

Document Title: Engine, description	Function Group: 200	Information Type: Service Information	Date: 2014/3/24
Profile: WLO, L70E [GB]			

Engine, description

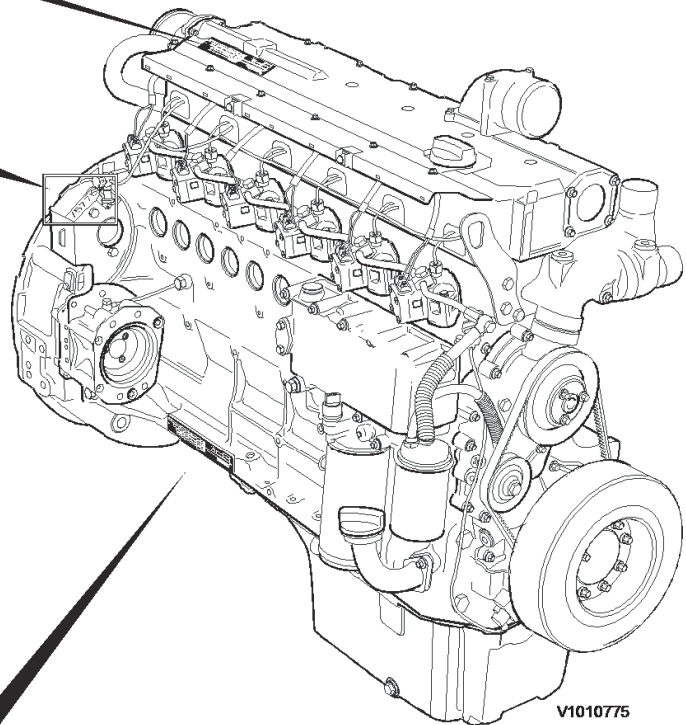
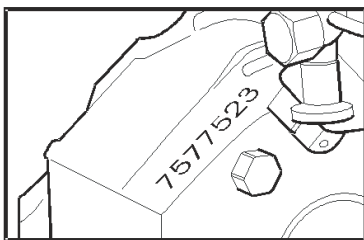
L90E is equipped with a four-stroke, straight six-cylinder turbocharged and direct-injected diesel engine with an air-cooled intercooler.

Fuel is injected with unit injectors. The unit injectors are positioned at an angle above the pistons and are controlled via the camshaft and the engine control unit's (E-ECU) software.

D6D is equipped with dry replaceable cylinder liners. The engine is of the low-emission type.

The engine's serial number is stamped on the name plate, on the cylinder block's side and on the valve cover. The engine's model designation and serial number must be indicated when ordering spare parts.

The cylinders are numbered with cylinder one closest to the flywheel. The engine's rotational direction is counter-clockwise, seen from the flywheel end. Firing order: 1-5-3-6-2-4.



Engine model DxD EAE2	Series No.	Engine No. 00582464	kW (G)red.	EP	K	E	01223270
kW (G)	kW (s)	l/min	8,0M				
xxx.x		xxxX					
	3840/03	00000000	+25				
DIN/ISO 3046 IFN			100				
MADE IN GERMANY							

Figure 1

Document Title: Engine, removing	Function Group: 210	Information Type: Service Information	Date: 2014/3/24
Profile: WLO, L70E [GB]			

Engine, removing

Op nbr 210-070

[9998547 Lifting tool](#)

Sling 4 m (13.1 ft), 4 pcs.

Sling 1 m (3.3 ft)

Ratchet block, 750 kg (1650 lbs)

Lifting eyes, 4 pcs. M12

1. Remove the engine hood, see [821 Engine hood, removing](#).
2. Drain the engine oil at the drain point. Volume: See [030 Engine, capacities](#)

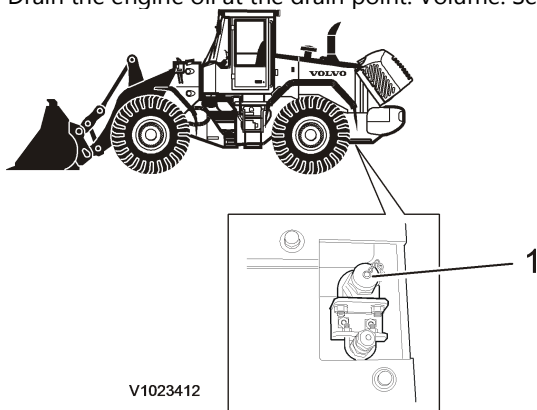


Figure 1

1. Drain point for engine oil

Machine, right-hand side

3. Disconnect:
 - the upper radiator hose from the engine.
 - the rubber hose on the turbo.
 - the pipe on the muffler.
 - the clamp for the preheating coil.
 - the coolant hose by loosening the hose clamp at the engine.

Remove:

1. the intermediate wall
2. the protective plate and guide plates.

- the bolts for the coolant collecting pipe.

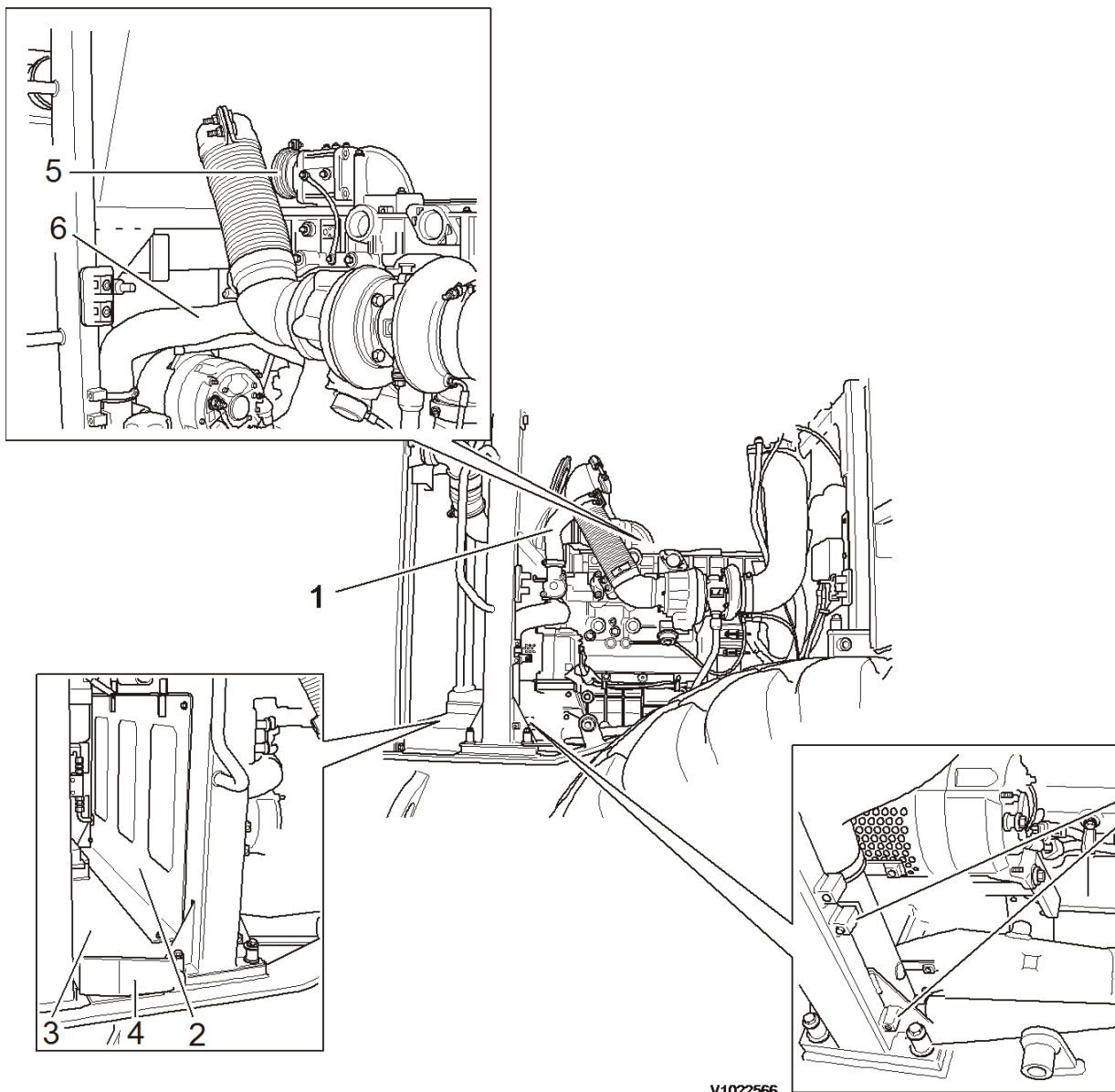


Figure 2

- Upper radiator hose
- Partition wall
- Protective plate
- Guide plate
- Clamp for preheating coil
- Coolant hose
- Bolts for coolant collecting pipe

Behind machine, under the hood

- Disconnect:

- the upper radiator hose.
- the clamp for the inlet hose.

Remove:

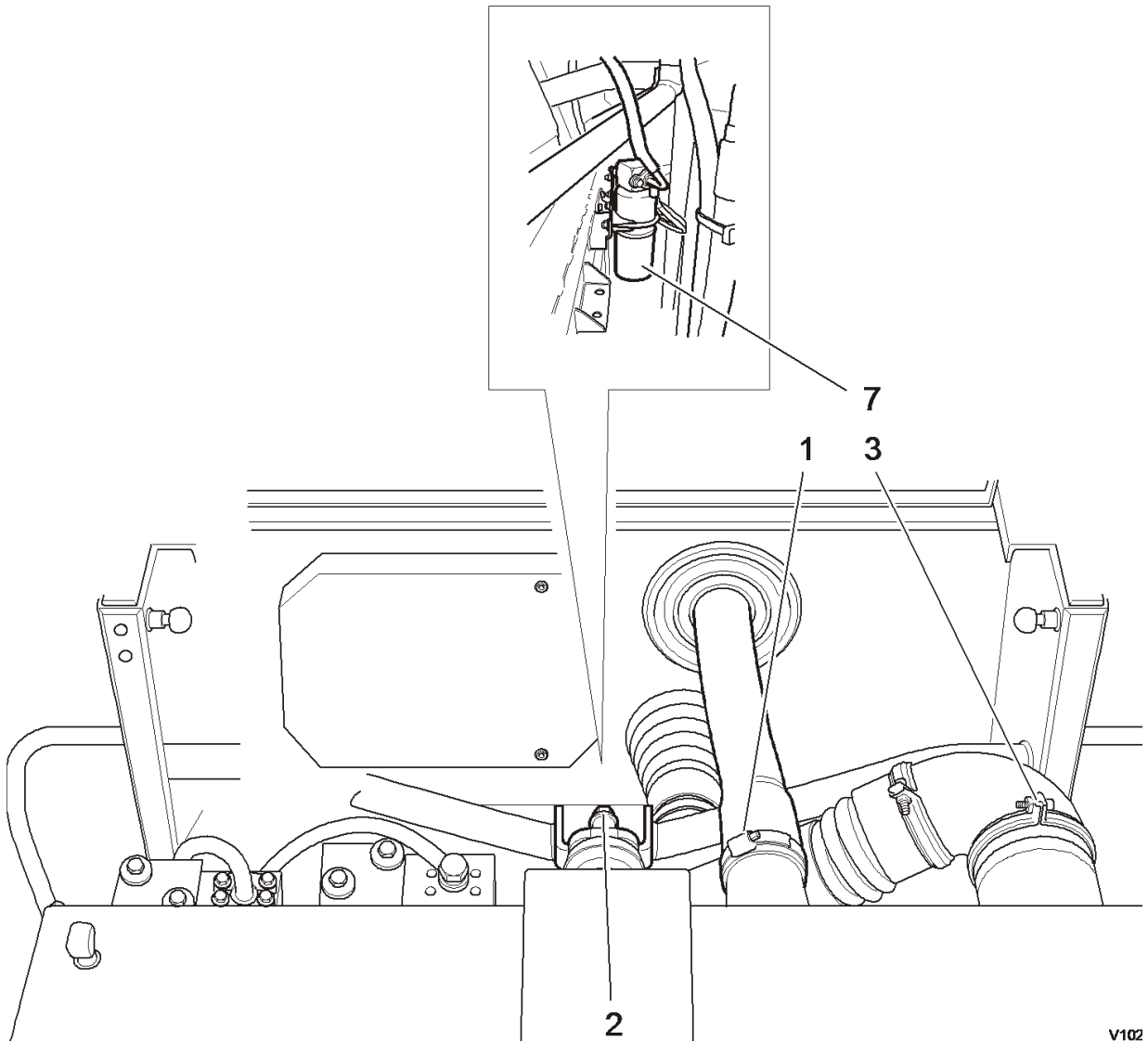
- Remove the protective plate for the engine-ECU.

- Remove the connection EAEB for the engine-ECU and the leadthrough plates. Move the connection out through the hole. Protect the connectors.
- Remove the dryer filter from the bracket and move it to the side so that the hood goes clear.

Loosen the upper radiator bracket.

NOTE!

Place a suitable spacer under the fan drum so that the radiator doesn't fall backward.



V102

Figure 3

1. Upper radiator hose
2. Upper radiator bracket
3. Clamp for charge-air pipe
4. Protective plate
5. Connection EAEB
6. Leadthrough plates
7. Receiver drier

Machine, left-hand side

5. Disconnect the hose for the fuel feed pump. Remove the AC compressor and fold it aside.

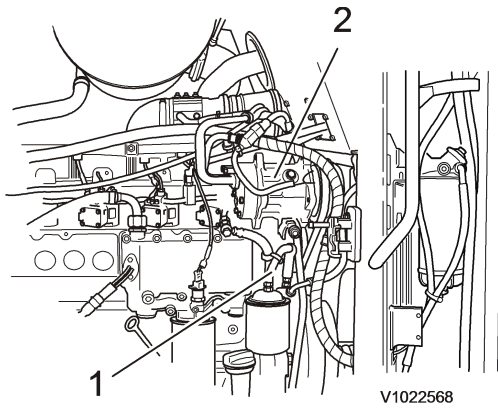


Figure 4

1. Hose to fuel feed pump
2. AC compressor

Machine, right-hand side

Engine removal

6. Disconnect:

- the coolant hose from the transmission oil cooler.
- the connection for the charge-air pipe.
- the hoses from the coolant collecting pipe.

Remove:

- the connection for the alternator and clamps for the cabling.
- the brackets for the charge-air pipe. Retain the spacers behind the rear bracket. Remove the pipe.
- the clamps for the coolant hoses. Retain the spacers. Cut off the cable tie.
- the bracket for connector RL.
- electric connections for the starter motor.
- the clamp for the engine oil level sensor and the connector.

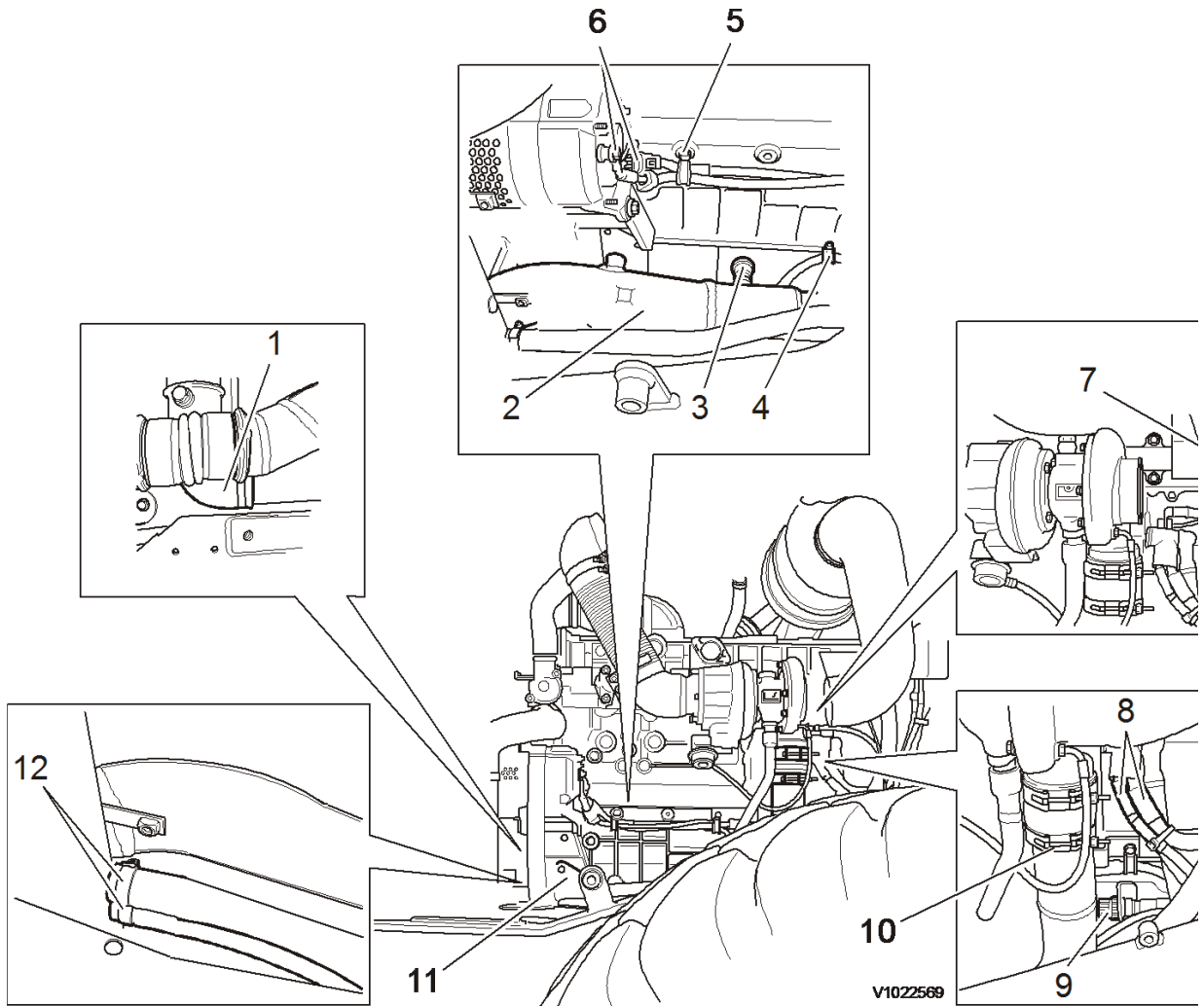


Figure 5

1. Coolant hose for transmission oil cooler
2. Charge air pipe
3. Connector
4. Clamp for engine oil level sensor
5. Connections for alternator
6. Clamp for cabling
7. Clamps for coolant hoses
8. Electric connections for starter motor
9. Bracket for connector
10. Connection for charge-air pipe
11. Bracket for charge-air pipe
12. Hoses for coolant collecting pipe

Under the machine

7. Remove protective plate.

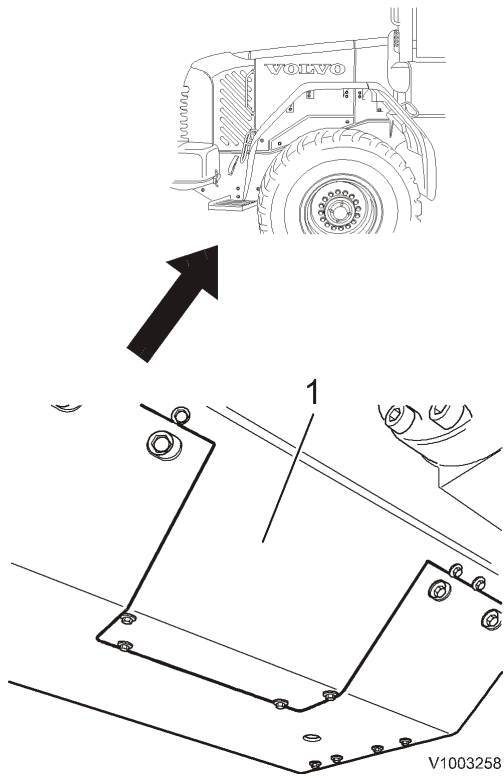


Figure 6

1. Protective plate

8. Remove the bolts for the engine mount.

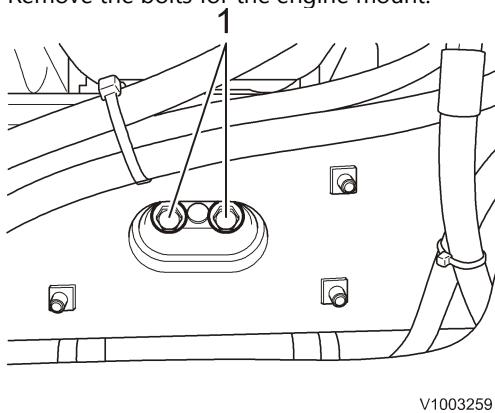


Figure 7

1. Bolt

Machine, left-hand side

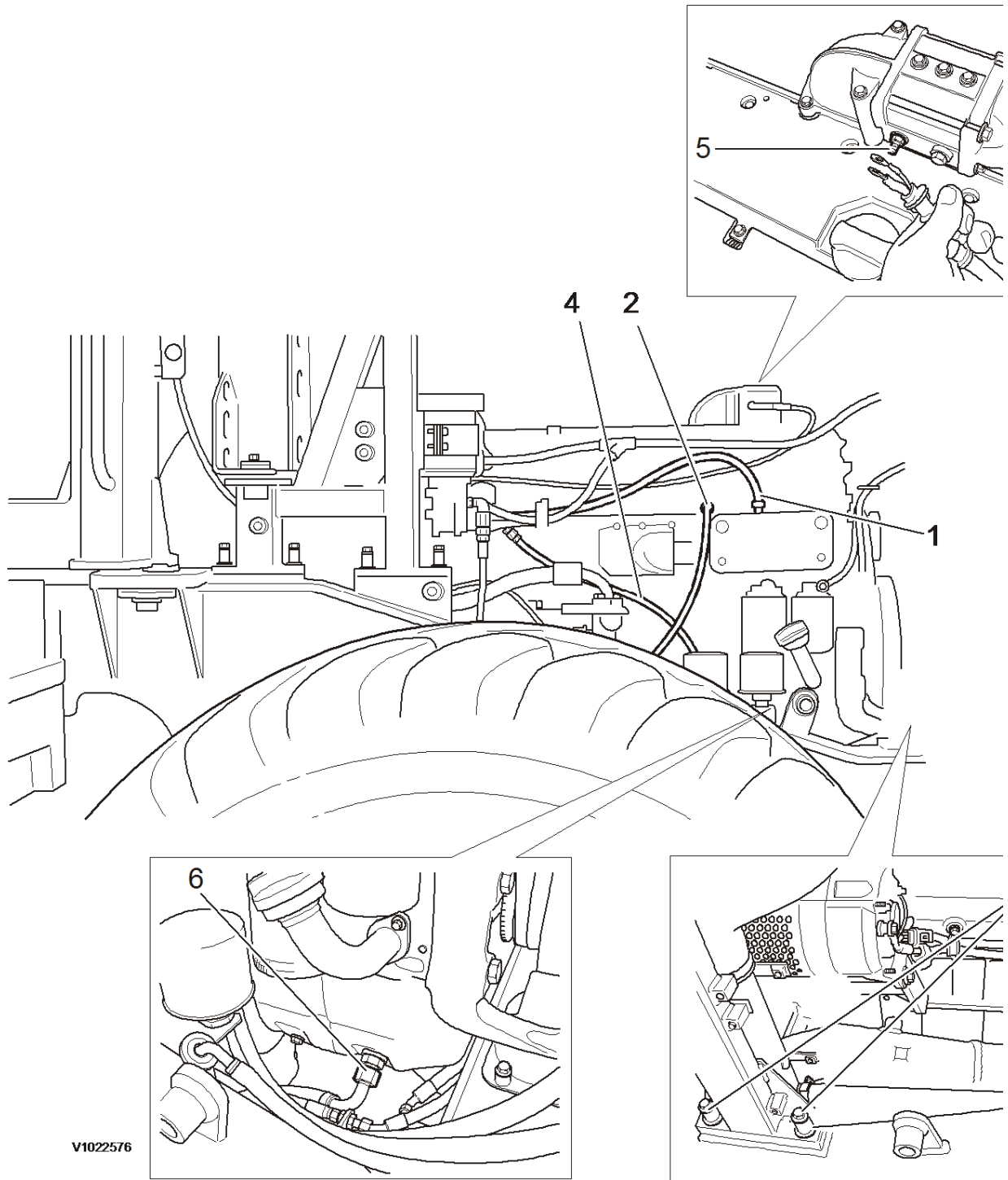
9. Disconnect:

- the coolant hose.
- Disconnect the fuel return hose. Retain the spacer behind the clamp. Plug the opening.

Remove:

- the connection for the engine heater connector.[1] ⓘ
- the 48-pin connector for the engine ECU. Protect the connector. Cut off the cable ties so that the cable harness is free.

- electric connections for the preheating coil.
- the drain hose for engine oil.
- the bolts for the framework. Connect sling and lift away.



V1022576

Figure 8

1. Coolant hose
2. Connection for engine heater connector
3. 48 pin connector
4. Fuel return hose
5. Electric connections for preheating coil
6. Drain hose for engine oil
7. Bolts for framework

10. Screw loose the hose clamp and disconnect the leak-oil hose between the flywheel housing and transmission.

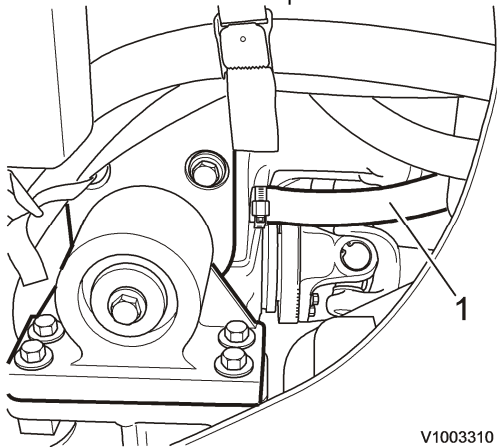


Figure 9

1. Leak-oil hose

11.

- Mark up and loosen the electric connections for the secondary steering pump.
- Disconnect the secondary steering pump.
- Disconnect the hydraulic pump and move it to the side, complete with all hydraulic hoses and strap it down in that position.

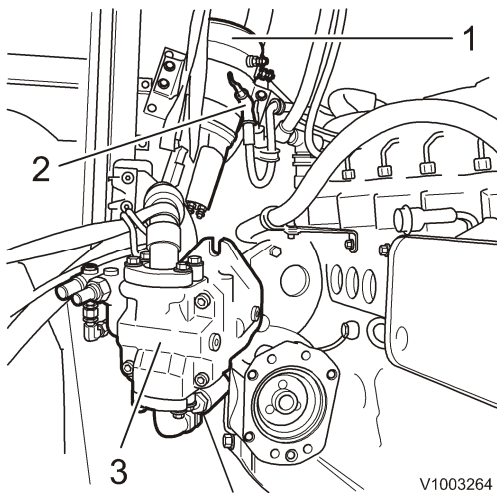


Figure 10

1. Secondary steering pump
2. Electric connections
3. Hydraulic pump

12. Connect the engine to the overhead crane with lifting device 9998547 according to the figure.

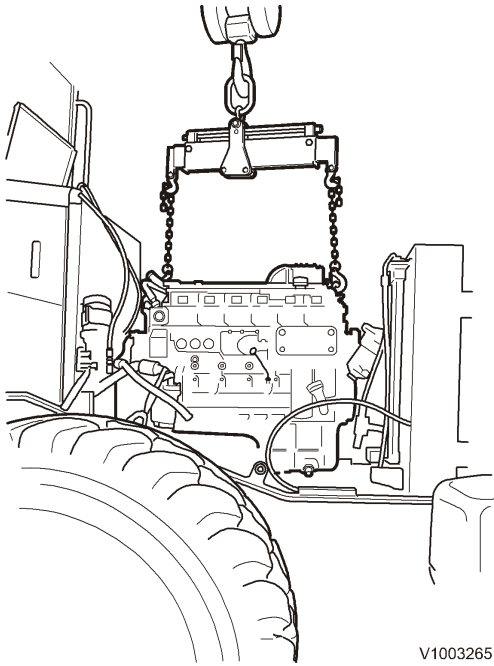


Figure 11

13.

- Remove the bolts, 4 pcs., for the rubber cushion.
- Remove the bolts for the engine mount. Two on each side.
- Lift the engine sufficiently so that the rubber cushion and engine mount can be removed.
- Remove the transverse engine member. Two bolts on each side. Weight: **34 kg (75 lbs)**

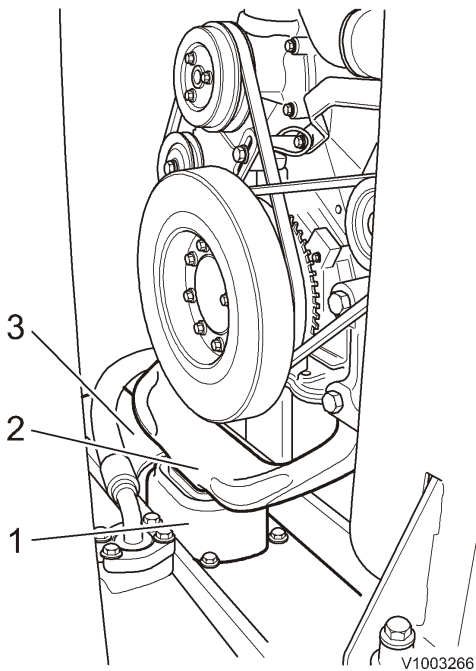


Figure 12

1. Bolts for rubber cushion
2. Bolts for engine mount
3. Engine member

14. Lift the engine sufficiently to fit a suitable spacer (1) of approx. 20 mm (0.78 in) under the transmission. Also use a

jack (2) for securing.

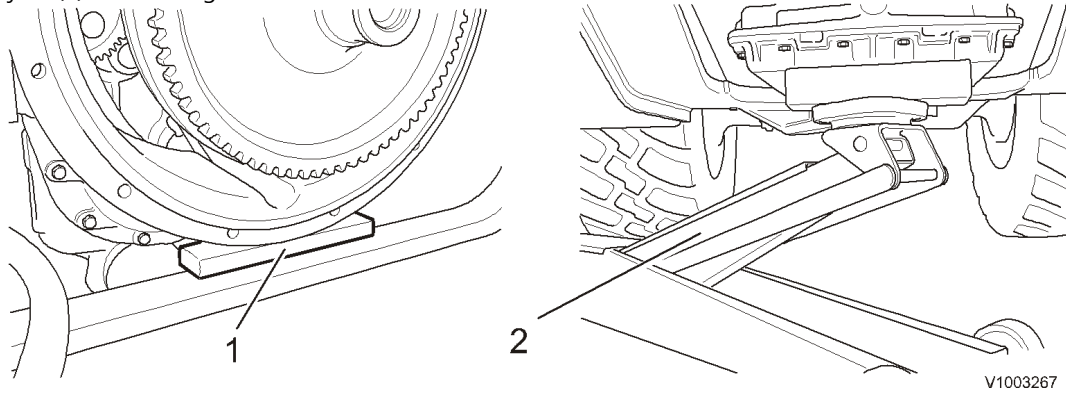


Figure 13

- 1. Spacer
- 2. Jack

15. Remove the bolts between the engine and transmission, 12 bolts.

16. Remove the engine. Weight: **approx. 600 kg (1323 lbs)**.

[1] optional equipment

Document Title: Engine, installing	Function Group: 210	Information Type: Service Information	Date: 2014/3/24
Profile: WLO, L70E [GB]			

Engine, installing

Op nbr 210-072

[9998547 Lifting tool](#)

Sling 4 m (13.1 ft)

Sling 1 m (3.3 ft)

Lifting eyes, 4 pcs. M12

Ratchet block, 750 kg (1653 lbs)

1. Fit a new O-ring on the transmission.
2. Connect the engine in the lifting yoke at the correct angle according to the figure. Lift and fit in the engine to the transmission.
Weight: approx. **approx. 600 kg (1323 lbs)**.

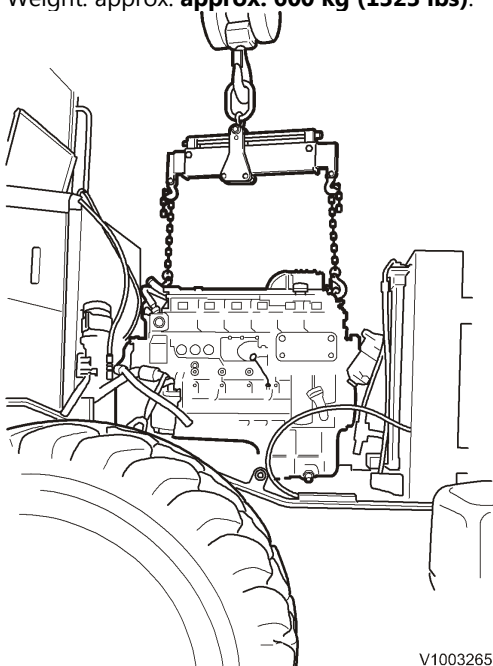


Figure 1

3. Install the bolts for the engine at the transmission. 12 pcs.
Tightening torque: **60 ±10 Nm (44 ±7 lbf ft)**
4. Remove the spacer under the transmission.
5. Fit:

- the transverse engine member.
Weight: **37 kg (81.6 lbs)**
- the rubber cushion and engine mount.
- the bolts for the rubber cushion and torque them. Note the spacers.
Tightening torque **85 ±18 Nm (63 ±13 lbf ft)**.
- the bolts for the engine mount and torque them.
Tightening torque **275 ±45 Nm (202 ± 33 lbf ft)**

Carefully lower the engine and fit the engine mount in the guide on the rubber cushion.

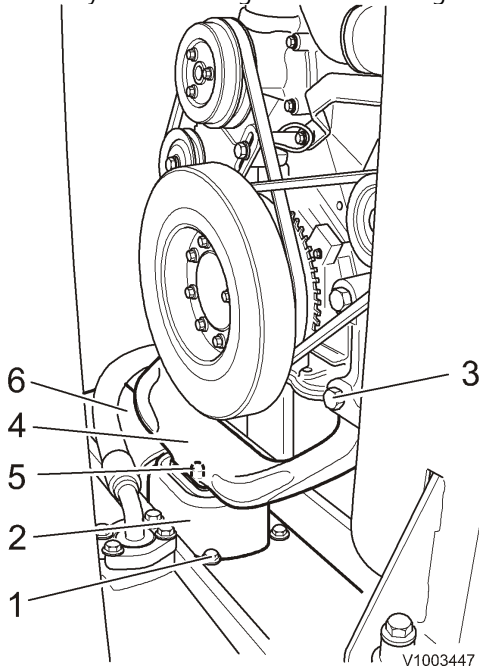


Figure 2

1. Bolts for rubber cushion
2. Rubber cushion
3. Bolts for engine mount
4. Engine mount
5. Guide
6. Engine member

Under the machine

6. Install the bolts for the rubber cushion.
Tightening torque **85 ±18 Nm (63 ±13 lbf ft)**

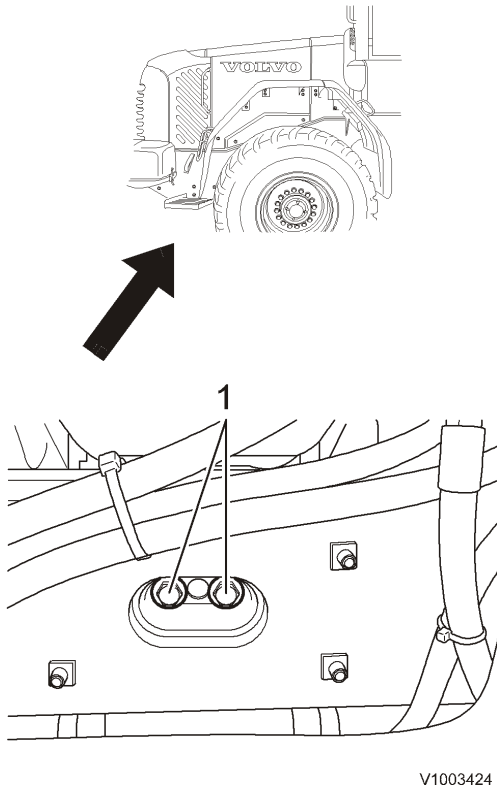


Figure 3

1. Bolts

7. Install protective plate.

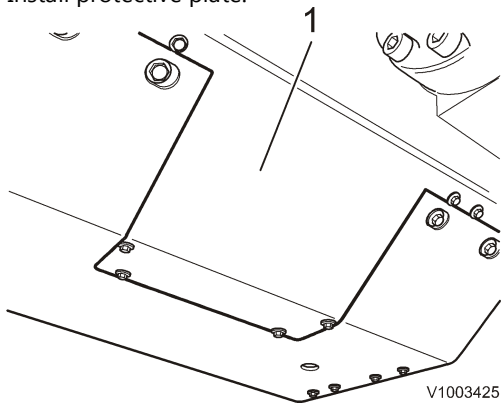


Figure 4

1. Protective plate

8. Disconnect the lifting device from the engine and run aside the overhead crane.

Machine, left-hand side

9. Fit the leak-oil hose.

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