

Dear Sirs

This service letter contains important information about the development of fretting marks at the assembly surfaces of the connecting rod and the marine head, and possible rework of this.

The complete connecting rod consists of three different parts, upper and lower marine head parts and the connecting rod. Due to the operation forces the connections of these parts are exposed to the development of fretting that may occur over time.

Fretting marks are caused by micro movements between two parts under high load.

Whenever the connecting rod is disassembled the assembly surfaces must be inspected for signs of fretting marks. If fretting marks are observed at one or more of the assembly surfaces these must be cleaned and smoothed before the connecting rod is reassembled.

In case fretting at the connecting rod is not addressed this may cause severe engine damage due to connection rod failure.

If you have any questions or comments, please contact LEO7-HOL@Mandieselturbo.com with reference to this service letter.

Yours faithfully



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Action code: WHEN CONVENIENT

Fretting Marks on Connecting Rod Contact Surfaces

SL2016-635/JNN
December 2016

Concerns

Owners and operators of MAN four-stroke diesel engines.

Types:

Propulsion: L21/31, L27/38

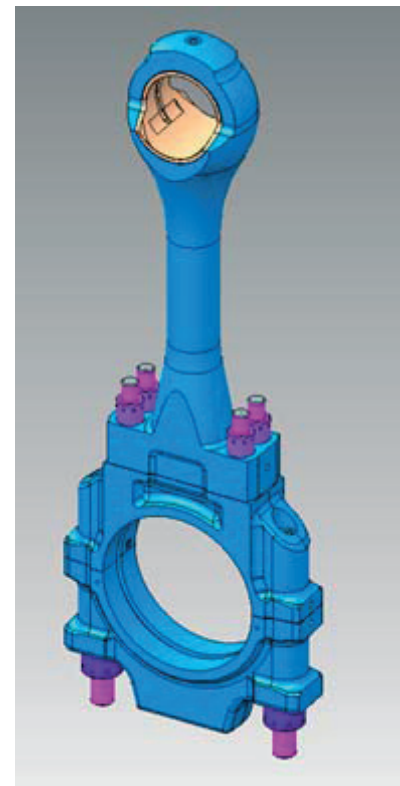
GenSet: L21/31, L21/31S, L27/38, L27/38S

Reference

Work cards

506-01.15 and

M116110-01



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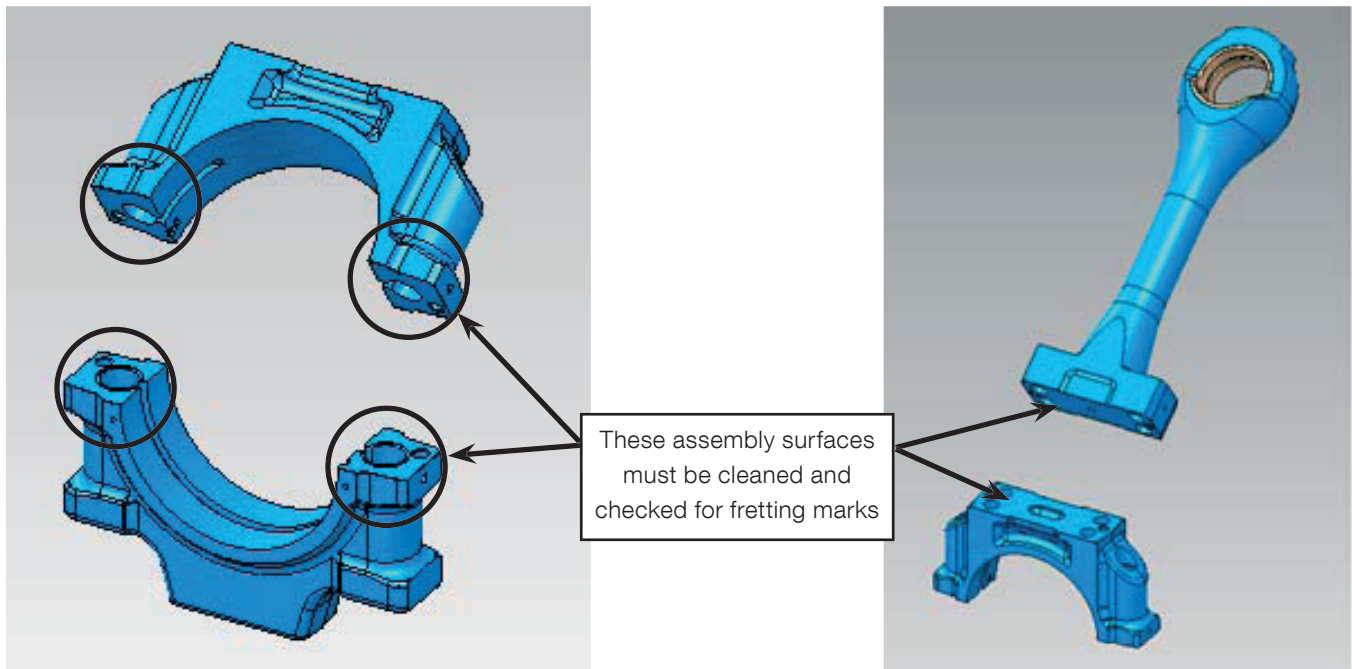
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To ensure proper condition of each connecting rod part and high operating reliability, all contact surfaces must be checked for fretting and crack tested whenever the assemblies are opened and at least in connection with every main overhaul.

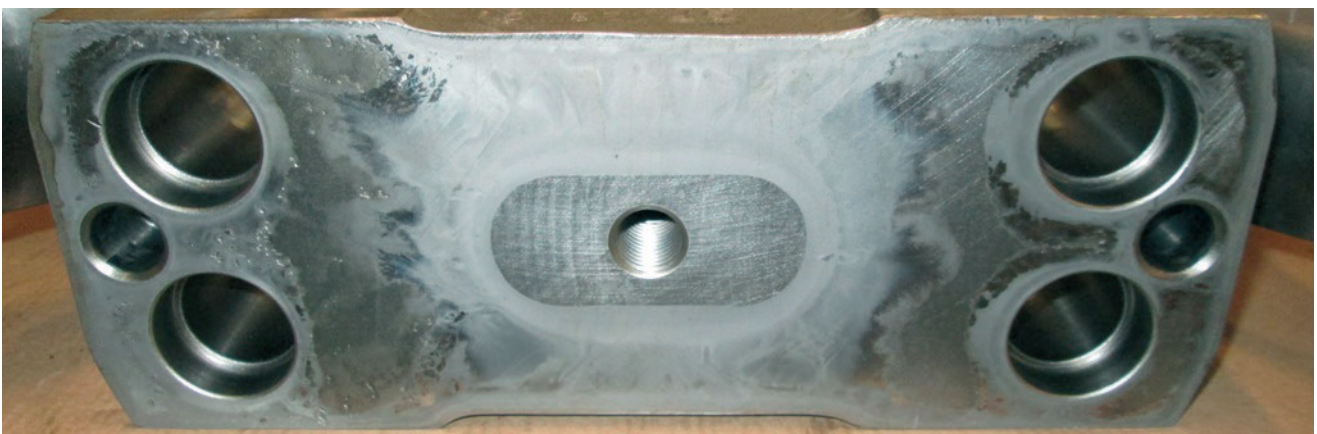
Clean all assembly surfaces by applying slushing oil or clean diesel oil onto contact surfaces, using a fiber mat until it is absolutely dirt-free.

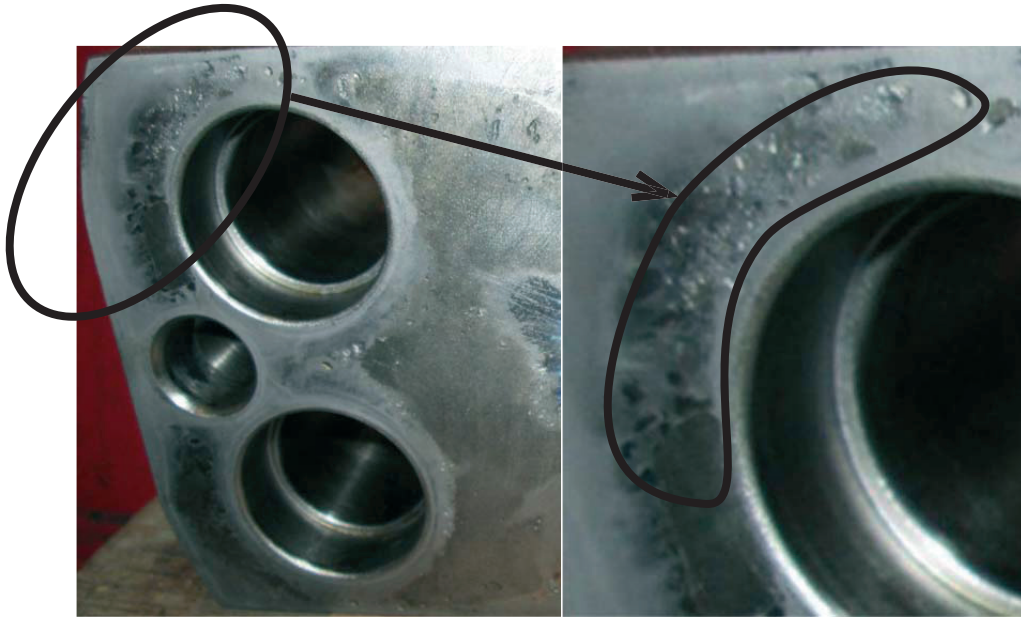


After cleaning the assembly surface at the connecting rod/marine head and the assembly surfaces of the upper and lower marine head parts should be checked for fretting marks.

Fretting can easily be identified by running one's finger nail over the suspicious surfaces. If rough or uneven surfaces are felt or detected, these are indications of fretting.

In case fretting marks cover more than 20% of any assembly surface of the part, it must be replaced with a new part.





The above picture shows an example of fretting marks at the assembling surface of the connecting rod.

If fretting marks are observed, they must be reworked as follows:

Smooth all fretting areas (even the smallest ones) using the universal abrasive cleaner. Areas which cannot be smoothed with the universal abrasive cleaner must be treated with an oil stone.

All smoothed areas must be crack tested by means of a penetrant test or magnetic particle test method to detect potential cracks.

No crack is allowed at the machined parts of the connecting rod. If cracks are detected, the related part must be replaced, i.e. marine head or connecting rod.

Before the connecting rod is installed, the ovality of the marine head must be checked. If the maximum limit is exceeded, the marine head must be replaced.

NOTICE

During reassembling of the parts the assembly surfaces have to be clean, dry and absolutely free of oil, grease or other fluids.

Examples of products suitable for cleaning and smoothing of the assembly surfaces:

Fibre mat: Scotch-Brite™ WR-RL, Type A medium

Anticorrosive agent : ANTICORIT 1

Solvent cleaner: ARDROX 9PR88

Universal abrasive cleaner: HOLEX 55 7660, fine

In case of any doubts about how to judge fretting marks or any part of the above rectification procedure, we recommend contacting our worldwide PrimeServ organisation for assistance.