



EFFICIENT PROBLEM SOLVING WITH THE HELP OF OIL DIAGNOSTICS AND LUBRICATION REVIEW

COMPANY:
ISD Dunafer, Cold Rolling Mill

INDUSTRY:
Steel industry

APPLICATION:
Georg slitting hydraulic system

PRODUCT:
MOL Hydro HME 46

SERVICE:
Lubrication technology consulting, LubCheck oil and machine diagnostics

"With the help of MOL-LUB experts, we have managed to eliminate the slitting machine's recurrent technical issue. Thus we have achieved increased operating reliability and more efficient operation. In the future, I will not hesitate to contact MOL experts with confidence regarding issues with relevance to lubrication, as they provide comprehensive background support."

*Csaba Hekele
mechanical engineer, plant manager, Cold Rolling Mill, ISD Dunafer Zrt.*



To maintain maximum operating reliability in the ISD Dunafer Cold Rolling Mill unit, the lubricants in equipment with large filling volumes are continuously monitored using MOL LubCheck oil and machine diagnostics. Based on feedback from oil diagnostics reports, it is possible to plan maintenance and repairs and to reduce the downtime caused by breakdowns. Going beyond analysis, MOL-LUB experts also help reveal the root causes of defects, which eventually led to a successful solution for the Georg sheet slitting hydraulic unit at ISD Dunafer. For this particular machine, oil diagnostics and lubrication technology review allowed the extension of the earlier 2-3 year oil change period not justified by operating conditions and finally, the inherent technical problem was identified, too.

ISD Dunafer corporate group is the largest company in the Hungarian domestic steel industry, manufacturing almost 2 million tons of finished products annually. In the CRM, different types of steel strip bands are cut to size on the plant's Georg slitting line. However, the hydraulic unit of the equipment has not achieved the desired oil change period of 8-10 years, typical for similar feed units, since its commissioning. In view of reducing maintenance costs, samples were sent to the LubCheck oil diagnostics laboratory each year on a regular basis. After a short operating period, the tests readily concluded that the cleanness of the oil was inadequate. Due to the dark brown sediments present in the oil, the laboratory recommended the replacement of the oil filling, and the cleaning and monitoring of the equipment. Given that, initially, no operating issues were observed, the symptoms were treated by relatively frequent oil changes every 2-3 years and the addition of an extra filter unit. However, over the course of that time, operating problems occurred too, as the hydraulic valve parts started to get stuck. The oil sample taken at the time showed high brown sediment content, which in turn suggested local overheating.

ISD Dunafer experts and MOL-LUB lubrication engineers set out to find the causes together. Although thermovision tests did not pick up local hot spots in the system, the review of the hydraulic system showed that there was a problem with oil heating. The manufacturer originally set up the hydraulic feed system by placing electric heating cartridges in the tank. Even though heating was controlled, the thermostat was able to be switched on for non-moving pumps too, with no fluid flow. Therefore oil could be overheated locally near the heating filaments.

This design defect is remedied with the incorporation of a heating and circulation unit. The reconstruction of the system is also expected to reduce the thermal load of hydraulic oil and sediment generation. It will be possible to maintain the required oil purity, extending the lifetime of the oil filling and increasing equipment availability.

1 CHALLENGE

To localise and eliminate the technical problem arising from irregular machine temperatures, to increase the hydraulic oil change period

2 SOLUTION

Oil and machine diagnostics-based maintenance, lubrication review

3 RESULT

Identification of defect cause, more reliable operation, longer expected oil lifetime

LUBRICATION TECHNOLOGY CONSULTING

Using professional lubrication management lubricants may increase production reliability and profitability and improve product quality; in the opposite case, they can get worse! With years of experience, our expert team at MOL-LUB, is ready to help you with any lubrication-related issue whether it is selecting the right lubricant, solution of a technical problem or other issues related to lubricants in general.

Lubricant selection	Solving special problems	Supporting cost-effective operation
We can help you to set up a lubricant portfolio, optimised for your machinery and fully meeting all technical requirements.	We are at your disposal to resolve one-off and special tasks related to the lubrication of machinery and any other eventual problems.	With the help of our highly specialised machine status monitoring system based on oil diagnostics, our engineers can participate in setting up a status monitoring system for you and will then evaluate relevant oil sample laboratory test results to develop recommendations for required actions based on conclusions drawn during the process.

LUBCHECK OIL AND MACHINE DIAGNOSTICS

LubCheck diagnostics is the world's leading lubricant-analysis process, which helps to identify the degree of lubricant ageing, degradation and any kind of damage to machines well before its consequences might cause significant losses in production and lead to high repair costs.

STATE-OF-THE-ART LABORATORY

MOL-LUB Ltd. has been operating a state-of-the art oil testing laboratory for more than 20 years. The accredited laboratory is a specialist member of WearCheck International and analyses and evaluates several thousand oil samples every year, thus saving its customers significant amounts of money and ensuring more efficient production scheduling.



WITH THE HELP OF LUBCHECK DIAGNOSTICS

- potential breakdowns can be recognised and identified at an early stage
- any hidden depreciation and irregular operation of machines can be identified and tested
- production losses can be reduced or eliminated
- machine repair costs can be reduced
- maintenance will be more precise and easier to plan
- machine oil change intervals can be optimised
- machine reliability can be improved



INDICATORS ARE IMPROVING

- more efficient production scheduling
- optimised lubrication
- significant financial savings
- easy-to-plan maintenance costs

YOUR PARTNER

