Customer Testimonial

LEAP℠ Oil Analysis Program

Cup Manufacturing Company in the Southeast U.S.

Cone Drive Gearbox

- **Identified wear metals and problematic oil mixing**
- **Taught customer how to read and understand results, providing helpful analysis rather than just a stack of reports**
- **Saved $26,552 in labor and equipment during first four months**

Customer Profile

A cup manufacturing company located in the Southeast U.S. produces single-use products for beverages in the retail and food service markets.

Application

The manufacturer uses Cone Drive gearboxes to turn the cup-making machine.

Challenge

The company was losing the main Cone Drive gearboxes at an average rate of one per month at a cost of $6,500 per gearbox, resulting in an annual equipment loss of $78,000. In addition, it took two men six hours to take an old gearbox out and replace it with a new Cone Drive. The new maintenance manager wanted to reduce his equipment downtime and increase his plant's production.

Solution

The maintenance manager asked Mark D. Jones, LE lubrication consultant, if he could help. Mark's first recommendation was to pull oil samples on nine Cone Drive gearboxes and a new sample of the Chevron HiPerSYN® 320 Oil. Mark explained to the customer that – using LEAP Oil Analysis – the samples would report viscosity, wear particles, additive package, water and ISO cleanliness level. The next step would be to check the manual and ensure that the correct lubricant was being used.

A significant aspect of the LEAP Oil Analysis Program is the LE consultant walking the customer through the report, explaining the results and teaching the customer how to read the report. When the customer's reports came back within a week, Mark showed the maintenance manager that two different types of oils were being used, and that the oils were being mixed. Cone Drives require either an ISO 460- or 680-grade synthetic oil due to the constant heat used during production. The customer had been using an EP gear oil and a Chevron ISO 320-grade synthetic oil. The Chevron oil could not hold up to the load and heat, and was breaking down by itself. When the two oils were mixed, the oil collapsed completely.

Armed with this information from the LEAP Oil Analysis, Mark recommended to the customer that all the gearboxes be flushed with LE's Monolec® R&O Compressor / Turbine Oil (6405) at no load, and then drained. After the flushing, he recommended the use of LE's Monolec Synthetic Industrial Lubricant (9460) in the Cone Drive.

Results

In the first four months after switching to the LE oil, the manufacturer lost no more cone drives. This saved the company $26,000 in cone drives and $552 in labor ($23 per hour), for a projected annual savings of $78,000 in equipment and $6,624 in labor.

The customer is pleased with the results and has made additional reliability improvements, including the installation of Esco oil sight glass levelers and gearbox adapter kits for the addition of desiccant breathers and off line filtration..

UNIT ID
L6 RIMMER CONE DRIVE
SECOND ID
SHV40A025-7A
UNIT TYPE
WORM GEAR
APPLICATION
PLASTICS

COMPANY INFORMATION

ACCOUNT NUMBER	59300009190023
DATE SAMPLED	08/01/09
DATE RECEIVED	08/10/09
DATE COMPLETED	08/12/09
TRACKING #	09079S01198
MANUFACTURER/MODEL	
LUBE MFR	CHEVRON
LUBE TYPE - GRADE	HIPERSYN OIL ISO 320
MICRON RATING	0
FILTER TYPE	NONE
SUMP CAPACITY	2.00
HYD SYSTEM PRESSURE	0
FLUID ADDED	

OVERALL SEVERITY OF REPORT
based on comments, not individual flags

ACTION SUGGESTED

0	1	2	3	4
NORMAL		ABNORMAL		CRITICAL

LAB #	LOCATION	ANALYST
264316	I	RNF

FLUID ANALYSIS REPORT - 800-537-7683

COMMENTS: Particle Count is at a SEVERE LEVEL; Viscosity is SIGNIFICANTLY LOW; Flagged additive levels are different than what should be present for the lubricant that is identified for this unit. (This does not imply that the lubricant does not meet proper API, SAE, or ISO classifications.); Is the lubricant manufacturer, type and/or grade correctly identified for this unit; Worm gear metal is at a MINOR LEVEL; Abrasives (silicon/dirt) are at a MODERATE LEVEL; Aluminum is most likely in the form of alumina/silica (Dirt); ACID NUMBER is SLIGHTLY HIGH; Lubricant change acknowledged;

	WEAR METALS PPM											CONTAMINANT METALS - PPM			MULTI-SOURCE METALS - PPM						ADDITIVE METALS PPM				
SAMPLE #	IRON	CHROMIUM	NICKEL	ALUMINUM	COPPER	LEAD	TIN	CADMIUM	SILVER	VANADIUM	SILICON	SODIUM	POTASSIUM	TITANIUM	MOLYBDENUM	ANTIMONY	MANGANESE	LITHIUM	BORON	MAGNESIUM	CALCIUM	BARIUM	PHOSPHOROUS	ZINC
1	123	0	3	35	446	6	54	0	0	0	55	61	3	4	3	1	0	1	0	0	9	1	455	187

SAMPLE #	DATE SAMPLED / DATE RECEIVED	UNIT TIME / LUBE TIME	LUBE CHG	FILTER CHG	FUEL GC	SOOT Vol.	WATER Vol	VIS 40C CS	VIS 100C CS	TAN Total Acid	TBN Total Base	I-R OXIDA	I-R NITRA	ISO CODE	4 MICRON	6 MICRON	10 MICRON	14 MICRON	21 MICRON	38 MICRON	70 MICRON	100 MICRON
1	08/01/09 / 08/10/09	1YEAR / 1YEAR	Y	U				208		0.55				26/26/25	445006	358491	317396	261549	99999	28490	1620	211

SAMP #	WATER KF PPM
1	309

Comments are advisory only and are based on the assumption that the sample and data submitted are valid. Missing lube or unit time limits the evaluation. No warranty is expressed or implied.

Thank you to the management and maintenance team, and to Mark D. Jones, LE lubrication consultant (pictured), for providing the information used in this report.

LEAP℠ is a service mark and Monolec® is a registered trademark of Lubrication Engineers, Inc. HiPerSYN® is a registered trademark of Chevron Products Company.

Based on actual user experience. Individual results may vary. Not intended to supersede manufacturer specifications.

SIC 2675
LI70791 05-10

300 Bailey Avenue ◉ Fort Worth, TX 76107 ◉ Fax: 800-228-1142
LE operates under an ISO 9001 Certified Quality System.

www.LElubricants.com
800-537-7683