

Automotive Robotics Market Projected Growth from USD 6.41 Billion in 2023 to USD 17.92 Billion by 2030 | a CAGR of 12.2%

According to a research report published by Exactitude Consultancy, Companies covered: ABB Ltd, Yaskawa Electric Corporation, Kawasaki Heavy Industries, KUKA AG

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Rising automation needs, advanced manufacturing, and Industry 4.0 adoption drive the demand for automotive robotics worldwide."

Exactitude Consultancy

[robotics](#) refers to the use of robotic technology in the development, production, and installation of automobiles. It includes a broad spectrum of robots that execute diverse jobs with exceptional accuracy, velocity, and efficacy. By automating repetitive operations and carrying them out precisely and dependably, automotive robots seek to optimize manufacturing processes, increase productivity, improve product quality, and guarantee worker safety. Wide-ranging robotic applications and technology designed to satisfy the unique demands and specifications

of automakers are included in the automotive robotics market. By automating labor-intensive, repetitive processes that are typically done by human workers, these robotics systems are intended to improve efficiency, productivity, quality, and safety in automotive manufacturing plants.

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Automobile body panels, engines, gearboxes, interiors, and electronics are just a few of the parts that robots are utilised to assemble. They have excellent accuracy and consistency when doing jobs like installing parts, tightening nuts, and fitting components. Robots that are programmed to paint vehicles automatically apply layers of primer, base coat, and clear finish with accuracy and consistency. Throughout the production process, robots manage materials and components. They load and unload parts, move components between workstations, and keep track of inventory at warehouses and logistics hubs. More complex automation solutions in the automotive manufacturing industry are made possible by developments in robots, AI, and machine learning. Robots with sophisticated sensors and self-adjusting control systems are

more capable of handling complicated jobs independently and efficiently.

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<https://exactitudeconsultancy.com/reports/13165/automotive-robotics-market/#request-a-sample>

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ABB Ltd., Yaskawa Electric Corporation, Kawasaki Heavy Industries, KUKA AG, Denso Wave Incorporated, Comau SPA, Nachi-Fujikoshi Corp., FANUC Corporation, Rockwell Automation, Inc., Seiko Epson Corporation (Nagano, Japan), Dürr AG, Harmonic Drive System, Nabtesco Motion Control, Inc., and Others.

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In August 2023, KUKA AG announced that the company plans to introduce two systems for robotics education. The industrial automation provider also plans to show metalworking technologies with partners, as well as additive manufacturing offerings. FABTECH is North America's largest metal forming, fabrication, welding, and finishing event, according to organizer SME. KUKA will feature product demonstrations at Booth B27051 at McCormick Place in Chicago from Sept. 11 to 14.

In December 2023, ABB signed a contract with Volvo Cars to supply 1,300 industrial robots to help build its next generation of electric vehicles. Volvo will use ABB's new IRB 6710, 6720, and 6730 industrial robots for a variety of tasks, including spot welding, riveting, dispensing flow drilling, and more.

In September 2023, ABB announced that the company will feature next-generation robotic technologies that enable businesses to adapt production to variable market efficiency demands at Automate 2023, May 22-25, at the Huntington Place Convention Center in Detroit, Michigan (Booth #5623). The company is to deliver the benefits of the automation industry's most exhaustive and integrated portfolio of industrial and cooperative robots, Autonomous Mobile Robots (AMRs), and machine automation solutions to companies of all levels of technical complexity.

In May 2023, ABB Robotics announced that it would display next-generation robotics intended to enable manufacturers to adapt production to variable market demands at Automate 2023 efficiently. The company will display at Booth 5623 in the Huntington Place Convention Center in Detroit from May 22 to 25.

In March 2023, ABB announced that the company would expand its Robotics factory in the US. An investment of USD 20 million will increase production at its existing Auburn Hills facility and strengthen ABB's US leadership. A newly expanded, highly automated facility will create new jobs

in the state of Michigan. Expansion featuring the latest in automated and advanced manufacturing processes to open November 2023.

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Robots in auto factories help to reduce part-to-part variability. They never become weary or distracted, so they can repeat each cycle exactly the same manner every time. They don't drop or handle things in a way that could damage them. As a result, waste brought on by human error is removed, which also reduces variability in car assembly. Automotive robots can even modify preprogrammed pathways to accommodate differences in arriving materials because they are outfitted with vision systems. This reduces warranty costs, increases customer happiness, and results in fewer errors. Therefore, improvements in the quality of automobile manufacturing will propel market expansion.

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Many of the occupations in the car manufacturing industry are dangerous. For example, pouring molten metal presents a clear risk in a foundry. Musculoskeletal diseases brought on by repetitive motions, lifting, and twisting can also arise from certain jobs. Robots can assist in lowering these dangers. Robots protect workers from noise, weld flash, and odors from stamping, welding, and painting presses while vehicles are being assembled. Because automotive robots reduce worker exposure to hazardous settings and dirty tasks, they significantly lower the number of injury claims and accidents. Thus, the expansion of the automotive robots market will be driven by these factors.

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Many businesses said that the high cost of integration prevented them from implementing more. SMEs with smaller production lots find it too expensive to incorporate new robotic technologies, while large enterprises may find it difficult to combine these technologies with infrastructure that is 15 to 20 years old. Thus, these elements will limit the market's expansion.

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North America

North America is a significant player in the automotive robotics market, driven by the presence of established automotive manufacturers and advanced technological infrastructure. The region's emphasis on automation and robotics to lower production costs and increase manufacturing efficiency propels market expansion. Due to sustained investments in automation technologies, the United States is the largest contributor.

Europe holds a substantial share in the automotive robotics market due to its strong automotive industry, particularly in countries like Germany, France, and Italy. The area places a strong emphasis on innovation and the implementation of Industry 4.0 techniques, such as the use of robotics in manufacturing to improve accuracy, productivity, and quality. Initiatives from the government that promote smart manufacturing are also very important.

Asia-Pacific is the fastest-growing region in the automotive robotics market, with China, Japan, and South Korea being the key contributors. Market expansion is fuelled by the region's large-scale automobile production, fast industrialization, and rising investments in automation technology. Growth is further accelerated by the existence of significant auto and electronics industries, which are progressively utilising robotics to improve production efficiency.

The automotive robotics market in Latin America is growing, with countries like Brazil and Mexico being key contributors. The market growth is fueled by the increasing adoption of robotics in automotive manufacturing to boost production capabilities and reduce costs. Although the market is still emerging, the focus on modernization and industrial automation presents expansion opportunities.

Market Segmentation

Articulated Segment

Articulated Segment to Hold Largest Share Owing to Ease of Operation

The market is segmented into articulated, cartesian, cylindrical, SCARA, and others.

The articulated segment held the largest share of the market. Articulated robots are highly versatile and can be used across various applications such as dispensing, loading & unloading, packaging, and welding. Hence, these factors will fuel the growth of the segment during the forecast period.

The SCARA segment is expected to show substantial growth in the market. Factors such as high

flexibility due to a broad movement range, more accurate control, and smaller footprint are attributed to the increasing adoption of SCARA robots.

The Cartesian segment is expected to show steady growth in the market owing to its capacity to operate heavy payloads and reduce cycle times with highly repeatable and fast movements.

The Cylindrical segment is also expected to show good growth in the market due to their ease of use, low space requirements compared to Cartesian robots, and high usage in assembly operations.

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Welding Segment Dominated in 2023 Propelled by Substantial Efficiency Gains in Production

□□ □□□□□□□□□□, the market is segmented into welding, painting, material handling, assembly/disassembly, and others.

The welding segment held the largest share of the market in 2022. Factors such as enhancing safety and efficiency on the production line and improving the speed of multi-material vehicle production are attributed to the increasing adoption of welding robots.

The material handling segment is expected to show significant growth in the market. Material handling includes several functions such as loading and unloading, packing, and palletizing. When material handling tasks are delegated to robots, a number of human errors are eliminated. These faults include order packing mistakes, conveyor halt brought on by reduced pick speeds, and extended idle times. Thus, these elements will support this segment's expansion.

In addition, the painting industry is anticipated to increase steadily as a result of ongoing technical advancements that have made painting products lighter, faster, and easier to integrate.

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Automotive Robotics Market By Product Type, 2022-2029, (Usd Billion), (Thousand Units)

- Articulated Robots
- Cartesian Robots
- Cylindrical Robots
- Scara Robots
- Others

Automotive Robotics Market By Component 2022-2029, (Usd Billion), (Thousand Units)

Controller
Robotics Arm
End Effector
Drive
Sensor

Automotive Robotics Market By Application, 2022-2029, (Usd Billion), (Thousand Units)

Primary Manufacturing Process Robots
Welding
Painting
Cutting
Secondary Manufacturing Process Robots
Material Handling, Palletizing & Packaging
Assembly/Disassembly

Automotive Robotics Market By Region, 2022-2029, (Usd Billion), (Thousand Units)

North America
Asia Pacific
Europe
Latin America
Middle East and Africa

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What guidelines are followed by key performers to contest this Covid-19 condition?
What are the important matters drivers, opportunities, challenges, and dangers of the market?
will face surviving?
Which are the essential market players in the Automotive Robotics industry?
What is the forecast compound annual growth rate (CAGR) of the global market for the duration
of the forecast period (2024-2030)?
What could be the anticipated value of the Automotive Robotics marketplace during the forecast
period?

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The Automotive Leaf Spring Suspension Market is expected to grow at 5.18% CAGR from 2024 to

2030. It is expected to reach above USD 11.59 billion by 2030 from USD 7.36 billion in 2023.

<https://exactitudeconsultancy.com/reports/14178/automotive-leaf-spring-suspension-market>

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The global automotive on-board diagnostics market size is expected to reach USD 42,297.48 million by 2030, at a CAGR of 18.3% during the forecast period.

<https://exactitudeconsultancy.com/reports/14202/automotive-on-board-diagnostics-market/>

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The automotive self-driving chip sales market is expected to grow at 38.1% CAGR from 2024 to 2030. It is expected to reach above USD 29.78 Billion by 2030 from USD 1.64 Billion in 2023.

<https://exactitudeconsultancy.com/reports/14273/automotive-self-driving-chip-sales-market/>

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The automotive parts magnesium die casting market is expected to grow at 7.5% CAGR from 2024 to 2030. It is expected to reach above USD 21.76 billion by 2030 from USD 11.18 billion in 2023.

<https://exactitudeconsultancy.com/reports/14299/automotive-parts-magnesium-die-casting-market>

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The global Electric Vehicle Actuator Market is expected to grow at 19.35% CAGR from 2024 to 2030. It is expected to reach above USD 153.85 billion by 2030 from USD 44.60 billion in 2023.

<https://exactitudeconsultancy.com/reports/14088/electric-vehicle-actuator-market/>

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The automatic dependent surveillance broadcast (ADS-B) market is expected to grow at 19.27% CAGR from 2024 to 2030. It is expected to reach above USD 3.54 billion by 2030 from USD 0.72 billion in 2023.

<https://exactitudeconsultancy.com/reports/17854/automatic-dependent-surveillance-broadcast-market>

Global Autonomous Aircraft Market

The global autonomous aircraft market is expected to grow at 19.8% CAGR from 2024 to 2030. It is expected to reach above USD 23.50 billion by 2030 from USD 6.29 billion in 2023.

<https://exactitudeconsultancy.com/reports/17899/autonomous-aircraft-market/>

Global Autonomous Navigation Market

The global autonomous navigation market was valued at 4.01 billion and is projected to reach 11.46 billion by 2030, growing at a CAGR of 16.19% from 2024 to 2030.

<https://exactitudeconsultancy.com/reports/17929/autonomous-navigation-market>

Global Aviation 5G Market

The global aviation 5G market size was valued at USD 0.51 billion in 2023, and projected to reach USD 10.97 billion by 2030, with a CAGR of 47.34% from 2024 to 2030.

<https://exactitudeconsultancy.com/reports/17953/aviation-5g-market/>

Global Small Satellite Services Market

The global small satellite services market is expected to grow at 15.30 % CAGR from 2024 to 2030. It is expected to reach above USD 15.67 Billion by 2030 from USD 4.35 Billion in 2023.

<https://exactitudeconsultancy.com/reports/19719/small-satellite-services-market/>

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