SERVICE INFORMATION

Vacuum pump Mercedes Benz diesel

Damage due to wear on the cam disk

Vehicle: Mercedes Benz	Product: v acuum pump
Various models from model year 1968 with diesel engine	PIERBURG No.: 7.20208.../7.20547.../7.20607...

Potential complaints:

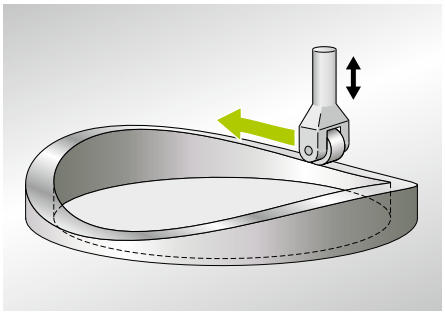
- Insufficient vacuum
- Rattling noises
- Feed roller on the vacuum pump worn
- Vacuum pump housing broken
- Damage to the vacuum pump cam follower

This type of piston or membrane vacuum pump is driven by a cam disk ("running curve") which is mounted on the injection timing mechanism of the fuel injection pump.
The cam roller is mounted in a cam follower and follows the running track of this cam disk. The lifting movement of the cam roller is transferred to the vacuum pump pistons.

These vacuum pumps are installed in large numbers in Diesel vehicles from Mercedes-Benz, such as the older models W123, W124, W201 and W202.

Until around the mid-1990s, the cam disk on the injection timing mechanism could be replaced separately. Today, the injection timing mechanism can only be replaced complete with the cam disk.

Vacuum pumps in series 7.20607... (top) on the injection timing mechanism



Vacuum pump driven via a cam disk (schematic diagram)

Supersedes SI 0025/A

Vacuum pumps are safety components and can therefore only be installed and dismantled by qualified personnel!

If the cam disk is worn, the cam roller of the cam follower starts to “jump”, gains notches as a result of the impact and causes rattling noises. In the worst case scenario, the feed roller can fall apart and the individual parts can get in to the primary drive.

When installing a new vacuum pump, the surface of the cam disk on the injection timing mechanism must always be checked as well.
If the cam disk is damaged or worn, the injection timing mechanism must also be replaced, as the new vacuum pump will otherwise be damaged after just a short mileage.

The sliding surface of a worn cam disk must never be ground or polished.
The sliding surface has a defined surface roughness, which is required for a non-positive connection with the cam roller. If the sliding surface is polished or ground, it is possible that the impeller will no longer turn with it. This will result in the impeller being worn on just one side. The chips generated by the friction then cause more damage.

The cam disk should be sent in to enable complaints to be assessed.

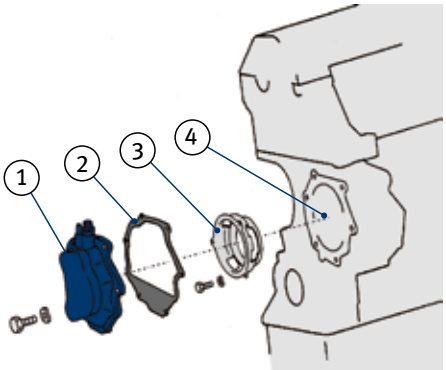
Immaculate cam disk

Worn cam disk

Further notes on installation

- Only install a vacuum pump (1) with the cam in low position and screw on crosswise.
- Always use a new seal (2).
- For older vehicles, the assembly basket (3) must be removed before installing a new vacuum pump. It is located on the crankcase in front of the injection timing mechanism (4). The assembly basket (3) is not used in later models.

The assembly basket (3) must not be installed again after a new vacuum pump is installed.



1 Vacuum pump
2 Seal
3 Assembly basket
4 Injection timing mechanism in the crankcase

Damage: Cam roller with pittings due to worn cam disk.

Damage: one-sided wear on the cam roller

Damage: Completely destroyed cam follower

Supersedes SI 0025/A