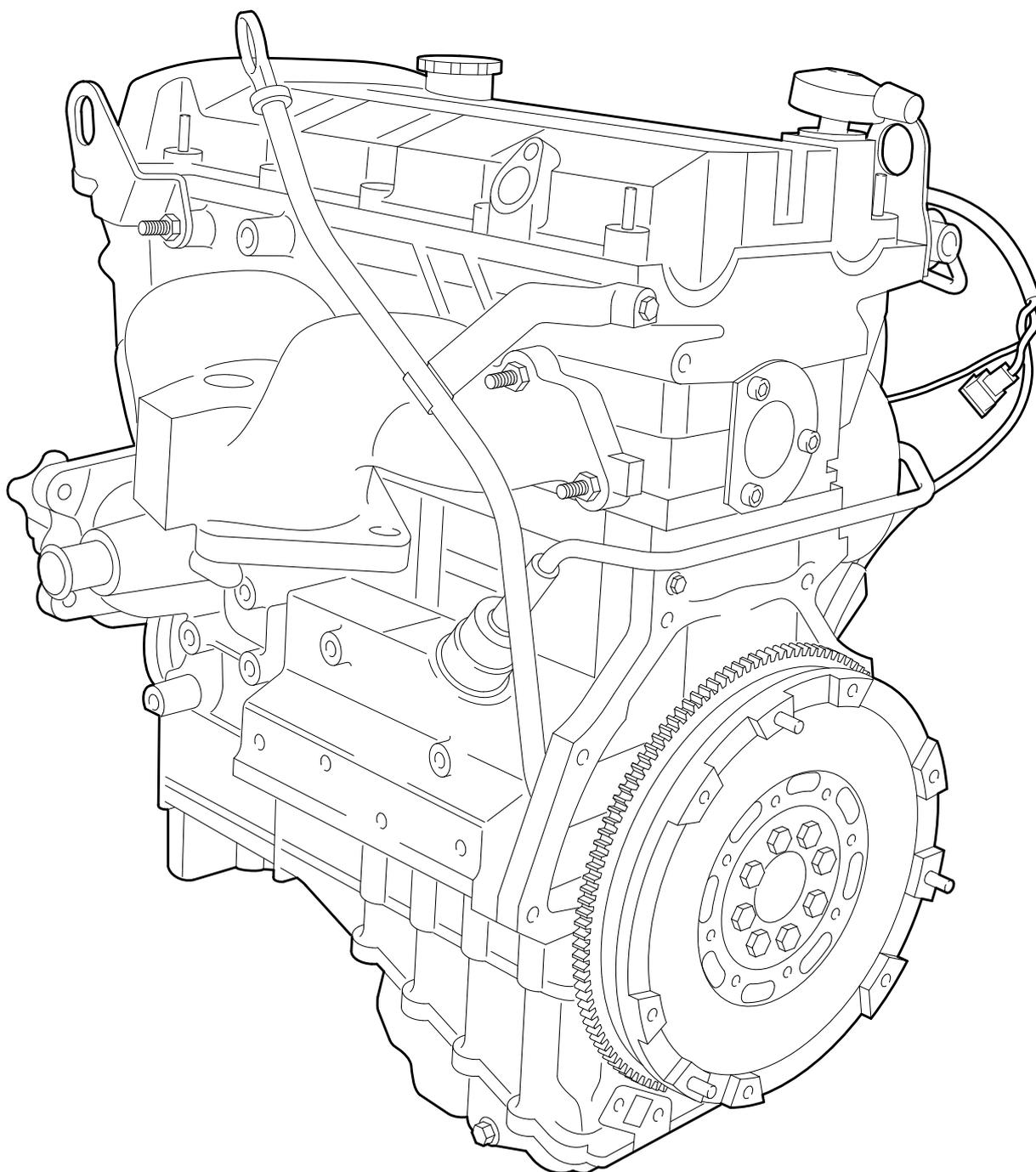


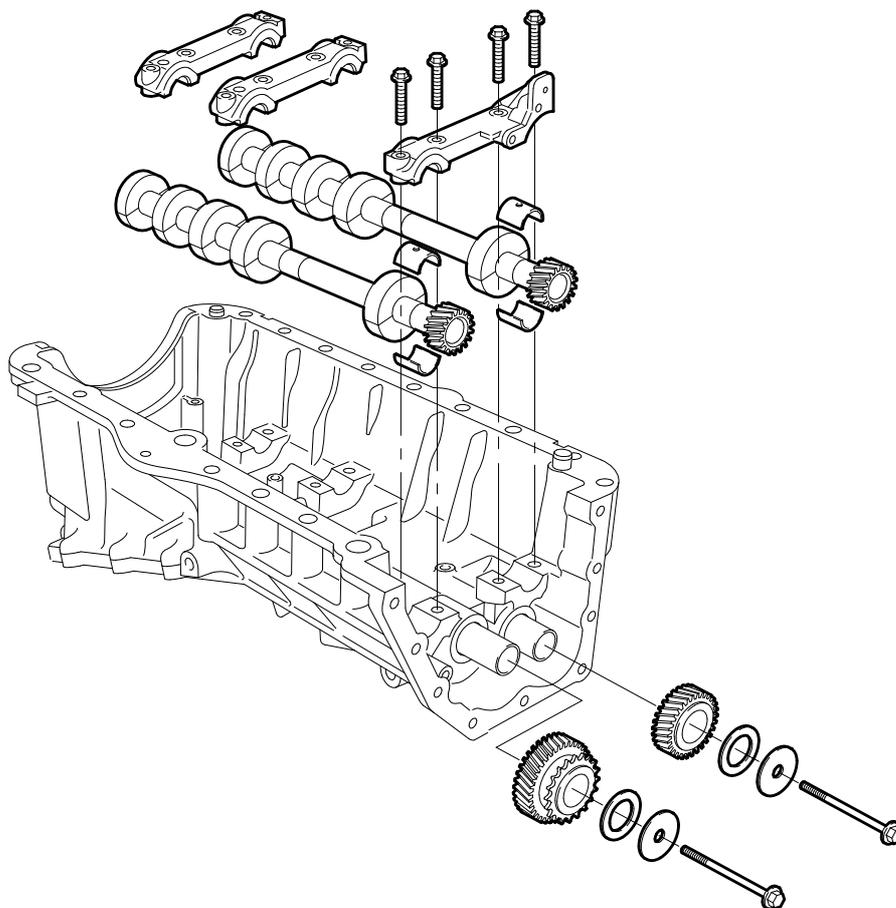
## Description and Operation



IAS2106237

Starting with the '96 ¾ MY the 2,3 litre DOHC 16V engine is installed in the Scorpio. The 106,6 kW (145 PS) engine conforms with the 94/12/EG (96 emission standard) and also meets all the criteria expected of a modern engine concerning power delivery, flexibility, smoothness and economy.

The most noticeable difference from the familiar 2,0 litre DOHC 16V is the height of the engine, which is caused by incorporating a housing for the balancer shafts. This construction technique together with the dual mass flywheel as used in the familiar 2,5 TCI diesel engine lead to particularly smooth and quiet running of the whole drive train.



IAS2106222

## 1. Balancer shaft housing

- In order to increase the smoothness and quiet running of the engine, a housing with two balancer shafts was developed. The balancer shafts rotate in opposite directions to each other and at twice the speed of the crankshaft, and in doing so produce vibrations which counteract those of the engine.
- To prevent the oil foaming, plastic covers are bolted on the balancer shaft weights.

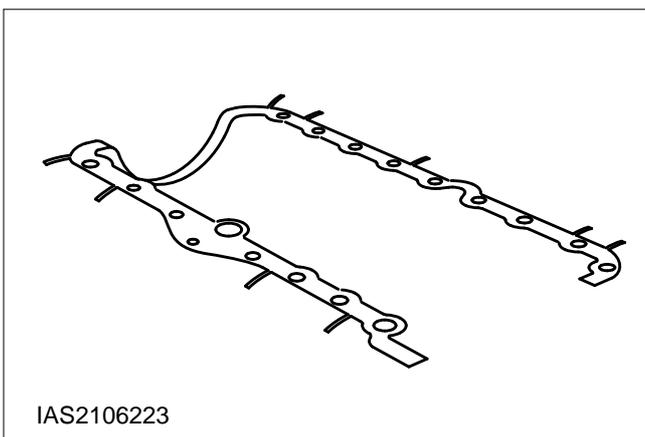
**NOTE:** The balancer shaft housing is positively located on the cylinder block by two guide sleeves. These sleeves must not be interchanged, because one of them has an oil feed hole.

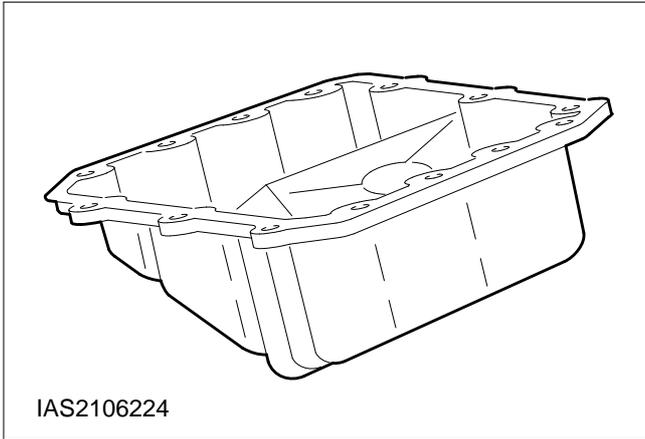
**⚠ CAUTION:** The balancer shafts may be removed to measure the bearing surfaces. If some parts of the balancer shaft housing are worn and need to be renewed (because, for instance, tolerances have been exceeded), then this can only be done by renewing the whole housing as a unit.

**NOTE:** Thread repairs on the housing are not allowed.

## 2. Balancer shaft housing/cylinder block gasket

- The gasket between the balancer shaft housing and the cylinder block is made from specially coated metal. In the area of the rear oil seal carrier the gasket has a profiled cross-section and is made of elastomer.
- To make for ease of assembly, the gasket has tabs on the edge, which are bent over when fitting, to hold it on the balancer shaft housing.

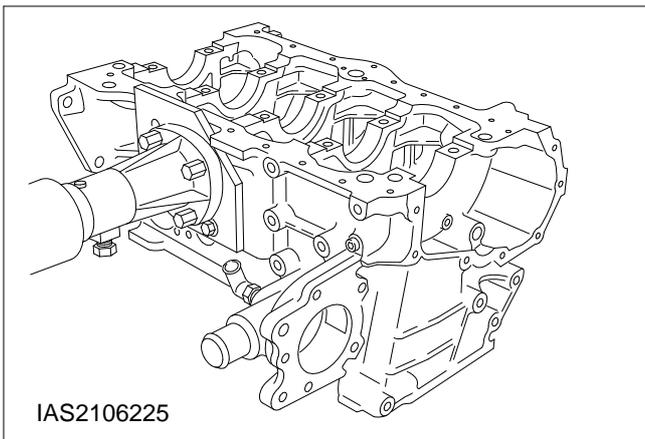




### 3. Sump

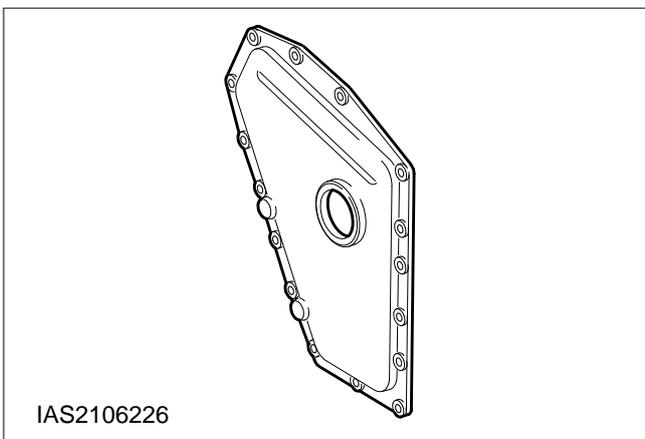
- The actual sump is fitted below the balancer shaft housing.
- It is made of pressed steel and has a gasket which is vulcanised in place.

**NOTE:** Only renew the sump if there is visible damage to the gasket.



### 4. Cylinder block

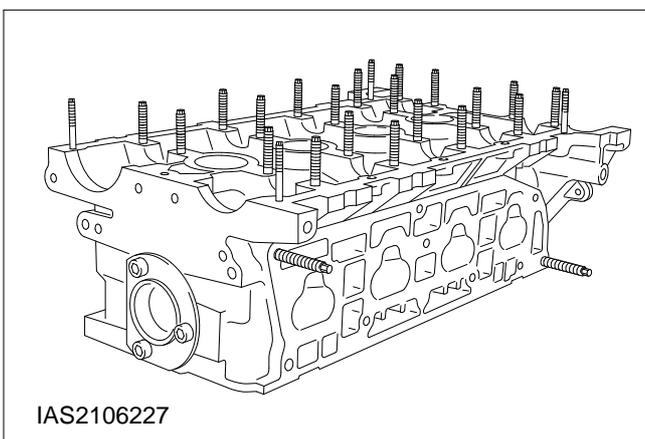
- The cylinder bore has been increased to 89,6 mm.
- Further differences to the 2,0 litre engine are among others: modified stiffening ribs, modified oil gallery bores and larger coolant openings on the cylinder head sealing surface.



### 5. Lower timing chain cover

- Like the 2,0 litre DOHC 16V variant, the 2,3 litre DOHC 16V engine has a crankshaft front oil seal integral with the lower cover for the timing chain. The centring ring supplied with the spare parts should only be removed after the cover has been fitted.

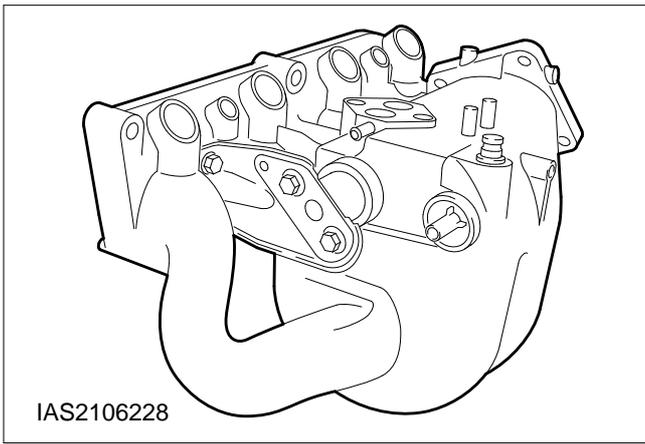
**NOTE:** Unlike the 2,0 litre variants, the cover can be re-used.



### 6. Cylinder head

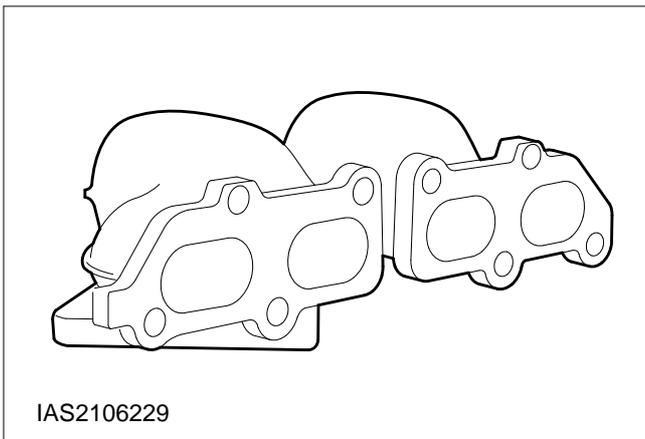
**NOTE:** Thread repairs must not be carried out.

- The valve guides are made of a sintered material.
- Extra holes have been provided between first and second and between second and third cylinders so that better coolant circulation is achieved.



### 7. Inlet manifold

- With the 2,3 litre DOHC 16V a new inlet manifold made of plastic is introduced.
- The variable induction system (VIS) is no longer fitted.
- There is an individual gasket to the cylinder head for each intake channel.



### 8. Exhaust manifold

Two additional bolts are used in securing the manifold, in order to increase the service life of the gasket between it and the cylinder head.