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Use of sealing compound on solid gaskets and surface seals

Water pump installation – seal in moderation

Sealing compound should be used in moderation when fitting water pumps. In some cases, it is not needed at all. Its use depends on whether solid gaskets or surface seals have been fitted. Read on to discover what you need to look out for during installation.

Unfortunately, the use of sealing compound during the fitting of water pumps often causes easily avoidable damage.

To prevent this, it is important to first distinguish between solid gaskets and surface seals.

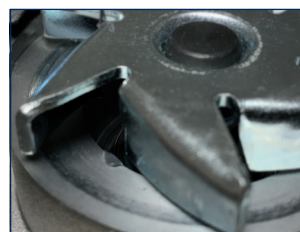
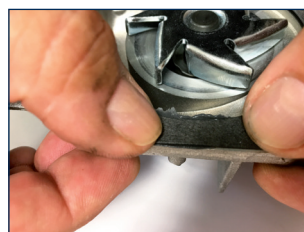
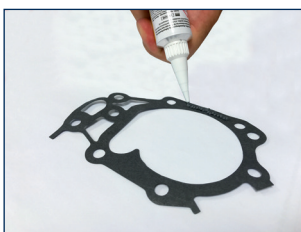
Solid gaskets

No sealing compound needs to be used on solid gaskets (e.g. o-rings). Here, it is enough to use a simple petroleum jelly or non-acidic grease to fix the seal during installation.

Surface seals

The use of sealing compound is, however, essential on surface seals. It should nevertheless only be applied in moderation, as too much quickly leads to the compound building up when tightening the water pump in the direction of the impeller or mechanical seal. In extreme cases, this may damage the mechanical seal, causing the water pump to leak (see photos below).

When using the sealing compound, it is also important to allow a drying time of around 10 to 20 minutes depending on the temperature. The water pump may only be tightened by the necessary torque once this drying time is up. The seal can only be subjected to stress again after a further 40 to 50 minutes.



Photos: Poor examples – how not to seal water pumps

Special case – vacuum-controlled water pump technology

Sealing compound is particularly important when fitting vacuum-controlled water pumps. This type of water pump is useful for thermal management and features technological enhancements which enable vehicles to comply with stricter exhaust emission standards and emission limits (see OPTIMAL technical tip 11/14 for further information).

Technical-Tip: 01/17
Pictures: OPTIMAL Automotive GmbH



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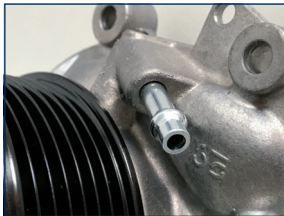


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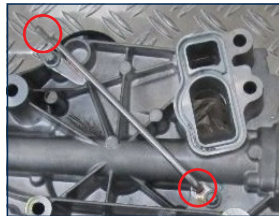
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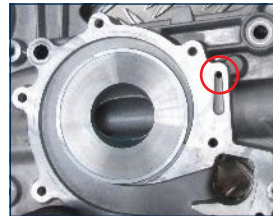
Unfortunately, fake water pumps without this vital vacuum-control technology regularly make their way onto the spare parts market. These sham products may be cheaper, but this does not make up for the poorer engine performance and failure to comply with exhaust emission limits.



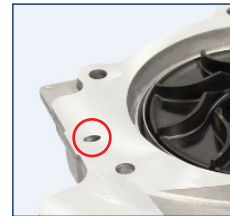
1. AQ-2452 Connection on the housing



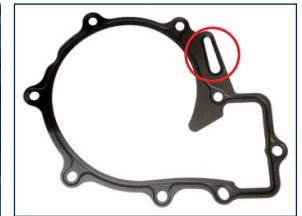
2. Timing chain case from behind



3. Timing chain case from the front



4. Channel in the water pump housing



5. Sealing cavity

Example: AQ-2423 Mercedes water pump

In the case of the AQ-2423 vacuum-controlled water pump, it must be ensured that the vacuum attachment (photo 1) is not located on the water pump housing itself but on a separate attachment (photo 2).

Since the AQ-2423 has a solid gasket, the use of sealing compound clogs up the control opening of the pneumatic control, causing the system to malfunction.

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