

Lubrication Best Practices Enhance Pellet Mill Uptime

Lubrication Reliability Program Leads to Increased Profits

With pellet mill applications, the constant presence of heat, high pressure, contaminants, and in some cases, moisture, work to break down the thin lubricating film protecting the equipment from metal-to-metal contact. Once that breakdown occurs, increased levels of wear and corrosion are generated and expensive unplanned downtime results.



LE can work with you to improve the performance and lifespan of your pellet mill equipment over typically accepted limits. With our field experience, technical expertise and comprehensive line of enhanced lubricants, we can help you understand your current lubrication practices and uncover suffering points that can be corrected such as:

- Over or under lubrication
- Using inferior lubricant for the application
- Failing to prevent or remove contaminants
- Relying on inconsistent manual lubrication when an automatic system could produce better results



We start by gathering information with our *Pellet Mill Data Collection Form*. After assessing your situation, we provide a phased improvement plan – based on your budget – to extend component life, reduce lube consumption, improve safety, and reduce costs.

Case Study

Customer

- Producer of wood pellets for renewable fuel
- Experiencing unacceptable bearing life, low productivity and excessive grease consumption with pellet mill

LE Solution

- Almasol® High Temperature Lubricant (1251) - Long-lasting, nonmelting NLGI 1 grease for use in centralized automatic lube systems.

Results

- Dramatically increased mill uptime
- Cut grease consumption by two-thirds, saving more than \$5,550 per year on grease alone
- Extended bearing life by four times and counting, saving tens of thousands on rebuilds

Components of an Effective Pellet Mill Lubrication Program



Equipment Assessment



Grease Selection



Automatic Lube System



Gear Oil Selection



Visual Monitoring / Contamination Removal



Contamination Exclusion

Identify the suffering points

Move forward with proven solutions for extending equipment life



Short Component Life, Equipment Failures & Other Problems

Pellet mill operations often overgrease with the intention of better lubricating the bearings, they may use an inadequate amount of grease or use a grease with the wrong base oil to effectively lubricate the bearings. Overgreasing or using the wrong type will contribute to a larger-than-needed amount of grease purchased each year. Contaminants that aren't prevented or removed also cause failures and unplanned downtime.



LE Solution: An onsite **equipment assessment** is needed to ensure the proper lubricants are used, as well as the proper amount, relubrication interval and application method. An LE consultant will gather information onsite using our *Pellet Mill Data Collection Form*, identifying make and model of the pellet mill, bearing part numbers, operating parameters, and current lubrication method. Based on the load, temperature, speed and environment for each piece of equipment, our Technical Services group will then recommend the most advantageous lubricant, lubrication interval, quantity, and application method. Along with this technical report, a cost analysis will be provided to determine if the changes will make sense financially.



Inadequate Grease Protection

Are you obtaining the L10 (or B10) life of the roll and quill bearings in your pellet mill or are they wearing out prematurely? In a 24/7 operation, lost production time is gone forever and cannot be made up. Failed bearings are a common yet avoidable problem in pellet mills; the right grease can make a huge difference. It has to be able to handle difficult conditions such as severe levels of particulate contamination, high heat, extreme pressures, and moisture – all of which affect the grease's ability to lubricate effectively.



LE Solution: **Almasol® High Temperature Lubricant** has been formulated for bearings operating in or near heat-generating equipment and subject to temperatures that cause ordinary greases to melt and run out of the bearing. This long-lasting, nonmelting grease has the right base oil viscosity and wear-reducing additives to significantly resist oxidation, vaporization and bleeding out of the bearing. It is used successfully in pellet mills around the world, and is proven at extending regreasing intervals and reducing grease consumption. For food-grade applications, **H1 Quinplex Food Machinery Lubricant** and **H1 Quincal Syn FG Grease** are recommended.



Manual Lubrication

Manual lubrication can be unreliable; additional maintenance responsibilities can lead to overgreasing and undergreasing, both of which are detrimental to bearing life and lead to premature failure. Lubricants applied manually tend to be applied on an inconsistent schedule and not necessarily when the bearing requires it; results can be hit or miss. Manual lubrication can also be unsafe due to lube points being in hard-to-reach locations or lubrication being done when the machinery is in operation.



LE Solution: **Automatic lubrication systems** are precise; they apply the right amount of lubricant, at the right time, in the right place, to ensure maximized bearing life. They keep the system closed and sealed from contaminants, while keeping operators safe. LE's Xport Automatic Lubrication Systems have been designed with pellet mills in mind and are effective at eliminating errors and extending the useful life of the bearings.



Xtract Contamination Removal

Xtract Oil
Sight Glasses



LE Enhanced Lubricants

High-Performance
Gear Oils



H1 & High-
Temperature
Greases

Xpert Services

Full Circle of Reliability

Armed with knowledge of best practices and all of the necessary tools to get the job done, your local LE lubrication consultant will help you plan and implement a world class lubrication reliability program to protect your assets.

Xpert
Training



Xpert Equipment
Reliability & Assessment

Xport Lubricant Application

Xport Centralized Automatic
Lubrication System



Xamine Oil Analysis



Xclude Contamination Exclusion





LE's state-of-the-art manufacturing facility, technology center, warehouse and primary office is located in Wichita, KS, with regional distribution out of Knoxville, TN, and Las Vegas, NV. Additional support functions are located in Fort Worth, TX. The company's international presence includes distributors in more than 60 countries.



LE Helps Protect Your Equipment & Grow Your Bottom Line

Leaders in Lubricants Since 1951

Does your lubricant supplier do all of this?

- ✓ Professional, onsite equipment reliability assessment
- ✓ Comprehensive lubricant line (industrial oils, engine oils and greases)
- ✓ Web-based oil analysis, with results reviewed by experts
- ✓ Storage systems, including stackable bulk units
- ✓ Visual identification, including tags, labels, color-coding and wall charts
- ✓ Handling and transfer equipment, including portable transfer containers, clear grease guns, grease pumps and lube reels
- ✓ Single- and multi-point automatic grease lubricators and lubricating systems
- ✓ Contamination exclusion and removal tools, including oil reservoir sight glasses, desiccant breathers and filtration equipment
- ✓ Local, factory-trained specialist available 24/7



Lubrication Engineers, Inc. is the total solutions provider for lubrication reliability. We work closely with our customers to learn about their specific equipment and lubrication needs, and then help them create a world class lubrication reliability program that provides equipment protection and enhanced profits.

We start with an onsite equipment assessment. A trained, local lubrication consultant provides a detailed report recommending lubricants, application methods, usage amounts, and drain or lube intervals.

LE's line of high-performance lubricants – manufactured in the U.S. and made of highly refined base oils and proprietary additives – far exceed the performance of conventional lubricants in a wide variety of industrial and automotive applications. In addition, your LE consultant can offer you several other best practice products and services to ensure the effectiveness of your program, including solutions for oil analysis, storage, handling and transfer, contamination exclusion, contamination removal, education and training.



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