With the many types of bearings available on the market, each with its own benefits and ideal uses, it can be difficult for engineers to select the proper bearing to best meet the demands of their specific application, in this guide, Emerson Bearing aims to support superior bearing performance in your operations assisting you with choosing the right bearing for your needs

As a leading provider of high quality ball and roller bearings for domestic and international customers Emerson Bearing offers a wide range of high performance products in various sizes and price points,. Choosing the right bearing for your application supports optimal equipment performance while reducing system downtime, maintenance needs and costs.

**Choosing the Correct Type of Bearing For your Application**

**A Selection Guide**

Bearing selection benefits by two major factors:

* Ball and Roller Bearings have a universal numbering system that was established in 1917 by ABMA, a trade group of the world’s leading bearing manufacturers. Regardless of the country of origin, a bearing with the same number conforms to the same dimensions and engineering specs. This allows for greater availability and price points.
* Boundary Dimension Standardization. Bearings with the same envelope dimensions are available with alternate interior rolling element configurations. This allows for options in terms of radial or axial load, misalignment, and levels of ABEC precision. This allows for achieving various performance goals using the same shaft/bore dimension and same outside dimension.

Critical Factors That influence the Selection of the Most Appropriate Bearing

1. Understanding the function of the machine in which the bearing is to be used.
2. Define the performance criteria. This includes required rotational speed and load capacity. Consider relative axial and radial load demands.
3. Selecting the type of bearing
4. Select required tolerance class and internal clearance required.
5. Select bearing dimensions based on capacity needed.
6. What are the sealing and lubrication needs?
7. Select desired mounting method.

There are several types of bearings to consider all of which share the same dimensional options in terms of inside and outer dimensions.

**Single Row Deep Groove Ball Bearings**. 6000, 6200, 6300, 6400

The most common type of bearing. Typically referred to as radial bearings they have the benefit of being able to take up to 20% of their load rating as axial load. Available with shields or integral seals. Variants are available with ceramic hybrid balls to increase load capacity and life as well as to deflect electrical currents passing through the bearing.

**Single Row Angular Contact Bearings.7000, 7200, 7300**

Single Row angular contact bearings are designed with high shoulders on the thrust side of both the inner and outer rings. Angular contact bearings are recommended for applications where there are high radial and thrust loads with the thrust load predominating. When supporting a shaft,

a bearing must be used at each end with their angles of contact opposed.

Spindle Bearings 7000 P4, 7200 P4, 7300 P4

This style shares the same dimensions as the single row but internally are of a higher ABEC class to meet the demands of precision applications including higher limiting speeds, reduced runout and endplay

**Double Row Angular Contact Bearing. 5200, 5300**

Double Row bearings have the features of two angular contact bearings mounted in duplex form but with lesser overall width. This also allows for simpler mounting procedure. Unlike single row angular contact bearings, the double row style is available with shields or seals.

**Roller Bearings.**

This style of bearing uses rollers as the rolling elements providing a high load capacity. They are available in several styles of rollers to accommodate different needs.

Cylindrical Roller. Nxxx, NJxxx, NUxxx, NUPxxx

Designed for high radial load applications. The inner and outer ring can be separated to facilitate assembly with the option of the rollers being attached to the inner or outer ring. Ideal for applications requiring a high degree of precision, speed, load and heat resistance. Applications include Traction motors, Mining and Aggregate, Blowers and Fans, Pumps and Compressors.

Tapered Roller Bearings. Metric 32000, 32200, 33000, 33200, Inch Lxxxxx

Tapered roller bearings feature an outer ring cup and a cone assembly. Its design can handle high axial, radial and combined loads. Widely used in vehicle applications, Machine shafts, Construction equipment, Conveyors. Speed reducers. Cranes and Hoists. Typically used in pairs.

Spherical Roller Bearings. 202xx, 22xxx, 23xxx

Spherical Roller bearings are designed to handle very heavy loads, even under misalignment or shaft deflection. Can also handle axial loading in either direction and heavy shock loads. Ideal for continuous casters, shaker screens, paper making equipment, pumps and compressors, Metal Mill equipment, mining equipment, blowers and fans.

Needle Roller Bearings

Because the bearings use needle rollers as rolling elements the cross section is thin, but they have a high load capacity. Because of the large number of rolling elements, the bearings have high rigidity and are ideally suited to wobbling or pivoting motion.

**Mounted Bearings**

Mounted units are comprised of a ball or roller bearing inserted into various types of housing. The housing can be bolted onto machinery and the inner ring can be easily mounted onto the shaft. A variety of standard housing shapers are available, flange, pillow or hangar styles to suit various applications.

## **Emerson Bearing Is Your Partner for All Your Bearing Needs**

Choosing the proper bearing is essential for ensuring optimal performance and reliable operations in your application, and Emerson Bearing is here to help. We have over 50 years of product expertise and multi-industry experience. With the most extensive bearing inventory on the East Coast, Emerson Bearing stocks diverse bearing styles at various price points, with same-day order fulfillment capabilities of 80%. If we don't have the bearing you're looking for, we can procure it for you.

Our team understands the importance of lasting relationships. The majority of our current staff has been a part of the Emerson Bearing team for two or three decades, with some of our client relationships spanning nearly as long. [Contact us](https://info.emersonbearing.com/lp-contact-us) to learn more about the bearings we offer, or [request a quote](https://info.emersonbearing.com/lp-request-a-quote) today to partner with Emerson Bearing on your next project.