

Automotive Parts Die Casting Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)

Market Report | 2023-01-23 | 100 pages | Mordor Intelligence

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Report description:

The Automotive Die Casting Market is valued at USD 61.05 Billion in 2021 and is expected to reach USD 87.54 Billion by 2027, registering a CAGR of over 6.19% during the forecast period (2022-2027).

The COVID-19 pandemic had a profound impact on manufacturing operations, and the market witnessed a slowdown due to supply chain disruptions and trade restrictions worldwide. However, economic activities resumed across the world market to witness steady growth during the forecast period.

The market studied is largely driven by supply chain complexities in the die casting industry, expanding the automotive market, increasing penetration of die casting parts within the current automotive industry, and future use of die casting in electric vehicles.

The automotive industry witnessed dramatic growth over the past couple of years. Owing to new innovation, it has never restricted itself. At present, automotive manufacturers are striving to meet the targets for highly tensile chassis frames and strong automotive parts, which are long-standing, lightweight, and cost-effective.

CAFE standards and EPA policies to reduce automobile emissions and increase fuel efficiency are driving automobile manufacturers to reduce the weight of the automobile by using lightweight non-ferrous metals. Subsequently, the use of die-cast parts as a weight reduction strategy is acting as a major driver for the market studied.

Rules imposed by OSHA and the initiatives by the NADCA to improve the technical workforce in the die casting industry are expected to improve the overall production of the market studied.

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The automobile industry is highly dependent on the Environment Protection Agency (EPA) regulations, owing to the high emissions of the automotive units. The move by the EPA to raise the miles per gallon (mpg) standards to 54.5 mpg by 2025 has actually helped the die casting industry, as the automotive industry concluded that the only way to get to those mileage standards is by manufacturing lightweight vehicles.

Automotive Parts Die Casting Market Trends

Vacuum Die Casting is Expected to Witness a High Growth Rate

There have been significant developments and improvements in the conventional die casting process. Currently, the ultra-high-vacuum die casting process is applied for producing large and thin component parts, such as space-frames and pillars, which are usually welded to automobile chassis.

Electrical and hydraulic components in an automobile work simultaneously. Reliability and quality are given prime importance in transmission parts. The transmission system in an automobile is a complex combination of mechanical functions. It is prone to extreme conditions and environments. This enhances the importance of integrity. Valve bodies, stators, and clutch pistons are some of the commonly die-casted transmission parts in the automotive industry. For instance,

Nissan announced that the 2022 Rogue would receive the OEM's all-new, variable-compression-ratio, turbocharged 3-cylinder as the sole engine offering. The new engine produces 201 horsepower and 225 lb-ft of torque, increases of 11% and 24%, respectively, versus the outgoing 2.5L naturally aspirated mill. New textured valve lifters reduce friction and improve overall engine efficiency, while a vacuum low-pressure die-cast cylinder head improves engine cooling.

There have been key developments and improvements in the conventional die casting process. Currently, the ultra-high-vacuum die casting process is applied for producing large and thin component parts, such as space-frames and pillars, which are usually welded to automobile chassis. For instance,?

In May 2021, LK Group, following the signing of 7 sets of Idra 6000T, 4500, and 3500 ultra-large intelligent die-casting units, made an announcement of another order of 9000T die casting machine to Wencan Group.

However, the shift from other processes to the vacuum die casting process is gradual and expected to continue to increase during the forecast period as manufacturers are trying to embed this technology into the process.

Asia-Pacific Region Expected to Play Key role in the Market

The Asia-Pacific region is expected to dominate the market owing to the presence of key countries like India, China, Japan, etc. China is one of the major producers of die casting parts, accounting for more than 64.90% of the regional (Asia-Pacific) die casting market share. ?

The COVID-19 pandemic had a mild impact on the country's automotive production owing to trade and travel restrictions imposed worldwide. For instance,? In December 2020, According to the China Association of Automobile Manufacturers. China's car production reached 2.84 million units registering an increase of 5.7% from 2019. The production of passenger cars reached 2.33

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million in December, while the respective figures for commercial vehicles were 509,000 units, up by 2.3% year-on-year.

Some of the major players have to change their expansion plans, product launches, production, etc., for other countries across India, Japan, China, etc. For instance,

In June 2020, AISIN-HONGDA delayed launching the AI auto parts plant, set up by Japan's Aisin Seiki and Toyota Tsusho and China's Ruifeng Investment. Aisin-Hongda has invested USD 70 million to build the plant in Taizhou city in east China's Zhejiang province. ?

In March 2021, Sandhar Technologies Limited announced that it had entered into a non-binding memorandum of understanding (MoU) with Unicast Autotech (P) Ltd for the purpose of acquiring the aluminum die casting business.?

In April 2021, Toyota Industries Corporation and Siemens announced that they have cooperated to develop artificial intelligence that can predict product abnormalities in aluminum die casting, a key process in automotive air conditioning compressor production. This technology will improve quality and productivity by utilizing the AI application in Industrial Edge, the Siemens edge computing platform for the industry. ?

The growing automobile industry, along with consumer demand for fuel-efficient vehicles and the latest advancements in die casting techniques, are expected to drive the growth of the Asia-pacific region over the forecast period.

Automotive Parts Die Casting Market Competitor Analysis

The global market for die casting is highly fragmented, with many regional small-medium scale players from developing countries entering the market. Major recognized players, such as Nematik, Georg Fischer Automotive, Ryobi Die casting, Rheinmetall AG, Form Technologies Inc. (Dynacast), and Shiloh Industries, together accounted for over 16% of the overall global market share. These key players have focused their revenues on R&D, mainly to develop better production processes and alloys. For instance,

In February 2021, Endurance Technologies commenced commercial production at its new plant in Vallam, Vadagal, Kancheepuram, Tamil Nadu. The plant will manufacture aluminum die-castings and carry out the integration of disc brake components with control brake modulators for supplying machined aluminum castings to Hyundai, Kia, and Royal Enfield.

In December 2021, General Motors announced plans to invest more than USD 51 million to install state-of-the-art equipment at its Bedford, Indiana, aluminum die casting foundry to support the manufacture of drive unit castings for the upcoming Chevrolet Silverado EV and other current casting applications.

In March 2019, Rockman Industries, the auto component subsidiary of the Hero Group, announced the acquisition of a strategic stake in UK's MCT Engineering through Moldex Composites.?

In January 2019, Endurance Technologies Ltd acquired Italy-based aluminum die casting company, Fonpresmetal Gap SpA, for EUR 8.16 million. The Endurance Group in Europe has nine manufacturing plants at present, of which six are in Italy and three in Germany.

Koch Enterprises (Gibbs Die Casting Group), Linamar Corporation, Bocar Group, Endurance Group, Sandhar technologies, Sundaram Clayton Ltd, and Rockman Industries are a few other key players in the market.

Additional Benefits:

The market estimate (ME) sheet in Excel format

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