

# Service Information

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

Engine platform: all  
Engine section: Liner

Engine type: all  
Validity: until further notice

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Information for all recipients of Service Information

Action: for your information



## Liner honing

With the publication of this document the Service Information 0016com Issue 1 becomes invalid. Please delete/remove it from your files.

The final surface finish of the cylinder liners of all engines manufactured by Caterpillar Motoren is achieved by honing. The requirements on the liner surfaces and, in the following, the technology to achieve the desired honing structure have been refined significantly in several steps over the past few decades. All liners installed in MaK / CM engines of the models currently in production (M20-M46 DF) receive a “plateau-honing” which can only be achieved reliably with carefully selected and updated honing equipment.

Once the honing is done, the results of a modern honing process can be checked only with rather complex measurement equipment and respective experience and know-how, not available in many engine workshops. A roughness measurement of the surface, as it could be done on the liners of legacy engines, does not give sufficient information about the honed surface of a current cylinder liner. As the multitude of influencing process parameters will hardly allow a stable, reproduceable process in a standard service workshop, it will also not be sufficient to only check samples of honed liners with the complex measurement equipment mentioned above.

Honing of liners is often requested as part of a standard overhaul after longer operating hours (30/60 Th) even though, based on our experience, the vast majority of liners does not necessarily exhibit wear or damages to the surface at these occasions that would truly require honing from a technical perspective. However, as the results produced by honing a liner can vary greatly, the condition of the liner surface often does not improve by applying an undefined honing on top of the existing honing structure. Wrong honing can have a number of negative effects on engine operation such as increased lube oil consumption, increased wear of liners and piston rings, increased wear on piston ring grooves, lacquering of liners, etc. The desired cleaning effect of the honing can, in many cases, be achieved with methods that do not affect the properties of the original honing structure, by thorough manual cleaning with a mild acid for example.

We therefore do not recommend honing of liners as a standard procedure in our maintenance manual. Should you feel that a liner surface exhibits wear or damages that require an overhaul, we strongly recommend discussing the most suitable option with your authorized servicing dealer. One safe choice for such cases can always be certified REParts™ cylinder liners. These are liners that are overhauled and re-honed to the original specification by the original liner manufacturer and can be ordered through authorized MaK/CM service providers.



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