Lubrication Program Combats Challenges of Belt Conveyor Systems

Some of the toughest maintenance challenges at manufacturing facilities are presented by large belt-driven conveyor systems. These critical assets require gear oil for the gearbox, electric motor grease for the motor, and grease for multiple lubrication points – mostly for bearings. Improper lubrication and contamination can cause premature wear, or even worse, create unplanned downtime.

Recurring challenges include dirt, water, heavy loads, vibration and extreme temperatures – and these are even more severe when the system is located outside. Some of the common lubrication challenges that maintenance teams face in trying to keep conveyors properly lubricated are multiple lube points, long walking distances, and the need to climb ladders and stairs. In addition, many lube points are in hard-to-reach places – creating safety concerns. All of this means compliance with OEM-recommended relubrication intervals is difficult to achieve.

To combat these challenges, LE recommends a comprehensive lubrication program, consisting of gear oil selection, grease selection, grease application, contamination exclusion, and visual monitoring / contamination removal.

Understanding the Application

It is important to first identify what type of lubricant the OEM recommends. Next, use the LETS strategy to make the recommendation that best fits your situation.

Load
- Is the load light, moderate or heavy?

Environment
- Is moisture present?
- Are fine particulates present?

Temperature
- What are the actual temperatures to which the application and lubricant will be exposed, from startup to normal operating temperatures?

Speed
- How fast does the conveyor travel: slow, moderate, fast?
- What is the bearing rpm?

Answering these questions will help you select the right lubricant and reliability solutions for properly caring for your equipment.

Components of an Effective Conveyor Lubrication Program
Identify the suffering points
Move forward with proven solutions for extending equipment life

Incorrect Gear Oil Selection
Inferior or incorrect gear oil can lead to equipment problems and unplanned downtime. For example, some gear oils become foamy and lose performance in the presence of moisture. Another problem is when extreme pressure gear oil is used in gearboxes with internal backstops. EP chemistry will not allow the clutch or sprag mechanisms to properly engage, resulting in the mechanism slipping.

LE Solution: Choose the gear oil best suited to your application – using your LETS answers – ideally one designed to combat the effects of high temperatures, water, contaminants and heavy loads. A long-lasting, nonfoaming, turbine-quality oil with anti-wear additives will ensure that the equipment works without interruption.

For gearboxes with external backstops, the following EP gear oils, which contain our proprietary Duolec® additive, are recommended:
- Duolec® Vari-Purpose Gear Lubricant (1601-1610)
- Duolec® Syn Gear Lubricant (9815-9846)
- Duolec® PAG Gear Lubricant (9705-9707)

For gearboxes with internal backstops, the following non-EP gear oils are recommended:
- Multilec® Industrial Oil (6801-6807)
- H1 Quinplex® Syn FG Gear Oil (4150-4460)
- Monolec® Syn Industrial Oil (9032-9150 & 9220-9460)

Incorrect Grease Selection
If the wrong grease in used, the reliability and lifespan of your equipment may suffer.

LE Solution: In most cases, you need an EP grease that can withstand heavy loads, maintain performance in a broad range of operating temperatures, seal out water, protect from corrosion and wear, and will not emulsify when water is present.

Monolec® Extend EM Grease (1282) is recommended for electric motors, and the following high-performance EP greases are recommended for other conveyor applications:
- Almaplex® Industrial Lubricant (1274-1275)
- H1 Quincal™ Syn FG Grease (4070-4072)
- Monolec® Multiplex Lubricant (4622)
- Monocal® GP Grease (1499)

Problems with Grease Application
Common problems include overgreasing, undergreasing and not greasing at all. Many operators have to manually grease in hard-to-reach or unsafe areas.

LE Solution: Your LE consultant can help determine correct lubrication amounts and intervals, and then help you choose which single- or multi-point lubrication system will work best in your application. Automatic systems are precision lubrication tools that take the guesswork out of maintenance by supplying the right amount of grease for the application at the right time 24/7. They reduce labor time, enhance safety, reduce equipment failures, and keep out contaminants.
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.

Full Circle of Reliability

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LE Helps
Protect Your Equipment & Grow Your Bottom Line

Leaders in Lubricants Since 1951

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.

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