Evaluation of Fuel Injection Pump

DCI / 324 - August 2013

Concerns
MAN Diesel & Turbo four-stroke engines 48/60B, 51/60DF

Summary
Information regarding fuel injection pump evaluation

Filing Advice
Assembly group / work card 200

Background

Fuel injection pumps of MAN Diesel & Turbo’s medium speed engines are high loaded engine components. The pump elements are subjected to high stresses caused by pressure changes. Due to this plunger and barrel are affected by cavitation.

Facts

Wear due to cavitation is a typical process in fuel injection pumps, which begins already with the first engine operating period. Wear typically occurs on the spill port hole of the monoblock cylinder and the plunger crown above the control edge. Cavitation is well known as a physical phenomenon in high pressure fluid systems. The severity of cavitation attack is very much associated with the viscosity and in particular with the quality of fuel, e.g. water content and the load of the engine.

Prevention

In order to reduce the cavitation attack to the fuel pump element the so-called baffle screw, a sacrificial component, had been a standard of our injection pumps for years.
For your information you will find attached our Diesel Customer Information No. 280, describing maintenance interval for nose-type and flat baffle screws.

However it is important to observe specified parameters such as fuel pressures, temperatures, water content inside fuel oil and viscosities to minimize the cavitation effect. Anyhow development of cavitation cannot be avoided and is directly connected to engine load and related injection pressure.

**Recommendation**

For your continuous service inspections of the pump elements, we like to support you with attached working cards “Check and evaluation of pump element”, in order to give you a proper overview of possible occurring abrasion wear and cavitation and how to realize and evaluate these findings.

**Contact**

Should you have any queries, our Technical Service will be pleased to be of assistance:

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Please forward this information to your technical operating personnel and remember to inform us of the current operating hours of your MAN Diesel & Turbo engines.