

Automotive Solenoid Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 to 2032

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Abstracts

The Global Automotive Solenoid Market, valued at USD 4.7 billion in 2023, is expected to grow at a CAGR of 7.1% from 2024 to 2032. The rise in electric and hybrid vehicle (EV and HEV) adoption is a key driver behind this growth, as solenoids play a crucial role in controlling fluid and gas flow, thermal management, and power distribution in these vehicles. The increasing focus on reducing emissions and promoting greener transportation options further propels demand for automotive solenoids. Governments worldwide are implementing stricter emission regulations, pushing automakers to obtain fuel-effective and eco-friendly vehicles. Solenoids are vital in systems like fuel injection and engine management, providing precise control over fuel delivery and combustion, which in turn improves fuel efficiency and reduces emissions.

In EVs and HEVs, solenoids are also essential for optimizing battery performance and managing thermal systems, contributing to overall emission reduction efforts. In terms of vehicle types, the passenger vehicle segment held over 65% of the market share in 2023, projected to surpass USD 5.5 billion by 2032. The dominance of this segment is largely due to the high volume of passenger car sales, especially in regions like Asia-Pacific, North America, and Europe. The increasing demand for fuel-efficient vehicles equipped with advanced technologies, including automated transmission, engine management, and emission control systems, is driving the adoption of solenoids in this category. From a functional perspective, the fluid control segment accounted for about 53% of the market in 2023. Solenoids used in fluid control are critical to key vehicle systems such as fuel injection, transmission, braking (ABS), and HVAC.

Their ability to regulate fluid flow precisely makes them indispensable for optimizing vehicle performance, enhancing fuel efficiency, and meeting stringent emission

standards. The rising adoption of fuel-efficient technologies and tightening global emission regulations further bolster demand for advanced solenoids, particularly in internal combustion engine (ICE) vehicles. The Asia-Pacific region dominated the automotive solenoid market, holding more than 45% of the market share in 2023, with projections to exceed USD 4 billion by 2032. China, as the largest producer and consumer of automobiles globally, leads the region's demand for solenoids across various automotive applications. The country's strong push towards emission reduction and fuel-efficient technologies is driving the need for advanced solenoid systems in areas like transmission, engine management, and emission control systems.

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