

Water pump damage and causes (Part I)

Water pump quality depends upon the use of high grade components. These ensure competent repair, and satisfied customers. However, even the best selection of materials cannot prevent premature water pump damage caused by ignoring fitting instructions. In an ongoing dialogue with repair professionals, Meyle specialists identify the external factors primarily responsible for early water pump failure. The following describes some typical damage patterns and their causes.

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Water pump leakage

Problem

A leaking radial seal results in water pump leakage. The radial seal reacts to particles and will not seal properly. These can penetrate the sealing gap of the mechanical seal and destroy the sliding surfaces.

Caution: Small amounts of fluid egressing from the bleed hole shortly after installation are harmless, as the sealing elements do not settle until after the run-in period.

Possible Consequences

Coolant loss
Risk of engine over-heat
Damage to the shaft bearing

Solution

Thoroughly flush the cooling system, prior to installing the new water pump, to remove contaminants. Follow the flush procedures recommended by the vehicle manufacturer and use the specified fluids.



Defective bearing

Problem

Excessive strain is frequently caused by incorrect belt tension. The resulting effect is complete bearing failure.

Possible Consequences

Noise from the pump
Water pump failure
In the worst case, engine damage

Solution

When tensioning the belt, observe the vehicle manufacturer's specifications and use the recommended special tooling.

We recommend that all belt drive components be replaced. Unusual noise coming from the belt drive must be checked immediately.



Damage to the housing

Problem

Incorrect alignment when installing the water pump and over-tightened screws lead, to strain which can cause fissures in the housing. These structural damages lead to leaks and eventually failure.

Possible Consequences

Water pump leakage
Engine damage

Solution

To ensure strain-free installation, clean the seal face thoroughly and hand tighten the screws.

Follow the installation procedures recommended by the vehicle manufacturer and apply the specified torques.