Action code: WHEN CONVENIENT

Sulphur corrosion package

SL2019-677/JNN
July 2019

Concerns
Owners and operators of
MAN four-stroke diesel engines.
Type:
Marine: L21/31
Stationary: L21/31S

Attachments:
Quick Guide,
"Sulphur corrosion package"
Spare parts kit plate P51755-01,
Kit for sulphur corrosion

Dear Sir or Madam

Service feedback from operators has recently revealed some incidents of excessive corrosion in the exhaust duct at the cylinder head of the engine type L21/31.

The corrosion is observed on engines operating on HFO with a high sulphur content. The extent of the corrosion depends on the load profile and sulphur content in the fuel.
It is caused by condensation of sulphur acid on the relatively cold wall of the exhaust duct. High sulphur contents and operation at low load accelerate the corrosion.

Due to the above, it is crucial to maintain a correct cooling water temperature in the high temperature (HT) circuit of the engine. Therefore, we draw attention to the importance of frequent checking of the engine performance parameters, including the HT cooling water temperature. In case the temperature has decreased beyond the normal values mentioned in the instruction manual, we strongly recommend inspecting the HT thermostatic elements. Our service department has reported cases with failing thermostatic elements caused by corrosion / cavitation on the sealing surface of these, see the following pictures for reference.

Yours faithfully

Mikael C. Jensen
Vice President
Engineering

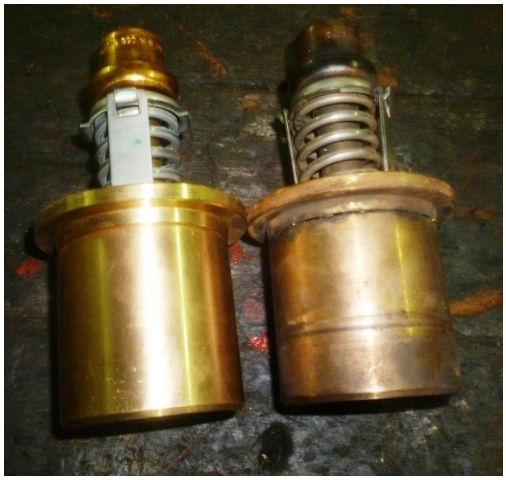
Henrik Møller Hansen
Senior Manager
Production Support

MAN Energy Solutions
H. Christoffersensvej 6
4960 Holeby
Denmark
Phone: +45 54 69 31 00
Fax: +45 54 69 30 30
info-hol@man-es.com

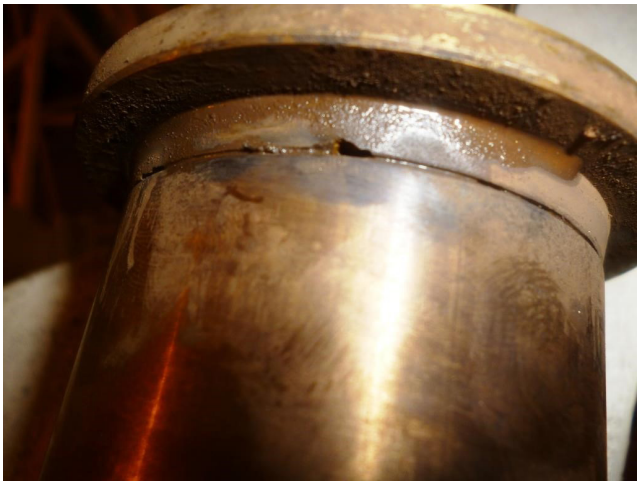
www.marine.man-es.com

MAN Energy Solutions
Niels Juels Vej 15
9900 Frederikshavn
Denmark
Phone: +45 96 20 41 00
Fax: +45 96 20 40 30
info-frh@man-es.com

MAN Energy Solutions
Branch of MAN Energy Solutions SE,
Germany
CVR No.: 31611792
Head office: Teglholmsgade 41
2450 Copenhagen SV, Denmark
German Reg.No.: HRB 22056
Amtsgericht Augsburg



New and used valve elements



Corrosion / cavitation on sealing surface

If sulphur corrosion cannot be avoided by maintenance of the cooling water system, we have prepared a retrofit cooling water temperature control package aiming to increase the temperature on the exhaust duct wall.
By increasing the cooling water temperature and locally reducing the water flow in the cylinder head, the wall temperature in the exhaust duct will rise, and hereby possible condensation of sulphur acid will be reduced.

The cooling water temperature control package consists of the following parts:

- A 31-mm restriction to be installed for cooling water flow control through the engine. It must be installed in the common water outlet pipe from the cylinder heads (1 pc/engine).
- A plug screw with 2.5-mm hole for local flow control at the cylinder head. It must be installed in the cooling water jacket (1 pc/cylinder).
- The HT cooling water thermostatic elements are to be changed from 79°C to 85°C (3 pcs/engine).

For further details, see the attached presentation.

The needed orifice, plug screws, and thermostatic elements are made available via the attached spare parts plate 51755-01. The package covers engines from 5 to 9 cylinders, and surplus material cannot be returned.

The above modifications have been introduced as standard on engines ordered after January 2018.

The retrofit package is available through your usual PrimeServ contact or you may contact our PrimeServ department directly via e-mail:

primeserv-hol@man-es.com