Linear Motor - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts 2019 - 2029

Market Report | 2024-02-17 | 120 pages | Mordor Intelligence

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Report description:

The linear motor market was valued at USD 1.88 billion in the previous year and is expected to register a CAGR of 5.49%, reaching 2.46 billion by the next five years. A linear motor is a rotary electric motor that can produce linear motion without contacting parts. This helps in eliminating backlash, windup, and maintenance issues. Thus, there is a growing demand for linear motors in machine tools, semiconductor equipment, electronic manufacturing, and many other industrial motion control applications. There is also a rising availability of custom linear motors for various industry applications.

Key Highlights
-The cylindrical motor segment is anticipated to witness robust growth in the linear motor market during the forecast period. A cylindrical linear motor is a highly rigid machine with smooth axis movement. The broader use of linear motors in cars to automate their performance is accelerating the market growth in the automotive sector. As the automotive industry is rapidly evolving, there is a surge in demand for linear motors to provide convenience and safety to drivers. Growth in automotive manufacturing will likely boost the demand for linear motors in production line transport, handling, positioning, sorting, and material provisioning.
-Asia Pacific is anticipated to grow significantly in the global linear motor market. Tecnotion, a leading direct drive components manufacturer, recently opened its new sales office in Suzhou, China, as an essential step towards continuous international expansion. China stands as a potential growth market for the company's high-performance products and vast industry knowledge in the linear motion industry. Growing technological advancements are aiding linear motors' development to meet the market demands in the Asia Pacific region.
-The growing rate of high-performance industrial automation is fuelling the adoption of linear motors globally. Asia is regarded as the world's largest market for the deployment of industrial robots. China, Japan, and the Republic of Korea are significant markets for annual industrial automation installations in Asia Pacific. Such data indicates the region's growth of linear motors in the coming

years.
-In the current year, Siemens presented its investment strategy of USD 2 billion for a new high-tech factory in Singapore to serve Southeast Asia's booming intelligent hardware technologies market. The company also announced an investment of USD 215 million in the factory to incorporate highly automated manufacturing processes.
-The COVID-19 pandemic encouraged industries to adopt industrial automation to manage operations better. With the need to manage high-velocity operations with limited and expensive labor resources, the demand for automated equipment has risen. Following this trend, manufacturers are expected to increase automated manufacturing post-COVID-19 to mitigate global supply chain risks. This is likely to boost the adoption of the linear motor market across the globe in the post-pandemic era.

Linear Motor Market Trends

Optimum Control Characteristics of Linear Motors to Propel the Growth of the Market Studied

- A high-performance linear motion system enables performance requirements to be met precisely and adapts to industry-specific applications. As a result, linear motion system manufacturers focus on unique designs to achieve optimized control and better-traversing quality. This also enables original equipment manufacturers (OEMs) to optimize 'cogging,' a force ripple occurring frequently in iron-core linear motors.
- Growing demands for dynamic characteristics of linear motors are encouraging manufacturers to collaborate and cooperate with automation specialists to achieve their objectives. There is a rising demand for lightweight linear servo drives, which can be more energy efficient than conventional mechanical drive systems and with solid control technology.
- Sophisticated motion controllers and servo drives provide enhanced control characteristics to the motion of the linear motor. OEMs are, therefore, introducing new modular designs in linear motors through innovation. Linear motors with best-in-class control technology offer faster, precise, and reliable motion control capabilities for various applications. The advantage of linear motors in terms of stiffness and frequency response compared to traditional motors is anticipated to propel the global linear motor market growth.
- There is a growing demand for linear motors in the electronics and semiconductor industries for applications such as wafer handling, inspection, testing, assembly, and packaging, among others. The ability of the linear drives to effectively control the challenges, such as high precision, high dynamics, and low maintenance, in the electronics and semiconductor industries, enables authorities to secure long-term, sustainable competitive advantages.
- As the global electronics industry evolves, the need for microchips is proliferating. The growing establishment of semiconductor manufacturing hubs worldwide has increased the demand for robotics and automation to produce microchips. High-control linear motors can assist through a wide range of semiconductor applications from the wafer level, through inspection to pick and place and measurement requirements.

Asia Pacific Expected to Dominate the Global Linear Motor Market

- The Asia Pacific region accounts for the world's largest industrial automation market. The International Federation of Robotics states that China is the largest adopter of industrial robotic systems in Asia Pacific, followed by Japan. High accuracy, speed, and responsiveness are likely to boost the demand for linear motors in robotics, CNC machines, and automation systems.
- Industries in Asia Pacific have adopted the U-shaped linear motor for the pick and place procedure to avoid damaging materials during production. Linear servo drives feature a customized development platform for precise pick and place motion. The personalized development platform enhances operational speed and efficiency while achieving precise control.
- The Asia Pacific linear motor market presents significant growth opportunities for many countries. Malaysia, Singapore, Taiwan,

and Thailand are some of the most preferred sites for relocating electronics companies. India and Vietnam have become important hubs in recent years, mainly due to their low labor costs and proximity to crucial final markets.
- The Fourth Industrial Revolution involved equipping factories with advanced hardware and software that promoted greater efficiency. With rapid advancements in Industry 4.0, Southeast Asian countries are incorporating digital technology in manufacturing to improve productivity. According to the Wisconsin Economic Development Corporation, Singapore recently announced a ten-year roadmap to grow its manufacturing sector by 50 percent by the end of this decade. Similarly, Malaysia plans to increase its industrial productivity by 30 percent within the same time.
- Growing trends of advanced manufacturing and Industry, 4.0 in Asia Pacific will provide opportunities for businesses in the linear motor market to achieve operational accuracy and efficiency, thereby promoting regional market growth.

Linear Motor Industry Overview

The Linear Motor Market is fragmented because of the presence of several companies. Some key players are ETEL SA, Mitsubishi Electric Corporation, Tecnotion, Rockwell Automation, Aerotech, Inc., Fanuc Corporation, Hiwin Corporation, Sinotech, Inc., Faulhaber Group, Yaskawa Electric Corporation., etc. Key players in this market are introducing new innovative products and forming partnerships and collaborations to gain competitive advantages.

In October 2022, NUM Group, a machine automation manufacturer and Computerized Numerical Control specialist launched its new series of brushless linear servo motors designed for continuous duty cycle applications in machine tools. The company's LMX series linear motors can help mitigate the effect of arduous operating conditions. Robust stainless steel and integrated cooling circuits maximize the flow rate in the primary coil section, which minimizes cogging forces and reduces thermal losses.

In April 2022, Motors and generators company Sanyo Denki Co., Ltd. developed an energy-efficient linear servo motor with fast acceleration and deceleration to expand its servo system lineup. The linear motor accelerates equipment faster, shortens the cycle time, and increases productivity. The new product is for high-speed drive equipment applications such as conveyor machines and feed axes of PCB surface mounters. Reduced power loss offered by the motor makes equipment more energy efficient, consistently providing high precision.

Additional Benefits:

- The market estimate (ME) sheet in Excel format
- 3 months of analyst support

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