

McGILL®

Precision Aerospace Bearings



For Demanding Aviation And
Aerospace Applications

From one extreme to the other...



Track Roller, Control and Specialized Design Bearings Stand Up And Stand Out In Tough Aircraft, Airframe And Aerospace Applications.

From the sub-freezing temperatures at high altitudes to the sizzling hot environments of the desert floor, McGill aircraft bearings are designed to perform! These bearings are custom engineered for specific applications on both fixed wing aircraft and helicopters for military and commercial services.

They meet a broad variety of U.S. military specifications, as well as numerous world-wide aircraft quality standards. They are designed and manufactured in ISO 9001 Certified facilities.

McGILL Specially-Configured "Designed-To-Order Bearings" ...

Examples of McGill custom bearings which were developed specifically for commercial passenger jets are:

1. Thrust ball bearings used in aircraft auxiliary pumps.
2. Thin-section stainless steel ball bearings that provide maximum corrosion-resistance to weather exposure and the environment when utilized in airplane doors.

When a standard off-the-shelf bearing will not satisfy the application, McGill can modify the standard bearing or

come up with an entirely custom designed bearing. *McGill engineers have provided this type of special service for over 50 years* and can assist you with your most demanding special applications.

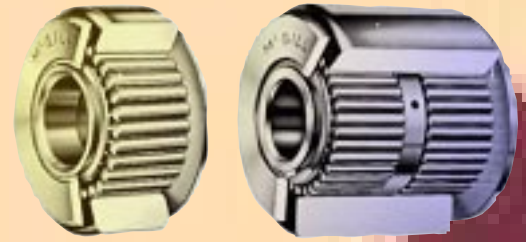
Modifications to standard products could include (but are not limited to) the following:

- A variety of lubricant options, including high and low temperature lubricants
- Special construction materials for corrosion resistance, temperature extremes or marginal lubrication
- Coatings/platings - Dry Film, Thin Dense Chrome, Thick Dense Chrome, Government Chrome, Zinc-Nickel, Silver
- Heat treatment
- Seals - for extreme temperatures, chemicals, environment
- Special relubrication features
- Stem/thread length

Demanding application and maintenance requirements, such as special resistance to corrosion, etc., can be addressed with special materials.

McGill engineers have extensive experience working with a variety of traditional and new materials, including: M-50, Pyrowear 675 and BG42.

CRES Stainless Steel AFC And AL Series



Many of the standard designs AFC/AL Series bearings are being offered in a stainless steel material. All bearing components are manufactured from quality stainless steel alloy to offer increased protection against corrosive atmospheres, as well as to increase the time intervals between scheduled maintenance periods.

CRES Stainless Steel Control Bearings



McGill is now offering a variety of stainless steel aircraft control bearings also. Contact our Customer Service Department for more information on sizes, types and availability on these special bearings.

Involve McGill Engineers Early-On In The Design Process

You can save significant time and money by involving our highly qualified engineers as early as possible in the design formation stage. Our staff of creative people will work closely with you during every stage of the process to specially apply/design/engineer/manufacture those highly customized bearings to your precise specifications.

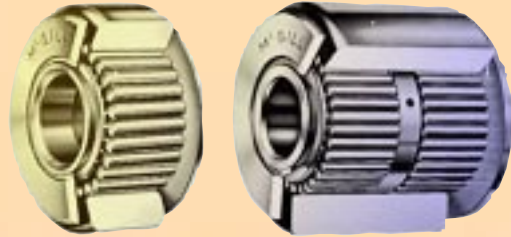
superior design

McGill Standard Aircraft Bearings

AFC AND AL SERIES MIL Spec. Reference MS-21438, MS-21439
AFC and AL Series needle bearings were developed for track roller applications. They are derived from and interchangeable with McGill NBF and NBL Series bearings. The newer AFC/AL Series bearings have the added advantage of patented LUBRI-DISC® Seals, which provide integral sealing, reduced operating friction and longer relubrication intervals. Exposed outer surfaces are chrome plated; exposed surfaces of end-plates are cadmium or zinc-nickel plated; the inner race is black oxide treated.

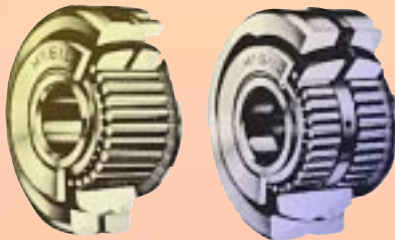


NBF AND NBL SERIES MIL Spec. Reference MS-24465, MS-24466
NBF and NBL Series bearings are needle bearings designed specifically for airframe track roller applications. These bearings have the same surface plating as the AFC and AL Series bearings described previously. NBF/NBL Series bearings are ONLY for replacement in older applications; AFC/AL Series bearings are to be specified and used for current applications and future designs.



designed to perform

NBE AND NBK SERIES MIL Spec. Reference MS-24463, MS-24464
NBE and NBK Series bearings are self-aligning, housing outer race supported needle bearings. They are self-aligned by a spherical outer race O.D. mating in a spherical adapter bore and relubricated both through the bore of the inner race and the O.D. of the outer race. External surfaces, except bore, are cadmium and/or zinc nickel plated. The NBE Series utilizes a single row of needle rollers. NBK Series is similar to the NBE Series with an integral rib on the O.D. of the inner race and two rows of full complement needle rollers.

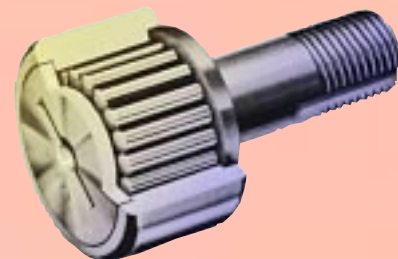


NBC SERIES MIL Spec. Reference MS-24461
NBC aircraft bearings are self-contained, outer race housing supported bearings having a full complement of spherical end rollers. External surfaces except bore are cadmium or zinc-nickel plated. This series is ordinarily provided with lubrication grooves and holes in both inner and outer races.



HRS AND CHR SERIES MIL Spec. Reference MS-21432, MS-21447
NAS Standards Number NAS562
McGill produces these integral stud designs in accordance with the above specifications and standards, as well as with special modifications. HRS Series have cylindrical O.D. and CHR Series bearings have a crowned O.D.

Sealed bearings are available in the HRS/CHR Series. To specify, add the letter "R" to the basic catalog number. Exposed surfaces of the outer race on these bearings are chrome plated; remaining surfaces are cadmium plated. Relubrication features can be provided from either end of the stud. Consult McGill Customer Service for availability and application data on these bearings.



McGILL®

Also manufactured by McGill, helicopter transmission bearings, aircraft hydraulic pump and motor bearings, and a variety of custom engineered aircraft products.



Application Considerations

The proper selection and application of power transmission products and components, including the related area of product safety, is the responsibility of the customer. Operating and performance requirements and potential associated issues will vary appreciably depending upon the use and application of such products and components. The scope of the technical and application information included in this publication is necessarily limited. Unusual operating environments and conditions, lubrication requirements, loading supports, and other factors can materially affect the application and operating results of the products and components, and the customer should carefully review its requirements. Any technical advice or review furnished by Emerson Power Transmission Corporation and its divisions with respect to the use of products and components is given in good faith and without charge, and Emerson assumes no obligation or liability for the advice given, or results obtained, all such advice and review being given and accepted at customer's risk.

Standard Terms and Conditions

For a copy of our Standard Terms and Conditions of Sale, disclaimers of warranty, limitations of liability and remedy, please refer to Catalog 96 or contact the McGill Customer Service Center or Distributor nearest you. These terms and conditions of sale, disclaimers and limitations of liability and remedy, apply to any person who may buy, acquire or use McGill bearings (etc.) referred to herein, including any person who buys from a licensed distributor of McGill / Emerson products.

McGILL[®]
PRECISION BEARINGS



MCGILL MANUFACTURING
EMERSON POWER TRANSMISSION CORP.
909 Lafayette Street
Valparaiso IN 46383-4299 U.S.A.
© Telephone 219-465-2200 Fax 219-465-2290