



### SUGAR MILL OPERATION

Need answers? Looking for technical support? Having an issue with your equipment? Need a lubricant analysis? Let our problem-solving experts handle your toughest issues. Ask our panel of lubricant experts about your oil and grease questions.

Email us at [Expert@royalmfg.com](mailto:Expert@royalmfg.com) or visit our website to fill out a brief questionnaire that will help us answer your questions in a timely fashion.



HIGH PERFORMANCE OILS & GREASES

**TREAT YOUR MILL LIKE A KING**

### SPECIALTY LUBRICANTS CREATED TO COMBAT CRITICAL CONDITIONS

As one of the largest lubricant manufacturers in North America, Royal has been developing oils and greases for over 100 years. We understand what it takes to formulate unique products for equipment that needs to operate under the most critical conditions.

### SUGAR MILL PROCESSING

Unlike other industries, processing of sugar cane involves severe operating conditions and poses some unique challenges for lubrication engineers. Sugar crushers are the heart of any mill and the journal roller bearing is responsible for the mill running smoothly.

These Journal roller bearings are comparatively large in size and run under severe heavy shock and vibration loads. When this type of equipment comes in contact with cane sugar and cane juice, it creates an even more severe and challenging environment to combat rust and corrosion.

Historically, many asphaltic, chlorinated compound based solvents and other unsafe lubricants have been used — which are not recommended for health and environmental reasons, nor do they provide the protections needed to combat corrosion.

Royal's expert research and development team has engineered competitive and environmentally safe lubricants for every application in a sugar mill, providing longer service life and reducing operating costs.



Royal Manufacturing started over 100 years ago by supplying automotive, farm and oil field lubricants in and around Tulsa, Oklahoma. Royal now supplies a full line of extended duty high performance oils and greases, worldwide, that have proven their ability to outperform most lubricants available for mining, construction and industrial equipment. This includes a full line of synthetic oils and greases, food grade lubricants as well as biodegradable lubricants.

Supplying a comprehensive line of lubricating oils and greases to all of the USA and 24 other countries throughout the world, Royal offers the ultimate in high-quality heavy equipment protection.



### NEW ADVANCED FORMULA

### ROYAL PREMIUM SUGAR MILL GREASE

Royal Premium Sugar Mill Grease is specially designed for lubricating sugar mill crusher roll journal bearings, bushings, and open gears.

This high performing grease is based on modified calcium thickeners, encapsulated with overbased sulfonate wafers, and compounded with our Advanced ISOGOLD™ additive technology to combat the most severe operating conditions.

Our new and improved formulation shows excellent mechanical and roll stability (only 2-3% change) in the presence of 20% sugar solution in hot water, and will not wash away even in the presence of over 50% sugar cane juice — indicating that sugar cane juice and hot water will not have a detrimental effect on the performance of Royal Premium Sugar Mill Grease. This product is inert in nature and will not react with copper, bronze, or steel materials. This premium grease is free of asphalt, chlorine, solvents, Moly/Graphite and other undesired chemicals. Its overbased calcium sulfonate wafer-like structure

takes care of heavy shock loads and keeps temperature of the bearings and bushings under control.

#### PRODUCT BENEFITS:

- Outstanding extreme pressure and anti-wear properties
- Meets/ exceeds the performance levels without moly/graphite
- Excellent copper corrosion and rust protection
- Excellent resistance against water and sugar solution
- Inert to bronze, copper and other steel materials
- Application temperature -18°C to 120°C

#### CUSTOMER ADVANTAGES:

- Withstand heavy shock and vibration load
- Chemical and thermal resistant
- Will not leak and wash away in presence of hot water or cane sugar juice
- Spreads smoothly and uniformly on entire contact surface and lubricate effectively
- Control bearing temperature by unique heat dissipating technology
- Can also be used efficiently in bushings, open gears

#### OUTSTANDING STABILITY TEST RESULTS:

Mechanical and Roll stability in presence of 20% sugar solution only shows 2-3% change.

©2017 ROYAL™ Mfg Co Lp  
SG2017

**CONTACT US TODAY FOR LUBRICANT ANALYSIS TESTING**

516 S. 25TH WEST AVE TULSA, OK 74127 TEL. 918.584.2671 9998 DOERR LANE SCHERTZ, TX 78154 TEL. 210.651.7322

AMERICA'S OIL SINCE 1914

ROYALMFG.COM

INFO@ROYALMFG.COM



## MULTI-PURPOSE GREASE

### ROYAL UTILITY GREASE

NLGI GRADE 2, 1, 0

These Lithium based EP greases are the perfect choice for general purpose sugar mill lubrication. These greases are excellent for bearing lubrication and they are formulated with a highly refined mineral oil with anti-rust, anti-oxidation and moderate EP properties. Not suitable for journal bearings.

## GEAR OIL

### INLUBE EP GEAR OIL

ISO GRADES: 46, 68, 100, 150, 220

Premium quality, extreme pressure, industrial gear lubricants designed for use in gears and bearings. Available in five different grades, these oils are designed to operate under severe service, heavy load and shock conditions. They are recommended for use in all types of enclosed industrial gear drives, bearings, chain and slides requiring extreme pressure gear oils and have extremely good antifoam characteristics and superior water separation.

**MEETS OR EXCEEDS OEM SPECIFICATIONS**

## HYDRAULIC OILS

### ROZEP AW HYDRAULIC 20K

ISO GRADES: 32, 46, 68

Superior anti-wear hydraulic oils formulated for extended service from the finest high quality base stocks and are further fortified with high performance additives to enhance their capability. They are recommended for use in high-pressure hydraulic systems which utilize vane, piston or gear pumps in addition to rust and oxidation inhibited oils providing excellent performance. Their superior oxidation resistance enables extended oil drain intervals with significant reduction in sludge, varnish and carbon deposits on internal parts, pumps and other internal components.

**MEETS OR EXCEEDS OEM SPECIFICATIONS**

### ROZEP 35K HYDRAULIC OIL

A high performing hydraulic fluid designed for use in mobile equipment hydraulic systems which operate in low temperature conditions. Because of its high dielectric strength, it can be safely used in equipment operating around overhead power lines such as elevated work platforms and man-lifts, minimizing the possibility of electrocution, since it will not conduct electricity should an oil leak occur.

## TURBINE OIL

### CIRRO XS TURBINE OIL

SIEMENS APPROVED: TLV 9013 04, TLV 9013 05 - ISO 32, 46

ISO GRADE: 32, 46, 68, 100

A superior quality rust and oxidation inhibiting turbine oil designed for use in both steam and gas turbines. The ASTM D-943 TOST result of more than 10,000 hours enables it to be used in applications which require very long life where other turbine oils fail. It is recommended for use in steam and gas turbines, including the General Electric Frame 7 units, as well as many pumps, compressors, oil circulating systems, centralized oil mist systems and other applications requiring a top quality, long life turbine oil.

## FOOD GRADE GREASE

### ROYAL CROWN TECH ULTRA GREASE

NLGI GRADE: 2, 1, 0, 00

A new generation H1 Food Grade Grease, designed specifically to handle the most severe conditions of applications in food-grade plants. This overbased calcium sulfonate based grease provides the added protection of our Advanced ISOGOLD™ Technology, to help increase the life of your equipment and reduce costs. This innovative grease outperforms other food grade greases, including calcium, clay and aluminum complex base greases. This product is suitable for journal bearings, bushings and gear applications.



KOSHER  
CERTIFICATION  
SERVICE



## SPECIALIZED GREASES FOR OPEN GEAR AND WIRE ROPES

### ROYAL ULTIMATE 1000 GREASE

NLGI GRADE: 0, 00

Royal Ultimate 1000 is one of our King Grade greases, capable of handling heavy loads for large and medium size open gears with 12th FZG stage pass and excellent adhesion characteristics. Our specialized grease is based on aluminum complex soap thickener with excellent sprayability characteristics. This product is free from asphalt, chlorine, lead and solvents, and contains a combination of graphite and molybdenum disulphide.

### ROYAL MOBILA GREASE

This product is an economical substitute for open gears and wire ropes — free from chlorinated compounds and solvents. This product does contain asphalt.



## WORLD-CLASS SUGAR MILLS TRUST ROYAL TO KEEP THEIR MACHINES RUNNING EFFICIENTLY

### Advantages of Royal's Greases and Oils

- Provides superior protection against varnishing, rust, and excessive wear, while extending equipment life and lowering maintenance costs.
- Excellent water resistant properties.
- Extreme pressure protection.
- No breakdown or run-out over long running equipment during high temperatures
- Protects metal surfaces during stop-run conditions.
- Excellent anti-oxidant and anti-foam agents, rust and corrosion inhibitors.
- Reliable protection against fluid deterioration with superb base oils and additive performance.
- Prevents pump cavitation's, noisy and erratic operation providing more efficient operations
- **Extended Drain:** Outstanding oxidation resistance enables extended oil drain intervals, with significantly reduced sludge, varnish and carbon deposits on exhaust valves and other compressor components. Reduces the necessity for valve cleaning and other maintenance.



## ADVANCED ISOGOLD™ TECHNOLOGY

Royal's Advanced ISOGOLD™ Technology is a proprietary blend of high performance additives engineered to protect and lengthen the life of equipment.