

Service Information

Caterpillar Motoren GmbH & Co. KG product support information for medium-speed engines

Engine platform: M32
Engine section: Piston

Engine type: M32 / M32C
Validity: until further notice

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Information for all recipients of Service Information

Action: for your information

Piston ring groove wear on M 32/ M 32C engines

Engines of the M32 and M32C series have been in operation for many years and many have accumulated high running hours. In the recent past, we have received a few reports of unusually high wear in the first ring groove of piston crowns with a chrome-plated first ring groove. In these cases, the wear limit was reached far earlier than expected, after only a few hundred hours in the most extreme cases. Obviously, these piston crowns had to be replaced outside the scheduled maintenance scheme. It was apparent that this phenomenon mainly affected reconditioned piston crowns.

Despite extensive efforts, the cause of the increased wear in the first ring groove for these cases could not yet be definitively determined. However, it is noticeable that only a small portion of the population is affected, but that these engines tend to repeatedly show the increased wear.

Based on our analysis, high and strongly varying engine loads, the quality of the fuel and the lubricating oil treatment as well as the quality of the piston crown rework can significantly contribute to the wear.

Several years ago, we changed the surface treatment of the ring grooves for all new piston crowns from chrome-plated to hardened. Only spare parts for older variants and reconditioned piston crowns are still delivered with chrome-plated ring grooves. For the engines affected by the wear phenomenon described above, changing to piston crowns with a hardened first ring groove has led to a normalization of wear rates again, so that component operating times of 30,000 h and more can be achieved again.

Increased piston ring groove wear can also lead to consequential piston ring fractures and damage to the liners. Especially for engines that have experienced increased ring groove wear, we therefore recommend the use of piston crowns with hardened piston ring grooves.

Your authorized MaK service partner will be pleased to answer any further questions on this subject.

