LUBE – TIPS: How Particles Affect Fuel Economy
APRIL04

Today's Tip: Rebuild Shops Could Use Wrong Grease

Though it is sometimes overlooked, equipment owners should always specify the grease to be used by the companies that rebuild motors (and other equipment with greased bearings) for them. Otherwise, the grease they use may be incompatible with grease the owner will use to replenish the bearing lubricant. It would be time well spent to visit a frequently used shop, and ask someone on the shop floor to show you how he or she knows what grease to add to your equipment bearings. (Submitted by Van Richard, Sr. Reliability Engineer, Georgia Gulf. Thanks Van!)

Each tip published will earn the sender $75. Submit your tip.

Book Bits: How Particles Affect Fuel Economy

From the "How to Select a Motor Oil for Your Car or Truck"

Sooner or later, wear from abrasive particles and deposits from carbon and oxide insolubles will interfere with efficient combustion in an engine. Valve train wear (cams, valve guides, etc.) can impact timing and valve movement. Wear of rings, pistons and cylinder walls influences volumetric compression efficiency and

combustion blow-by resulting in power loss. Particle-induced wear is greatest when the particle sizes are in the same range as the oil film thickness.

For diesel and gasoline engines, there is a surprising number of laboratory and field studies that report the need to control particles below 10 microns. One such study by General Motors concluded that, "controlling particles in the 3 micron to 10 micron range had the greatest impact on wear rates and that engine wear rates correlated directly to the dust concentration levels in the sump."

More information about the book "How to Select a Motor Oil and Filter for Your Car or Truck"

Lubrication Technician Boot Camp

Noria is planning the first ever Lubrication Boot Camp this summer, geared toward providing practical hands-on training for those on the front lines of lubrication, machinery lubrication technicians. Based around Noria's industry leading training, this 5 week course covers more than just the theory of lubrication, but more importantly provides a practical, interactive forum where the learning pace allows for the details associated with lubrication best practices to be fully explored.

Taught by Noria's team of Technical Consultants, the boot camp covers the three key area of lubrication best practice; lubricant selection, application and re-lubrication, contamination control, including seals, breather and filters selection and best practices, and how to use oil analysis as a predictive and proactive maintenance tool.

Get more information here or e-mail ntrantham@noria.com

Lube-Trivia: How Silicon Gets In Your Oil

Test your knowledge and prepare for ICML lubrication and oil analysis certification.

QUESTION: Name two common sources of silicon in used oil.

Get the answer here.

Q & A: Improving Oil Analysis Results

"We have an oil sampling program at our mill on many of our critical systems. We have installed sampling ports on our hydraulic and oil

circulation systems but rarely see an advance warning of equipment problems. Consequently, we have unexpected failures on sampled systems.

What can we do to improve our results?"

There are many factors that can influence the effectiveness of an oil analysis program, including test slate selection, alarm levels, laboratory quality, sample frequency, sample location and equipment operational factors to name a few. Two common problems that programs encounter are poor test selection and poorly selected sample port locations.

While both of these can confuse the outcome and minimize the effectiveness of analysis, a properly selected sample location is vital for trending changing equipment condition. It is possible to assess lubricant and contamination conditions with samples taken from many locations in most reservoirs. However, sampling for evidence of mechanical problems requires a sample to be collected from a location that contains the highest concentration of 'evidence' of a problem. The evidence is of course the wear metals.

Often samples are collected from a pressure line after a filter, or from a drain line toward the bottom of a reservoir. This is generally because these locations enable low cost sample port installation, easy access and low cost sample collection. However, these common locations are far from ideal because the 'evidence' may be filtered or settled out of the lubricant, leaving the program with little more than fluid properties information. Sample ports must be configured to enable collection of lubricant in close proximity to the mechanical components in question.

We have heard the axiom about factors influencing real estate transactions: The top three factors in maximizing real estate value are location, location and location.

The same concept applies to oil analysis-based equipment condition monitoring programs.

Mike Johnson, Sr. Technical Consultant, Noria Corporation

Submit a question

Post of the Week: Oil Viscosity and Flow

To reward the lubrication and reliability community for its participation in the Noria Message Boards, we've started the Post of the Week award. Every week, we award one lucky member $50 (USD).

This week's award goes to:

Alan Wallace (Gold Member)

Here's an excerpt from the post:

"The oil could be anywhere between an ISO 22 and an ISO 68 but it depends on the design and specifics of the application. I am going to assume that you are considering an oil cooler to minimize the circulating oil's temperature and hence give a similar viscosity across the changing temperature variations. One thing to remember is that the flow was originally determined by the oils ability to adhere to the ring and this was in part a function of the tackiness or adhesion or surface plating characteristics of the oil. These functions are partially independent of ISO viscosity. Also the oil rings supplied the minimum amount of oil required. As long as the oil doesn't cause an imbalance or an oil whirl or oil whip situation you can't put too much oil into the bearing by simple splash method. So the more you put in the easier it would be to remove the heat, etc."

See the entire post here.

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MRO Today's

"Lean Manufacturing University 2" conference

features case-study presentations from 10 world-class companies: GE, Ford, Whirlpool, etc.

May 25-26 in Cleveland.

Training Calendar

MAY 2004

Machinery Lubrication I
10-11 Cleveland, Ohio
12-13 Lima, Peru
18-19 Point Lisas, Trinidad
18-20 Orapa, Botswana
25-26 Monterrey, Mexico
26-28 Sao Paulo, Brazil

Machinery Lubrication II
12-13 Cleveland, Ohio

Oil Analysis I
5-6 Orapa, Botswana
19-20 Buenos Aires, Argentina
19-21 Daegu, South Korea
24-25 Austin, Texas
24-25 Barcelona, Spain

Oil Analysis II
26-27 Austin, Texas
26-27 Barcelona, Spain

Oil Analysis for Engineers
6-7 Sunninghill, Johannesburg, South Africa

JUNE 2004

Best Practices for Machinery Lubrication
9-11 Bangkok, Thailand

Machinery Lubrication I
7-8 Chicago, Illinois
8-10 Madrid, Spain
16-17 Antofagasta, Chile
22-24 Francistown, Botswana
28-29 Chester, Cheshire, United Kingdom

Machinery Lubrication II
9-10 Chicago, Illinois
June 30 - July 1 Chester, Cheshire, UK

Oil Analysis I
7-8 Francistown, Botswana
15-16 Sowa Town, Botswana
16-18 Gdansk, Poland
21-22 Chester, Cheshire, United Kingdom

Oil Analysis II
23-24 Buenos Aires, Argentina
23-24 Chester, Cheshire, United Kingdom

Técnicas de Lubricación
30 León, Mexico

Análisis de Aceite para Equipo Móvil
28-29 León, Mexico

Entire training calendar | Course links

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