



**WORLD LEADERSHIP IN SUPER PRECISION
BEARING TECHNOLOGY FOR MACHINE TOOLS**

**QUALITY
PRECISION
EXCELLENCE**

BARDEN

For over 100 years, Barden/FAG has worked to improve the accuracy, efficiency and performance of ball and roller bearings.

Today, through research, material innovations and advances in technology and design, we are a world leader in the development and manufacture of super precision bearings for the machine tool industry.

And now you can satisfy *all* your precision machine tool bearing requirements — ball or roller — from a single source: Barden.

When customers demand exceptional performance, reliability and long life from a bearing, the name to recommend is Barden, the world's leading authority on super precision bearing technology.

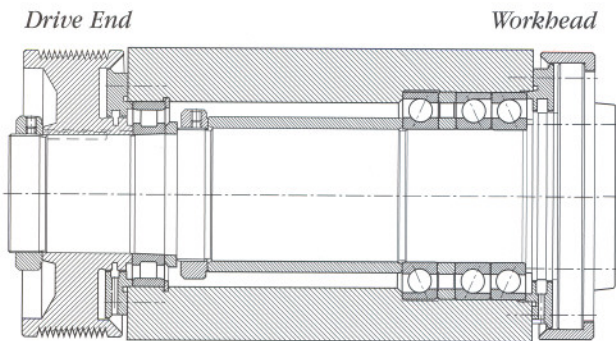


BARDEN



SUPER PRECISION CYLINDRICAL ROLLER BEARINGS

These rugged, single and double row cylindrical roller bearings are used where high radial stiffness and high load capacity are required. Typically used in combination with double direction angular contact thrust ball bearings. Can also be used with spindle bearing arrangements.



CNC spindle with a single row cylindrical roller bearing used in the drive end and a triplex set of angular contact ball bearings in the workhead end. This combination provides high speed and precision machining capabilities with high radial load carrying capacity.

Key Features

- High radial stiffness and high radial load capacity
- Precision tolerances, SP + UP
- Excellent running accuracy
- Hybrid ceramic option permits even higher speeds
- Exclusive optimized roller crown design
- The classic “floating bearing”

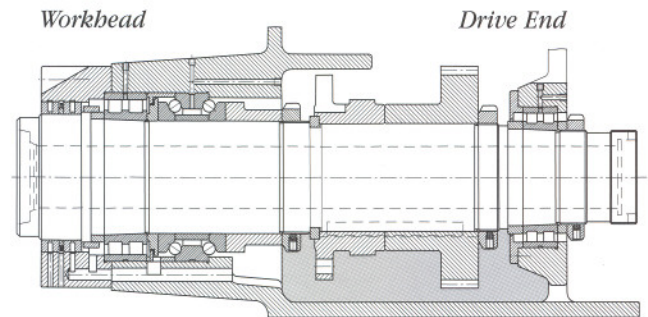
Basic Bearing Numbers

N10, NN30, N19, NNU49



DOUBLE DIRECTION ANGULAR CONTACT THRUST BALL BEARINGS

Used exclusively with double row cylindrical roller bearings. (Mounting dimensions match NN30 Series.) The benefit of this configuration is that both axial and radial forces can be supported separately with a high thrust load capacity.



Heavy-duty lathe spindle showing a double direction angular contact thrust ball bearing used with a double row cylindrical roller bearing in the workhead. Drive end of the spindle features one double row cylindrical bearing. This combination allows spindle to operate with high rigidity, while accommodating both axial and radial loads.

Key Features

- Used in combination with cylindrical roller bearings
- Very high thrust load capacity
- 60° contact angle + axial preloading = good ball control
- Manufactured to precision tolerances, SP + UP

Basic Bearing Numbers

2344, 2347



SEALED ANGULAR CONTACT SPINDLE BEARINGS

Sealed spindle bearings offer protection against premature failure caused by contamination or loss of lubricant and can help prolong bearing life. However, while traditional seals inhibit contaminant infiltration, they do so at the expense of running speeds. Barden angular contact sealed spindle bearings feature a unique non-contacting seal that offers all the protection of a traditional seal, but permits uninhibited running speeds due to the “non-contacting” nature of the design.

Key Features

- Unique, non-contacting seal design
- No loss of running speed
- Enhanced lubricant retention
- Protects against contaminant infiltration
- “Greased for life” right from the box/“Fit and Forget”
- Interchangeable with bearings of the same series

Basic Bearing Numbers*

1900, 100, 200

*“RR” in bearing nomenclature indicates bearings have seals on two sides, greased for life.



BALL SCREW SUPPORT BEARINGS

Ball screw support bearings are made for high performance applications where extreme rigidity requirements preclude the use of standard angular contact bearings. Available in inch (Series L) and metric (BSB, 7602, 7603 Series) sizes. Along with extreme rigidity, these bearings exhibit low drag torque and minimal axial runout. Low friction allows attainment of the highest accuracies during rapid position changes at high speeds. Applications include cross slides, “X-Y” positioners and transfer tables.

Key Features

- Extreme axial rigidity through standard heavy (UH) preload
- Low starting and running torque
- Exceptional control of axial runout
- Extremely high speedability
- Available with X-life ultra rings, ceramic balls and seals.

Basic Bearing Numbers

Inch: Series L*

Metric: BSB Series, 7602, 7603*

*Available in single, duplex and quadruplex sets. Custom combinations available.



CERAMIC HYBRID BALL AND ROLLER BEARINGS

Ceramic hybrid bearings — silicon nitride (ceramic) balls or rollers and steel inner and outer rings — offer significant performance advantages over conventional bearings with steel balls or rollers. Ceramic hybrid bearings exhibit low vibration levels and can run faster than conventional bearings. Useful life can be extended 2x to 5x when compared to conventional all-steel bearings. Ceramic hybrid bearings are now considered suitable for even low speed applications because of their proven quality, performance, reliability and long service life.

Key Features

- Bearings last 2x to 5x longer
- Faster running speeds possible with less vibration
- Spindle rigidity increases
- Less heat build up
- Lube life extended
- Naturally fatigue resistant

Basic Bearing Numbers*

Spindle: 10MO, 1800, 1900, 100, 200

Cylindrical Roller: N10, NN30, N19, NNU49

*"C" in bearing nomenclature indicates bearings have ceramic balls.



X-LIFE ULTRA ANGULAR CONTACT BALL BEARINGS

X-life ultra bearings — developed to achieve maximum speeds, loads and long life — are hybrid bearings with rings made from Cronidur 30, a high nitrogen stainless steel, and ceramic (silicon nitride) balls. X-life ultra bearings run 30% faster than standard ceramic hybrids, have a useful service life 10x longer than conventional all-steel bearings and exhibit extraordinary corrosion resistance. Higher admissible contact pressure allows use of a smaller bearing design which means lower velocity at unchanged speeds, and a reduction in lubricant stress.

Key Features

- Significantly prolonged bearing life
- Operates at extremely high speeds
- Exceptional corrosion resistance
- Performs well under mixed friction conditions
- Higher admissible contact pressures
- Can reduce overall system costs substantially

Basic Bearing Numbers*

Spindle: 10MO, 1800, 1900, 100, 200

Ball Screw Support: Inch: Series L;

Metric: BSB Series, 7602, 7603

**"XC" in nomenclature means bearings have Cronidur 30 rings & ceramic balls.



ULTRA FILTERED GREASES FOR PRECISION BEARINGS

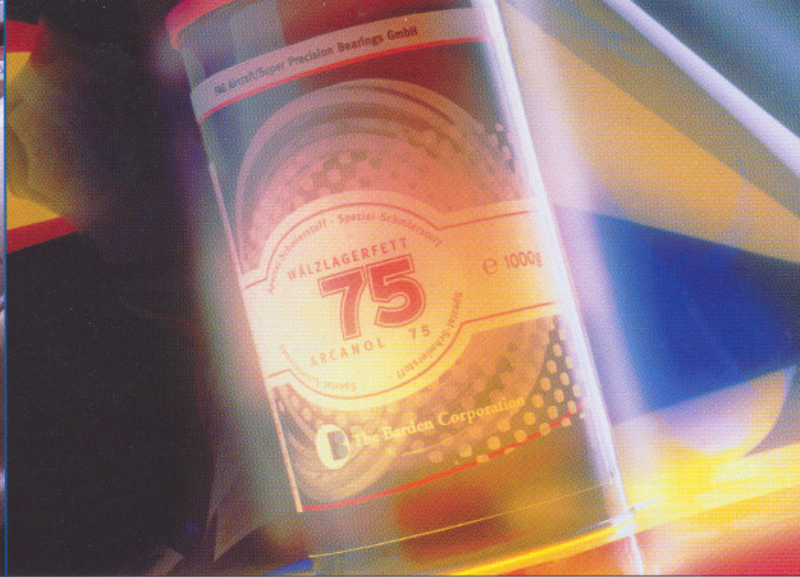
Precision bearings require high-quality lubricants in appropriate amounts in order to function properly. Inferior greases or poor cleanliness habits during re-lubrication risk introducing harmful contaminants into the bearing which could degrade overall performance and lead to premature failure. Barden Ultra Filtered Greases are filtered at 10 to 40 microns and are specifically engineered to maximize the performance characteristics of precision bearings. Four grease types available in convenient 30cc dispensers. Consult Barden for grease characteristics.

Key Features

- All greases are “ultra pure”
- Cartridges pre-filled for convenience
- Each cartridge holds 30cc of grease
- Calibrated tubes for proper “metering”
- Dispenser plunger controls grease flow
- Pinpoint applicator tip

Grease Types Available

G-12, G-42, G-46, G-75



G-75 HIGH PERFORMANCE GREASE

G-75 is a high performance grease specifically engineered for high speed spindle bearing applications (1.5M dN). G-75 combines a fully synthetic base oil with a Polyurea thickener instead of a barium complex soap thickener. It contains no toxins. G-75 offers high thermal stability, exceptional viscosity and temperature behavioral characteristics and low oil bleed rate all resulting in longer grease life. Run-in times are reduced by 50%. The base oil in G-75 exhibits about the same viscosity at 40° C as G-46, but with 1/2 the starting torque.

Key Features

- High thermal stability
- Exceptional viscosity/temperature characteristics
- Low oil bleed rate
- Synthetic base oil ensures longer grease life
- Excellent in vertical applications

Grease Designation

G-75

ADDITIONAL RESOURCES



Machine Tool Products Catalog

Complete list of Barden super precision, Angular Contact Ball and Roller Bearings for the machine tool industry. Bearing types include Spindle, Cylindrical Roller, Double Direction Angular Contact Thrust, Ball Screw Support, Floating

Displacement and Axial-Radial Cylindrical Roller Bearings. Detailed product specification tables and an extensive application engineering section included. (202 pages)



Specialty Products Catalog

Contains detailed information on Barden specialty product bearings (excluding machine tool) for a wide range of applications including dental, x-ray, aerospace, gyro, auto sport, canning, vacuum pumps, and magnetic spindles. Includes product specification tables for deep groove and angular contact miniature and instrument bearings (inch and metric sizes), and an extensive application engineering section. (148 pages)



"Why Bearings Fail" Poster and Tutorial

Handy wall poster and companion booklet describes 12 of the most common causes of ball bearing failure. Illustrated with detailed drawings and large color photos showing how to identify each failure mode. (Wall poster and 12-page guide)



CD-40

Both the Barden Machine Tool and Specialty Products Catalogs are contained on this quick-reference CD. Formatted for PC users.



Web Site

Visit us on the Web at www.bardenbearings.com.

Coming in 2003: *FastTrack*™

FastTrack™ is Barden's new 24- to 48-hour bearing modification and "quick ship" program which includes:

- Custom Lubrication
- Steel-to-Ceramic Ball Upgrades
- Preload Modifications
- Duplex, Triplex or Quad Set Configurations
- Extended "After Hours" Service

Ask your Barden Sales Engineer for details.



The Barden Corporation

FAG Aerospace and Super Precision Bearings Division

P.O. Box 2449 • 200 Park Avenue
Danbury, Connecticut 06813-2449
Phone 203-744-2211 • Fax 203-744-3756
E-mail: sales@bardenbearings.com
www.bardenbearings.com