



Vacuum pump for Mercedes-Benz diesel

Damage due to wear on the cam

Vehicle: Mercedes-Benz	Product: Vacuum pump
Model series	PIERBURG no.
Various models from model year 1968 with diesel engine	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 finger type rocker

This type of piston or membrane vacuum pump is driven by a cam (running curve) which is mounted on the injection timer of the fuel injection pump.

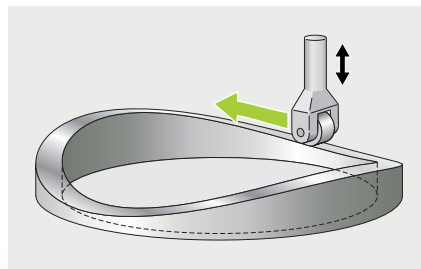
The cam roller is mounted in a finger type rocker and follows the running track of this cam. The lifting movement of the cam roller is transferred to the vacuum pump pistons.

These vacuum pumps are installed on Mercedes-Benz diesel passenger cars in large numbers e.g. the older model ranges W123, W124, W201 and W202.

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



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



Vacuum pump driven via a cam (schematic diagram)



Vacuum pumps are safety components. The installation and dismantling may therefore only be carried out by qualified personnel!

If the cam is worn, the cam roller of the finger type rocker 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 on the injection timer must always be checked as well.

If the cam is damaged or worn, the injection timer must also be replaced - otherwise the vacuum pump could be damaged.

The sliding surface of a worn cam must never be ground or polished.

It 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, meaning that it is worn on one side.

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

Further notes on installation

- The vacuum pump (1) should be screwed on cross-wise in the lowered position of the cam.
- Always use a new seal (2).



Immaculate cam



Worn cam



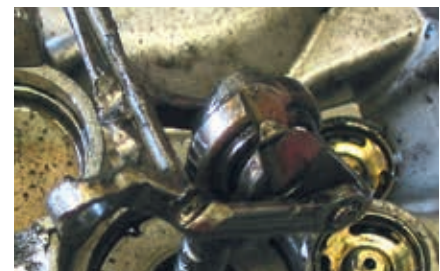
Damage symptoms: Cam roller with pittings due to worn cam.



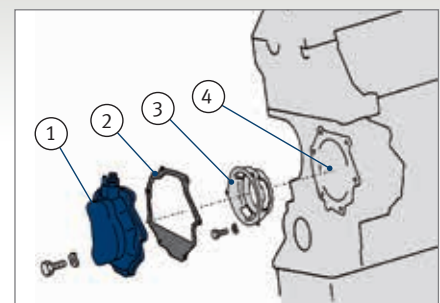
Damage symptoms: cam roller worn on one side

The chips generated by the friction then cause more damage.

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



Damage symptoms: completely destroyed finger type rocker



- 1 Vacuum pump
- 2 Gasket
- 3 Assembly basket
- 4 Injection timer in the crankcase

- For older vehicles, the assembly basket (3) must be removed before installing a new vacuum pump. It is mounted in the crankcase in front of the injection timer (4). The assembly basket (3) is not used in later models.