

Sealing engine components.

Damage caused by incorrect screw tightening

In the engine, the screw is one of the most important construction parts for combining engine parts and keeping them together permanently.

The cylinder-head stud is one of the most important screw connections. To guarantee the engine's functioning the expert mechanic must install the screws in accordance with precise tightening instructions.

In addition to the cylinder head, there are many other places, such as oil tank, valve cover, water pump, control cover, intake-exhaust manifold, etc., where it is just as important to maintain the tightening torques prescribed by the engine manufacturer.

Gaskets for valve covers or oil tanks, for example, are repeatedly being tightened with too much torque to try to press together distorted components. Following the motto: the more torque, the tighter.

But the result is anything but satisfactory. The seal material, made of high-quality elastomeric plastics or plasticizer materials, cannot cope with this force impact, the seal material is damaged, leading to leaks.



Rubber and cork valve cover seal



Elastomer oil tank seal

Sealing engine components

Example: middle segment car

After a short service life, the valve cover of this engine was damaged due to excessive pressing forces on the semi-circular elastomer arch (cf. arrow).

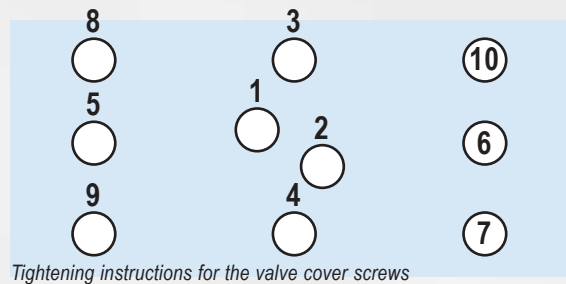
If the prescribed tightening torque had been used

1st opening: 1 – 3 Nm

2nd opening: warm-up time approx. 15 min.

3rd opening: 6 – 8 Nm

this would not have happened.



Summary

When assembling the components, always follow the prescribed installation guidelines and test the sealed surfaces for leaks. That is the only way that the seal can do what it is supposed to do.



Das Original

ElingKlinger AG | Aftermarket Division
 Max-Eyth-Straße 2 | D-72581 Dettingen/Erms
 Fon ++49 (0)71 23/724-622 | Fax ++49 (0)71 23/724-609
 elring@elring.de | www.elring.de