

Aerospace Robotics & Automated Assembly Market Forecasts to 2034 - Global Analysis By Component (Hardware, Software and Services), Robotics Type, Automation Level, Application, End User and By Geography

<https://marketpublishers.com/r/A0CCFC8945DBEN.html>

Date: September 2026

Pages: 200

Price: US\$ 4,150.00 (Single User License)

ID: A0CCFC8945DBEN

Abstracts

According to Statistics MRC, the Global Aerospace Robotics & Automated Assembly Market is accounted for \$4.0 billion in 2026 and is expected to reach \$11.8 billion by 2034 growing at a CAGR of 14.3% during the forecast period. Aerospace Robotics & Automated Assembly refers to the use of robotic equipment, automated machinery, and intelligent manufacturing systems across aerospace production processes. These technologies support precision-intensive activities including drilling, riveting, fastening, welding, inspection, component movement, and structural assembly. Their adoption enables manufacturers to achieve greater accuracy, consistency, and productivity while lowering dependence on labor-intensive operations and improving worker safety. Modern robotic solutions increasingly combine machine vision, sensors, artificial intelligence, and computerized controls, allowing aerospace factories to operate with greater flexibility, process visibility, and efficiency.

According to Airbus, the company delivered 793 commercial aircraft in 2025, up from 766 in 2024, while recording 1,000 gross commercial aircraft orders and ending the year with a record backlog of 8,754 aircraft. This sustained production demand supports the need for automated assembly, robotics, and advanced manufacturing technologies to increase throughput and maintain consistent quality.

Market Dynamics:

Driver:

Increasing demand for precision and production efficiency

The rising emphasis on manufacturing accuracy and operational productivity is accelerating the adoption of robotics and automated assembly in aerospace production. Aircraft and spacecraft components demand precise drilling, fastening, riveting, welding, and positioning, requiring reliable and repeatable processes. Robotic technologies help minimize inconsistencies associated with manual operations while supporting uniform quality and controlled execution. They can also streamline production workflows, reduce processing times, and improve coordination between manufacturing stages. Consequently, aerospace manufacturers increasingly utilize automation to achieve dependable, efficient, and high-quality assembly operations.

Restraint:

High initial investment and implementation costs

Significant upfront expenditure remains a major limitation for the wider deployment of robotics and automated assembly within aerospace manufacturing. Advanced robots, specialized equipment, vision technologies, control software, integration solutions, and infrastructure demand considerable financial resources. Expenses can further increase because of programming, facility adjustments, workforce training, maintenance, and system modernization. Smaller aerospace manufacturers and suppliers may find these requirements particularly difficult to accommodate. As a result, concerns regarding capital availability, lengthy payback periods, and implementation expenses may cause companies to postpone automation investments and expansion plans.

Opportunity:

Growing adoption of collaborative and intelligent robotics

The expanding use of collaborative and intelligent robotic technologies creates considerable growth opportunities for aerospace automated assembly. Collaborative robots can operate together with workers while handling repetitive, demanding, and accuracy-sensitive manufacturing tasks. Combining robotics with artificial intelligence, vision systems, and sophisticated sensors enables greater responsiveness, monitoring, and operational control. This approach allows manufacturers to automate specific processes without eliminating human involvement. As a result, aerospace companies can modernize established facilities, increase productivity, improve workplace safety, and achieve greater manufacturing flexibility through targeted automation investments.

Threat:

Shortage of skilled workforce and rapid technology obsolescence

Limited availability of skilled personnel presents a significant challenge for aerospace robotics and automated assembly adoption. Sophisticated systems require workers with expertise in robotic programming, system integration, industrial controls, artificial intelligence, software, and aerospace production. A shortage of qualified specialists can complicate deployment, maintenance, and troubleshooting while increasing reliance on third-party expertise. Furthermore, fast-paced technological developments may shorten equipment and software lifecycles, forcing manufacturers to upgrade systems more frequently. Higher training and modernization requirements can raise costs and create uncertainty around long-term automation investments.

Covid-19 Impact:

COVID-19 initially created significant challenges for aerospace robotics and automated assembly as aircraft demand declined, factories experienced interruptions, supply networks faced shortages, and labor availability weakened. These conditions encouraged aerospace companies to delay or limit automation-related expenditures. At the same time, the crisis demonstrated the value of automated production, digital technologies, and remote process monitoring. During the subsequent recovery, aerospace manufacturers increasingly viewed robotics as a means of improving production resilience, limiting reliance on manual operations, managing labor constraints, and preparing manufacturing systems for future disruptions.

The hardware segment is expected to be the largest during the forecast period

The hardware segment is expected to account for the largest market share during the forecast period because it provides the essential physical infrastructure for automated aerospace production. This segment comprises robotic arms, controllers, sensors, end-effectors, vision systems, automated tools, and supporting machinery used throughout manufacturing operations. Hardware enables manufacturers to conduct drilling, fastening, welding, handling, inspection, and assembly with consistent precision and repeatability. Its contribution to reliable, accurate, and efficient production makes physical robotic equipment a fundamental element of aerospace automation and strengthens its importance compared with software and service solutions.

The UAVs & drones manufacturers segment is expected to have the highest CAGR during the forecast period

Over the forecast period, the UAVs & drones manufacturers segment is predicted to witness the highest growth rate. Rising requirements for unmanned aerial platforms are driving manufacturers toward automated and robotic production methods for lightweight structures, propulsion systems, electronics, and precision components. Robotic automation enables improved manufacturing consistency, faster processing, and repeatable assembly. The increasing sophistication of UAV designs, combined with the need for flexible and scalable production capabilities, is encouraging greater integration of robotics, machine vision, and intelligent automated systems throughout drone

manufacturing processes.

Region with largest share:

During the forecast period, the North America region is expected to hold the largest market share because of its well-developed aerospace industry and widespread implementation of advanced automation technologies. The region has a strong concentration of aircraft producers, defense organizations, robotics providers, and aerospace component suppliers. Ongoing modernization of manufacturing facilities, technological development, and investment in intelligent production systems support the adoption of robotic solutions. Additionally, mature industrial infrastructure, specialized workforce capabilities, and demand for accurate and productive manufacturing processes continue to reinforce North America's dominant position in aerospace robotics and automated assembly.

Region with highest CAGR:

Over the forecast period, the Asia Pacific region is anticipated to exhibit the highest CAGR. Rising aerospace production capabilities and increasing investment in advanced manufacturing are encouraging broader use of robotic technologies throughout the region. Countries including China, India, Japan, and South Korea are developing their aviation, defense, and space industries, creating favorable conditions for automated assembly. Government support for smart manufacturing and robotics is strengthening this trend. Growing requirements for accurate, efficient, and scalable production are further driving the adoption of robotic automation across aerospace manufacturing operations.

Key players in the market

Some of the key players in Aerospace Robotics & Automated Assembly Market include ABB Ltd., Broetje-Automation GmbH, Comau S.p.A., Electroimpact, Inc., Fanuc Corporation, Fives Group, Kawasaki Heavy Industries, Ltd., KUKA AG, Northrop Grumman Corporation, Oliver Crispin Robotics Limited, Omron Corporation, Siemens, Staubli International AG, Universal Robots A/S, Yaskawa Electric Corporation, Airbus SE, The Boeing Company and Lockheed Martin Corporation.

Key Developments:

In August 2026, Northrop Grumman and Aeronix, Inc., an Aeronix Technologies Group company, launched a multimillion-dollar strategic partnership to accelerate the development of advanced space-based cryptographic systems. The collaboration builds on a successful prototype effort between the two companies, which delivered a space-based mesh networking solution for the Department of War to fast-track secure, resilient

data sharing capabilities in low-earth satellite orbit networks.

In October 2025, Airbus and the Netherlands strengthen aerospace partnership during Dutch royal visit to Toulouse. The visit underscores the deep and long-standing partnership between Airbus and the Dutch aerospace industry and paves the way for future collaboration with the signing of several key agreements in the fields of industrial cooperation, innovation, sustainability, and education.

Components Covered:

Hardware

Software

Services

Robotics Types Covered:

Industrial Robots

Collaborative Robots (Cobots)

Mobile Robots

Specialized Aerospace Robots

Automation Levels Covered:

Fully Automated Systems

Semi-Automated Systems

Manual-Assisted Robotics

Applications Covered:

Aircraft Structural Assembly

Engine & Propulsion Assembly

Avionics & Electronics Integration

Composite Material Handling & Processing

Inspection & Quality Assurance

Maintenance, Repair & Overhaul (MRO)

End Users Covered:

Commercial Aviation

Military & Defense Aviation

Spacecraft & Launch Vehicles

UAVs & Drones Manufacturers

Regions Covered:

North America

United States

Canada

Mexico

Europe

United Kingdom

Germany

France

Italy

Spain

Netherlands

Belgium

Sweden

Switzerland

Poland

Rest of Europe

Asia Pacific

China

Japan

India

South Korea

Australia

Indonesia

Thailand

Malaysia

Singapore

Vietnam

Rest of Asia Pacific

South America

Brazil

Argentina

Colombia

Chile

Peru

Rest of South America

Rest of the World (RoW)

Middle East

Saudi Arabia

United Arab Emirates

Qatar

Israel

Rest of Middle East

Africa

South Africa

Egypt

Morocco

Rest of 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)

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