

Plain bearings

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Function Plain bearings support and guide moving components inside the engine. Their primary purpose is to facilitate the virtually wear-free rotation of these components. Plain bearings comprise one or two bearing shells which are locked firmly in place in the bearing seat. The bearing shells wrap around the rotating shaft at the bearing journals. Engine oil is pushed into the plain bearing through a bore hole. During normal operation of the engine, the shaft virtually guides above the film of oil without touching the bearing shell.

Plain bearings absorb the axial and radial forces, redirecting them to the bearing housing. Plain bearings are used both for rotating shafts:

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- crankshaft
- camshaft
- rocker arm shaft and
- counterbalance shaft
- and in the connecting rod.



They also have the important task of absorbing and embedding abrasion. This abrasion occurs during normal operation of the engine. It takes the form of tiny particles of metal that are too small to be trapped by the oil filter but big enough to cause increased wear if they are not embedded. This key function of the plain bearing for smooth running and low-wear operation of the engine requires a specific design.

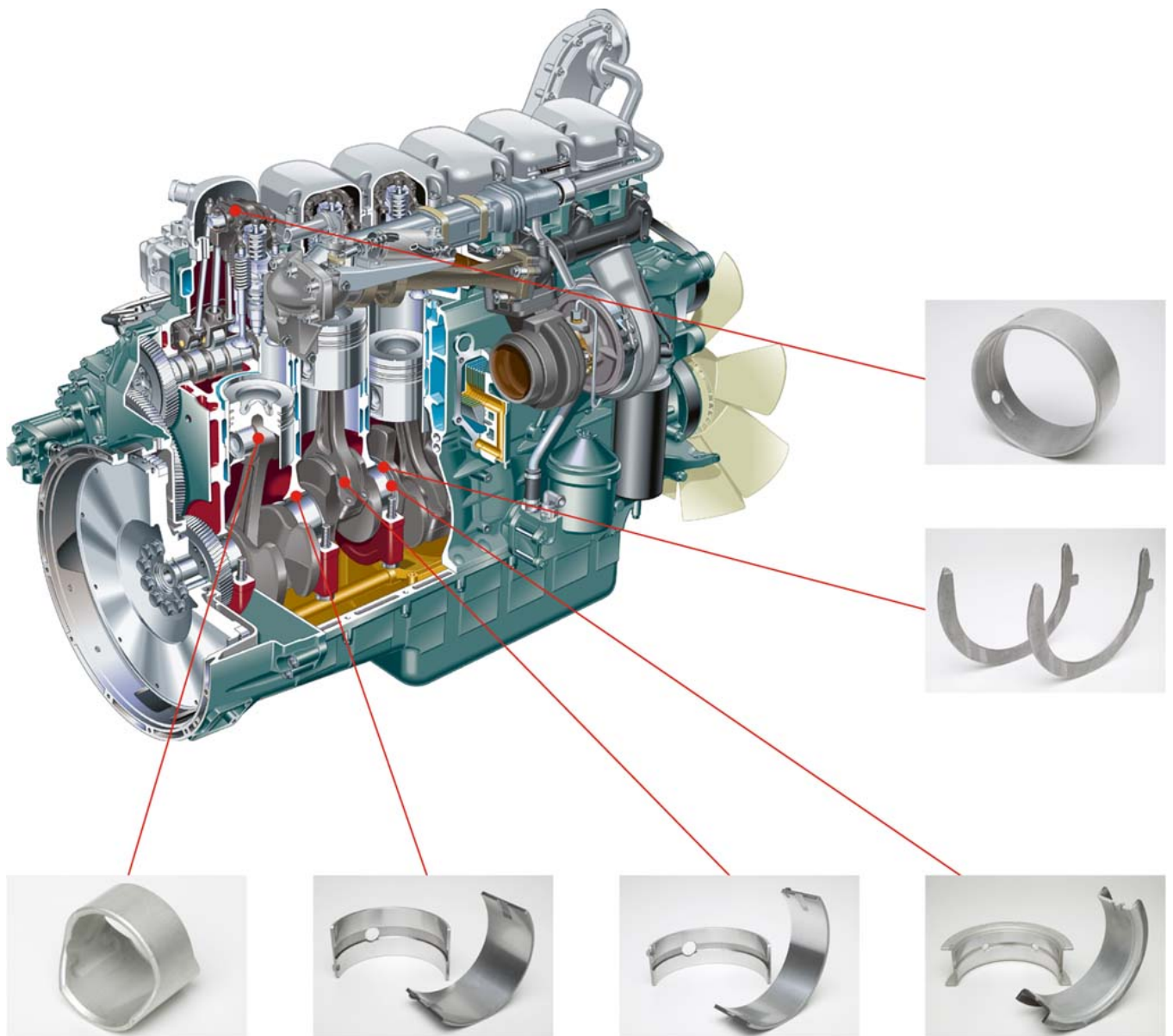
Safety

Safety Plain bearings are essential for the safe running and long service life of an engine. Damage to plain bearings – referred to in this context by experts as "fretting" – can cause an engine to stop suddenly. In some driving situations, this can increase the risk of an accident occurring.

Depreciation

Depreciation Engine bearings are designed to last the service life of the engine. However, there are numerous factors that can cause the premature failure of plain bearings. They include using

- poor-quality or spent oil
- dirt in oil or fuel
- water in oil
- Oil starvation



Plain bearings can also be damaged by oil starvation. Oil starvation can be caused by a faulty or leaking oil pump, for example, a fault affecting the pressure limiting valve, a leak in the oil pipe system, too little oil or the vehicle being too sharply tilted.

Therefore, if plain bearings are to function reliably, it is of the utmost importance that oil and the oil filter are replaced regularly in accordance with the manufacturer's specifications. This requirement applies in particular when using biofuels, for which replacement intervals are much shorter. Furthermore, the oil level should also be checked regularly between service intervals and topped up if necessary.

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