

Automotive Fuel Injector Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 90 pages | Mordor Intelligence

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Report description:

The Automotive Fuel Injector Market was valued at USD 10.22 billion in 2021 and USD 14.60 billion in 2027 and is expected to register a CAGR of ~ 6% during the forecast period (2023 - 2028).

The COVID 19 pandemic caused a downturn in the automotive fuel injector markets since major automotive manufacturing facilities completely halted production as a consequence of the worldwide lockdown imposed by numerous governments. However, increased vehicle demand is witnessed in the last few months, supporting the growth of the gasoline direct injection system market following the pandemic. For instance, According to Scotiabank, global car sales increased to roughly 66.7 million vehicles in 2021, up from around 63.8 million units in 2020.

Over the long term, an increase in demand for fuel economy, improved engine performance, a rise in implementation of strict emissions rules such as Bharat Stage VI, and an increase in preference for engine downsizing & vehicle weight reduction will positively impact the target market growth during the forecast period. Additionally, fuel injection systems are predicted to increase at a significant pace due to rising population, improving lifestyles, and the cumulative demand for passenger vehicles. Injection systems are critical components in any vehicle engine because they manage and monitor the amount of fuel entering the engine cylinders. Modern fuel injection systems not only manage the flow of fuel, but also provide additional functions such as multiple, pilot, post injections, and rate shaping (scheduling), which are also expected to significantly contribute to market growth.

However, A fuel injection system is comparatively more expensive than a carburetor up-gradation and has a shorter lifespan than compared to the carburetor. Repairing fuel injectors is more difficult than carburetor repair. A carburetor's air fuel ratio and mix will be superior to a direct injection system.

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In Asia-Pacific countries such as India, and China are likely to play a significant role in the growth of the target market in the upcoming days since these areas serve as hubs for some of the top automobile manufacturers and accommodate expanding vehicle production and penetration of new cars. The increasing demand for MHCV in countries such as China, India, and Brazil is creating new opportunities for fuel injection systems.

Automotive Fuel Injector Market Trends

Multipoint fuel injection Segment is Expected to Hold Major Share in the Market

Multipoint fuel injection provides a separate injector nozzle outside each cylinder's intake port, which is why the technique is also known as port injection. Shooting the fuel vapor thus to the intake port ensures that it will be entirely absorbed into the cylinder. The key benefit is that MPFI designs correctly measure fuel, attaining the desired air-fuel ratio and optimizing all connected elements. It also essentially prevents the risk of gasoline condensing or collecting in the intake manifold. The intake manifold for TBI and carburetors must be built to transfer the engine's heat, a measure to evaporate liquid fuel.

Factors such as rising vehicle production, rising need for fuel economy, and severe pollution regulations are propelling research and growth in the automotive fuel injection systems market. For instance,

Recently, Bosch has introduced a new series of performance fuel injectors. The current, high-flow gasoline injectors are based on Bosch's newest model of multi-port injectors, the EV14, and are intended to increase fuel flow, productivity, and power.

Asia-Pacific Region is Anticipated to Play a Significant Role in the Market

The Asia-Pacific market is expanding rapidly, owing to rising vehicle manufacturing in these areas. Rising purchasing power, increased demand for fuel-efficient automobiles, and stricter pollution standards in rising nations economies such as China and India have all resulted in increased demand for fuel injection systems. Asia-Pacific is expected to be the largest market for automotive fuel injection systems, with the fastest growth rate during the forecast period. Additionally, prominent companies in the region have been improving their existing commercial vehicle lineup, which is projected to supply the market with profitable potential. Such development and technological advancements in the automobile sector will contribute to the growth of the fuel injector market over the forecast period. For instance,

In February 2021, Nissan launched the new NV300 Combi., the latest improvement to its light commercial vehicle line-up, which incorporates increased safety and drivetrain & engines to deliver superior performance.

In January 2022, China Yuchai International, through its main operating subsidiary, Guangxi Yuchai Machinery Company Limited (GYMCL), announced that the company's YCK05 hydrogen-powered engine achieved stable ignition and operation in a recent demonstration at the Beijing Institute of Technology. The YCK05 hydrogen-powered engine incorporates a variety of sophisticated special technologies, including high-pressure multi-point input air injection, high-efficiency low-inertia turbocharging, and high-efficiency lean-burn combustion.

Automotive Fuel Injector Market Competitor Analysis

The existence of multiple global companies throughout the world led the automobile fuel injector industry . While some of the market's top players compete on the basis of product offering, other firms are collaborating, acquiring, and partnering throughout the globe. For instance,

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In February 2022, KEYOU and HOERBIGER have agreed to a manufacturing and distribution partnership to commercialize injectors for hydrogen engines. Both firms have agreed to collaborate on the research, manufacture, and marketing of injectors for hydrogen engines. The emphasis is on the development of PFI injectors for high-performance heavy-duty applications. In April 2021, Argonne has formed a new collaboration with Cummins, Convergent, and Sandia to anticipate fuel injector dynamics. Experiments, machine learning, and high-fidelity simulations are used by collaborators to provide prediction tools to engine makers. Fuel injector nozzles may be small, but they have a significant influence on how engines operate. Their role is to break down fuel into tiny droplets when it mixes with air and ignites, a process requiring intricate spray dynamics that scientists are still attempting to figure out.

Some major players dominating the market include Robert Bosch LLC, Denso Corporation, Continental AG, Magneti Marelli Parts and Services S.p.A., and Delphi Technologies (BorgWarner Inc.).

Additional Benefits:

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

Table of Contents:

1 INTRODUCTION

- 1.1 Study Assumptions
- 1.2 Scope of the Study

2 RESEARCH METHODOLOGY

3 EXECUTIVE SUMMARY

4 MARKET DYNAMICS

- 4.1 Market Drivers
- 4.2 Market Restraints
- 4.3 Porter's Five Forces Analysis
 - 4.3.1 Threat of New Entrants
 - 4.3.2 Bargaining Power of Buyers/Consumers
 - 4.3.3 Bargaining Power of Suppliers
 - 4.3.4 Threat of Substitute Products
 - 4.3.5 Intensity of Competitive Rivalry

5 MARKET SEGMENTATION

- 5.1 By Type
 - 5.1.1 Throttle Body Injection
 - 5.1.2 Multipoint Fuel Injection
 - 5.1.3 Others Types
- 5.2 By Fuel
 - 5.2.1 Diesel Fuel Injectors
 - 5.2.2 Gasoline Fuel Injectors
- 5.3 By Vehicle Type

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- 5.3.1 Passenger Vehicle
- 5.3.2 Commercial Vehicle
- 5.4 By Sales Channel
 - 5.4.1 OEM
 - 5.4.2 Aftermarket
- 5.5 By Geography
 - 5.5.1 North America
 - 5.5.1.1 United States
 - 5.5.1.2 Canada
 - 5.5.1.3 Rest of North America
 - 5.5.2 Europe
 - 5.5.2.1 Germany
 - 5.5.2.2 United Kingdom
 - 5.5.2.3 France
 - 5.5.2.4 Italy
 - 5.5.2.5 Spain
 - 5.5.2.6 Rest of Europe
 - 5.5.3 Asia-Pacific
 - 5.5.3.1 India
 - 5.5.3.2 China
 - 5.5.3.3 Japan
 - 5.5.3.4 South Korea
 - 5.5.3.5 Rest of Asia-Pacific
 - 5.5.4 Rest of World
 - 5.5.4.1 South America
 - 5.5.4.2 Middle-East

6 COMPETITIVE LANDSCAPE

- 6.1 Vendor Market Share
- 6.2 Company Profiles*
 - 6.2.1 Robert Bosch GmbH
 - 6.2.2 Denso Corporation
 - 6.2.3 Continental AG
 - 6.2.4 Delphi Technologies (BorgWarner Inc.)
 - 6.2.5 Magneti Marelli Parts and Services S.p.A.
 - 6.2.6 Mikuni American Corporation
 - 6.2.7 Hitachi Astemo Indiana, Inc.
 - 6.2.8 Infineon Technologies AG
 - 6.2.9 GB Remanufacturing, Inc.
 - 6.2.10 Valley Fuel Injection & Turbo, Inc.

7 MARKET OPPORTUNITIES AND FUTURE TRENDS

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