

RBC Aerospace Bearings

AeroCres® Fracture-tough Airframe Products

Fracture-tough airframe products enhance corrosion resistance

For many years, corrosion has been a significant problem with bearings used in the aircraft industry. While CRES 440C has been used successfully in many aircraft applications, it is not suitable for the demands of rod end banjos or track roller studs. These two bearing components require a full Rc 58 hardness in the raceway area and a softer, tougher material elsewhere. This is not attainable with CRES 440C. RBC's AeroCres® products provide the unique solution that meets these dual material requirements.

We have selected a specialized carburized stainless steel, and have developed and optimized the heat treatment process that resulted in a homogeneous microstructure — delivering both corrosion protection and core fracture toughness.

Currently, this new material is being used for many structural bearing components such as rod end banjos, track roller studs, and outer rings. Fracture toughness, corrosion resistance, and long fatigue life are critical requirements for these components.



AeroCres® fracture-tough airframe products offer enhanced corrosion resistance in harsh operating environments.

Benefits

- Excellent fracture toughness superior to CRES 440C.
- Proven corrosion resistance similar to CRES 440C.
- Compressive residual stresses in carburized case.
- Lower starting torque after extended exposure to a neutral salt solution (ASTM-G44).
- Meets or exceeds government requirements for fatigue and static testing per AS 39901.
- Longer bearing life resisting premature corrosion.

Applications

Bearings located in exposed corrosive positions of aircraft such as:

- Landing gear and doors
- Leading and trailing edges
- Engine controls
- Tail sections

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Corrosion Resistance Comparison

AeroCres® Rod End vs. 8620/52100 Rod End

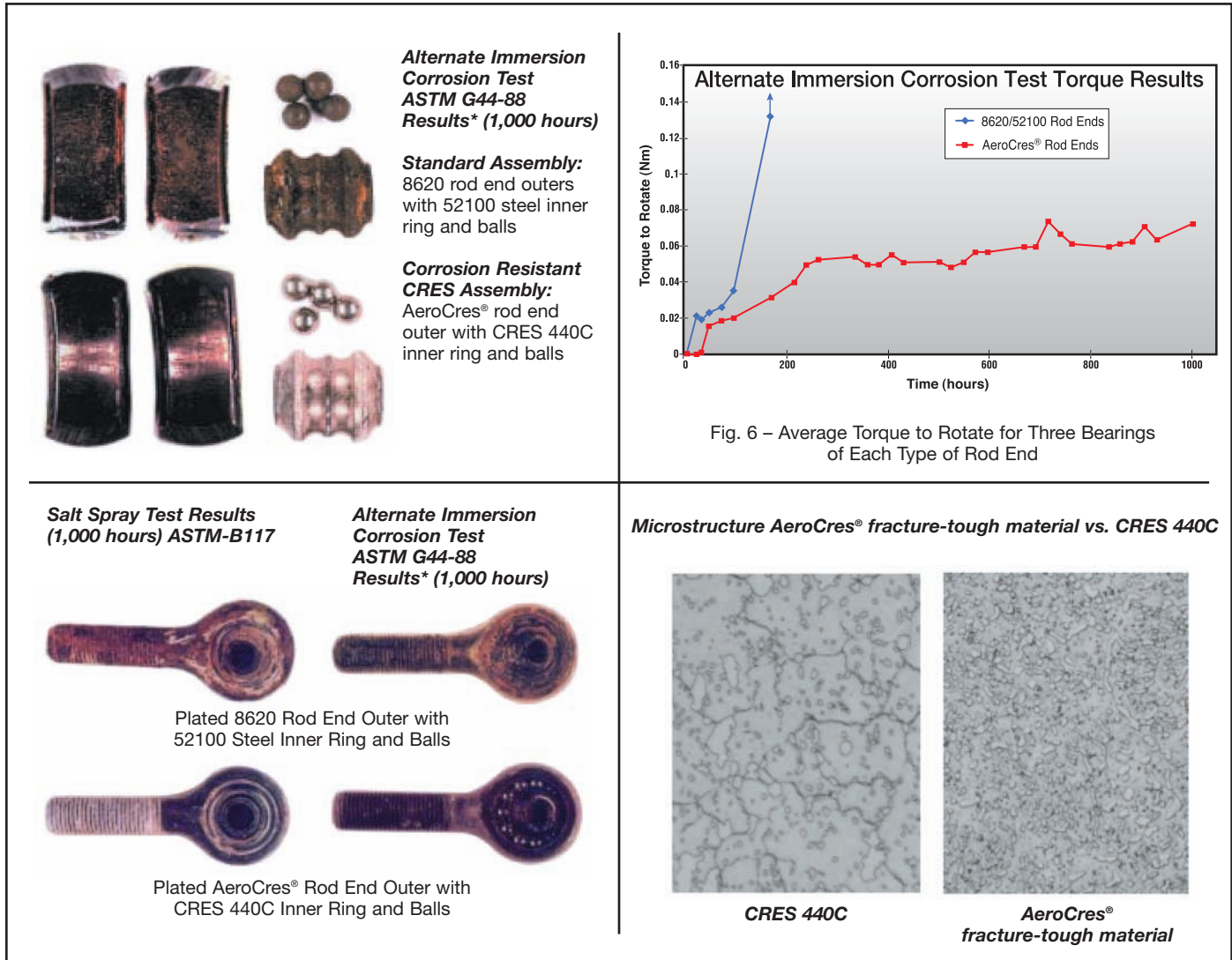


Fig. 6 – Average Torque to Rotate for Three Bearings of Each Type of Rod End

Approvals

- BACB10GS
- BACB10GY
- BACB10GZ

Engineering Support

- Application consultation
- Product design
- Product testing
- Metallurgical analysis
- Heat treating, stainless, and other high-alloy steels

Ordering Information

- Contact RBC Customer Service at 866.722.2376



866.rbc.aero

www.rbcbearings.com

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