VOLVO

Construction Equipment

Service Information

Document Title:	Function Group:	Information Type:	Date:
Cylinder head, description	**211**	**Service Information**	**2014/4/22**
Profile: **WLO, L220E [GB]**			

Cylinder head, description

The cylinder head is made of cast iron and made in one piece, which is a condition for a stable support for the overhead camshaft in its bearings. The camshaft is journalled in seven bearing housings provided with replaceable bearing shells. Because the engine has a four-valve system and centrally positioned injectors, the combustion chambers are completely symmetrical. The cylinder head is secured with 38 M16 bolts, evenly distributed around each cylinder.

Each cylinder has separate inlet and exhaust ducts and so called cross-flow. The valve guides, which are made of alloy cast iron, and the steel valve seats, are replaceable. All valve guides have oil seals.
The lower end of the injector is located in a copper sleeve, the lower end of which is flared. The upper end of the copper sleeve is sealed with a rubber ring. The fuel duct to the injectors is machined directly in the cylinder head. The coolant thermostat is integrated in the cylinder head.

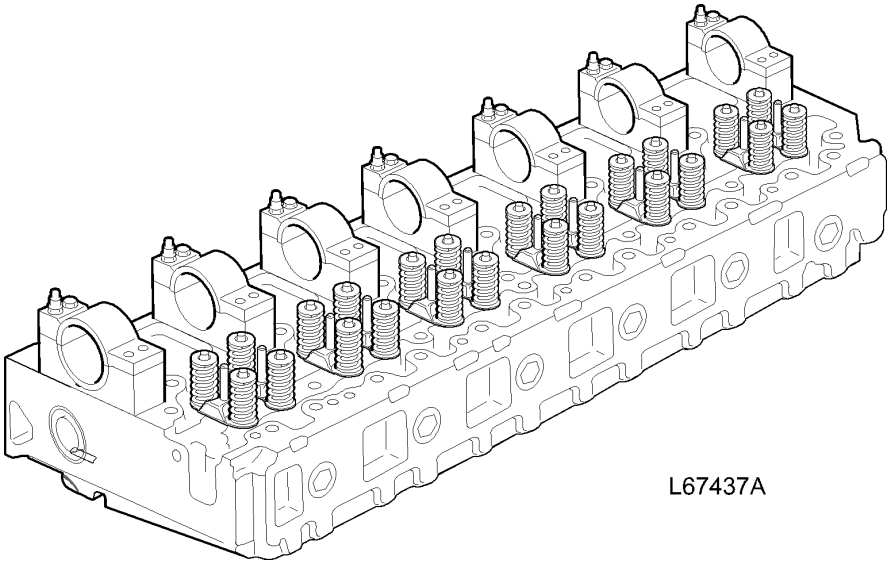

Figure 1
Cylinder head

VOLVO

Construction Equipment

Service Information

Document Title: **Valve cover, changing the gasket (in field)**	Function Group: **211**	Information Type: **Service Information**	Date: **2014/4/22**
Profile: **WLO, L220E [GB]**			

Valve cover, changing the gasket (in field)

Op nbr 21436

Removing

1. Clean the valve cover and surrounding components thoroughly. This is to avoid dirt entering the cylinder head when the cover is removed.

2. Remove the retaining bolts from the engine hood (4 bolts).

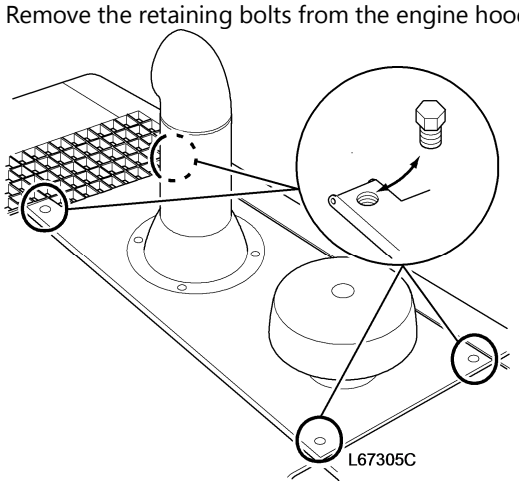

Figure 1

3. Undo the exhaust pipe clamp and disconnect the pipe from the silencer.
   Disconnect the air hose between the turbocharger and air cleaner from the air cleaner. Leave the hose connected to the turbocharger. Raise the engine hood as far as possible with the tool supplied with the machine placed on the hydraulic tank.
   Secure the engine hood with the tool retainer.

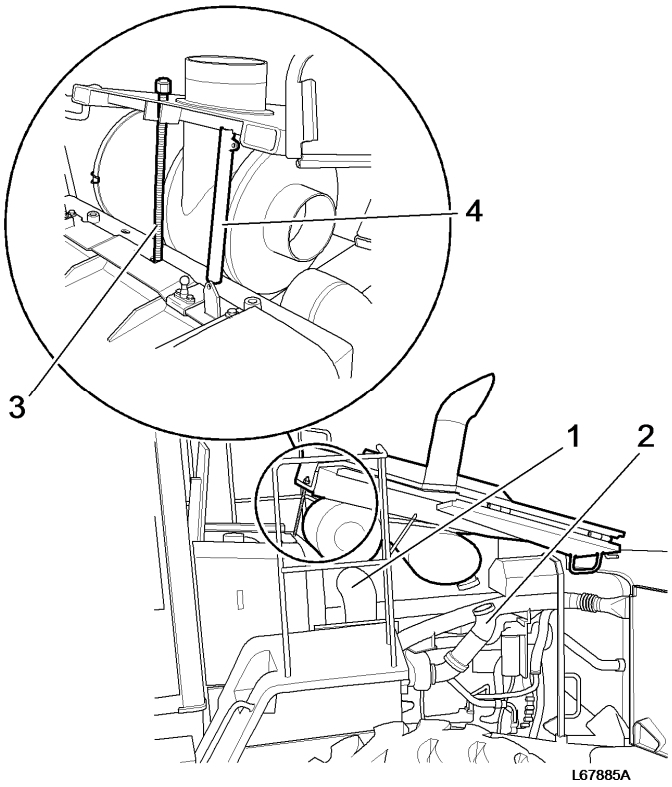

Figure 2

1. Air hose
2. Exhaust pipe clamp
3. Tool for raising the engine hood
4. Retainer, securing the engine hood

4. **WARNING**

Risk of burns when removing the header tank cap because of excess pressure in the cooling system.

Open the header tank cap.
Drain enough coolant to empty the header tank. Use the drain hose stored in the right-hand battery box or the tool box on the machine.

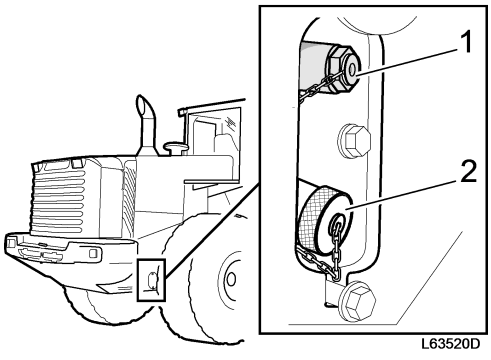

Figure 3

1. Draining the coolant
2. Draining the engine oil

5. Disconnect the three coolant hoses from the header tank. Unplug the connector for SE2603.

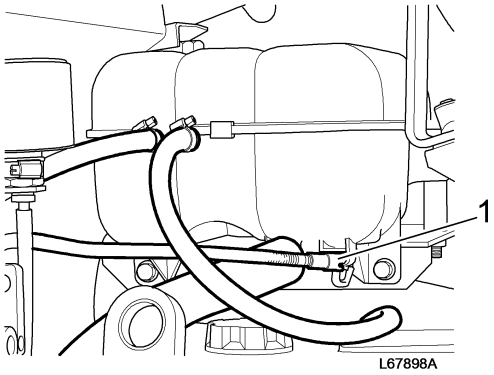

Figure 4

1. SE2603

6. Detach the bracket on which the heater tank is mounted.
   Move the bracket to one side and secure it to the hood with a strap or similar.

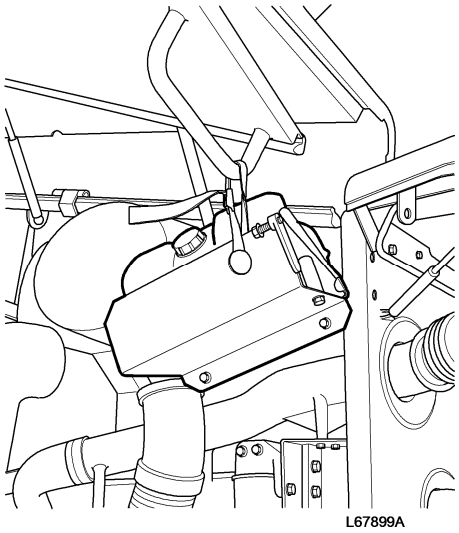

Figure 5

7. Remove the cable clamps on the member behind the hydraulic tank, the rear axle breather filter and the relay, if fitted.

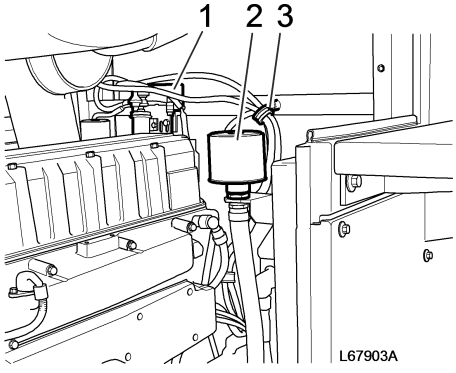

Figure 6

1. Relay
2. Clamps
3. Breather filter

8. Remove the valve cover.

Installation

9. Clean the valve cover and fit the new gasket.
   Fit the valve cover. Tighten the bolts in the sequence specified in the diagram.
   Tightening torque, retaining bolts: **20 Nm**

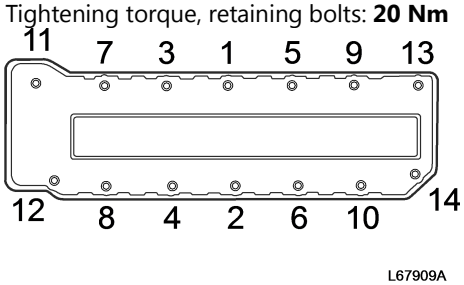

Figure 7
Tightening sequence, valve cover

10. Fit the relay, the breather filter and the cable clamps.

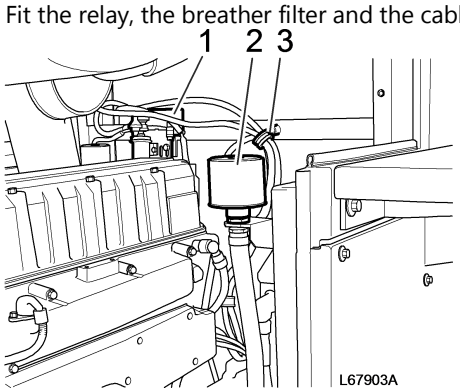

Figure 8

1. Relay
2. Clamps
3. Breather filter

11. Fit the cable clamps on the member behind the hydraulic tank and the relay (if applicable).

12. Fit the bracket on which the heater tank is mounted.

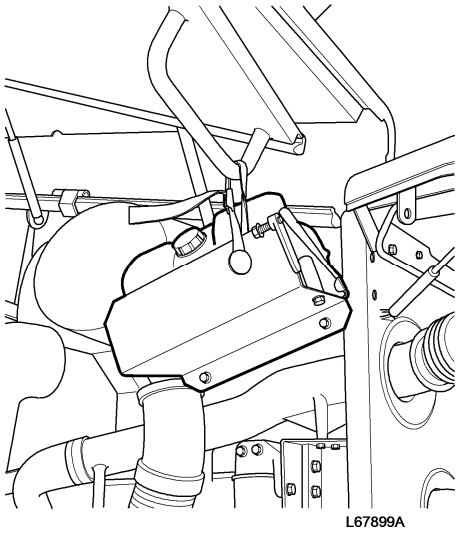

Figure 9

13. Connect the three coolant hoses to the header tank. Plug in the connector to SE2603.

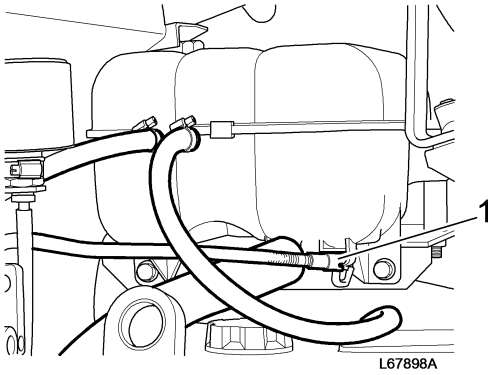

Figure 10

1. SE2603

14. Remove the tool retainer securing the hood. Lower the hood.
Fit the exhaust pipe clamp and the pipe to the silencer.
Connect the air hose between the turbocharger and air cleaner.

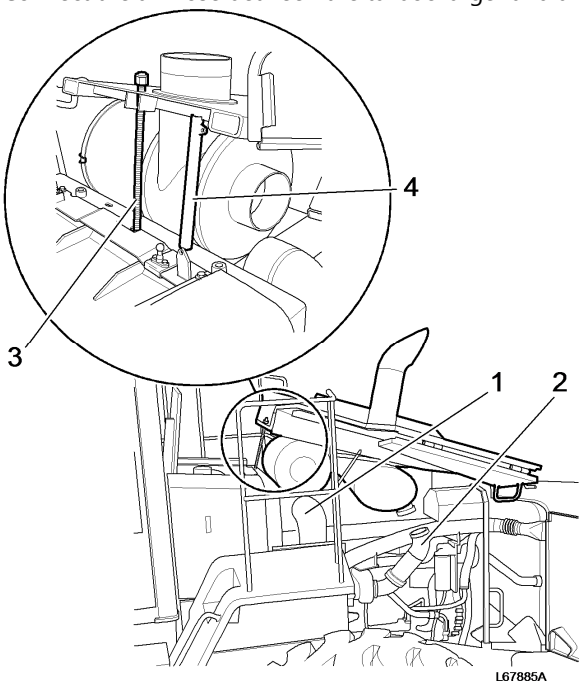

Figure 11

1. Air hose
2. Exhaust pipe clamp
3. Tool for raising the engine hood
4. Retainer, securing the engine hood

15. Fit the bolts retaining the engine hood.

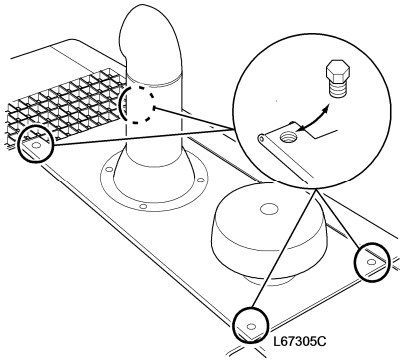

Figure 12

VOLVO
Construction Equipment

Service Information

Document Title: **Valve cover, changing gasket**	Function Group: **211**	Information Type: **Service Information**	Date: **2014/4/22**
Profile: **WLO, L220E [GB]**			

Valve cover, changing gasket

Op nbr

999 3590 Rotation tool

Exhaust valves

1. Remove the engine hood, see 821 Engine hood, removing.
2. Remove the valve cover.
3. Remove the old gasket from the valve cover.
4. Clean the valve cover and the cylinder head from remains of the old gasket.
5. Fit the new gasket in the valve cover.
6. Fit the valve cover. Tightening torque: **20 Nm**

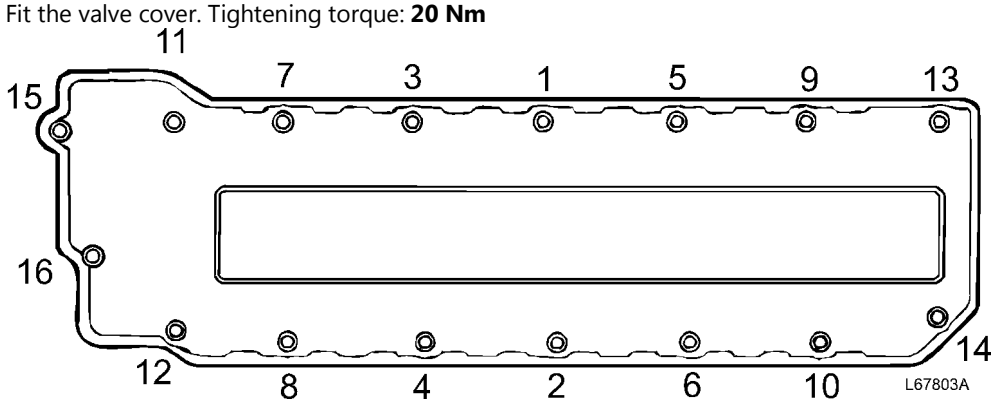

Figure 1
Tightening diagram for valve cover

7. Fit the engine hood, see 821 Engine hood, installing.

Document Title:	Function Group:	Information Type:	Date:
Cylinder block, description	**212**	**Service Information**	**2014/4/22**
Profile: **WLO, L220E [GB]**			

Cylinder block, description

The cylinder block is made of cast iron and provided with so called wet cylinder liners. For the cylinder block to obtain high rigidity and good sound dampening its sides are curved round each cylinder.
To further stiffen the block construction a frame, made of nodular iron, is bolted to its bottom plane.

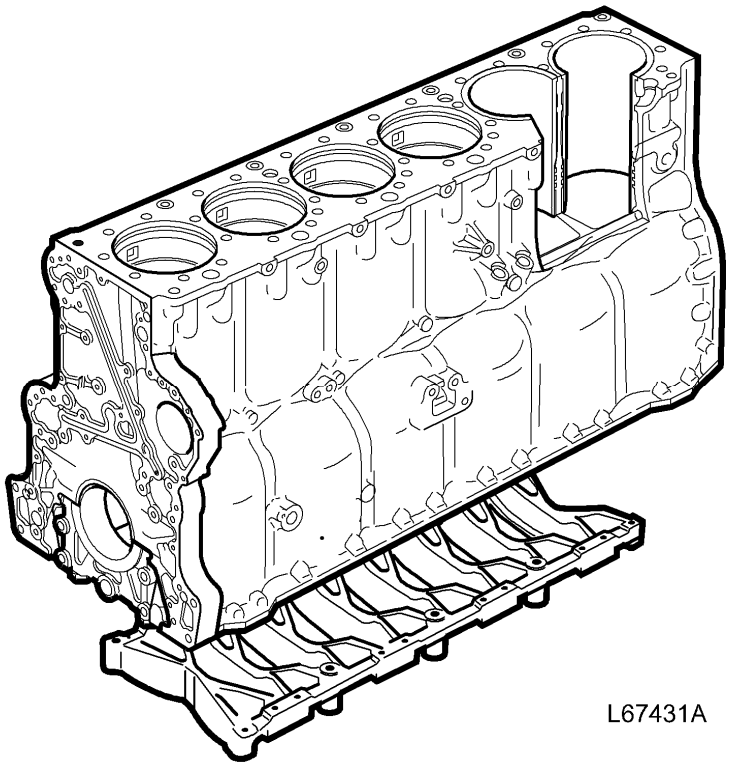

Figure 1
Cylinder block

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