Automotive Robotics - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

Market Report | 2025-07-01 | 120 pages | Mordor Intelligence

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Report description:

Automotive Robotics Market Analysis

The automotive robotics market stood at USD 16.32 billion in 2025 and is forecast to reach about USD 31.67 billion by 2030, advancing at a 14.18% CAGR. Rapid electrification, widening labor gaps, and mounting quality expectations are prompting vehicle makers to replace manual stations with intelligent articulated and collaborative cells. Electric-vehicle battery pack integration, e-powertrain assembly, and full-body quality verification increasingly require motion precision that manual processes cannot match, especially as OEMs press for 100% inspection.

Global Automotive Robotics Market Trends and Insights

Automation to Boost Throughput & Quality

Manufacturers cite automation as the quickest route to alleviate production bottlenecks; 65.3% plan new robot investments to raise line throughput. The International Federation of Robotics logged a 14% rise in operational industrial robots during 2024, marking the steepest annual jump since 2018. Advanced inspection cells now test parts 10 times faster than coordinate-measuring machines, opening the door to 100% inspection without extending cycle time. AI-enabled vision detects defects smaller than 0.05 mm, creating a new quality baseline for body-in-white welding and final trim. As hardware prices drop, many plants recover capital outlays in one to three years, reinforcing the business case for expanded fleets.

EV-Battery & E-Powertrain Manufacturing Needs

Electric-vehicle assembly introduces heavier yet fewer sub-assemblies that require distinct handling, sealing, and welding methods. ABB estimates that 80 planned gigafactories will still leave battery supply short of demand, underscoring the need for high-throughput robotic production . Co-locating battery lines with final assembly promotes sustainability and reduces logistics, but only if robots can alternate between battery and body tasks. Specialized aluminum welding cells and end-of-life disassembly robots such as Thoth's DisMantleBot illustrate new niches emerging from the EV shift.

High Capex & Installation Costs

Small and medium suppliers still view six-figure robot cells as risky despite falling price points. Robotics-as-a-service vendors such as Rapid Robotics offset sticker shock through monthly contracts that bundle hardware, service, and software. Integration often doubles upfront spend because lines must be re-rigged for guarding, vision calibration, and operator training. FANUC's USD 110 million Auburn Hills campus expansion shows the ecosystem investment needed to make turnkey deployment viable. Total cost of ownership also hinges on maintenance, software refreshes, and cyber-patching, often underestimated in business cases.

Other drivers and restraints analyzed in the detailed report include:

Labor Shortages & Wage Inflation in Auto Hubs / Tighter OEM Quality-Consistency Mandates / Scarcity of Skilled Robot Programmers /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

Vehicle makers held 61.18% of the automotive robotics market in 2024, reflecting their ability to absorb capital costs and embed articulated welders, painters, and sealers across every major line. This cohort now prioritizes AI vision for trim-and-final inspection and seeks cobots that can tackle ergonomic tasks once left to humans. Service centers form the fastest-growing slice, riding a 14.31% CAGR as EV diagnostics and ADAS calibration push mechanized processes into aftermarket bays.

Upskilling remains critical. OEMs such as Mercedes-Benz integrate humanoid robots to relieve staff from repetitive fetching tasks, while independent garages invest in robotic wheel alignment systems to shorten appointment times. Continued migration of complex repairs from dealerships to multi-brand centers will buoy the automotive robotics market into the next decade.

Robotic arms represented 36.54% of revenue in 2024, yet value is quickly shifting toward analytics, vision, and cyber-secure controllers. Software and services are advancing at a 14.64% CAGR, making this the prime strategic battleground. Cloud-hosted dashboards track utilization and issue predictive alerts, converting one-time capex into annuity streams.

Fleet-level orchestration platforms unify hundreds of cells into one virtual entity, enabling production planners to redeploy tasks in minutes rather than days. As hardware margins compress, vendors differentiate through continuous software updates and app-store ecosystems, reinforcing the automotive robotics market's move toward outcome-based contracting.

The Automotive Robotics Market Report is Segmented by End-User Type (Vehicle Manufacturers (OEMs), Component Manufacturers (Tier-1 and 2), and More), Component Type (Controllers, Robotic Arms, and More), Product Type (Cartesian Robots, SCARA Robots, and More), Function Type (Painting Robots, Welding Robots, and More), and Geography (North America, South America, and More). The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

Asia-Pacific retained 46.55% of the automotive robotics market in 2024, anchored by China's 429,500 unit output and a robot density of 470 per 10,000 workers. Domestic vendors such as Siasun and Estun benefit from state incentives that keep acquisition costs low, while Japanese integrators continue to refine lean robotic cells for high-mix assembly. Southeast Asian governments extend production-linked incentives, inviting OEMs to localize EV lines with fully automated battery pack stations.

South America logs the highest 14.94% CAGR as multinationals commit fresh capital: Stellantis has earmarked EUR 5.6 billion for flexible EV capacity, and General Motors is spending USD 1.4 billion on robotic body shops in Brazil. Technology-transfer clauses in these deals allow local integrators to license advanced welding software, accelerating domestic expertise. Rising wage inflation reinforces the shift to robotics, particularly in Brazil's chassis and powertrain plants.

North America pursues reshoring to mitigate geopolitical risk. USMCA rules of origin encourage suppliers to automate to maintain cost competitiveness despite labor shortages. Federal credits targeting battery production spark new gigafactory projects that integrate high-payload robots for cell stacking and module assembly. Europe holds steady yet demands high functional-safety compliance that favors premium robotic solutions. Germany continues to act as an R&D hub, even as margin pressure spurs automakers to transfer volume production to lower-cost regions.

List of Companies Covered in this Report:

ABB Ltd / FANUC Corporation / KUKA AG / Yaskawa Electric Corporation / Kawasaki Heavy Industries (Robotics) / Omron Adept Technologies / Honda Motor Co (Robotics) / Nachi-Fujikoshi Corp / Harmonic Drive Systems / RobCo SWAT Ltd / Denso Wave Inc / Comau SpA / Staubli Robotics / Universal Robots A/S / Hyundai Robotics / Epson Robots / OTC Daihen / Siasun Robot & Automation / Estun Automation / Techman Robot /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
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