

Customer Testimonial



Duolec® Vari-Purpose Gear Lubricant (1606)

Tower Components, Inc. – Ramseur, N.C.

Koellman Gearbox

- *Reduced operating temperatures 20 to 25°F*
- *Dropped amp usage 3/4 to 2 amps*
- *Extended drain intervals from 6 months to more than 18 months*

Customer Profile

Tower Components makes PVC and plastic components used in cooling towers for the power industry all across the United States and worldwide.

Application

A 90 HP, American Kuhne extruder, model UNEX 6.1, with a Koellman gearbox is used to extrude and produce polyethylene OPTI-BAR for cooling towers.

Challenge

Eric Branch, maintenance manager, was interested in longer drain intervals and the possible energy reduction that could be realized.

LE Solution

Jeff Boyles, LE lubrication consultant, met with Eric in July 2006 and explained the advantages of using LE lubricants. Jeff performed an on site inspection of the equipment to verify proper lube application. Upon closer examination, he discovered the OEM plate on the equipment recommended AGMA 6 EP. The local supplier they were using had been given the specs, but had sent AGMA 5 EP gear oil instead. Eric didn't realize the difference at the time.

Jeff recommended Almasol® Vari-Purpose Gear Lubricant (605), which is formulated for heavy-duty service in transmissions, differentials and industrial gearing. Almasol 605 has extreme pressure (EP) characteristics, is long lasting, water resistant and non-foaming in service. It is very adhesive, protects against corrosive wear and can reduce overheating.



In August, Eric ordered a 420 lb drum of Almasol 605, a LEAP Oil Analysis Kit and a vacuum pump.

Results

In early October, Eric took oil samples of the oil to verify the current condition of the oil and equipment. He also recorded amp and temperature readings before the change out. The old oil was drained and replaced with Almasol 605. He took new amp and temperature readings of the new Almasol 605 oil. The operating temperature had dropped 20-25°F and the amp usage dropped 3/4 - 2 amps, depending on the material being run. This improvement in performance had occurred even though the new oil was a higher viscosity than the old oil it replaced. Eric plans to perform oil analysis after six months and use the results to extend the oil drain intervals to 12 to 18 months or more, rather than the previous six months.



The following formula was used to find the cost savings of the unit's electrical consumption. This is the same formula used by the local utility company.

$(\text{volts}/1000) \times \text{Amperes Saved} \times 1.73^* = \text{kW Savings}$
 $\text{kW Savings} \times \text{Hours of Operation Per Year} = \text{Annual kWh Savings}$
 $\text{Annual kWh Savings} \times \text{Electrical Rate} = \text{Annual Electrical Savings}$
*Conversion Factor for a 3-Phase Power Source

At 3/4 Amp Drop:
 $(480/1000) \times 0.75 \times 1.73 = .6228$
 $.6228 \times 4950 = 3082.86$
 $3082.86 \times \$0.0619 = \190.82

At 2 Amp Drop:
 $\$190.82 \div 0.75 \text{ Amp} \times 2 \text{ AMP} = \508.85

Almasol 605 saves between \$191 to \$508 per year in electrical consumption alone.

In addition to the electrical savings, Eric can expect equipment life to be extended due to reduced friction on the internal components.

Eric commented, "I am very pleased with the performance of the product."

2009 update: Earlier in the year, Eric was promoted to manager over maintenance of the plant and equipment. Chad Marley was moved to Eric's old position, maintenance manager. Chad took oil samples of the extruder gearbox after 18 months. The oil was still in good condition and recommended to continue, which they did. Another oil sample will be taken in 6 to 8 months to monitor oil and machine condition.

Note: Chad is still using Almasol Vari-Purpose Gear Lubricant (605). He will have to replace the Almasol 605 with the new Duolec® Vari-Purpose Gear Lubricant (1606) when change is recommended by oil analysis.

Other Products Used

- H1 Quinplex® Penetrating Oil & Lubricant (4058) for chains
- Monolec® Hydraulic Oil (6110) in the extruders
- Monolec® R & O Compressor / Turbine Oil (6404) for vacuum pumps
- Multilec® Industrial Oil (6802) for the compressors

Thank you to Eric Branch and Chad Marley, maintenance managers, and to Jeff Boyles, LE lubrication consultant (pictured), for providing the information used in this report.



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