

RBC Thin Section Bearings



Bearings for:

**Military • Industrial • Semiconductor
Robotics • Medical**

Smoother. Faster. Longer. Because That's How We Roll.

Military

Designed to be lightweight, our bearings allow everything from satellites to military airplanes to perform their jobs. We offer custom bearings that are optimized to reduce friction & perform in extreme conditions without sacrificing accuracy.

The military environment is demanding for bearings. It is often a place where high precision, extreme temperatures, and large loads simultaneously interact with each other, while there are limited space & weight requirements. RBC's thin section aerospace bearings are ideal for these extreme environments. Our extensive selection of bearing materials, coatings, retainers, shields, and balls allows us to design a bearing that meets or exceeds the customer's needs.

Applications:

- ✓ Aircraft (Military and Commercial)
- ✓ Ships
- ✓ Ground combat and security vehicles
- ✓ Weapons
- ✓ Space
- ✓ Radar



Industrial

Have a machine that poses unique design requirements? Our thin section ball bearings can be the answer to your problem! We work with engineers at a wide range of companies that rely on us to design and manufacture bearings to improve their equipment's performance.

Applications:

- ✓ Automation – motors, indexing and rotary tables
- ✓ Packaging assembly
- ✓ Radar
- ✓ Tire/wire braiding



Semiconductor

RBC's semiconductor thin section bearings have been developed to deliver high accuracy, long life and smooth operation in both vacuum and atmospheric environments. For over 20 years our engineers have designed bearings to extend MTBF (mean time between failure) in a variety applications.

Applications:

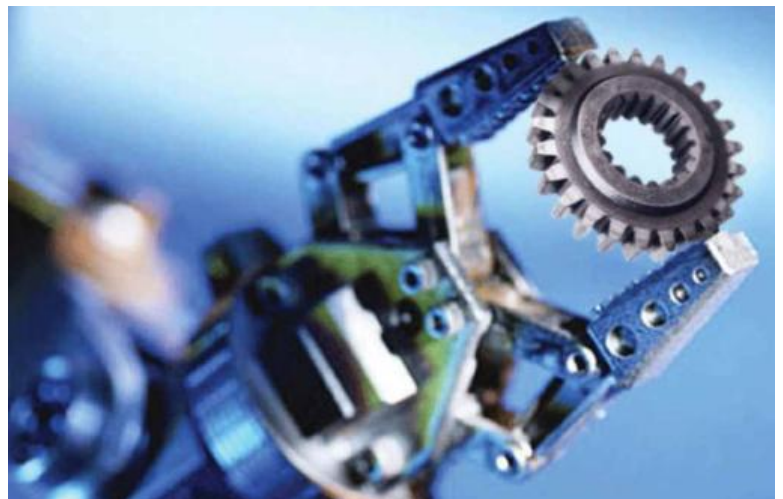
- ✓ Robotic arms
- ✓ Motors
- ✓ Wide variety of fab processing tools



Robotics

Applications:

- ✓ Human assist
- ✓ Paint spray
- ✓ Pick and place arms
- ✓ Welding



Medical

Applications:

- ✓ Centrifuges
- ✓ Surgical equipment
- ✓ Testing equipment
- ✓ X-Ray and scanning machines
- ✓ Robotic surgery devices
- ✓ Automated medication dispensing machines



Part Number Designation

| | | | | | | | | | | |
|---------------------|-----------------|---------------|-------------|----------|----------|-------------|------------------|------------------|--------------------|------------|
| EXAMPLE: | K | A | 1 | 2 | 0 | X | P | 0 | M* | RBC |
| NOMENCLATURE | Material | Series | Size | | | Type | Separator | Precision | Radial Play | |
| POSITION | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9** | |

| Position 1 - Material | | |
|-----------------------|----------------------|---|
| Rings, Balls | | Seals, Shields, Coating |
| J | 52100 Bearing Steel | Two Seals - Molded Rubber, Steel Reinforced |
| K | 52100 Bearing Steel | No Seals or Shields |
| M | M-50 Tool Shield | No Seals or Shields |
| N | 52100 Bearing Steel | Thin Dense Chrome Plating |
| S | 440C Stainless Steel | No Seals or Shields |
| Z | Other | |

| Position 3, 4, 5 - Size |
|--|
| Bore Size (inches) Multiplied by 10 |

| Position 8 - RBC Precision Class | |
|----------------------------------|-------------|
| Type | Description |
| 0 | ABEC 1F |
| 3 | ABEC 3F |
| 4 | ABEC 5F |
| 6 | ABEC 7F |

Reference: ANSI/ABMA Std 26.2

| Position 2 - Radius | | |
|---------------------|------------------|-------|
| Series | Radial Thickness | Width |
| AA | 0.187 x | 0.187 |
| A | 0.250 x | 0.250 |
| B | 0.312 x | 0.312 |
| C | 0.375 x | 0.375 |
| D | 0.500 x | 0.500 |
| F | 0.750 x | 0.750 |
| G | 1.000 x | 1.000 |
| U | 0.375 x | 0.500 |

| Position 6 - Type | |
|-------------------|--|
| Type | Description |
| A | Angular Contact Single Bearing |
| B | Back-to-Back Angular Contact Duplex Pair |
| C | Radial Contact |
| F | Face-to-Face Angular Contact Duplex Pair |
| M | Super Duplex™ Back-to-Back |
| T | Tandem Angular Contact Duplex Pair |
| W | Super Duplex™ Face-to-Face |
| X | 4-Point Contact |

| Position 9 - Radial Clearance (G) Radial or Axial Pre-Load (P) | | |
|--|----------------|---|
| Code | | |
| A | .0000 to .0015 | C |
| B | .0000 to .0010 | C |
| C | .0005 to .0010 | C |
| D | .0005 to .0015 | C |
| E | .0010 to .0020 | C |
| F | .0015 to .0025 | C |
| G | .0020 to .0030 | C |
| H | .0030 to .0040 | C |
| I | .0040 to .0050 | C |
| J | .0050 to .0060 | C |
| K | .0000 to .0015 | P |
| L | .0000 to .0010 | P |
| M | .0005 to .0010 | P |
| N | .0005 to .0015 | P |
| P | .0010 to .0020 | P |
| R | .0015 to .0025 | P |
| S | .0020 to .0030 | P |
| T | .0030 to .0040 | P |
| U | .0040 to .0050 | P |
| Z | Other | |

| Position 7 - Separator | | |
|------------------------|--------------------------------------|--------------------|
| Type | Design | Material |
| D | Snap-Over Cage | Phenolic Laminate |
| F | None (Full Complement) | N/A |
| G | Circular Pocket | Nylon |
| H | Circular Pocket | Phenolic Laminate |
| L | Snap-Over Cage | Nylon |
| P | Snap-Over Cage | Brass or Composite |
| R | Circular Pocket | Brass or Composite |
| T | Snap-Over Cage | Stainless Steel |
| U | Circular Pocket | Stainless Steel |
| Z | Other (Toroids, Spacer, Balls, etc.) | As Specified |

Note: Radially and Axially pre-loaded bearings meet bore and O.D. tolerances prior to pre-load.

*The alphanumeric identification system is used under license.

Why Thin Section Bearings?

Thin section bearings are engineered to solve a variety of design problems that cannot be solved with conventional ball bearings. Typically, thin section ball bearings are found where there are space limitations, combined loading conditions & weight restrictions.

Here are some advantages of RBC's Thin Section Ball Bearings:










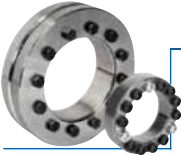







- ✓ Light Weight
- ✓ High Stiffness
- ✓ Small Cross Section
- ✓ Multi-load Capabilities
- ✓ Variety of Cross Sections & Sizes
- ✓ Modified & Custom Bearings



Quality Certifications



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

| | | |
|--|--|---|
|  <p>Tapered Roller Thrust Bearings</p> <p>Case-hardened tapered roller thrust bearings for oilfield top drives and swivels. Available in full complement, maximum capacity versions.</p> |  <p>Thin Section Ball Bearings</p> <p>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.</p> |  <p>Cam Followers</p> <p>Standard stud, heavy stud, yoke type, caged roller followers. Patented RBC Roller® cylindrical roller cam followers, HexLube® universal cam followers, airframe track rollers.</p> |
|  <p>Cylindrical Roller Bearings</p> <p>Cylindrical roller bearings designed for mud pump pinion and eccentric positions. Fully interchangeable to industry standards.</p> |  <p>Needle Roller Bearings</p> <p>Pitchline® caged heavy duty needle roller bearings ideal for cross head bearings applications. These double row bearings are available in single row and TandemRoller® versions.</p> |  <p>Commercial Rod Ends</p> <p>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.</p> |
|  <p>Spherical Plain Bearings</p> <p>Radial, angular contact, extended inner ring, high misalignment. QuadLube®, ImpactTuff®, SpreadLock® Seal, CrossLube®, Duralube™, and self-lubricating bearings. Available in inch and metric sizes.</p> |  <p>Tapered Roller Bearings</p> <p>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.</p> |  <p>TP Series Bearings</p> <p>RBC Bearings® TP Series cylindrical roller thrust bearings ideal for crane hooks, oil well swivels, winch systems, and gear boxes. Fully interchangeable with industry standard offering.</p> |
|  <p>Keyless Locking Devices</p> <p>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.</p> |  <p>Lubron™ Bearings</p> <p>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.</p> |  <p>Shaft Collars</p> <p>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.</p> |
|  <p>Self-Lubricating Bearings</p> <p>Radial, thrust, rod ends, spherical bearings, high temperature, high loads. Available in inch and metric sizes. Fiberglide® self-lubricating bearings.</p> |  <p>Rigid Couplings</p> <p>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.</p> |  <p>Specials</p> <p>RBC Bearings® manufactures many specialty bearings for the aerospace, oil and energy, semiconductor equipment, packaging, transportation, and other industries.</p> |
|  <p>Ball Bearings</p> <p>Precision ground, semiground, unground. High loads, long life, smooth operation. Nice® branded products are offered in caged and full complement configurations.</p> |  <p>PIC Design</p> <p>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.</p> | |



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