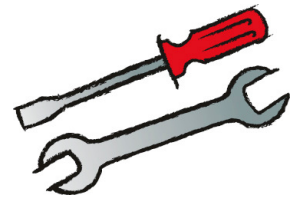




Das Original

TSI 07/09



## **Tips from the gasket expert**

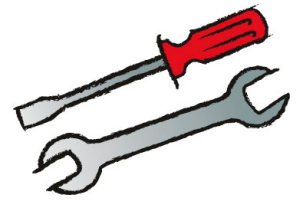
### **Engine failure – is the cylinder head gasket to blame?**

# **Gas blow-by**

## **Failure of the cylinder head gasket on commercial vehicles**

Engine failure – is the cylinder-head gasket to blame? When an engine fails – for instance due to overheating or oil/water leakage after installation of the cylinder head - the blame is often put on the cylinder head gasket. And that is understandable from the workshop professional's point of view, since the gasket has usually been installed carefully in accordance with the repair instructions. Analysis of actual cases through the years clearly shows that the real cause of engine damage is often something entirely different. The cylinder head gasket is usually the last link in the chain where the damage comes to light – when the gasket can no longer fully carry out its actual task – sealing the engine.

This serie of our Technical Service Inforamtions is intended to be a tool for you. It will help you find the hidden actual causes of engine damage and ideally prevent damage with appropriate measures before it is too late.

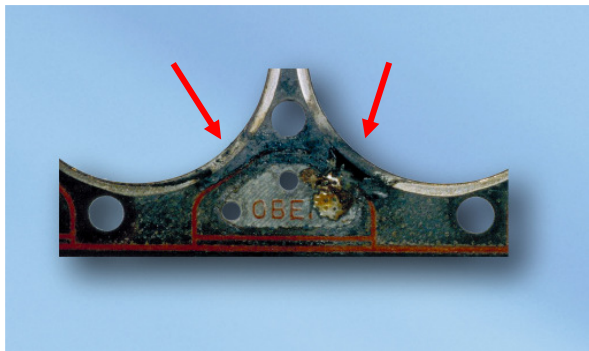


# Gas blow-by

## Failure of the cylinder head gasket on commercial vehicles

### **Damage symptoms:**

Between cylinders two and three (exhaust area) there is extreme gas over blow. The soft-material of the gasket has been destroyed on the area of the water holes.



### **Possible Causes:**

- The bolts were not tightened in compliance with the method specified by the manufacturer
- No using of new high quality cylinder head bolts
- Cylinder liner has sunk
- Components have become distorted
- The surfaces of the cylinder crankcase and cylinder head were too rough

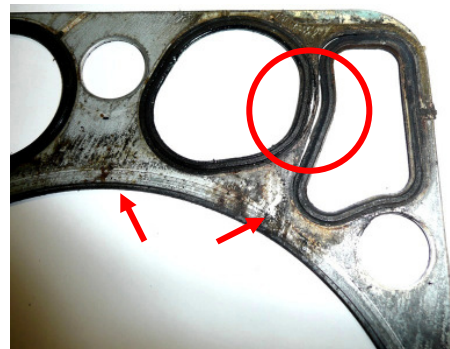
### **Measure:**

Follow the engine manufacturer's general instructions for installations.

→ Professional installation of the cylinder head gasket in seven steps (TSI 04/04).

### **Damage symptoms:**

The elastomer sealing element has separated from the gasket carrier at the tappet opening, as well as the water opening. The result is significant loss of water.



### **Possible Causes:**

- Uneven cylinder head surface
- The cylinder head gasket was not compressed sufficiently
- The elastomer sealing elements were pressed away from the carrier plate by the strong gas pressure
- The full-load operation of the engine accelerated the destruction
- Injection system failure
- Liner protrusion not adjusted properly