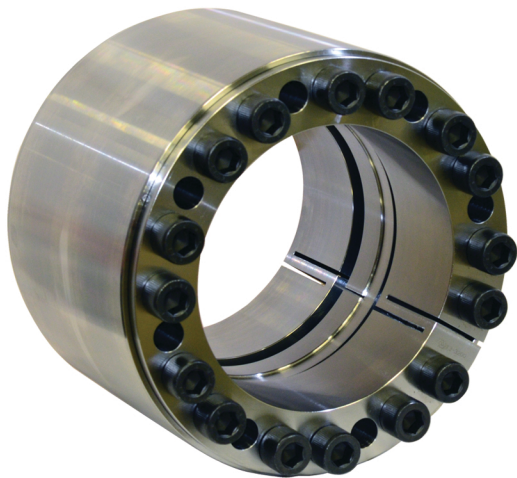


## Optimal Solution for Mining Belt Conveyor Systems

*Climax keyless locking devices provide advantages over keyed connections. Mining OEMs incorporate keyless connections in equipment design.*



Drum pulleys, especially head or tail pulleys, using traditional keyed connections introduce several compromises. Whenever a shaft is keyed, it must be oversized to account for the loss of effective cross section. This adds weight and cost not only to the shaft, but to every component on the shaft. Once assembled, keyways are susceptible to fretting, corrosion, and allow backlash. QD, XT, or taper-lock bushings do not transmit reversing bending moments and are susceptible to shaft fatigue failure originating at the keyways. Climax KLDs eliminate the need for keyways reducing downtime and loss of profit while allowing the use of smaller shafting and components. KLDs provide a longer life for both mine duty and engineered class conveyor pulleys.

### For Rotating Applications:

- Keys, keyways, and set screws prone to shaft damage and keyway fretting
- Splines, prone to fretting and require expensive machining
- Shrink or press fits that are difficult and costly to install and remove
- QD/Taperlock bushings use keyways where wallowing occurs causing fretting and backlash
- Hex nut keyless bushings are not self-locking and dynamic loading can loosen the connection

Mining machinery is constantly subjected to some of the harshest environments and torturous loads for which an engineer can design. Climax KLDs provide high torque, bending, and axial thrust capacities, eliminate axial movement during installation, and provide for a mechanically designed system that eliminates the need for keyways. KLDs are installed and removed using simple hand tools allowing for easy field serviceability.

Climax offers an extensive line of keyless locking devices from stock and has the ability to engineer custom designs.



RBC has been producing bearings in the USA since 1919. In addition to unique custom bearings, RBC offers a full line of standard industrial and aerospace bearings, including:



### Tapered Roller Thrust Bearings

Case-hardened tapered roller thrust bearings for oilfield top drives and swivels. Available in full complement, maximum capacity versions.



### Thin Section Ball Bearings

Standard cross sections to one inch. Bore sizes to 40 inches. Stainless steel and other materials are available. Seals are available on all sizes and standard cross sections. Super duplex configurations.



### Cam Followers

Standard stud, heavy stud, yoke type, caged roller followers. Patented **RBC Roller**® cylindrical roller cam followers, **HexLube**® universal cam followers, airframe track rollers.



### Cylindrical Roller Bearings

Cylindrical roller bearings designed for mud pump pinion and eccentric positions. Fully interchangeable to industry standards.



### Needle Roller Bearings

**Pitchline**® caged heavy duty needle roller bearings ideal for cross head bearings applications. These double row bearings are available in single row and **Tandem Roller**® versions.



### Commercial Rod Ends

Commercial and industrial, precision, Mil-Spec series, self-lubricating, and aircraft. Sold under the **Heim**®, **Unibal**®, and **Spherco**® names. Available in inch and metric sizes.



### Spherical Plain Bearings

Radial, angular contact, extended inner ring, high misalignment. **QuadLube**®, **ImpactTuff**®, **SpreadLock**® Seal, **CrossLube**®, and self-lubricating bearings. Available in inch and metric sizes.



### Tapered Roller Bearings

Single, double, & multi row versions available for main bearing positions in mud pumps, gear boxes, etc. Bearings are constructed of case hardened steel washers and rollers with bore size of 11" or greater.



### TP Series Bearings

RBC's TP Series cylindrical roller thrust bearings ideal for crane hooks, oil well swivels, winch systems, and gear boxes. Fully interchangeable with industry standard offering.



### Keyless Locking Devices

Mechanical bushings used to connect power transmission components onto rotating shafts. Without the use of keyways, KLDs eliminate the problems associated with backlash including fretting, corroding, and wallowing.



### Lubron® Bearings

**Lubron**® self-lubricating bearings designed and custom manufactured in most any size, material and bearing configuration. Applications include hydro power and water control, nuclear power generation, infrastructure, architecture, offshore marine, industrial, machinery and heavy equipment.



### Shaft Collars

Used to position or locate a component on a shaft. Made from mild steel, type 303 or 316 stainless steel, aluminum, or acetal. Available in inch and metric sizes.



### Self-Lubricating Bearings

Radial, thrust, rod ends, spherical bearings, high temperature, high loads. Available in inch and metric sizes. **Fiberglide**® self-lubricating bearings.



### Specials

RBC manufactures many specialty bearings for the aerospace, oil and energy, semiconductor equipment, packaging, transportation, and other industries.



### Ball Bearings

Precision ground, semiground, unground. High loads, long life, smooth operation. **Nice**® branded products are offered in caged and full complement configurations.



### Rigid Couplings

Shaft couplings serve as components to time, join, or align shafts at lower speeds and torque, especially when zero backlash is desired. Made from mild steel with a black oxide finish, type 303 stainless steel, or aluminum. Available in inch and metric sizes.



### PIC Design

Complete line of precision gears, precision hardware, timing belts, pulleys, and linear motion systems. Industries served include industrial, aerospace, defense, medical, robotics and automation, material handling, and assembly. Custom design support for unique applications.