Automotive Turbocharger Market by Diesel & Gasoline Turbo (VGT, Wastegate, e-Turbo), Component (Turbine Wheel, Compressor Wheel, Housing), Material, Off-Highway Equipment, Vehicle Type, Fuel Type, Aftermarket and Region - Global Forecast to 2030

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Report description:

The automotive turbocharger market is projected to grow from USD 15.2 billion in 2024 to USD 22.9 billion by 2030, at a CAGR of 7.1%. The global automotive turbocharger market has experienced steady growth in recent years. Factors such as stringent emissions regulations, growing demand for TGDI (Turbocharged Gasoline Direct Injection) technology, and demand for more fuel-efficient vehicles have fueled the advancement in automotive turbocharger technology. Turbochargers are widely used in gasoline and diesel engines to increase power output, improve fuel efficiency, and meet emission limits. As automobile manufacturers and tier-1 suppliers prioritize fuel efficiency, emissions reduction, and performance, the development of automotive turbocharger technology is expected to play a vital role in the coming years.
"Gasoline passenger cars are leading the global automotive turbocharger market during the forecast period."
Owing to the growing focus on a cleaner environment, OEMs have shifted from diesel to gasoline-passenger cars. This shift is not predominantly observed in the commercial vehicle segment. For instance, according to ACEA, the EU had 36.7% gasoline vehicles, which decreased to ~16% in 2022. Further, growing demand for passenger cars with gasoline engines is observed as there are stricter emission regulations on diesel engines and there is a decline in the growth of diesel-powered engines. Turbocharged GDI engines offer several advantages such as optimized fuel and combustion efficiency. These enhanced GDI engines, with advanced engine design and turbocharging technology, have allowed OEMs to achieve higher levels of fuel efficiency while maintaining a consistent power and torque output. Europe has been at the forefront of gasoline-turbocharged vehicles in recent years. According to ACEA statistics, European gasoline cars grew by 10.6% compared to the previous year, with significant growth in key countries such as Italy (+24.9%) and Germany (+16.1%). The Asia Pacific and North American countries also noticed a sharp

increase and are expected to maintain an upward trend. As gasoline engines are generally less expensive to manufacture and maintain than diesel engines with high-power output, the demand for an efficient and economical option with gasoline vehicles will continue to dominate in the coming future.

"E-turbochargers are projected to be the fastest growing turbocharger type by 2030."

The advent of electric turbochargers with advanced technological capabilities has shown a significant adoption rate in internal combustion engines with hybrid powertrains. The electric turbochargers boost torque at lower engine speeds, enhancing agility and optimizing acceleration, particularly from a standstill condition of the vehicle. An electric turbocharger can be operational with a 48 V battery architecture, eliminates turbo lag with reduced emissions, and improves fuel efficiency. The electric turbocharger has huge potential, which is why it can be installed in light-duty vehicles (LDVs) and heavy commercial vehicles. For instance, the Mercedes-AMG SL 43 convertible, Mercedes-Benz S-Class, Mercedes-Benz S450, Audi SQ7, and Volvo XC90 T6 are some vehicle models offered with e-turbochargers. Although e-turbochargers cost more than wastegate and VGT technology, their application is limited to premium vehicles only. However, with the rising demand for hybrid vehicles within the premium price bracket, the demand for these vehicles installed with e-turbochargers will spur in the future, subsequently striving for the growth of the e-turbocharger market.

"Europe is the second largest automotive turbocharger market."

Europe has been at the forefront of turbocharger adoption for several years. Stringent emissions regulations and the demand for smaller, more fuel-efficient engines without compromising performance have driven the widespread adoption of turbocharging technology. Prominent OEMs such as Volkswagen AG, Mercedes-Benz, BMW, Stellantis N.V., and Renault have restricted the production of diesel passenger vehicles, thereby promoting the sales of gasoline and, electric and hybrid vehicles. This will prompt the growth of turbocharger technology installed in the GDI engines, mild-hybrid, and electric passenger cars. On the other hand, a majority of LCVs and heavy commercial vehicles are still diesel-powered. According to ACEA publication 2023, light commercial vehicles, trucks, and buses are still dominant in the EU, with >90% of the fleets running on diesel. This demonstrates the strong position of diesel-powered vehicles in the commercial vehicle segment, and this trend is speculated to be constant during the reviewed period. This will propel the growth of diesel turbochargers in the region.

The break-up of the profile of primary participants in the automotive turbocharger market:

- By Company Type: Tier 1 - 60%, Tier 2 -40 %
- By Designation: C Level - 60%, Director Level - 20%, Others - 20%
- By Region: North America- 50%, Europe - 35%, Asia Pacific - 15%.

Prominent companies include BorgWarner Inc. (US), Garrett Motion Inc. (US), Mitsubishi Heavy Industries (Japan), IHI Corporation (Japan), and Cummins Inc. (US) are the leading manufacturers of automotive turbochargers in the global market.

Research Coverage:

This research report categorizes the Automotive turbocharger market by vehicle type (passenger car, LCV, trucks, buses), fuel type (diesel, gasoline, alternate fuel), diesel by turbo type (VGT, Wastegate, E-turbo), gasoline by turbo type (VGT, Wastegate, E-turbo), gasoline by vehicle type (passenger car, LCV, trucks, buses), by material (cast iron, aluminum, others), by component (turbine wheel, compressor wheel, housing), off-highway by application (agricultural tractors, construction equipment, mining equipment), aftermarket by vehicle type (LCV, HCV), by region (Asia Pacific, North America, Europe, Rest of the World). The report's scope covers detailed information regarding the major factors, such as drivers, restraints, challenges, and opportunities, influencing the growth of the automotive turbocharger market. A detailed analysis of the key industry players has been done to provide insights into their business overview, solutions, and services; key strategies; contracts, partnerships, agreements, new product & service launches, mergers and acquisitions, recession impact, and recent developments associated with the automotive turbocharger market. This report covers the competitive analysis of upcoming startups in the automotive turbocharger market ecosystem.

Reasons to buy this report:

The report will help the market leaders/new entrants with information on the closest approximations of the revenue numbers for the overall automotive turbocharger market and the subsegments. The report includes a comprehensive market share analysis, supply chain analysis, extensive lists and insights into component manufacturers, chapter segmentation based on materials, a

thorough supply chain analysis, and a competitive landscape. The report also helps stakeholders understand the market pulse and provides information on key market drivers, restraints, challenges, and opportunities.
The report provides insights on the following pointers:
-□Analysis of key drivers (Decrease in NOx emission limit in upcoming emission norms regulation, increase in demand for passenger cars with gasoline engines), restraints (High maintenance cost and more amount of cooling oil requirement and increase in adoption of electric vehicles), opportunities (Development of electric turbochargers), and challenges (Turbo lag and durable, economical, and temperature resistance material requirement) are influencing the growth of the automotive turbocharger market.
-□Product Development/Innovation: Detailed insights on upcoming technologies, research & development activities, and new product & service launches in the automotive turbocharger market.
-□Market Development: Comprehensive information about lucrative markets - the report analyses the automotive turbocharger market across varied regions.
-□Market Diversification: Exhaustive information about new products & services, untapped geographies, recent developments, and investments in the automotive turbocharger market
-□Competitive Assessment: In-depth assessment of market shares, growth strategies, and service offerings of leading players like BorgWarner Inc. (US), Garrett Motion Inc. (US), Mitsubishi Heavy Industries Ltd. (Japan), IHI Corporation (Japan), and Cummins Inc. (US) among others in the automotive turbocharger market.
The report also helps stakeholders understand the pulse of the automotive micro-mobility market & electric vehicle market by providing them with information on key market drivers, restraints, challenges, and opportunities.

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