

# **Ball Bearing Market Report by Application (Automobile, General Engineering, Mining and Construction, Railways, Aerospace and Shipping, Agriculture, and Others), and Region 2024-2032**

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## **Abstracts**

The global ball bearing market size reached US\$ 43.7 Billion in 2023. Looking forward, IMARC Group expects the market to reach US\$ 62.0 Billion by 2032, exhibiting a growth rate (CAGR) of 3.8% during 2024-2032. The growing demand for machinery and equipment, rising demand for automation and robotics in various industries to optimize processes and improve productivity, and technological innovations to enhance durability are some of the major factors propelling the market.

A ball bearing is a mechanical component that is widely used in various applications to reduce friction and support rotational or linear motion. It comprises an outer and inner ring that are housed with small steel balls. It enables smooth rolling and distribution of the load evenly and allows the bearing to handle both radial and axial forces. It assists in minimizing frictional resistance, enhancing efficiency, and increasing the lifespan of machines and equipment. Moreover, it aids in facilitating movement and power transmission and ensuring the smooth operation of various mechanical systems.

At present, the rising adoption of renewable energy sources, such as wind power, across the globe is bolstering the growth of the market. Besides this, the increasing popularity of miniaturization in electronic devices and components is strengthening the growth of the market. In line with this, the growing demand for efficient material handling equipment that streamlines workflow processes and reduces operational costs is offering a positive market outlook. Apart from this, the increasing consumer preference for electric vehicles (EVs) to reduce environmental pollution and maintain sustainability around the world is offering lucrative growth opportunities to industry investors. In

In addition, the rising air travel demand, along with the increasing space exploration activities, is supporting the growth of the market. Furthermore, the growing focus on improving productivity in numerous end-use industries is positively influencing the market.

#### Ball Bearing Market Trends/Drivers:

Rising demand for machinery and equipment in various industries

The rising demand for machinery and equipment in various industries around the world is contributing to the growth of the market. Countries are developing and modernizing their machinery and equipment that provide smooth and efficient movement. Various industries, such as automotive, aerospace, construction, and manufacturing, heavily depend on ball bearings to reduce friction and enhance operational efficiency. In addition, there is a rise in the demand for advanced machinery to meet production requirements and reduce operational costs. Apart from this, the increasing demand for heavy machinery and construction equipment on account of the rising number of infrastructure development projects is bolstering the growth of the market.

Increasing demand for automation and robotics to perform numerous tasks

Automation involves the usage of technology to perform various tasks that were previously executed by humans, whereas robotics comprise the deployment of intelligent machines to perform complex actions with precision. As a result, the rising trend of automation and the introduction of robotics in various industries are supporting the growth of the market. There is also an increase in the preference for automation and robotics to enhance efficiency, reduce costs, and improve quality in manufacturing, logistics, and service sectors. In addition, robots are becoming more adaptable and intelligent, which enables them to streamline the workflows and performing accurate and repetitive tasks in industries. Industries are adopting automated systems that rely on precision components and optimize processes and improve productivity.

Technological Innovations to create high-performance ball bearings

Manufacturers are constantly investing in research and development (R&D) activities to create high-performance ball bearings that offer enhanced durability, increased load capacities, and reduced friction. In line with this, these innovations allow ball bearings to operate more efficiently and withstand higher stress conditions, which makes them suitable for a wide range of applications in various industries. Apart from this, the development of specialized coatings and materials for these bearings benefits in

expanding their usage in extreme environments and challenging operating conditions, such as high temperatures or corrosive environments. Moreover, the continuous improvement in technology encourages industries to adopt these bearings across diverse sectors for increased productivity.

#### Ball Bearing Industry Segmentation:

IMARC Group provides an analysis of the key trends in each segment of the global ball bearing market report, along with forecasts at the global and regional levels from 2024-2032. Our report has categorized the market based on application.

#### Breakup by Application:

- Automobile
- General Engineering
- Mining and Construction
- Railways, Aerospace and Shipping
- Agriculture
- Others

Automobile represents the largest market segment

The report has provided a detailed breakup and analysis of the market based on the application. This includes automobile, general engineering, mining and construction, railways, aerospace and shipping, agriculture, and others. According to the report, automobile represented the largest segment. The rising demand for ball bearings in various automotive components, such as engines, transmissions, wheel hubs, steering systems, and suspension systems, is contributing to the growth of the market. In addition, they provide smooth and efficient rotational movement, reduce friction, and enhance the overall performance and durability of vehicles. Apart from this, the increasing adoption of electric vehicles (EVs) among individuals is bolstering the growth of the market.

The general engineering segment comprises a wide range of applications, such as manufacturing machinery, industrial pumps, electric motors, agricultural equipment, and power tools. In line with this, ball bearings play a vital role in these applications by supporting rotational and linear motion in diverse machinery and equipment.

The mining and construction industries rely on heavy machinery and equipment that operate under challenging conditions. These bearings are crucial components in these

applications as they withstand high loads and harsh environments. They are used in equipment like crushers, excavators, loaders, and conveyors.

Railways, aerospace and shipping industries utilize ball bearings for various purposes. In the railway industry, they are widely utilized to manufacture various parts of trains and locomotives. They ensure efficient movement of wheels, axles, and other critical parts. In addition, they are used in wheelsets, axle boxes, traction motors, and gearbox applications. They assist in enhancing the safety and reliability of railway systems by providing stable and consistent performance, especially during high-speed operations. In the aerospace industry, they are used in aircraft engines, landing gear systems, flight control surfaces, and auxiliary power units to ensure smooth operation and reduce heat and energy losses. In the shipping industry, they are utilized in marine propulsion systems, ship engines, and various auxiliary machinery to reduce mechanical losses and enhance fuel efficiency.

Breakup by Region:

Asia Pacific

Europe

North America

Middle East and Africa

Latin America

Asia Pacific exhibits a clear dominance, accounting for the largest ball bearing market share

The report has also provided a comprehensive analysis of all the major regional markets, which include Asia Pacific, Europe, North America, Middle East and Africa, and Latin America. According to the report, Asia Pacific accounted for the largest market share.

Asia Pacific held the biggest market share due to the increasing infrastructure development. In line with this, the rising production of vehicles is impelling the growth of the market in the Asia Pacific region. Apart from this, the increasing urbanization is contributing to the growth of the market. In addition, the rising demand for various electronic devices and appliances, such as tablets, smartphones, and computers, among individuals is supporting the growth of the market in the Asia Pacific region.

Competitive Landscape:

Various companies are investing in research and development (R&D) activities to create innovative products that offer improved performance, durability, and efficiency. They are also focusing on developing specialized bearings for specific applications and exploring new materials and manufacturing processes. Apart from this, major manufacturers are diversifying their product portfolio to cater to a wide range of industries and applications. They may offer different types of bearings, such as deep groove, angular contact, and thrust ball bearings, to address specific customer needs. In line with this, many companies are offering customized solutions to meet the unique requirements of their clients. They are closely working with customers to design and manufacture products that cater to specific applications or industries.

The report has provided a comprehensive analysis of the competitive landscape in the market. Detailed profiles of all major companies have also been provided. Some of the key players in the market include:

NTN Corporation

Timken

JTEKT

SKF

Schaeffler Group

Recent Developments:

In 2022, The Timken Company, a global leader in engineered bearings and industrial motion products, acquired GGB Bearing Technology (GGB), a division of Enpro, Industries. This acquisition assists the company in enhancing bearing portfolio with complementary products.

In June 2022, NTN Corporation developed sensor integrated bearing “Talking Bearing™” that incorporates sensors, power generation units, and wireless devices into bearing and wirelessly transmits information on temperature, vibration, and rotational speed. It enables more advanced condition monitoring and early anomaly detection.

In May 2023, SKF announced a consolidation of its spherical roller bearing manufacturing to secure the long-term competitiveness on the European markets. It is also heavily investing in upgrading machinery and manufacturing processes.

Key Questions Answered in This Report

1. What was the size of the global ball bearing market in 2023?
2. What is the expected growth rate of the global ball bearing market during 2024-2032?
3. What are the key factors driving the global ball bearing market?
4. What has been the impact of COVID-19 on the global ball bearing market?

5. What is the breakup of the global ball bearing market based on the application?
6. What are the key regions in the global ball bearing market?
7. Who are the key players/companies in the global ball bearing market?

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