

Axial Flux Motors Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Cooling Process (Air Cooling, Liquid Cooling), By Type (Dual-Rotor Single Stator, Single-Rotor Dual-Stator), By Application (General Manufacturing, Power, Construction, Automotive, Aerospace, Marine, Agriculture, Others), By Region & Competition, 2020-2030F

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Abstracts

Market Overview

The Global Axial Flux Motors Market was valued at USD 240.5 million in 2024 and is anticipated to reach USD 1123.5 million by 2030, growing at a CAGR of 29.1% during the forecast period. Axial flux motors are gaining widespread traction due to their superior efficiency, compact form factor, and high power density, making them highly suitable for electric vehicles (EVs), aerospace, robotics, and other space-constrained applications. Their lightweight design supports energy-efficient mobility, especially in sectors prioritizing sustainability and performance. The evolution of battery technology and the global emphasis on reducing carbon emissions have further reinforced the appeal of axial flux motors as a clean, efficient alternative to conventional systems. Additionally, increasing investments in renewable energy infrastructure and innovations in motor materials and manufacturing techniques are helping to reduce production costs and expand their application across multiple industries.

Key Market Drivers

Rising Demand for Electric Vehicles (EVs)

The growing adoption of electric vehicles is a major factor driving the Global Axial Flux Motors Market. As the automotive industry continues its transition towards electrification, the need for efficient, lightweight, and space-saving motor technologies has intensified. Axial flux motors offer notable advantages over traditional radial flux motors, including higher power density and improved efficiency in a more compact and lighter design. These characteristics are crucial for EV manufacturers striving to enhance vehicle range and performance. Major players such as BorgWarner and GKN Automotive are actively investing in axial flux motor technology through acquisitions and strategic partnerships to strengthen their position in the electric powertrain sector. According to the International Energy Agency (IEA), global EV sales exceeded 14 million units in 2023, accounting for 18% of all new car sales, highlighting the rising influence of EVs in shaping market demand.

Key Market Challenges

High Manufacturing Costs and Scalability Issues

A critical challenge for the axial flux motor market lies in the elevated production costs and scalability limitations associated with these motors. While they offer outstanding performance and efficiency benefits, their manufacturing requires advanced materials such as high-performance magnets and precision-engineered components. These factors increase the cost relative to conventional radial flux motors. The complex design, which often involves multi-phase windings and tightly controlled rotor-stator alignment, further complicates the manufacturing process. For cost-sensitive markets like mass-produced electric vehicles, the high price tag of axial flux motors can hinder widespread adoption. Additionally, the lack of well-established large-scale production infrastructure for these motors makes it difficult to achieve economies of scale, deterring manufacturers from switching to axial flux alternatives despite their performance advantages.

Key Market Trends

Growing Adoption in Electric Vehicles (EVs) and Hybrid Electric Vehicles (HEVs)

The integration of axial flux motors into EVs and HEVs is rapidly emerging as a dominant trend in the global market. Automakers are increasingly turning to these motors to meet the demand for improved performance, reduced emissions, and greater efficiency. Axial flux motors provide high torque output in a compact form, contributing to better acceleration

and more efficient use of vehicle space. Their design also supports lighter vehicles, enhancing driving range and energy conservation—key concerns for electric mobility. Furthermore, the space saved by axial flux motors allows for greater design flexibility, including the installation of larger batteries or enhanced cargo space. As automotive manufacturers continue to prioritize sustainable, high-performance solutions, investments in R&D and strategic collaborations are accelerating the incorporation of axial flux motors into next-generation EV and HEV platforms, reinforcing their critical role in the evolving mobility landscape.

Key Market Players

YASA Ltd.

Emrax d.o.o.

GKN Automotive Limited

BorgWarner Inc.

Apex Dynamics, Inc.

Infinitum Electric, Inc.

PMS Motors

Rotary Power Ltd.

Report Scope:

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

Axial Flux Motors Market, By Type:

Dual-Rotor Single Stator

Single-Rotor Dual-Stator

Axial Flux Motors Market, By Application:

General Manufacturing

Power

Construction

Automotive

Aerospace

Marine

Agriculture

Others

Axial Flux Motors Market, By Cooling Process:

Air Cooling

Liquid Cooling

Axial Flux Motors Market, By Region:

North America

United States

Canada

Mexico

Europe

Germany

France

United Kingdom

Italy

Spain

Asia Pacific

China

India

Japan

South Korea

Australia

South America

Brazil

Colombia

Argentina

Middle East & Africa

Saudi Arabia

UAE

South Africa

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Axial

Axial Flux Motors Market – Global Industry Size, Share, Trends, Opportunity, and Forecast, Segmented By Coolin...

Flux Motors Market.

Available Customizations:

Global Axial Flux Motors Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

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

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