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Automotive Thermal Management Market Forecasts to 2032 – Global Analysis By Vehicle Type (Passenger Cars and Commercial Vehicles), Propulsion Type (Internal Combustion Engine [ICE] Vehicles and Electric & Hybrid Vehicles), Component, Application and By Geography

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Abstracts

According to Stratistics MRC, the Global Global Automotive Thermal Management Market is accounted for $113.3 billion in 2025 and is expected to reach $177.2 billion by 2032 growing at a CAGR of 6.6% during the forecast period. Automotive thermal management systems and technologies regulate temperature across vehicle components, ensuring efficiency, safety, and comfort. It includes engine cooling, HVAC, battery management, and waste heat recovery systems. Rising adoption of electric and hybrid vehicles has intensified demand for advanced thermal solutions, especially for battery performance. Regulatory focus on emissions, fuel efficiency, and passenger comfort is shaping market growth. Innovations in lightweight materials, smart sensors, and energy-efficient cooling are enhancing automotive thermal management across passenger and commercial vehicles worldwide.

Market Dynamics:

Driver:

Growth of EVs and hybrid vehicles

The increasing adoption of electric and hybrid vehicles is a significant driver for the automotive thermal management market. These vehicles require advanced thermal

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systems to manage the heat generated by batteries and electric drivetrains. Efficient thermal management ensures optimal performance, safety, and longevity of battery systems. As governments worldwide implement stricter emission regulations and offer incentives for EV adoption, the demand for such vehicles and consequently, for thermal management solutions is expected to rise. This trend is particularly evident in regions like Europe and North America, where EV sales are accelerating.

Restraint:

High system integration costs

The integration of advanced thermal management systems in vehicles involves significant costs, which can be a restraint for manufacturers. These systems require high-quality materials and sophisticated engineering to ensure efficiency and reliability. The complexity of integrating these systems with existing vehicle architectures adds to the expense. Moreover, the need for continuous innovation to meet evolving performance standards further increases R&D and production costs. These financial challenges may deter some manufacturers, especially smaller ones, from adopting advanced thermal solutions.

Opportunity:

Growth in autonomous vehicle systems

The rise of autonomous vehicles presents a significant opportunity for the automotive thermal management market. Autonomous vehicles rely heavily on sensors, processors, and other electronic components that generate substantial heat. Efficient thermal management is crucial to ensure the optimal functioning and longevity of these components. As the development and deployment of autonomous vehicles accelerate, the demand for advanced thermal management solutions tailored to these systems is expected to grow, offering new avenues for market expansion.

Threat:

Fluctuations in automotive production

Fluctuations in automotive production pose a threat to the automotive thermal management market. Factors such as economic downturns, supply chain disruptions, and changing consumer preferences can lead to reduced vehicle production volumes.

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These fluctuations impact the demand for thermal management systems, as lower production levels result in decreased orders for these components. Additionally, uncertainties in production schedules can affect manufacturers' ability to plan and allocate resources efficiently, potentially leading to financial instability in the thermal management sector.

Covid-19 Impact:

The COVID-19 pandemic significantly disrupted the automotive thermal management market. Lockdowns and restrictions led to temporary shutdowns of manufacturing facilities, causing delays in production and supply chains. Decreased consumer demand for vehicles resulted in reduced orders for thermal management systems. However, as the industry gradually recovered, there was a renewed focus on enhancing vehicle efficiency and performance, leading to resurgence in demand for advanced thermal solutions. The pandemic underscored the importance of resilient supply chains and adaptive strategies in the automotive sector.

The internal combustion engine (ICE) vehicles segment is expected to be the largest during the forecast period

The internal combustion engine (ICE) vehicles segment is expected to account for the largest market share during the forecast period. ICE vehicles continue to dominate global vehicle sales, especially in regions where EV infrastructure is still developing. These vehicles require advanced thermal management systems to handle the heat generated by internal combustion processes, ensuring engine efficiency and longevity. The sustained demand for ICE vehicles, coupled with the need for efficient thermal solutions, supports the continued prominence of this segment.

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

Over the forecast period, the sensors segment is predicted to witness the highest growth rate. This growth is driven by the increasing integration of advanced driver-assistance systems (ADAS) and autonomous driving technologies, which rely heavily on sensors. These sensors generate significant heat, necessitating efficient thermal management solutions to ensure their optimal performance and longevity. As the automotive industry moves towards greater automation and connectivity, the demand for sensor-based thermal management systems is expected to rise substantially.

Region with largest share:

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During the forecast period, the Asia Pacific region is expected to hold the largest market share. This dominance is attributed to the region's robust automotive manufacturing base, particularly in countries like China, Japan, and South Korea. Additionally, the rapid adoption of electric vehicles and the presence of major automotive OEMs in Asia Pacific contribute to the region's leading position. The growing consumer demand for vehicles, coupled with supportive government policies promoting clean energy and emissions reduction, further bolsters the market share of this region.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. This rapid growth is driven by the increasing production and sales of electric and hybrid vehicles, particularly in countries like China and India. The expansion of EV infrastructure, coupled with government incentives and regulations promoting clean energy, accelerates the adoption of advanced thermal management solutions. Furthermore, the region's focus on technological advancements and innovation in automotive manufacturing supports the high growth rate in this sector.

Key players in the market

Some of the key players in Automotive Thermal Management Market include Aisin, BorgWarner, Continental, Dana, Delta Electronics, DENSO, Ebersp?cher, Gentherm, Hanon Systems, Marelli, MAHLE, Modine Manufacturing, Robert Bosch, Schaeffler, Sogefi, T. RAD, UFI Filters, Valeo, Webasto, and ZF Friedrichshafen.

Key Developments:

In June 2025, Continental launched the first sensor technology to measure temperature directly on EV motor rotors, reducing tolerance from 15°C to 3°C. This enables more efficient use of rare earth elements and improved motor performance.

In February 2025, Ebersp?cher announced its participation in bauma 2025, showcasing efficient thermal management solutions for off-highway vehicles, including integrated heating and cooling systems for cabin, battery and engine applications.

In July 2024, BorgWarner secured contracts to supply exhaust gas recirculation (EGR) coolers to a North American commercial vehicle customer, with production planned for Q4 2027. The coolers feature proprietary compact floating core architecture for

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enhanced thermal durability.

Vehicle Types Covered:

- Passenger Cars
- Commercial Vehicles

Propulsion Types:

- Internal Combustion Engine (ICE) Vehicles
- Electric & Hybrid Vehicles

Components Covered:

- Heat Exchangers
- Compressors
- Pumps
- Valves
- Sensors
- Fans & Blowers
- Other Components

Applications Covered:

- Engine Cooling
- Cabin Thermal Management (HVAC)

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- Transmission Thermal Management
- Waste Heat Recovery/Exhaust Gas Recirculation (EGR)
- Battery Thermal Management
- Motor and Power Electronics Thermal Management

Regions Covered:

- North America
  - US
  - Canada
  - Mexico
- Europe
  - Germany
  - UK
  - Italy
  - France
  - Spain
  - Rest of Europe
- Asia Pacific
  - Japan
  - China

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- 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 2024, 2025, 2026, 2028, and 2032
- Market Trends (Drivers, Constraints, Opportunities, Threats, Challenges, Investment Opportunities, and recommendations)

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- 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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Note: Tables for North America, Europe, APAC, South America, and Middle East & Africa Regions are also represented in the same manner as above.

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