

Automotive Charge Air Cooler (CAC) Market by Vehicle Type (Passenger Car, LCV, and M&HCV), by Product Type (Air-Cooled Charge Air Cooler and Liquid-Cooled Charge Air Cooler), by Position Type (Standalone CAC and Integrated CAC), by Fuel Type (Gasoline and Diesel), and by Region (North America, Europe, Asia-Pacific, and Rest of World), Trend, Forecast, Competitive Analysis, and Growth Opportunity: 2018-2023

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### **Abstracts**

This report, from Stratview Research, studies the charge air cooler market in the automotive industry over the trend period 2012 to 2017 and the forecast period 2018 to 2023 both in terms of value and units. The report provides detailed insights into the market dynamics to enable informed business decision making and growth strategy formulation based on the opportunities present in the market.

The Global Automotive Charge Air Cooler Market: Highlights

The global automotive charge air cooler market is projected to offer an impressive growth opportunity and is likely to reach US\$ 3,110.8 million in 2023. Organic growth in the automobile production owing to increasing disposable income and growing urbanization; strict government regulations regarding carbon emission reductions and fuel efficiency enhancements, such as CAF? Standards; and increasing penetration of turbochargers are some of the major growth drivers of charge air coolers in the automotive industry.



The automotive industry is undergoing the most potentially disruptive decade where stringent government regulations regarding carbon emission reductions and fuel efficiency enhancements are generating an enormous pressure on automakers. Automakers are unraveling it by finding distinct ways. Engine downsizing is one of the prime approaches for achieving such industry needs. It makes engine hotter but makes the engine more powerful and efficient and provides an impetuous growth in the demand for turbochargers in vehicles. This creates a need for effective cooling of charged air through charge air cooler (CAC) (also known as an intercooler).

Hot air entering engine can create a higher combustion temperature, which creates a greater nitrogen oxide formation and increases thermal load on the engine and related components. Charge air cooler act as a cooling interface, which transforms hot air coming from a turbocharger or a supercharger to cool air entering combustion engine. CACs also contribute towards a reduction in turbo lag and an improvement in engine volumetric efficiency with lower engine displacement.

The global automotive charge air cooler market is segmented based on the vehicle type as Passenger Car, LCV, and M&HCV. Passenger car is expected to remain the growth engine of the market during the forecast period. Higher production of cars coupled with an increased adoption of charge air cooler in gasoline engines is driving the segment.

Based on the product type, the automotive charge air cooler market is segmented as Air-Cooled Charge Air Cooler (also known as Air-to-Air Charge Air Cooler) and Liquid-Cooled Charge Air Cooler (also known as Water-Cooled Charge Air Cooler). Air-cooled charge air cooler is expected to remain the dominant product type in the market during the forecast period, whereas liquid-cooled charge air cooler is likely to grow at a faster rate during the same period. Smaller packaging space with reduced duct length, reduction in pressure loss, an improvement in power and torque delivery, and an enhanced efficiency are some of the key whys and wherefores for faster growth of liquid cooled charge air cooler as compared to air-cooled charge air cooler.

Another factor evoking interest towards the usage of liquid-cooled charge air cooler is its versatility. It can be adjusted in various configurations, such as remote mounting or self-contained and can be integrated into the intake manifold or supercharger housing. On the other hand, air-cooled charge air cooler is generally mounted standalone in the front of radiator only.

Based on the fuel type, the market is segmented as Diesel Engine-based Charge Air Cooler and Gasoline Engine-based Charge Air Cooler. The diesel engine is expected to



remain the dominant segment of the automotive charge air cooler market during the forecast period, whereas gasoline engine is expected to witness a higher growth during the same period.

In terms of regions, Europe is expected to remain the largest automotive charge air cooler market during the forecast period, owing to the high penetration of diesel engine vehicles coupled with a greater penetration of turbochargers to address the strict emission norms of European Commission. North America, another considerable region, is also likely to generate a healthy demand for charge air cooler in the coming years, primarily propelled by the USA and Mexico.

Asia-Pacific is likely to experience the highest growth during the same period. China and India are the growth engine of Asia-Pacific's market for charge air coolers. Both countries together accounted for more than 60% of the Asia-Pacific's market and are likely to grow at an impressive double-digit growth rate during the forecast period.

The supply chain of this market comprises raw material suppliers, charge air cooler manufacturers, system suppliers, automotive OEMs, and dealers. Major automotive charge air cooler manufacturers are Calsonic Kansei Corporation, Denso Corporation, Dana Incorporated, Hanon Systems Mahle GmbH, T.RAD Co., Ltd., and Valeo Group. Development of integrated charge air coolers and formation of strategic alliances with OEMs and turbocharger suppliers are the key strategies adopted by the major players to gain a competitive edge in the market.

### RESEARCH METHODOLOGY

This report offers high-quality insights and is the outcome of detailed research methodology comprising extensive secondary research, rigorous primary interviews with industry stakeholders and validation and triangulation with Stratview Research's internal database and statistical tools. More than 1,000 authenticated secondary sources, such as company annual reports, fact book, press release, journals, investor presentation, white papers, patents, and articles have been leveraged to gather the data. About 15 detailed primary interviews with the market players across the value chain in all four regions and industry experts have been executed to obtain both qualitative and quantitative insights.

### REPORT FEATURES

This report provides market intelligence in the most comprehensive way. The report



structure has been kept such that it offers maximum business value. It provides critical insights into the market dynamics and will enable strategic decision making for the existing market players as well as those willing to enter the market. The following are the key features of the report:

Market structure: Overview, industry life cycle analysis, supply chain analysis

Market environment analysis: Growth drivers and constraints, Porter's five forces analysis, SWOT analysis

Market trend and forecast analysis

Market segment trend and forecast

Competitive landscape and dynamics: Market share, product portfolio, product launches, etc.

Attractive market segments and associated growth opportunities

**Emerging trends** 

Strategic growth opportunities for the existing and new players

Key success factors

The global automotive charge air cooler market is segmented into the following categories.

Automotive Charge Air Cooler (CAC) Market, By Vehicle Type

Passenger Car (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Light Commercial Vehicle (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Medium- & Heavy-Duty Commercial Vehicle (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)



Automotive Charge Air Cooler (CAC) Market, By Product Type

Air-Cooled Charge Air Cooler (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Liquid-Cooled Charge Air Cooler (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Automotive Charge Air Cooler (CAC) Market, By Position Type

Standalone CAC (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Integrated CAC (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Automotive Charge Air Cooler (CAC) Market, By Fuel Type

Gasoline Vehicles (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Diesel Vehicles (Regional Analysis: North America, Europe, Asia-Pacific, and RoW)

Automotive Charge Air Cooler (CAC) Market, By Region

North America (Country Analysis: The USA, Canada, and Mexico)

Europe (Country Analysis: Germany, France, The UK, Italy, Russia, and Rest of Europe)

Asia-Pacific (Country Analysis: China, Japan, India, and Rest of Asia-Pacific)

Rest of the World (Country Analysis: Brazil, Argentina, and Others)



### REPORT CUSTOMIZATION OPTIONS

With this detailed report, Stratview Research offers one of the following free customization options to our respectable clients:

### **COMPANY PROFILING**

Detailed profiling of additional market players (up to 3 players)

SWOT analysis of key players (up to 3 players)

### **REGIONAL SEGMENTATION**

Current market size (2017) of charge air cooler market in any of the North American country by Vehicle type

### **COMPETITIVE BENCHMARKING**

Benchmarking of key players on the following parameters: Product portfolio, geographical reach, regional presence, and strategic alliances

Custom Research: Stratview Research offers custom research services across sectors. In case of any custom research requirement related to market assessment, competitive benchmarking, sourcing and procurement, target screening, and others, please send your inquiry at sales@stratviewresearch.com.



### **Contents**

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Abbreviation

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About Us

Report Scope

Report Objectives

Research Methodology

Secondary Research

Key Information Gathered from Secondary Research

**Primary Research** 

Key Information Gathered from Primary Research

Breakdown of Primary Interviews by Region, Designation, and Value Chain Node Data Analysis and Triangulation

### 1. EXECUTIVE SUMMARY

## 2. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET - OVERVIEW AND MARKET FORCES

- 2.1. Introduction
- 2.2. Market Classification
  - 2.2.1. By Vehicle Type
  - 2.2.2. By Product Type
  - 2.2.3. By Position Type
  - 2.2.4. By Fuel Type
  - 2.2.5. By Region
- 2.3. Market Drivers
- 2.4. Market Constraints
- 2.5. Supply Chain Analysis
- 2.6. Industry Life Cycle Analysis
- 2.7. PEST Analysis: Impact Assessment of Changing Business Environment
- 2.8. Porter's Five Forces Analysis
  - 2.8.1. Bargaining Power of Suppliers
  - 2.8.2. Bargaining Power of Customers
  - 2.8.3. Threat of New Entrants
  - 2.8.4. Threat of Substitutes



- 2.8.5. Competitive Rivalry
- 2.9. SWOT Analysis

## 3. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET ANALYSIS – BY VEHICLE TYPE

- 3.1. Strategic Insights
- 3.2. Passenger Car CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 3.2.1. Regional Trend and Forecast (US\$ Million and Million Units)
- 3.3. LCV CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 3.3.1. Regional Trend and Forecast (US\$ Million and Million Units)
- 3.4. M&HCV CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 3.4.1. Regional Trend and Forecast (US\$ Million and Million Units)

## 4. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET ANALYSIS – BY PRODUCT TYPE

- 4.1. Strategic Insights
- 4.2. Air-Cooled CAC Market Trend and Forecast (US\$ Million and Million Units)
- 4.2.1. Regional Trend and Forecast (US\$ Million and Million Units)
- 4.3. Liquid-Cooled CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 4.3.1. Regional Trend and Forecast (US\$ Million and Million Units)

## 5. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET ANALYSIS – BY POSITION TYPE

- 5.1. Strategic Insights
- 5.2. Automotive Standalone CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 5.2.1. Regional Trend and Forecast (US\$ Million and Million Units)
- 5.3. Automotive Integrated CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 5.3.1. Regional Trend and Forecast (US\$ Million and Million Units)

# 6. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET ANALYSIS – BY FUEL TYPE

- 6.1. Strategic Insights
- 6.2. Gasoline Engine-based CAC Market Trend and Forecast (US\$ Million and Million



### Units)

- 6.2.1. Regional Trend and Forecast (US\$ Million and Million Units)
- 6.3. Diesel Engine-based CAC Market Trend and Forecast (US\$ Million and Million Units)
  - 6.3.1. Regional Trend and Forecast (US\$ Million and Million Units)

## 7. AUTOMOTIVE CHARGE AIR COOLER (CAC) MARKET ANALYSIS – BY REGION

- 7.1. Strategic Insights
- 7.2. North American Automotive CAC Market Analysis
- 7.2.1. North American Automotive CAC Market T&F, by Country (US\$ Million and Million Units)
  - 7.2.1.1. The USA: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.2.1.2. Canada: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.2.1.3. Mexico: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.2.2. North American Automotive CAC Market T&F, by Vehicle Type (US\$ Million and Million Units)
- 7.2.3. North American Automotive CAC Market T&F by Product Type (US\$ Million and Million Units)
- 7.2.4. North American Automotive CAC Market T&F by Position Type (US\$ Million and Million Units)
- 7.2.5. North American Automotive CAC Market T&F by Fuel Type (US\$ Million and Million Units)
- 7.3. European Automotive CAC Market Analysis
- 7.3.1. European Automotive CAC Market T&F, by Country (US\$ Million and Million Units)
  - 7.3.1.1. Germany: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.3.1.2. France: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.3.1.3. The United Kingdom: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.3.1.4. Italy: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.3.1.5. Russia: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.3.1.6. Rest of Europe: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.3.2. European Automotive CAC Market T&F, by Vehicle Type (US\$ Million and Million Units)
- 7.3.3. European Automotive CAC Market T&F, by Product Type (US\$ Million and Million Units)
- 7.3.4. European Automotive CAC Market T&F, by Position Type (US\$ Million and Million Units)



- 7.3.5. European Automotive CAC Market T&F, by Fuel Type (US\$ Million and Million Units)
- 7.4. Asia-Pacific's Automotive CAC Market Analysis
- 7.4.1. Asia-Pacific's Automotive CAC Market T&F, by Country (US\$ Million and Million Units)
  - 7.4.1.1. Japan: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.4.1.2. China: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.4.1.3. South Korea: Automotive CAC Market T&F (US\$ Million and Million Units)
  - 7.4.1.4. India: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.4.1.5. Rest of Asia-Pacific: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.4.2. Asia-Pacific's Automotive CAC Market T&F, by Vehicle Type (US\$ Million and Million Units)
- 7.4.3. Asia-Pacific's Automotive CAC Market T&F, by Position Type (US\$ Million and Million Units)
- 7.4.4. Asia-Pacific's Automotive CAC Market T&F, by Fuel Type (US\$ Million and Million Units)
- 7.5. Rest of the World (RoW)'s Automotive CAC Market Analysis
  - 7.5.1. RoW's Automotive CAC Market T&F, by Country (US\$ Million and Million Units)
    - 7.5.1.1. Brazil: Automotive CAC Market T&F (US\$ Million and Million Units)
    - 7.5.1.2. Argentina: Automotive CAC Market T&F (US\$ Million and Million Units)
    - 7.5.1.3. Others: Automotive CAC Market T&F (US\$ Million and Million Units)
- 7.5.2. RoW's Automotive CAC Market T&F, by Vehicle Type (US\$ Million and Million Units)
- 7.5.3. RoW's Automotive CAC Market T&F, by Position Type (US\$ Million and Million Units)
- 7.5.4. RoW's Automotive CAC Market T&F, by Fuel Type (US\$ Million and Million Units)

#### 8. COMPETITIVE ANALYSIS

- 8.1. Strategic Insights
- 8.2. Product Portfolio Analysis
- 8.3. Presence by Vehicle Type
- 8.4. Geographical Presence
- 8.5. New Product Launches
- 8.6. Strategic Alliances: Mergers and Acquisitions, Joint Ventures, Collaborations, etc.
- 8.7. Expert Opinion
- 8.8. Market Share Analysis



### 9. STRATEGIC GROWTH OPPORTUNITIES

- 9.1. Strategic Insights
- 9.2. Market Attractive Analysis
  - 9.2.1. Market Attractiveness by Vehicle Type
  - 9.2.2. Market Attractiveness by Product Type
  - 9.2.3. Market Attractiveness by Position Type
  - 9.2.4. Market Attractiveness by Fuel Type
  - 9.2.5. Market Attractiveness by Region
  - 9.2.6. Market Attractiveness by Country
- 9.3. Emerging Trends
- 9.4. Growth Matrix Analysis
- 9.5. Key Success Factors

### 10. COMPANY PROFILE OF KEY PLAYERS

- 10.1. Calsonic Kansei Corporation
- 10.2. Dana Incorporated
- 10.3. Denso Corporation
- 10.4. Hanon Systems
- 10.5. MAHLE GmbH
- 10.6. Modine Manufacturing Company
- 10.7. Rochling Group
- 10.8. T.RAD Co., Ltd.
- 10.9. Valeo Group



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