

Workshop Manual

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D3-110i-B, D3-130i-B

D3-160i-B, D3-190i-B

D3-130A-B, D3-160A-B, D3-190A-B

Workshop manual

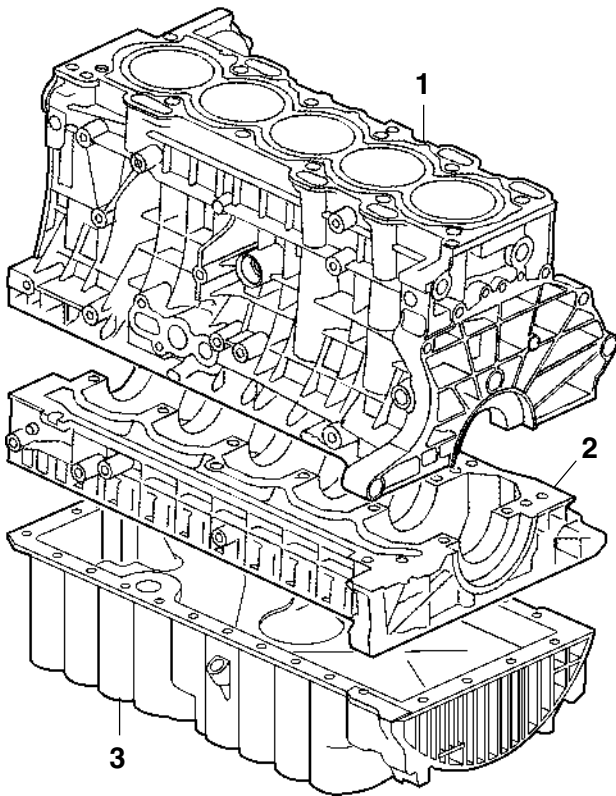
Group 21–26

Marine engines

D3-110i-B, D3-130i-B, D3-160i-B, D3-190i-B D3-130A-B, D3-160A-B, D3-190A-B

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Engine block

The engine block consists of two sections: engine block (1) and spacer block (2).

The engine block is made from pressure die-cast aluminum alloy, and has cast in cylinder liners. The upper parts of the cylinders have open water jackets, where coolant can flow freely.

The spacer block is made from aluminum alloy and serves as the crankshaft bearing caps and also as a stiffener for the engine block.

Sump

The sump (3) is made from aluminum alloy and is installed underneath the spacer block. The sump contains a safety valve for the oil cooler and a number of galleries which direct the lubrication oil.

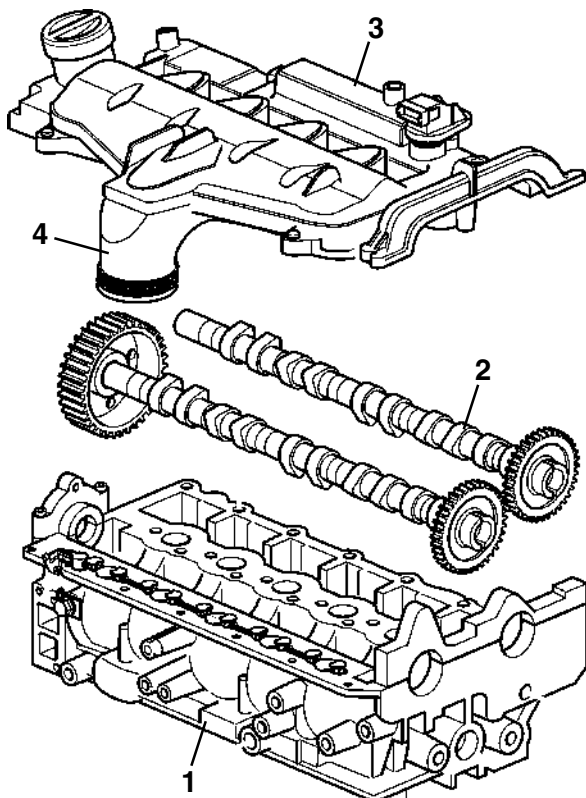
Cylinder head

The cylinder head (1) is made from aluminum alloy and has twin overhead camshafts (2) which use cylinder head casting as a bearing, together with bearing caps.

There are four valves per cylinder. The inlet ducts are doubled for each cylinder, and have different lengths and geometry. The camshafts operate the valves via rockers with roller cam followers. Valve clearance is adjusted hydraulically. The injector nozzles are mounted centrally in the combustion chamber.

The inlet camshaft is driven by the crankshaft, via a toothed belt. The exhaust camshaft is driven by the inlet camshaft, via a gear wheel.

The butterfly in the inlet pipe is fixed in the open position.



Camshaft

The camshafts consist of several components. The cam lobes and gear wheels have been made separately, and are then pressed onto a hollow shaft. This offers the advantages of lower weight and that different materials can be used in the camshaft.

Valve housing / inlet manifold

The valve housing (3) is integrated with the inlet manifold (4). The induction air from the air to the cylinders is directed through the inlet manifold.