

Aircraft Engine Combustor Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, By Engine Type (Turboprop, Turbofan, Turboshaft, Piston), By Type (Multiple Chamber, Turbo-Annular Chamber, Annular Chamber), By Aircraft Type (Narrow Body Aircrafts, Wide Body Aircrafts, Regional Aircrafts, Business Aircrafts, Rotorcrafts, Fighter aircrafts), By Application (Commercial, Military), By Region & Competition, 2021-2031F

<https://marketpublishers.com/r/AB5A16A98851EN.html>

Date: January 2026

Pages: 180

Price: US\$ 4,500.00 (Single User License)

ID: AB5A16A98851EN

Abstracts

The Global Aircraft Engine Combustor Market is projected to expand from USD 1.16 Billion in 2025 to USD 1.58 Billion by 2031, reflecting a CAGR of 5.29%. As a specialized chamber within a gas turbine where compressed air mixes with fuel to generate the high-pressure gas stream needed to drive the turbine, the combustor is seeing demand driven by the global requirement for new commercial fleets and increased engine production. Additionally, strict environmental regulations and the need for fuel efficiency are pushing manufacturers to develop advanced combustion systems. According to the International Air Transport Association, the global aircraft order backlog surpassed 17,000 units in 2025, indicating strong and sustained demand for propulsion systems and their components.

However, the sector faces significant hurdles due to persistent supply chain vulnerabilities. Manufacturers are struggling with shortages of high-performance raw materials and delays in precision component deliveries, which disrupt tight production schedules. This inability of the supply base to rapidly scale output to meet original equipment manufacturer targets creates bottlenecks that could severely restrict the

overall expansion of the global aircraft engine combustor market.

Market Driver

The rapid increase in global commercial aircraft deliveries and fleet expansion serves as the primary catalyst for the aircraft engine combustor market. As airlines aggressively modernize their fleets to handle recovering travel volumes, the demand for new propulsion systems has intensified, forcing manufacturers to scale up the production of core combustion components. This trend is supported by strong traffic metrics; the International Air Transport Association reported in its '2024 Global Passenger Market Performance' that total global passenger traffic rose by 10.4% in 2024 compared to the previous year. This resurgence requires increased equipment deliveries, leading major aerospace entities to record significant backlogs, such as RTX, which reported a record backlog of \$218 billion at the end of 2024.

Concurrently, the demand for fuel-efficient and high-performance aero engines is reshaping combustor design and procurement. Airlines are prioritizing next-generation engines that use advanced combustion technologies to improve thermal efficiency and reduce fuel consumption, driving the market toward sophisticated, heat-resistant liners and fuel injectors. This shift is evident in recent financial results; according to GE Aerospace in January 2025, orders for its Commercial Engines & Services segment grew by 38% for the full year 2024. This trend ensures that the combustor market is expanding not only in unit volume but also in technical complexity and value.

Market Challenge

The main obstacle hindering the growth of the Global Aircraft Engine Combustor Market is the continuation of severe supply chain vulnerabilities. Despite robust demand for propulsion systems, manufacturers face difficulties converting this interest into realized revenue due to critical shortages of high-performance raw materials and delays in receiving precision components. These logistical bottlenecks disrupt the strict production schedules necessary for complex gas turbine assembly, effectively limiting manufacturing output. Consequently, the combustor market is prevented from reaching its full potential because broader engine production lines are frequently stalled by labor constraints or missing parts.

This struggle to scale production is highlighted by recent industry performance metrics. According to the International Air Transport Association, the global aviation industry faced a delivery shortfall of approximately 30% in 2024 compared to initial forecasts,

largely due to these entrenched supply chain constraints. This significant gap indicates that, despite a massive order backlog, actual market growth is being suppressed by the industrial base's incapacity to meet the delivery targets set by original equipment manufacturers.

Market Trends

The adoption of Additive Manufacturing (AM) for complex component geometries is transforming the production of combustor elements, such as fuel injectors and swirlers. This manufacturing approach enables engineers to consolidate multi-part assemblies into single, lightweight structures with intricate internal cooling channels that were previously impossible to cast. By optimizing fuel-air mixing ratios through these precise geometries, manufacturers can significantly reduce nitrogen oxide emissions and enhance thermal efficiency to meet tightening regulations. This shift is supported by substantial investment; according to a March 2024 press release, GE Aerospace allocated \$54 million to its Auburn facility specifically to expand additive manufacturing capacity for critical engine components.

In parallel, the development of hydrogen-ready combustion systems marks a critical technical evolution as the sector moves toward zero-emission propulsion. Since hydrogen burns at significantly higher temperatures and speeds than kerosene, combustor architectures must be fundamentally redesigned to prevent flashbacks and manage extreme thermal loads. This requires the creation of specialized flame stabilization mechanisms and rigorous testing of flow dynamics. The progress of this technology is evident in recent milestones; the German Aerospace Center (DLR) reported in June 2024 that researchers successfully conducted optical measurements of hydrogen combustion under realistic pressures, providing essential data for finalizing low-emission hydrogen combustor designs.

Key Market Players

Safran SA

Rolls-Royce Holdings

General Electric Aerospace

Pratt & Whitney

MTU Aero Engines

Honeywell Aerospace

Kawasaki Heavy Industries

GKN Aerospace

Parker Hannifin Corporation

Mitsubishi Heavy Industries

Report Scope

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

Aircraft Engine Combustor Market, By Engine Type

Turboprop

Turbofan

Turboshaft

Piston

Aircraft Engine Combustor Market, By Type

Multiple Chamber

Tubo-Annular Chamber

Annular Chamber

Aircraft Engine Combustor Market, By Aircraft Type

Narrow Body Aircrafts

Wide Body Aircrafts

Regional Aircrafts

Business Aircrafts

Rotorcrafts

Fighter aircrafts

Aircraft Engine Combustor Market, By Application

Commercial

Military

Aircraft Engine Combustor Market, By Region

North America

United States

Canada

Mexico

Europe

France

United Kingdom

Italy

Germany

Spain

Asia Pacific

China

India

Japan

Australia

South Korea

South America

Brazil

Argentina

Colombia

Middle East & Africa

South Africa

Saudi Arabia

UAE

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Aircraft Engine Combustor Market.

Available Customizations:

Global Aircraft Engine Combustor Market report with the given market data, TechSci Research offers customizations according to a company's specific needs. The following

Aircraft Engine Combustor Market - Global Industry Size, Share, Trends, Opportunity, and Forecast, By Engine T...

customization options are available for the report:

Company Information

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

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