Gear Oil, Thruster

Thruster AQUAMASTER US 1401 AZIMUTH, Tug Boat

Customer Case

CUSTOMER SAVINGS & BENEFITS

Installing a CJC® Thruster Filter, the following benefits were obtained:

- Costly emergency docking was avoided
- Lifetime of both components and oil was increased with a factor 5–6
- Oil change avoided and 850 Litres of gear oil re-treated
- consistently clean and dry gear oil ensured – free from water, wear debris and sodium/salt
- CO_2 emissions reduced – 2,210 kg CO_2 saved per avoided oil change

**) The thermal disposal of waste oil causes approx. 2.6 kg CO_2 per 1 litre.*

CUSTOMER

Vessel: Harbor tug boat "VB PORNIC"
Vessel owner: BOLUDA, France, 44603 Saint-Nazaire

SYSTEM

Thruster: AQUAMASTER US 1401 AZIMUTH (starboard thruster)
Gear oil: EPONA Z 100, Mineralöl, 100,7 cSt @ 40 °C
Oil volume: 850 Litres

CHALLENGE

The customer had problems with seawater inlet on the starboard thruster of the tug. The mineral oil was contaminated from high level of seawater (0.39%), and sodium (NA) particles of 22 ppm. The next drydock was scheduled in six months so a solution was needed to continue vessel operation.

SOLUTION

A CJC® Thruster Filter consisting of a Desorber D5 and Oil Care System 15/25 was installed. The installation in an off-line circuit ensures the continuous dewatering, fine filtration and care of the gear oil (24/7/365).

RESULT

Weekly oil samples were taken to follow the oil condition and trend. After one week of operation, the CJC® Thruster Filter had removed water from the oil so the ppm went from 3904 ppm to 136 ppm. According to Noria Corporation, this corresponds to a lifetime extension factor of 5-6 for the oil and equipment. The recommended water level in oil is < 300 ppm. Moreover, wear debris particles were lowered: Iron & Copper from 29 & 4 ppm down to 17 & 1 ppm, whereas the contaminant Na was lowered from 22 ppm to 13 ppm. Max recommended limit for all < 25 ppm.

ENVIRONMENTAL BENEFITS

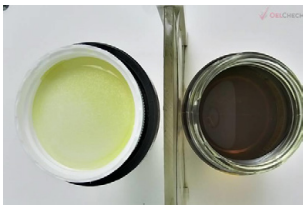
Avoiding the oil change has also a significant impact on the environmental footprint of the vessel and contributes to BOLUDA's strategic objectives to be a CO_2 neutral company.

Mr. Olivier GLOAGUEN, Regional Technical Manager:
"The installation of the CJC® Thruster Filter allowed the vessel to remain operational for 6 months before its next technical shutdown. The results of the analyses are clear and clearly demonstrate the effectiveness of CJC® Thruster Filter."

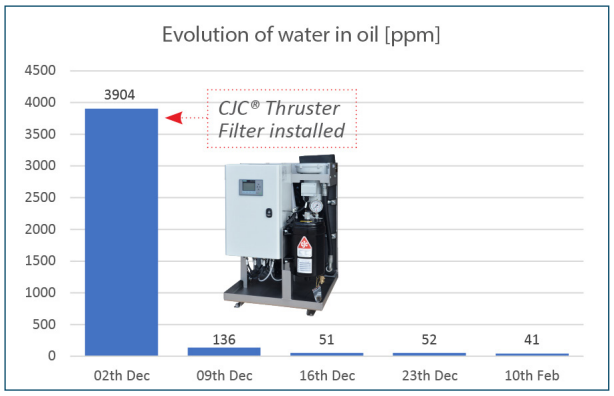
Chief Engineer and Hervé Solle from CJC® next to the CJC® Thruster Filter installed at the tug boat.

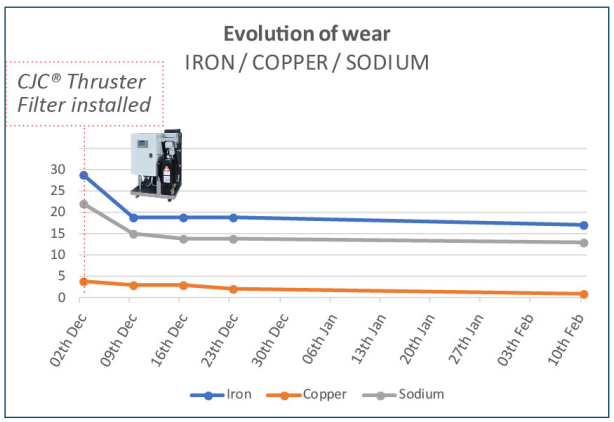
OIL SAMPLING

BEFORE without oil care
Water: 0.39 %
Sodium: 22 ppm



After 3 weeks with CJC®
Water: 0.05 %
Sodium: 14 ppm





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