# Tips from the gasket expert

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

# Gas blow-by on the metal layer gasket Metaloflex®

## Failure due to pressure build-up in the cooling system

***Damage symptoms:***

Clear linear impressions visible on the multi-layer metal-elastomer cylinder-head gasket. These impressions were made by the cylinder-head sealing surfaces and run in the direction of the combustion chamber.

***Cause:***

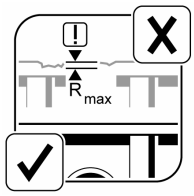
The surface structure of the cylinder head was machined either too coarsely or not at all. This caused combustion gas blow-by into the cooling circuit and overheating (pressure build-up).

***Other possible causes:***

- The air was not removed entirely from the cooling system so the coolant did not circulate.
- Cooling circuit was interrupted (water pump, thermostat, fan).
- High exhaust back pressure caused engine to overheat (e.g. defective catalytic converter).

***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.




| Parameters | Metal/soft-material | Multi-layer metal | Metal-elastomer |
|---|---|---|---|
| $R_z$ | 15 - 20 µm | 11 µm | 11 - 20 µm |
| $R_{max}$ | 20 - 25 µm | 15 µm | 15 - 20 µm |
| $W_t$ | | 8-10 µm | |

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