

# Keyless Locking Devices Simplify Maintenance in Traditional Stamping Presses

*Climax Keyless Locking Devices eliminate the use of keyed shafts required when mounting bull gears in mechanical steel stamping presses, providing a shaft-to-bore connection that is reliable, increased durability, and supplies infinite timing capability.*



Bull gears are widely used in traditional stamping presses. After some time the bore of these bull gears will wear out and require maintenance. The typical maintenance approach is often lengthy and consequently affects production and profitability to the manufacturing facility. This process includes welding the bores to enable the plant to machine them back to the required shaft size and finally add a keyway. In addition, the keyed shafting will oftentimes need to be repaired or replaced which can be difficult and time consuming.

Climax provides an exceptional solution that eliminates the need for keyed shafts. Our keyless locking assemblies can be placed in the bore of the bull gear, to lock it to the shaft and provide the necessary torque capacity, while increasing durability, as well as supply infinite timing capability. This keyless solution simplifies the machining required, allows for timing, and provides for infinite service life.

When maintenance is required, KLDs are installed and removed using simple hand tools. Climax carries an extensive line of shaft locking solutions from stock. Our engineers have the ability to engineer custom designs to fit any application challenge you may have.

## For Rotating Applications:

- Keys, keyways, and set screws are prone to shaft damage and fretting corrosion
- Splines, prone to fretting and require expensive machining
- Shrink or press fits that are difficult 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



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**®, **DuraLube**™, 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, semigrind, 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.