

Solenoid Valve Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Body Material (Stainless Steel, Brass, Aluminium, Plastic, Others), By Design Type (2-way, 3-way, 4-way, 5-way), By Operating Type (Direct, Semi-Direct, Indirect), By End User Industry (Oil & Gas, Water & Wastewater, Food & Beverage, Chemical & Petrochemical, Power Generation, Automotive, Pharmaceuticals, Others), By Region, and By Competition, 2020-2030F

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Abstracts

The Global Solenoid Valve Market was valued at USD 7.61 billion in 2024 and is projected to reach USD 9.67 billion by 2030, growing at a CAGR of 3.92% during the forecast period. The market is experiencing substantial growth, driven by advancements in automation, industrial progress, and an increasing demand for efficient fluid control solutions. Solenoid valves, which utilize electromagnetic coils to regulate the flow of liquids and gases, are widely utilized across various sectors, including oil and gas, water treatment, automotive, pharmaceuticals, and food and beverage industries. The increasing adoption of Industry 4.0 and smart manufacturing practices has further accelerated demand, as solenoid valves enable precise, remote-controlled fluid management, thereby improving operational efficiency and reducing costs. Moreover, stringent government regulations focused on energy efficiency and water conservation are driving the market, as solenoid valves play a critical role in optimizing resource usage.

Key Market Drivers

Growing Demand for Solenoid Valves in the Oil and Gas Sector

A primary driver for market growth is the rising demand for solenoid valves in the oil and gas industry, where they are essential for pipeline control, safety shut-off, and fluid regulation. As global energy consumption increases, the need for advanced flow control systems in exploration and production activities has surged.

Similarly, the water and wastewater treatment industry is experiencing strong growth due to heightened concerns about water scarcity and pollution. Solenoid valves are widely used in filtration systems, irrigation, and desalination plants, ensuring efficient water distribution and conservation.

Rising Use in the Automotive Industry

The automotive sector is another key contributor to the solenoid valve market. As the production of electric and hybrid vehicles increases, solenoid valves are being integrated into systems such as fuel injection, cooling circuits, and HVAC (heating, ventilation, and air conditioning). Additionally, the medical and pharmaceutical industries rely on solenoid valves for precise fluid control in devices like dialysis machines, ventilators, and laboratory equipment. The COVID-19 pandemic underscored the importance of solenoid valves in medical devices, further boosting demand in the healthcare sector.

Key Market Challenges

High Initial and Maintenance Costs

A significant challenge facing the solenoid valve market is the high initial costs associated with advanced solenoid valve systems. While basic solenoid valves are relatively affordable, high-performance versions used in specialized applications (such as those in the oil and gas or pharmaceutical industries) can be costly. These valves often require precision engineering, corrosion-resistant materials, and specialized coatings, which drive up production costs. Furthermore, solenoid valves are subject to wear and tear due to continuous operation, necessitating regular maintenance to prevent system failures. Issues like coil burnouts, contamination, and pressure fluctuations can lead to frequent replacements, further adding to operational expenses. The need for skilled technicians to install, monitor, and maintain solenoid valve systems

also increases the total cost of ownership, which can deter smaller businesses and cost-sensitive industries from adopting advanced solenoid valve technology. As a result, some industries may seek alternative flow control solutions, slowing market growth.

Key Market Trends

Expansion of Solenoid Valve Applications in the Automotive Industry

The automotive sector is emerging as a major growth driver for the solenoid valve market, with increasing applications in fuel injection systems, HVAC, braking systems, and transmission control. The growing production of electric and hybrid vehicles is further driving demand, as solenoid valves are incorporated into battery cooling circuits and energy recovery systems. The transition to energy-efficient and emission-reducing technologies is pushing automakers to integrate advanced solenoid valves for better fluid control and enhanced fuel efficiency. Additionally, as autonomous and connected vehicles become more prevalent, the need for high-precision solenoid valves in safety and performance systems is rising. With the automotive industry increasingly focused on electrification and smart mobility, the solenoid valve market is poised for substantial growth in this segment.

Key Market Players

Emerson Electric Co.

Christian Borkert GmbH & Co. KG

Curtiss-Wright Corporation

Danfoss Industries Pvt Ltd.

GSR Ventiltechnik GmbH & Co. KG

Eaton Corporation plc

IMI group

Parker Hannifin Corporation

Dwyer Instruments, LLC

SMC Corporation

Report Scope:

In this report, the Global Solenoid Valve Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Solenoid Valve Market, By Body Material:

Stainless Steel

Brass

Aluminum

Plastic

Others

Solenoid Valve Market, By Design Type:

2-way

3-way

4-way

5-way

Solenoid Valve Market, By Operating Type:

Direct

Semi-Direct

Indirect

Solenoid Valve Market, By End User Industry:

Oil & Gas

Water & Wastewater

Food & Beverage

Chemical & Petrochemical

Power Generation

Automotive

Pharmaceuticals

Others

Solenoid Valve Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

South America

Brazil

Argentina

Colombia

Asia-Pacific

China

India

Japan

South Korea

Australia

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Solenoid Valve Market.

Available Customizations:

Global Solenoid Valve Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following

Solenoid Valve Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Body Mate...

customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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