

Pneumatic Equipment Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

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Report description:

The Pneumatic Equipment Market is expected to register a CAGR of 7.3% over the forecast period. A significant increase in demand from manufacturing industries, due to the execution of small and large projects and to improve the efficiency of a range of industrial projects, is poised to increase the adoption of pneumatic equipment over the forecast period. Moreover, there is a growing need across end-user verticals to improve process efficiency to minimize costs. This could be attained by ensuring the integration of the appropriate equipment with the system's demands. Equipment such as pneumatic actuator has considerable cost, size, and thrust advantages.

Key Highlights

Increasing automation across industries will likely propel the market growth of pneumatic equipment. A significant increase in demand from manufacturing industries due to the execution of small and large projects and the efficiency of a range of industrial projects is poised to increase the adoption of pneumatic equipment over the forecast period.

Moreover, there is a growing need across end-user verticals to improve process efficiency to minimize costs. It could be attained by ensuring the integration of the appropriate equipment with the system's demands. Equipment like pneumatic actuators has considerable cost, size, and thrust advantages.

Pneumatic systems rely on a constant supply of compressed air, generally provided by an air compressor, to develop and control energy. They are widely used across industries to drive machinery. Pneumatic systems offer several distinctive advantages. Compared to electromotive components, pneumatic parts last longer and require less maintenance. Pneumatic components are relatively simple, making them suitable for less complicated automatic control systems. Pneumatic system components do not overheat when overloaded.?

The advent of jet engines for passenger and military aircraft stimulated the use of centrifugal and axial-flow compressors in the aerospace sector. The extensive use of pneumatics for packaging machines to drive motion and actuate machine sequences

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garnered interest from machine designers. ?

Pneumatic equipment is helpful when frequent washdowns are needed. There are pneumatic valves for sanitary issues, which can withstand aggressive chemicals and detergents. They are less complex than other power technologies and, thus, are known for dependable operations with lesser downtime. Pneumatics is significantly used in the food and beverage sector as they are clean, reliable, easy, and safe to maintain. They must also design features that enhance performance and potentially lower the associated costs. ?

Growth in applications due to Industry 4.0 is expected to augment innovative pneumatic solutions. The Industrial Internet of Things (IIoT) is revolutionizing manufacturing, packaging, and related process industries, and it is bringing digital transformation to pneumatic operations of virtually any size. This transformation allows operators to process and capture data from pneumatic and other machine elements to receive significant production insights.

Pneumatic Equipment Market Trends

Pneumatic Valves to Hold Significant Market Share

The growth of pneumatic valves' is driven by factors such as the expanding use of pneumatic valves in the manufacturing and mechanical domain. Additionally, the increasing usage of heavy automobiles is anticipated to propel the market growth in the forecast period. However, high-end maintenance and a shortage of skilled personnel are expected to impede market growth during the forecast period.

Preventive maintenance for pneumatic systems is essential to getting the best performance out of the equipment. Regularly checking the state of pneumatic equipment helps catch wear and tear before it becomes a problem. Pneumatic systems offer a multitude of benefits for end users.

A common interest for OEMs in developing a lean, mean machine that can be mass customized and sold to multiple markets with the most minor/minimum modifications is driving the growth of pneumatic valves in industrial equipment. According to OICA, last year, around 10.9 million commercial vehicles were produced in North America.

In May 2022, Emerson announced that its AVENTICSTM Series Advanced Valve (AV) valve system with Advanced Electronic System (AES) Profinet and Ethernet/IP capabilities are offered with preinstalled Open Platform Communication Unified Architecture (OPC UA), giving it the unique and only valve systems with this directly incorporated capability. The AES enables users to overcome interoperability difficulties and get easier access to data, whereas including the digital twin can boost productivity and efficiency.

Pneumatic valves and meeting machine safety regulations are proving to be successful strategies in the machine-building world. This interest, in part, has resulted from the globalization of the machining marketplace and the intent to sell in multiple regions, presenting pneumatic technology to be increasingly used. Integrating safety technology and pneumatic valves intensifies system reliability, elongates operation life, and satisfies those safety regulations.

North America to Witness Significant Growth

One of the critical theories driving the future of pneumatics is its overall equipment effectiveness, which is improved with a better understanding of machine systems and processes. While the focus is very much on the electronic and digital control of automated systems, this does not necessarily hinder the future of pneumatics, as many material elements of pneumatic systems can adapt their designs and processes to incorporate IIoT factors into their operation. Researchers try to advance electronic data collection systems using thin foils. These foils could be attached as labels to a pneumatic cylinder, where they would gather usage and sensory data and transmit it wirelessly to a control network.

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The increase in production and sales of commercial vehicles and off-highway trucks, along with the increased railway and high-speed train production, are driving the growth of the market studied in the region.

According to the US Census Bureau, the annual sales of retail food and beverage stores in the United States amounted to approximately USD 880 billion last year. Pneumatic cylinders are a common component in food and beverage conveyance systems. This is likely because the systems are easy to clean and are a compact, reliable way of generating linear and rotational motion.

FDA's Food Safety Modernization Act in September 2022 has finalized seven major rules to implement FSMA, recognizing that ensuring the safety of the food supply is a shared responsibility among many different points in the global supply chain for human and animal food. Pneumatic systems perform various tasks, from moving ingredients along for processing to final packaging and product loading. These systems carry out numerous functions in every aspect of the food and beverage supply chain and can do so even in extreme conditions.

Pneumatic Equipment Market Competitor Analysis

The Pneumatic Equipment Market is very competitive in nature. The market is moderately fragmented due to the presence of various small and large players. All the major players account for a large share of the market and are focusing on expanding their consumer base across the world. Some of the significant players in the market include Festo Inc., SMC Corporation of America, Janatics, Parker Hannifin Corp., Siemens AG, and Ingersoll Rand.

In September 2022, SMC Corporation of America updated the pneumatic system on the Boilermaker Special VII, the official mascot of Purdue University. To prepare for the project, a team of four SMC engineers collaborated with the Reamer Club to examine the state of the pneumatics on the train and design a new system. The update consisted of replacing the air preparation system that removes moisture and debris from the pressurized air, the valves and manifold that direct the air, and the tubing, wiring, and fittings that connect the entire system.

In February 2022, MassChallenge Switzerland, part of MassChallenge's global network of innovators, partnered with a leading manufacturer of pneumatic equipment and machine elements, SMC Corporation. SMC plays an essential role in the automation of various industries, from robots and other devices required in factory automation to automatic inspection equipment used for medical and semiconductor manufacturing equipment. According to MassChallenge Switzerland, SMC brings tremendous experience in automation technology, which will significantly benefit startups and partners, as pneumatic technology contributes to the production of almost every product of daily life.

Additional Benefits:

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

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