

Solenoid Valve Market to See Steady Growth, Reaching USD 7,016.7 Billion by 2032 at 3.9% CAGR | Kendrion, ASCO, GFPiping

Solenoid Valve Market Growing automation in industries and demand for precise flow control drive market expansion.

NEW YORK, NY, UNITED STATES, April 9, 2025 /EINPresswire.com/ -- According to a comprehensive research report by Market Research Future (MRFR), the Solenoid Valve Market Information by Type, Application, Industry, and Region - Forecast till 2032, the <u>Solenoid Valve</u>



<u>Market Size</u> was valued at USD 4,995.4 Billion in 2023. The Solenoid Valve market industry is projected to grow from USD 5,175.2 Billion in 2024 to USD 7,016.7 Billion by 2032, exhibiting a compound annual growth rate of 3.9% during the forecast period 2024 - 2032.

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The Solenoid Valve Market is expanding, fueled by growing industrial automation, demand for fluid control systems, and advancements in smart valve technologies."

MRFR

Solenoid Valve Market Comprehensive Overview

The solenoid valve market has seen significant growth over the past few years, driven by increasing industrial automation, expanding applications in various end-use industries, and technological advancements in valve design. A solenoid valve is an electromechanically operated valve used to control the flow of liquids or gases. These valves are commonly employed in fluid power pneumatic and hydraulic systems, as well as in control systems in industries such as oil & gas, water treatment, chemical,

automotive, and food & beverage. The growth in process industries, combined with the rising focus on efficiency and safety, has led to widespread adoption of solenoid valves across the globe.

The solenoid valve market is currently experiencing robust expansion due to the increasing

automation of industrial processes and the adoption of smart technologies. These valves offer various advantages, including quick response time, remote control operation, low power consumption, and reliability. As businesses aim to optimize process control and minimize human intervention, solenoid valves are becoming indispensable components in automated systems. In addition, the integration of Internet of Things (IoT) technologies in solenoid valves is boosting demand by providing real-time monitoring, predictive maintenance, and better process control.

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Key Companies in the Solenoid Valve market include

CKD Corporation
Emerson Electric Corporation
Kendrion
GF Piping
IMI Precision Engineering
Danfoss Industries Ltd.
Curtiss Wright Corporation
Parker Hannifin Corporation
ASCO Valves Inc.
Rotex automation
SMC Corporation
The Lee Company

Market Trends Highlights

Adoption of Smart Valve Technologies: The emergence of Industry 4.0 and smart manufacturing is encouraging the use of intelligent solenoid valves. These valves offer diagnostics capabilities, remote monitoring, and enhanced process control, resulting in improved efficiency and reduced downtime.

Growth in Renewable Energy and Water Management: As the global focus shifts toward sustainable development, the demand for solenoid valves in renewable energy systems and water treatment facilities is on the rise. Their ability to control water and gas flow precisely makes them essential in environmental management systems.

Miniaturization and Customization: The market is witnessing a growing demand for miniaturized solenoid valves, particularly in medical devices and laboratory automation. Furthermore, customers are increasingly seeking application-specific valve designs, promoting customization and modularity in valve production.

Market Dynamics

The dynamics of the solenoid valve market are influenced by various factors such as technological innovation, changing regulations, and evolving end-user requirements. Manufacturers are focusing on developing more energy-efficient valves with enhanced control features. At the same time, governments across the globe are implementing stringent environmental regulations, promoting the use of automated flow control solutions that reduce waste and enhance operational efficiency.

The competitive landscape of the market is also dynamic, with several players investing heavily in research and development to differentiate their products. Strategic partnerships, acquisitions, and geographic expansions are also common, as companies aim to strengthen their foothold in emerging markets and expand their product offerings.

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Market Drivers

A major driver of the solenoid valve market is industrial automation, particularly in sectors like manufacturing, pharmaceuticals, food processing, and petrochemicals. Automation requires precise and reliable flow control systems, and solenoid valves serve as critical components in these environments. The shift toward smart factories and digital twin technology is amplifying this demand.

Urbanization and infrastructure development are also contributing to market growth. With the increasing need for efficient water supply systems, waste management, and <u>HVAC systems</u> in smart buildings and residential complexes, solenoid valves are playing a crucial role in ensuring automated control and system safety.

In the healthcare sector, the demand for solenoid valves is rising in medical equipment such as ventilators, dialysis machines, and dental chairs. The growing emphasis on health infrastructure following global health crises such as COVID-19 has further accelerated this trend.

Market Restraints

Despite strong growth prospects, the solenoid valve market faces certain restraints. One of the primary challenges is the high cost of advanced solenoid valves, especially those with smart functionalities and specialized materials. Small and medium enterprises (SMEs) may find it difficult to adopt such systems due to budget constraints.

Valve failure due to wear and tear or contamination is another concern, particularly in harsh industrial environments. Regular maintenance is required to ensure the reliability and longevity of these valves, adding to operational costs.

Moreover, technical limitations such as noise, limited pressure handling capacity, and susceptibility to voltage fluctuations can restrict the applicability of solenoid valves in some high-demand scenarios. These issues are being addressed by ongoing research and product innovation, but they still pose barriers to widespread adoption in specific industries.

Solenoid Valve Market Segmentation

The solenoid valve market is broadly segmented as follows:

By Type: 2-way valves dominate the market due to their simple design and widespread application, followed by 3-way and 4-way valves.

By Material: Brass remains a popular choice due to its cost-effectiveness and versatility, while stainless steel is preferred for its durability in corrosive environments. Plastic valves are gaining traction in low-pressure applications.

By Function: Normally closed solenoid valves hold the largest share, particularly in safety-critical applications where default closure is essential during power failure.

By Application: The industrial sector is the leading end-use segment, followed by automotive, healthcare, and water treatment.

By Geography: North America and Europe have traditionally held significant market shares, but Asia-Pacific (APAC) is emerging as the fastest-growing region, driven by rapid industrialization in China, India, and Southeast Asia.

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Future Trends

Looking ahead, the solenoid valve market is poised for continued growth with evolving technologies and emerging applications. Integration with IoT and AI will pave the way for smarter flow control solutions capable of predictive maintenance and autonomous operations. The demand for energy-efficient valves will intensify as companies strive to meet sustainability goals and reduce operational costs.

The medical sector will continue to expand its use of solenoid valves, particularly in life-support and diagnostic equipment. With growing aging populations and increasing investments in health infrastructure worldwide, this segment is expected to remain robust.

The automotive industry's evolution, especially with the rise of electric and autonomous vehicles, will also shape the future of the market. Solenoid valves will be increasingly incorporated into

advanced vehicle control systems, thermal management, and braking systems.

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