

# **Automotive Electric HVAC Compressor Market Size, Share & Trends Analysis Report By Cooling Capacity, By Product (Scroll), By Vehicle, By Drivetrain (PHEV, BEV, HEV), By Region, And Segment Forecasts, 2025 - 2030**

<https://marketpublishers.com/r/ABA51C6DDAD3EN.html>

Date: November 2024

Pages: 120

Price: US\$ 4,950.00 (Single User License)

ID: ABA51C6DDAD3EN

## **Abstracts**

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### **Automotive Electric HVAC Compressor Market Growth & Trends**

The global automotive electric HVAC compressor market size is expected to reach USD 53.11 billion by 2030, registering a CAGR of 23.3% from 2025 to 2030, according to a new report by Grand View Research, Inc. An electric compressor offers several benefits over a conventional compressor, such as lower energy consumption, compact size, controlled revolution speed, and noise-free operations. Also, unlike a conventional compressor, which is belt-driven, an electric compressor is independent of the vehicle engine. An electric compressor draws power from a separate electric motor, which is powered using an inverter. Such an arrangement ensures that the cooling operation of the vehicle continues even when the vehicle is turned off. The electric compressor also requires lesser power to drive as a result of this arrangement, thereby leaving the vehicle performance unaffected and ensuring cleaner operations due to low oil carryover.

The function of an electric compressor in an electric vehicle is much significant than that of a conventional compressor in an ICE vehicle. In an electric vehicle, the compressor is responsible for the cooling of the entire cabin as well as the battery pack. Electric compressor protects the battery from overheating and subsequently the vehicle from breaking down. Hence, an electric HVAC compressor serves as an essential component for the overall functioning of an electric vehicle. Rising fuel prices coupled

with the growing awareness about environmental protection have been driving the adoption of electric vehicles and subsequently the demand for electric HVAC compressors.

However, the high initial costs and maintenance costs associated with electric HVAC compressors are expected to restrain the growth of the market. The installation of electric HVAC compressors involves heavy-duty electric wiring, which increases the overall cost of the system. Repairs and maintenance of electric compressors is also a complex task requiring a high level of expertise, thereby adding to the overall cost. Moreover, the demand for electric compressors relies entirely on the demand for electric vehicles. However, the sales of electric vehicles are already facing a double whammy of the higher price and range anxiety associated with electric vehicles. Nevertheless, advances in technology, the subsequent launch of new products, and the continued installation of electric chargers and charging stations are expected to encourage consumers to opt for electric vehicles, thereby driving the demand for electric HVAC compressors over the forecast period.

#### Automotive Electric HVAC Compressor Market Report Highlights

The 20-40 CC segment dominated the market with a share of 54.7% in 2024, owing to the increasing demand for efficient cooling systems in passenger and light commercial vehicles, which require compact and effective solutions to manage cabin temperatures.

The passenger vehicles segment dominated the market with the largest revenue share in 2024. This dominance can be attributed to consumers' growing preference for personal vehicles that offer enhanced comfort and energy efficiency.

The automotive scroll compressor is a vital component within the automotive electric HVAC compressor market, notable for its efficiency, compact design, and superior performance.

The BEV segment is expected to grow at the highest CAGR over the forecast period, driven by increasing environmental awareness and advancements in battery technology.

Asia Pacific automotive electric HVAC compressor market dominated the global

market with a revenue share of 66.3% in 2024. This is primarily driven by the rapid adoption of Electric Vehicles (EVs) and robust government support for sustainable transportation initiatives.

## Contents

### CHAPTER 1. METHODOLOGY AND SCOPE

- 1.1. Market Segmentation and Scope
- 1.2. Market Definition
- 1.3. Information Procurement
  - 1.3.1. Purchased Database
  - 1.3.2. GVR's Internal Database
  - 1.3.3. Secondary Sources and Third-Party Perspectives
  - 1.3.4. Primary Research
- 1.4. Information Analysis
  - 1.4.1. Data Analysis Models
- 1.5. Market Formulation and Data Visualization
- 1.6. Data Validation and Publishing

### CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. Market Snapshot
- 2.2. Segment Snapshot
- 2.3. Competitive Landscape Snapshot

### CHAPTER 3. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET VARIABLES, TRENDS AND SCOPE

- 3.1. Market Lineage Outlook
- 3.2. Market Dynamics
  - 3.2.1. Market Driver Analysis
  - 3.2.2. Market Restraint Analysis
  - 3.2.3. Industry Challenge
- 3.3. Industry Analysis Tools
  - 3.3.1. PORTER's Analysis
    - 3.3.1.1. Bargaining power of the suppliers
    - 3.3.1.2. Bargaining power of the buyers
    - 3.3.1.3. Threats of substitution
    - 3.3.1.4. Threats from new entrants
    - 3.3.1.5. Competitive rivalry
  - 3.3.2. PESTEL Analysis
    - 3.3.2.1. Political landscape

3.3.2.2. Economic and social landscape

3.3.2.3. Technological landscape

## **CHAPTER 4. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET: COOLING CAPACITY ESTIMATES AND TREND ANALYSIS**

4.1. Automotive Electric HVAC Compressor Market, By Cooling Capacity: Key Takeaways

4.2. Cooling Capacity Movement Analysis and Market Share, 2024 and 2030

4.3. Market Estimates and Forecasts, By Cooling Capacity, 2018 - 2030 (USD Million)

4.3.1. Less than 20 CC

4.3.1.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

4.3.2. 20-40 CC

4.3.2.1. Market Revenue Estimates and Forecasts, 2018 - 2030(USD Million)

4.3.3. 40-60 CC

4.3.3.1. Market Revenue Estimates and Forecasts, 2018 - 2030(USD Million)

4.3.4. More than 60 CC

4.3.4.1. Market Revenue Estimates and Forecasts, 2018 - 2030(USD Million)

## **CHAPTER 5. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET: PRODUCT ESTIMATES AND TREND ANALYSIS**

5.1. Automotive Electric HVAC Compressor Market, By Product: Key Takeaways

5.2. Product Movement Analysis and Market Share, 2024 and 2030

5.3. Market Estimates and Forecasts, By Product, 2018 - 2030 (USD Million)

5.3.1. Scroll

5.3.1.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

## **CHAPTER 6. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET: VEHICLE ESTIMATES AND TREND ANALYSIS**

6.1. Automotive Electric HVAC Compressor Market, By Vehicle: Key Takeaways

6.2. Vehicle Movement Analysis and Market Share, 2024 and 2030

6.3. Market Estimates and Forecasts, By Vehicle, 2018 - 2030 (USD Million)

6.3.1. Passenger Vehicles

6.3.1.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

6.3.2. LCV

6.3.2.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

6.3.3. HCV

- 6.3.3.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)
- 6.3.4. Buses and Coaches
  - 6.3.4.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

## **CHAPTER 7. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET: DRIVETRAIN ESTIMATES AND TREND ANALYSIS**

- 7.1. Automotive Electric HVAC Compressor Market, By Drivetrain: Key Takeaways
- 7.2. Drivetrain Movement Analysis and Market Share, 2024 and 2030
- 7.3. Market Estimates and Forecasts, By Drivetrain, 2018 - 2030 (USD Million)
  - 7.3.1. PHEV
    - 7.3.1.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 7.3.2. BEV
    - 7.3.2.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 7.3.3. HEV
    - 7.3.3.1. Market Revenue Estimates and Forecasts, 2018 - 2030 (USD Million)

## **CHAPTER 8. AUTOMOTIVE ELECTRIC HVAC COMPRESSOR MARKET: REGIONAL ESTIMATES AND TREND ANALYSIS**

- 8.1. Automotive Electric HVAC Compressor Market: Regional Outlook
- 8.2. Regional Marketplaces: Key Takeaways
- 8.3. Market Estimates and Forecasts, by Region, 2018 - 2030 (USD Million)
- 8.4. North America
  - 8.4.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 8.4.2. U.S.
    - 8.4.2.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 8.4.3. Canada
    - 8.4.3.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
- 8.5. Europe
  - 8.5.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 8.5.2. UK
    - 8.5.2.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 8.5.3. Germany
    - 8.5.3.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
  - 8.5.4. France
    - 8.5.4.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)
- 8.6. Asia Pacific
  - 8.6.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.6.2. China

8.6.2.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.6.3. Japan

8.6.3.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.6.4. India

8.6.4.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.6.5. Australia

8.6.5.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.6.6. South Korea

8.6.6.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.7. Latin America

8.7.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

### 8.7.2. Brazil

8.7.2.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

### 8.7.3. Mexico

8.7.3.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## 8.8. Middle East and Africa

8.8.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

### 8.8.2. UAE

8.8.2.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

### 8.8.3. Saudi Arabia

8.8.3.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

### 8.8.4. South Africa

8.8.4.1. Market Estimates and Forecasts, 2018 - 2030 (USD Million)

## **CHAPTER 9. COMPETITIVE LANDSCAPE**

### 9.1. Company Categorization

### 9.2. Company Market Positioning

### 9.3. Company Heat Map Analysis

### 9.4. Company Profiles/Listing

#### 9.4.1. Brose Fahrzeugteile SE & Co. KG

##### 9.4.1.1. Company Overview

##### 9.4.1.2. Financial Performance

##### 9.4.1.3. Cooling Capacity Portfolio

##### 9.4.1.4. Recent Developments/ Strategic Initiatives

#### 9.4.2. BorgWarner, Inc

##### 9.4.2.1. Company Overview

##### 9.4.2.2. Financial Performance



- 9.4.2.3. Cooling Capacity Portfolio
- 9.4.2.4. Recent Developments/ Strategic Initiatives
- 9.4.3. Denso Corporation
  - 9.4.3.1. Company Overview
  - 9.4.3.2. Financial Performance
  - 9.4.3.3. Cooling Capacity Portfolio
  - 9.4.3.4. Recent Developments/ Strategic Initiatives
- 9.4.4. Hanon Systems
  - 9.4.4.1. Company Overview
  - 9.4.4.2. Financial Performance
  - 9.4.4.3. Cooling Capacity Portfolio
  - 9.4.4.4. Recent Developments/ Strategic Initiatives
- 9.4.5. MAHLE GmbH
  - 9.4.5.1. Company Overview
  - 9.4.5.2. Financial Performance
  - 9.4.5.3. Cooling Capacity Portfolio
  - 9.4.5.4. Recent Developments/ Strategic Initiatives
- 9.4.6. Sanden Corporation
  - 9.4.6.1. Company Overview
  - 9.4.6.2. Financial Performance
  - 9.4.6.3. Cooling Capacity Portfolio
  - 9.4.6.4. Recent Developments/ Strategic Initiatives
- 9.4.7. Toyota Industries Corporation.
  - 9.4.7.1. Company Overview
  - 9.4.7.2. Financial Performance
  - 9.4.7.3. Cooling Capacity Portfolio
  - 9.4.7.4. Recent Developments/ Strategic Initiatives
- 9.4.8. Valeo
  - 9.4.8.1. Company Overview
  - 9.4.8.2. Financial Performance
  - 9.4.8.3. Cooling Capacity Portfolio
  - 9.4.8.4. Recent Developments/ Strategic Initiatives
- 9.4.9. Highly Marelli
  - 9.4.9.1. Company Overview
  - 9.4.9.2. Financial Performance
  - 9.4.9.3. Cooling Capacity Portfolio
  - 9.4.9.4. Recent Developments/ Strategic Initiatives
- 9.4.10. Robert Bosch GmbH.
  - 9.4.10.1. Company Overview



9.4.10.2. Financial Performance

9.4.10.3. Cooling Capacity Portfolio

9.4.10.4. Recent Developments/ Strategic Initiatives

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