Tips from the gasket expert
Leaks in the pressure oil area after a short service life

Following a cylinder head repair, oil leaks can occur in the area around the pressure oil channel after a relatively short period of operation. Quite often, the cause is incorrectly attributed to the cylinder head gasket.

To ensure proper sealing, Elring cylinder head gaskets are equipped in this area with special sealing elements and designs specifically matched to the engine:
linear elastomer coatings (Figure 1),
special beading (Figure 2),
elastomer sealing elements (Figure 3).

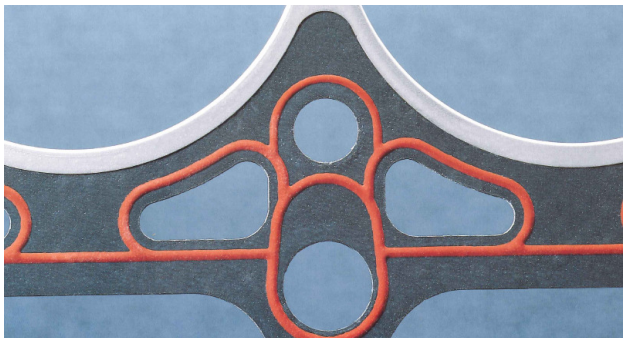

Figure 1: Pressure oil area with red elastomer coating

Real-world example:
Figure 3 shows a cylinder head gasket in which leakage occurred in the pressure oil area after a short service life. In this case, a chemical sealant was applied in addition to the elastomer sealing element. This improper use of sealant exposes the mating sealing surface of the cylinder head to impurities, and the resulting condition of this surface causes the sealing function to fail after a short period of operation. This is clearly visible in the indentations (scoring) on the cylinder head gasket.

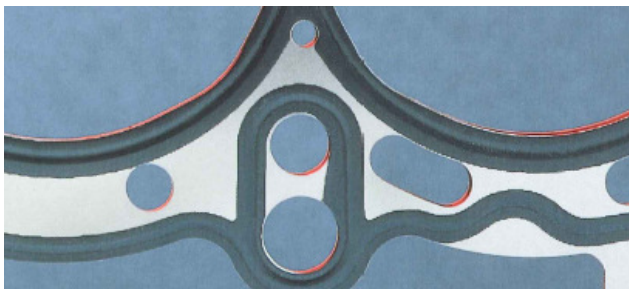

Figure 2: Pressure oil area with metallic bead beneath black coating

Proper assembly:

Sealing compound is not normally used in the cylinder head gasket assembly, unless the engine manufacturer specifies this explicitly for a precisely defined area. The surface quality and warpage of the sealing surfaces must be inspected carefully. The cylinder head will be resurfaced by a professional engine repair shop with the necessary high-precision resurfacing machines.

Figure 3: Impurities resulting from chemical sealant on outer edge of green elastomer sealing element and on sealing surface

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