

## 2.8

### Cylinder heads

The cylinder head plays a special role in the combustion engine. Its structural design has a significant effect on the operating behaviour and the engine performance. The cylinder head has the following tasks: sealing of the combustion chamber to the cylinder block. Formation of the combustion chamber shape and conduction of the combustion heat. For air-cooled engines, the combustion heat is conducted via the formed cooling fins, and for water-cooled engines via the water ducts. The cylinder head controls the charge exchange process in the engine, provides the fresh gas feed and drains off the exhaust fumes. Furthermore it receives the valves. In engines with the camshaft at the top; it receives the valve train and the camshaft, in engines with the camshaft at the bottom it only receives parts of the valve train. In passenger car engines, a one-piece cylinder head is mostly used. The large volume utility vehicle Diesel engines often have one cylinder head for each cylinder. This saves repair costs in case of engine damage. The KS cylinder heads are recognised quality products with proven reliability and longevity.

#### Installation of cylinder heads

When repairing the engine, all the necessary conditions must be created to maintain the high quality of a KS cylinder head. During assembly, always observe the fitting guidelines and adjustment values of the engine manufacturers.

#### Before assembly

Compare the length of the deinstalled cylinder head bolts with the maximum values specified by the engine manufacturer and if different, replace the screws with new ones.

The flatness of the sealing surface of the crankcase must be checked. The sealing surfaces must be clean and free of grease. Use the correct cylinder head gasket and pay attention to the gap dimension, the hole pattern and the combustion chamber diameter.

#### Assembly

The cylinder head bolts must be tightened with the torque / angle of rotation specified by the engine manufacturer and in the right order.

The specified stress of the toothed belts or timing chains must be adhered to.

To prevent damages caused by dry starting up, all movable parts are to be lubricated with clean engine oil during assembly.

#### After assembly

For non-distortion-free cylinder head gaskets, the cylinder head bolts must be retightened after respective mileage.

When using antifreeze or coolants, observe engine manufacturer's approval. Silicate-free coolants are particularly suited to highly strained aluminium engines and allow extension of the change intervals. The silicate-free coolant additive must never be mixed with silicate-containing products by any means, as engine damage cannot be ruled out in case of mixing.

#### Delivery condition of our cylinder heads

- Naked ▶ with valve guides and valve seat inserts
- Partially assembled ▶ with valves
- Ready-to-install ▶ with camshaft, valves and tappets

