



Xpert™ Services

Xpert™ Energy Savings Assessment

Reduced Friction Leads to Reduced Energy Costs, Enabling Substantial Savings Across All Applications

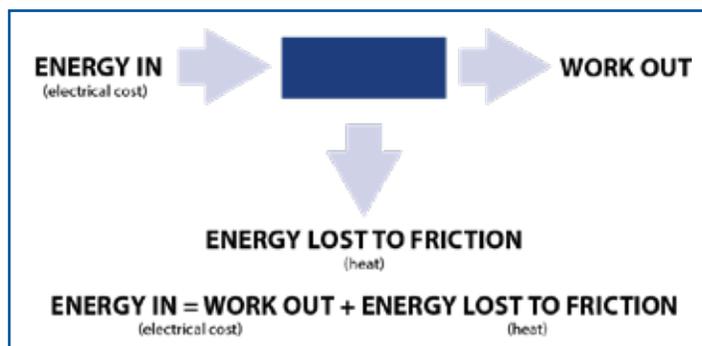
For most manufacturers, better lubrication practices can contribute to dramatic energy savings. The cost of electricity at an average industrial facility –76 percent of operating costs according to the U.S. Department of Energy – far exceeds the cost of lubricants and other reliability improvements, making a lubrication reliability program an extremely cost effective solution.

With our Xpert™ Energy Savings Assessment as a blueprint, Lubrication Engineers has helped our customers shave electrical energy costs across the board on equipment including air compressors, gearboxes, electric motors, refrigeration systems, pumps, hydraulic systems, and ball mills. In addition to a healthy impact on the bottom line, a lubrication reliability program can contribute to an organization's sustainability efforts.

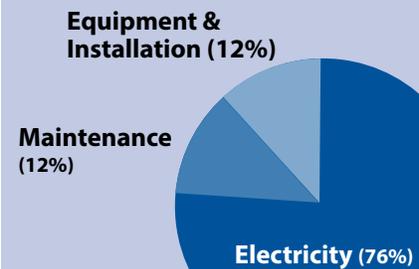
Friction Robs Electrical Energy

The law of conservation of energy states that energy cannot be created or destroyed, but merely converted from one form to another. Friction can result from metal-to-metal contact that occurs between two opposing surfaces moving relative to one another. Even between highly machined surfaces, asperity contact occurs. Fluid friction can also cause energy loss. The greater the friction, the more energy is required to move the surfaces, which results in higher electrical costs.

The use of enhanced high-performance lubricants can reduce this friction, which means less electricity is required to drive the application.



Industrial Operating Costs



Source: U.S. Dept. of Energy



Generation of compressed air consumes approx. 10 to 30% of total electricity at an average industrial facility, according to the U.S. Dept. of Energy, with the efficiency rating of an air compressor as low as 10%.



Documented Success

Following our energy savings assessment and implementation of lubrication reliability improvements, LE has documented typical energy savings for three of the most common pieces of equipment:

- Gearboxes 10-15%
- Air Compressors 10-12%
- Electric Motors 5%

How LE Lubricants Help Conserve Energy

When it comes to reducing friction and saving energy, the quality of the lubricant matters. LE formulates each of its high-performance lubricants for specific applications; this includes the use of proprietary wear-reducing additives, including Monolec®, Duolec® and Almasol®, all of which can minimize metal-to-metal contact and reduce wear. They can be found in many LE lubricants.

- **Monolec** creates a single molecular lubricating film on metal surfaces, vastly increasing oil film strength without affecting clearances. It allows opposing surfaces to slide by one another.
- **Duolec** is dual-acting; it provides both wear-reducing and extreme pressure protection. Designed specifically for use in LE gear lubricants, it increases oil film strength and is temperature activated to provide a protective layer that smooths metal surfaces.
- **Almasol** is a solid additive able to withstand extremely heavy loads, chemical attack and temperatures up to 1,900°F (1,038°C). It is attracted to metal surfaces, forming a microscopic layer but not building on itself or affecting clearances.

Selecting the best lubricant for each application – one that protects equipment from metal-to-metal contact while limiting fluid friction – requires a combination of the best fluid and the right viscosity. LE can help you identify the best lubricant for protecting your equipment and conserving energy.

Getting Started

Our experienced, knowledgeable consultants will visit your facility to help you identify a few pieces of critical equipment and prepare for amperage testing. Next up they will gather data and average out the companywide savings opportunities based on the reductions seen in the tested equipment. The result will be a valuable blueprint for achieving your energy savings and lubrication reliability goals.

Following the assessment, our experts can train your team and be onsite as you begin the journey. LE's customized, cost-effective program can easily pay for itself within the first year when the recommendations have been implemented. There's no better time than the present to take the first step. What are you waiting for? Let's get started!

Electric Motor Example		
HP Rating	Operation: 40 hrs/week	Operation: Continuous
10	\$60	\$251
50	\$299	\$1,254
100	\$597	\$2,507
200	\$1,194	\$5,015
300	\$1,791	\$7,522
400	\$2,388	\$10,030

Assumptions

- 5% Amperage Reduction
- \$0.10 kWh Electricity Rate
- 3-Phase 230v Motor w/ 75% efficiency



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