

Low-Noise Bearings Market: Current Analysis and Forecast (2024-2032)

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Abstracts

The Low-Noise Bearings Market is witnessing a steady growth rate of 5.75% within the forecast period. The market has seen sudden growth due to varied demands for quiet bearings across automotive, aerospace, and industrial machinery. Machinery and vehicles function quietly due to the away-from-noise generation, which stimulates an important contribution to growth. Low-noise bearings help primarily in vibration and noise control and are greatly valued in very high-end applications such as electric vehicles and medical devices. Companies' focus is also geared towards customized solutions for specific industry requirements, for instance, food & beverage-where bearings need to endure harsh cleaning agents and remain low noise. The ability to deliver a customized variance has become another competitive strategy manufacturers are adopting today to strengthen their market presence and meet the ever-increasing stringent demands of various industries. For instance, in 2023, NBC Bearings, which is part of the CK Birla Group based in India, specialized in developing bearings and other automotive components and has developed a wide range of low-noise bearings for the EV industry. These bearings are suitable for EV drivetrains and are suitable for applications in the wheel hub, steering, and motor of an electric vehicle.

Based on type, the low-noise bearings market is segmented into ball bearings, roller bearings, plain bearings, and others. In 2023, the ball bearings segment was the largest in the market and would remain the same even in the forthcoming forecast period. The dominance is due to the design versatility, high precision, and value for money, which make ball bearings universally applicable in fields as diverse as automotive and aerospace, general machinery, and electronics. The most recent advances in material science and engineering have helped design quiet ball bearings that can withstand extreme operational conditions and environmental demands. In May 2024, NTN Corporation

developed a large-diameter deep groove ball bearing for the coaxial e-Axle, a significant driving component in electric vehicles (EVs). These bearings operate for high-speed rotation, with a dmn value of 1.5 million, enabling torque performance of over 50% lower than conventional products. Besides, miniaturization in electronics has created a great demand for tiny, high-precision ball bearings. The manufacturers are in a constant drive for innovation in compact bearings, preserving bearing performance and noise level.

Based on material, the low-noise bearings market is segmented into metal, ceramic, plastic, and others. The ceramic segment dominated the market in 2023 and is expected to retain its dominance throughout the forecast period. Ceramic bearings have become the preferred bearings for use in applications that require high speed, precision, and minimum friction, thus allowing for quieter operations than metal and plastic bearings. More wear and corrosion-resistant properties, lower density, and no requirement for lubrication are some of the benefits offered by ceramic bearings. The above properties make them well-suited for use in extreme locations and applications in varied conditions. Their resistance to high temperatures and corrosive materials makes them additionally suitable for chemical processing industries. The trend toward the increasing adoption of ceramic bearings results from their longevity and energy-efficient operation in machinery. For instance, in February 2023, NTN Corporation unveiled its specialized bearings for the H3 Launch Vehicle turbopumps that required an ultra-high-speed rotation under cryogenic conditions. These bearings have NTN's solid lubricant that is suitable for the extreme temperatures of liquid hydrogen and oxygen. NTN has further innovated by introducing proprietary ceramic balls in their bearings to counteract centrifugal forces, thereby assisting the rocket's performance. This will be the first application of ceramic ball bearings in commercial rockets produced in Japan, which illustrates NTN's long-standing commitment to the aerospace realm.

Based on application, the low-noise bearings market is segmented into automotive, industrial machinery, aerospace, electronics, and others. Among these, the automotive segment dominated the market in 2023 and is expected to continue leading during the forecast period. The demands for quieter, more efficient driving experiences for both conventional and electric vehicles, bearing technological advances, continue to improve performance and reduce noise for widespread acceptance across the automotive sector. Manufacturers are rolling out products whose performance enhances vehicle longevity and fuel economy

while conforming to some of the most stringent noise reduction criteria. The growing momentum for electric vehicles has created a spurt in the development of specialized low-noise bearing solutions to meet the markedly different requirements of electric motor applications that are important for longer range and performance. All these initiatives from the industry underscore the ongoing commitment to putting technology in the realm of consumer preferences as well as regulatory requirements for quieter and more efficient vehicles.

Based on the distribution channel, the low-noise bearings market is segmented into OEM and Aftermarket. The OEM segment dominated in 2023 and is projected to maintain its leadership during the forecast period. The trend stems from the high demand for precision components such as cars, aerospace, and industrial machinery, in which low-noise bearings are important in reducing vibration and noise, thus enhancing machines' performance and longevity. The importance of low-noise bearings is higher in the automotive sector, where they are applied in gearboxes, electric motors, and wheels, where they dramatically reduce noise levels and boost comfort or performance. And as the electric vehicle market realms of stringent noise reduction specifications, demand for these high-quality low-noise bearings is driving up OEM requirements. Continuously, manufacturers collaborate with automotive OEMs in endeavors to develop customized solutions for desired use in electric and luxury vehicles. On the other hand, the industrial application of these bearings is for high-speed machinery and equipment. Industries like printing, food processing, and textile manufacturing have a big percentage in the use of such bearings since high precision and control of noise are mandatory requirements from different operational and safety perspectives rather than fulfilling workplace regulations on noise.

For a better understanding of the market of the low-noise bearings market, the market is analyzed based on its worldwide presence in countries such as North America (The US, Canada, and Rest of North America), Europe (Germany, The UK, France, Italy, Spain, Rest of Europe), Asia-Pacific (China, Japan, India, Rest of Asia-Pacific), Rest of World. The Asia-Pacific low-noise bearings market is expected to dominate in the forecast period. The region has extensive manufacturing industries, primarily in automotive, electronics, and machinery. The prime example is China and India, which mainly depend on the automotive sector and high volumes of low-noise bearings to improve the performance of vehicles and reduce noise. The rapid urbanization in the region and, subsequently, major developments of infrastructure have further accelerated the

growth of the market. Projects such as the construction of metros, highways, and skyscrapers require advanced machinery with low-noise bearings not only for operational efficiency but also for safety. An important aspect of the bearings is used in construction equipment in congested urban areas where noise reduction is an essential requirement. Countries like China, India, and Japan are investing in renewable energy projects such as wind and solar farms, where low-noise bearings are essential for the maintenance and operations of wind turbines and solar tracking systems. These bearings ensure the longevity and safety of such projects and optimize their efficiency. Furthermore, governments in the region are focusing on their economy and trying to make a production-based economy. To boost their manufacturing sectors, many governments in the region have introduced campaigns, such as the "Make in India" initiated by India and "Made in China 2025" in China. Such campaigns often come with subsidies and incentives for adopting newer manufacturing technologies, such as low-noise bearings under precision engineering components.

Some of the major players operating in the market include SKF Group, Italcuscinetti S.p.A. a Socio Unico, ROLLAX GmbH & Co. KG, The Timken Company, WINKEL GmbH, NSK Ltd., TFL Bearing, Luoyang LZJM Precision Bearing Co., Ltd., Shenzhen Youmeite Bearings Co., Ltd, and Schaeffler AG.

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