

eVTOL Engineered Product Solutions

for Propulsion, Aerostructures & Flight Controls



Ball/Roller Bearings • Plain Bearings • Hydraulics • Control & Structural Rods
Precision Machined Components • Specialty Fasteners

Innovation. Commitment. Quality. _____

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RBC Bearings has a long history of supporting our aerospace and defense customers with unique design solutions to complex problems and an unparalleled legacy of support in aerospace rotary and fixed wing applications.

The product line includes both standard catalog items and custom designed products and assemblies necessary to support propulsion, aerostructures and flight control applications required for use aboard eVTOL aircraft. RBC has manufactured aviation safety critical products for rotary and fixed wing aircraft for decades.

Propulsion Systems:

Rolling Element, Ball and Roller Bearings, Pylon, Engine Mounts



Aerostructures:

Spherical Plain Bearings, Rolling Element, Ball and Roller Bearings, Structural Rods, Fasteners



Flight Controls:

Control Rods, Rod Ends, Airframe Control Ball Bearings



RBC Bearings has one of the broadest offerings of bearing products in the Aerospace Industry which is backed up by extensive special processing capabilities such as HVOF (Thermal Spray), Dry Film, Passivate, Nitride, and proprietary self-lubricating liners. Lightweight material options include; titanium, aluminum, and elastomerics complemented by a full range of other aerospace grade materials.

Performance Advantages:

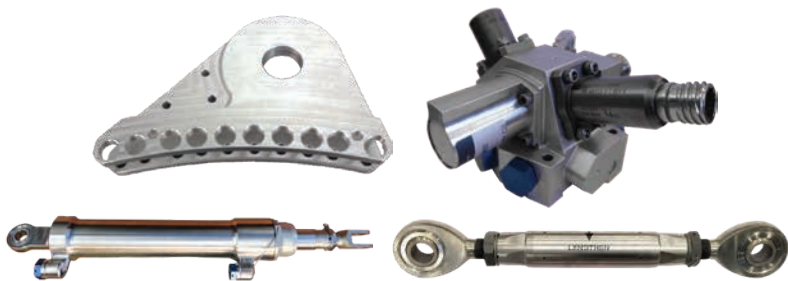
- ✓ Extended Operational Life
- ✓ Reduced Coefficient of Friction
- ✓ High Temperature Operation
- ✓ Customized and Catalog Design Solutions

RBC Offering:

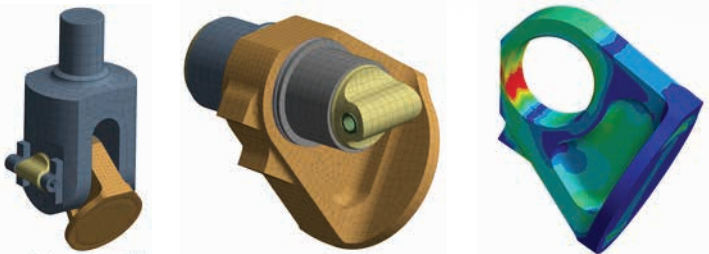
- ✓ Aerospace Standards
- ✓ Lightweight Products
- ✓ Specialty Designs
- ✓ Sub-Assemblies

Other Applications:

Complex Machined Components, Hydraulic Valves & Actuators, Shafts, Spline Rings and Gears



RBC Bearings utilizes ANSYS FEA to predict and avoid design failure and optimize features of multi-component assemblies for static or fatigue conditions, removing the potential for large lead time delays for physical testing deviances. RBC has capabilities to test all products to evaluate performance under dynamic flight spectra with radial, axial, and rotational degrees of freedom.



We have a design solution for your application, please give us the opportunity to put our technical and manufacturing resources to work for you.



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:



Spherical Bearings

- MS approved to AS81820 (formerly MIL-B-81820)
- Self-lubricating • Metal-to-Metal
- Loader slots • High temperature
- Low coefficient of friction
- Special configurations and materials



Rod End Bearings

- MS approved to AS81935 (formerly MIL-B-81935)
- Self-lubricating • Metal-to-Metal
- Loader slots • High temperature
- Low coefficient of friction
- Special configurations and materials



Thin Section Ball Bearings

- Standard cross sections to one inch
- Stainless steel and other materials are available
- Sizes to 40"
- Seals available on all sizes and standard cross sections
- Super duplex configurations



Track Rollers

- MS approved to AS39901 (formerly MIL-B-3990)
- ATF single row and ATL double row
- Sealed with lube holes and grooves
- Heavy duty cross sections
- Advanced AeroCres® materials available



Journal Bearings

- MS approved to AS81934 (formerly MIL-B-81934)
- Plain and flanged • Self-lubricating
- High temperature • High loads
- Available in inch and metric sizes



Cam Followers

- MS approved to AS39901 (formerly MIL-B-3990)
- Advanced AeroCres® materials available
- Maximum corrosion resistance
- Superior lubricants & seals to reduce maintenance



Airframe Control Ball Bearings

- MS approved to AS7949 (formerly MIL-B-7949)
- Single and double row
- Radial, self-aligning, and pulley series
- 52100 Cad plated and 440C stainless
- Zinc Nickel plated



Load Slot Bearings

- Spherical and rod end designs
- Superior ball-to-race conformity
- Reduced maintenance cost
- Variety of race materials available



Ball Bearing Rod Ends

- MS approved to AS6039 (formerly MIL-B-6039)
- Various shank configurations
- Low coefficient of friction
- Advanced AeroCres® materials available



Specials

- Many specialty bearings, custom-designed and configured for diverse aerospace applications
- Capability for advanced aerospace specialty corrosion resistant and high temperature materials



Rings and Seals

- Solutions for any pneumatic and hydraulic applications
- Seals from .5" to 55" diameter
- Cast Iron to Rene 41
- Precision machined & wire rings to tight tolerances



Control Rods

- Swaging up to 14' length and 4" diameter
- Nadcap and customer special process approvals including NDT
- Surface treatments, CNC Machining, Flash Welding, Aluminum Heat Treat
- Design and build to print



Specialty Fasteners

- Hollow Bolts, Fuse Pins, Solid Bolts (Standards), Custom Machined Parts & Nuts
- Hot Headed, Thread Rolled, HVOF Coated
- Large Diameter over 3/4"



Ducting Solutions

- Solutions for pneumatic ducting
- Patented couplings
- Temperatures 450° to 1,500°F
- Engines, Aircraft, APUs



Hydraulic Actuators

- 2-Position Fluid Hydraulic
- Auto or Manual Mechanical Locking
- Lock Sensing/Position Sensing
- Flow/Directional Control Valves; Solenoid/Manual



Machined Components

- Exotic materials • 3, 3.5, 4 and 5 Axis
- Horizontal and Vertical Milling
- Lathes, Hot Head, Gearing, Heat Treat, Special Processes

