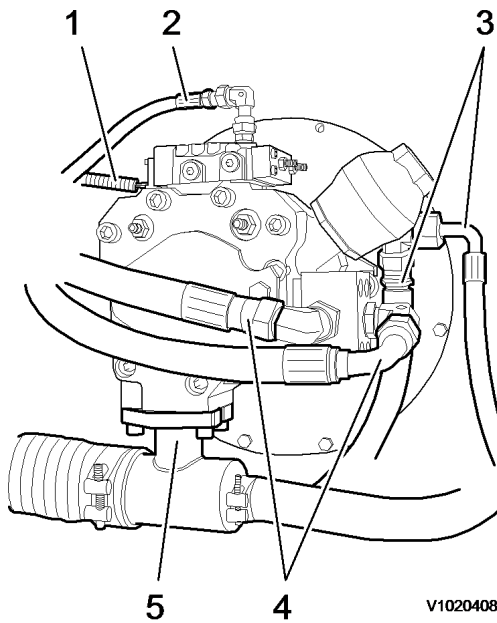


11.

Figure 8
Working pump

1. Hydraulic hoses
2. Attachment

Install the hoses in the attachment.



12.

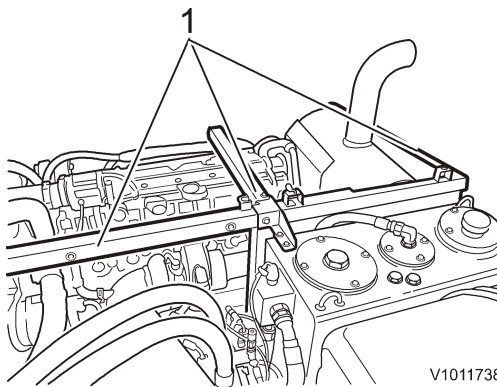
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Figure 9
Working pump

1. Connector
2. LS-hose
3. Leak-off oil hoses
4. Pressure hoses
5. Suction line

Connect the suction line, connector, LS-hose and pressure hoses to the working pump.
Fill the pump with hydraulic oil through the connection for the leak-off oil hoses.
Connect the leak-off oil hoses.

13. Disconnect the vacuum pump, see [900 Vacuum pump, disconnection](#).



14.

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Figure 10
Engine/hydraulic compartment

1. Frame

Install frame **1**.



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