

# **Centrifugal Fan Wheel Market Forecasts to 2034 – Global Analysis By Material Type (Stainless Steel, Aluminum, Carbon Steel, Nickel Alloys, Polymer and Composite Materials and Other Material Types), Blade Type, Power Rating, Application, End User and By Geography**

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## **Abstracts**

According to Statistics MRC, the Global Centrifugal Fan Wheel Market is accounted for \$10.4 billion in 2026 and is expected to reach \$19.7 billion by 2034 growing at a CAGR of 8.3% during the forecast period. The centrifugal fan wheel market refers to the industry segment dedicated to the manufacturing and distribution of centrifugal fan wheels, integral components of centrifugal fans widely employed in various industrial applications. These fans generate airflow by accelerating air radially outward from the center of the wheel, creating a consistent and powerful stream. The centrifugal fan wheel finds widespread applications across diverse industries due to its efficient air-handling capabilities.

According to Statista, the number of sold HVAC units is expected to surpass 151 million in 2024. In 2019, most units of HVAC were sold to the public sector. The sector accounted for a large share of 33% of the HVAC segment in 2019.

### **Market Dynamics:**

#### **Driver:**

Rising demand for HVAC systems

As global urbanization and construction activities surge, there is a corresponding increase in the need for efficient climate control in residential, commercial, and industrial spaces. HVAC systems play a pivotal role in maintaining optimal indoor air quality and temperature, and centrifugal fan wheels are essential components within these systems. Their ability to generate a consistent and powerful airflow aligns with the requirements of HVAC applications, ensuring effective ventilation and temperature regulation. Moreover, the emphasis on energy-efficient solutions and the integration of advanced technologies in HVAC systems further amplify the demand for centrifugal fan wheels.

**Restraint:**

## High initial costs

The considerable upfront investment required for purchasing and installing centrifugal fan wheels can deter potential buyers, particularly small and medium-sized enterprises with budget constraints. The advanced technologies and materials incorporated in modern fan wheel designs, aimed at improving efficiency and performance, contribute to the elevated initial costs. Industries seeking cost-effective solutions may hesitate to invest in these systems, favoring alternatives with lower upfront expenditures. However, the economic uncertainties and capital-intensive nature of certain applications exacerbate the challenge, influencing decision-makers to explore more affordable air handling options.

**Opportunity:**

## Technological advancements

Ongoing innovations in fan wheel technology drive the market forward by enhancing performance, efficiency, and overall reliability. Manufacturers are engaged in developing cutting-edge designs and materials for centrifugal fan wheels, resulting in improved aerodynamics and energy efficiency. Smart and sensor-based technologies are being integrated to enable better control and monitoring of fan systems, contributing to optimized operations and reduced energy consumption. Additionally, these advancements cater to the evolving needs of industries seeking more sophisticated and adaptable air handling solutions.

**Threat:**

## Energy consumption concerns

Despite ongoing efforts to enhance energy efficiency, certain centrifugal fan systems may still exhibit relatively high energy consumption levels, particularly in heavy-duty industrial applications. This can pose a challenge for industries facing stringent energy regulations or aiming to minimize operational costs. The demand for sustainable and eco-friendly solutions further intensifies the scrutiny on energy efficiency in fan systems. Balancing the need for robust air handling performance with the imperative to reduce energy consumption remains a delicate challenge for manufacturers.

## **Covid-19 Impact:**

The pandemic-induced slowdown led to project delays, reduced manufacturing operations, and constrained investments, affecting the demand for centrifugal fan wheels across multiple sectors. Supply chain disruptions, including shortages of raw materials and logistical challenges, impeded production capacities. However, the temporary closure of construction sites and commercial establishments further curtailed the installation of HVAC systems, where centrifugal fan wheels are integral components.

The stainless steel segment is expected to be the largest during the forecast period

Owing to its exceptional properties that enhance durability and corrosion resistance, Stainless Steel segment commanded the largest share during the forecast period. Stainless steel fan wheels have gained prominence in various industries, particularly in corrosive environments such as chemical processing plants and marine applications. The material's resistance to rust and corrosion ensures a longer lifespan of fan wheels, reducing maintenance costs and enhancing operational reliability. Furthermore, stainless steel's hygienic characteristics make it ideal for applications in pharmaceuticals, food processing, and healthcare facilities, where cleanliness and sterility are paramount.

The backward curved segment is expected to have the highest CAGR during the forecast period

Due to the advanced aerodynamic design and superior energy efficiency, Backward Curved segment is expected to hold lucrative growth over the projected period. Backward curved fan wheels are characterized by their curved blades facing away from the direction of rotation, allowing for efficient and stable airflow. This design minimizes

turbulence and pressure fluctuations, resulting in enhanced performance and reduced energy consumption. Industries are increasingly adopting backward curved fan wheels in HVAC systems, industrial processes, and air pollution control applications, appreciating their ability to deliver high static pressure and optimal airflow with lower power input.

### **Region with largest share:**

Due to a surge in industrial activities, increasing infrastructure development, and a growing emphasis on energy-efficient solutions, North America region is poised to hold the largest market share throughout the extrapolated period. The region's robust manufacturing sector, coupled with the expansion of commercial and residential construction projects, is fostering a heightened demand for efficient air handling systems. Stringent environmental regulations and a focus on sustainable practices are encouraging industries to invest in advanced centrifugal fan wheels. Additionally, the adoption of these fan wheels is further accelerated by the region's commitment to enhancing indoor air quality and ventilation in various sectors results in the expansion of market.

### **Region with highest CAGR:**

Asia Pacific region is poised to witness profitable growth throughout the projection period. As countries in Asia Pacific increasingly focus on environmental sustainability, stringent regulations and initiatives are encouraging industries to adopt advanced air handling solutions. The region's commitment to reducing carbon emissions and improving air quality is driving the demand for centrifugal fan wheels, particularly in sectors such as manufacturing, power generation, and infrastructure development.

### **Key players in the market**

Some of the key players in Centrifugal Fan Wheel market include ABB Ltd, Alfa Laval Ab, Beckett Air Corporation, Chicago Blower Corporation, Continental Blower Llc, Fergas Group AB, Greenheck Fan Corporation, Howden Group Ltd, Kruger Ventilation Industries Pte Ltd, Siemens Ag and Systemair AB.

### **Key Developments:**

In July 2023, Howden, the international insurance broker, announced the acquisition of Media Insurance Brokers International Limited (“Media Insurance Brokers”, or “MIB”),

a major independent UK and Irish film and television broker, representing a significant step in Howden's strategy to become the leading insurance broker in this market.

In September 2022, Greenheck announced its partnership with Pittsburgh Air Systems/Air Industrial, Inc. to exclusively represent Greenheck Air Distribution Products throughout western Pennsylvania and northern West Virginia. Greenheck's line of Air Distribution Products, including grilles, registers, diffusers (GRDs), and air terminal units (ATUs), is the latest addition to its comprehensive line of commercial and industrial ventilation equipment.

#### Material Types Covered:

Stainless Steel

Aluminum

Carbon Steel

Nickel Alloys

Polymer and Composite Materials

Other Material Types

#### Blade Types Covered:

Backward Curved

Radial

Forward Curved

Other Blade Types

#### Power Ratings Covered:

10 KW – 500 KW

125 W – 10 KW

Up to 125 W

Above 500 KW

#### Applications Covered:

Automotive

Heating, Ventilation, and Air Conditioning (HVAC) Systems

Industrial Systems

Other Applications

#### End Users Covered:

Pulp & Paper

Oil & Gas

Power Generation

Other End Users

#### Regions Covered:

North America

US

Canada

Mexico

## Europe

Germany

UK

Italy

France

Spain

Rest of Europe

## Asia Pacific

Japan

China

India

Australia

New Zealand

South Korea

Rest of Asia Pacific

## South America

Argentina

Brazil

Chile

Rest of South America

Middle East & Africa

Saudi Arabia

UAE

Qatar

South Africa

Rest of Middle East & Africa

**What our report offers:**

- Market share assessments for the regional and country-level segments
- Strategic recommendations for the new entrants
- Covers Market data for the years 2023, 2024, 2025, 2026, 2027, 2028, 2030, 2032 and 2034
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)
- Strategic recommendations in key business segments based on the market estimations
- Competitive landscaping mapping the key common trends
- Company profiling with detailed strategies, financials, and recent developments
- Supply chain trends mapping the latest technological advancements

**Free Customization Offerings:**

All the customers of this report will be entitled to receive one of the following free customization options:

Company Profiling

Comprehensive profiling of additional market players (up to 3)

SWOT Analysis of key players (up to 3)

## Regional Segmentation

Market estimations, Forecasts and CAGR of any prominent country as per the client's interest (Note: Depends on feasibility check)

## Competitive Benchmarking

Benchmarking of key players based on product portfolio, geographical presence, and strategic alliances

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