



SERVICE INFORMATION

SPUTTER BEARINGS

DESIGN AND FITTING INSTRUCTIONS

WHAT ARE SPUTTER BEARINGS?

Sputter bearings are engine bearings with a sliding layer that is applied by a PVD (Physical Vapour Deposition) process. This sliding layer is considerably thinner and more resistant to wear than on conventional bearing shells manufactured with a galvanised sliding layer. Kolbenschmidt supplies sputter bearings for original equipment (OE) to numerous renowned car manufacturers and the worldwide aftermarket.

WHY SPUTTER BEARINGS?

Stresses on bearings have been steadily increasing in recent decades due to higher engine performances – in particular on turbocharged diesel engines. To cope with these greater bearing stresses, it has been necessary to develop bearings with higher wear resistance and greater strength. Compared to conventional bearings, sputter bearings can withstand a 50 % greater stress, and this with identical bearing dimensions.

AREAS OF APPLICATION

Sputter bearings are primarily used in diesel engines for passenger cars and utility vehicles. The reason for this is the increased bearing stress developed in diesel engines due to the working principle and the resulting increased working pressures. In petrol engines, sputter bearings are only used in a few exceptional cases.

DIFFERENTIATING CHARACTERISTICS

For better differentiation, sputter bearing shells are labelled with the word “Sputter” on the rear side of the bearing at Kolbenschmidt. This enables the bearing shells to be differentiated clearly from conventional bearing shells.



Sputter bearing shell

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SI 0014

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FITTING INSTRUCTIONS

Sputter bearings are normally only installed on the pressure-loaded side of connecting rod and main bearings (red bearing shell). The less loaded anti-thrust side is equipped with conventional two or three-component bearings. If the bearing shells are mixed up during installation, damage to the bearings occurs even after a short service life – as we know from experience.



If an engine has been designed with sputter bearings, the bearing positions should also be equipped with sputter bearings for reconditioning. Using conventional bearing shells results either in significantly reduced durability or instant bearing damage.



NOTE:

In order to guarantee a successful engine repair, pressure oil filling should be always carried out for reconditioned engines. This prevents damage to the various bearing positions caused by inadequate lubrication upon initial start-up of the engine.



Pressure-loaded side of connecting rod and main bearings