



**ROCKFORD BALL SCREW®**  
PRODUCTS & SERVICES GUIDE



# IT'S YOUR MOVE.



# ROCKFORD BALL SCREW®



## ABOUT US

Ian McBain founded Rockford Ball Screw (RBS) in 1973 utilizing his years of experience in the industry with the goals of providing a quality product, on-time and at a competitive price. What started as a family business in the basement of the McBain home grew to a successful leader in the ball screw industry. It has continued to grow and thrive with Linda McGary (McBain) serving as president since 2006.

In 2009, Rockford Ball Screw added linear guide rails and blocks to its product range. Rockford Linear Motion complements Rockford Ball Screw's product line with another linear motion tool. The high-performance product is provided with extremely short lead times, making it a perfect fit for RBS' customers.

Today, RBS is an industry leader in Ball Screws and Linear Guide Rails and continues to serve its customers with a state-of-the-art facility, providing personalized customer service every step of the way. It offers an extensive product family, and one of the largest inventories of ball screw and ACME screw product lines in the industry, including standard and non-standard offerings. Innovative engineering expertise and precision manufacturing processes ensure top performance and reliability in all its products.

**Rockford Ball Screw is an ISO 9001 Registered company, dedicated to continuous improvement and total customer satisfaction.**



- ROCKFORD BALL SCREW PROVIDES MOTION SOLUTIONS TO THE FOLLOWING INDUSTRIES:**
- Building Construction
  - Heavy Lift Industries
  - General Industrial
  - Transportation
  - RV
  - Medical
  - Food Packaging
  - Energy



## CUSTOMIZED EXPERTISE

Rockford Ball Screw has one of the highest levels of customer service in the industry and offers direct access to the RBS tech lab team. Customers have direct access to RBS' Tech Team – sales, development, and engineering teams – to support their requirements.

RBS' Tech Lab is committed to establishing requirements and designing a program for success across the entire design cycle – from prototyping through production. Extensive engineering expertise, specially trained staff, and a state-of-the-art manufacturing facility work in concert to effectively fulfill customer needs – whether they require standard or custom offerings.

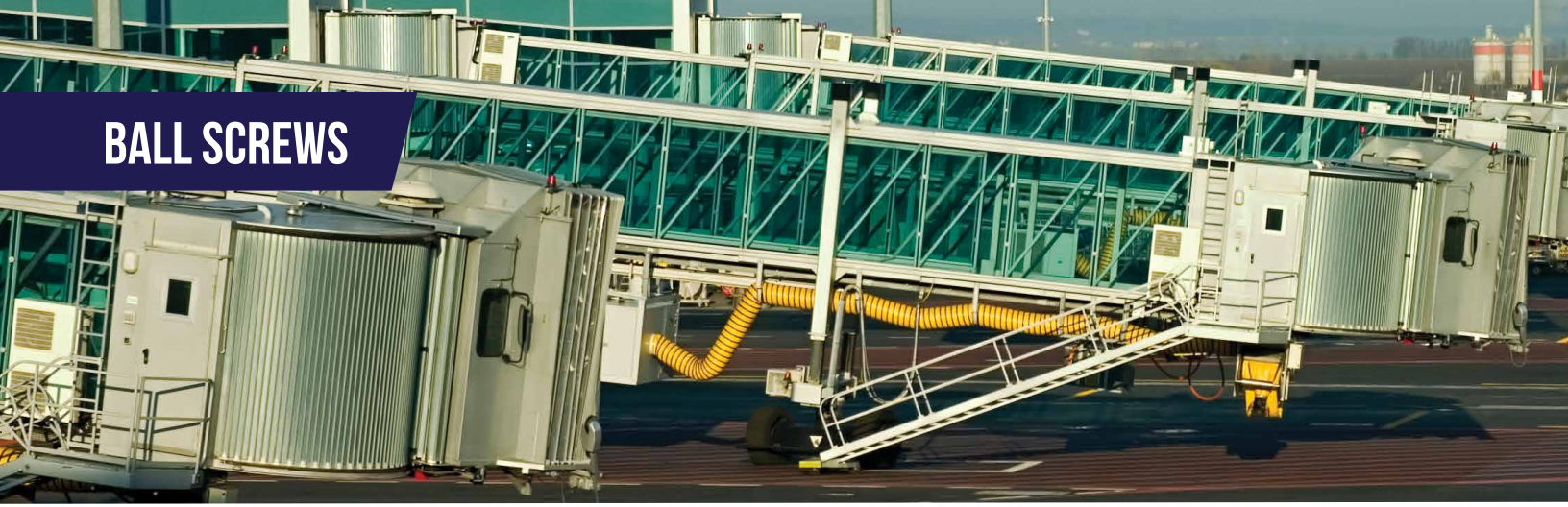
RBS' Tech Team conducts feasibility assessments and challenges themselves to think outside the box to find the best solution. Obstacles are never an issue for the RBS Tech Team, and they go above and beyond to find a solution to the most difficult motion engineering challenges.



# BALL SCREWS



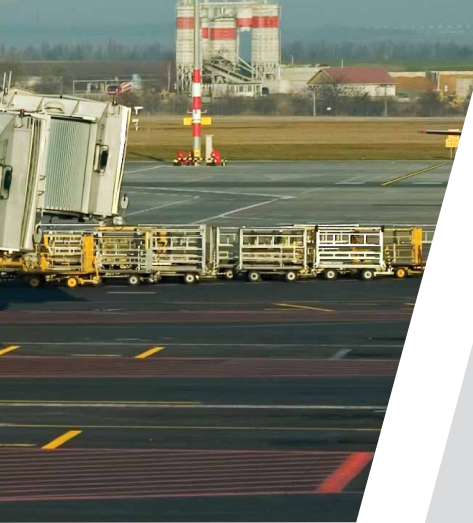
**BALL SCREWS**



# INDUSTRY IN MOTION

AN INTEGRAL PART OF WHAT  
KEEPS MANUFACTURING,  
PRODUCTION AND PEOPLE  
ON THE MOVE.





## STANDARD BALL SCREWS

RBS' Flagship product, the ball screw, consists of a screw that runs on ball bearings. Matching helical grooves on the screw and nut recirculate the bearings, making it an efficient way to convert angular-to-linear motion and vice versa. Ball screws are available in standard and metric sizes.

- Excellent static and dynamic load rating
- RBS stocks 56 ball screw models in a variety of materials including high and low carbon alloy steels & various grades of stainless steel



## FREE WHEELING BALL SCREWS

In addition to the full line of recirculating ball screws, free-wheeling ball screw assemblies are available. The free-wheeling ball screw utilizes a ball cage (retainer) inside the nut, differentiating it from the standard ball screw. As the cage contacts the stop pins in the screw at the ends of the stroke, the ball nut stops linear movement, but the screw continues to rotate (free-wheel). This eliminates the need for limit switches and other types of stops otherwise required, making it a perfect feature for bed or chair actuators, trim tab actuator and electrical switching devices.



# BALL SCREWS



## PRE-LOADED BALL NUTS

Preloaded ball screw assemblies consist of two standard ball nuts joined by an adjustable preload package containing a collar and bevel, or wave springs. As a method of eliminating backlash in a ball screw assembly, preloaded assemblies work one group of ball grooves in opposition to another.

Preloaded assemblies increase stiffness and provide for accurate positioning with very little increase in applied torque or decrease in load capacity. They are utilized when zero backlash and repeatability must be maintained.

## ACME SCREWS

ACME screw products are designed and manufactured to provide an economical means for converting angular/rotational motion to linear/translational motion. They are typically less costly than a ball screw and more tolerant to less-than-optimal operating environments. Many ACME screws provide sliding element friction that prevents back driving, therefore eliminating the need for a braking device to account for the stored energy within a system. Catalogued and non-catalogued ACME products are produced in a variety of sizes, thread types and materials.

## ACME NUTS

ACME nuts with external mounting threads are available in bronze and engineered plastic.

Nuts come in single as well as multiple starts. Thread classes include 2C, 2G and custom.





# BEARING MOUNTS/SUPPORTS

Rockford Ball Screw offers one of the most complete line of standard bearing mounts in the industry. Bearing mounts provide the support of a screw's rotational axis and absorb the radial and axial force components. Bearing mounts can be shipped loose for customer installation or can be preassembled to the screw at the RBS factory.

## TYPES OF STANDARD MOUNTS

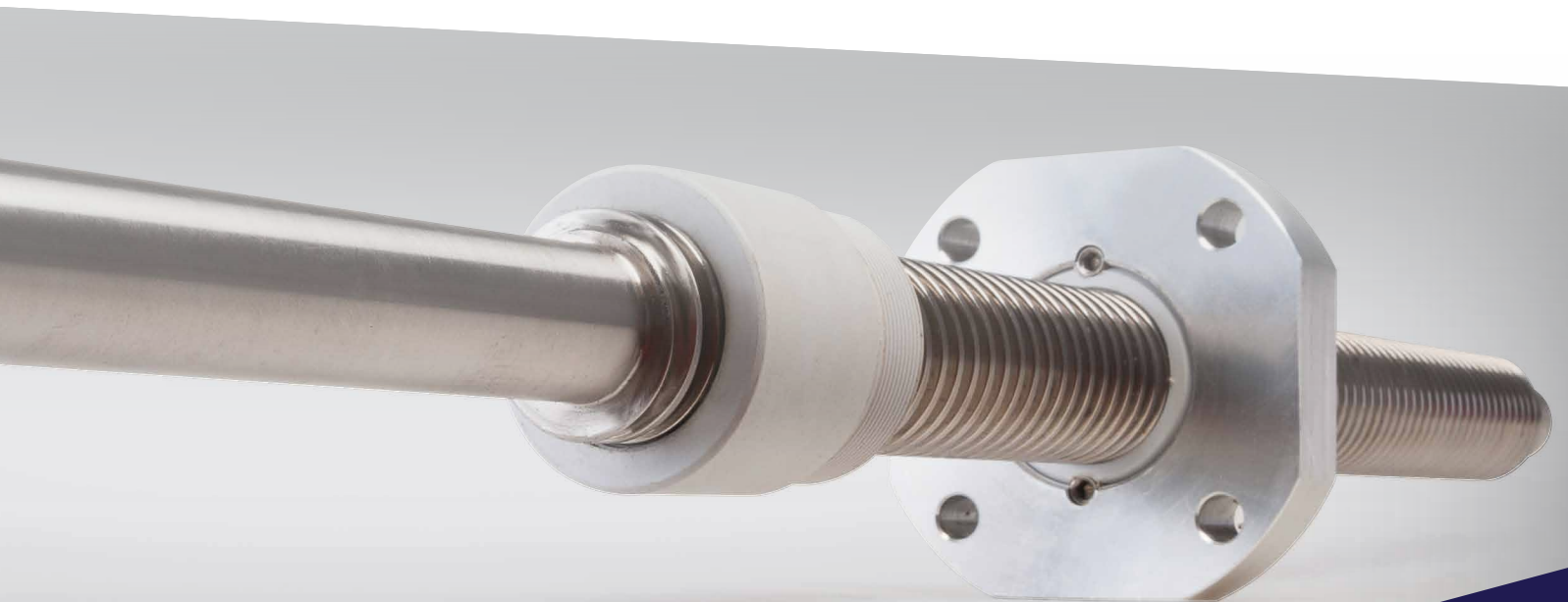
- Fixed Angular- model BMF
- Simple Angular- model BM
- Simple Radial- model BMR



Rockford Ball Screw works closely with our customers to design, engineer and manufacture bearing supports for unique applications.

## CUSTOM BEARING SUPPORT EXAMPLES:

- Tapered Roller Bearings
- Thrust Bearing Arrangements
- Spherical Roller Bearings
- Multiple Angular Contact Bearing Stacks





## LUBRICATION

Proper lubrication is essential to achieve optimum life for a ball screw assembly. Ball screws that are not lubricated can experience up to a 90% reduction in calculated life. RBS's multi-purpose grease has been specifically formulated with extreme pressure and anti-wear additives to reduce rolling element friction, wear, and provide noise dampening characteristics. RBS recommends this grease for ball screws, bearing mounts, ACME screws and other applications requiring excellent hydrodynamic lubrication.



## ACCESSORIES

### WIPER KITS

Polymer brush wipers are designed to keep large particulates from entering the ball nut. Wiper kits are available for all standard ball screw models.

### MOUNTING FLANGES

When using a mounting flange instead of the standard v-thread on the ball nut body, it must be permanently attached to prevent disengagement during operation. Flanges are available for all standard models and custom flanges can be made per your specification.

- Custom mounting condition
- Lubrication porting
- Custom bolt hole location and size
- Customer-specific material options

### SAFETY SPRINGS

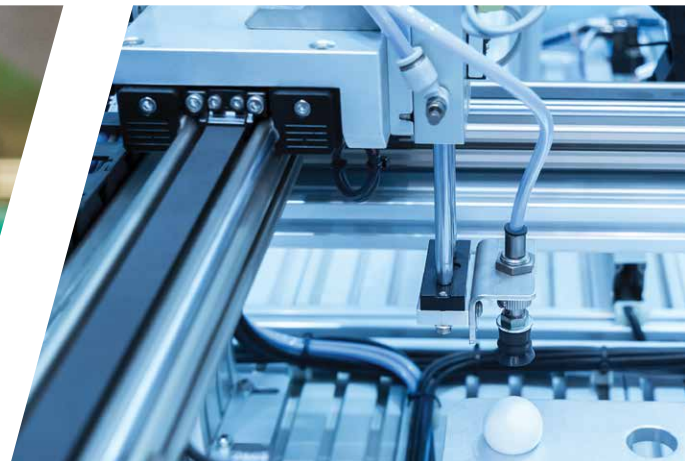
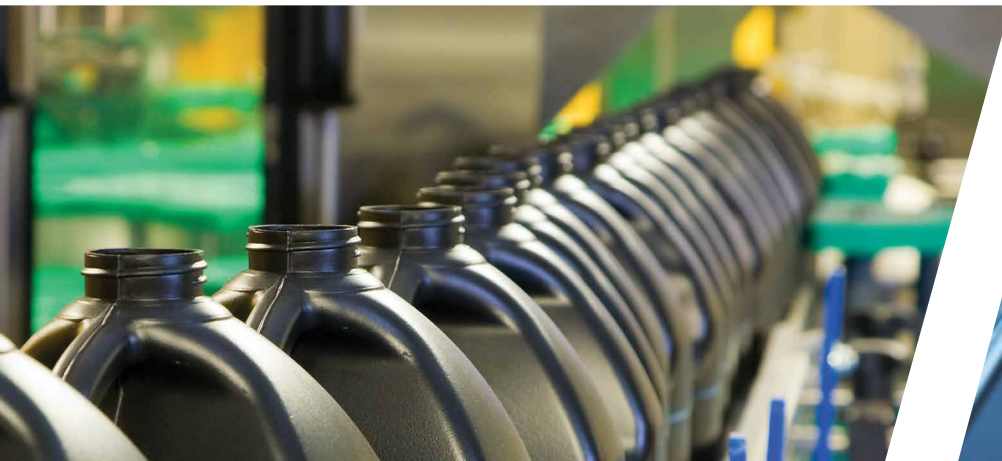
The safety spring is a coiled spring in the inactive part of the ball nut that conforms to the ball screw thread. If the balls are lost from the ball nut, the safety spring assumes the load and prevents the nut from falling. Safety springs are mandatory if the spring is used to lift, and/or support people. Safety springs are available for most ball screw models.

# LINEAR GUIDE RAILS



ROCKFORD LINEAR MOTION™

## LINEAR GUIDE RAILS



# A GUIDING FORCE

MOTION SOLUTIONS THAT HELP THE WORLD TRANSPORT, PROCESS, HANDLE, CONVERT AND AUTOMATE.



## LINEAR GUIDE RAILS

Rockford Linear Motion (RLM) provides linear guide rail solutions that are embedded into the machines we use daily or that build the products we depend on to lead our lives. RLM's Profile Guide Rails provide accurate, stable, and smooth linear guidance under a wide range of speeds, loads, conditions and space requirements. They are available in multiple sizes and lengths to suit the customer's application.

**SOME EXAMPLES  
OF MARKETS SERVED  
INCLUDE:**

- Medical
- Factory Automation
- Material handling
- Transportation
- Food Processing



## LINEAR GUIDE RAILS

### CUSTOM LENGTH INFORMATION & MACHINED TO SUIT DETAILS

Rockford Linear Motion will supply product machined to any length to suit our customer's needs. The bearing tracks on the rails are hardened at 56 to 62 Rockwell.

### JOINED RAIL INFORMATION

Rockford Linear Motion (RLM) supplies all of the linear guide rails to meet the needs of our customer's custom length requirements. At times, the customer's design requires a rail exceeding 4000mm in length. When this happens, RLM will machine and match multiple ends of the linear guide rails to meet the proper length. This maintains the normal rail bolt hole spacing while giving the customer a machined match at the point where the rails are joined.

### COATED RAIL INFORMATION

Rockford Ball Screw and Rockford Linear Motion provide a variety of coatings for our products to meet the range of environments our customers present us.



# CHARACTERISTICS & ADVANTAGES

Rockford Linear Motion carries both a Standard Profile (RPGH) and Low-Profile (RPGS) style block.

## **FOUR-WAY EQUAL LOADING**

Both the RPGH and RPGS blocks have four circular arc raceway; each raceway has a 45 degree contact angle which allows for equal loading in all directions.

## **HIGH RIGIDITY & SELF ALIGNMENT**

The raceways and Double Face configuration offers high-rigidity and tolerates misalignments of the rail.

## **UNIVERSAL RAIL**

Both standard (RPGH) and low-height (RPGS) blocks use a common rail. Both sides of the rail are ground as datum references.

## **ENHANCED FEATURES ARE STANDARD**

End seals are a standard feature on each block; most sizes also have a long-life lubrication reservoir, a metal seal retention frame and side seal. Mounting Bolt hole protective caps are included with every rail.

## **INDUSTRY STANDARD MOUNTING/ENVELOPE DIMENSIONS**

Designed in accordance with international standards.





We are the industry leader in Ball Screws and Linear Guide Rails and provide our customers with personalized customer service every step of the way, with the goal of total customer satisfaction.

**It's Your Move.™**



ROCKFORD LINEAR MOTION™

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