

## TSI 07/10



# Tips from the gasket expert Engine failure – is the cylinder head gasket to blame?

# Overheating on 2-layer metal gaskets

### Damage symptoms:

The metallic functional layer into which the combustion chamber seal is integrated is broken in the area of the sealing web. Obvious black discoloration indicates over-blown combustion gas.





#### Cause:

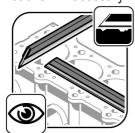
Part distortion resulted in over-blown combustion gases, which in turn overheated the metal layers and lead to their destruction.

#### Other possible causes:

- Low quality fuel (insufficient octane rating).
- Excessive compression ratio.
- Engine tuning (sparkplugs with incorrect heat rating).
- Insufficient bolt clamp force (bolt quality, tightening of bolts).

#### Measures:

Check the condition of the sealing surfaces very closely before installation and ensure that the cylinder head is. If necessary resurfacing by a specialist.





| Para-            | Metal/soft- | Multi-layer | Metal-     |
|------------------|-------------|-------------|------------|
| meters           | material    | metal       | elastomer  |
| $R_z$            | 15 - 20 µm  | 11 µm       | 11 - 20 µm |
| R <sub>max</sub> | 20 - 25 μm  | 15 µm       | 15 - 20 μm |
| W <sub>t</sub>   |             | 8-10 µm     |            |