

High Temperature Lubrication



High temperature Grease with added Teflon can drive impressive savings in reducing unplanned downtime

One of the major causes of bearing failure can be environmental, especially high temperatures. Other conditions of moist, wet, dusty or dirty atmospheres can also contribute to an early breakdown with bearings.

The most severe example I have encountered were roller shaft bearings enclosed in large toasting ovens. When I first became involved with this equipment I found that an EP (extreme pressure) grease had been used previously, this had a ceiling temperature of 170 degrees C. Measured with an IR meter the surfaces of the shaft and inner journal temperatures were reaching 240 degrees.

Basically the grease was liquifying and acting as a total loss system

The application required a high temperature grease quickly. UK lubrication company INTERFLON were contacted and supplied a HT Grease that had an upper temperature of 240 C with short term temperatures of 270 C applicable. The new lubricant was introduced and the bearing failures started to reduce in number. Then something strange occurred when the incidents started to increase back to prior levels. The lubrication was thought to be the issue again; although I believed differently.

The next time we experienced a bearing issue I took it away for examination, especially interesting was that this one was showing signs of seizure rather than it wearing the bearing elements. On strip down I found that the bearing cavity was baked hard with a chalk like substance. It was obvious that the HTG lubricant had been contaminated with another grease. After further examination of the other bearing sets I found evidence of the incorrect grease being applied.

The return of the failures were having a significant effect. I decided to withdraw all lubrication from the planned maintenance schedule and take it into the ownership of myself and another engineer. This was a program that we continued for 18 months until all the contaminated bearings were either purged or changed out. The failures stopped as I tracked the interventions in the maintenance management system.

During this time I communicated the findings to highlight them to the maintenance group. Then we introduced lubrication schematics with the assistance of INTERFLON UK.

This education then became a known working practice amongst the maintenance engineers who now understood the risks of the incompatibility of greases

The learnings I took from this were that you can have the correct lubricant for the application, but if it is applied in the incorrect manner, with lack of training or information then you will experience equipment damage and failure.

Once the information, training and lubrication schematics were introduced the reliability and availability increased

This drove massive savings in unplanned downtime, improved safety by the removal of work on hot equipment, reduced reactive maintenance cost, reduced inventory spend, increased confidence of the operations team and delivered a sustainable reliability strategy.

Please feel free to comment, or contact Uptime Consultant Ltd if you would like to discuss your lubrication and reliability strategy needs.

Andy



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